Redesignation Request and Maintenance Plan for the Door County-Revised, WI 2015 Ozone National Ambient Air Quality Standard Nonattainment Area

DRAFT FOR PUBLIC REVIEW

Developed By:
The Wisconsin Department of Natural Resources

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Table of Contents

List of Tables

List of Figures

List of Technical Appendices

List of Acronyms

AEI	WDNR's air emissions inventory
AQS	EPA's Air Quality System database
CAA	Clean Air Act
CAIR	Clean Air Interstate Rule
CART	Classification and Regression Tree
CDD	Clean Data Determination
CSAPR	Cross-State Air Pollution Rule
CTG	Control Techniques Guideline
DV	Design value
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
iSIP	Infrastructure SIP
LADCO	Lake Michigan Air Directors Consortium
MOVES3	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)
NSR	New Source Review
OMB	U.S. Office of Management and Budget
ppm	parts per million
PSD	Prevention of Significant Deterioration
RACM	Reasonably Available Control Measures
RACT	Reasonably Available Control Technology
RFP	Reasonable Further Progress
RTA	Rural Transport Area
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

Wisconsin requests that the U.S. Environmental Protection Agency (EPA) redesignate the Door County-Revised, WI 2015 8-hour ozone National Ambient Air Quality Standard (NAAQS) nonattainment area to attainment. Based on air quality monitoring data for the years 2019-2021, the Door County-Revised nonattainment area has demonstrated attainment of the 2015 ozone NAAQS.

1.1. Background

The federal Clean Air Act (CAA) requires an area not meeting a NAAQS for a specified criteria pollutant to develop or revise its State Implementation Plan (SIP) to expeditiously attain and maintain the NAAQS in that nonattainment area. When attainment of a NAAQS in a nonattainment area has been achieved, Section 107(d)(3)(D) of the CAA allows states to request the nonattainment area to be redesignated to attainment provided that certain criteria are met.

Historically, exceedances of the federal ozone standards have been monitored along the shoreline of Lake Michigan, including Door County. The history of ozone nonattainment in Door County is shown in Table 1.1. The area was designated nonattainment for both the 1979 and 1997 ozone NAAQS and was subsequently redesignated to attainment for both standards. The area was designated unclassifiable/attainment for the 2008 ozone NAAQS.

In October 2015, EPA finalized a revision to the 8-hour ozone NAAQS (80 FR 65291). The 2015 ozone NAAQS (0.070 parts per million, ppm) was more restrictive than the previous 2008 ozone NAAQS (0.075 ppm). On June 4, 2018, EPA published a final rulemaking that designated part of Door County as a marginal nonattainment, rural transport area (RTA) for the 2015 ozone NAAQS (83 FR 25776). This rulemaking was based on EPA's review of ozone monitoring data collected during the years 2014 to 2016. This partial county nonattainment area consisted of the boundary of Newport State Park. On June 10, 2020, EPA redesignated this nonattainment area to attainment for the 2015 ozone NAAQS (85 FR 35377).

On June 14, 2021, in response to a July 10, 2020 decision by the D.C. Circuit Court, EPA published a final rule revising the 2015 ozone NAAQS designations for 13 counties, including Door County (86 FR 31438). As part of this action, EPA revised the Door County nonattainment area to include the portion of Door County north of Sturgeon Bay Canal, exclusive of Newport State Park. The revised designation was effective July 14, 2021.

EPA's July 2021 revised designation for Door County did not include the area originally designated by EPA in June 2018 (and subsequently redesignated to attainment in June 2020). The revised area was therefore identified by EPA as a separate and distinct "Door County-Revised" area in its rulemaking finalizing the revised designation.[1] This redesignation request and maintenance plan applies only to the Door County-Revised nonattainment area and does not

[1] 86 FR 31447 (https://www.govinfo.gov/content/pkg/FR-2021-06-14/pdf/2021-11454.pdf)

impact or affect EPA's original 2015 ozone NAAQS partial Door County area, which remains in attainment consistent with EPA's June 2020 redesignation action.[2]

Table 1.1. Door County ozone NAAQS nonattainment history.

Year Promulgated	1979	1997	2008	2015	
Level	0.12 ppm	0.08 ppm	0.075 ppm	0.070 ppm	
Averaging Time	1 hour	8 hours	8 hours	8 hours	
Area of Door County	Entire county	Entire county	Entire county	Door County (partial county)[a]	Door County-Revised (partial county)[b]
Classification	Marginal (Rural Transport)	Former Subpart 1	Unclassifiable/ Attainment	Marginal (Rural Transport)	Marginal (Rural Transport)
Redesignation to Attainment	4/17/2003 68 FR 18883	7/12/2010 75 FR 39635	N/A	6/10/2020 85 FR 35377	TBD

[a] EPA finalized its original designation for Door County for the 2015 ozone NAAQS on June 4, 2018. This partial county nonattainment area consists of the boundary of Newport State Park.

[b] EPA revised its 2015 ozone designation for Door County on June 14, 2021. The "Door County-Revised" nonattainment area includes the portion of the county north of the Sturgeon Bay Canal, excluding Newport State Park.

1.2. Rural Transport Area

Section 182(h) of the Clean Air Act identifies a category of ozone nonattainment areas known as Rural Transport Areas (RTAs). An RTA is treated as a marginal nonattainment area for purposes of ozone related-planning and control requirements, regardless of the area's classification. For an area to qualify as an RTA, the nonattainment area must meet two criteria. First, the nonattainment area cannot be adjacent to or include any part of a metropolitan statistical area, as defined by the U.S. Office of Management and Budget (OMB). Second, the nitrogen oxides (NOx) and volatile organic compounds (VOCs) emissions from sources within the area cannot make a significant contribution to ozone concentrations in the area itself, or in other areas. EPA found that the Door County-Revised nonattainment area met these criteria and was therefore eligible to be treated as an RTA.[3]

1.3. Geographical Description

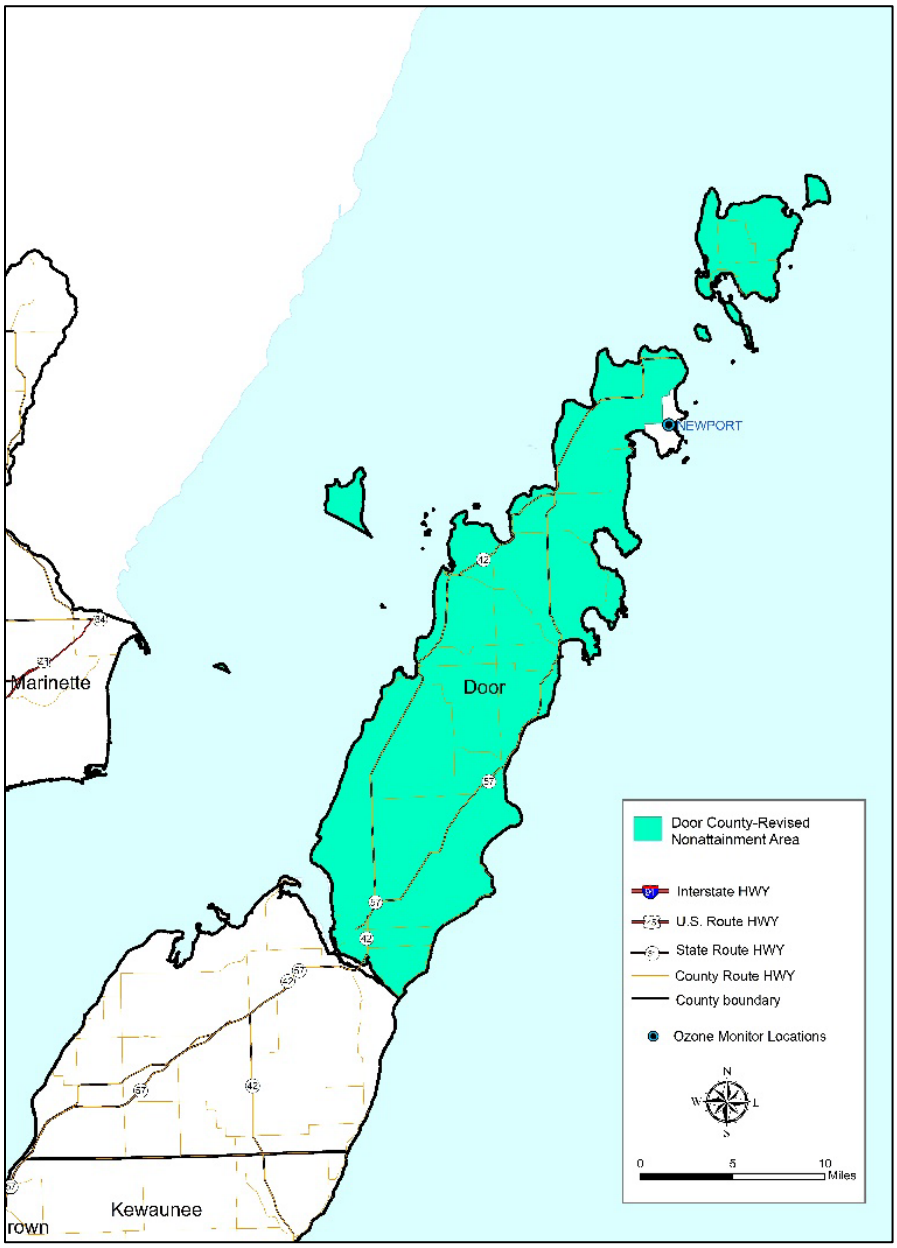
Door County is located in eastern Wisconsin along the western shoreline of Lake Michigan (Figure 1.1). The Door County-Revised nonattainment area consists of the area north of Sturgeon

[2] For more information about the relationship between these two areas, see EPA's Final Area Designations for the 2015 Ozone National Ambient Air Quality Standards Technical Support Document (TSD) for Counties Remanded to EPA, Wisconsin, May 2021, available at https://www.epa.gov/sites/default/files/2021-05/documents/wi_tsd_remand_final.pdf (pp. 82-83).

[3] Ibid, pp. 80-83.

Bay Canal excluding Newport State Park. The air quality monitor within this nonattainment area (the Newport monitor) is located at the far northeastern tip of the Door peninsula, which juts northeastward into Lake Michigan. The monitor itself is located on high ground in Newport State Park and is surrounded on nearly three sides by water. The exposed location of this monitor makes it prone to be impacted by ozone-rich air transported over the lake from the major metropolitan areas to the south, as explained further in Section 4. Ozone transported from out of state is the dominant source of ozone in Door County, accounting for approximately 89 percent of the measured ozone concentrations at the Newport monitor (Figure 4.1).

Figure 1.1. Map of the Door County-Revised 2015 ozone nonattainment area (in green), with monitoring locations shown.



1.4. Status of Ozone Air Quality

Ozone monitoring data from 2019 through 2021 demonstrates that the air quality meets the 2015 ozone NAAQS in the Door County-Revised nonattainment area, as discussed in more detail in Section 3. In addition, total summer emissions of ozone precursors (NOx and VOCs) are projected to continue declining in the areas upwind of Door County that contribute to ozone nonattainment at the Newport monitor. As a result, the Wisconsin Department of Natural Resources (WDNR) expects maintenance of the standard, as discussed in Sections 4 and 7, justifying a redesignation to attainment for the Door County-Revised 2015 ozone NAAQS nonattainment area based on Section 107(d)(3)(E) of the CAA**.**

1.5. Requirements for Redesignation and Overview of this Redesignation Request

Sections 107(d)(3)(E)(i) through (v) of the CAA establish the following criteria to be met in order for an area to be considered for redesignation of a NAAQS:

(i) A determination by EPA that the area has attained the NAAQS;

(ii) A fully approved SIP for the area under Section 110(k) of the CAA;

(iii) A determination by EPA that the improvement in air quality is due to permanent and enforceable reductions in emissions;

(iv) A fully approved maintenance plan, including a contingency plan, for the area under Section 175(A) of the CAA; and

(v) A determination that all applicable requirements for the area under Section 110 and Part D of the CAA have been met.

Section 110 and Part D of the CAA list a number of criteria that must be met prior to consideration for redesignation of nonattainment areas to attainment. In addition, EPA has published detailed guidance in a document entitled “Procedures for Processing Requests to Redesignate Areas to Attainment,” issued September 4, 1992 as a memo sent to EPA Regional Air Directors (“Redesignation Guidance”). This redesignation request and maintenance plan is based on this Redesignation Guidance, supplemented by additional guidance received from staff at EPA Region 5.

This redesignation request and maintenance plan shows that the Door County-Revised 2015 ozone NAAQS nonattainment area has met these CAA criteria as demonstrated by all of the following:

- Ozone monitoring data demonstrate that the Door County-Revised nonattainment area has attained the 2015 ozone NAAQS (criterion (i), addressed in Section 3).

- Emissions inventories for the nonattainment base year (2014) and attainment year (2019), in combination with a discussion of the control measures in place, indicate that air quality improvements are consistent with observed reductions in NOx and VOC inventories due

to permanent and enforceable emissions reductions (criterion (iii), addressed in Sections 4 and 6).

- Transportation conformity budgets and a description of how the state has met other Section 110 and Part D CAA requirements fulfill the state's remaining requirements for a redesignation request (criteria (ii) and (v), addressed in Sections 2 and 5).

- Projected emissions inventories for the maintenance years (2030 and 2035) and a contingency plan provide a complete maintenance plan (criterion (iv), addressed in Sections 4 and 7).

2. CAA SECTION 110(a) AND PART D REQUIREMENTS

As a precondition to redesignation of a nonattainment area to attainment, the CAA requires EPA to determine that the state has met all applicable requirements under section 110 and part D of Title I of the CAA (per CAA Section 107(d)(3)(E)(v)) and that the state has a fully approved SIP under Section 110(k) for the area (per CAA Section 107(d)(3)(E)(ii)).

2.1. Satisfying CAA Section 110(a) General SIP Requirements

Section 110(a) of the CAA contains the general requirements for a SIP. Section 110(a)(2) provides that the implementation plan submitted by a state must have been adopted by the state after reasonable public notice and hearing, and, among other things, must:

- Include enforceable emission limitations and other control measures, means or techniques necessary to meet the requirements of the CAA;

- Provide for establishment and operation of appropriate devices, methods, systems, and procedures necessary to monitor ambient air quality;

- Provide for implementation of a source permit program to regulate the modification and construction of any stationary source within the areas covered by the plan;

- Include provisions for the implementation of part C, Prevention of Significant Deterioration (PSD), and part D, New Source Review (NSR) permit programs;

- Include criteria for stationary source emission control measures, monitoring, and reporting; and

- Include provisions for air quality modeling; and provide for public and local agency participation in planning and emission control rule development.

Wisconsin submitted an infrastructure SIP (iSIP) to satisfy the Section 110(a) requirements for the 2015 ozone NAAQS to EPA on September 14, 2018. Appendix 1 includes Wisconsin's iSIP submittal.

2.2. Satisfying CAA Part D Requirements

CAA Title I, Part D, Subpart 1 sets forth the basic nonattainment requirements applicable to all nonattainment areas. Subpart 2 of Part D, which includes Section 182 of the CAA, establishes additional required provisions for ozone nonattainment areas based on their level of nonattainment classification. Guidance from EPA declares that in submitting a redesignation request, states must meet all Part D requirements that were applicable at the time the redesignation request was submitted.[4]

Subpart 1 Requirements

Section 172(c)(3) requires submittal and approval of a comprehensive, accurate and complete inventory of actual emissions for the area. This requirement was superseded by the inventory requirement in Section 182(a)(1), discussed in the Subpart 2 section below.

Section 172(c)(4) requires the identification and quantification of allowable emissions for major new and modified stationary sources in an area. Section 172(c)(5) requires source permits for the construction and operation of new and modified major stationary sources in the nonattainment area. Wisconsin has an approved NSR program that meets these requirements. Furthermore, after redesignation, PSD requirements will apply. Wisconsin has an approved PSD program. The EPA approved additional provisions in Wisconsin's PSD rule on October 6, 2014 (79 FR 60064) and February 7, 2017 (82 FR 9515).

Section 172(c)(7) requires the SIP to meet the applicable provisions of CAA Section 110(a)(2). As noted in the previous section, Wisconsin submitted an affirmation of meeting the Section 110(a) requirements to the EPA on September 14, 2018. This submittal can be found in Appendix 1.

Section 176(c) of the CAA requires states to establish criteria and procedures to ensure that federally supported or funded activities, including highway projects, conform to the air quality planning goals in the applicable SIPs. The requirement to determine conformity applies to transportation plans, programs, and projects developed, funded, or approved under Title 23 of the U.S. Code and the Federal Transit Act (transportation conformity) as well as to all other federally-supported or funded projects (general conformity). Section 5 of this document includes a discussion of transportation conformity.

Subpart 2 Requirements

Section 182(a)(1) requires the submission of a comprehensive emissions inventory. An emissions inventory is included in Section 4 of this redesignation request.

Section 182(a)(2) requires the submission of certain corrections to VOC Reasonably Available Control Technology (RACT) rules, vehicle inspection and maintenance (I/M) programs and permitting programs. These corrections were addressed for the Door County nonattainment area

[4] "Procedures for Processing Requests to Redesignate Areas to Attainment," memo from John Calcagni to EPA Regional Air Directors, September 4, 1992.

under the 1979 1-hour ozone standard and do not need to be addressed again under the 2015 8-hour ozone standard.

Section 182(a)(3)(B) requires the submission of an emissions statement SIP. The WDNR submitted this statement to EPA in its January 27, 2020 redesignation request for the original Door County 2015 ozone NAAQS nonattainment area, and has also included such a statement in Section 4.5.

Section 182(b)(5) requires NOx and VOC emissions offsets at a ratio of 1.1 to 1 for major source permits in marginal ozone nonattainment areas. These offset ratios are incorporated into Wisconsin's Nonattainment NSR permitting program, which was approved by EPA on January 18, 1995 (60 FR 3538).

When EPA approves the emissions inventory and the other marginal nonattainment area requirements included in this request, Wisconsin will have met all the applicable SIP requirements for the purposes of redesignation for this area.

3. OZONE MONITORING

3.1. Ozone Monitoring Network

The Newport monitor within Door County has been operating since 1989. This monitor is located within Newport State Park (Figure 1.1). Although technically located outside of the Door County-Revised nonattainment area, EPA used data from the Newport monitor to determine the attainment status of this area when revising Door County's designation in June 2021. Therefore, data from this monitor are also used to determine if and when the area attains the NAAQS.

3.2. Ambient Ozone Monitoring Data

The EPA's requirements for ozone air monitoring data are contained in Appendix U to 40 CFR Part 50 ("Interpretation of the Primary and Secondary National Ambient Air Quality Standards for Ozone"). The level of the 2015 ozone NAAQS is 0.070 ppm. A monitoring site measures compliance with the 2015 ozone NAAQS if it meets the following conditions:

1. There are three complete years of ozone monitoring data at the site.

2. The 3-year average of the annual fourth-highest daily maximum 8-hour average ozone concentration is equal to or less than 0.070 ppm. This value is called the "design value".

For an area to attain the standard, the design values for all monitoring sites within that area must be equal to or lower than the NAAQS.

Table 3.1 shows the fourth-highest daily maximum 8-hour average values for the Newport monitor for 2019 through 2021. Table 3.1 also shows the 2019-2021 design value, which meets the 2015 ozone NAAQS. This confirms that the Door County-Revised nonattainment area has attained the 2015 ozone NAAQS.

Significant reductions in emissions of ozone precursors, NOx and VOCs, from upwind sources have resulted from permanent and enforceable control measures implemented during the time period associated with the 2015 ozone standard, as discussed in more detail in Sections 4 and 6.

Table 3.1. Monitoring data for the Door County-Revised nonattainment area, showing annual fourth-highest 8-hour concentrations and design values (DV) in parts per million (ppm). 2019 through 2021 data were downloaded from EPA's Air Quality System (AQS) database.

Site (Site ID)	4th high 8-hr ozone (ppm)			Design value (ppm)
	2019	2020	2021	2019-2021
Newport (55-029-0004)	0.066	0.075	0.070	0.070

3.3. Quality Assurance

All available data for the Newport ozone monitoring site for 2019 through 2021 has been quality assured and archived in EPA's Air Quality System (AQS). The WDNR has an approved Ozone Quality Assurance Project Plan and quality assures monitoring data in accordance with 40 CFR Part 58 to assure that the quality of the monitoring data submitted to AQS meets federal criteria. The 2019 through 2021 datasets were certified by the state on November 23, 2021 and are awaiting EPA concurrence. The data are available to the public.

3.4. Data Completeness

EPA requires that daily maximum 8-hour average concentrations be available for at least 90 percent of the days in the ozone season for a given site over the 3-year period and that no site have less than 75 percent data completeness for a given year. The data from the Newport monitoring site meets EPA requirements for completeness (as described in Appendix U to 40 CFR Part 50) for the years 2019 through 2021, with data completeness for each year being 97 percent, 98 percent, and 99 percent, respectively. For these three years, the overall average data completeness for the Newport monitor was 98 percent.

4. EMISSIONS INVENTORIES

4.1. Overview and Choice of Inventory Years

The CAA requires that a state demonstrate that the improvement in ozone air quality between the nonattainment and attainment years is based on permanent and enforceable emissions reductions in order for a nonattainment area to be redesignated to attainment.

Door County sources have little to no ability to influence ozone concentrations at the monitor in the county. Emissions from upwind states contribute more ozone to the Newport monitor than do sources in Wisconsin, as shown in Figures 4.1-4.4 and discussed below. Despite out-of-state transport contributing significantly to ozone concentrations measured at the Newport monitor, the fourth-highest daily maximum 8-hour average ozone values within the Door County-Revised nonattainment area still meet the 2015 ozone NAAQS (Table 3.1).

The WDNR is submitting comprehensive inventories of actual and projected emissions for the Door County-Revised nonattainment area as well as emissions from contributing upwind metropolitan areas.[5] These inventories fulfill the demonstration of improvement required under the CAA. Section 6 documents the specific programs responsible for making the emissions reductions permanent and enforceable. These programs are the foundation for the actual emissions inventory data discussed in this section. It should be noted that these emissions inventories do not result in a limitation on emissions for any specific source or source category in the future. These inventories are snapshots of recent emissions levels and a best estimate of future emissions levels and are used to demonstrate relative changes in total emissions and future maintenance of the standard.

EPA's Redesignation Guidance requires a state to submit emissions inventories for the following years:

1. A year in which the standard was not attained ("nonattainment year");
2. A year in which the standard was attained ("attainment year");
3. A year at least 10 years after the area has been redesignated to attainment to demonstrate maintenance of the standard ("maintenance year"); and
4. An intermediate year between the attainment year and maintenance year ("interim year").

The WDNR has developed the following NOx and VOC emissions inventories as part of the redesignation request:

[5] Inventories for the Chicago, Green Bay and Milwaukee metropolitan areas are included in this request to represent upwind areas contributing to the Newport monitor. EPA specifically identified these three areas as contributors to the Newport monitor in its Final Area Designations TSD for the Counties Remanded to EPA for the 2015 Ozone NAAQS (pp. 77). For the purposes of this analysis only, the Chicago area is represented by Cook, Dekalb, DuPage, Grundy, Kane, Kendall, Lake McHenry and Will Counties in Illinois; Jasper, Lake, Porter and Newton Counties in Indiana, and Kenosha County, Wisconsin. The Green Bay area is represented by Brown County, Wisconsin. The Milwaukee area is represented by Milwaukee, Ozaukee, Racine, Waukesha and Washington Counties in Wisconsin.

1. 2014 nonattainment year emissions inventory;
2. 2019 attainment year emissions inventory;
3. 2030 interim maintenance year emissions inventory; and
4. 2035 maintenance year emissions inventory.

EPA guidance for redesignation inventories provides the flexibility to use any one of the three years contained in the attainment design value provided emissions from the season selected are found representative in terms of economic conditions, key sector emissions characteristics and weather/ozone conduciveness conditions. 2019 is the first year in the attainment design value period (2019-2021) and also meets the other conditions. This year, therefore, forms a reasonable basis for assessing the "real and permanent" nature of attainment as required by the CAA. For more information on meteorological trends see Section 6.6.

Wisconsin is required to demonstrate continued maintenance of the NAAQS for ten years after redesignation. As part of this demonstration, WDNR is providing a projection of emissions for 2030 as the interim projection year and 2035 as the maintenance year. The emissions projections through 2035 are relied upon in the maintenance demonstration presented in Section 7.

4.2. Nonattainment Year (2014) and Attainment Year (2019) Inventories

The WDNR developed the following emissions information to satisfy EPA's redesignation requirements to submit nonattainment and attainment year inventories for NO_x and VOC. Appendix 2 includes a discussion of the methodology used to estimate sector-specific emissions for 2014 and 2019 for both the nonattainment area and upwind area emissions inventories (shown in tables 4.1 through 4.4). Between 2014 and 2019, NOx emissions decreased by 13 percent, and VOC emissions decreased 27 percent in the Door County-Revised 2015 ozone NAAQS nonattainment area. These reductions are due primarily to decreases in NOx and VOC emissions from the onroad and nonroad mobile sectors provided by the federal mobile source programs summarized in Sections 6.3 and 6.4.

4.3. Maintenance Year Inventories (2030 and 2035)

By designating the Door County-Revised area as an RTA, EPA determined that local emissions do not impact the area's ability to attain the standard. Therefore, in addition to the requirement for the interim and maintenance year inventory for the Door County-Revised 2015 ozone NAAQS nonattainment area, WDNR is also providing emissions projections for the upwind metropolitan areas emitting precursors that may influence the ozone levels in the Door County-Revised area. Appendix 2 includes information on sector-specific emissions projection methodologies for the Door County-Revised nonattainment area. Appendix 8 includes information on emissions projection methodology for upwind areas.

Tables 4.1 and 4.2 show the projected NOx and VOC emissions (in tposd) in 2030 and 2035 for the Door County-Revised 2015 ozone NAAQS nonattainment area and tables 4.3 and 4.4 show the projected NOx and VOC emissions (in tposd) for the upwind metropolitan areas. These inventories project that NOx and VOC emissions will continue to decrease in future years.

In the Door County-Revised area, total NOx emissions will decrease by approximately 30 percent (1.19 tposd) from 2019 to 2035. The largest reduction is in the nonroad sector (0.83 tposd). Total VOC emissions will decrease by 28 percent (1.05 tposd). The largest decrease is again in the nonroad sector (1.00 tposd). In the upwind areas, total NOx emissions across these areas are projected to decrease by approximately 34 percent (211.09 tposd) from 2019 to 2035 (Table 4.3). The largest reductions are projected from the onroad mobile sector (106.35tposd) followed by the nonroad mobile sector (26.34 tposd) due to ongoing implementation of the federal and state mobile source control programs detailed in Section 6.3. VOC emissions are also projected to decrease in the upwind metropolitan areas by approximately 13 percent (or 70.91 tposd) from 2019 to 2035 (Table 4.4). The largest VOC reductions are projected from the onroad mobile sector (78.50 tposd) followed by the nonroad mobile sector (2.11 tposd). This analysis shows that the Door County-Revised 2015 ozone NAAQS nonattainment area is expected to maintain the air quality standard for more than ten years into the future.

As discussed above and shown in Tables 4.1 through 4.4, overall NOx and VOC emissions are projected to decline or remain stable, however, some sectors show slight increases in emissions over this time period. All three upwind metropolitan areas also show slight increases in area source sector VOC emissions. VOC emissions also increase slightly for the non-EGU point sector in the Green Bay area and the EGU sector in the Milwaukee area. These increases are very small compared to the emissions reductions projected in the onroad and nonroad mobile sectors and do not affect the overall reduction in NOx or VOC emissions for the any of the upwind areas.

Table 4.1. Door County-Revised area NOx emissions (tposd) by source type.

Sector	2014 nonattainment year	2019 attainment year	2030 interim year	2035 maintenance year
Point - EGU	0.00	0.00	0.00	0.00
Point - Non-EGU	0.00	0.00	0.00	0.00
Area	0.20	0.20	0.19	0.19
Onroad	0.87	0.61	0.30	0.26
Nonroad	3.32	2.99	2.18	2.16
TOTAL	4.39	3.80	2.67	2.61
Change from 2014 (% change)	NA	-0.59 (-13%)	-1.72 (-39%)	-1.77 (-40%)

Table 4.2. Door County-Revised area VOC emissions (tposd) by source type.

Sector	2014 nonattainment year	2019 attainment year	2030 interim year	2035 maintenance year
Point - EGU	0.00	0.00	0.00	0.00
Point - Non-EGU	0.21	0.13	0.18	0.18
Area	0.74	0.74	0.74	0.75
Onroad	0.29	0.22	0.13	0.12
Nonroad	3.38	2.28	1.37	1.28
TOTAL	4.61	3.37	2.42	2.32
Change from 2014 (% change)	NA	-1.24 (-27%)	-2.19 (-48%)	-2.29 (-50%)

Table 4.3. NOx emissions (tposd) from upwind metropolitan areas by source type.

Sector	2014 nonattainment year	2019 attainment year	2030 interim year	2035 maintenance year
Chicago Metropolitan Area				
Point - EGU	54.04	24.73	9.32	9.77
Point - Non-EGU	102.20	92.32	92.52	92.36
Area	96.68	95.23	89.52	86.83
Onroad	311.75	171.02	69.03	40.91
Nonroad	158.24	131.72	113.96	110.87
TOTAL	**722.92**	**515.02**	**374.35**	**340.75**
Change from 2014 (% change)	-	-207.90 (29%)	-348.57 (-48%)	-382.17 (-53%)
Green Bay Area				
Point - EGU	3.28	0.72	0.01	0.02
Point - Non-EGU	12.29	5.58	5.60	5.62
Area	2.63	2.60	2.56	2.54
Onroad	11.20	6.49	1.86	0.46
Nonroad	4.05	2.58	1.48	1.00
TOTAL	**33.46**	**17.98**	**11.51**	**9.65**
Change from 2014 (% change)	-	-15.48 (-46%)	-21.95 (-66%)	-23.81 (-71%)
Milwaukee Metropolitan Area				
Point - EGU	15.95	12.43	12.92	12.80
Point - Non-EGU	5.11	4.96	4.98	4.98
Area	17.87	17.66	17.11	16.89
Onroad	57.74	29.15	10.17	4.94
Nonroad	28.19	16.49	13.31	12.58
TOTAL	**124.86**	**80.68**	**58.48**	**52.19**
Change from 2014 (% change)	-	-44.18 (-35%)	-66.38 (-53%)	-72.67 (-58%)

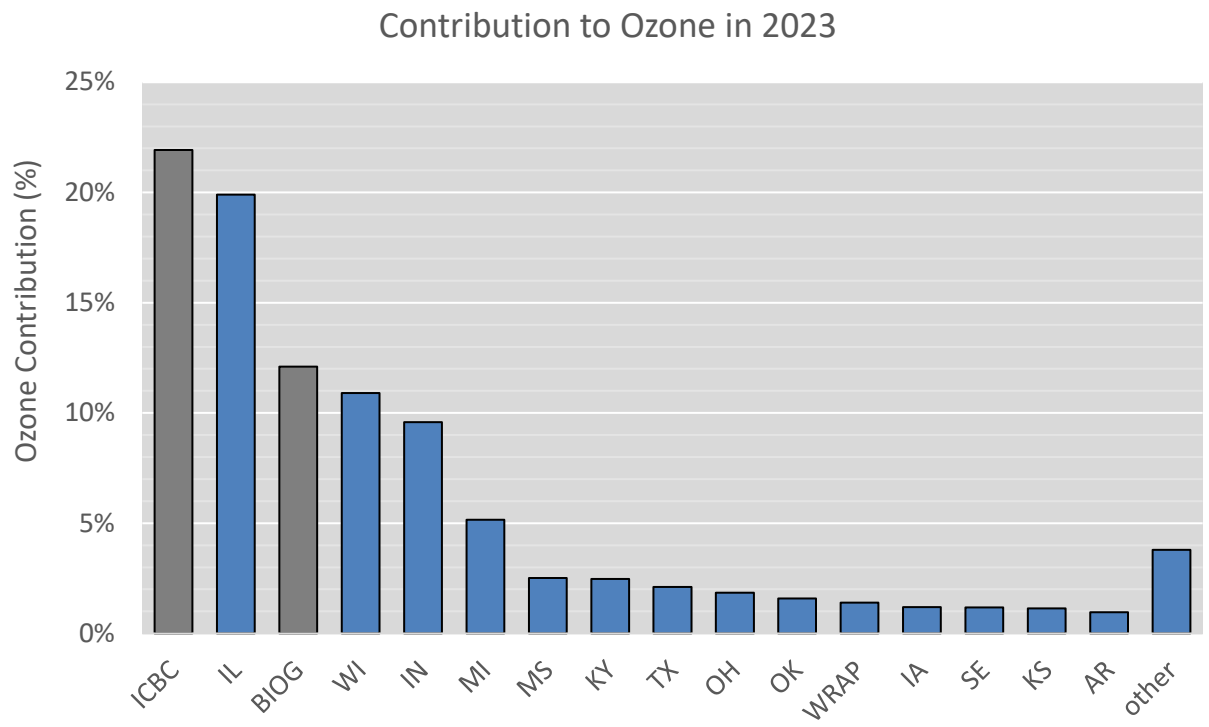
Table 4.4. VOC emissions (tposd) from upwind metropolitan areas by source type.

Sector	2014 nonattainment year	2019 attainment year	2030 interim year	2035 maintenance year
Chicago Area				
Point - EGU	1.35	1.46	0.86	0.87
Point - Non-EGU	48.85	46.28	45.59	45.36
Area	240.36	242.83	249.38	252.30
Onroad	170.29	99.75	49.96	33.82
Nonroad	91.62	68.78	66.68	67.68
TOTAL	**552.47**	**459.10**	**412.46**	**400.02**
Change from 2014 (% change)	-	-93.37 (-17%)	-140.01 (-25%)	-152.45 (-28%)
Green Bay Area				
Point - EGU	0.05	0.01	0.00	0.00
Point - Non-EGU	4.22	4.53	4.54	4.55
Area	8.71	9.01	9.38	9.54
Onroad	6.31	3.78	1.97	1.43
Nonroad	2.91	1.64	1.41	1.35
TOTAL	**22.21**	**18.97**	**17.30**	**16.87**
Change from 2014 (% change)	-	-3.24 (-15%)	-4.91 (-22%)	-5.34 (-24%)
Milwaukee Area				
Point - EGU	0.39	0.61	0.98	0.97
Point - Non-EGU	9.01	8.80	8.78	8.76
Area	50.40	50.81	51.43	51.70
Onroad	31.07	16.42	8.68	6.20
Nonroad	18.77	11.51	10.82	10.79
TOTAL	**109.64**	**88.15**	**80.69**	**78.42**
Change from 2014 (% change)	-	-21.49 (-20%)	-28.95 (-26%)	-31.22 (-28%)

4.4. Trends in Emissions from Upwind Areas

NOx and VOC emissions from out-of-state sources located to the south are the largest contributors to ozone at the Newport monitor (Figure 4.1). Figure 4.1 shows that emissions sources in Wisconsin are estimated to contribute only about 11 percent to concentrations at the Newport monitor in 2023. Reductions in emissions from upwind areas are therefore likely to have a greater impact on ozone concentrations measured at this monitor than those from Wisconsin sources.

Figure 4.1. Ozone source apportionment modeling from the Lake Michigan Air Directors Consortium (LADCO) for the Newport monitor.[6]



[6] 2023 projected contributions are from LADCO 2015 Interstate Transport Modeling (with water). For information on 2023 modeling methodology see: LADCO 2015 O3 NAAQS Transport Modeling TSD. https://www.ladco.org/wp-content/uploads/Documents/Reports/TSDs/O3/LADCO_2015O3iSIP_TSD_13Aug2018.pdf. Source regions were grouped differently for the different modeling efforts and do not include states that are broken out specifically due to their significant independent contributions. The "SE" (Southeast) region includes MS, AL, GA, FL, TN, VA, NC and SC. The "WRAP" (West) region includes WA, OR, CA, NV, ID, MT, WY, UT, CO, AZ, NM, ND and SD. "ICBC" refers to "initial/boundary conditions", which are contributions that cannot otherwise be attributed to a state or source region, such as emissions originating outside the U.S. "BIOG" represents biogenic emissions. "Other" represents other states or regions not otherwise listed.

4.5. Emission Statement

Section 182(a)(3)(B) of the CAA requires marginal ozone nonattainment areas to submit an emission statement. The emission statement must:

> … require that the owner or operator of each stationary source of oxides of nitrogen or volatile organic compounds provide the state with a statement, in such form as the Administrator may prescribe (or an equivalent alternative developed by the state), for classes or categories of sources, showing the actual emissions of oxides of nitrogen and volatile organic compounds from that source. The first such statement shall be submitted within 3 years after the date of the enactment of the CAA Amendments of 1990. Subsequent statements shall be submitted at least every year thereafter. The statement shall contain a certification that the information contained in the statement is accurate to the best knowledge of the individual certifying the statement.

Wisconsin has an approved emission statement program in place that covers the Door County-Revised 2015 ozone NAAQS nonattainment area. This is because the state had areas designated as nonattainment for earlier ozone NAAQS. EPA's 2015 Ozone NAAQS SIP Requirement Rule states that:

> … a state may have an emissions statement regulation (per CAA section 182(a)(3)(B)) that has been previously approved by the EPA for a prior ozone NAAQS that covers all the state's nonattainment areas and relevant classes and categories of sources for the 2015 ozone NAAQS, and that is likely to be sufficient for purposes of meeting the emissions statement requirement for the 2015 ozone NAAQS (83 FR 62998, 63001).

The WDNR has the authority under section 299.15 of the Wisconsin Statutes and chapter NR 438 of the Wisconsin Administrative Code to require annual NOx and VOC emissions reporting from any facility in the state that emits a pollutant above the thresholds specified in the code. EPA approved Wisconsin's emission reporting program as satisfying the CAA emission statement requirement on December 6, 1993 (58 FR 64155). Therefore, Wisconsin has satisfied this requirement for the 2015 ozone NAAQS.

5. TRANSPORTATION CONFORMITY BUDGETS

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 at 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 Door County-Revised 2015 ozone NAAQS area as part of this redesignation request.

Door County is considered an isolated rural area for transportation planning purposes. As such, the area does not have federally required metropolitan transportation plans and transportation improvement plans (TIPs) and is not subject to the frequency requirements for conformity determinations on transportation plans and TIPs (40 CFR 93.104(b), (c), and (e)). Therefore, the Door County area is not required to complete a conformity determination until a non-exempt FHWA/FTA project(s) requires funding or approval, based on the conformity requirements for isolated rural areas at 40 CFR 93.109(g).

5.1. Motor Vehicle Emissions Model

The MVEBs are developed using EPA's Motor Vehicle Emission Simulator (MOVES3) model and a travel demand model. The MOVES3 model is used to derive estimates of hot summer day emissions for the ozone precursors NOx and VOC. 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. Appendices 2, 3 and 7 contain summaries of key data inputs to MOVES3.[7]

5.2. Motor Vehicle Emissions Budgets

Table 5.1 describes the MVEBs developed by WDNR for the Door County-Revised 2015 ozone NAAQS nonattainment years 2030 and 2035. These budgets 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 reasonable further progress (RFP), attainment, or maintenance. To calculate a safety margin, WDNR

[7] The complete set of inputs to MOVES3 is too lengthy to include in this document. However, electronic copies of the inputs can be obtained upon request.

increased the onroad mobile source portions of the 2030 and 2035 projected emissions inventories by 15 percent for the Door County-Revised 2015 ozone NAAQS nonattainment area.

Table 5.1. Motor vehicle emissions budgets (MVEBs) for the Door County-Revised Maintenance Area for 2030 and 2035.

Year	Emissions (tons per ozone season weekday)	
	VOC	NO_x
2030	0.13	0.30
2035	0.12	0.26

6. PERMANENT AND ENFORCEABLE CONTROL MEASURES

The CAA Section 107(d)(3)(E)(iv) specifies that improvements in air quality must be due to permanent and enforceable emissions reductions. This section outlines the permanent and enforceable control measures that apply to sources in the Door County-Revised 2015 ozone NAAQS nonattainment area, and more generally, to metropolitan areas upwind of the Door County-Revised nonattainment area. These control measures reduced emissions in this area by the 2019 attainment year, leading to the emissions reductions shown in Section 4. These control programs are described in greater detail in Appendix 9.

Table 6.1 lists the permanent and enforceable emissions control programs implemented for each emission source sector. Many of the control measures have been implemented under long-standing programs that began prior to 2014 (the nonattainment year) and 2019 (the attainment year). This discussion highlights those control measures or emissions reductions that have occurred since 2014.

Table 6.1. Wisconsin emissions control programs that contributed to NOx and VOC emissions reductions within and upwind of the Door County-Revised 2015 ozone NAAQS nonattainment area.[a]

Sector	NOx Control Measures	VOC Control Measures
Point	- Wisconsin NOx RACM[b] and RACT[c] - Federal NOx Transport Rules	- VOC RACT/CTG[d] - Federal NESHAP[e] Rules
Area		- VOC RACT/CTG - Federal VOC emissions standards for consumer/commercial products - Area source NESHAP Rules
Onroad	-Numerous federal onroad mobile source control programs (see Section 6.3) -Wisconsin vehicle inspection and maintenance program[a]	
Nonroad	-Numerous federal nonroad mobile source control programs (see Section 6.4)[a]	

[a] Table 6.1 lists emissions control programs implemented within the Door County-Revised 2015 ozone NAAQS nonattainment area and/or throughout the state. Appendix 9 provides a detailed explanation of these programs.
[b] Reasonably Available Control Measures
[c] Reasonably Available Control Technology
[d] Control Techniques Guidelines
[e] National Emission Standards for Hazardous Air Pollutants

It is important to note that: (1) by classifying the Door County-Revised nonattainment area as an RTA, EPA acknowledged that emissions in the Door County-Revised area do not contribute to nonattainment; and (2) most of the ozone measured at the Newport monitor is due to ozone and ozone precursors that originate in upwind areas. For these reasons, even though pollution control programs continue to decrease emissions within the Door County-Revised 2015 ozone NAAQS nonattainment area, emissions reductions in upwind areas will have an outsized impact on the county's air quality.

6.1. Point Source Control Measures

NO_x Control Measures

Wisconsin implemented RACT for major NO_x sources (sources with a potential to emit 100 tons or greater per year) in the state's nonattainment areas for the 1997 ozone NAAQS. NOx RACT applies to several Wisconsin counties upwind of the Door County-Revised 2015 ozone NAAQS nonattainment area including Sheboygan County, the five-county Milwaukee area, and Kenosha County. The NOx RACT requirements are codified under ss. NR 428.20 to 428.25, Wis. Adm. Code and became effective in August 2007.

Wisconsin first implemented Reasonably Available Control Measures (RACM) for NOx sources in the state's nonattainment areas for the 1997 ozone NAAQS. The affected NOx emissions units located in shoreline counties upwind of the Door County-Revised 2015 ozone NAAQS nonattainment area are required to demonstrate compliance with the NOx emissions control requirements specified under ss. NR 428.04 to 428.12, Wis. Adm. Code. Certain NOx emissions units are also subject to the federal transport requirements described below.

EGUs in 23 eastern states, including 12 states that significantly contribute over the 1 percent significance threshold to the Newport monitor, have been subject to a series of federal NOx transport rules since 2009.[8] These rules have included the Clean Air Interstate Rule (CAIR), the Cross State Air Pollution Rule (CSAPR) and the CSAPR Update Rule. Both the CSAPR and CSAPR Update Rules contributed to emissions reductions between the 2014 nonattainment year and the 2019 attainment year. CSAPR implemented a first phase of NOx emissions budgets in 2015 and 2016, and the CSAPR Update Rule established an additional phase of NOx emissions budgets starting with the 2017 ozone season.

On April 30, 2021, 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 FR 23054).[9] The rule further reduced EGU NOx emissions in 12 states starting in the 2021 ozone season. Due to this rule and other changes already underway in the power sector, EPA expects ozone season NOx emissions will be nearly 25,000 tons lower in 2021 than in 2019, a reduction of 19 percent.[10]

VOC Control Measures

Wisconsin implemented VOC RACT to fulfill CAA Section 182(b)(2) requirements for applicable Wisconsin nonattainment areas under the 1997 and the 2008 ozone NAAQS. VOC RACT rules were adopted under chs. NR 419 through 424, Wis. Adm. Code. Appendix 9

[8] LADCO's 2023 source contribution modeling indicates that Illinois, Wisconsin, Indiana, Michigan, Mississippi, Kentucky, Texas, Ohio, Oklahoma, Iowa and Kansas and Arkansas all contribute significantly to the ozone measured in Door County. All of these states are subject to one or more of the federal NOx rules discussed.
[9] The rulemaking responds to a September 2019 ruling by the U.S. Court of Appeals for the D.C. Circuit, *Wisconsin v. EPA*, which remanded the CSAPR Update to EPA for failing to fully eliminate significant contribution to nonattainment and interference with maintenance of the 2008 ozone NAAQS from upwind states by downwind areas' attainment dates.
[10] https://www.epa.gov/sites/default/files/2021-03/documents/revised_csapr_update_factsheet_for_final_rule.pdf.

summarizes Wisconsin's VOC RACT program, including program elements which are implemented outside of the Door County-Revised 2015 ozone NAAQS nonattainment area, which may contribute to reduced ozone concentrations in this area.

Non-combustion VOC point source emissions in the Door-County-Revised area are subject to source-specific National Emission Standards for Hazardous Air Pollutant (NESHAP) requirements and/or VOC RACT rules, as applicable. These NESHAP rules also apply to sources nationally, thereby reducing the transport of VOC emissions into the nonattainment area.

6.2. Area Source Control Measures

As noted for point sources, Wisconsin has implemented VOC RACT rules under chs. NR 419 through 424, Wis. Adm. Code (Appendix 9). In addition, national VOC emissions standards for consumer and commercial products also limit VOC emissions from area sources, as do NESHAPs for gasoline distribution (Stage I vapor recovery requirements) and area source industrial, commercial and institutional boilers.

6.3. Onroad Source Control Measures

Both NOx and VOC emissions from onroad mobile sources are controlled through federal new vehicle emissions standards programs and fuel standards. Although initial compliance dates in many cases were prior to 2014, 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 nonattainment area and contributing ozone precursor transport areas. The Wisconsin-administered vehicle inspection and maintenance (I/M) program also limits onroad VOC and NOx emissions from onroad sources in southeastern Wisconsin. See Section 3 of Appendix 9 for more information on these federally enforceable control programs.

6.4. Nonroad Source Control Measures

VOC and NOx emitted by nonroad mobile sources are significantly controlled via federal standards for new engines. The nonroad regulations continue to slowly lower average unit and total sector emissions as equipment fleets are replaced each year, pulling the highest emitting equipment out of circulation or substantially reducing its use. Fuel programs regulating fuel sulfur content also enable achievement of various new engine tier VOC and NOx emissions limits. See Section 4 of Appendix 9 for more information about these federally enforceable control programs.

6.5. 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, RFP, or any other applicable CAA requirements for any of the criteria pollutants. This request for redesignation does not implement any changes in the control programs or requirements approved in the SIP and in place during the 2019 attainment year. Therefore, all requirements related to section 110(l) noninterference are fulfilled under this request. Further, Wisconsin will continue to implement all control programs currently in the SIP for emissions of ozone precursors in this

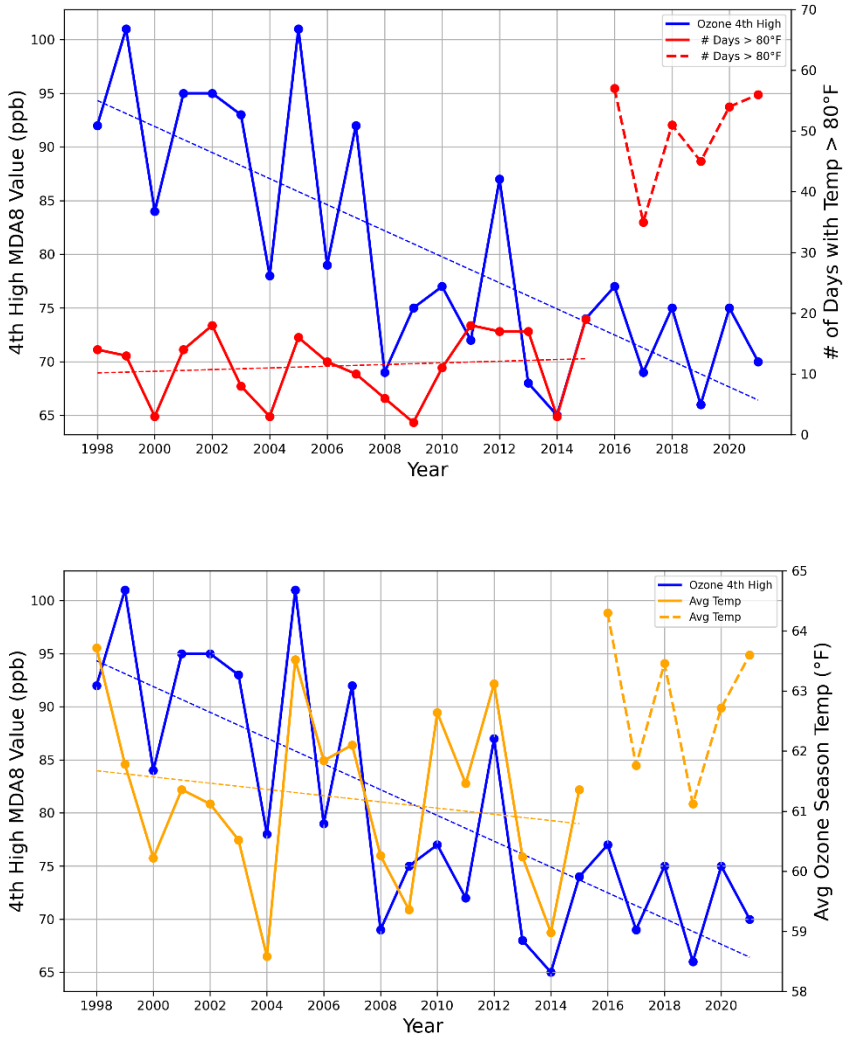
maintenance area. As documented in Wisconsin's iSIP for the 2015 ozone NAAQS (Appendix 1), WDNR has the legal authority and necessary resources to actively enforce any violations of its rules or permit provisions. Removal of any control program from the SIP will be subject to a public hearing process, a demonstration of noninterference, and approval by EPA.

6.6. Impact of Permanent and Enforceable Measures on Monitored Ozone Concentrations

Comparison of trends in ozone concentrations and temperature supports the conclusion that the improvement in air quality shown in Section 3 is derived from the permanent and enforceable control measures described in this section, rather than from unusually favorable meteorology or adverse economic conditions. Since ozone typically has a positive correlation with temperature, WDNR analyzed the fourth highest daily maximum 8-hour average (MDA8) ozone concentrations for the months May through September. These data were compared with two measures of temperature: the number of days with temperatures above 80 °F and the average ozone season (May through September) temperature. Ozone concentration and temperature data is from the Newport monitor. The WDNR examined data for the last 23 years in order to differentiate the influence of other meteorological variables affecting ozone formation, such as wind direction and wind speed.

Figure 6.1 shows that over the last 23 years, ozone concentrations at the Newport monitor have decreased substantially. In contrast, temperatures have remained relatively constant. In 2016, the temperature probe at the Newport monitoring site was relocated from 15 meters to 5 meters above ground to better align with EPA guidance. This change led to noticeable increases in the temperatures recorded, such that the 1998 to 2015 record should not be directly compared with the 2016 to 2021 temperature record. The evidence from the 18-year record from 1998 to 2015 indicates that even with year-to-year variability, the overall long-term temperature trend has been relatively stable, with a slight increase in the number of hot days and a slight decrease in the average season temperature. This finding suggests that reductions in emissions, rather than favorable meteorology, led to the long-term reduction in ozone concentrations. Similarly, adverse economic conditions cannot account for the downward trends in ozone levels.

Figure 6.1. Comparison of Door County ozone values to temperature (1998-2021). Annual fourth highest maximum daily 8-hour average ozone concentrations plotted with (top) the number of days with temperatures over 80 °F and (bottom) the average May through September temperatures for the Newport monitor.[11] Dotted lines are best-fit linear regressions.

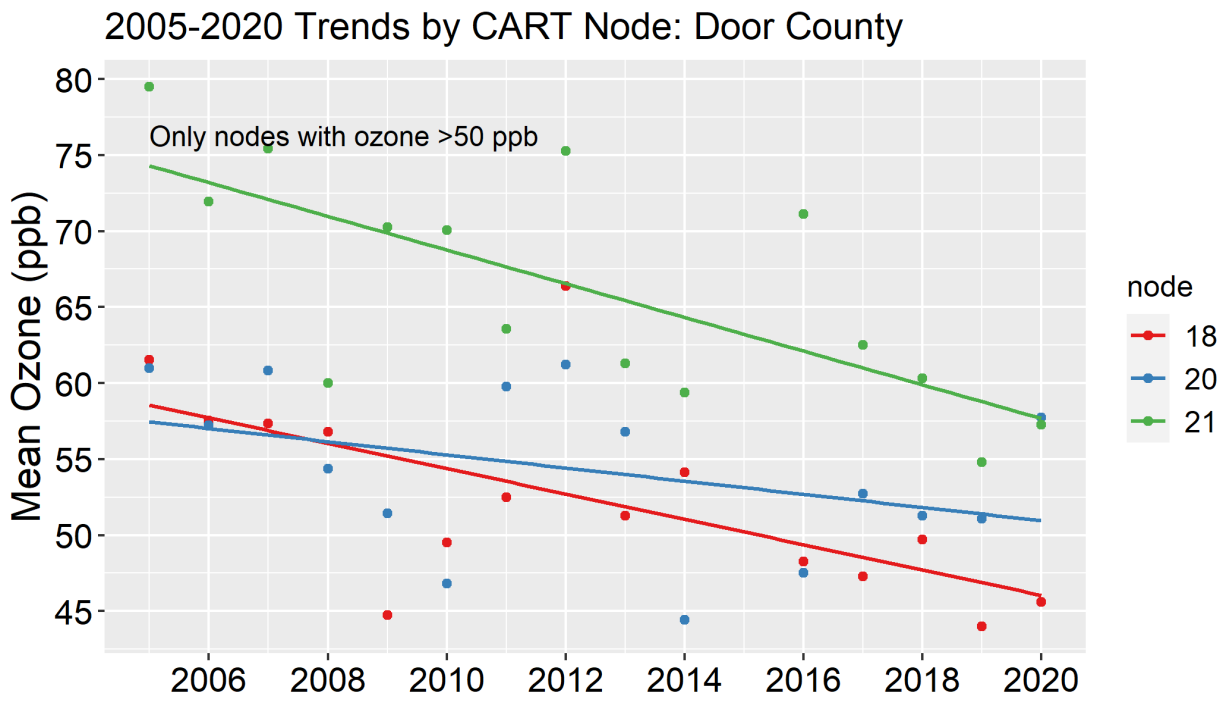


To provide additional evidence that improvements in air quality observed in the Door County-Revised 2015 ozone NAAQS nonattainment area are due to changes in emissions, rather than favorable meteorology, Appendix 10 includes the results of a Classification and Regression Tree (CART) analysis conducted by LADCO for the Door County monitoring site using data from 2005-2020. The CART analysis shows that ozone concentrations for the meteorologically

[11] Note that the height of the temperature probe was changed between 2015 and 2016, which affected the temperatures measured. Temperatures before and after this change therefore cannot be directly compared. The solid red line connects data collected when the temperature probe was located at 15 meters above ground, and the dashed red line connects data collected when the temperature probe was located at 5 meters above ground.

distinct types of days decreased over this period, with the largest reductions occurring during days experiencing the highest ozone concentrations.

Figure 6.2. Trends in average (mean) ozone in high-ozone nodes for the Door County monitor. High ozone nodes are those with mean ozone concentrations over 50 ppb.



The analysis described in this section support the conclusion that the long-term decreases in ozone levels in the Door County-Revised 2015 ozone NAAQS nonattainment area, including the reductions to attainment-level air quality monitored in 2019-2021, are due to the permanent and enforceable reductions in ozone precursor emissions discussed earlier in this section, rather than from unusually favorable meteorology or adverse economic conditions.

7. MAINTENANCE PLAN FOR DOOR COUNTY-REVISED NONATTAINMENT AREA

Section 175A of the CAA sets forth the elements of a maintenance plan for areas seeking redesignation from nonattainment to attainment. The plan must demonstrate continued attainment of the applicable NAAQS for at least ten years after EPA approves a redesignation to attainment. Eight years after the redesignation, the state must submit a revised maintenance plan, which demonstrates attainment for the ten years following the initial ten-year period.

Based on the latest air quality monitoring data, the Newport monitor's 2019-2021 design value meets the 2015 ozone NAAQS (Section 3). Comparison of nonattainment (2014) and attainment (2019) year inventories showed that attainment of the NAAQS was accompanied by significant reductions in ozone precursor emissions from the areas that contribute to nonattainment at this monitor (Section 4). These emissions reductions were due to permanent and enforceable measures, many of which will further reduce emissions during the maintenance period (Section 6). In this section, maintenance of the attainment status of the Door County-Revised area is demonstrated via reported and projected ozone season day emissions provided on a sector-specific basis that show continued reductions in emissions during maintenance years. This section also includes contingency measures and commitments to continue monitoring and to revise this maintenance plan.

7.1. Demonstration of Maintenance via Comparison of Attainment and Maintenance Emissions Inventories

Maintenance emissions inventory projections are described in Section 4 and summarized in Tables 7.1 through 7.4. 2019 was chosen as the representative attainment year inventory. 2030 and 2035 were chosen as interim and final maintenance years.

The forecast maintenance inventories for 2030 and 2035 demonstrate that emissions of NOx and VOC are projected to decrease in future years relative to the 2019 attainment year for the Door County-Revised 2015 ozone NAAQS nonattainment area and the three metropolitan areas upwind of the Door County-Revised nonattainment area (Tables 7.1 through 7.4). Total emissions affecting ozone concentrations from metropolitan areas upwind of the nonattainment area are projected to decrease 34-46 percent for NOx and 11-13 percent for VOC from 2019 to 2035. Nonattainment area emissions are also projected to decrease by 31 percent for NOx and 31 percent for VOC from 2019 to 2035. Since the monitor attained the standard in 2019-2021 and contributing emissions are projected to decrease through 2035, this inventory analysis demonstrates that the Door County-Revised 2015 ozone NAAQS nonattainment area is expected to maintain the 2015 ozone NAAQS for more than ten years into the future.

Table 7.1. NOx emissions in the Door County-Revised 2015 ozone maintenance area.

	Total NOx emissions (tons per ozone season day)			
	2019 attainment year	**2030 interim year**	**2035 maintenance year**	**Net Change (2019-2035)**
Point	0.00	0.00	0.00	NA
Area	0.20	0.19	0.19	-0.01(-5%)
Onroad	0.61	0.30	0.26	-0.36(-57%)
Nonroad	2.99	2.18	2.16	-0.83(-38%)
Total	**3.80**	**2.67**	**2.61**	**-1.19(-31%)**

Table 7.2. VOC emissions in the Door County-Revised 2015 ozone maintenance area.

	Total VOC emissions (tons per ozone season day)			
	2019 attainment year	**2030 interim year**	**2035 maintenance year**	**Net Change (2019-2035)**
Point	0.13	0.18	0.18	0.05(38%)
Area	0.74	0.74	0.75	0.01(1%)
Onroad	0.22	0.13	0.12	-0.11(-45%)
Nonroad	2.28	1.37	1.28	-0.99(-44%)
Total	**3.37**	**2.42**	**2.32**	**-1.05(-31%)**

Table 7.3. NOx emissions in upwind metropolitan areas.

	Total NOx emissions (tons per ozone season day)			
	2019 attainment year	**2030 interim year**	**2035 maintenance year**	**Net Change (2019-2035)**
Chicago Metropolitan Area				
Point	117.05	101.84	102.13	-14.92 (-13%)
Area	95.23	89.52	86.83	-8.40 (-9%)
Onroad	171.02	69.03	40.91	-130.11(-76%)
Nonroad	131.72	113.96	110.87	-20.85 (-16%)
TOTAL	**515.02**	**374.35**	**340.75**	**-174.27 (-34%)**
Green Bay Metropolitan Area				
Point	6.30	5.61	5.64	-0.66 (-10%)
Area	2.60	2.56	2.54	-0.06 (-2%)
Onroad	6.49	1.86	0.46	-6.03 (-93%)
Nonroad	2.58	148	1.00	-1.58 (-61%)
TOTAL	**17.98**	**11.51**	**9.65**	**-8.33 (-46%)**
Milwaukee Metropolitan Area				
Point	17.39	17.90	17.78	0.39 (2%)
Area	17.66	17.11	16.89	-0.77 (-4%)
Onroad	29.15	10.17	4.94	-24.21 (-83%)
Nonroad	16.49	13.31	12.58	-3.91 (-24%)
TOTAL	**80.68**	**58.48**	**52.19**	**-28.49 (-35%)**

Table 7.4. VOC emissions in upwind metropolitan areas.

	Total VOC emissions (tons per ozone season day)			
	2019 attainment year	**2030 interim year**	**2035 maintenance year**	**Net Change (2019-2035)**
Chicago Metropolitan Area				
Point	47.73	46.45	46.23	-1.50 (-3%)
Area	242.83	249.38	252.30	9.47 (4%)
Onroad	99.75	49.96	33.82	-65.93 (-66%)
Nonroad	68.78	66.68	67.68	-1.1 (-2%)
TOTAL	**459.10**	**412.46**	**400.02**	**-59.08 (-13%)**
Green Bay Metropolitan Area				
Point	4.54	4.55	4.56	0.02 (0%)
Area	9.01	9.38	9.54	0.53 (6%)
Onroad	3.78	1.97	1.43	-2.35 (-62%)
Nonroad	1.64	1.41	1.35	-0.29 (-18%)
TOTAL	**18.97**	**17.30**	**16.87**	**-2.10 (-11%)**
Milwaukee Metropolitan Area				
Point	9.41	9.75	9.73	0.32 (3%)
Area	50.81	51.43	51.70	0.89 (2%)
Onroad	16.42	8.68	6.20	-10.2 (-62%)
Nonroad	11.51	10.82	10.79	-0.72 (-6%)
TOTAL	**88.15**	**80.69**	**78.42**	**-9.73 (-11%)**

7.2. Verification of Continued Attainment

Per EPA's redesignation request guidance[12], WDNR will verify continued attainment of the 2015 8-hour ozone NAAQS in the Door County-Revised area during the maintenance period via continued ozone monitoring. The WDNR commits to continue monitoring ozone levels in this area and will discuss any changes that may become necessary with EPA Region 5 staff. The WDNR will continue to quality assure the monitoring data to meet the requirements of 40 CFR 58 and will enter all data into AQS on a timely basis in accordance with federal guidelines. Ozone concentration data will continue to be available on the WDNR website,[13] providing real-time data and information about any NAAQS exceedances to the public.

In addition, ozone precursor inventories will be prepared for 2023, 2026, 2029 and 2032 as part of the CAA-required National Emissions Inventory (NEI) program. These inventories will be compared with the 2019 attainment year inventory and projected 2030 interim and 2035

[12] "Procedures for Processing Requests to Redesignate Areas to Attainment," memo from John Calcagni to EPA Regional Air Directors, September 4, 1992.
[13] See WDNR website at: https://airquality.wi.gov/home/map.

maintenance year inventories, to assess emissions trends, as necessary, to assure continued attainment of the 2015 ozone NAAQS.

7.3. Maintenance Contingent Response Plan

The EPA's Redesignation Guidance says that a state's "maintenance plan shall contain such contingency measures as the Administrator deems necessary to ensure prompt correction of any violation of the NAAQS." As part of Wisconsin's maintenance plan for the Door County-Revised 2015 ozone NAAQS nonattainment area, Wisconsin commits to two separate levels of contingent response to any renewed exceedance and/or violation of the 2015 ozone NAAQS. The first step, a "warning level response," initiates a study to investigate whether the observed exceedance requires further evaluation or action to ensure maintenance going forward. The second step, an "action level response," would identify and implement any needed control measures necessary to ensure maintenance.

Specifics of Wisconsin's contingency response are as follows:

Warning Level Response

A warning level response would be initiated if an annual (1-year) 4th high monitored concentration is above the level of the 2015 ozone NAAQS (0.070 ppm). A warning level response would initiate a study to determine whether the high ozone concentrations indicate a trend towards higher ozone levels and whether emissions are significantly higher than projected in the maintenance plan. The warning level study will be initiated no later than six months following data certification with a final evaluation completed within 12 months after data certification. This study would include the following elements:

- An assessment of whether actual emissions have deviated significantly from the emissions projections contained in this maintenance plan for the nonattainment area, along with an evaluation of which sectors and states are responsible for any emissions increases; and
- An assessment of whether unusual meteorological conditions during the high-ozone year led to the high monitored ozone concentrations.

Should it be determined through the warning level study that action is necessary to ensure maintenance, Wisconsin will follow the procedures for control selection and implementation outlined under the action level response below.

Action Level Response

An action level response would be initiated if a three-year design value exceeds the level of the 2015 ozone NAAQS (0.070 ppm) or if a warning level study determined it was warranted. An action level response would first consist of a study to determine whether additional control measures are needed to assure attainment and maintenance of the 2015 ozone NAAQS. The action level study will be initiated no later than six months following data certification with a final evaluation completed within 12 months after data certification and would examine the following factors for the contributing area:

- The level, distribution, and severity of ambient ozone concentrations
- The weather patterns contributing to ozone levels
- Potential contributing emissions sources
- The geographic applicability of possible contingency measures
- Upwind emissions trends, including the impact of existing or forthcoming control measures that have not yet been implemented
- Air quality contributions from outside the maintenance area

Should this study indicate that additional measures are necessary to return the area to attainment, the selection of emissions reduction measures to be implemented will be based upon their potential to reduce ozone concentrations at violating monitors in the nonattainment area, cost-effectiveness, emissions reduction potential, economic and social considerations, ease and timing of implementation, and other appropriate factors. When considering these criteria, priority will be given to measures that can be in place within 18 months.

Potential additional control measures to be implemented in upwind areas are listed below. Because it is not possible to determine what control measures, if any, will be appropriate at an unspecified time in the future, this list is neither comprehensive nor in order of priority.

- Anti-idling control program for mobile sources, targeting diesel vehicles
- Diesel exhaust retrofits
- Traffic flow improvements
- Park and ride facilities
- Rideshare/carpool program
- Expansion of the vehicle emissions testing program

Wisconsin has an extremely limited ability to affect ozone concentrations in the Door County-Revised 2015 ozone NAAQS nonattainment area due to the influence of emissions originating in upwind states. High ozone events at the Newport monitor occur almost exclusively when these sites are downwind of Chicago and other source areas to the south. Out-of-state sources of ozone overwhelm local sources at the Newport monitor (Figure 4.1). As a consequence, additional controls on NOx and VOC emissions from Wisconsin are likely to have very little, if any, impact on ozone concentrations in this area. When identifying additional controls for implementation, the state will have to consider the potential of those controls to reduce ozone concentrations at violating monitors in the maintenance area. Federal regulatory programs may be more appropriate to limit the transport of ozone and its precursors to the Door County-Revised 2015 ozone NAAQS nonattainment area from upwind states. Examples of such programs include:

- Implementation of any federally promulgated rule regulating transport of ozone precursors
- Updated federal NOx emissions limits for heavy-duty vehicles
- Updated (Phase 2) federal fuel efficiency standards for medium- and heavy-duty engines and vehicles
- New federal regulations on the sale of aftermarket catalysts for vehicle catalytic converters

Should it be determined through the action level study that existing and on-the-way measures are inadequate to return the area to attainment, WDNR will identify and implement candidate control measures as necessary to assure attainment and maintenance of the area within 18 months of certification of the monitoring data that initiated the action level response. Given the impact of upwind emissions on ozone formation along Wisconsin's Lake Michigan shoreline, WDNR notes that the action level study findings may indicate that additional Wisconsin control measures would do little to help the Door County-Revised area return to and maintain attainment.

Adoption of any additional control measures would be subject to the necessary Wisconsin administrative, legal, and legislative processes. The WDNR would solicit input from interested and affected parties in the area prior to selecting appropriate control measures. This process would include publication of notices, an opportunity for a public hearing, and other measures required by Wisconsin law.

7.4. Commitment to Revise Maintenance Plan

As required by Section 175A(b) of the CAA, WDNR commits to submit to EPA, eight years after redesignation, an additional revision of the SIP. The revision will contain Wisconsin's plan for maintaining the 2015 ozone NAAQS in this area for an additional ten years beyond the first ten-year maintenance period following redesignation.

8. PUBLIC PARTICIPATION

In accordance with section 110(a)(2) of the CAA, WDNR published a notice on the internet on November 30, 2021 stating that it would hold a public hearing on the Redesignation Request and Maintenance Plan for the Door County-Revised 2015 ozone NAAQS nonattainment area at 9:00 A.M. on January 3, 2022. A notice of availability was also posted on the website. The redesignation request will be available for public comment through January 4, 2022. The WDNR will respond to any public comments received on this draft in the final document submitted to EPA.

9. CONCLUSIONS

Air quality measured at the Newport monitor in the Door County-Revised 2015 ozone NAAQS nonattainment area in Wisconsin has attained the 2015 ozone NAAQS. As described within this document, applicable provisions of the CAA regarding redesignation to attainment have been met. Therefore, WDNR, on behalf of the State of Wisconsin, requests that EPA redesignate the Door County-revised area from nonattainment to attainment for the 2015 ozone NAAQS and approve the associated maintenance plan for the area.

APPENDIX 1

Wisconsin's Infrastructure State Implementation Plan (SIP) for the 2015 Ozone National Ambient Air Quality Standard (NAAQS)

Wisconsin's Infrastructure State Implementation Plan for the 2015 Ozone National Ambient Air Quality Standard (NAAQS)

Introduction

The Wisconsin Department of Natural Resources (DNR) is submitting this SIP revision to confirm that the State of Wisconsin has the authority necessary to evaluate ambient air quality, develop plans to attain and maintain new and existing air quality standards, meet the requirements of the New Source Review (NSR) program, and effectively enforce all applicable requirements. Specifically, the current Wisconsin State Implementation Plan (SIP) contains the resources and authority to implement and satisfactorily complete the requirements set forth in Section 110 of the federal Clean Air Act (CAA), commonly referred to as the "infrastructure SIP," for the 2015 Ozone National Ambient Air Quality Standard (NAAQS).

The SIP elements addressed in this document are required under CAA Sections 110(a)(1) and (2) and in accordance with the U.S. Environmental Protection Agency's (EPA's) guidance on infrastructure SIP elements[1]. Section 110(a)(1) provides the procedural and timing requirements for SIPs. Section 110(a)(2) specifies the basic elements and sub-elements that all SIPs must contain. An opportunity for public comment and hearing will be provided for this certification of SIP authority, in accordance with 40 CFR part 51, appendix V, paragraph 2.1(g), and 40 CFR 51.102.

Required SIP Elements under CAA Section 110(a)(2)

The sections below include descriptions of the required SIP elements excerpted from the EPA guidance on infrastructure SIPs.[1] The italicized text is from the CAA. The DNR response follows each requirement.

1. Element A – Section 110(a)(2)(A): Emission limits and other control measures

Each such plan shall […] include enforceable emission limitations and other control measures, means, or techniques (including economic incentives such as fees, marketable permits, and auctions of emissions rights), as well as schedules and timetables for compliance, as may be necessary or appropriate to meet the applicable requirements of this chapter.

The DNR has authority under Chapters 227 and 285, *Wis. Stats*. to create new rules and implement existing emission limits and controls to meet the requirements of Section 110(a)(2)(A). The authority for DNR to develop rules and regulations is found in ss.

[1] Guidance on Infrastructure State Implementation Plan (SIP) Elements under Clean Air Act Sections 110(a)(1) and 110(a)(2), memo from Stephen D. Page to Regional Air Directors, Regions 1-10, September 13, 2013.

227.11(2)(a), 285.11(1), 285.17(1)(a) and 285.21(1)(a), *Wis. Stats*. Section 227.11(2)(a), *Wis. Stats.,* expressly confers rule making authority to an agency. Section 285.11(1) and (6), *Wis. Stats.,* requires that DNR promulgate rules and establish control strategies in order to prepare and implement the SIP for the prevention, abatement and control of air pollution in the state. Section 285.17(1)(a), *Wis. Stats.*, requires DNR to classify sources or categories of sources that may cause or contribute to air pollution. Section 285.21(1)(a), *Wis. Stats.,* requires that DNR promulgate by rule ambient air quality standards that are similar to, but no more restrictive than, the federal NAAQS.

The following current Wisconsin administrative code contains existing emission limits and control requirements that apply to ozone:

- Chapters NR 419 through NR 425, *Wis. Adm. Code*, control VOC as an ozone precursor.
- Chapter NR 428, *Wis. Adm. Code*, controls nitrogen oxides (NOx) as an ozone precursor.

2. Element B – Section 110(a)(2)(B): Ambient air quality monitoring/data system

Each such plan shall […] provide for establishment and operation of appropriate devices, methods, systems, and procedures necessary to

(i) monitor, compile, and analyze data on ambient air quality, and

(ii) upon request, make such data available to the Administrator.

The DNR operates a fully-approved air monitoring network in accordance with EPA's ambient air quality monitoring network requirements (40 CFR part 53 and 40 CFR part 58). After the monitoring data has been certified, it is used to determine compliance with the NAAQS. All monitored data is submitted to the EPA's Air Quality System in a timely manner in accordance with 40 CFR part 58. Authority for air monitoring efforts exists under general air pollution duties in s. 285.11, *Wis. Stats*. Funding for Wisconsin's air monitoring network comes from a variety of sources, including from EPA under its Section 103 and 105 grant programs supporting federal monitoring requirements specified in 40 CFR 58.10.

Wisconsin's most recently adopted annual network plan for 2018 was approved by EPA on September 1, 2017. The DNR continues to provide EPA Region 5 notice of any proposals to remove or move monitoring stations in its network plan, pursuant to 40 CFR part 58.10. In addition, DNR actively participates in the development of five-year regional network assessments for EPA Region 5 states; the most recent assessment was completed in 2015.

3. Element C – Section 110(a)(2)(C): Programs for enforcement of control measures and for construction or modification of stationary sources

Each such plan shall […] include a program to provide for the enforcement of the measures described in subparagraph (A), and regulation of the modification and construction of any stationary source within the areas covered by the plan as necessary to assure that national ambient air quality standards are achieved, including a permit program as required in parts C and D of this subchapter.

The DNR Air Management and Environmental Enforcement programs work together to ensure compliance with Wisconsin SIP provisions, administrative code, and permit requirements. Authority to enforce violations and to assess penalties is contained in ss. 285.83 and 285.87, *Wis. Stats*. The DNR follows a stepped enforcement process to address violations. The enforcement response ranges from issuance of a Letter of Inquiry (the state counterpart to an EPA "114 request") when additional information is needed to determine compliance or confirm the significance of a violation, up through referral to the Wisconsin Department of Justice for civil or criminal enforcement, as appropriate.

The Environmental Performance Partnership Agreement (EnPPA) between the Wisconsin Air Management Program and EPA Region 5 addresses implementation of the EPA's High Priority Violation (HPV) and Federally Regulated Violations (FRV) policies. The process for prosecution of violations is also addressed in a May 22, 2015 Air Management Program Compliance and Enforcement Memorandum of Understanding (MOU) between EPA Region 5 and the DNR Air Management Program. Consistent with the provisions of this MOU, the two agencies conduct monthly compliance and enforcement conference calls to discuss program issues and specific cases.

The DNR regulates modification and construction of stationary sources through its EPA approved nonattainment NSR, Prevention of Significant Deterioration (PSD), and Title V permit programs under s. 285.11, s. 285.13, s. 285.17, s. 285.19, and ss. 285.60 through 285.69, *Wis. Stats*. The DNR collects revenue dedicated to the implementation of these permit programs through applicable fees under s. 285.69, *Wis. Stats*.

On February 7, 2017, EPA approved revisions to Wisconsin's SIP that meet EPA's requirements for Wisconsin's PSD and NSR program (82 FR 9515). In this action, EPA fully approved the PSD-related infrastructure requirements for previous Wisconsin submittals. In addition, EPA's approval confirmed that Wisconsin's PSD program continues to require that PSD permits (that would otherwise be required based on emissions of pollutants other than greenhouse gases (GHGs)) contain limitations on GHG emissions based on the application of Best Available Control Technology, consistent with the June 23, 2014 U.S. Supreme Court decision in *Utility Air Regulatory Group v. Environmental Protection Agency*, 134 S.Ct. 2427. Wisconsin 2015 Act 33 modified language related to GHGs in ch. NR 405, *Wis. Adm. Code* to reflect the 2014 Supreme Court decision. DNR submitted a request to EPA on November 29, 2017 to incorporate the revised administrative code provision into the state SIP.

4. Elements D(i)(I) and (II) – Section 110(a)(2)(D)(i): Interstate pollution transport

Each such plan shall […] contain adequate provisions:

(i) prohibiting, consistent with the provisions of this subchapter, any source or other type of emissions activity within the state from emitting any air pollutant in amounts which will-

(I) contribute significantly to nonattainment in, or

(II) interfere with maintenance by, any other state with respect to any such national primary or secondary ambient air quality standard, or interfere with measures required to be included in the applicable implementation plan for any other state under part C of this subchapter to prevent significant deterioration of air quality to protect visibility."

The DNR has adopted and implemented all federal programs required to date in addressing transport of NO_X and sulfur dioxide (SO_2) impacting ozone, fine particulate matter ($PM_{2.5}$) and visibility in other states. These programs include the Clean Air Interstate Rule (CAIR), Cross State Air Pollution Rule (CSAPR), CSAPR Update Rule, and all regional haze rule requirements applicable for the 2008-2018 planning period.

In fulfilling CAIR program requirements, Wisconsin adopted ch. NR 432, *Wis. Adm. Code*, in 2007 for the annual distribution of NO_X allowances. The SO_2 CAIR program is implemented through a federal implementation plan (FIP). EPA implemented CSAPR to replace CAIR requirements beginning January 1, 2015. CSAPR and the CSAPR Update are fully implemented through a FIP, and Wisconsin does not have to take any additional actions regarding this rule.

In August 2012, EPA approved Wisconsin's regional haze SIP applicable for the 2008-2018 planning period. This haze SIP satisfied Reasonable Progress Goals required under Subpart P of 40 CFR Part 51 and Best Available Retrofit Technology required under Appendix Y of 40 CFR Part 51.

Wisconsin will continue to work in addressing the transport of pollutants which impede compliance with new and revised NAAQS and will continue regional haze work and planning for the 2018-2028 period and beyond. To do this, Wisconsin has entered into agreements and working relationships with the surrounding states of Illinois, Indiana, Michigan, Ohio and Minnesota through the Lake Michigan Air Directors Consortium (LADCO) to perform air quality assessments and develop control strategies for regional pollutants, such as NO_X and SO_2 ($PM_{2.5}$ precursors). Together, continued implementation of federal regulations and cooperative work with other states will address Wisconsin's transport and regional haze obligations.

If needed, section 285.11, 285.13 and 285.15, *Wis. Stats*., address circumstances where interstate transport reduction agreements between states are needed to resolve SIP

development of cross-boundary nonattainment areas. As detailed in the section addressing Section 110(a)(2)(C), Wisconsin has adequate PSD regulations; these regulations satisfy the PSD-related elements of Section 110(a)(2)(D)(i), as well as those of Section 110(a)(2)(C).

5. Element D(ii) – Section 110(a)(2)(D)(ii): Interstate pollution abatement and international air pollution

Each such plan shall […] contain adequate provisions […] ensuring compliance with the applicable requirements of sections 126 and 115 (relating to interstate and international pollution abatement).

Wisconsin's SIP contains adequate provisions to ensure compliance with Section 126 of the CAA relating to interstate pollution abatement. Neighboring states and tribes are notified regarding new or modified sources per 285.61(5), *Wis. Stats.* No source or sources within Wisconsin are the subject of an active finding under section 126 of the CAA with respect to any NAAQS. There are no final findings under section 115 of the CAA against Wisconsin with respect to ozone.

6. Element E – Section 110(a)(2)(E): Adequate resources and authority, conflict of interest, and oversight of local governments and regional agencies

Each such plan shall […] provide:

(i) necessary assurances that the State (or, except where the Administrator deems inappropriate, the general purpose local government or governments, or a regional agency designated by the State or general purpose local governments for such purpose) will have adequate personnel, funding, and authority under state (and, as appropriate, local) law to carry out such implementation plan (and is not prohibited by any provision of Federal or State law from carrying out such implementation plan or portion thereof),

(ii) requirements that the state comply with the requirements respecting state boards under section 128,

(iii) necessary assurances that, where the State has relied on a local or regional government agency, or instrumentality for the implementation of any plan provision, the State has responsibility for ensuring adequate implementation of such plan provision.

Wisconsin's basic air management duties and authorities are described in s. 285.11, *Wis. Stats*. Funding and personnel for the DNR is provided through the state's biennial budget process. The DNR Air Management Program has several funding sources, including program revenue (fees paid by businesses), tax revenue, and grants (federal and state). There are separate accounts affiliated with the different funding sources to ensure the funding and related personnel are used for the intended purpose.

The primary federal grant the DNR Air Management Program receives is the Section 105 Air Pollution Control Grant. This grant is monitored extensively by EPA; in addition, DNR and EPA negotiate priorities and grant commitments under the EnPPA, which is a two-year agreement itemizing performance measures and outcomes across various funding sources and grants.

Section 128 of the CAA requires that:

a. Any board or body which approves permits or enforcement orders under this chapter shall have at least a majority of members who represent the public interest and do not derive any significant portion of their income from persons subject to permits and enforcement orders under this Act; and

b. Any potential conflicts of interest by members of such board or body or the head of an executive agency with similar powers be adequately disclosed.

Existing Wisconsin state statutes address these CAA Section 128 requirements. Section 15.05, *Wis. Stats.*, vests the administrative powers and duties of DNR in the secretary, including issuance of air permits or enforcement orders. Wisconsin's Natural Resources Board (NRB) functions are purely regulatory, advisory, and policy-making. The NRB cannot approve enforcement orders or permits under the statutes that govern its operations. Section 19.45(2), *Wis. Stats*, prevents financial gain of a public official and Section 19.46, *Wis. Stats*, prevents a public official from taking actions where there is a conflict of interest. The Secretary of DNR is a public official subject to these ethical obligations under ch. 19, *Wis. Stats*.

On February 22, 2016, EPA finalized approval of DNR's SIP revision incorporating ss. 15.05, 19.45(2) and 19.46, *Wis. Stats*. into the Wisconsin SIP to meet Section 128 requirements for state boards.

7. Element F – Section 110(a)(2)(F): Stationary source monitoring and reporting

Each such plan shall […] require, as may be prescribed by the Administrator:

(i) the installation, maintenance, and replacement of equipment, and the implementation of other necessary steps, by owners or operators of stationary sources to monitor emissions from such sources,

(ii) periodic reports on the nature and amounts of emissions and emissions-related data from such sources, and

(iii) correlation of such reports by the state agency with any emission limitations or standards established pursuant to this chapter, which reports shall be available at reasonable times for public inspection."

The DNR requires regulated sources to monitor, keep records, and submit reports dependent on applicable requirements and the type of permit issued. Frequency and requirements for review are incorporated as part of chs. NR 438 and 439, *Wis. Adm. Code*. Emission reports are submitted to meet requirements of Wisconsin's emission statement SIP. Wisconsin has a web-based monitoring, reporting, permits and compliance database called the Wisconsin Air Resources Program to help ensure efficient operation of these functions. Authority for these activities is provided in s. 285.65, *Wis. Stats*. Public inspection of reports is available under Wisconsin's open records law contained in s. 19.35, *Wis. Stats*.

8. Element G – Section 110(a)(2)(G): Emergency powers

Each such plan shall provide for authority comparable to that in section 303 of this Title and adequate contingency plans to implement such authority.

Wisconsin Statute s. 285.85 requires DNR to act upon a finding that episode or emergency conditions exist. This language authorizes DNR to seek immediate injunctive relief in circumstances of substantial danger to the environment or to public health. Air pollution episode levels and episode emission control action programs are codified in ch. NR 493, *Wis. Adm. Code*.

9. Element H – Section 110(a)(2)(H): SIP revisions

Each such plan shall [...] provide for revisions of such plan –

(i) from time to time as may be necessary to take account of revisions of such national primary or secondary ambient air quality standard or the availability of improved or expeditious methods of attaining such standard, and

(ii) except as provided in paragraph (3)(C), whenever the Administrator finds on the basis of information available to the Administrator that the plan is substantially inadequate to attain the national ambient air quality standard which it implements or to otherwise comply with any additional requirements established under this chapter (CAA).

Wisconsin Statute s. 285.11(6) provides DNR the authority to develop a plan for the prevention, abatement and control of air pollution that includes all rules, limits, and regulations necessary to meet NAAQS, which includes responding to any deficiencies that may be identified in these plans, rules, or control strategies.

10. Element I – Section 110(a)(2)(I): Plan revisions for nonattainment areas

Each such plan shall –

(I) in the case of a plan or plan revision for an area designated as a nonattainment area, meet the applicable requirements of part D of this subchapter (relating to nonattainment areas).

According to EPA's interpretation of the CAA, this element is subject to a different submission schedule and will be reviewed and acted upon through a separate process. Therefore, the DNR is not addressing this element in this submission.

11. Element J – Section 110(a)(2)(J): Consultation with government officials, public notification, and PSD and visibility protection

Each such plan shall […] meet the applicable requirements of section 121 of this Title (relating to consultation), section 127 of this Title (relating to public notification), and part C of this subchapter (relating to prevention of significant deterioration of air quality and visibility protection).

The DNR is given the authority in s. 285.13(5), *Wis. Stats.*, to "advise, consult, contract and cooperate with other agencies of the state, local governments, industries, other states, interstate or inter-local agencies, and the federal government, and with interested persons or groups" during the entire SIP revision process and for other elements related to air management for which DNR is the officially-charged agency.

DNR follows an administrative rulemaking process for public input, adoption by the Wisconsin NRB, and legislative review on rule-based SIP revisions for air quality control programs or measures. Non-rule SIP revisions also allow for public review and input under the authority of s. 285.13(1), *Wis. Stats.*, and as required by 40 CFR 51.102. In addition, for any SIP revision not related to a single source, DNR is required under 285.14(2), *Wis. Stats*., to provide the proposed revision to the standing committees of the Wisconsin State Legislature with jurisdiction over environmental matters for their review at least 60 days prior to submittal to EPA and to respond within 15 days to any written comments received from the chairpersons of the committees.

These processes ensure that potentially impacted public entities are identified and have an opportunity to provide input in the SIP development process. In addition, the DNR Air Management Program routinely engages stakeholders (through formal bodies such as the Air Management Study Group, or otherwise) when developing SIP revisions.

As provided for under s. 285.11, *Wis. Stats.*, public notice (such as an air quality advisory) is provided at specified monitoring levels associated with the Air Quality Index as air quality conditions warrant. Public notification is provided through the department's website and through a contracted e-mail subscription service known as "GovDelivery."

Wisconsin also actively participates in development of regional air quality forecasts and EPA's AirNow air quality data outreach program.

The DNR's satisfaction of the PSD and visibility requirements of this section have been previously addressed in the section addressing 110(a)(2)(C) and 110(a)(2)(D) requirements. Insofar as those provisions satisfy the applicable requirements of those sections, DNR intends the same provisions to satisfy the applicable requirements of Section 110(a)(2)(J).

12. Element K – Section 110 (a)(2)(K): Air quality modeling and submission of modeling data

"Each such plan shall […] provide for-

(i) the performance of such air quality modeling as the administrator may prescribe for the purpose of predicting the effect on ambient air quality of any emissions of any pollutant for which the Administrator has established a national ambient air quality standard, and

(ii) the submission upon request, of data related to such air quality modeling to the Administrator."

The DNR has the authority and capacity to perform air quality modeling to predict the effect of emissions of pollutants covered by the NAAQS and/or their precursors. The DNR works with LADCO and EPA to perform regional modeling of ozone from consistent emissions inventory and meteorology platforms. This regional modeling supports SIP development for Wisconsin, quantifies interstate pollutant transport contributions, and supports visibility impact assessments. The DNR requires source-specific modeling or modeling-based assessments for permitting for the construction of major sources and some minor sources. The DNR also conducts source-specific modeling for some major and minor operation permits. These authorities reside under ss. 285.11, 285.13 and 285.60-285.69, *Wis. Stats*.

13. Element L – Section 110(a)(2)(L): Permitting fees

Each such plan shall require the owner or operator of each major stationary source to pay to the permitting authority, as a condition of any permit required under this chapter, a fee sufficient to cover –

(i) the reasonable costs of reviewing and acting upon any application for such a permit, and

(ii) if the owner or operator receives a permit for such source, the reasonable costs of implementing and enforcing the terms and conditions of any such permit (not including any court costs or other costs associated with any enforcement action), until such fee

requirement is superseded with respect to such sources by the Administrator's approval of a fee program under subchapter Title V of this chapter.

Major stationary sources receive permits under Wisconsin's Title V and NSR programs. The Title V program is funded by emission fees paid by sources and the level of funding is included in the state's biennial budget process. The NSR program is funded by application and review fees that vary based on the type and complexity of the permit. The NSR program fees were revised and effective on January 1, 2011. The annual emission fees for Title V sources were revised and effective on January 1, 2014. Authority for these activities is established under s. 285.69, *Wis. Stats*.

14. Element M – Section 110(a)(2)(M): Consultation and participation by affected local entities

Each such plan shall […] provide for consultation and participation by local political subdivisions affected by the plan.

Consultative authorities and responsibilities are noted in response to Section 110(a)(2)(J) requirements above regarding intergovernmental consultation. The formal public processes used to develop and adopt both rule and non-rule SIP revisions allow for consultation and participation by the public, including local government entities and political subdivisions.

APPENDIX 2

2014 and 2019 Emission Inventories Documentation

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 section 4.2 of the Wisconsin Department of Natural Resources (WDNR) Redesignation Request and Maintenance Plan for the Door County-Revised 2015 Ozone NAAQS Nonattainment Area. This is accomplished in part by developing and comparing nonattainment year (2014) and attainment year (2019) emissions inventories.

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 (EIs) 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 2014 and 2019 point source emission inventories were 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 was one electric generating unit (EGU) point source facility located in the Door County-Revised 2015 ozone NAAQS nonattainment area: Washington Island Electric Cooperative. Due to the low emissions from this EGU, it was included in the non-EGU point source inventory using the same methodology.

The 2014 and 2019 emissions inventories for point sources were tabulated using the emissions data reported annually by each facility operator to the WDNR air emissions inventory (AEI). The

[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.

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 EPA's WebFIRE database. Appendix 4 provides a list of point source emissions by facility identification number (FID) and facility name for both 2014 and 2019.

The following procedure was used to determine an average day's emissions for a typical ozone season work weekday for 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, and the nonpoint inventory quantifies emissions collectively. 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.

For the 2014 nonattainment year, nonpoint source emissions inventory estimates were based on the 2014 National Emissions Inventory (NEI), except for the Stage II refueling category, as described below. Emission calculation methodologies used in developing 2014 nonpoint emissions inventory are available in the EPA's 2014 NEI, Technical Support Document (TSD).[2]

[2] https://www.epa.gov/sites/default/files/2018-07/documents/nei2014v2_tsd_05jul2018.pdf

For the 2019 attainment year, nonpoint source emissions inventory estimates were based on interpolating between 2016 base year emissions and 2023 projections from the EPA's 2016 emissions modeling platform,[3] except for the category "Gasoline Service Stations, Stage II: Total Refueling," as described below.

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 WDNR-updated nonpoint fuel combustion sectors, EPA provided SCC cross-walk between nonpoint and their 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 the State of Wisconsin is 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. The 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.[4]

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.[5]

In order to obtain the area source emissions for the Door County-Revised 2015 ozone NAAQS nonattainment area, emission estimates from the entire county were allocated to the partial county based on population data. Door County's population for 2014 and 2019 was estimated by interpolating between 2013 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 Door County-Revised 2015 ozone NAAQS nonattainment area as compared to the entire county. Using this methodology, for both 2014 and 2019, 53 percent of the county's population was estimated to live in the Door County-Revised 2015 ozone NAAQS nonattainment area. Appendix 5 includes table of area source emissions by source category.

[3] https://www.epa.gov/air-emissions-modeling/2016v1-platform.
[4] https://www.eia.gov/state/seds/sep_use/notes/use_print.pdf.
[5] https://www.census.gov/programs-surveys/cbp/data.html.

Gasoline Service Stations, Stage II: Total Refueling

The WDNR estimated emissions from vehicle refueling at gasoline stations (Stage II refueling) using EPA's MOVES3.0.2 model using the same inputs used for onroad modeling.

Door County has never had a Stage II vapor recovery program (vapor recovery nozzles at gas pumps). Thus, WDNR inputted zero emissions reductions from a Stage II program in its MOVES runs for years 2014 and 2019. 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), WDNR, using travel data developed by the Wisconsin Department of Transportation (WDOT), adjusted the MOVES oswd outputted emissions to osd emissions, based on the ratio of average day (weekdays and weekends) to weekday travel during the ozone season. The adjustment factors used are 0.9649 for 2014 and 0.9663 for 2019.

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 by the MOtor Vehicle Emission Simulator (MOVES), EPA's recommended mobile source model. The model was run in inventory mode. The version used was MOVES3.0.2, the most recent version of the model, released in September 2021. All estimates were made in accordance with the following EPA technical guidance:

- MOVES3 Technical Guidance: Using MOVES to Prepare Emission Inventories for State Implementation Plans and Transportation Conformity (76 pp, November 2020, EPA-420-B-20-052).[6]

The onroad mobile NOx and VOC emissions for the Door County-Revised 2015 ozone NAAQS nonattainment area for 2014 and 2019 (as well as the 2030 and 2035 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.[7]

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 from the state agency responsible for transportation data in Door County, WDOT. 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 Door County and the Door County-Revised 2015 ozone NAAQS nonattainment area.

[6] https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P1010LY2.pdf

[7] The complete set of inputs to MOVES3.0.2 is too lengthy to include in this document. However, electronic copies of the input files can be obtained upon request.

The WDOT provided to WDNR its most recent transportation modeling data for both the entire county and the Door County-Revised nonattainment area on October 18, 2021. 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, WDNR utilized the following additional WDOT transportation data in developing inputs to MOVES:

- The WDOT official VMT estimates posted at the WDOT webpage.[8] In addition, WDOT provided spreadsheets to 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 WDOT and provided to WDNR by the Southeastern Wisconsin Regional Planning Commission (SEWRPC) for the ten-year period of 2008 through 2017.

2.3.2. Descriptions of MOVES Modeling Inputs

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

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

2.3.2.1. Vehicle-Miles of Travel (VMT)

A summary of the procedures 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 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. The WDNR has defined "ozone season" for the mobile sector as the three months of June, July and August. Using WDOT day-of-week and month-of-year statewide VMT adjustment factors, SEWRPC and WDNR developed adjustment factors to convert from the AADT (annual VMT divided by 365) to ozone season weekday VMT (see Table A2.1). For the year 2014, adjustment factors were developed from WDOT data from that specific year. For the year 2019 (as well as for the 2030 and 2035 projections), adjustment factors were developed from WDOT data averaged over the 10-year-period of 2008 to 2017.

Table A2.1. Factors to Convert AADT to Ozone Season Weekday VMT.

MOVES Roadway Type	Year 2014	Year 2019
Rural Restricted	1.158	1.153
Rural Unrestricted	1.152	1.149
Urban Restricted	1.152	1.155
Urban Unrestricted	1.166	1.154

- **Estimation of Ozone Season Weekday VMT in the Door County-Revised 2015 Ozone NAAQS Nonattainment Area:** WDOT's travel demand model does not provide full VMT coverage. For example, local travel is not included for Door County. Thus, WDNR adjusted WDOT-modeled VMT to match WDOT official posted AADT [9]. When doing this adjustment, WDNR added travel on local roadways in proportion to WDOT estimates of 2017 local travel in Door County provided to WDNR on November 29, 2018. A summary of WDOT-provided VMTs and the resulting WDNR-estimated ozone season weekday VMTs is shown in Table A2.2. WDOT has previously agreed with these WDNR adjustment methods.

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

Table A2.2. VMTs for Door County and the Door County-Revised 2015 Ozone NAAQS Nonattainment Area.

Year	Year 2014 and 2019 Vehicle-Miles of Travel (VMT)						
	Full Door County			Door County-Revised 2015 Ozone NAAQS Nonattainment Area			
	WDOT-Modeled (Tu-Th)	WDOT-Modeled (Tu-Th) with Additional Local	WDOT Official Posted AADT (Su-Sa)	WDOT-Modeled (Tu-Th)	WDOT-Modeled (Tu-Th) with Additional Local	WDNR-Estimate of WDOT Official Posted AADT (Su-Sa)	WDNR-Estimated Ozone Season Weekday (Mo-Fr)
2014	490,747	559,624	1,093,063	229,809	275,305	528,564[10]	609,731
2019	500,433	570,669	1,373,665	233,476	279,750	661,880[11]	761,085

- **2014 Ozone Season Weekday VMT:** The WDOT-modeled VMT for an average weekday (Tuesday – Thursday) for the year 2014 is 229,809 for the Door County-Revised 2015 ozone NAAQS nonattainment area (interpolated between 2010 and 2045). This VMT increases to 275,305 when local travel is added. After adjusting to official WDOT annual average day VMT (528,564/275,305 = about +91.99%) and then to ozone season weekday (about +15.36%), this value becomes 275,305 * ~1.9199 * ~1.1536 = 609,731.

- **2019 Ozone Season Weekday VMT:** The WDOT-modeled VMT for an average weekday (Tuesday – Thursday) for the year 2019 is 233,476 for the Door County-Revised 2015 ozone NAAQS nonattainment area (interpolated between 2010 and 2045). This VMT increases to 279,750 when additional local travel is added. After adjusting to official WDOT annual average day VMT (661,880/279,750 = about +136.60%) and then to ozone season weekday (about +14.99%), this value becomes 279,750 * ~2.3660 * ~1.1499 = 761,085.

- **Allocation of VMT to the 13 Vehicle Classes in MOVES:** The WDOT provided VMT data for two general vehicle classes (Auto and Truck[12]). The MOVES model calculates emissions for 13 vehicle classes as shown in Table A2.3. The WDNR used the MOVES3.0.2 default vehicle class distributions for Door County to further break down the VMT into the 13 MOVES classes.

[10] The reason why this value of 528,564 differs from the value calculated from the table (1,093,063*275,305/559,624 = 537,728) is that the calculation resulting in 528,564 was done for each individual roadway class and then summed. Since the distribution of VMT by roadway class for the full county and for the nonattainment area differ, the calculated values also differ.
[11] The reason why this value of 661,880 differs from the value calculated from the table (1,373,665*279,750/570,669 = 673,390) is that the calculation resulting in 661,880 was done for each individual roadway class and then summed. Since the distribution of VMT by roadway class for the full county and for the nonattainment area differ, the calculated values also differ.
[12] This truck class includes buses, but not passenger trucks or light commercial trucks.

Table A2.3 shows the final VMT by vehicle class values WDNR used in MOVES3.0.2.

Table A2.3. Ozone Season Weekday VMT Inputted into MOVES3.0.2.

MOVES Vehicle Class	Year	
	2014	2019
Motorcycles	6,416	7,555
Passenger Cars	215,698	250,998
Passenger Trucks	289,586	377,556
Light Commercial Trucks	30,612	39,027
Other Buses	1,806	2,457
Transit Buses	646	811
School Buses	1,192	1,406
Refuse Trucks	253	293
Single Unit Short-haul Trucks	24,586	31,164
Single Unit Long-haul Trucks	1,619	2,070
Motor Homes	976	1,176
Combination Short-haul Trucks	9,071	11,677
Combination Long-haul Trucks	27,269	34,896
TOTAL	**609,731**	**761,085**

The total ozone season weekday VMT in 2019 is 24.8 percent greater than the total ozone season weekday VMT in 2014.

2.3.2.2. VMT by Hour of Day

The WDNR used the MOVES3.0.2 default hourly VMT distributions for Door County for the years 2014 and 2019 (as well as for the 2030 and 2035 projections).

2.3.2.3. Vehicle Population

The WDNR estimated vehicle populations for each vehicle class by dividing ozone season weekday VMT by the MOVES3.0.2 default for average daily travel per vehicle. Table A2.4 shows the final vehicle population values WDNR used in MOVES3.0.2.

Table A2.4. Vehicle Populations Inputted into MOVES3.0.2.

MOVES Vehicle Class	Year	
	2014	**2019**
Motorcycles	619	738
Passenger Cars	6,619	7,449
Passenger Trucks	8,175	10,302
Light Commercial Trucks	807	1,017
Other Buses	21	28
Transit Buses	7	9
School Buses	40	45
Refuse Trucks	4	5
Single Unit Short-haul Trucks	601	786
Single Unit Long-haul Trucks	26	35
Motor Homes	61	80
Combination Short-haul Trucks	88	112
Combination Long-haul Trucks	106	135
TOTAL	**17,175**	**20,742**

The total vehicle population in 2019 is 20.8 percent greater than the total vehicle population in 2014.

2.3.2.4. Vehicle Age Distribution

Year 2014: Using data from WDOT's registration database as of March 2014, WDNR calculated vehicle age distributions for the year 2014 for five vehicle classes: passenger cars, passenger trucks, light commercial trucks, intercity buses and school buses. The EPA default distributions were used for the other eight source types: motorcycles, transit buses and six medium-to-heavy truck classes. The WDNR calculated two 2014 distributions: one for the seven-county vehicle inspection and maintenance program region (Kenosha, Milwaukee, Ozaukee, Racine, Sheboygan, Washington and Waukesha counties) and the other for the remaining 65 Wisconsin counties. The WDNR used the 65-county distribution for modeling the Door County-Revised 2015 ozone NAAQS nonattainment area.

Year 2017: Using data from the WDOT registration database as of January 2018, WDNR calculated a new local vehicle age distribution for the year 2017 for all vehicle classes except the two long-haul truck classes (MOVES classes 53 and 62, for which the MOVES default distributions were used). Again, WDNR calculated two 2017 distributions: one for the seven-county inspection and maintenance program region and the other for the remaining 65 Wisconsin counties.

Year 2019: The WDNR projected the 2017 vehicle age distributions to 2019 using the methodology presented in the memorandum: "New Method to Project Age Distribution", from Allison DenBleyker, ERG, to Alison Eyth, EPA, dated August 14, 2019. This new method does not attempt to predict any future growth, and only shifts the economic recession "dip" for model years 2009 to 2011 downstream while dampening the recession's effect with increasing calendar year. No other features of the age distribution change, except for minor shifts due to re-

normalizing the distribution. EPA used this same methodology to project age distributions to the years 2020, 2023 and 2028 for their 2016 Emissions Modeling Platform, version 1.

Table A2.5 presents the resulting average vehicle ages for 2014, 2017 and 2019 for the 65 outstate counties, which include Door County.

Table A2.5. Average Vehicle Ages (years old).

MOVES Vehicle Class	Year		
	2014	2017	2019
11 - Motorcycle	8.21	14.68	14.63
21 - Passenger Car	10.28	10.43	10.36
31 - Passenger Truck	8.74	8.25	8.18
32 - Light Commercial Truck	11.65	11.50	11.45
41 - Other Bus	11.45	12.40	12.40
42 - Transit Bus	11.41	11.87	11.87
43 - School Bus	8.49	9.43	9.43
51 - Refuse Truck	11.17	10.89	10.87
52 - Single Unit Short-haul Truck	11.62	13.47	13.35
53 - Single Unit Long-haul Truck	12.18	11.60	11.78
54 - Motor Home	11.16	17.79	17.78
61 - Combination Short-haul Truck	13.94	15.19	15.13
62 - Combination Long-haul Truck	9.14	10.42	10.42

The following differences between the average ages in 2014 and 2017 should be noted:

- For combination long-haul trucks, the average age in 2017 is greater than in 2014 because the model years 2005 to 2007 had high sales.
- For some low-population vehicle classes (especially, motorcycle and motor home) the average age in 2017 is significantly greater than in 2014 because the MOVES default distribution was used for 2014 whereas a local distribution was used for 2017. This bias produces a slight underestimation of the reduction in onroad emissions from 2014 to 2017.

The average ages in 2019 tend to be slightly less than those in 2017. The reason for this is that the effect of the "recession dip" for model years 2009 to 2011 on lowering the average age diminishes over time.

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 Door County-Revised nonattainment area from the transportation modeling data provided by 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 Door County-Revised nonattainment area does not have any restricted access roadways, resulting in VMT in only two of the four roadway classes.

2.3.2.6. Average Speed Distribution

For each of the two MOVES roadway classes in the Door County-Revised nonattainment area, WDNR adjusted the 14-bin speed distribution obtained from WDOT to the 16-bin speed distribution required by the MOVES model.[13] This adjustment was based on the average speeds within the WDOT bins.[14] The resulting distributions of VHT by average trip speed are provided in Appendix 7.

2.3.2.7. Fuel Formulation and Supply

The MOVES3.0.2 defaults currently provide the best available fuel data and therefore were used.

2.3.2.8. Vehicle Inspection and Maintenance Program

Door County is outside of the seven-county southeastern Wisconsin vehicle inspection program region. Thus, no inspection and maintenance program was modelled.

2.3.2.9. Meteorology Data

Temperatures conducive to peak ozone formation were assumed for the ozone season weekday modeling. To ensure consistent emission estimates over time, 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 63/85 degrees Fahrenheit for Door County.

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, construction, lawn and garden, locomotive and agricultural equipment.

[13] 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.

[14] 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.

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 2014 and 2019 nonroad emissions for the non-MAR categories were developed using the nonroad component of EPA's MOVES3.0.2 model.

The only change WDNR made to the MOVES3.0.2 nonroad defaults was an updated monthly distribution of agricultural activity, developed by the Lake Michigan Air Directors Consortium (LADCO) for Wisconsin and other Midwestern states. EPA also used these updated distributions for each Midwestern state for the 2016 emission modeling platform, version 1, and the 2017 NEI.

The model was run for Door County for the months of June, July and August, using the same hot ozone season day temperatures used for the onroad modeling. 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 Door County-Revised 2015 ozone NAAQS 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

The WDNR used data from EPA's 2014 NEI, version 2, and 2016 emissions modeling platform, version 1, to estimate emissions in Door County from commercial marine vessels and aircraft, as

described in sections 2.4.2.1 and 2.4.2.2. The WDNR then allocated these emissions to the Door County-Revised nonattainment area as described in section 2.4.3. Since Door County does not have any rail lines, the rail locomotive emissions are zero.

2.4.2.1 Aircraft

For the year 2014, WDNR obtained annual aircraft emissions in Door County from the EPA's 2014 National Emissions Inventory, version 2.[15] Emissions by several source classification codes (SCCs) were available. To estimate ozone season day emissions, annual emissions were divided by 339.7 for both NOx and VOC, as described below in this section.

For the year 2019, WDNR calculated summer total aircraft emissions in Door County by linearly interpolating between monthly emission estimates for the years 2016 and 2023 in EPA's 2016 emissions modeling platform, version 1.[16] This interpolation used emissions only for the three months of June, July and August. WDNR then divided the interpolated emissions by 92 (the number of days in those three months) to obtain ozone season day emissions. The resulting ratio of annual emissions to ozone season day emissions is 339.7 to 1 for aircraft. This ratio held for all platform years (2016, 2023 and 2028) as well as both pollutants (NOx and VOC) and, thus, were used for all four inventory years (2014, 2019, 2030 and 2035). The WDNR then allocated the resulting total aircraft emissions into SCC classes using the corresponding SCC allocation percentages in EPA's 2017 NEI.[17]

The allocation of the full county emissions to the Door County-Revised 2015 ozone NAAQS nonattainment area is described in section 2.4.4.

2.4.2.2. Commercial Marine Vessels

During May of 2020, EPA posted updated commercial marine annual emission estimates for the Great Lakes region in their 2016 emission modeling platform, version 1, for the years 2016 and 2028. The WDNR used these data to calculate annual commercial marine emissions for the years 2014 and 2019 (as well as the projection years of 2030 and 2035).

For the year 2014, WDNR calculated annual emissions by linearly back-calculating from the 2028 and 2016 annual emissions, with the constraint that if the 2016 emissions exceeded the 2028 emissions, the 2014 emissions were set equal to the 2016 emissions. This constraint helps ensure against an overestimation of 2014 emissions.

For the year 2019, WDNR calculated annual emissions by linearly interpolating between the 2016 and 2028 annual emissions.

The EPA's May 2020 updated emissions did not include monthly emissions, so WDNR used earlier monthly estimates in EPA's 2016 emissions modeling platform to develop ratios between

[15] https://www.epa.gov/air-emissions-inventories/2014-national-emissions-inventory-nei-data
[16] https://www.epa.gov/air-emissions-modeling/2016v1-platform
[17] https://www.epa.gov/air-emissions-inventories/2017-national-emissions-inventory-nei-data

annual emissions and ozone season day emissions. Using the same procedures described in section 2.4.2.1 for aircraft, WDNR determined that ozone season day emissions equal annual emissions divided by the following amounts:

- For category C1 and C2 engines:
  265.9 for NOx and 260.2 for VOC
- For category C3 engines:
  691.0 for NOx and 831.7 for VOC

These ratios hold for all platform years (2016, 2023 and 2028) and, thus, were used for all four inventory years (2014, 2019, 2030 and 2035). The high ratios for C3 vessels reflect high activity from these vessels during the winter months.

2.4.3. Allocation of Emissions to Door County-Revised Nonattainment Area

Given the wide range of nonroad mobile sources, several surrogates were employed to estimate the proportion of countywide emissions in the Door County-Revised 2015 ozone NAAQS nonattainment area. The surrogates are described below.

2.4.3.1. Land Area

Based on geographic data for each minor civil division in Door County, the land area of the Door County-Revised nonattainment area comprises 58 percent of the total county land area.

The nonroad categories allocated to the Door County-Revised nonattainment area based on this 58 percent land area proportion are agriculture, logging, oilfields, recreational, and underground mining. It should be noted that Door County 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 county's population estimated to live in the Door County-Revised nonattainment area is 53 percent for both 2014 and 2019.

The nonroad categories allocated to the Door County-Revised nonattainment area based on this 53 percent population proportion are commercial, construction, industrial, and lawn & garden.

2.4.3.3. Water Area

The WDNR obtained two sets of water area data:

- One limited to inland lakes and nearshore waters of Lake Michigan and Green Bay. WDNR obtained data for these water areas from the report "Surface Water Inventory of Door County", prepared by the Door County Soil and Water Conservation Department, December 2000.[18] From page 41 of this report, Door County has eight inland lakes with public access, totaling 2,920 acres of water area. Seven of these lakes, totaling 2,855 acres of water area, are in the Door County-Revised nonattainment area. And, from page 44 of this report, Door County has 31 bays and harbors, totaling 23,516 acres of water area. 26 of these locations, totaling 16,094 acres, are entirely in the Door County-Revised nonattainment area. Furthermore, one location, Sturgeon Bay (4,778 acres) is between the Door County-Revised nonattainment and the rest of Door County. Assigning 50 percent of Sturgeon Bay (i.e., 2,389 acres) to the Door County-Revised nonattainment area results in (2,855 + 16,094 + 2,389) / (2,920 + 23,516) = 81 percent of Door County's inland lakes and nearshore waters located in the Door County-Revised nonattainment area.
- The other inclusive of all water area assigned to the minor civil divisions of Door County. These areas include the outlying waters of Green Bay and Lake Michigan. Based on U.S. Census Bureau data, this area totals 708.4 square miles (about 453,000 acres). 77 percent of this area (545.2 square miles or about 349,000 acres) is associated with minor civil divisions located in the Door County-Revised nonattainment area.

The WDNR used the allocation factor of inland lakes and nearshore waters (81%) for pleasure craft with outboard engines, since those boats do not generally travel on the outlying waters of Lake Michigan and Green Bay.

The WDNR used the allocation factor for all waters (77%) for pleasure craft with inboard engines, since those boats can often travel on the outlying waters of Lake Michigan and Green Bay.

It should be noted that EPA also assigns a larger water area for inboard-engine pleasure craft than for outboard-engine pleasure craft.[19]

2.4.3.4. Location of Grid Cells in Lake Michigan and Green Bay

The EPA provided the commercial marine underway (i.e., non-port) emissions that WDNR used (see section 2.4.2.2) in individual 1.33-kilometer grid cells. Of the grid cells that EPA assigned to Door County (over 2,000), WDNR selected for the Door County-Revised nonattainment area those cells north of selected latitudes, depending on the longitude. The WDNR selected all grid

[18] https://www.co.door.wi.gov/DocumentCenter/View/568/Surface-Water-Inventory-PDF?bidId=

[19] The file in the MOVES nonroad database for the allocation of emissions from pleasure craft with inboard engines (WI_WIB_ALO) assigns 795 square kilometers of water area to Door County. In contrast, the file in the MOVES nonroad database for the allocation of emissions from pleasure craft with outboard engines (WI_WOB_ALO) assigns 155 square kilometers of water area to Door County.

cells north of the latitude 44.89. Furthermore, for longitudes east of -87.41, WDNR also selected those grid cells north of the latitude 44.80. (Two latitudes were used because the Door County-Revised nonattainment area extends further south on its Lake Michigan side than on its Green Bay side.) The sum of the emissions from the grid cells selected for the Door County-Revised nonattainment area comprised 94 percent of the NOx underway emissions for the entire county and 95 percent of the VOC underway emissions for the entire county.

2.4.3.5. Port Location

Door County has one port that handles commercial marine vessels. This port is located in the City of Sturgeon Bay, which is partially inside and partially outside the Door County-Revised nonattainment area. The port itself has some docks inside the Door County-Revised nonattainment area and others outside. The WDNR assigned 50 percent of the Door County commercial marine port emissions to the Door County-Revised nonattainment area.

2.4.3.6. Airport Location

The EPA NEIs for 2014, version 2, and 2017 provide aircraft emissions for individual airports. Of the seven airports in Door County, five are in the Door County-Revised nonattainment area. In both NEIs the proportion of aircraft emissions originating from airports in the Door County-Revised nonattainment area are 18.9 percent for NOx and 25.7 percent for VOC. For all four inventory years (2014, 2019, 2030 and 2035) the proportion of total Door County aircraft emissions in the Door County-Revised nonattainment area are those same percentages.

APPENDIX 3

2030 and 2035 Emissions Projections Documentation

This appendix provides information for the sector-specific NOx and VOC tons per ozone season day (tposd) emission estimates in section 4.3 of the Wisconsin Department of Natural Resources (WDNR) Redesignation Request and Maintenance Plan for the Door County-Revised 2015 Ozone NAAQS Nonattainment Area. As part of this demonstration, the WDNR is providing a projection of emissions for 2030 and 2035 as the maintenance years.

1. Point Inventory Methodology for 2030 and 2035

The projected 2030 and 2035 emissions from Washington Island Electric Cooperative were calculated by applying growth factors to the 2018 emissions data, as Washington Island Electric Cooperative did not report emissions for the attainment year of 2019. The growth factors were developed from Annual Energy Outlook (AEO) 2020 industry-specific energy consumption data for electricity and are summarized in Table A3.1. Growth in energy consumption was assumed to correspond linearly with growth in emissions.

Point source emissions are projected for 2030 and 2035 by applying growth factors to the 2019 attainment year inventory, as well as considering new and modified sources. A detailed description of the methodology is provided below, and a list of sources with the applied growth rates and calculated emissions is provided in Appendix 4. Non-EGU point source projected 2030 and 2035 emissions were derived by applying growth factors to the 2019 attainment year inventory. Growth factors were developed from Annual Energy Outlook (AEO) 2020 industry-specific energy consumption data, summarized in Table A3.2. Growth in energy consumption was assumed to correspond linearly with growth in emissions. A second step in projecting emissions – accounting for potential emissions increases resulting from the modification of existing sources or the installation of new sources – is described in section 1.1 below.

Table A3.1. Growth Factors from AEO 2020 Used for Projecting Wisconsin Point Source Emissions for the Door County-Revised 2015 Ozone NAAQS Nonattainment Area

NAICS	NAICS Description	AEO Industrial or Commercial Sub-sector	AEO Energy Consumption (trillion Btu) [1]			Growth Factors (from 2019) [2]	
			2019	2030	2035	2030 GF	2035 GF
336611	Ship Building and Repairing	No AEO Industrial or Commercial Subsector	N/A	N/A	N/A	1.00[3]	1.00[3]
221112	Fossil Fuel Electric Power Generation	East North Central Energy Consumption - Electricity	1.822	1.976	2.030	1.05	1.08

[1] Source: http://www.eia.gov/forecasts/aeo/index.cfm.
[2] Growth factors for the entire 2019-2030 and 2019-2035 periods were calculated by dividing the 2030 or 2035 energy consumption values by the 2019 energy consumption value.
[3] No AEO industrial or commercial sub-sector matched this source. Assumed a growth factor of 1.00.

1.1. Modified and New Source Emissions

Section 172(c)(4) of the Clean Air Act (CAA) requires identification and quantification of potential emissions from new or modified sources when developing emission inventories for attainment and maintenance purposes. The point source emissions inventory described in section 1 above includes projections of emissions growth determined by applying general regional growth factors. However, this methodology alone does not distinguish emissions associated with modified and new sources. Therefore, as a second step the WDNR reviewed permitting actions for sources in the Door County-Revised 2015 ozone NAAQS nonattainment area from 2016 to 2020 (five years).

The Door County-Revised 2015 ozone NAAQS nonattainment area had no new or modified permits issued during this five-year period.

2. Area Source Inventory Methodology for 2030 and 2035

EPA's 2016 Emissions Modeling Platform, Version 1 includes base year 2016 and projections for the years 2023 and 2028.[1] Projection years 2030 and 2035 area source emissions were estimated primarily by extrapolating EPA's 2014 NEI, 2016, 2023 and 2028 projections from the 2016 modeling inventory. Methodologies used to develop 2023 and 2028 emissions modeling platform projection data are available in the EPA's Air Emissions Modeling 2016 Version 1 Technical Support Document.[2] The exception is that WDNR staff projected emissions from vehicle refueling at gasoline stations (Stage II refueling) using EPA's MOVES3.0.2 model with the same inputs used for the onroad modeling.

As was done in calculating Stage II refueling emissions for 2014 and 2019, WDNR adjusted weekday emissions to average day (weekdays and weekends) emissions, based on the ratio of average day to weekday travel, resulting in adjustment factors of 0.9664 for both 2030 and 2035. Although Door County never had a Stage II vapor recovery program, Stage II refueling emissions steadily decreased from 2014 to 2035 owing to an increasing number of vehicles having on-board refueling vapor recovery (ORVR) systems.

In order to obtain the area source emissions for the partial Door County-Revised 2015 ozone NAAQS nonattainment area, emission estimates from the entire county were allocated to the partial county area based on population data. The Door County population data projections for 2030 and 2035 from the Wisconsin Department of Administration were used to calculate the emission estimates. The partial county population was identified based on the relative population of the Minor Civil Divisions in the Door County-Revised 2015 ozone NAAQS nonattainment area compared with the entire county. For both 2030 and 2035, the county's population, estimated to live in the Door County-Revised 2015 ozone NAAQS nonattainment area was 53 percent. Appendix 5 includes tables of projected area source emissions for Door County-Revised 2015 ozone NAAQS nonattainment area by source category.

[1] https://www.epa.gov/air-emissions-modeling/2016v1-platform.
[2] https://www.epa.gov/air-emissions-modeling/2016-version-1-technical-support-document.

3. Onroad Inventory Methodology for 2030 and 2035

As was done for the 2014 and 2019 emissions, the 2030 and 2035 projected onroad emissions were developed using the MOVES3.0.2 model. Unless otherwise stated in this section, the methodology WDNR used for 2030 and 2035 is the same methodology WDNR used for years 2014 and 2019, as described in Appendix 2, section 2.3.

The WDNR grew vehicle-miles of travel (VMT) from 2019 using the same growth rates provided in the transportation modeling data provided to WDNR by the Wisconsin Department of Transportation (WDOT). The WDOT data provides 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 MOVES3.0.2 default VMT splits by vehicle class for Door County for 2030 and 2035. Table A3.3 shows the resulting ozone season weekday VMT.

Table A3.2. Ozone Season Weekday VMT Inputted into MOVES3.0.2.

MOVES Vehicle Class	Year			
	2014	**2019**	**2030**	**2035**
Motorcycles	6,416	7,555	7,796	7,925
Passenger Cars	215,698	250,998	268,486	284,554
Passenger Trucks	289,586	377,556	381,013	374,582
Light Commercial Trucks	30,612	39,027	37,545	36,733
Other Buses	1,806	2,457	2,664	2,743
Transit Buses	646	811	823	839
School Buses	1,192	1,406	1,496	1,540
Refuse Trucks	253	293	373	416
Single Unit Short-haul Trucks	24,586	31,164	36,164	39,285
Single Unit Long-haul Trucks	1,619	2,070	2,413	2,612
Motor Homes	976	1,176	1,435	1,583
Combination Short-haul Trucks	9,071	11,677	13,095	12,908
Combination Long-haul Trucks	27,269	34,896	34,305	33,942
TOTAL	**609,731**	**761,085**	**787,608**	**799,663**

The total ozone season weekday VMT increases by 24.8 percent from 2014 to 2019, increases by 3.5 percent from 2019 to 2030, and increases by 1.5 percent from 2030 to 2035. In terms of annual VMT growth rates, these rates are 4.53 percent from 2014 to 2019, 0.31 percent from 2019 to 2030, and 0.30 percent from 2030 to 2035.

The vehicle populations for each of the years are shown in Table A3.4.

Table A3.3. Vehicle Populations Inputted into MOVES3.0.2.

MOVES Vehicle Class	Year			
	2014	2019	2030	2035
Motorcycles	619	738	779	812
Passenger Cars	6,619	7,449	7,856	8,194
Passenger Trucks	8,175	10,302	10,322	10,160
Light Commercial Trucks	807	1,017	1,019	1,002
Other Buses	21	28	29	29
Transit Buses	7	9	9	9
School Buses	40	45	47	48
Refuse Trucks	4	5	6	6
Single Unit Short-haul Trucks	601	786	878	921
Single Unit Long-haul Trucks	26	35	39	41
Motor Homes	61	80	89	93
Combination Short-haul Trucks	88	112	103	99
Combination Long-haul Trucks	106	135	125	119
TOTAL	**17,175**	**20,742**	**21,299**	**21,534**

The total vehicle population increases by 20.8 percent from 2014 to 2019, increases by 2.7 percent from 2019 to 2030, and increases by 1.1 percent from 2030 to 2035. In terms of annual population growth rates, these rates are 3.85 percent from 2014 to 2019, 0.24 percent from 2019 to 2030, and 0.22 percent from 2030 to 2035.

The WDNR projected the 2017 vehicle age distribution to 2030 and 2035 using the methodology done to project from 2017 to 2019, which is described in section 2.3.2.4 in Appendix 2. Table A3.5 presents the resulting average vehicle ages for all four inventory years.

Table A3.4. Average Vehicle Ages (years old).

MOVES Vehicle Class	Year			
	2014	2019	2030	2035
Motorcycle	8.21	14.63	14.37	14.38
Passenger Car	10.28	10.36	10.30	10.31
Passenger Truck	8.74	8.18	8.21	8.22
Light Commercial Truck	11.65	11.45	11.38	11.41
Other Bus	11.45	12.40	12.40	12.40
Transit Bus	11.41	11.87	11.87	11.87
School Bus	8.49	9.43	9.43	9.43
Refuse Truck	11.17	10.87	10.58	10.62
Single Unit Short-haul Truck	11.62	13.35	13.05	13.10
Single Unit Long-haul Truck	12.18	11.78	11.58	11.55
Motor Home	11.16	17.78	17.49	17.50
Combination Short-haul Truck	13.94	15.13	15.16	15.15
Combination Long-haul Truck	9.14	10.42	10.42	10.42

Emissions for 2030 and 2035 were increased by a 15 percent safety margin, as agreed through the interagency transportation conformity consultative process.

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

4. Nonroad Inventory Methodology for 2030 and 2035

The methodology for determining 2030 and 2035 projected nonroad emissions is parallel to the methodology used to determine the 2014 and 2019 estimates, as described in Appendix 2, section 2.4.

For all source categories except commercial marine, aircraft and rail locomotive (MAR), the nonroad component of the MOVES3.0.2 model was run for Door County at hot ozone season day temperatures. As was done for 2014 and 2019, the only change made to the MOVES3.0.2 nonroad defaults was an updated monthly distribution of agricultural activity, developed by the Lake Michigan Air Directors Consortium (LADCO). The MOVES3.0.2 model's default growth projections were assumed.

For aircraft, WDNR calculated emissions for 2030 and 2035 by linearly extrapolating from the 2023 and 2028 ozone season day values in the EPA's 2016 emissions modeling platform, version 1, with the constraint that if the 2028 emissions were less than the 2023 emissions, the 2030 and 2035 emissions were set equal to the 2028 emissions. The intent of this constraint is to avoid an underestimation of the 2030 and 2035 emissions.

For commercial marine, WDNR calculated 2030 and 2035 emissions by linearly extrapolating from the emission values for the years 2016 and 2028 in the EPA's May 2020 updated commercial marine estimates in their 2016 emissions modeling platform, version 1, again with the constraint that if 2028 emissions were less than 2016 emissions, the 2030 and 2035 emissions were set equal to the 2028 emissions.

Door County did not have any rail activity in 2014 and 2019 and, thus, no rail emissions. EPA's 2016 emissions modeling platform, version 1, does not project any future year rail emissions. Thus, WDNR assumed no rail emission in Door County for 2030 and 2035.

In allocating the full Door County emissions to the Door County-Revised 2015 ozone NAAQS nonattainment area, the adjustment factor values used for 2014 and 2019 were also used for 2030 and 2035.

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

APPENDIX 4

Point Source Emissions for 2014, 2019, 2030 and 2035

This appendix provides a list of the Door County-Revised 2015 ozone NAAQS nonattainment area point source tons per ozone season day (tposd) emissions by facility identification number (FID) and facility name for 2014, 2019, 2030 and 2035. The sums of NOx and VOC emissions from these facilities were used for the EGU and non-EGU sectors NOx and VOC tposd emission estimates sections 4.2 (Nonattainment Year and Attainment Year Inventories) and 4.3 (Maintenance Year Inventories) of the Wisconsin Department of Natural Resources (WDNR) Redesignation Request and Maintenance Plan for the Door County-Revised 2015 ozone NAAQS nonattainment area.

Table A4.1 2014 and 2019 Point Source Emissions for the Door County-Revised 2015 Ozone NAAQS Nonattainment Area[1,2]

FID	Facility Name	NAICS	Pollutant	2014 (tposd)	2019 (tposd)	2014 (tons)	2019 (tons)
415046060	FINCANTIERI BAY SHIPBUILDING CO	336611	NOx	0.00085	0.0008	2.58	3.66
415181910	FINCANTIERI BAY SHIPBUILDING CO	336611	NOx	0.0001	Not Reporting	0.639	Not Reporting
415186750	WASHINGTON ISLAND ELECTRIC COOPERATIVE	221112	NOx	0.00137	Not Reporting	0.150	No Reporting
415046060	FINCANTIERI BAY SHIPBUILDING CO	336611	VOC	0.16	0.13	51.26	35.09
415181910	FINCANTIERI BAY SHIPBUILDING CO	336611	VOC	0.05	Not Reporting	11.66	Not Reporting
415186750	WASHINGTON ISLAND ELECTRIC COOPERATIVE	221112	VOC	0.0000039	Not Reporting	0.00124	Not Reporting
TOTAL			**NOx**	**0.0014**	**0.0008**	**3.37**	**3.66**
			VOC	**0.205**	**0.13**	**46.75**	**46.75**

[1] Tons per ozone season day (tposd) emissions were calculated by WI AEI using the 3rd quarter operation information.
[2] According to Wisconsin State 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 2030 and 2035 Point Source Emissions for the Manitowoc County 2015 Ozone NAAQS Nonattainment Area[1]

FID	Facility Name	NAICS	Pollutant	2030 (tposd)	2035 (tposd)	2030 (tons)	2035 (tons)
415046060	FINCANTIERI BAY SHIPBUILDING CO	336611	NOx	0.0008	0.0008	3.66	3.66
415181910	FINCANTIERI BAY SHIPBUILDING CO[3]	336611	NOx	0.0001	0.0001	0.639	0.6385
415186750	WASHINGTON ISLAND ELECTRIC COOPERATIVE[4]	221112	NOx	0.00137	0.0014	0.378	0.3888
415046060	FINCANTIERI BAY SHIPBUILDING CO	336611	VOC	0.13	0.13	35.09	35.09
415181910	FINCANTIERI BAY SHIPBUILDING CO[3]	336611	VOC	0.05	0.05	11.66	11.66
415186750	WASHINGTON ISLAND ELECTRIC COOPERATIVE[4]	221112	VOC	0.000012	0.000012	0.003	0.003
Sub-total – Existing Sources			NOx	0.0026	0.0023	4.30	4.30
			VOC	0.175	0.175	46.75	46.75
New & Modified Sources[2]							
N/A	N/A	N/A	NOx	0.00	0.00	0.00	0.00
N/A	N/A	N/A	VOC	0.00	0.00	0.00	0.00
TOTAL (Existing + New/Modified Sources)			**NOx**	0.00	0.00	0.00	0.00
			VOC	0.00	0.00	0.00	0.00

[1] No new or modified sources were reported.
[2] For new and modified sources, the tposd emissions are calculated based on the annual potential emissions divided by 260 weekdays.
[3] 2030 and 2035 projections based on the 2014 emissions because the source did not report 2019 emissions.
[4] 2030 and 2035 projections based on 2018 emissions because the source did not report 2019 emissions.

APPENDIX 5

Area Source Emissions for 2014, 2019, 2030 and 2035

This appendix provides a list of the area source tons per ozone season day (tposd) emissions by source classification code (SCC) for 2014, 2019, 2030 and 2035 for the Door County-Revised 2015 ozone NAAQS nonattainment area. The sum of NOx and VOC emissions from the different SCCs were used for the area source sector NOx and VOC tposd emission estimates in sections 4.2 (Nonattainment Year and Attainment Year Inventories) and 4.3 (Interim Year and Maintenance Year Inventories) of the Wisconsin Department of Natural Resources (WDNR) Redesignation Request and Maintenance Plan for the Door County-Revised 2015 Ozone NAAQS Nonattainment Area.

SCCs are used to classify different types of activities that generate emissions. Each SCC represents a unique source category-specific process or function that emits air pollutants. For example, SCC 2102002000 represents a stationary industrial coal boiler. A searchable database of SCC codes can be found on this EPA website: https://sor-scc-api.epa.gov/sccwebservices/sccsearch/.

Table A5.1. Area Source 2014 and Projected 2019, 2030 and 2035 Emissions for the Door County-Revised 2015 Ozone NAAQS Nonattainment Area

FIPS	SCC	Pollutant	2014(tposd)	2019(tposd)	2030(tposd)	2035(tposd)
55029	2102001000	NOx	0.00E+00	0.00E+00	0.00E+00	0.00E+00
55029	2102002000	NOx	0.00E+00	0.00E+00	0.00E+00	0.00E+00
55029	2102004001	NOx	3.36E-04	3.43E-04	3.62E-04	3.71E-04
55029	2102004002	NOx	2.06E-03	2.11E-03	2.22E-03	2.27E-03
55029	2102005000	NOx	0.00E+00	0.00E+00	0.00E+00	0.00E+00
55029	2102006000	NOx	2.16E-02	2.08E-02	1.81E-02	1.69E-02
55029	2102007000	NOx	3.21E-04	3.55E-04	4.34E-04	4.70E-04
55029	2102008000	NOx	2.42E-02	2.41E-02	2.50E-02	2.54E-02
55029	2102011000	NOx	0.00E+00	0.00E+00	0.00E+00	0.00E+00
55029	2103001000	NOx	0.00E+00	0.00E+00	0.00E+00	0.00E+00
55029	2103002000	NOx	0.00E+00	0.00E+00	0.00E+00	0.00E+00
55029	2103004001	NOx	1.88E-04	1.99E-04	2.18E-04	2.28E-04
55029	2103004002	NOx	9.37E-04	9.87E-04	1.09E-03	1.13E-03
55029	2103005000	NOx	0.00E+00	0.00E+00	0.00E+00	0.00E+00
55029	2103006000	NOx	2.29E-02	2.20E-02	1.86E-02	1.71E-02
55029	2103007000	NOx	1.32E-03	1.32E-03	1.32E-03	1.32E-03
55029	2103008000	NOx	1.55E-03	1.55E-03	1.55E-03	1.55E-03
55029	2103011000	NOx	6.92E-06	6.92E-06	6.93E-06	6.93E-06
55029	2104001000	NOx	0.00E+00	0.00E+00	0.00E+00	0.00E+00
55029	2104002000	NOx	0.00E+00	0.00E+00	0.00E+00	0.00E+00
55029	2104004000	NOx	5.71E-03	5.71E-03	5.72E-03	5.72E-03
55029	2104006000	NOx	3.37E-02	3.37E-02	3.38E-02	3.38E-02
55029	2104007000	NOx	5.09E-02	5.09E-02	5.09E-02	5.10E-02
55029	2104008100	NOx	6.00E-04	6.31E-04	7.01E-04	7.33E-04
55029	2104008210	NOx	4.50E-04	4.09E-04	3.34E-04	2.99E-04
55029	2104008220	NOx	1.77E-04	1.93E-04	2.13E-04	2.23E-04
55029	2104008230	NOx	4.55E-05	5.04E-05	5.78E-05	6.13E-05
55029	2104008310	NOx	2.66E-03	2.46E-03	2.08E-03	1.90E-03
55029	2104008320	NOx	1.99E-03	2.17E-03	2.39E-03	2.50E-03
55029	2104008330	NOx	1.17E-03	1.30E-03	1.49E-03	1.58E-03
55029	2104008400	NOx	1.53E-03	1.96E-03	2.56E-03	2.85E-03
55029	2104008510	NOx	1.04E-03	6.81E-04	1.44E-04	1.44E-04
55029	2104008610	NOx	1.32E-03	1.34E-03	1.33E-03	1.33E-03
55029	2104008700	NOx	2.66E-03	2.80E-03	3.05E-03	3.16E-03
55029	2104009000	NOx	3.93E-05	4.14E-05	4.50E-05	4.67E-05
55029	2104011000	NOx	9.52E-05	9.52E-05	9.53E-05	9.54E-05
55029	2302002200	NOx	0.00E+00	0.00E+00	0.00E+00	0.00E+00
55029	2610000100	NOx	3.88E-04	3.88E-04	3.89E-04	3.89E-04
55029	2610000400	NOx	3.13E-04	3.13E-04	3.13E-04	3.14E-04
55029	2610000500	NOx	6.45E-03	6.45E-03	6.46E-03	6.46E-03

FIPS	SCC	Pollutant	2014(tposd)	2019(tposd)	2030(tposd)	2035(tposd)
55029	2610030000	NOx	9.57E-03	9.57E-03	9.58E-03	9.59E-03
55029	2810025000	NOx	9.42E-04	9.62E-04	1.03E-03	1.06E-03
55029	2810060100	NOx	1.65E-04	1.68E-04	1.81E-04	1.86E-04
55029	2102001000	VOC	0.00E+00	0.00E+00	0.00E+00	0.00E+00
55029	2102002000	VOC	0.00E+00	0.00E+00	0.00E+00	0.00E+00
55029	2102004001	VOC	3.36E-06	3.43E-06	3.62E-06	3.71E-06
55029	2102004002	VOC	1.43E-04	1.46E-04	1.55E-04	1.58E-04
55029	2102005000	VOC	0.00E+00	0.00E+00	0.00E+00	0.00E+00
55029	2102006000	VOC	1.19E-03	1.27E-03	1.48E-03	1.57E-03
55029	2102007000	VOC	1.17E-05	1.30E-05	1.59E-05	1.72E-05
55029	2102008000	VOC	1.87E-03	1.86E-03	1.94E-03	1.96E-03
55029	2102011000	VOC	0.00E+00	0.00E+00	0.00E+00	0.00E+00
55029	2103001000	VOC	0.00E+00	0.00E+00	0.00E+00	0.00E+00
55029	2103002000	VOC	0.00E+00	0.00E+00	0.00E+00	0.00E+00
55029	2103004001	VOC	3.20E-06	3.38E-06	3.71E-06	3.87E-06
55029	2103004002	VOC	6.51E-05	6.87E-05	7.55E-05	7.87E-05
55029	2103005000	VOC	0.00E+00	0.00E+00	0.00E+00	0.00E+00
55029	2103006000	VOC	1.26E-03	1.27E-03	1.28E-03	1.29E-03
55029	2103007000	VOC	4.82E-05	4.83E-05	4.83E-05	4.84E-05
55029	2103008000	VOC	1.20E-04	1.20E-04	1.20E-04	1.20E-04
55029	2103011000	VOC	1.18E-07	1.18E-07	1.18E-07	1.19E-07
55029	2104001000	VOC	0.00E+00	0.00E+00	0.00E+00	0.00E+00
55029	2104002000	VOC	0.00E+00	0.00E+00	0.00E+00	0.00E+00
55029	2104004000	VOC	2.22E-04	2.22E-04	2.22E-04	2.23E-04
55029	2104006000	VOC	1.97E-03	1.97E-03	1.98E-03	1.98E-03
55029	2104007000	VOC	1.98E-03	1.98E-03	1.98E-03	1.98E-03
55029	2104008100	VOC	4.36E-03	4.59E-03	5.10E-03	5.33E-03
55029	2104008210	VOC	8.51E-03	7.74E-03	6.32E-03	5.65E-03
55029	2104008220	VOC	9.30E-04	1.01E-03	1.12E-03	1.17E-03
55029	2104008230	VOC	3.41E-04	3.78E-04	4.34E-04	4.60E-04
55029	2104008310	VOC	5.04E-02	4.69E-02	4.00E-02	3.68E-02
55029	2104008320	VOC	1.05E-02	1.14E-02	1.26E-02	1.32E-02
55029	2104008330	VOC	8.78E-03	9.72E-03	1.12E-02	1.18E-02
55029	2104008400	VOC	8.86E-04	1.13E-03	1.48E-03	1.65E-03
55029	2104008510	VOC	6.70E-03	4.36E-03	9.15E-04	9.15E-04
55029	2104008610	VOC	4.44E-02	4.51E-02	4.49E-02	4.48E-02
55029	2104008700	VOC	1.93E-02	2.03E-02	2.22E-02	2.30E-02
55029	2104009000	VOC	2.02E-04	2.13E-04	2.32E-04	2.41E-04
55029	2104011000	VOC	3.70E-06	3.70E-06	3.71E-06	3.71E-06
55029	2201000062	VOC	4.56E-02	2.96E-02	1.67E-02	1.56E-02
55029	2302002100	VOC	7.27E-04	7.41E-04	7.96E-04	8.20E-04
55029	2302002200	VOC	2.51E-03	2.56E-03	2.75E-03	2.83E-03

FIPS	SCC	Pollutant	2014(tposd)	2019(tposd)	2030(tposd)	2035(tposd)
55029	2302003000	VOC	3.30E-04	3.37E-04	3.62E-04	3.73E-04
55029	2302003100	VOC	3.63E-04	3.71E-04	3.98E-04	4.10E-04
55029	2302003200	VOC	6.08E-06	6.20E-06	6.66E-06	6.86E-06
55029	2401001000	VOC	4.73E-02	4.83E-02	5.18E-02	5.34E-02
55029	2401005000	VOC	1.37E-02	1.37E-02	1.37E-02	1.37E-02
55029	2401008000	VOC	8.46E-03	8.47E-03	8.48E-03	8.48E-03
55029	2401015000	VOC	0.00E+00	0.00E+00	0.00E+00	0.00E+00
55029	2401020000	VOC	0.00E+00	0.00E+00	0.00E+00	0.00E+00
55029	2401055000	VOC	0.00E+00	0.00E+00	0.00E+00	0.00E+00
55029	2401080000	VOC	9.18E-02	9.18E-02	9.20E-02	9.20E-02
55029	2401090000	VOC	0.00E+00	0.00E+00	0.00E+00	0.00E+00
55029	2401100000	VOC	1.22E-02	1.24E-02	1.34E-02	1.38E-02
55029	2401200000	VOC	1.21E-04	1.24E-04	1.33E-04	1.37E-04
55029	2415000000	VOC	0.00E+00	0.00E+00	0.00E+00	0.00E+00
55029	2420000000	VOC	0.00E+00	0.00E+00	0.00E+00	0.00E+00
55029	2425000000	VOC	0.00E+00	0.00E+00	0.00E+00	0.00E+00
55029	2460100000	VOC	4.04E-02	4.13E-02	4.43E-02	4.56E-02
55029	2460200000	VOC	4.45E-02	4.54E-02	4.87E-02	5.02E-02
55029	2460400000	VOC	2.75E-02	2.81E-02	3.01E-02	3.10E-02
55029	2460500000	VOC	1.92E-02	1.96E-02	2.10E-02	2.17E-02
55029	2460600000	VOC	1.15E-02	1.18E-02	1.26E-02	1.30E-02
55029	2460800000	VOC	3.60E-02	3.67E-02	3.94E-02	4.06E-02
55029	2460900000	VOC	1.41E-03	1.44E-03	1.55E-03	1.60E-03
55029	2461021000	VOC	1.20E-02	1.20E-02	1.20E-02	1.20E-02
55029	2461022000	VOC	6.64E-03	6.64E-03	6.65E-03	6.65E-03
55029	2461850000	VOC	3.74E-02	3.74E-02	3.75E-02	3.75E-02
55029	2501011011	VOC	2.37E-03	2.42E-03	2.60E-03	2.68E-03
55029	2501011012	VOC	2.66E-03	2.71E-03	2.92E-03	3.00E-03
55029	2501011013	VOC	3.39E-03	3.46E-03	3.72E-03	3.83E-03
55029	2501011014	VOC	4.95E-04	5.05E-04	5.42E-04	5.59E-04
55029	2501011015	VOC	9.36E-05	9.55E-05	1.03E-04	1.06E-04
55029	2501012011	VOC	1.04E-04	1.06E-04	1.14E-04	1.17E-04
55029	2501012012	VOC	8.50E-05	8.67E-05	9.31E-05	9.59E-05
55029	2501012013	VOC	4.63E-03	4.72E-03	5.07E-03	5.22E-03
55029	2501012014	VOC	1.43E-03	1.45E-03	1.56E-03	1.61E-03
55029	2501012015	VOC	1.80E-04	1.84E-04	1.97E-04	2.03E-04
55029	2501050120	VOC	0.00E+00	0.00E+00	0.00E+00	0.00E+00
55029	2501055120	VOC	0.00E+00	0.00E+00	0.00E+00	0.00E+00
55029	2501060051	VOC	0.00E+00	0.00E+00	0.00E+00	0.00E+00
55029	2501060052	VOC	0.00E+00	0.00E+00	0.00E+00	0.00E+00
55029	2501060053	VOC	1.27E-02	1.21E-02	9.84E-03	8.84E-03
55029	2501060201	VOC	1.45E-02	1.39E-02	1.13E-02	1.01E-02

FIPS	SCC	Pollutant	2014(tposd)	2019(tposd)	2030(tposd)	2035(tposd)
55029	2501080050	VOC	2.27E-02	2.27E-02	2.27E-02	2.27E-02
55029	2501080100	VOC	5.50E-04	5.50E-04	5.51E-04	5.51E-04
55029	2505030120	VOC	9.50E-04	9.09E-04	7.38E-04	6.63E-04
55029	2505040120	VOC	0.00E+00	0.00E+00	0.00E+00	0.00E+00
55029	2610000100	VOC	1.75E-03	1.75E-03	1.76E-03	1.76E-03
55029	2610000400	VOC	1.19E-03	1.19E-03	1.19E-03	1.19E-03
55029	2610000500	VOC	1.50E-02	1.50E-02	1.50E-02	1.50E-02
55029	2610030000	VOC	9.21E-03	9.21E-03	9.23E-03	9.23E-03
55029	2630020000	VOC	5.37E-04	5.48E-04	5.88E-04	6.06E-04
55029	2680003000	VOC	0.00E+00	0.00E+00	0.00E+00	0.00E+00
55029	2805002000	VOC	4.24E-03	2.04E-03	1.51E-03	1.10E-03
55029	2805007100	VOC	2.03E-05	3.45E-05	4.29E-05	4.75E-05
55029	2805009100	VOC	2.90E-06	3.22E-06	3.68E-06	3.89E-06
55029	2805010100	VOC	0.00E+00	1.73E-06	2.14E-06	2.46E-06
55029	2805018000	VOC	1.57E-02	3.22E-02	3.60E-02	3.89E-02
55029	2805025000	VOC	3.05E-05	3.16E-05	3.56E-05	3.74E-05
55029	2805035000	VOC	0.00E+00	1.12E-03	1.37E-03	1.57E-03
55029	2805040000	VOC	0.00E+00	2.05E-04	2.50E-04	2.86E-04
55029	2805045000	VOC	0.00E+00	4.13E-04	5.06E-04	5.80E-04
55029	2810025000	VOC	8.20E-04	8.36E-04	8.98E-04	9.25E-04
55029	2810060100	VOC	5.78E-07	5.89E-07	6.33E-07	6.52E-07
TOTAL		NOx	0.20	0.20	0.19	0.19
		VOC	0.74	0.74	0.74	0.75

* Values marked in red font indicate WDNR staff estimates.

APPENDIX 6

Nonroad Emissions for 2014, 2019, 2030 and 2035

This appendix provides detailed listings of the estimated nonroad tons per ozone season day (tposd) emissions for over 200 subcategories for the Door County-Revised 2015 ozone NAAQS nonattainment area, as well as the entirety of Door County, for 2014, 2019, 2030 and 2035. The sum of NOx and VOC emissions from these nonroad subcategories were used for the nonroad sector NOx and VOC tposd emission estimates in sections 4.2 (Nonattainment Year and Attainment Year Inventories) and 4.3 (Maintenance Year Inventories) of the Wisconsin Department of Natural Resources (WDNR) Redesignation Request and Maintenance Plan for the Door County-Revised 2015 Ozone NAAQS Nonattainment Area.

These inventories are based on two primary sources of data:

MOVES model estimates
EPA's MOVES3.0.2 model was used for most source categories, with exceptions listed below.

EPA's National Emissions Inventory and modeling projections
Emissions for commercial marine, aircraft and rail locomotive were obtained using the EPA's 2014, version 2, and 2017 National Emissions Inventories (NEIs) and the EPA's 2016 emissions modeling platform, version 1 (which includes projections to 2023 and 2028).

Table A6.1. 2014 Nonroad NOx and VOC Emissions: tons per ozone season day (tposd) for Door County and the Door County-Revised 2015 ozone NAAQS nonattainment area

SCC	Segment Description	SCC Description	Emis-sions from	Door Co. 2014 Emissions		% in NAA		Allocate by	Door-Revised NAA 2014 Emissions	
				NOx	VOC	NOx	VOC		NOx	VOC
2260001010	Recreational	2-Stroke Motorcycles: Off-Road	MOVES	0.0022	0.2714	58%	58%	land area	0.0013	0.1574
2260001020	Recreational	2-Stroke Snowmobiles	MOVES	0.0000	0.0722	58%	58%	land area	0.0000	0.0419
2260001030	Recreational	2-Stroke All Terrain Vehicles	MOVES	0.0011	0.0980	58%	58%	land area	0.0007	0.0568
2260001060	Recreational	2-Stroke Specialty Vehicle Carts	MOVES	0.0012	0.0049	58%	58%	land area	0.0007	0.0028
2260002006	Construction	2-Stroke Tampers/Rammers	MOVES	0.0000	0.0015	53%	53%	population	0.0000	0.0008
2260002009	Construction	2-Stroke Plate Compactors	MOVES	0.0000	0.0001	53%	53%	population	0.0000	0.0000
2260002021	Construction	2-Stroke Paving Equipment	MOVES	0.0000	0.0001	53%	53%	population	0.0000	0.0000
2260002027	Construction	2-Stroke Signal Boards	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2260002039	Construction	2-Stroke Concrete/Industrial Saws	MOVES	0.0001	0.0037	53%	53%	population	0.0000	0.0020
2260002054	Construction	2-Stroke Crushing/Proc. Equipment	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2260003030	Industrial	2-Stroke Sweepers/Scrubbers	MOVES	0.0000	0.0001	53%	53%	population	0.0000	0.0000
2260003040	Industrial	2-Stroke Other General Industrial Equipment	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2260004015	Lawn/Garden	2-Stroke Rotary Tillers < 6 HP (Residential)	MOVES	0.0000	0.0005	53%	53%	population	0.0000	0.0003
2260004016	Lawn/Garden	2-Stroke Rotary Tillers < 6 HP (Commercial)	MOVES	0.0001	0.0015	53%	53%	population	0.0000	0.0008
2260004020	Lawn/Garden	2-Stroke Chain Saws < 6 HP (Residential)	MOVES	0.0001	0.0045	53%	53%	population	0.0001	0.0024
2260004021	Lawn/Garden	2-Stroke Chain Saws < 6 HP (Commercial)	MOVES	0.0004	0.0173	53%	53%	population	0.0002	0.0092
2260004025	Lawn/Garden	2-Stroke Trimmers/Edgers/Brush Cutters (Res.)	MOVES	0.0004	0.0098	53%	53%	population	0.0002	0.0052
2260004026	Lawn/Garden	2-Stroke Trimmers/Edgers/Brush Cutters (Com.)	MOVES	0.0007	0.0173	53%	53%	population	0.0004	0.0092
2260004030	Lawn/Garden	2-Stroke Leafblowers/Vacuums (Residential)	MOVES	0.0002	0.0063	53%	53%	population	0.0001	0.0033
2260004031	Lawn/Garden	2-Stroke Leafblowers/Vacuums (Commercial)	MOVES	0.0006	0.0173	53%	53%	population	0.0003	0.0092
2260004035	Lawn/Garden	2-Stroke Snowblowers (Residential)	MOVES	0.0000	0.0007	53%	53%	population	0.0000	0.0004
2260004036	Lawn/Garden	2-Stroke Snowblowers (Commercial)	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2260004071	Lawn/Garden	2-Stroke Commercial Turf Equipment	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2260005035	Agriculture	2-Stroke Sprayers	MOVES	0.0000	0.0002	58%	58%	land area	0.0000	0.0001
2260006005	Commercial	2-Stroke Light Commercial Generator Set	MOVES	0.0000	0.0002	53%	53%	population	0.0000	0.0001
2260006010	Commercial	2-Stroke Light Commercial Pumps	MOVES	0.0001	0.0015	53%	53%	population	0.0000	0.0008
2260006015	Commercial	2-Stroke Light Commercial Air Compressors	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2260006035	Commercial	2-Stroke Hydro Power Units	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2260007005	Logging	2-Stroke Logging Equipment Chain Saws > 6 HP	MOVES	0.0000	0.0004	58%	58%	land area	0.0000	0.0002
2265001010	Recreational	4-Stroke Motorcycles: Off-Road	MOVES	0.0015	0.0115	58%	58%	land area	0.0009	0.0067
2265001030	Recreational	4-Stroke All Terrain Vehicles	MOVES	0.0120	0.1193	58%	58%	land area	0.0069	0.0692
2265001050	Recreational	4-Stroke Golf Carts	MOVES	0.0065	0.0203	58%	58%	land area	0.0038	0.0118
2265001060	Recreational	4-Stroke Specialty Vehicle Carts	MOVES	0.0015	0.0052	58%	58%	land area	0.0009	0.0030
2265002003	Construction	4-Stroke Asphalt Pavers	MOVES	0.0000	0.0001	53%	53%	population	0.0000	0.0000
2265002006	Construction	4-Stroke Tampers/Rammers	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000

SCC	Segment Description	SCC Description	Emis-sions from	Door Co. 2014 Emissions		% in NAA		Allocate by	Door-Revised NAA 2014 Emissions	
				NOx	VOC	NOx	VOC		NOx	VOC
2265002009	Construction	4-Stroke Plate Compactors	MOVES	0.0001	0.0002	53%	53%	population	0.0000	0.0001
2265002015	Construction	4-Stroke Rollers	MOVES	0.0001	0.0001	53%	53%	population	0.0000	0.0001
2265002021	Construction	4-Stroke Paving Equipment	MOVES	0.0001	0.0004	53%	53%	population	0.0001	0.0002
2265002024	Construction	4-Stroke Surfacing Equipment	MOVES	0.0000	0.0001	53%	53%	population	0.0000	0.0001
2265002027	Construction	4-Stroke Signal Boards	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2265002030	Construction	4-Stroke Trenchers	MOVES	0.0001	0.0003	53%	53%	population	0.0001	0.0001
2265002033	Construction	4-Stroke Bore/Drill Rigs	MOVES	0.0001	0.0001	53%	53%	population	0.0000	0.0001
2265002039	Construction	4-Stroke Concrete/Industrial Saws	MOVES	0.0002	0.0005	53%	53%	population	0.0001	0.0003
2265002042	Construction	4-Stroke Cement & Mortar Mixers	MOVES	0.0001	0.0006	53%	53%	population	0.0001	0.0003
2265002045	Construction	4-Stroke Cranes	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2265002054	Construction	4-Stroke Crushing/Proc. Equipment	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2265002057	Construction	4-Stroke Rough Terrain Forklifts	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2265002060	Construction	4-Stroke Rubber Tire Loaders	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2265002066	Construction	4-Stroke Tractors/Loaders/Backhoes	MOVES	0.0001	0.0002	53%	53%	population	0.0000	0.0001
2265002072	Construction	4-Stroke Skid Steer Loaders	MOVES	0.0001	0.0001	53%	53%	population	0.0001	0.0001
2265002078	Construction	4-Stroke Dumpers/Tenders	MOVES	0.0000	0.0001	53%	53%	population	0.0000	0.0000
2265002081	Construction	4-Stroke Other Construction Equipment	MOVES	0.0001	0.0000	53%	53%	population	0.0000	0.0000
2265003010	Industrial	4-Stroke Aerial Lifts	MOVES	0.0006	0.0007	53%	53%	population	0.0003	0.0004
2265003020	Industrial	4-Stroke Forklifts	MOVES	0.0012	0.0007	53%	53%	population	0.0006	0.0004
2265003030	Industrial	4-Stroke Sweepers/Scrubbers	MOVES	0.0002	0.0003	53%	53%	population	0.0001	0.0002
2265003040	Industrial	4-Stroke Other General Industrial Equipment	MOVES	0.0004	0.0012	53%	53%	population	0.0002	0.0006
2265003050	Industrial	4-Stroke Other Material Handling Equipment	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2265003060	Industrial	4-Stroke Industrial AC/Refrigeration	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2265003070	Industrial	4-Stroke Terminal Tractors	MOVES	0.0001	0.0000	53%	53%	population	0.0000	0.0000
2265004010	Lawn/Garden	4-Stroke Lawn mowers (Residential)	MOVES	0.0035	0.0330	53%	53%	population	0.0019	0.0175
2265004011	Lawn/Garden	4-Stroke Lawn mowers (Commercial)	MOVES	0.0016	0.0097	53%	53%	population	0.0008	0.0051
2265004015	Lawn/Garden	4-Stroke Rotary Tillers < 6 HP (Residential)	MOVES	0.0003	0.0029	53%	53%	population	0.0002	0.0015
2265004016	Lawn/Garden	4-Stroke Rotary Tillers < 6 HP (Commercial)	MOVES	0.0010	0.0073	53%	53%	population	0.0005	0.0039
2265004025	Lawn/Garden	4-Stroke Trimmers/Edgers/Brush Cutters (Res.)	MOVES	0.0000	0.0002	53%	53%	population	0.0000	0.0001
2265004026	Lawn/Garden	4-Stroke Trimmers/Edgers/Brush Cutters (Com.)	MOVES	0.0000	0.0003	53%	53%	population	0.0000	0.0001
2265004030	Lawn/Garden	4-Stroke Leafblowers/Vacuums (Residential)	MOVES	0.0000	0.0003	53%	53%	population	0.0000	0.0002
2265004031	Lawn/Garden	4-Stroke Leafblowers/Vacuums (Commercial)	MOVES	0.0020	0.0061	53%	53%	population	0.0011	0.0032
2265004035	Lawn/Garden	4-Stroke Snowblowers (Residential)	MOVES	0.0000	0.0014	53%	53%	population	0.0000	0.0008
2265004036	Lawn/Garden	4-Stroke Snowblowers (Commercial)	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2265004040	Lawn/Garden	4-Stroke Rear Engine Riding Mowers (Res.)	MOVES	0.0008	0.0040	53%	53%	population	0.0004	0.0021
2265004041	Lawn/Garden	4-Stroke Rear Engine Riding Mowers (Comm.)	MOVES	0.0002	0.0006	53%	53%	population	0.0001	0.0003
2265004046	Lawn/Garden	4-Stroke Front Mowers (Commercial)	MOVES	0.0003	0.0010	53%	53%	population	0.0002	0.0005
2265004051	Lawn/Garden	4-Stroke Shredders < 6 HP (Commercial)	MOVES	0.0001	0.0009	53%	53%	population	0.0001	0.0005
2265004055	Lawn/Garden	4-Stroke Lawn & Garden Tractors (Residential)	MOVES	0.0105	0.0411	53%	53%	population	0.0055	0.0218

SCC	Segment Description	SCC Description	Emis-sions from	Door Co. 2014 Emissions		% in NAA		Allocate by	Door-Revised NAA 2014 Emissions	
				NOx	VOC	NOx	VOC		NOx	VOC
2265004056	Lawn/Garden	4-Stroke Lawn & Garden Tractors (Commercial)	MOVES	0.0027	0.0079	53%	53%	population	0.0014	0.0042
2265004066	Lawn/Garden	4-Stroke Chippers/Stump Grinders (Comm.)	MOVES	0.0005	0.0009	53%	53%	population	0.0003	0.0005
2265004071	Lawn/Garden	4-Stroke Commercial Turf Equipment (Comm.)	MOVES	0.0082	0.0235	53%	53%	population	0.0044	0.0125
2265004075	Lawn/Garden	4-Stroke Other Lawn & Garden Equip. (Res.)	MOVES	0.0004	0.0023	53%	53%	population	0.0002	0.0012
2265004076	Lawn/Garden	4-Stroke Other Lawn & Garden Equip. (Com.)	MOVES	0.0004	0.0020	53%	53%	population	0.0002	0.0011
2265005010	Agriculture	4-Stroke 2-Wheel Tractors	MOVES	0.0000	0.0000	58%	58%	land area	0.0000	0.0000
2265005015	Agriculture	4-Stroke Agricultural Tractors	MOVES	0.0001	0.0001	58%	58%	land area	0.0001	0.0000
2265005020	Agriculture	4-Stroke Combines	MOVES	0.0000	0.0000	58%	58%	land area	0.0000	0.0000
2265005025	Agriculture	4-Stroke Balers	MOVES	0.0005	0.0004	58%	58%	land area	0.0003	0.0003
2265005030	Agriculture	4-Stroke Agricultural Mowers	MOVES	0.0000	0.0001	58%	58%	land area	0.0000	0.0000
2265005035	Agriculture	4-Stroke Sprayers	MOVES	0.0006	0.0010	58%	58%	land area	0.0003	0.0006
2265005040	Agriculture	4-Stroke Tillers > 5 HP	MOVES	0.0009	0.0038	58%	58%	land area	0.0005	0.0022
2265005045	Agriculture	4-Stroke Swathers	MOVES	0.0007	0.0006	58%	58%	land area	0.0004	0.0003
2265005055	Agriculture	4-Stroke Other Agricultural Equipment	MOVES	0.0008	0.0006	58%	58%	land area	0.0005	0.0004
2265005060	Agriculture	4-Stroke Irrigation Sets	MOVES	0.0001	0.0001	58%	58%	land area	0.0001	0.0000
2265006005	Commercial	4-Stroke Light Commercial Generator Set	MOVES	0.0018	0.0078	53%	53%	population	0.0009	0.0041
2265006010	Commercial	4-Stroke Light Commercial Pumps	MOVES	0.0004	0.0013	53%	53%	population	0.0002	0.0007
2265006015	Commercial	4-Stroke Light Commercial Air Compressors	MOVES	0.0002	0.0005	53%	53%	population	0.0001	0.0003
2265006025	Commercial	4-Stroke Light Commercial Welders	MOVES	0.0004	0.0012	53%	53%	population	0.0002	0.0006
2265006030	Commercial	4-Stroke Light Commercial Pressure Wash	MOVES	0.0007	0.0029	53%	53%	population	0.0004	0.0015
2265006035	Commercial	4-Stroke Hydro Power Units	MOVES	0.0000	0.0001	53%	53%	population	0.0000	0.0000
2265007010	Logging	4-Stroke Logging Equipment Shredders > 6 HP	MOVES	0.0000	0.0001	58%	58%	land area	0.0000	0.0001
2265007015	Logging	4-Stroke Logging Equipment Skidders	MOVES	0.0000	0.0000	58%	58%	land area	0.0000	0.0000
2265008005	Airport	4-Stroke Airport Ground Support Equipment	EPA	0.0000	0.0000	100%	100%	airport location	0.0000	0.0000
2267001060	Recreational	LPG Specialty Vehicle Carts	MOVES	0.0003	0.0001	58%	58%	land area	0.0002	0.0000
2267002003	Construction	LPG Asphalt Pavers	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267002015	Construction	LPG Rollers	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267002021	Construction	LPG Paving Equipment	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267002024	Construction	LPG Surfacing Equipment	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267002030	Construction	LPG Trenchers	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267002033	Construction	LPG Bore/Drill Rigs	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267002039	Construction	LPG Concrete/Industrial Saws	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267002045	Construction	LPG Cranes	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267002054	Construction	LPG Crushing/Proc. Equipment	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267002057	Construction	LPG Rough Terrain Forklifts	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267002060	Construction	LPG Rubber Tire Loaders	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267002066	Construction	LPG Tractors/Loaders/Backhoes	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267002072	Construction	LPG Skid Steer Loaders	MOVES	0.0001	0.0000	53%	53%	population	0.0001	0.0000
2267002081	Construction	LPG Other Construction Equipment	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000

SCC	Segment Description	SCC Description	Emis-sions from	Door Co. 2014 Emissions		% in NAA		Allocate by	Door-Revised NAA 2014 Emissions	
				NOx	VOC	NOx	VOC		NOx	VOC
2267003010	Industrial	LPG Aerial Lifts	MOVES	0.0006	0.0001	53%	53%	population	0.0003	0.0001
2267003020	Industrial	LPG Forklifts	MOVES	0.0188	0.0036	53%	53%	population	0.0100	0.0019
2267003030	Industrial	LPG Sweepers/Scrubbers	MOVES	0.0001	0.0000	53%	53%	population	0.0001	0.0000
2267003040	Industrial	LPG Other General Industrial Equipment	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267003050	Industrial	LPG Other Material Handling Equipment	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267003070	Industrial	LPG Terminal Tractors	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267004066	Lawn/Garden	LPG Chippers/Stump Grinders (Commercial)	MOVES	0.0002	0.0000	53%	53%	population	0.0001	0.0000
2267005055	Agriculture	LPG Other Agricultural Equipment	MOVES	0.0000	0.0000	58%	58%	land area	0.0000	0.0000
2267005060	Agriculture	LPG Irrigation Sets	MOVES	0.0000	0.0000	58%	58%	land area	0.0000	0.0000
2267006005	Commercial	LPG Light Commercial Generator Sets	MOVES	0.0008	0.0001	53%	53%	population	0.0004	0.0001
2267006010	Commercial	LPG Light Commercial Pumps	MOVES	0.0001	0.0000	53%	53%	population	0.0001	0.0000
2267006015	Commercial	LPG Light Commercial Air Compressors	MOVES	0.0001	0.0000	53%	53%	population	0.0000	0.0000
2267006025	Commercial	LPG Light Commercial Welders	MOVES	0.0001	0.0000	53%	53%	population	0.0001	0.0000
2267006030	Commercial	LPG Light Commercial Pressure Washers	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267006035	Commercial	LPG Hydro Power Units	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267008005	Airport	LPG Airport Ground Support Equipment	EPA	0.0000	0.0000	100%	100%	airport location	0.0000	0.0000
2268002081	Construction	CNG Other Construction Equipment	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2268003020	Industrial	CNG Forklifts	MOVES	0.0015	0.0010	53%	53%	population	0.0008	0.0005
2268003030	Industrial	CNG Sweepers/Scrubbers	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2268003040	Industrial	CNG Other General Industrial Equipment	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2268003060	Industrial	CNG AC/Refrigeration	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2268003070	Industrial	CNG Terminal Tractors	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2268005055	Agriculture	CNG Other Agricultural Equipment	MOVES	0.0000	0.0000	58%	58%	land area	0.0000	0.0000
2268005060	Agriculture	CNG Irrigation Sets	MOVES	0.0002	0.0001	58%	58%	land area	0.0001	0.0000
2268006005	Commercial	CNG Light Commercial Generator Sets	MOVES	0.0003	0.0002	53%	53%	population	0.0002	0.0001
2268006010	Commercial	CNG Light Commercial Pumps	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2268006015	Commercial	CNG Light Commercial Air Compressors	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2268006020	Commercial	CNG Light Commercial Gas Compressors	MOVES	0.0001	0.0001	53%	53%	population	0.0001	0.0000
2268008005	Airport	CNG Airport Ground Support Equipment	EPA	0.0000	0.0000	100%	100%	airport location	0.0000	0.0000
2270001060	Recreational	Diesel Specialty Vehicle Carts	MOVES	0.0038	0.0010	58%	58%	land area	0.0022	0.0006
2270002003	Construction	Diesel Pavers	MOVES	0.0017	0.0001	53%	53%	population	0.0009	0.0001
2270002006	Construction	Diesel Tampers/Rammers (unused)	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2270002009	Construction	Diesel Plate Compactors	MOVES	0.0001	0.0000	53%	53%	population	0.0000	0.0000
2270002015	Construction	Diesel Rollers	MOVES	0.0048	0.0004	53%	53%	population	0.0025	0.0002
2270002018	Construction	Diesel Scrapers	MOVES	0.0051	0.0003	53%	53%	population	0.0027	0.0001
2270002021	Construction	Diesel Paving Equipment	MOVES	0.0003	0.0000	53%	53%	population	0.0002	0.0000
2270002024	Construction	Diesel Surfacing Equipment	MOVES	0.0003	0.0000	53%	53%	population	0.0001	0.0000
2270002027	Construction	Diesel Signal Boards	MOVES	0.0007	0.0001	53%	53%	population	0.0004	0.0000
2270002030	Construction	Diesel Trenchers	MOVES	0.0028	0.0003	53%	53%	population	0.0015	0.0001

SCC	Segment Description	SCC Description	Emis-sions from	Door Co. 2014 Emissions		% in NAA		Allocate by	Door-Revised NAA 2014 Emissions	
				NOx	VOC	NOx	VOC		NOx	VOC
2270002033	Construction	Diesel Bore/Drill Rigs	MOVES	0.0036	0.0003	53%	53%	population	0.0019	0.0001
2270002036	Construction	Diesel Excavators	MOVES	0.0143	0.0008	53%	53%	population	0.0076	0.0004
2270002039	Construction	Diesel Concrete/Industrial Saws	MOVES	0.0002	0.0000	53%	53%	population	0.0001	0.0000
2270002042	Construction	Diesel Cement & Mortar Mixers	MOVES	0.0001	0.0000	53%	53%	population	0.0001	0.0000
2270002045	Construction	Diesel Cranes	MOVES	0.0051	0.0003	53%	53%	population	0.0027	0.0002
2270002048	Construction	Diesel Graders	MOVES	0.0034	0.0002	53%	53%	population	0.0018	0.0001
2270002051	Construction	Diesel Off-highway Trucks	MOVES	0.0140	0.0007	53%	53%	population	0.0074	0.0004
2270002054	Construction	Diesel Crushing/Proc. Equipment	MOVES	0.0010	0.0001	53%	53%	population	0.0005	0.0000
2270002057	Construction	Diesel Rough Terrain Forklifts	MOVES	0.0070	0.0006	53%	53%	population	0.0037	0.0003
2270002060	Construction	Diesel Rubber Tire Loaders	MOVES	0.0239	0.0015	53%	53%	population	0.0127	0.0008
2270002066	Construction	Diesel Tractors/Loaders/Backhoes	MOVES	0.0192	0.0038	53%	53%	population	0.0102	0.0020
2270002069	Construction	Diesel Crawler Tractors	MOVES	0.0183	0.0010	53%	53%	population	0.0097	0.0005
2270002072	Construction	Diesel Skid Steer Loaders	MOVES	0.0136	0.0035	53%	53%	population	0.0072	0.0018
2270002075	Construction	Diesel Off-Highway Tractors	MOVES	0.0028	0.0002	53%	53%	population	0.0015	0.0001
2270002078	Construction	Diesel Dumpers/Tenders	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2270002081	Construction	Diesel Other Construction Equipment	MOVES	0.0028	0.0002	53%	53%	population	0.0015	0.0001
2270003010	Industrial	Diesel Aerial Lifts	MOVES	0.0010	0.0003	53%	53%	population	0.0005	0.0001
2270003020	Industrial	Diesel Forklifts	MOVES	0.0075	0.0004	53%	53%	population	0.0040	0.0002
2270003030	Industrial	Diesel Sweepers/Scrubbers	MOVES	0.0039	0.0003	53%	53%	population	0.0021	0.0001
2270003040	Industrial	Diesel Other General Industrial Equipment	MOVES	0.0047	0.0004	53%	53%	population	0.0025	0.0002
2270003050	Industrial	Diesel Other Material Handling Equipment	MOVES	0.0003	0.0000	53%	53%	population	0.0001	0.0000
2270003060	Industrial	Diesel AC/Refrigeration	MOVES	0.0082	0.0007	53%	53%	population	0.0044	0.0004
2270003070	Industrial	Diesel Terminal Tractors	MOVES	0.0043	0.0003	53%	53%	population	0.0023	0.0001
2270004031	Lawn/Garden	Diesel Leafblowers/Vacuums (Commercial)	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2270004036	Lawn/Garden	Diesel Snowblowers (Commercial)	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2270004046	Lawn/Garden	Diesel Front Mowers (Commercial)	MOVES	0.0047	0.0006	53%	53%	population	0.0025	0.0003
2270004056	Lawn/Garden	Diesel Lawn & Garden Tractors (Commercial)	MOVES	0.0009	0.0001	53%	53%	population	0.0005	0.0001
2270004066	Lawn/Garden	Diesel Chippers/Stump Grinders (Commercial)	MOVES	0.0074	0.0007	53%	53%	population	0.0039	0.0003
2270004071	Lawn/Garden	Diesel Commercial Turf Equipment (Comm.)	MOVES	0.0006	0.0001	53%	53%	population	0.0003	0.0000
2270004076	Lawn/Garden	Diesel Other Lawn & Garden Equipment	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2270005010	Agriculture	Diesel 2-Wheel Tractors	MOVES	0.0000	0.0000	58%	58%	land area	0.0000	0.0000
2270005015	Agriculture	Diesel Agricultural Tractors	MOVES	0.1596	0.0136	58%	58%	land area	0.0926	0.0079
2270005020	Agriculture	Diesel Combines	MOVES	0.0205	0.0017	58%	58%	land area	0.0119	0.0010
2270005025	Agriculture	Diesel Balers	MOVES	0.0001	0.0000	58%	58%	land area	0.0001	0.0000
2270005030	Agriculture	Diesel Agricultural Mowers	MOVES	0.0000	0.0000	58%	58%	land area	0.0000	0.0000
2270005035	Agriculture	Diesel Sprayers	MOVES	0.0016	0.0002	58%	58%	land area	0.0010	0.0001
2270005040	Agriculture	Diesel Tillers > 6 HP	MOVES	0.0000	0.0000	58%	58%	land area	0.0000	0.0000
2270005045	Agriculture	Diesel Swathers	MOVES	0.0014	0.0002	58%	58%	land area	0.0008	0.0001
2270005055	Agriculture	Diesel Other Agricultural Equipment	MOVES	0.0039	0.0004	58%	58%	land area	0.0022	0.0002

SCC	Segment Description	SCC Description	Emis-sions from	Door Co. 2014 Emissions		% in NAA		Allocate by	Door-Revised NAA 2014 Emissions	
				NOx	VOC	NOx	VOC		NOx	VOC
2270005060	Agriculture	Diesel Irrigation Sets	MOVES	0.0017	0.0001	58%	58%	land area	0.0010	0.0001
2270006005	Commercial	Diesel Light Commercial Generator Sets	MOVES	0.0047	0.0005	53%	53%	population	0.0025	0.0003
2270006010	Commercial	Diesel Light Commercial Pumps	MOVES	0.0011	0.0001	53%	53%	population	0.0006	0.0001
2270006015	Commercial	Diesel Light Commercial Air Compressors	MOVES	0.0024	0.0002	53%	53%	population	0.0013	0.0001
2270006025	Commercial	Diesel Light Commercial Welders	MOVES	0.0014	0.0004	53%	53%	population	0.0008	0.0002
2270006030	Commercial	Diesel Light Commercial Pressure Washer	MOVES	0.0002	0.0000	53%	53%	population	0.0001	0.0000
2270006035	Commercial	Diesel Hydro Power Units	MOVES	0.0001	0.0000	53%	53%	population	0.0001	0.0000
2270007015	Logging	Diesel Logging Equip Fell/Bunch/Skidders	MOVES	0.0014	0.0001	58%	58%	land area	0.0008	0.0000
2270008005	Airport	Diesel Airport Ground Support Equipment	EPA	0.0000	0.0000	100%	100%	airport location	0.0000	0.0000
2275001000	Airport	Military Aircraft	EPA	0.0054	0.0026	9%	9%	airport location	0.0005	0.0002
2275050011	Airport	General Aviation Aircraft, Piston Driven	EPA	0.0016	0.0038	32%	32%	airport location	0.0005	0.0012
2275050012	Airport	General Aviation Aircraft, Turbine Driven	EPA	0.0032	0.0067	32%	32%	airport location	0.0010	0.0022
2275060011	Airport	Taxi Aircraft, Piston Driven	EPA	0.0001	0.0001	11%	11%	airport location	0.0000	0.0000
2275060012	Airport	Taxi Aircraft, Turbine Driven	EPA	0.0012	0.0016	11%	12%	airport location	0.0001	0.0002
2275070000	Airport	Aircraft Auxiliary Power Units	EPA	0.0000	0.0000	#DIV/0	#DIV/0	airport location	0.0000	0.0000
2280002101	Comm. Mar.	CM Vessels, Diesel, Port, Cat. C1&C2, Main Eng.	EPA	0.0069	0.0009	50%	50%	port location	0.0034	0.0005
2280002102	Comm. Mar.	CM Vessels, Diesel, Port, Cat. C1&C2, Aux. Eng.	EPA	0.1497	0.0044	50%	50%	port location	0.0749	0.0022
2280002201	Comm. Mar.	CM Vessels, Diesel, Underway, C1&C2, Main Eng.	EPA	0.4021	0.0232	88%	93%	grid cell location	0.3541	0.0215
2280002202	Comm. Mar.	CM Vessels, Diesel, Underway, C1&C2, Aux. Eng.	EPA	0.8528	0.0251	98%	98%	grid cell location	0.8338	0.0246
2280002203	Comm. Mar.	CM Vessels, Diesel, Underway, C3, Main Eng.	EPA	0.0933	0.0070	88%	93%	grid cell location	0.0820	0.0065
2280002204	Comm. Mar.	CM Vessels, Diesel, Underway, C3, Aux. Eng.	EPA	0.0629	0.0020	97%	97%	grid cell location	0.0612	0.0020
2282005010	Pleasure Craft	2-Stroke Outboards	MOVES	0.2383	2.1602	81%	81%	water area	0.1930	1.7497
2282005015	Pleasure Craft	2-Stroke Personal Watercraft	MOVES	0.1012	0.4663	77%	77%	water area	0.0779	0.3590
2282010005	Pleasure Craft	4-Stroke Inboards	MOVES	0.9907	0.8747	77%	77%	water area	0.7628	0.6735
2282020005	Pleasure Craft	Diesel Inboards	MOVES	0.7785	0.0355	77%	77%	water area	0.5994	0.0274
2282020010	Pleasure Craft	Diesel Outboards	MOVES	0.0006	0.0001	81%	81%	water area	0.0005	0.0001
228500200x	Railroad	All Diesel Locomotives	EPA	0.0000	0.0000	0%	0%	rail links	0.0000	0.0000
2285002015	Railway Maint.	Diesel Railway Maintenance	MOVES	0.0000	0.0000	0%	0%	rail links	0.0000	0.0000
2285004015	Railway Maint.	4-Stroke Gasoline Railway Maintenance	MOVES	0.0000	0.0000	0%	0%	rail links	0.0000	0.0000
2285006015	Railway Maint.	LPG Railway Maintenance	MOVES	0.0000	0.0000	0%	0%	rail links	0.0000	0.0000
ALL (Total)	**ALL (Total)**	**ALL (Total)**		**4.1771**	**4.5140**	79.4%	74.9%		**3.3155**	**3.3790**
22xx005xxx	Agriculture	All	MOVES	0.1928	0.0232	58.0%	58.0%	land area	0.1118	0.0134
22750xxxxx	Airport	All	EPA	0.0115	0.0148	18.9%	25.7%	airport location	0.0022	0.0038
22xx006xxx	Commercial	All	MOVES	0.0152	0.0173	53.0%	53.0%	population	0.0081	0.0092
2280002xxx	Comm. Mar	All	EPA	1.5677	0.0627	89.9%	91.3%	grid cell & port loc.	1.4095	0.0573
22xx002xxx	Construction	All	MOVES	0.1467	0.0225	53.0%	53.0%	population	0.0778	0.0119
22xx003xxx	Industrial	All	MOVES	0.0534	0.0102	53.0%	53.0%	population	0.0283	0.0054

SCC	Segment Description	SCC Description	Emis-sions from	Door Co. 2014 Emissions		% in NAA		Allocate by	Door-Revised NAA 2014 Emissions	
				NOx	VOC	NOx	VOC		NOx	VOC
22xx004xxx	Lawn/Garden	All	MOVES	0.0490	0.2221	53.0%	53.0%	population	0.0260	0.1177
22xx007xxx	Logging	All	MOVES	0.0014	0.0006	58.0%	58.0%	land area	0.0008	0.0003
22820xxxxx	Pleasure Craft	All	MOVES	2.1092	3.5368	77.5%	79.4%	water area	1.6337	2.8097
228500200x	Railroad	All	EPA	0.0000	0.0000	#DIV/0	#DIV/0	rail links	0.0000	0.0000
228500x015	Railway Maint.	All	MOVES	0.0000	0.0000	#DIV/0	#DIV/0	rail links	0.0000	0.0000
22xx001xxx	Recreational	All	MOVES	0.0302	0.6039	58.0%	58.0%	land area	0.0175	0.3502
ALL (Total)	**ALL (Total)**	**ALL (Total)**		**4.1771**	**4.5140**	79.4%	74.9%		**3.3155**	**3.3790**

Table A6.2. 2019 Nonroad NOx and VOC Emissions: tons per ozone season day (tposd) for Door County and the Door County-Revised 2015 ozone NAAQS nonattainment area

SCC	Segment Description	SCC Description	Emis-sions from	Door Co. 2019 Emissions		% in NAA		Allocate by	Door-Revised NAA 2019 Emissions	
				NOx	VOC	NOx	VOC		NOx	VOC
2260001010	Recreational	2-Stroke Motorcycles: Off-Road	MOVES	0.0025	0.2122	58%	58%	land area	0.0015	0.1231
2260001020	Recreational	2-Stroke Snowmobiles	MOVES	0.0000	0.0545	58%	58%	land area	0.0000	0.0316
2260001030	Recreational	2-Stroke All Terrain Vehicles	MOVES	0.0013	0.0411	58%	58%	land area	0.0007	0.0238
2260001060	Recreational	2-Stroke Specialty Vehicle Carts	MOVES	0.0008	0.0037	58%	58%	land area	0.0005	0.0022
2260002006	Construction	2-Stroke Tampers/Rammers	MOVES	0.0000	0.0018	53%	53%	population	0.0000	0.0010
2260002009	Construction	2-Stroke Plate Compactors	MOVES	0.0000	0.0001	53%	53%	population	0.0000	0.0000
2260002021	Construction	2-Stroke Paving Equipment	MOVES	0.0000	0.0001	53%	53%	population	0.0000	0.0000
2260002027	Construction	2-Stroke Signal Boards	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2260002039	Construction	2-Stroke Concrete/Industrial Saws	MOVES	0.0001	0.0045	53%	53%	population	0.0001	0.0024
2260002054	Construction	2-Stroke Crushing/Proc. Equipment	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2260003030	Industrial	2-Stroke Sweepers/Scrubbers	MOVES	0.0000	0.0001	53%	53%	population	0.0000	0.0000
2260003040	Industrial	2-Stroke Other General Industrial Equipment	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2260004015	Lawn/Garden	2-Stroke Rotary Tillers < 6 HP (Residential)	MOVES	0.0000	0.0005	53%	53%	population	0.0000	0.0002
2260004016	Lawn/Garden	2-Stroke Rotary Tillers < 6 HP (Commercial)	MOVES	0.0001	0.0015	53%	53%	population	0.0000	0.0008
2260004020	Lawn/Garden	2-Stroke Chain Saws < 6 HP (Residential)	MOVES	0.0001	0.0045	53%	53%	population	0.0001	0.0024
2260004021	Lawn/Garden	2-Stroke Chain Saws < 6 HP (Commercial)	MOVES	0.0004	0.0172	53%	53%	population	0.0002	0.0091
2260004025	Lawn/Garden	2-Stroke Trimmers/Edgers/Brush Cutters (Res.)	MOVES	0.0004	0.0093	53%	53%	population	0.0002	0.0049
2260004026	Lawn/Garden	2-Stroke Trimmers/Edgers/Brush Cutters (Com.)	MOVES	0.0007	0.0173	53%	53%	population	0.0004	0.0092
2260004030	Lawn/Garden	2-Stroke Leafblowers/Vacuums (Residential)	MOVES	0.0002	0.0060	53%	53%	population	0.0001	0.0032
2260004031	Lawn/Garden	2-Stroke Leafblowers/Vacuums (Commercial)	MOVES	0.0006	0.0173	53%	53%	population	0.0003	0.0092
2260004035	Lawn/Garden	2-Stroke Snowblowers (Residential)	MOVES	0.0000	0.0004	53%	53%	population	0.0000	0.0002
2260004036	Lawn/Garden	2-Stroke Snowblowers (Commercial)	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2260004071	Lawn/Garden	2-Stroke Commercial Turf Equipment	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2260005035	Agriculture	2-Stroke Sprayers	MOVES	0.0000	0.0002	58%	58%	land area	0.0000	0.0001
2260006005	Commercial	2-Stroke Light Commercial Generator Set	MOVES	0.0000	0.0002	53%	53%	population	0.0000	0.0001
2260006010	Commercial	2-Stroke Light Commercial Pumps	MOVES	0.0001	0.0016	53%	53%	population	0.0000	0.0009
2260006015	Commercial	2-Stroke Light Commercial Air Compressors	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2260006035	Commercial	2-Stroke Hydro Power Units	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2260007005	Logging	2-Stroke Logging Equipment Chain Saws > 6 HP	MOVES	0.0000	0.0003	58%	58%	land area	0.0000	0.0002
2265001010	Recreational	4-Stroke Motorcycles: Off-Road	MOVES	0.0015	0.0102	58%	58%	land area	0.0008	0.0059
2265001030	Recreational	4-Stroke All Terrain Vehicles	MOVES	0.0104	0.1057	58%	58%	land area	0.0060	0.0613
2265001050	Recreational	4-Stroke Golf Carts	MOVES	0.0060	0.0196	58%	58%	land area	0.0035	0.0114
2265001060	Recreational	4-Stroke Specialty Vehicle Carts	MOVES	0.0012	0.0040	58%	58%	land area	0.0007	0.0023
2265002003	Construction	4-Stroke Asphalt Pavers	MOVES	0.0000	0.0001	53%	53%	population	0.0000	0.0000
2265002006	Construction	4-Stroke Tampers/Rammers	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000

SCC	Segment Description	SCC Description	Emis-sions from	Door Co. 2019 Emissions		% in NAA		Allocate by	Door-Revised NAA 2019 Emissions	
				NOx	VOC	NOx	VOC		NOx	VOC
2265002009	Construction	4-Stroke Plate Compactors	MOVES	0.0001	0.0002	53%	53%	population	0.0000	0.0001
2265002015	Construction	4-Stroke Rollers	MOVES	0.0001	0.0002	53%	53%	population	0.0000	0.0001
2265002021	Construction	4-Stroke Paving Equipment	MOVES	0.0001	0.0004	53%	53%	population	0.0001	0.0002
2265002024	Construction	4-Stroke Surfacing Equipment	MOVES	0.0000	0.0002	53%	53%	population	0.0000	0.0001
2265002027	Construction	4-Stroke Signal Boards	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2265002030	Construction	4-Stroke Trenchers	MOVES	0.0001	0.0003	53%	53%	population	0.0001	0.0001
2265002033	Construction	4-Stroke Bore/Drill Rigs	MOVES	0.0001	0.0001	53%	53%	population	0.0000	0.0001
2265002039	Construction	4-Stroke Concrete/Industrial Saws	MOVES	0.0002	0.0006	53%	53%	population	0.0001	0.0003
2265002042	Construction	4-Stroke Cement & Mortar Mixers	MOVES	0.0001	0.0005	53%	53%	population	0.0001	0.0003
2265002045	Construction	4-Stroke Cranes	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2265002054	Construction	4-Stroke Crushing/Proc. Equipment	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2265002057	Construction	4-Stroke Rough Terrain Forklifts	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2265002060	Construction	4-Stroke Rubber Tire Loaders	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2265002066	Construction	4-Stroke Tractors/Loaders/Backhoes	MOVES	0.0001	0.0002	53%	53%	population	0.0000	0.0001
2265002072	Construction	4-Stroke Skid Steer Loaders	MOVES	0.0001	0.0001	53%	53%	population	0.0000	0.0001
2265002078	Construction	4-Stroke Dumpers/Tenders	MOVES	0.0000	0.0001	53%	53%	population	0.0000	0.0000
2265002081	Construction	4-Stroke Other Construction Equipment	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2265003010	Industrial	4-Stroke Aerial Lifts	MOVES	0.0004	0.0005	53%	53%	population	0.0002	0.0003
2265003020	Industrial	4-Stroke Forklifts	MOVES	0.0008	0.0005	53%	53%	population	0.0004	0.0003
2265003030	Industrial	4-Stroke Sweepers/Scrubbers	MOVES	0.0002	0.0004	53%	53%	population	0.0001	0.0002
2265003040	Industrial	4-Stroke Other General Industrial Equipment	MOVES	0.0004	0.0014	53%	53%	population	0.0002	0.0007
2265003050	Industrial	4-Stroke Other Material Handling Equipment	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2265003060	Industrial	4-Stroke Industrial AC/Refrigeration	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2265003070	Industrial	4-Stroke Terminal Tractors	MOVES	0.0001	0.0000	53%	53%	population	0.0000	0.0000
2265004010	Lawn/Garden	4-Stroke Lawn mowers (Residential)	MOVES	0.0026	0.0210	53%	53%	population	0.0014	0.0111
2265004011	Lawn/Garden	4-Stroke Lawn mowers (Commercial)	MOVES	0.0015	0.0090	53%	53%	population	0.0008	0.0048
2265004015	Lawn/Garden	4-Stroke Rotary Tillers < 6 HP (Residential)	MOVES	0.0002	0.0019	53%	53%	population	0.0001	0.0010
2265004016	Lawn/Garden	4-Stroke Rotary Tillers < 6 HP (Commercial)	MOVES	0.0008	0.0053	53%	53%	population	0.0004	0.0028
2265004025	Lawn/Garden	4-Stroke Trimmers/Edgers/Brush Cutters (Res.)	MOVES	0.0000	0.0001	53%	53%	population	0.0000	0.0001
2265004026	Lawn/Garden	4-Stroke Trimmers/Edgers/Brush Cutters (Com.)	MOVES	0.0000	0.0002	53%	53%	population	0.0000	0.0001
2265004030	Lawn/Garden	4-Stroke Leafblowers/Vacuums (Residential)	MOVES	0.0000	0.0002	53%	53%	population	0.0000	0.0001
2265004031	Lawn/Garden	4-Stroke Leafblowers/Vacuums (Commercial)	MOVES	0.0015	0.0057	53%	53%	population	0.0008	0.0030
2265004035	Lawn/Garden	4-Stroke Snowblowers (Residential)	MOVES	0.0000	0.0010	53%	53%	population	0.0000	0.0005
2265004036	Lawn/Garden	4-Stroke Snowblowers (Commercial)	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2265004040	Lawn/Garden	4-Stroke Rear Engine Riding Mowers (Res.)	MOVES	0.0005	0.0031	53%	53%	population	0.0003	0.0016
2265004041	Lawn/Garden	4-Stroke Rear Engine Riding Mowers (Comm.)	MOVES	0.0002	0.0006	53%	53%	population	0.0001	0.0003
2265004046	Lawn/Garden	4-Stroke Front Mowers (Commercial)	MOVES	0.0002	0.0008	53%	53%	population	0.0001	0.0004
2265004051	Lawn/Garden	4-Stroke Shredders < 6 HP (Commercial)	MOVES	0.0001	0.0006	53%	53%	population	0.0000	0.0003
2265004055	Lawn/Garden	4-Stroke Lawn & Garden Tractors (Residential)	MOVES	0.0071	0.0322	53%	53%	population	0.0038	0.0171

SCC	Segment Description	SCC Description	Emis-sions from	Door Co. 2019 Emissions		% in NAA		Allocate by	Door-Revised NAA 2019 Emissions	
				NOx	VOC	NOx	VOC		NOx	VOC
2265004056	Lawn/Garden	4-Stroke Lawn & Garden Tractors (Commercial)	MOVES	0.0023	0.0073	53%	53%	population	0.0012	0.0039
2265004066	Lawn/Garden	4-Stroke Chippers/Stump Grinders (Comm.)	MOVES	0.0004	0.0008	53%	53%	population	0.0002	0.0004
2265004071	Lawn/Garden	4-Stroke Commercial Turf Equipment (Comm.)	MOVES	0.0074	0.0216	53%	53%	population	0.0039	0.0115
2265004075	Lawn/Garden	4-Stroke Other Lawn & Garden Equip. (Res.)	MOVES	0.0003	0.0015	53%	53%	population	0.0002	0.0008
2265004076	Lawn/Garden	4-Stroke Other Lawn & Garden Equip. (Com.)	MOVES	0.0003	0.0014	53%	53%	population	0.0001	0.0007
2265005010	Agriculture	4-Stroke 2-Wheel Tractors	MOVES	0.0000	0.0000	58%	58%	land area	0.0000	0.0000
2265005015	Agriculture	4-Stroke Agricultural Tractors	MOVES	0.0001	0.0001	58%	58%	land area	0.0000	0.0000
2265005020	Agriculture	4-Stroke Combines	MOVES	0.0000	0.0000	58%	58%	land area	0.0000	0.0000
2265005025	Agriculture	4-Stroke Balers	MOVES	0.0004	0.0003	58%	58%	land area	0.0002	0.0002
2265005030	Agriculture	4-Stroke Agricultural Mowers	MOVES	0.0000	0.0000	58%	58%	land area	0.0000	0.0000
2265005035	Agriculture	4-Stroke Sprayers	MOVES	0.0004	0.0007	58%	58%	land area	0.0003	0.0004
2265005040	Agriculture	4-Stroke Tillers > 5 HP	MOVES	0.0008	0.0029	58%	58%	land area	0.0004	0.0017
2265005045	Agriculture	4-Stroke Swathers	MOVES	0.0006	0.0005	58%	58%	land area	0.0003	0.0003
2265005055	Agriculture	4-Stroke Other Agricultural Equipment	MOVES	0.0006	0.0005	58%	58%	land area	0.0004	0.0003
2265005060	Agriculture	4-Stroke Irrigation Sets	MOVES	0.0001	0.0001	58%	58%	land area	0.0000	0.0000
2265006005	Commercial	4-Stroke Light Commercial Generator Set	MOVES	0.0014	0.0066	53%	53%	population	0.0008	0.0035
2265006010	Commercial	4-Stroke Light Commercial Pumps	MOVES	0.0004	0.0014	53%	53%	population	0.0002	0.0007
2265006015	Commercial	4-Stroke Light Commercial Air Compressors	MOVES	0.0002	0.0006	53%	53%	population	0.0001	0.0003
2265006025	Commercial	4-Stroke Light Commercial Welders	MOVES	0.0004	0.0013	53%	53%	population	0.0002	0.0007
2265006030	Commercial	4-Stroke Light Commercial Pressure Wash	MOVES	0.0006	0.0027	53%	53%	population	0.0003	0.0014
2265006035	Commercial	4-Stroke Hydro Power Units	MOVES	0.0000	0.0001	53%	53%	population	0.0000	0.0001
2265007010	Logging	4-Stroke Logging Equipment Shredders > 6 HP	MOVES	0.0000	0.0001	58%	58%	land area	0.0000	0.0001
2265007015	Logging	4-Stroke Logging Equipment Skidders	MOVES	0.0000	0.0000	58%	58%	land area	0.0000	0.0000
2265008005	Airport	4-Stroke Airport Ground Support Equipment	EPA	0.0000	0.0000	100%	100%	airport location	0.0000	0.0000
2267001060	Recreational	LPG Specialty Vehicle Carts	MOVES	0.0002	0.0001	58%	58%	land area	0.0001	0.0000
2267002003	Construction	LPG Asphalt Pavers	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267002015	Construction	LPG Rollers	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267002021	Construction	LPG Paving Equipment	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267002024	Construction	LPG Surfacing Equipment	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267002030	Construction	LPG Trenchers	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267002033	Construction	LPG Bore/Drill Rigs	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267002039	Construction	LPG Concrete/Industrial Saws	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267002045	Construction	LPG Cranes	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267002054	Construction	LPG Crushing/Proc. Equipment	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267002057	Construction	LPG Rough Terrain Forklifts	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267002060	Construction	LPG Rubber Tire Loaders	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267002066	Construction	LPG Tractors/Loaders/Backhoes	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267002072	Construction	LPG Skid Steer Loaders	MOVES	0.0001	0.0000	53%	53%	population	0.0000	0.0000
2267002081	Construction	LPG Other Construction Equipment	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000

SCC	Segment Description	SCC Description	Emis-sions from	Door Co. 2019 Emissions		% in NAA		Allocate by	Door-Revised NAA 2019 Emissions	
				NOx	VOC	NOx	VOC		NOx	VOC
2267003010	Industrial	LPG Aerial Lifts	MOVES	0.0003	0.0001	53%	53%	population	0.0002	0.0000
2267003020	Industrial	LPG Forklifts	MOVES	0.0121	0.0016	53%	53%	population	0.0064	0.0008
2267003030	Industrial	LPG Sweepers/Scrubbers	MOVES	0.0001	0.0000	53%	53%	population	0.0000	0.0000
2267003040	Industrial	LPG Other General Industrial Equipment	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267003050	Industrial	LPG Other Material Handling Equipment	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267003070	Industrial	LPG Terminal Tractors	MOVES	0.0001	0.0000	53%	53%	population	0.0000	0.0000
2267004066	Lawn/Garden	LPG Chippers/Stump Grinders (Commercial)	MOVES	0.0001	0.0000	53%	53%	population	0.0001	0.0000
2267005055	Agriculture	LPG Other Agricultural Equipment	MOVES	0.0000	0.0000	58%	58%	land area	0.0000	0.0000
2267005060	Agriculture	LPG Irrigation Sets	MOVES	0.0000	0.0000	58%	58%	land area	0.0000	0.0000
2267006005	Commercial	LPG Light Commercial Generator Sets	MOVES	0.0006	0.0001	53%	53%	population	0.0003	0.0001
2267006010	Commercial	LPG Light Commercial Pumps	MOVES	0.0001	0.0000	53%	53%	population	0.0000	0.0000
2267006015	Commercial	LPG Light Commercial Air Compressors	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267006025	Commercial	LPG Light Commercial Welders	MOVES	0.0001	0.0000	53%	53%	population	0.0000	0.0000
2267006030	Commercial	LPG Light Commercial Pressure Washers	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267006035	Commercial	LPG Hydro Power Units	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267008005	Airport	LPG Airport Ground Support Equipment	EPA	0.0000	0.0000	#DIV/0	#DIV/0	airport location	0.0000	0.0000
2268002081	Construction	CNG Other Construction Equipment	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2268003020	Industrial	CNG Forklifts	MOVES	0.0010	0.0005	53%	53%	population	0.0005	0.0002
2268003030	Industrial	CNG Sweepers/Scrubbers	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2268003040	Industrial	CNG Other General Industrial Equipment	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2268003060	Industrial	CNG AC/Refrigeration	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2268003070	Industrial	CNG Terminal Tractors	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2268005055	Agriculture	CNG Other Agricultural Equipment	MOVES	0.0000	0.0000	58%	58%	land area	0.0000	0.0000
2268005060	Agriculture	CNG Irrigation Sets	MOVES	0.0001	0.0001	58%	58%	land area	0.0001	0.0000
2268006005	Commercial	CNG Light Commercial Generator Sets	MOVES	0.0002	0.0001	53%	53%	population	0.0001	0.0001
2268006010	Commercial	CNG Light Commercial Pumps	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2268006015	Commercial	CNG Light Commercial Air Compressors	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2268006020	Commercial	CNG Light Commercial Gas Compressors	MOVES	0.0001	0.0001	53%	53%	population	0.0001	0.0000
2268008005	Airport	CNG Airport Ground Support Equipment	EPA	0.0000	0.0000	#DIV/0	#DIV/0	airport location	0.0000	0.0000
2270001060	Recreational	Diesel Specialty Vehicle Carts	MOVES	0.0030	0.0007	58%	58%	land area	0.0017	0.0004
2270002003	Construction	Diesel Pavers	MOVES	0.0011	0.0001	53%	53%	population	0.0006	0.0000
2270002006	Construction	Diesel Tampers/Rammers (unused)	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2270002009	Construction	Diesel Plate Compactors	MOVES	0.0001	0.0000	53%	53%	population	0.0000	0.0000
2270002015	Construction	Diesel Rollers	MOVES	0.0031	0.0002	53%	53%	population	0.0016	0.0001
2270002018	Construction	Diesel Scrapers	MOVES	0.0022	0.0001	53%	53%	population	0.0012	0.0001
2270002021	Construction	Diesel Paving Equipment	MOVES	0.0002	0.0000	53%	53%	population	0.0001	0.0000
2270002024	Construction	Diesel Surfacing Equipment	MOVES	0.0002	0.0000	53%	53%	population	0.0001	0.0000
2270002027	Construction	Diesel Signal Boards	MOVES	0.0007	0.0001	53%	53%	population	0.0004	0.0000
2270002030	Construction	Diesel Trenchers	MOVES	0.0021	0.0001	53%	53%	population	0.0011	0.0001

SCC	Segment Description	SCC Description	Emis-sions from	Door Co. 2019 Emissions		% in NAA		Allocate by	Door-Revised NAA 2019 Emissions	
				NOx	VOC	NOx	VOC		NOx	VOC
2270002033	Construction	Diesel Bore/Drill Rigs	MOVES	0.0029	0.0002	53%	53%	population	0.0015	0.0001
2270002036	Construction	Diesel Excavators	MOVES	0.0078	0.0004	53%	53%	population	0.0041	0.0002
2270002039	Construction	Diesel Concrete/Industrial Saws	MOVES	0.0001	0.0000	53%	53%	population	0.0001	0.0000
2270002042	Construction	Diesel Cement & Mortar Mixers	MOVES	0.0001	0.0000	53%	53%	population	0.0001	0.0000
2270002045	Construction	Diesel Cranes	MOVES	0.0028	0.0001	53%	53%	population	0.0015	0.0001
2270002048	Construction	Diesel Graders	MOVES	0.0018	0.0001	53%	53%	population	0.0010	0.0000
2270002051	Construction	Diesel Off-highway Trucks	MOVES	0.0115	0.0004	53%	53%	population	0.0061	0.0002
2270002054	Construction	Diesel Crushing/Proc. Equipment	MOVES	0.0007	0.0000	53%	53%	population	0.0003	0.0000
2270002057	Construction	Diesel Rough Terrain Forklifts	MOVES	0.0043	0.0002	53%	53%	population	0.0023	0.0001
2270002060	Construction	Diesel Rubber Tire Loaders	MOVES	0.0139	0.0007	53%	53%	population	0.0074	0.0004
2270002066	Construction	Diesel Tractors/Loaders/Backhoes	MOVES	0.0150	0.0027	53%	53%	population	0.0080	0.0014
2270002069	Construction	Diesel Crawler Tractors	MOVES	0.0101	0.0005	53%	53%	population	0.0054	0.0002
2270002072	Construction	Diesel Skid Steer Loaders	MOVES	0.0122	0.0025	53%	53%	population	0.0064	0.0013
2270002075	Construction	Diesel Off-Highway Tractors	MOVES	0.0017	0.0001	53%	53%	population	0.0009	0.0000
2270002078	Construction	Diesel Dumpers/Tenders	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2270002081	Construction	Diesel Other Construction Equipment	MOVES	0.0019	0.0001	53%	53%	population	0.0010	0.0001
2270003010	Industrial	Diesel Aerial Lifts	MOVES	0.0009	0.0002	53%	53%	population	0.0005	0.0001
2270003020	Industrial	Diesel Forklifts	MOVES	0.0046	0.0001	53%	53%	population	0.0024	0.0001
2270003030	Industrial	Diesel Sweepers/Scrubbers	MOVES	0.0023	0.0001	53%	53%	population	0.0012	0.0001
2270003040	Industrial	Diesel Other General Industrial Equipment	MOVES	0.0029	0.0002	53%	53%	population	0.0015	0.0001
2270003050	Industrial	Diesel Other Material Handling Equipment	MOVES	0.0002	0.0000	53%	53%	population	0.0001	0.0000
2270003060	Industrial	Diesel AC/Refrigeration	MOVES	0.0076	0.0004	53%	53%	population	0.0040	0.0002
2270003070	Industrial	Diesel Terminal Tractors	MOVES	0.0018	0.0001	53%	53%	population	0.0010	0.0000
2270004031	Lawn/Garden	Diesel Leafblowers/Vacuums (Commercial)	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2270004036	Lawn/Garden	Diesel Snowblowers (Commercial)	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2270004046	Lawn/Garden	Diesel Front Mowers (Commercial)	MOVES	0.0040	0.0004	53%	53%	population	0.0021	0.0002
2270004056	Lawn/Garden	Diesel Lawn & Garden Tractors (Commercial)	MOVES	0.0008	0.0001	53%	53%	population	0.0004	0.0000
2270004066	Lawn/Garden	Diesel Chippers/Stump Grinders (Commercial)	MOVES	0.0059	0.0005	53%	53%	population	0.0031	0.0003
2270004071	Lawn/Garden	Diesel Commercial Turf Equipment (Comm.)	MOVES	0.0004	0.0000	53%	53%	population	0.0002	0.0000
2270004076	Lawn/Garden	Diesel Other Lawn & Garden Equipment	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2270005010	Agriculture	Diesel 2-Wheel Tractors	MOVES	0.0000	0.0000	58%	58%	land area	0.0000	0.0000
2270005015	Agriculture	Diesel Agricultural Tractors	MOVES	0.0918	0.0068	58%	58%	land area	0.0532	0.0039
2270005020	Agriculture	Diesel Combines	MOVES	0.0152	0.0012	58%	58%	land area	0.0088	0.0007
2270005025	Agriculture	Diesel Balers	MOVES	0.0001	0.0000	58%	58%	land area	0.0000	0.0000
2270005030	Agriculture	Diesel Agricultural Mowers	MOVES	0.0000	0.0000	58%	58%	land area	0.0000	0.0000
2270005035	Agriculture	Diesel Sprayers	MOVES	0.0012	0.0001	58%	58%	land area	0.0007	0.0001
2270005040	Agriculture	Diesel Tillers > 6 HP	MOVES	0.0000	0.0000	58%	58%	land area	0.0000	0.0000
2270005045	Agriculture	Diesel Swathers	MOVES	0.0011	0.0001	58%	58%	land area	0.0006	0.0001
2270005055	Agriculture	Diesel Other Agricultural Equipment	MOVES	0.0026	0.0002	58%	58%	land area	0.0015	0.0001

SCC	Segment Description	SCC Description	Emis-sions from	Door Co. 2019 Emissions		% in NAA		Allocate by	Door-Revised NAA 2019 Emissions	
				NOx	VOC	NOx	VOC		NOx	VOC
2270005060	Agriculture	Diesel Irrigation Sets	MOVES	0.0009	0.0001	58%	58%	land area	0.0005	0.0000
2270006005	Commercial	Diesel Light Commercial Generator Sets	MOVES	0.0040	0.0004	53%	53%	population	0.0021	0.0002
2270006010	Commercial	Diesel Light Commercial Pumps	MOVES	0.0009	0.0001	53%	53%	population	0.0005	0.0000
2270006015	Commercial	Diesel Light Commercial Air Compressors	MOVES	0.0017	0.0001	53%	53%	population	0.0009	0.0001
2270006025	Commercial	Diesel Light Commercial Welders	MOVES	0.0013	0.0003	53%	53%	population	0.0007	0.0001
2270006030	Commercial	Diesel Light Commercial Pressure Washer	MOVES	0.0001	0.0000	53%	53%	population	0.0001	0.0000
2270006035	Commercial	Diesel Hydro Power Units	MOVES	0.0001	0.0000	53%	53%	population	0.0000	0.0000
2270007015	Logging	Diesel Logging Equip Fell/Bunch/Skidders	MOVES	0.0005	0.0000	58%	58%	land area	0.0003	0.0000
2270008005	Airport	Diesel Airport Ground Support Equipment	EPA	0.0000	0.0000	100%	100%	airport location	0.0000	0.0000
2275001000	Airport	Military Aircraft	EPA	0.0054	0.0026	9%	9%	airport location	0.0005	0.0002
2275050011	Airport	General Aviation Aircraft, Piston Driven	EPA	0.0016	0.0038	32%	32%	airport location	0.0005	0.0012
2275050012	Airport	General Aviation Aircraft, Turbine Driven	EPA	0.0032	0.0067	32%	32%	airport location	0.0010	0.0022
2275060011	Airport	Taxi Aircraft, Piston Driven	EPA	0.0001	0.0001	11%	11%	airport location	0.0000	0.0000
2275060012	Airport	Taxi Aircraft, Turbine Driven	EPA	0.0012	0.0016	11%	11%	airport location	0.0001	0.0002
2275070000	Airport	Aircraft Auxiliary Power Units	EPA	0.0000	0.0000	100%	100%	airport location	0.0000	0.0000
2280002101	Comm. Mar.	CM Vessels, Diesel, Port, Cat. C1&C2, Main Eng.	EPA	0.0061	0.0008	50%	50%	port location	0.0030	0.0004
2280002102	Comm. Mar.	CM Vessels, Diesel, Port, Cat. C1&C2, Aux. Eng.	EPA	0.1330	0.0039	50%	50%	port location	0.0665	0.0019
2280002201	Comm. Mar.	CM Vessels, Diesel, Underway, C1&C2, Main Eng.	EPA	0.3572	0.0205	88%	93%	grid cell location	0.3146	0.0190
2280002202	Comm. Mar.	CM Vessels, Diesel, Underway, C1&C2, Aux. Eng.	EPA	0.7577	0.0222	98%	98%	grid cell location	0.7408	0.0217
2280002203	Comm. Mar.	CM Vessels, Diesel, Underway, C3, Main Eng.	EPA	0.1013	0.0079	88%	93%	grid cell location	0.0890	0.0073
2280002204	Comm. Mar.	CM Vessels, Diesel, Underway, C3, Aux. Eng.	EPA	0.0682	0.0023	97%	97%	grid cell location	0.0665	0.0022
2282005010	Pleasure Craft	2-Stroke Outboards	MOVES	0.2645	1.3170	81%	81%	water area	0.2142	1.0667
2282005015	Pleasure Craft	2-Stroke Personal Watercraft	MOVES	0.1218	0.2144	77%	77%	water area	0.0938	0.1651
2282010005	Pleasure Craft	4-Stroke Inboards	MOVES	0.8058	0.7329	77%	77%	water area	0.6205	0.5644
2282020005	Pleasure Craft	Diesel Inboards	MOVES	0.7714	0.0420	77%	77%	water area	0.5940	0.0324
2282020010	Pleasure Craft	Diesel Outboards	MOVES	0.0005	0.0001	81%	81%	water area	0.0004	0.0001
228500200x	Railroad	All Diesel Locomotives	EPA	0.0000	0.0000	0%	0%	rail links	0.0000	0.0000
2285002015	Railway Maint.	Diesel Railway Maintenance	MOVES	0.0000	0.0000	0%	0%	rail links	0.0000	0.0000
2285004015	Railway Maint.	4-Stroke Gasoline Railway Maintenance	MOVES	0.0000	0.0000	0%	0%	rail links	0.0000	0.0000
2285006015	Railway Maint.	LPG Railway Maintenance	MOVES	0.0000	0.0000	0%	0%	rail links	0.0000	0.0000
ALL (Total)	**ALL (Total)**	**ALL (Total)**		**3.7278**	**3.0742**	80.1%	74.1%		**2.9869**	**2.2769**
22xx005xxx	Agriculture	All	MOVES	0.1160	0.0139	58.0%	58.0%	land area	0.0673	0.0081
22750xxxxx	Airport	All	EPA	0.0115	0.0148	18.9%	25.7%	airport location	0.0022	0.0038
22xx006xxx	Commercial	All	MOVES	0.0123	0.0157	53.0%	53.0%	population	0.0065	0.0083
2280002xxx	Comm. Mar	All	EPA	1.4236	0.0575	89.9%	91.4%	grid cell & port loc.	1.2805	0.0526
22xx002xxx	Construction	All	MOVES	0.0978	0.0182	53.0%	53.0%	population	0.0519	0.0097
22xx003xxx	Industrial	All	MOVES	0.0358	0.0062	53.0%	53.0%	population	0.0190	0.0033

SCC	Segment Description	SCC Description	Emis-sions from	Door Co. 2019 Emissions		% in NAA		Allocate by	Door-Revised NAA 2019 Emissions	
				NOx	VOC	NOx	VOC		NOx	VOC
22xx004xxx	Lawn/Garden	All	MOVES	0.0392	0.1894	53.0%	53.0%	population	0.0208	0.1004
22xx007xxx	Logging	All	MOVES	0.0006	0.0005	58.0%	58.0%	land area	0.0003	0.0003
22820xxxxx	Pleasure Craft	All	MOVES	1.9640	2.3064	77.5%	79.3%	water area	1.5229	1.8286
228500200x	Railroad	All	EPA	0.0000	0.0000	#DIV/0	#DIV/0	rail links	0.0000	0.0000
228500x015	Railway Maint.	All	MOVES	0.0000	0.0000	#DIV/0	#DIV/0	rail links	0.0000	0.0000
22xx001xxx	Recreational	All	MOVES	0.0270	0.4516	58.0%	58.0%	land area	0.0156	0.2620
ALL (Total)	**ALL (Total)**	**ALL (Total)**		**3.7278**	**3.0742**	80.1%	74.1%		**2.9869**	**2.2769**

Table A6.3. 2030 Nonroad NOx and VOC Emissions: tons per ozone season day (tposd) for Door County and the Door County-Revised 2015 ozone NAAQS nonattainment area

SCC	Segment Description	SCC Description	Emis-sions from	Door Co. 2030 Emissions		% in NAA		Allocate by	Door-Revised NAA 2030 Emissions	
				NOx	VOC	NOx	VOC		NOx	VOC
2260001010	Recreational	2-Stroke Motorcycles: Off-Road	MOVES	0.0026	0.1873	58%	58%	land area	0.0015	0.1086
2260001020	Recreational	2-Stroke Snowmobiles	MOVES	0.0000	0.0429	58%	58%	land area	0.0000	0.0249
2260001030	Recreational	2-Stroke All Terrain Vehicles	MOVES	0.0013	0.0126	58%	58%	land area	0.0008	0.0073
2260001060	Recreational	2-Stroke Specialty Vehicle Carts	MOVES	0.0008	0.0035	58%	58%	land area	0.0005	0.0020
2260002006	Construction	2-Stroke Tampers/Rammers	MOVES	0.0000	0.0019	53%	53%	population	0.0000	0.0010
2260002009	Construction	2-Stroke Plate Compactors	MOVES	0.0000	0.0001	53%	53%	population	0.0000	0.0000
2260002021	Construction	2-Stroke Paving Equipment	MOVES	0.0000	0.0001	53%	53%	population	0.0000	0.0000
2260002027	Construction	2-Stroke Signal Boards	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2260002039	Construction	2-Stroke Concrete/Industrial Saws	MOVES	0.0001	0.0049	53%	53%	population	0.0001	0.0026
2260002054	Construction	2-Stroke Crushing/Proc. Equipment	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2260003030	Industrial	2-Stroke Sweepers/Scrubbers	MOVES	0.0000	0.0001	53%	53%	population	0.0000	0.0001
2260003040	Industrial	2-Stroke Other General Industrial Equipment	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2260004015	Lawn/Garden	2-Stroke Rotary Tillers < 6 HP (Residential)	MOVES	0.0000	0.0005	53%	53%	population	0.0000	0.0002
2260004016	Lawn/Garden	2-Stroke Rotary Tillers < 6 HP (Commercial)	MOVES	0.0001	0.0015	53%	53%	population	0.0000	0.0008
2260004020	Lawn/Garden	2-Stroke Chain Saws < 6 HP (Residential)	MOVES	0.0001	0.0044	53%	53%	population	0.0001	0.0023
2260004021	Lawn/Garden	2-Stroke Chain Saws < 6 HP (Commercial)	MOVES	0.0004	0.0170	53%	53%	population	0.0002	0.0090
2260004025	Lawn/Garden	2-Stroke Trimmers/Edgers/Brush Cutters (Res.)	MOVES	0.0004	0.0092	53%	53%	population	0.0002	0.0049
2260004026	Lawn/Garden	2-Stroke Trimmers/Edgers/Brush Cutters (Com.)	MOVES	0.0007	0.0171	53%	53%	population	0.0004	0.0091
2260004030	Lawn/Garden	2-Stroke Leafblowers/Vacuums (Residential)	MOVES	0.0002	0.0059	53%	53%	population	0.0001	0.0031
2260004031	Lawn/Garden	2-Stroke Leafblowers/Vacuums (Commercial)	MOVES	0.0006	0.0171	53%	53%	population	0.0003	0.0091
2260004035	Lawn/Garden	2-Stroke Snowblowers (Residential)	MOVES	0.0000	0.0004	53%	53%	population	0.0000	0.0002
2260004036	Lawn/Garden	2-Stroke Snowblowers (Commercial)	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2260004071	Lawn/Garden	2-Stroke Commercial Turf Equipment	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2260005035	Agriculture	2-Stroke Sprayers	MOVES	0.0000	0.0002	58%	58%	land area	0.0000	0.0001
2260006005	Commercial	2-Stroke Light Commercial Generator Set	MOVES	0.0000	0.0003	53%	53%	population	0.0000	0.0001
2260006010	Commercial	2-Stroke Light Commercial Pumps	MOVES	0.0001	0.0019	53%	53%	population	0.0000	0.0010
2260006015	Commercial	2-Stroke Light Commercial Air Compressors	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2260006035	Commercial	2-Stroke Hydro Power Units	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2260007005	Logging	2-Stroke Logging Equipment Chain Saws > 6 HP	MOVES	0.0000	0.0003	58%	58%	land area	0.0000	0.0002
2265001010	Recreational	4-Stroke Motorcycles: Off-Road	MOVES	0.0014	0.0095	58%	58%	land area	0.0008	0.0055
2265001030	Recreational	4-Stroke All Terrain Vehicles	MOVES	0.0096	0.0982	58%	58%	land area	0.0056	0.0570
2265001050	Recreational	4-Stroke Golf Carts	MOVES	0.0060	0.0194	58%	58%	land area	0.0035	0.0112
2265001060	Recreational	4-Stroke Specialty Vehicle Carts	MOVES	0.0007	0.0024	58%	58%	land area	0.0004	0.0014
2265002003	Construction	4-Stroke Asphalt Pavers	MOVES	0.0000	0.0001	53%	53%	population	0.0000	0.0000
2265002006	Construction	4-Stroke Tampers/Rammers	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000

SCC	Segment Description	SCC Description	Emis-sions from	Door Co. 2030 Emissions		% in NAA		Allocate by	Door-Revised NAA 2030 Emissions	
				NOx	VOC	NOx	VOC		NOx	VOC
2265002009	Construction	4-Stroke Plate Compactors	MOVES	0.0001	0.0002	53%	53%	population	0.0000	0.0001
2265002015	Construction	4-Stroke Rollers	MOVES	0.0001	0.0002	53%	53%	population	0.0000	0.0001
2265002021	Construction	4-Stroke Paving Equipment	MOVES	0.0001	0.0004	53%	53%	population	0.0001	0.0002
2265002024	Construction	4-Stroke Surfacing Equipment	MOVES	0.0000	0.0002	53%	53%	population	0.0000	0.0001
2265002027	Construction	4-Stroke Signal Boards	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2265002030	Construction	4-Stroke Trenchers	MOVES	0.0001	0.0003	53%	53%	population	0.0001	0.0002
2265002033	Construction	4-Stroke Bore/Drill Rigs	MOVES	0.0000	0.0001	53%	53%	population	0.0000	0.0001
2265002039	Construction	4-Stroke Concrete/Industrial Saws	MOVES	0.0002	0.0007	53%	53%	population	0.0001	0.0003
2265002042	Construction	4-Stroke Cement & Mortar Mixers	MOVES	0.0001	0.0005	53%	53%	population	0.0001	0.0003
2265002045	Construction	4-Stroke Cranes	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2265002054	Construction	4-Stroke Crushing/Proc. Equipment	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2265002057	Construction	4-Stroke Rough Terrain Forklifts	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2265002060	Construction	4-Stroke Rubber Tire Loaders	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2265002066	Construction	4-Stroke Tractors/Loaders/Backhoes	MOVES	0.0001	0.0002	53%	53%	population	0.0000	0.0001
2265002072	Construction	4-Stroke Skid Steer Loaders	MOVES	0.0000	0.0001	53%	53%	population	0.0000	0.0000
2265002078	Construction	4-Stroke Dumpers/Tenders	MOVES	0.0000	0.0001	53%	53%	population	0.0000	0.0000
2265002081	Construction	4-Stroke Other Construction Equipment	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2265003010	Industrial	4-Stroke Aerial Lifts	MOVES	0.0003	0.0005	53%	53%	population	0.0002	0.0003
2265003020	Industrial	4-Stroke Forklifts	MOVES	0.0011	0.0007	53%	53%	population	0.0006	0.0004
2265003030	Industrial	4-Stroke Sweepers/Scrubbers	MOVES	0.0003	0.0005	53%	53%	population	0.0001	0.0003
2265003040	Industrial	4-Stroke Other General Industrial Equipment	MOVES	0.0006	0.0020	53%	53%	population	0.0003	0.0011
2265003050	Industrial	4-Stroke Other Material Handling Equipment	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2265003060	Industrial	4-Stroke Industrial AC/Refrigeration	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2265003070	Industrial	4-Stroke Terminal Tractors	MOVES	0.0001	0.0001	53%	53%	population	0.0001	0.0000
2265004010	Lawn/Garden	4-Stroke Lawn mowers (Residential)	MOVES	0.0025	0.0196	53%	53%	population	0.0013	0.0104
2265004011	Lawn/Garden	4-Stroke Lawn mowers (Commercial)	MOVES	0.0015	0.0089	53%	53%	population	0.0008	0.0047
2265004015	Lawn/Garden	4-Stroke Rotary Tillers < 6 HP (Residential)	MOVES	0.0002	0.0018	53%	53%	population	0.0001	0.0009
2265004016	Lawn/Garden	4-Stroke Rotary Tillers < 6 HP (Commercial)	MOVES	0.0008	0.0052	53%	53%	population	0.0004	0.0028
2265004025	Lawn/Garden	4-Stroke Trimmers/Edgers/Brush Cutters (Res.)	MOVES	0.0000	0.0001	53%	53%	population	0.0000	0.0001
2265004026	Lawn/Garden	4-Stroke Trimmers/Edgers/Brush Cutters (Com.)	MOVES	0.0000	0.0002	53%	53%	population	0.0000	0.0001
2265004030	Lawn/Garden	4-Stroke Leafblowers/Vacuums (Residential)	MOVES	0.0000	0.0002	53%	53%	population	0.0000	0.0001
2265004031	Lawn/Garden	4-Stroke Leafblowers/Vacuums (Commercial)	MOVES	0.0014	0.0055	53%	53%	population	0.0007	0.0029
2265004035	Lawn/Garden	4-Stroke Snowblowers (Residential)	MOVES	0.0000	0.0010	53%	53%	population	0.0000	0.0005
2265004036	Lawn/Garden	4-Stroke Snowblowers (Commercial)	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2265004040	Lawn/Garden	4-Stroke Rear Engine Riding Mowers (Res.)	MOVES	0.0005	0.0029	53%	53%	population	0.0003	0.0016
2265004041	Lawn/Garden	4-Stroke Rear Engine Riding Mowers (Comm.)	MOVES	0.0002	0.0006	53%	53%	population	0.0001	0.0003
2265004046	Lawn/Garden	4-Stroke Front Mowers (Commercial)	MOVES	0.0002	0.0007	53%	53%	population	0.0001	0.0003
2265004051	Lawn/Garden	4-Stroke Shredders < 6 HP (Commercial)	MOVES	0.0001	0.0006	53%	53%	population	0.0000	0.0003
2265004055	Lawn/Garden	4-Stroke Lawn & Garden Tractors (Residential)	MOVES	0.0067	0.0309	53%	53%	population	0.0035	0.0164

SCC	Segment Description	SCC Description	Emis-sions from	Door Co. 2030 Emissions		% in NAA		Allocate by	Door-Revised NAA 2030 Emissions	
				NOx	VOC	NOx	VOC		NOx	VOC
2265004056	Lawn/Garden	4-Stroke Lawn & Garden Tractors (Commercial)	MOVES	0.0022	0.0072	53%	53%	population	0.0012	0.0038
2265004066	Lawn/Garden	4-Stroke Chippers/Stump Grinders (Comm.)	MOVES	0.0004	0.0008	53%	53%	population	0.0002	0.0004
2265004071	Lawn/Garden	4-Stroke Commercial Turf Equipment (Comm.)	MOVES	0.0073	0.0214	53%	53%	population	0.0039	0.0113
2265004075	Lawn/Garden	4-Stroke Other Lawn & Garden Equip. (Res.)	MOVES	0.0002	0.0013	53%	53%	population	0.0001	0.0007
2265004076	Lawn/Garden	4-Stroke Other Lawn & Garden Equip. (Com.)	MOVES	0.0002	0.0012	53%	53%	population	0.0001	0.0006
2265005010	Agriculture	4-Stroke 2-Wheel Tractors	MOVES	0.0000	0.0000	58%	58%	land area	0.0000	0.0000
2265005015	Agriculture	4-Stroke Agricultural Tractors	MOVES	0.0000	0.0001	58%	58%	land area	0.0000	0.0000
2265005020	Agriculture	4-Stroke Combines	MOVES	0.0000	0.0000	58%	58%	land area	0.0000	0.0000
2265005025	Agriculture	4-Stroke Balers	MOVES	0.0001	0.0001	58%	58%	land area	0.0001	0.0001
2265005030	Agriculture	4-Stroke Agricultural Mowers	MOVES	0.0000	0.0000	58%	58%	land area	0.0000	0.0000
2265005035	Agriculture	4-Stroke Sprayers	MOVES	0.0002	0.0004	58%	58%	land area	0.0001	0.0002
2265005040	Agriculture	4-Stroke Tillers > 5 HP	MOVES	0.0003	0.0013	58%	58%	land area	0.0002	0.0008
2265005045	Agriculture	4-Stroke Swathers	MOVES	0.0002	0.0001	58%	58%	land area	0.0001	0.0001
2265005055	Agriculture	4-Stroke Other Agricultural Equipment	MOVES	0.0002	0.0002	58%	58%	land area	0.0001	0.0001
2265005060	Agriculture	4-Stroke Irrigation Sets	MOVES	0.0001	0.0001	58%	58%	land area	0.0000	0.0000
2265006005	Commercial	4-Stroke Light Commercial Generator Set	MOVES	0.0016	0.0074	53%	53%	population	0.0008	0.0039
2265006010	Commercial	4-Stroke Light Commercial Pumps	MOVES	0.0004	0.0016	53%	53%	population	0.0002	0.0009
2265006015	Commercial	4-Stroke Light Commercial Air Compressors	MOVES	0.0002	0.0007	53%	53%	population	0.0001	0.0004
2265006025	Commercial	4-Stroke Light Commercial Welders	MOVES	0.0005	0.0015	53%	53%	population	0.0002	0.0008
2265006030	Commercial	4-Stroke Light Commercial Pressure Wash	MOVES	0.0007	0.0032	53%	53%	population	0.0004	0.0017
2265006035	Commercial	4-Stroke Hydro Power Units	MOVES	0.0000	0.0001	53%	53%	population	0.0000	0.0001
2265007010	Logging	4-Stroke Logging Equipment Shredders > 6 HP	MOVES	0.0000	0.0001	58%	58%	land area	0.0000	0.0000
2265007015	Logging	4-Stroke Logging Equipment Skidders	MOVES	0.0000	0.0000	58%	58%	land area	0.0000	0.0000
2265008005	Airport	4-Stroke Airport Ground Support Equipment	EPA	0.0000	0.0000	100%	100%	airport location	0.0000	0.0000
2267001060	Recreational	LPG Specialty Vehicle Carts	MOVES	0.0001	0.0000	58%	58%	land area	0.0001	0.0000
2267002003	Construction	LPG Asphalt Pavers	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267002015	Construction	LPG Rollers	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267002021	Construction	LPG Paving Equipment	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267002024	Construction	LPG Surfacing Equipment	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267002030	Construction	LPG Trenchers	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267002033	Construction	LPG Bore/Drill Rigs	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267002039	Construction	LPG Concrete/Industrial Saws	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267002045	Construction	LPG Cranes	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267002054	Construction	LPG Crushing/Proc. Equipment	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267002057	Construction	LPG Rough Terrain Forklifts	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267002060	Construction	LPG Rubber Tire Loaders	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267002066	Construction	LPG Tractors/Loaders/Backhoes	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267002072	Construction	LPG Skid Steer Loaders	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267002081	Construction	LPG Other Construction Equipment	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000

SCC	Segment Description	SCC Description	Emis-sions from	Door Co. 2030 Emissions		% in NAA		Allocate by	Door-Revised NAA 2030 Emissions	
				NOx	VOC	NOx	VOC		NOx	VOC
2267003010	Industrial	LPG Aerial Lifts	MOVES	0.0002	0.0000	53%	53%	population	0.0001	0.0000
2267003020	Industrial	LPG Forklifts	MOVES	0.0164	0.0019	53%	53%	population	0.0087	0.0010
2267003030	Industrial	LPG Sweepers/Scrubbers	MOVES	0.0001	0.0000	53%	53%	population	0.0001	0.0000
2267003040	Industrial	LPG Other General Industrial Equipment	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267003050	Industrial	LPG Other Material Handling Equipment	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267003070	Industrial	LPG Terminal Tractors	MOVES	0.0001	0.0000	53%	53%	population	0.0000	0.0000
2267004066	Lawn/Garden	LPG Chippers/Stump Grinders (Commercial)	MOVES	0.0001	0.0000	53%	53%	population	0.0001	0.0000
2267005055	Agriculture	LPG Other Agricultural Equipment	MOVES	0.0000	0.0000	58%	58%	land area	0.0000	0.0000
2267005060	Agriculture	LPG Irrigation Sets	MOVES	0.0000	0.0000	58%	58%	land area	0.0000	0.0000
2267006005	Commercial	LPG Light Commercial Generator Sets	MOVES	0.0003	0.0000	53%	53%	population	0.0001	0.0000
2267006010	Commercial	LPG Light Commercial Pumps	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267006015	Commercial	LPG Light Commercial Air Compressors	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267006025	Commercial	LPG Light Commercial Welders	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267006030	Commercial	LPG Light Commercial Pressure Washers	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267006035	Commercial	LPG Hydro Power Units	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267008005	Airport	LPG Airport Ground Support Equipment	EPA	0.0000	0.0000	#DIV/0	#DIV/0	airport location	0.0000	0.0000
2268002081	Construction	CNG Other Construction Equipment	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2268003020	Industrial	CNG Forklifts	MOVES	0.0013	0.0006	53%	53%	population	0.0007	0.0003
2268003030	Industrial	CNG Sweepers/Scrubbers	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2268003040	Industrial	CNG Other General Industrial Equipment	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2268003060	Industrial	CNG AC/Refrigeration	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2268003070	Industrial	CNG Terminal Tractors	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2268005055	Agriculture	CNG Other Agricultural Equipment	MOVES	0.0000	0.0000	58%	58%	land area	0.0000	0.0000
2268005060	Agriculture	CNG Irrigation Sets	MOVES	0.0001	0.0001	58%	58%	land area	0.0001	0.0000
2268006005	Commercial	CNG Light Commercial Generator Sets	MOVES	0.0001	0.0001	53%	53%	population	0.0001	0.0000
2268006010	Commercial	CNG Light Commercial Pumps	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2268006015	Commercial	CNG Light Commercial Air Compressors	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2268006020	Commercial	CNG Light Commercial Gas Compressors	MOVES	0.0001	0.0001	53%	53%	population	0.0001	0.0000
2268008005	Airport	CNG Airport Ground Support Equipment	EPA	0.0000	0.0000	#DIV/0	#DIV/0	airport location	0.0000	0.0000
2270001060	Recreational	Diesel Specialty Vehicle Carts	MOVES	0.0017	0.0003	58%	58%	land area	0.0010	0.0002
2270002003	Construction	Diesel Pavers	MOVES	0.0005	0.0000	53%	53%	population	0.0002	0.0000
2270002006	Construction	Diesel Tampers/Rammers (unused)	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2270002009	Construction	Diesel Plate Compactors	MOVES	0.0001	0.0000	53%	53%	population	0.0000	0.0000
2270002015	Construction	Diesel Rollers	MOVES	0.0015	0.0001	53%	53%	population	0.0008	0.0000
2270002018	Construction	Diesel Scrapers	MOVES	0.0004	0.0000	53%	53%	population	0.0002	0.0000
2270002021	Construction	Diesel Paving Equipment	MOVES	0.0001	0.0000	53%	53%	population	0.0001	0.0000
2270002024	Construction	Diesel Surfacing Equipment	MOVES	0.0001	0.0000	53%	53%	population	0.0000	0.0000
2270002027	Construction	Diesel Signal Boards	MOVES	0.0006	0.0001	53%	53%	population	0.0003	0.0000
2270002030	Construction	Diesel Trenchers	MOVES	0.0014	0.0000	53%	53%	population	0.0007	0.0000

SCC	Segment Description	SCC Description	Emis-sions from	Door Co. 2030 Emissions		% in NAA		Allocate by	Door-Revised NAA 2030 Emissions	
				NOx	VOC	NOx	VOC		NOx	VOC
2270002033	Construction	Diesel Bore/Drill Rigs	MOVES	0.0011	0.0001	53%	53%	population	0.0006	0.0000
2270002036	Construction	Diesel Excavators	MOVES	0.0025	0.0001	53%	53%	population	0.0013	0.0001
2270002039	Construction	Diesel Concrete/Industrial Saws	MOVES	0.0001	0.0000	53%	53%	population	0.0001	0.0000
2270002042	Construction	Diesel Cement & Mortar Mixers	MOVES	0.0001	0.0000	53%	53%	population	0.0000	0.0000
2270002045	Construction	Diesel Cranes	MOVES	0.0006	0.0000	53%	53%	population	0.0003	0.0000
2270002048	Construction	Diesel Graders	MOVES	0.0003	0.0000	53%	53%	population	0.0002	0.0000
2270002051	Construction	Diesel Off-highway Trucks	MOVES	0.0093	0.0002	53%	53%	population	0.0049	0.0001
2270002054	Construction	Diesel Crushing/Proc. Equipment	MOVES	0.0003	0.0000	53%	53%	population	0.0001	0.0000
2270002057	Construction	Diesel Rough Terrain Forklifts	MOVES	0.0020	0.0000	53%	53%	population	0.0010	0.0000
2270002060	Construction	Diesel Rubber Tire Loaders	MOVES	0.0048	0.0002	53%	53%	population	0.0025	0.0001
2270002066	Construction	Diesel Tractors/Loaders/Backhoes	MOVES	0.0057	0.0005	53%	53%	population	0.0030	0.0003
2270002069	Construction	Diesel Crawler Tractors	MOVES	0.0037	0.0001	53%	53%	population	0.0019	0.0001
2270002072	Construction	Diesel Skid Steer Loaders	MOVES	0.0075	0.0008	53%	53%	population	0.0040	0.0004
2270002075	Construction	Diesel Off-Highway Tractors	MOVES	0.0010	0.0000	53%	53%	population	0.0005	0.0000
2270002078	Construction	Diesel Dumpers/Tenders	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2270002081	Construction	Diesel Other Construction Equipment	MOVES	0.0005	0.0000	53%	53%	population	0.0003	0.0000
2270003010	Industrial	Diesel Aerial Lifts	MOVES	0.0008	0.0001	53%	53%	population	0.0004	0.0000
2270003020	Industrial	Diesel Forklifts	MOVES	0.0051	0.0001	53%	53%	population	0.0027	0.0001
2270003030	Industrial	Diesel Sweepers/Scrubbers	MOVES	0.0015	0.0000	53%	53%	population	0.0008	0.0000
2270003040	Industrial	Diesel Other General Industrial Equipment	MOVES	0.0012	0.0000	53%	53%	population	0.0007	0.0000
2270003050	Industrial	Diesel Other Material Handling Equipment	MOVES	0.0001	0.0000	53%	53%	population	0.0001	0.0000
2270003060	Industrial	Diesel AC/Refrigeration	MOVES	0.0100	0.0003	53%	53%	population	0.0053	0.0002
2270003070	Industrial	Diesel Terminal Tractors	MOVES	0.0009	0.0000	53%	53%	population	0.0005	0.0000
2270004031	Lawn/Garden	Diesel Leafblowers/Vacuums (Commercial)	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2270004036	Lawn/Garden	Diesel Snowblowers (Commercial)	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2270004046	Lawn/Garden	Diesel Front Mowers (Commercial)	MOVES	0.0031	0.0002	53%	53%	population	0.0017	0.0001
2270004056	Lawn/Garden	Diesel Lawn & Garden Tractors (Commercial)	MOVES	0.0007	0.0001	53%	53%	population	0.0004	0.0000
2270004066	Lawn/Garden	Diesel Chippers/Stump Grinders (Commercial)	MOVES	0.0026	0.0002	53%	53%	population	0.0014	0.0001
2270004071	Lawn/Garden	Diesel Commercial Turf Equipment (Comm.)	MOVES	0.0003	0.0000	53%	53%	population	0.0001	0.0000
2270004076	Lawn/Garden	Diesel Other Lawn & Garden Equipment	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2270005010	Agriculture	Diesel 2-Wheel Tractors	MOVES	0.0000	0.0000	58%	58%	land area	0.0000	0.0000
2270005015	Agriculture	Diesel Agricultural Tractors	MOVES	0.0297	0.0017	58%	58%	land area	0.0172	0.0010
2270005020	Agriculture	Diesel Combines	MOVES	0.0040	0.0003	58%	58%	land area	0.0023	0.0002
2270005025	Agriculture	Diesel Balers	MOVES	0.0000	0.0000	58%	58%	land area	0.0000	0.0000
2270005030	Agriculture	Diesel Agricultural Mowers	MOVES	0.0000	0.0000	58%	58%	land area	0.0000	0.0000
2270005035	Agriculture	Diesel Sprayers	MOVES	0.0003	0.0000	58%	58%	land area	0.0002	0.0000
2270005040	Agriculture	Diesel Tillers > 6 HP	MOVES	0.0000	0.0000	58%	58%	land area	0.0000	0.0000
2270005045	Agriculture	Diesel Swathers	MOVES	0.0004	0.0000	58%	58%	land area	0.0002	0.0000
2270005055	Agriculture	Diesel Other Agricultural Equipment	MOVES	0.0006	0.0000	58%	58%	land area	0.0004	0.0000

SCC	Segment Description	SCC Description	Emis-sions from	Door Co. 2030 Emissions		% in NAA		Allocate by	Door-Revised NAA 2030 Emissions	
				NOx	VOC	NOx	VOC		NOx	VOC
2270005060	Agriculture	Diesel Irrigation Sets	MOVES	0.0003	0.0000	58%	58%	land area	0.0002	0.0000
2270006005	Commercial	Diesel Light Commercial Generator Sets	MOVES	0.0027	0.0002	53%	53%	population	0.0014	0.0001
2270006010	Commercial	Diesel Light Commercial Pumps	MOVES	0.0006	0.0000	53%	53%	population	0.0003	0.0000
2270006015	Commercial	Diesel Light Commercial Air Compressors	MOVES	0.0010	0.0000	53%	53%	population	0.0006	0.0000
2270006025	Commercial	Diesel Light Commercial Welders	MOVES	0.0010	0.0001	53%	53%	population	0.0005	0.0001
2270006030	Commercial	Diesel Light Commercial Pressure Washer	MOVES	0.0001	0.0000	53%	53%	population	0.0000	0.0000
2270006035	Commercial	Diesel Hydro Power Units	MOVES	0.0001	0.0000	53%	53%	population	0.0000	0.0000
2270007015	Logging	Diesel Logging Equip Fell/Bunch/Skidders	MOVES	0.0001	0.0000	58%	58%	land area	0.0001	0.0000
2270008005	Airport	Diesel Airport Ground Support Equipment	EPA	0.0000	0.0000	100%	100%	airport location	0.0000	0.0000
2275001000	Airport	Military Aircraft	EPA	0.0054	0.0026	9%	9%	airport location	0.0005	0.0002
2275050011	Airport	General Aviation Aircraft, Piston Driven	EPA	0.0016	0.0038	32%	32%	airport location	0.0005	0.0012
2275050012	Airport	General Aviation Aircraft, Turbine Driven	EPA	0.0032	0.0067	32%	32%	airport location	0.0010	0.0022
2275060011	Airport	Taxi Aircraft, Piston Driven	EPA	0.0001	0.0001	11%	11%	airport location	0.0000	0.0000
2275060012	Airport	Taxi Aircraft, Turbine Driven	EPA	0.0012	0.0016	11%	11%	airport location	0.0001	0.0002
2275070000	Airport	Aircraft Auxiliary Power Units	EPA	0.0000	0.0000	100%	100%	airport location	0.0000	0.0000
2280002101	Comm. Mar.	CM Vessels, Diesel, Port, Cat. C1&C2, Main Eng.	EPA	0.0038	0.0005	50%	50%	port location	0.0019	0.0002
2280002102	Comm. Mar.	CM Vessels, Diesel, Port, Cat. C1&C2, Aux. Eng.	EPA	0.0829	0.0023	50%	50%	port location	0.0415	0.0012
2280002201	Comm. Mar.	CM Vessels, Diesel, Underway, C1&C2, Main Eng.	EPA	0.2227	0.0122	88%	93%	grid cell location	0.1962	0.0114
2280002202	Comm. Mar.	CM Vessels, Diesel, Underway, C1&C2, Aux. Eng.	EPA	0.4724	0.0133	98%	98%	grid cell location	0.4619	0.0130
2280002203	Comm. Mar.	CM Vessels, Diesel, Underway, C3, Main Eng.	EPA	0.1188	0.0098	88%	93%	grid cell location	0.1044	0.0091
2280002204	Comm. Mar.	CM Vessels, Diesel, Underway, C3, Aux. Eng.	EPA	0.0800	0.0028	97%	97%	grid cell location	0.0780	0.0028
2282005010	Pleasure Craft	2-Stroke Outboards	MOVES	0.2788	0.5678	81%	81%	water area	0.2258	0.4599
2282005015	Pleasure Craft	2-Stroke Personal Watercraft	MOVES	0.1331	0.1500	77%	77%	water area	0.1025	0.1155
2282010005	Pleasure Craft	4-Stroke Inboards	MOVES	0.3735	0.4882	77%	77%	water area	0.2876	0.3759
2282020005	Pleasure Craft	Diesel Inboards	MOVES	0.7426	0.0514	77%	77%	water area	0.5718	0.0396
2282020010	Pleasure Craft	Diesel Outboards	MOVES	0.0004	0.0001	81%	81%	water area	0.0004	0.0001
228500200x	Railroad	All Diesel Locomotives	EPA	0.0000	0.0000	0%	0%	rail links	0.0000	0.0000
2285002015	Railway Maint.	Diesel Railway Maintenance	MOVES	0.0000	0.0000	0%	0%	rail links	0.0000	0.0000
2285004015	Railway Maint.	4-Stroke Gasoline Railway Maintenance	MOVES	0.0000	0.0000	0%	0%	rail links	0.0000	0.0000
2285006015	Railway Maint.	LPG Railway Maintenance	MOVES	0.0000	0.0000	0%	0%	rail links	0.0000	0.0000
ALL (Total)	**ALL (Total)**	**ALL (Total)**		**2.7108**	**1.9155**	80.3%	71.6%		**2.1779**	**1.3707**
22xx005xxx	Agriculture	All	MOVES	0.0367	0.0047	58.0%	58.0%	land area	0.0213	0.0027
22750xxxxx	Airport	All	EPA	0.0115	0.0148	18.9%	25.7%	airport location	0.0022	0.0038
22xx006xxx	Commercial	All	MOVES	0.0096	0.0173	53.0%	53.0%	population	0.0051	0.0092
2280002xxx	Comm. Mar	All	EPA	0.9808	0.0410	90.1%	91.8%	grid cell & port loc.	0.8839	0.0376
22xx002xxx	Construction	All	MOVES	0.0453	0.0125	53.0%	53.0%	population	0.0240	0.0066
22xx003xxx	Industrial	All	MOVES	0.0403	0.0072	53.0%	53.0%	population	0.0214	0.0038

SCC	Segment Description	SCC Description	Emis-sions from	Door Co. 2030 Emissions		% in NAA		Allocate by	Door-Revised NAA 2030 Emissions	
				NOx	VOC	NOx	VOC		NOx	VOC
22xx004xxx	Lawn/Garden	All	MOVES	0.0338	0.1838	53.0%	53.0%	population	0.0179	0.0974
22xx007xxx	Logging	All	MOVES	0.0001	0.0004	58.0%	58.0%	land area	0.0001	0.0002
22820xxxxx	Pleasure Craft	All	MOVES	1.5283	1.2576	77.7%	78.8%	water area	1.1880	0.9910
228500200x	Railroad	All	EPA	0.0000	0.0000	#DIV/0	#DIV/0	rail links	0.0000	0.0000
228500x015	Railway Maint.	All	MOVES	0.0000	0.0000	#DIV/0	#DIV/0	rail links	0.0000	0.0000
22xx001xxx	Recreational	All	MOVES	0.0242	0.3762	58.0%	58.0%	land area	0.0140	0.2182
ALL (Total)	**ALL (Total)**	**ALL (Total)**		**2.7108**	**1.9155**	80.3%	71.6%		**2.1779**	**1.3707**

Table A6.4. 2035 Nonroad NOx and VOC Emissions: tons per ozone season day (tposd) for Door County and the Door County-Revised 2015 ozone NAAQS nonattainment area

SCC	Segment Description	SCC Description	Emis-sions from	Door Co. 2035 Emissions		% in NAA		Allocate by	Door-Revised NAA 2035 Emissions	
				NOx	VOC	NOx	VOC		NOx	VOC
2260001010	Recreational	2-Stroke Motorcycles: Off-Road	MOVES	0.0025	0.1844	58%	58%	land area	0.0015	0.1069
2260001020	Recreational	2-Stroke Snowmobiles	MOVES	0.0000	0.0418	58%	58%	land area	0.0000	0.0243
2260001030	Recreational	2-Stroke All Terrain Vehicles	MOVES	0.0013	0.0118	58%	58%	land area	0.0008	0.0068
2260001060	Recreational	2-Stroke Specialty Vehicle Carts	MOVES	0.0008	0.0034	58%	58%	land area	0.0004	0.0020
2260002006	Construction	2-Stroke Tampers/Rammers	MOVES	0.0000	0.0020	53%	53%	population	0.0000	0.0010
2260002009	Construction	2-Stroke Plate Compactors	MOVES	0.0000	0.0001	53%	53%	population	0.0000	0.0000
2260002021	Construction	2-Stroke Paving Equipment	MOVES	0.0000	0.0001	53%	53%	population	0.0000	0.0000
2260002027	Construction	2-Stroke Signal Boards	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2260002039	Construction	2-Stroke Concrete/Industrial Saws	MOVES	0.0001	0.0050	53%	53%	population	0.0001	0.0026
2260002054	Construction	2-Stroke Crushing/Proc. Equipment	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2260003030	Industrial	2-Stroke Sweepers/Scrubbers	MOVES	0.0000	0.0001	53%	53%	population	0.0000	0.0001
2260003040	Industrial	2-Stroke Other General Industrial Equipment	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2260004015	Lawn/Garden	2-Stroke Rotary Tillers < 6 HP (Residential)	MOVES	0.0000	0.0005	53%	53%	population	0.0000	0.0002
2260004016	Lawn/Garden	2-Stroke Rotary Tillers < 6 HP (Commercial)	MOVES	0.0001	0.0015	53%	53%	population	0.0000	0.0008
2260004020	Lawn/Garden	2-Stroke Chain Saws < 6 HP (Residential)	MOVES	0.0001	0.0044	53%	53%	population	0.0001	0.0023
2260004021	Lawn/Garden	2-Stroke Chain Saws < 6 HP (Commercial)	MOVES	0.0004	0.0167	53%	53%	population	0.0002	0.0089
2260004025	Lawn/Garden	2-Stroke Trimmers/Edgers/Brush Cutters (Res.)	MOVES	0.0004	0.0091	53%	53%	population	0.0002	0.0048
2260004026	Lawn/Garden	2-Stroke Trimmers/Edgers/Brush Cutters (Com.)	MOVES	0.0007	0.0168	53%	53%	population	0.0003	0.0089
2260004030	Lawn/Garden	2-Stroke Leafblowers/Vacuums (Residential)	MOVES	0.0002	0.0058	53%	53%	population	0.0001	0.0031
2260004031	Lawn/Garden	2-Stroke Leafblowers/Vacuums (Commercial)	MOVES	0.0006	0.0168	53%	53%	population	0.0003	0.0089
2260004035	Lawn/Garden	2-Stroke Snowblowers (Residential)	MOVES	0.0000	0.0004	53%	53%	population	0.0000	0.0002
2260004036	Lawn/Garden	2-Stroke Snowblowers (Commercial)	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2260004071	Lawn/Garden	2-Stroke Commercial Turf Equipment	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2260005035	Agriculture	2-Stroke Sprayers	MOVES	0.0000	0.0002	58%	58%	land area	0.0000	0.0001
2260006005	Commercial	2-Stroke Light Commercial Generator Set	MOVES	0.0000	0.0003	53%	53%	population	0.0000	0.0002
2260006010	Commercial	2-Stroke Light Commercial Pumps	MOVES	0.0001	0.0021	53%	53%	population	0.0000	0.0011
2260006015	Commercial	2-Stroke Light Commercial Air Compressors	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2260006035	Commercial	2-Stroke Hydro Power Units	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2260007005	Logging	2-Stroke Logging Equipment Chain Saws > 6 HP	MOVES	0.0000	0.0003	58%	58%	land area	0.0000	0.0002
2265001010	Recreational	4-Stroke Motorcycles: Off-Road	MOVES	0.0014	0.0094	58%	58%	land area	0.0008	0.0054
2265001030	Recreational	4-Stroke All Terrain Vehicles	MOVES	0.0095	0.0965	58%	58%	land area	0.0055	0.0560
2265001050	Recreational	4-Stroke Golf Carts	MOVES	0.0059	0.0191	58%	58%	land area	0.0034	0.0110
2265001060	Recreational	4-Stroke Specialty Vehicle Carts	MOVES	0.0006	0.0022	58%	58%	land area	0.0004	0.0013
2265002003	Construction	4-Stroke Asphalt Pavers	MOVES	0.0000	0.0001	53%	53%	population	0.0000	0.0000
2265002006	Construction	4-Stroke Tampers/Rammers	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000

SCC	Segment Description	SCC Description	Emis-sions from	Door Co. 2035 Emissions		% in NAA		Allocate by	Door-Revised NAA 2035 Emissions	
				NOx	VOC	NOx	VOC		NOx	VOC
2265002009	Construction	4-Stroke Plate Compactors	MOVES	0.0001	0.0002	53%	53%	population	0.0000	0.0001
2265002015	Construction	4-Stroke Rollers	MOVES	0.0001	0.0002	53%	53%	population	0.0000	0.0001
2265002021	Construction	4-Stroke Paving Equipment	MOVES	0.0001	0.0005	53%	53%	population	0.0001	0.0002
2265002024	Construction	4-Stroke Surfacing Equipment	MOVES	0.0001	0.0002	53%	53%	population	0.0000	0.0001
2265002027	Construction	4-Stroke Signal Boards	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2265002030	Construction	4-Stroke Trenchers	MOVES	0.0001	0.0003	53%	53%	population	0.0001	0.0002
2265002033	Construction	4-Stroke Bore/Drill Rigs	MOVES	0.0000	0.0001	53%	53%	population	0.0000	0.0001
2265002039	Construction	4-Stroke Concrete/Industrial Saws	MOVES	0.0002	0.0007	53%	53%	population	0.0001	0.0004
2265002042	Construction	4-Stroke Cement & Mortar Mixers	MOVES	0.0001	0.0005	53%	53%	population	0.0001	0.0003
2265002045	Construction	4-Stroke Cranes	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2265002054	Construction	4-Stroke Crushing/Proc. Equipment	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2265002057	Construction	4-Stroke Rough Terrain Forklifts	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2265002060	Construction	4-Stroke Rubber Tire Loaders	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2265002066	Construction	4-Stroke Tractors/Loaders/Backhoes	MOVES	0.0001	0.0002	53%	53%	population	0.0000	0.0001
2265002072	Construction	4-Stroke Skid Steer Loaders	MOVES	0.0000	0.0001	53%	53%	population	0.0000	0.0000
2265002078	Construction	4-Stroke Dumpers/Tenders	MOVES	0.0000	0.0001	53%	53%	population	0.0000	0.0000
2265002081	Construction	4-Stroke Other Construction Equipment	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2265003010	Industrial	4-Stroke Aerial Lifts	MOVES	0.0004	0.0006	53%	53%	population	0.0002	0.0003
2265003020	Industrial	4-Stroke Forklifts	MOVES	0.0013	0.0009	53%	53%	population	0.0007	0.0005
2265003030	Industrial	4-Stroke Sweepers/Scrubbers	MOVES	0.0003	0.0006	53%	53%	population	0.0002	0.0003
2265003040	Industrial	4-Stroke Other General Industrial Equipment	MOVES	0.0007	0.0024	53%	53%	population	0.0004	0.0013
2265003050	Industrial	4-Stroke Other Material Handling Equipment	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2265003060	Industrial	4-Stroke Industrial AC/Refrigeration	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2265003070	Industrial	4-Stroke Terminal Tractors	MOVES	0.0001	0.0001	53%	53%	population	0.0001	0.0000
2265004010	Lawn/Garden	4-Stroke Lawn mowers (Residential)	MOVES	0.0024	0.0193	53%	53%	population	0.0013	0.0102
2265004011	Lawn/Garden	4-Stroke Lawn mowers (Commercial)	MOVES	0.0015	0.0088	53%	53%	population	0.0008	0.0047
2265004015	Lawn/Garden	4-Stroke Rotary Tillers < 6 HP (Residential)	MOVES	0.0002	0.0017	53%	53%	population	0.0001	0.0009
2265004016	Lawn/Garden	4-Stroke Rotary Tillers < 6 HP (Commercial)	MOVES	0.0008	0.0052	53%	53%	population	0.0004	0.0027
2265004025	Lawn/Garden	4-Stroke Trimmers/Edgers/Brush Cutters (Res.)	MOVES	0.0000	0.0001	53%	53%	population	0.0000	0.0001
2265004026	Lawn/Garden	4-Stroke Trimmers/Edgers/Brush Cutters (Com.)	MOVES	0.0000	0.0002	53%	53%	population	0.0000	0.0001
2265004030	Lawn/Garden	4-Stroke Leafblowers/Vacuums (Residential)	MOVES	0.0000	0.0002	53%	53%	population	0.0000	0.0001
2265004031	Lawn/Garden	4-Stroke Leafblowers/Vacuums (Commercial)	MOVES	0.0013	0.0055	53%	53%	population	0.0007	0.0029
2265004035	Lawn/Garden	4-Stroke Snowblowers (Residential)	MOVES	0.0000	0.0009	53%	53%	population	0.0000	0.0005
2265004036	Lawn/Garden	4-Stroke Snowblowers (Commercial)	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2265004040	Lawn/Garden	4-Stroke Rear Engine Riding Mowers (Res.)	MOVES	0.0005	0.0029	53%	53%	population	0.0003	0.0015
2265004041	Lawn/Garden	4-Stroke Rear Engine Riding Mowers (Comm.)	MOVES	0.0002	0.0006	53%	53%	population	0.0001	0.0003
2265004046	Lawn/Garden	4-Stroke Front Mowers (Commercial)	MOVES	0.0002	0.0006	53%	53%	population	0.0001	0.0003
2265004051	Lawn/Garden	4-Stroke Shredders < 6 HP (Commercial)	MOVES	0.0001	0.0006	53%	53%	population	0.0000	0.0003
2265004055	Lawn/Garden	4-Stroke Lawn & Garden Tractors (Residential)	MOVES	0.0066	0.0305	53%	53%	population	0.0035	0.0161

SCC	Segment Description	SCC Description	Emis-sions from	Door Co. 2035 Emissions		% in NAA		Allocate by	Door-Revised NAA 2035 Emissions	
				NOx	VOC	NOx	VOC		NOx	VOC
2265004056	Lawn/Garden	4-Stroke Lawn & Garden Tractors (Commercial)	MOVES	0.0022	0.0071	53%	53%	population	0.0012	0.0038
2265004066	Lawn/Garden	4-Stroke Chippers/Stump Grinders (Comm.)	MOVES	0.0004	0.0008	53%	53%	population	0.0002	0.0004
2265004071	Lawn/Garden	4-Stroke Commercial Turf Equipment (Comm.)	MOVES	0.0072	0.0211	53%	53%	population	0.0038	0.0112
2265004075	Lawn/Garden	4-Stroke Other Lawn & Garden Equip. (Res.)	MOVES	0.0002	0.0013	53%	53%	population	0.0001	0.0007
2265004076	Lawn/Garden	4-Stroke Other Lawn & Garden Equip. (Com.)	MOVES	0.0002	0.0011	53%	53%	population	0.0001	0.0006
2265005010	Agriculture	4-Stroke 2-Wheel Tractors	MOVES	0.0000	0.0000	58%	58%	land area	0.0000	0.0000
2265005015	Agriculture	4-Stroke Agricultural Tractors	MOVES	0.0000	0.0001	58%	58%	land area	0.0000	0.0000
2265005020	Agriculture	4-Stroke Combines	MOVES	0.0000	0.0000	58%	58%	land area	0.0000	0.0000
2265005025	Agriculture	4-Stroke Balers	MOVES	0.0001	0.0001	58%	58%	land area	0.0000	0.0000
2265005030	Agriculture	4-Stroke Agricultural Mowers	MOVES	0.0000	0.0000	58%	58%	land area	0.0000	0.0000
2265005035	Agriculture	4-Stroke Sprayers	MOVES	0.0002	0.0004	58%	58%	land area	0.0001	0.0002
2265005040	Agriculture	4-Stroke Tillers > 5 HP	MOVES	0.0003	0.0011	58%	58%	land area	0.0002	0.0006
2265005045	Agriculture	4-Stroke Swathers	MOVES	0.0001	0.0001	58%	58%	land area	0.0001	0.0001
2265005055	Agriculture	4-Stroke Other Agricultural Equipment	MOVES	0.0002	0.0002	58%	58%	land area	0.0001	0.0001
2265005060	Agriculture	4-Stroke Irrigation Sets	MOVES	0.0001	0.0001	58%	58%	land area	0.0000	0.0000
2265006005	Commercial	4-Stroke Light Commercial Generator Set	MOVES	0.0017	0.0081	53%	53%	population	0.0009	0.0043
2265006010	Commercial	4-Stroke Light Commercial Pumps	MOVES	0.0004	0.0017	53%	53%	population	0.0002	0.0009
2265006015	Commercial	4-Stroke Light Commercial Air Compressors	MOVES	0.0002	0.0007	53%	53%	population	0.0001	0.0004
2265006025	Commercial	4-Stroke Light Commercial Welders	MOVES	0.0005	0.0016	53%	53%	population	0.0003	0.0009
2265006030	Commercial	4-Stroke Light Commercial Pressure Wash	MOVES	0.0008	0.0035	53%	53%	population	0.0004	0.0019
2265006035	Commercial	4-Stroke Hydro Power Units	MOVES	0.0000	0.0001	53%	53%	population	0.0000	0.0001
2265007010	Logging	4-Stroke Logging Equipment Shredders > 6 HP	MOVES	0.0000	0.0001	58%	58%	land area	0.0000	0.0000
2265007015	Logging	4-Stroke Logging Equipment Skidders	MOVES	0.0000	0.0000	58%	58%	land area	0.0000	0.0000
2265008005	Airport	4-Stroke Airport Ground Support Equipment	EPA	0.0000	0.0000	100%	100%	airport location	0.0000	0.0000
2267001060	Recreational	LPG Specialty Vehicle Carts	MOVES	0.0001	0.0000	58%	58%	land area	0.0000	0.0000
2267002003	Construction	LPG Asphalt Pavers	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267002015	Construction	LPG Rollers	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267002021	Construction	LPG Paving Equipment	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267002024	Construction	LPG Surfacing Equipment	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267002030	Construction	LPG Trenchers	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267002033	Construction	LPG Bore/Drill Rigs	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267002039	Construction	LPG Concrete/Industrial Saws	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267002045	Construction	LPG Cranes	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267002054	Construction	LPG Crushing/Proc. Equipment	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267002057	Construction	LPG Rough Terrain Forklifts	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267002060	Construction	LPG Rubber Tire Loaders	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267002066	Construction	LPG Tractors/Loaders/Backhoes	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267002072	Construction	LPG Skid Steer Loaders	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267002081	Construction	LPG Other Construction Equipment	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000

SCC	Segment Description	SCC Description	Emis-sions from	Door Co. 2035 Emissions		% in NAA		Allocate by	Door-Revised NAA 2035 Emissions	
				NOx	VOC	NOx	VOC		NOx	VOC
2267003010	Industrial	LPG Aerial Lifts	MOVES	0.0002	0.0000	53%	53%	population	0.0001	0.0000
2267003020	Industrial	LPG Forklifts	MOVES	0.0193	0.0023	53%	53%	population	0.0102	0.0012
2267003030	Industrial	LPG Sweepers/Scrubbers	MOVES	0.0001	0.0000	53%	53%	population	0.0001	0.0000
2267003040	Industrial	LPG Other General Industrial Equipment	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267003050	Industrial	LPG Other Material Handling Equipment	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267003070	Industrial	LPG Terminal Tractors	MOVES	0.0001	0.0000	53%	53%	population	0.0000	0.0000
2267004066	Lawn/Garden	LPG Chippers/Stump Grinders (Commercial)	MOVES	0.0001	0.0000	53%	53%	population	0.0001	0.0000
2267005055	Agriculture	LPG Other Agricultural Equipment	MOVES	0.0000	0.0000	58%	58%	land area	0.0000	0.0000
2267005060	Agriculture	LPG Irrigation Sets	MOVES	0.0000	0.0000	58%	58%	land area	0.0000	0.0000
2267006005	Commercial	LPG Light Commercial Generator Sets	MOVES	0.0002	0.0000	53%	53%	population	0.0001	0.0000
2267006010	Commercial	LPG Light Commercial Pumps	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267006015	Commercial	LPG Light Commercial Air Compressors	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267006025	Commercial	LPG Light Commercial Welders	MOVES	0.0001	0.0000	53%	53%	population	0.0000	0.0000
2267006030	Commercial	LPG Light Commercial Pressure Washers	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267006035	Commercial	LPG Hydro Power Units	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2267008005	Airport	LPG Airport Ground Support Equipment	EPA	0.0000	0.0000	#DIV/0	#DIV/0	airport location	0.0000	0.0000
2268002081	Construction	CNG Other Construction Equipment	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2268003020	Industrial	CNG Forklifts	MOVES	0.0016	0.0007	53%	53%	population	0.0008	0.0004
2268003030	Industrial	CNG Sweepers/Scrubbers	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2268003040	Industrial	CNG Other General Industrial Equipment	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2268003060	Industrial	CNG AC/Refrigeration	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2268003070	Industrial	CNG Terminal Tractors	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2268005055	Agriculture	CNG Other Agricultural Equipment	MOVES	0.0000	0.0000	58%	58%	land area	0.0000	0.0000
2268005060	Agriculture	CNG Irrigation Sets	MOVES	0.0001	0.0001	58%	58%	land area	0.0001	0.0000
2268006005	Commercial	CNG Light Commercial Generator Sets	MOVES	0.0001	0.0000	53%	53%	population	0.0000	0.0000
2268006010	Commercial	CNG Light Commercial Pumps	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2268006015	Commercial	CNG Light Commercial Air Compressors	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2268006020	Commercial	CNG Light Commercial Gas Compressors	MOVES	0.0002	0.0001	53%	53%	population	0.0001	0.0000
2268008005	Airport	CNG Airport Ground Support Equipment	EPA	0.0000	0.0000	#DIV/0	#DIV/0	airport location	0.0000	0.0000
2270001060	Recreational	Diesel Specialty Vehicle Carts	MOVES	0.0013	0.0002	58%	58%	land area	0.0007	0.0001
2270002003	Construction	Diesel Pavers	MOVES	0.0004	0.0000	53%	53%	population	0.0002	0.0000
2270002006	Construction	Diesel Tampers/Rammers (unused)	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2270002009	Construction	Diesel Plate Compactors	MOVES	0.0001	0.0000	53%	53%	population	0.0000	0.0000
2270002015	Construction	Diesel Rollers	MOVES	0.0014	0.0001	53%	53%	population	0.0007	0.0000
2270002018	Construction	Diesel Scrapers	MOVES	0.0003	0.0000	53%	53%	population	0.0002	0.0000
2270002021	Construction	Diesel Paving Equipment	MOVES	0.0001	0.0000	53%	53%	population	0.0000	0.0000
2270002024	Construction	Diesel Surfacing Equipment	MOVES	0.0001	0.0000	53%	53%	population	0.0000	0.0000
2270002027	Construction	Diesel Signal Boards	MOVES	0.0006	0.0001	53%	53%	population	0.0003	0.0000
2270002030	Construction	Diesel Trenchers	MOVES	0.0014	0.0000	53%	53%	population	0.0007	0.0000

SCC	Segment Description	SCC Description	Emis-sions from	Door Co. 2035 Emissions		% in NAA		Allocate by	Door-Revised NAA 2035 Emissions	
				NOx	VOC	NOx	VOC		NOx	VOC
2270002033	Construction	Diesel Bore/Drill Rigs	MOVES	0.0008	0.0000	53%	53%	population	0.0004	0.0000
2270002036	Construction	Diesel Excavators	MOVES	0.0025	0.0001	53%	53%	population	0.0013	0.0001
2270002039	Construction	Diesel Concrete/Industrial Saws	MOVES	0.0001	0.0000	53%	53%	population	0.0001	0.0000
2270002042	Construction	Diesel Cement & Mortar Mixers	MOVES	0.0001	0.0000	53%	53%	population	0.0000	0.0000
2270002045	Construction	Diesel Cranes	MOVES	0.0004	0.0000	53%	53%	population	0.0002	0.0000
2270002048	Construction	Diesel Graders	MOVES	0.0003	0.0000	53%	53%	population	0.0002	0.0000
2270002051	Construction	Diesel Off-highway Trucks	MOVES	0.0095	0.0002	53%	53%	population	0.0051	0.0001
2270002054	Construction	Diesel Crushing/Proc. Equipment	MOVES	0.0002	0.0000	53%	53%	population	0.0001	0.0000
2270002057	Construction	Diesel Rough Terrain Forklifts	MOVES	0.0018	0.0000	53%	53%	population	0.0010	0.0000
2270002060	Construction	Diesel Rubber Tire Loaders	MOVES	0.0038	0.0001	53%	53%	population	0.0020	0.0001
2270002066	Construction	Diesel Tractors/Loaders/Backhoes	MOVES	0.0044	0.0003	53%	53%	population	0.0023	0.0001
2270002069	Construction	Diesel Crawler Tractors	MOVES	0.0035	0.0001	53%	53%	population	0.0019	0.0001
2270002072	Construction	Diesel Skid Steer Loaders	MOVES	0.0067	0.0005	53%	53%	population	0.0035	0.0003
2270002075	Construction	Diesel Off-Highway Tractors	MOVES	0.0009	0.0000	53%	53%	population	0.0005	0.0000
2270002078	Construction	Diesel Dumpers/Tenders	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2270002081	Construction	Diesel Other Construction Equipment	MOVES	0.0003	0.0000	53%	53%	population	0.0002	0.0000
2270003010	Industrial	Diesel Aerial Lifts	MOVES	0.0008	0.0001	53%	53%	population	0.0004	0.0000
2270003020	Industrial	Diesel Forklifts	MOVES	0.0060	0.0001	53%	53%	population	0.0032	0.0001
2270003030	Industrial	Diesel Sweepers/Scrubbers	MOVES	0.0017	0.0001	53%	53%	population	0.0009	0.0000
2270003040	Industrial	Diesel Other General Industrial Equipment	MOVES	0.0013	0.0000	53%	53%	population	0.0007	0.0000
2270003050	Industrial	Diesel Other Material Handling Equipment	MOVES	0.0001	0.0000	53%	53%	population	0.0000	0.0000
2270003060	Industrial	Diesel AC/Refrigeration	MOVES	0.0118	0.0004	53%	53%	population	0.0063	0.0002
2270003070	Industrial	Diesel Terminal Tractors	MOVES	0.0011	0.0000	53%	53%	population	0.0006	0.0000
2270004031	Lawn/Garden	Diesel Leafblowers/Vacuums (Commercial)	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2270004036	Lawn/Garden	Diesel Snowblowers (Commercial)	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2270004046	Lawn/Garden	Diesel Front Mowers (Commercial)	MOVES	0.0030	0.0002	53%	53%	population	0.0016	0.0001
2270004056	Lawn/Garden	Diesel Lawn & Garden Tractors (Commercial)	MOVES	0.0007	0.0001	53%	53%	population	0.0004	0.0000
2270004066	Lawn/Garden	Diesel Chippers/Stump Grinders (Commercial)	MOVES	0.0018	0.0001	53%	53%	population	0.0009	0.0001
2270004071	Lawn/Garden	Diesel Commercial Turf Equipment (Comm.)	MOVES	0.0002	0.0000	53%	53%	population	0.0001	0.0000
2270004076	Lawn/Garden	Diesel Other Lawn & Garden Equipment	MOVES	0.0000	0.0000	53%	53%	population	0.0000	0.0000
2270005010	Agriculture	Diesel 2-Wheel Tractors	MOVES	0.0000	0.0000	58%	58%	land area	0.0000	0.0000
2270005015	Agriculture	Diesel Agricultural Tractors	MOVES	0.0200	0.0009	58%	58%	land area	0.0116	0.0005
2270005020	Agriculture	Diesel Combines	MOVES	0.0024	0.0002	58%	58%	land area	0.0014	0.0001
2270005025	Agriculture	Diesel Balers	MOVES	0.0000	0.0000	58%	58%	land area	0.0000	0.0000
2270005030	Agriculture	Diesel Agricultural Mowers	MOVES	0.0000	0.0000	58%	58%	land area	0.0000	0.0000
2270005035	Agriculture	Diesel Sprayers	MOVES	0.0002	0.0000	58%	58%	land area	0.0001	0.0000
2270005040	Agriculture	Diesel Tillers > 6 HP	MOVES	0.0000	0.0000	58%	58%	land area	0.0000	0.0000
2270005045	Agriculture	Diesel Swathers	MOVES	0.0003	0.0000	58%	58%	land area	0.0002	0.0000
2270005055	Agriculture	Diesel Other Agricultural Equipment	MOVES	0.0004	0.0000	58%	58%	land area	0.0002	0.0000

SCC	Segment Description	SCC Description	Emis-sions from	Door Co. 2035 Emissions		% in NAA		Allocate by	Door-Revised NAA 2035 Emissions	
				NOx	VOC	NOx	VOC		NOx	VOC
2270005060	Agriculture	Diesel Irrigation Sets	MOVES	0.0003	0.0000	58%	58%	land area	0.0001	0.0000
2270006005	Commercial	Diesel Light Commercial Generator Sets	MOVES	0.0025	0.0002	53%	53%	population	0.0013	0.0001
2270006010	Commercial	Diesel Light Commercial Pumps	MOVES	0.0006	0.0000	53%	53%	population	0.0003	0.0000
2270006015	Commercial	Diesel Light Commercial Air Compressors	MOVES	0.0011	0.0000	53%	53%	population	0.0006	0.0000
2270006025	Commercial	Diesel Light Commercial Welders	MOVES	0.0010	0.0001	53%	53%	population	0.0005	0.0000
2270006030	Commercial	Diesel Light Commercial Pressure Washer	MOVES	0.0001	0.0000	53%	53%	population	0.0000	0.0000
2270006035	Commercial	Diesel Hydro Power Units	MOVES	0.0001	0.0000	53%	53%	population	0.0000	0.0000
2270007015	Logging	Diesel Logging Equip Fell/Bunch/Skidders	MOVES	0.0001	0.0000	58%	58%	land area	0.0001	0.0000
2270008005	Airport	Diesel Airport Ground Support Equipment	EPA	0.0000	0.0000	100%	100%	airport location	0.0000	0.0000
2275001000	Airport	Military Aircraft	EPA	0.0054	0.0026	9%	9%	airport location	0.0005	0.0002
2275050011	Airport	General Aviation Aircraft, Piston Driven	EPA	0.0016	0.0038	32%	32%	airport location	0.0005	0.0012
2275050012	Airport	General Aviation Aircraft, Turbine Driven	EPA	0.0032	0.0067	32%	32%	airport location	0.0010	0.0022
2275060011	Airport	Taxi Aircraft, Piston Driven	EPA	0.0001	0.0001	11%	11%	airport location	0.0000	0.0000
2275060012	Airport	Taxi Aircraft, Turbine Driven	EPA	0.0012	0.0016	11%	11%	airport location	0.0001	0.0002
2275070000	Airport	Aircraft Auxiliary Power Units	EPA	0.0000	0.0000	100%	100%	airport location	0.0000	0.0000
2280002101	Comm. Mar.	CM Vessels, Diesel, Port, Cat. C1&C2, Main Eng.	EPA	0.0038	0.0005	50%	50%	port location	0.0019	0.0002
2280002102	Comm. Mar.	CM Vessels, Diesel, Port, Cat. C1&C2, Aux. Eng.	EPA	0.0829	0.0023	50%	50%	port location	0.0415	0.0012
2280002201	Comm. Mar.	CM Vessels, Diesel, Underway, C1&C2, Main Eng.	EPA	0.2227	0.0122	88%	93%	grid cell location	0.1962	0.0114
2280002202	Comm. Mar.	CM Vessels, Diesel, Underway, C1&C2, Aux. Eng.	EPA	0.4724	0.0133	98%	98%	grid cell location	0.4619	0.0130
2280002203	Comm. Mar.	CM Vessels, Diesel, Underway, C3, Main Eng.	EPA	0.1268	0.0107	88%	93%	grid cell location	0.1114	0.0099
2280002204	Comm. Mar.	CM Vessels, Diesel, Underway, C3, Aux. Eng.	EPA	0.0854	0.0031	97%	97%	grid cell location	0.0832	0.0030
2282005010	Pleasure Craft	2-Stroke Outboards	MOVES	0.2806	0.4970	81%	81%	water area	0.2273	0.4026
2282005015	Pleasure Craft	2-Stroke Personal Watercraft	MOVES	0.1341	0.1512	77%	77%	water area	0.1033	0.1164
2282010005	Pleasure Craft	4-Stroke Inboards	MOVES	0.3145	0.4520	77%	77%	water area	0.2422	0.3480
2282020005	Pleasure Craft	Diesel Inboards	MOVES	0.7698	0.0548	77%	77%	water area	0.5927	0.0422
2282020010	Pleasure Craft	Diesel Outboards	MOVES	0.0004	0.0001	81%	81%	water area	0.0004	0.0001
228500200x	Railroad	All Diesel Locomotives	EPA	0.0000	0.0000	0%	0%	rail links	0.0000	0.0000
2285002015	Railway Maint.	Diesel Railway Maintenance	MOVES	0.0000	0.0000	0%	0%	rail links	0.0000	0.0000
2285004015	Railway Maint.	4-Stroke Gasoline Railway Maintenance	MOVES	0.0000	0.0000	0%	0%	rail links	0.0000	0.0000
2285006015	Railway Maint.	LPG Railway Maintenance	MOVES	0.0000	0.0000	0%	0%	rail links	0.0000	0.0000
ALL (Total)	**ALL (Total)**	**ALL (Total)**		**2.6831**	**1.8046**	80.5%	71.2%		**2.1608**	**1.2845**
22xx005xxx	Agriculture	All	MOVES	0.0246	0.0034	58.0%	58.0%	land area	0.0143	0.0020
22750xxxxx	Airport	All	EPA	0.0115	0.0148	18.9%	25.7%	airport location	0.0022	0.0038
22xx006xxx	Commercial	All	MOVES	0.0095	0.0186	53.0%	53.0%	population	0.0050	0.0099
2280002xxx	Comm. Mar	All	EPA	0.9941	0.0421	90.1%	91.8%	grid cell & port loc.	0.8961	0.0387
22xx002xxx	Construction	All	MOVES	0.0411	0.0121	53.0%	53.0%	population	0.0218	0.0064
22xx003xxx	Industrial	All	MOVES	0.0470	0.0084	53.0%	53.0%	population	0.0249	0.0045

SCC	Segment Description	SCC Description	Emis-sions from	Door Co. 2035 Emissions		% in NAA		Allocate by	Door-Revised NAA 2035 Emissions	
				NOx	VOC	NOx	VOC		NOx	VOC
22xx004xxx	Lawn/Garden	All	MOVES	0.0323	0.1809	53.0%	53.0%	population	0.0171	0.0959
22xx007xxx	Logging	All	MOVES	0.0001	0.0004	58.0%	58.0%	land area	0.0001	0.0002
22820xxxxx	Pleasure Craft	All	MOVES	1.4994	1.1551	77.7%	78.7%	water area	1.1658	0.9093
228500200x	Railroad	All	EPA	0.0000	0.0000	#DIV/0	#DIV/0	rail links	0.0000	0.0000
228500x015	Railway Maint.	All	MOVES	0.0000	0.0000	#DIV/0	#DIV/0	rail links	0.0000	0.0000
22xx001xxx	Recreational	All	MOVES	0.0234	0.3687	58.0%	58.0%	land area	0.0136	0.2139
ALL (Total)	**ALL (Total)**	**ALL (Total)**		**2.6831**	**1.8046**	80.5%	71.2%		**2.1608**	**1.2845**

APPENDIX 7

Onroad Emissions and Activity Data for 2014, 2019, 2030 and 2035

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 2014, 2019, 2030 and 2035 for the Door County-Revised 2015 ozone NAAQS nonattainment area. The sum of NOx and VOC emissions from these onroad categories were used for the onroad sector NOx and VOC tposwd emission estimates in sections 4.2 (Nonattainment Year and Attainment Year Inventories) and 4.3 (Maintenance Year Inventories) of the Wisconsin Department of Natural Resources (WDNR) Redesignation Request and Maintenance Plan for the Door County-Revised 2015 Ozone NAAQS Nonattainment Area.

Table A7.1. 2014 Onroad NOx and VOC Emissions: tons per ozone season weekday (tposwd) for the Door County-Revised 2015 ozone NAAQS nonattainment area.

Source Type	Fuel Type	Road Type	Door County-Revised 2015 Ozone NAAQS Nonattainment Area – Year 2014			
			NO_x Emissions (tposwd)	VOC Emissions (tposwd)		
			Total	Exhaust	Evaporative	Total
Motorcycle	Gasoline	Off-Network	0.0000	0.0001	0.0057	0.0058
Motorcycle	Gasoline	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Motorcycle	Gasoline	Rural Unrestricted	0.0040	0.0042	0.0024	0.0065
Motorcycle	Gasoline	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Motorcycle	Gasoline	Urban Unrestricted	0.0004	0.0006	0.0004	0.0011
Passenger Car	Gasoline	Off-Network	0.0186	0.0195	0.0458	0.0654
Passenger Car	Gasoline	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Passenger Car	Gasoline	Rural Unrestricted	0.0775	0.0184	0.0073	0.0257
Passenger Car	Gasoline	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Passenger Car	Gasoline	Urban Unrestricted	0.0135	0.0039	0.0018	0.0057
Passenger Car	Diesel	Off-Network	0.0001	0.0002	0.0000	0.0002
Passenger Car	Diesel	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Passenger Car	Diesel	Rural Unrestricted	0.0005	0.0002	0.0000	0.0002
Passenger Car	Diesel	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Passenger Car	Diesel	Urban Unrestricted	0.0001	0.0000	0.0000	0.0000
Passenger Car	Ethanol (E-85)	Off-Network	0.0000	0.0000	0.0000	0.0000
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	0.0374	0.0298	0.0359	0.0657
Passenger Truck	Gasoline	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Passenger Truck	Gasoline	Rural Unrestricted	0.1423	0.0265	0.0066	0.0331
Passenger Truck	Gasoline	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Passenger Truck	Gasoline	Urban Unrestricted	0.0169	0.0040	0.0011	0.0052
Passenger Truck	Diesel	Off-Network	0.0060	0.0008	0.0000	0.0008
Passenger Truck	Diesel	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Passenger Truck	Diesel	Rural Unrestricted	0.0247	0.0048	0.0000	0.0048
Passenger Truck	Diesel	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Passenger Truck	Diesel	Urban Unrestricted	0.0037	0.0007	0.0000	0.0007
Passenger Truck	Ethanol (E-85)	Off-Network	0.0000	0.0000	0.0000	0.0001
Passenger Truck	Ethanol (E-85)	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Passenger Truck	Ethanol (E-85)	Rural Unrestricted	0.0001	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	0.0079	0.0063	0.0060	0.0122
Light Commercial Truck	Gasoline	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Light Commercial Truck	Gasoline	Rural Unrestricted	0.0321	0.0073	0.0014	0.0086
Light Commercial Truck	Gasoline	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Light Commercial Truck	Gasoline	Urban Unrestricted	0.0050	0.0015	0.0003	0.0019

Source Type	Fuel Type	Road Type	Door County-Revised 2015 Ozone NAAQS Nonattainment Area – Year 2014			
			NO_x Emissions (tposwd)	VOC Emissions (tposwd)		
			Total	Exhaust	Evaporative	**Total**
Light Commercial Truck	Diesel	Off-Network	0.0019	0.0003	0.0000	0.0003
Light Commercial Truck	Diesel	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Light Commercial Truck	Diesel	Rural Unrestricted	0.0077	0.0017	0.0000	0.0017
Light Commercial Truck	Diesel	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Light Commercial Truck	Diesel	Urban Unrestricted	0.0015	0.0003	0.0000	0.0003
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	0.0001	0.0000	0.0000	0.0001
Other Buses	Gasoline	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Other Buses	Gasoline	Rural Unrestricted	0.0003	0.0001	0.0000	0.0001
Other Buses	Gasoline	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Other Buses	Gasoline	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Other Buses	Diesel	Off-Network	0.0019	0.0003	0.0000	0.0003
Other Buses	Diesel	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Other Buses	Diesel	Rural Unrestricted	0.0140	0.0008	0.0000	0.0008
Other Buses	Diesel	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Other Buses	Diesel	Urban Unrestricted	0.0023	0.0001	0.0000	0.0001
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	0.0009	0.0002	0.0000	0.0002
Other Buses	CNG	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Other Buses	CNG	Urban Unrestricted	0.0001	0.0000	0.0000	0.0000
Transit Bus	Gasoline	Off-Network	0.0000	0.0000	0.0000	0.0000
Transit Bus	Gasoline	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Transit Bus	Gasoline	Rural Unrestricted	0.0001	0.0000	0.0000	0.0000
Transit Bus	Gasoline	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Transit Bus	Gasoline	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Transit Bus	Diesel	Off-Network	0.0008	0.0001	0.0000	0.0001
Transit Bus	Diesel	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Transit Bus	Diesel	Rural Unrestricted	0.0049	0.0004	0.0000	0.0004
Transit Bus	Diesel	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Transit Bus	Diesel	Urban Unrestricted	0.0009	0.0001	0.0000	0.0001
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	0.0003	0.0001	0.0000	0.0001
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
School Bus	Gasoline	Off-Network	0.0000	0.0000	0.0000	0.0000
School Bus	Gasoline	Rural Restricted	0.0000	0.0000	0.0000	0.0000
School Bus	Gasoline	Rural Unrestricted	0.0001	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	0.0001	0.0000	0.0001
School Bus	Diesel	Rural Restricted	0.0000	0.0000	0.0000	0.0000
School Bus	Diesel	Rural Unrestricted	0.0049	0.0007	0.0000	0.0007

Source Type	Fuel Type	Road Type	Door County-Revised 2015 Ozone NAAQS Nonattainment Area – Year 2014			
			NO_x Emissions (tposwd)	VOC Emissions (tposwd)		
			Total	Exhaust	Evaporative	Total
School Bus	Diesel	Urban Restricted	0.0000	0.0000	0.0000	0.0000
School Bus	Diesel	Urban Unrestricted	0.0007	0.0001	0.0000	0.0001
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
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	0.0003	0.0000	0.0000	0.0000
Refuse Truck	Diesel	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Refuse Truck	Diesel	Rural Unrestricted	0.0017	0.0001	0.0000	0.0001
Refuse Truck	Diesel	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Refuse Truck	Diesel	Urban Unrestricted	0.0002	0.0000	0.0000	0.0000
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
Single Unit Short-haul Truck	Gasoline	Off-Network	0.0042	0.0025	0.0039	0.0064
Single Unit Short-haul Truck	Gasoline	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Single Unit Short-haul Truck	Gasoline	Rural Unrestricted	0.0091	0.0020	0.0003	0.0023
Single Unit Short-haul Truck	Gasoline	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Single Unit Short-haul Truck	Gasoline	Urban Unrestricted	0.0010	0.0003	0.0000	0.0004
Single Unit Short-haul Truck	Diesel	Off-Network	0.0122	0.0021	0.0000	0.0021
Single Unit Short-haul Truck	Diesel	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Single Unit Short-haul Truck	Diesel	Rural Unrestricted	0.0654	0.0074	0.0000	0.0074
Single Unit Short-haul Truck	Diesel	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Single Unit Short-haul Truck	Diesel	Urban Unrestricted	0.0084	0.0010	0.0000	0.0010
Single Unit Short-haul Truck	CNG	Off-Network	0.0000	0.0000	0.0000	0.0000
Single Unit Short-haul Truck	CNG	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Single Unit Short-haul Truck	CNG	Rural Unrestricted	0.0001	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 Long-haul Truck	Gasoline	Off-Network	0.0000	0.0000	0.0002	0.0002
Single Unit Long-haul Truck	Gasoline	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	Gasoline	Rural Unrestricted	0.0006	0.0001	0.0000	0.0001
Single Unit Long-haul Truck	Gasoline	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	Gasoline	Urban Unrestricted	0.0001	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	Diesel	Off-Network	0.0006	0.0001	0.0000	0.0001
Single Unit Long-haul Truck	Diesel	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	Diesel	Rural Unrestricted	0.0039	0.0005	0.0000	0.0005
Single Unit Long-haul Truck	Diesel	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	Diesel	Urban Unrestricted	0.0005	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
Motor Home	Gasoline	Off-Network	0.0001	0.0001	0.0006	0.0007

Source Type	Fuel Type	Road Type	Door County-Revised 2015 Ozone NAAQS Nonattainment Area – Year 2014			
			NO_x Emissions (tposwd)	VOC Emissions (tposwd)		
			Total	Exhaust	Evaporative	Total
Motor Home	Gasoline	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Motor Home	Gasoline	Rural Unrestricted	0.0016	0.0004	0.0001	0.0005
Motor Home	Gasoline	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Motor Home	Gasoline	Urban Unrestricted	0.0002	0.0001	0.0000	0.0001
Motor Home	Diesel	Off-Network	0.0000	0.0000	0.0000	0.0000
Motor Home	Diesel	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Motor Home	Diesel	Rural Unrestricted	0.0018	0.0002	0.0000	0.0002
Motor Home	Diesel	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Motor Home	Diesel	Urban Unrestricted	0.0002	0.0000	0.0000	0.0000
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
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
Combination Short-haul Truck	Gasoline	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Combination Short-haul Truck	Diesel	Off-Network	0.0064	0.0008	0.0000	0.0008
Combination Short-haul Truck	Diesel	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Combination Short-haul Truck	Diesel	Rural Unrestricted	0.0700	0.0039	0.0000	0.0039
Combination Short-haul Truck	Diesel	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Combination Short-haul Truck	Diesel	Urban Unrestricted	0.0057	0.0003	0.0000	0.0003
Combination Short-haul Truck	CNG	Off-Network	0.0000	0.0000	0.0000	0.0000
Combination Short-haul Truck	CNG	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Combination Short-haul Truck	CNG	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Combination Short-haul Truck	CNG	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Combination Short-haul Truck	CNG	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Combination Long-haul Truck	Diesel	Off-Network	0.0067	0.0008	0.0000	0.0008
Combination Long-haul Truck	Diesel	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Combination Long-haul Truck	Diesel	Rural Unrestricted	0.2213	0.0117	0.0000	0.0117
Combination Long-haul Truck	Diesel	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Combination Long-haul Truck	Diesel	Urban Unrestricted	0.0157	0.0009	0.0000	0.0009
ALL (Total)	**ALL (Total)**	**ALL (Total)**	**0.8730**	**0.1702**	**0.1199**	**0.2901**
Motorcycle	ALL	ALL	0.0045	0.0048	0.0085	0.0134
Passenger Car	ALL	ALL	0.1102	0.0423	0.0549	0.0972
Passenger Truck	ALL	ALL	0.2311	0.0667	0.0437	0.1104
Light Commercial Truck	ALL	ALL	0.0561	0.0174	0.0077	0.0251
Other Buses	ALL	ALL	0.0196	0.0016	0.0000	0.0016
Transit Bus	ALL	ALL	0.0071	0.0006	0.0000	0.0006
School Bus	ALL	ALL	0.0061	0.0009	0.0000	0.0009
Refuse Truck	ALL	ALL	0.0023	0.0002	0.0000	0.0002
Single Unit Short-haul Truck	ALL	ALL	0.1004	0.0154	0.0042	0.0196
Single Unit Long-haul Truck	ALL	ALL	0.0058	0.0009	0.0002	0.0010
Motor Home	ALL	ALL	0.0039	0.0009	0.0006	0.0015
Combination Short-haul Truck	ALL	ALL	0.0821	0.0051	0.0000	0.0051
Combination Long-haul Truck	ALL	ALL	0.2437	0.0134	0.0000	0.0134
ALL (Total)	**ALL (Total)**	**ALL (Total)**	**0.8730**	**0.1702**	**0.1199**	**0.2901**

Source Type	Fuel Type	Road Type	Door County-Revised 2015 Ozone NAAQS Nonattainment Area – Year 2014			
			NO_x Emissions (tposwd)	VOC Emissions (tposwd)		
			Total	Exhaust	Evaporative	**Total**
ALL	Gasoline	ALL	0.3730	0.1280	0.1198	0.2479
ALL	Diesel	ALL	0.4982	0.0417	0.0000	0.0417
ALL	CNG	ALL	0.0017	0.0004	0.0000	0.0004
ALL	Ethanol (E-85)	ALL	0.0002	0.0001	0.0001	0.0001
ALL	Electricity	ALL	0.0000	0.0000	0.0000	0.0000
ALL (Total)	**ALL (Total)**	**ALL (Total)**	**0.8730**	**0.1702**	**0.1199**	**0.2901**
ALL	ALL	Off-Network	0.1058	0.0642	0.0981	0.1624
ALL	ALL	Rural Restricted	0.0000	0.0000	0.0000	0.0000
ALL	ALL	Rural Unrestricted	0.6900	0.0916	0.0180	0.1096
ALL	ALL	Urban Restricted	0.0000	0.0000	0.0000	0.0000
ALL	ALL	Urban Unrestricted	0.0773	0.0144	0.0037	0.0181
ALL (Total)	**ALL (Total)**	**ALL (Total)**	**0.8730**	**0.1702**	**0.1199**	**0.2901**

Table A7.2. 2019 Onroad NOx and VOC Emissions: tons per ozone season weekday (tposwd) for the Door County-Revised 2015 ozone NAAQS nonattainment area.

Source Type	Fuel Type	Road Type	Door County-Revised 2015 Ozone NAAQS Nonattainment Area – Year 2019			
			NO_x Emissions (tposwd)	VOC Emissions (tposwd)		
			Total	Exhaust	Evaporative	**Total**
Motorcycle	Gasoline	Off-Network	0.0000	0.0001	0.0088	0.0089
Motorcycle	Gasoline	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Motorcycle	Gasoline	Rural Unrestricted	0.0048	0.0050	0.0029	0.0079
Motorcycle	Gasoline	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Motorcycle	Gasoline	Urban Unrestricted	0.0005	0.0008	0.0005	0.0013
Passenger Car	Gasoline	Off-Network	0.0129	0.0158	0.0400	0.0557
Passenger Car	Gasoline	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Passenger Car	Gasoline	Rural Unrestricted	0.0351	0.0094	0.0061	0.0155
Passenger Car	Gasoline	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Passenger Car	Gasoline	Urban Unrestricted	0.0061	0.0020	0.0015	0.0035
Passenger Car	Diesel	Off-Network	0.0001	0.0001	0.0000	0.0001
Passenger Car	Diesel	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Passenger Car	Diesel	Rural Unrestricted	0.0002	0.0001	0.0000	0.0001
Passenger Car	Diesel	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Passenger Car	Diesel	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Passenger Car	Ethanol (E-85)	Off-Network	0.0000	0.0000	0.0000	0.0000
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	0.0239	0.0217	0.0327	0.0544
Passenger Truck	Gasoline	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Passenger Truck	Gasoline	Rural Unrestricted	0.0553	0.0119	0.0058	0.0177
Passenger Truck	Gasoline	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Passenger Truck	Gasoline	Urban Unrestricted	0.0066	0.0018	0.0010	0.0028
Passenger Truck	Diesel	Off-Network	0.0049	0.0005	0.0000	0.0005
Passenger Truck	Diesel	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Passenger Truck	Diesel	Rural Unrestricted	0.0146	0.0023	0.0000	0.0023
Passenger Truck	Diesel	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Passenger Truck	Diesel	Urban Unrestricted	0.0022	0.0003	0.0000	0.0003
Passenger Truck	Ethanol (E-85)	Off-Network	0.0000	0.0000	0.0001	0.0001
Passenger Truck	Ethanol (E-85)	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Passenger Truck	Ethanol (E-85)	Rural Unrestricted	0.0001	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	0.0060	0.0046	0.0056	0.0102
Light Commercial Truck	Gasoline	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Light Commercial Truck	Gasoline	Rural Unrestricted	0.0183	0.0041	0.0012	0.0053
Light Commercial Truck	Gasoline	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Light Commercial Truck	Gasoline	Urban Unrestricted	0.0029	0.0009	0.0003	0.0011

Source Type	Fuel Type	Road Type	Door County-Revised 2015 Ozone NAAQS Nonattainment Area – Year 2019			
			NO_x Emissions (tposwd)	VOC Emissions (tposwd)		
			Total	Exhaust	Evaporative	Total
Light Commercial Truck	Diesel	Off-Network	0.0015	0.0002	0.0000	0.0002
Light Commercial Truck	Diesel	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Light Commercial Truck	Diesel	Rural Unrestricted	0.0056	0.0010	0.0000	0.0010
Light Commercial Truck	Diesel	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Light Commercial Truck	Diesel	Urban Unrestricted	0.0011	0.0002	0.0000	0.0002
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	0.0001	0.0001	0.0000	0.0001
Other Buses	Gasoline	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Other Buses	Gasoline	Rural Unrestricted	0.0003	0.0001	0.0000	0.0001
Other Buses	Gasoline	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Other Buses	Gasoline	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Other Buses	Diesel	Off-Network	0.0019	0.0002	0.0000	0.0002
Other Buses	Diesel	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Other Buses	Diesel	Rural Unrestricted	0.0126	0.0007	0.0000	0.0007
Other Buses	Diesel	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Other Buses	Diesel	Urban Unrestricted	0.0021	0.0001	0.0000	0.0001
Other Buses	CNG	Off-Network	0.0001	0.0000	0.0000	0.0000
Other Buses	CNG	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Other Buses	CNG	Rural Unrestricted	0.0008	0.0002	0.0000	0.0002
Other Buses	CNG	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Other Buses	CNG	Urban Unrestricted	0.0001	0.0000	0.0000	0.0000
Transit Bus	Gasoline	Off-Network	0.0000	0.0000	0.0000	0.0000
Transit Bus	Gasoline	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Transit Bus	Gasoline	Rural Unrestricted	0.0001	0.0000	0.0000	0.0000
Transit Bus	Gasoline	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Transit Bus	Gasoline	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Transit Bus	Diesel	Off-Network	0.0007	0.0001	0.0000	0.0001
Transit Bus	Diesel	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Transit Bus	Diesel	Rural Unrestricted	0.0038	0.0003	0.0000	0.0003
Transit Bus	Diesel	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Transit Bus	Diesel	Urban Unrestricted	0.0007	0.0000	0.0000	0.0000
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	0.0002	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
School Bus	Gasoline	Off-Network	0.0000	0.0000	0.0000	0.0000
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	0.0001	0.0000	0.0001
School Bus	Diesel	Rural Restricted	0.0000	0.0000	0.0000	0.0000
School Bus	Diesel	Rural Unrestricted	0.0037	0.0004	0.0000	0.0004

Source Type	Fuel Type	Road Type	Door County-Revised 2015 Ozone NAAQS Nonattainment Area – Year 2019			
			NO_x Emissions (tposwd)	VOC Emissions (tposwd)		
			Total	Exhaust	Evaporative	**Total**
School Bus	Diesel	Urban Restricted	0.0000	0.0000	0.0000	0.0000
School Bus	Diesel	Urban Unrestricted	0.0005	0.0001	0.0000	0.0001
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
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	0.0003	0.0000	0.0000	0.0000
Refuse Truck	Diesel	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Refuse Truck	Diesel	Rural Unrestricted	0.0014	0.0001	0.0000	0.0001
Refuse Truck	Diesel	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Refuse Truck	Diesel	Urban Unrestricted	0.0002	0.0000	0.0000	0.0000
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
Single Unit Short-haul Truck	Gasoline	Off-Network	0.0035	0.0022	0.0046	0.0068
Single Unit Short-haul Truck	Gasoline	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Single Unit Short-haul Truck	Gasoline	Rural Unrestricted	0.0048	0.0013	0.0002	0.0016
Single Unit Short-haul Truck	Gasoline	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Single Unit Short-haul Truck	Gasoline	Urban Unrestricted	0.0005	0.0002	0.0000	0.0003
Single Unit Short-haul Truck	Diesel	Off-Network	0.0129	0.0014	0.0000	0.0014
Single Unit Short-haul Truck	Diesel	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Single Unit Short-haul Truck	Diesel	Rural Unrestricted	0.0509	0.0045	0.0000	0.0045
Single Unit Short-haul Truck	Diesel	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Single Unit Short-haul Truck	Diesel	Urban Unrestricted	0.0068	0.0006	0.0000	0.0006
Single Unit Short-haul Truck	CNG	Off-Network	0.0001	0.0000	0.0000	0.0000
Single Unit Short-haul Truck	CNG	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Single Unit Short-haul Truck	CNG	Rural Unrestricted	0.0002	0.0001	0.0000	0.0001
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 Long-haul Truck	Gasoline	Off-Network	0.0000	0.0000	0.0001	0.0001
Single Unit Long-haul Truck	Gasoline	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	Gasoline	Rural Unrestricted	0.0002	0.0001	0.0000	0.0001
Single Unit Long-haul Truck	Gasoline	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	Gasoline	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	Diesel	Off-Network	0.0005	0.0001	0.0000	0.0001
Single Unit Long-haul Truck	Diesel	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	Diesel	Rural Unrestricted	0.0026	0.0002	0.0000	0.0002
Single Unit Long-haul Truck	Diesel	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	Diesel	Urban Unrestricted	0.0004	0.0000	0.0000	0.0000
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
Motor Home	Gasoline	Off-Network	0.0001	0.0002	0.0012	0.0014

Source Type	Fuel Type	Road Type	Door County-Revised 2015 Ozone NAAQS Nonattainment Area – Year 2019			
			NO_x Emissions (tposwd)	VOC Emissions (tposwd)		
			Total	Exhaust	Evaporative	Total
Motor Home	Gasoline	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Motor Home	Gasoline	Rural Unrestricted	0.0023	0.0007	0.0001	0.0008
Motor Home	Gasoline	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Motor Home	Gasoline	Urban Unrestricted	0.0002	0.0001	0.0000	0.0001
Motor Home	Diesel	Off-Network	0.0000	0.0000	0.0000	0.0000
Motor Home	Diesel	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Motor Home	Diesel	Rural Unrestricted	0.0022	0.0003	0.0000	0.0003
Motor Home	Diesel	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Motor Home	Diesel	Urban Unrestricted	0.0003	0.0000	0.0000	0.0000
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
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
Combination Short-haul Truck	Gasoline	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Combination Short-haul Truck	Diesel	Off-Network	0.0072	0.0007	0.0000	0.0007
Combination Short-haul Truck	Diesel	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Combination Short-haul Truck	Diesel	Rural Unrestricted	0.0638	0.0030	0.0000	0.0030
Combination Short-haul Truck	Diesel	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Combination Short-haul Truck	Diesel	Urban Unrestricted	0.0053	0.0003	0.0000	0.0003
Combination Short-haul Truck	CNG	Off-Network	0.0001	0.0000	0.0000	0.0000
Combination Short-haul Truck	CNG	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Combination Short-haul Truck	CNG	Rural Unrestricted	0.0002	0.0001	0.0000	0.0001
Combination Short-haul Truck	CNG	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Combination Short-haul Truck	CNG	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Combination Long-haul Truck	Diesel	Off-Network	0.0076	0.0006	0.0000	0.0006
Combination Long-haul Truck	Diesel	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Combination Long-haul Truck	Diesel	Rural Unrestricted	0.1942	0.0080	0.0000	0.0080
Combination Long-haul Truck	Diesel	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Combination Long-haul Truck	Diesel	Urban Unrestricted	0.0144	0.0006	0.0000	0.0006
ALL (Total)	**ALL (Total)**	**ALL (Total)**	**0.6141**	**0.1107**	**0.1129**	**0.2235**
Motorcycle	ALL	ALL	0.0054	0.0059	0.0122	0.0181
Passenger Car	ALL	ALL	0.0543	0.0273	0.0476	0.0749
Passenger Truck	ALL	ALL	0.1077	0.0385	0.0397	0.0782
Light Commercial Truck	ALL	ALL	0.0353	0.0110	0.0070	0.0180
Other Buses	ALL	ALL	0.0180	0.0014	0.0000	0.0015
Transit Bus	ALL	ALL	0.0056	0.0005	0.0000	0.0005
School Bus	ALL	ALL	0.0047	0.0006	0.0000	0.0006
Refuse Truck	ALL	ALL	0.0019	0.0001	0.0000	0.0001
Single Unit Short-haul Truck	ALL	ALL	0.0796	0.0105	0.0048	0.0153
Single Unit Long-haul Truck	ALL	ALL	0.0038	0.0004	0.0001	0.0006
Motor Home	ALL	ALL	0.0052	0.0013	0.0013	0.0026
Combination Short-haul Truck	ALL	ALL	0.0765	0.0040	0.0000	0.0041
Combination Long-haul Truck	ALL	ALL	0.2161	0.0092	0.0000	0.0092
ALL (Total)	**ALL (Total)**	**ALL (Total)**	**0.6141**	**0.1107**	**0.1129**	**0.2235**

Source Type	Fuel Type	Road Type	Door County-Revised 2015 Ozone NAAQS Nonattainment Area – Year 2019			
			NO_x Emissions (tposwd)	VOC Emissions (tposwd)		
			Total	Exhaust	Evaporative	**Total**
ALL	Gasoline	ALL	0.1847	0.0830	0.1128	0.1957
ALL	Diesel	ALL	0.4275	0.0271	0.0000	0.0271
ALL	CNG	ALL	0.0017	0.0006	0.0000	0.0006
ALL	Ethanol (E-85)	ALL	0.0001	0.0001	0.0001	0.0002
ALL	Electricity	ALL	0.0000	0.0000	0.0000	0.0000
ALL (Total)	**ALL (Total)**	**ALL (Total)**	**0.6141**	**0.1107**	**0.1129**	**0.2235**
ALL	ALL	Off-Network	0.0849	0.0487	0.0932	0.1418
ALL	ALL	Rural Restricted	0.0000	0.0000	0.0000	0.0000
ALL	ALL	Rural Unrestricted	0.4780	0.0538	0.0164	0.0701
ALL	ALL	Urban Restricted	0.0000	0.0000	0.0000	0.0000
ALL	ALL	Urban Unrestricted	0.0512	0.0082	0.0033	0.0116
ALL (Total)	**ALL (Total)**	**ALL (Total)**	**0.6141**	**0.1107**	**0.1129**	**0.2235**

Table A7.3. 2030 Onroad NOx and VOC Emissions: tons per ozone season weekday (tposwd) for the Door County-Revised 2015 ozone NAAQS nonattainment area.

Source Type	Fuel Type	Road Type	Door County-Revised 2015 Ozone NAAQS Nonattainment Area – Year 2030			
			NO_x Emissions (tposwd)	VOC Emissions (tposwd)		
			Total	Exhaust	Evaporative	Total
Motorcycle	Gasoline	Off-Network	0.0000	0.0001	0.0074	0.0074
Motorcycle	Gasoline	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Motorcycle	Gasoline	Rural Unrestricted	0.0048	0.0041	0.0029	0.0070
Motorcycle	Gasoline	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Motorcycle	Gasoline	Urban Unrestricted	0.0005	0.0006	0.0005	0.0012
Passenger Car	Gasoline	Off-Network	0.0061	0.0078	0.0252	0.0330
Passenger Car	Gasoline	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Passenger Car	Gasoline	Rural Unrestricted	0.0070	0.0028	0.0042	0.0070
Passenger Car	Gasoline	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Passenger Car	Gasoline	Urban Unrestricted	0.0012	0.0006	0.0010	0.0016
Passenger Car	Diesel	Off-Network	0.0001	0.0001	0.0000	0.0001
Passenger Car	Diesel	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Passenger Car	Diesel	Rural Unrestricted	0.0001	0.0000	0.0000	0.0000
Passenger Car	Diesel	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Passenger Car	Diesel	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Passenger Car	Ethanol (E-85)	Off-Network	0.0000	0.0000	0.0000	0.0000
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	0.0089	0.0094	0.0212	0.0306
Passenger Truck	Gasoline	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Passenger Truck	Gasoline	Rural Unrestricted	0.0080	0.0034	0.0043	0.0077
Passenger Truck	Gasoline	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Passenger Truck	Gasoline	Urban Unrestricted	0.0010	0.0005	0.0007	0.0012
Passenger Truck	Diesel	Off-Network	0.0042	0.0003	0.0000	0.0003
Passenger Truck	Diesel	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Passenger Truck	Diesel	Rural Unrestricted	0.0030	0.0003	0.0000	0.0003
Passenger Truck	Diesel	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Passenger Truck	Diesel	Urban Unrestricted	0.0005	0.0000	0.0000	0.0000
Passenger Truck	Ethanol (E-85)	Off-Network	0.0000	0.0000	0.0001	0.0001
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	0.0017	0.0017	0.0034	0.0051
Light Commercial Truck	Gasoline	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Light Commercial Truck	Gasoline	Rural Unrestricted	0.0024	0.0007	0.0007	0.0014
Light Commercial Truck	Gasoline	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Light Commercial Truck	Gasoline	Urban Unrestricted	0.0004	0.0001	0.0002	0.0003

Source Type	Fuel Type	Road Type	Door County-Revised 2015 Ozone NAAQS Nonattainment Area – Year 2030			
			NO_x Emissions (tposwd)	VOC Emissions (tposwd)		
			Total	Exhaust	Evaporative	Total
Light Commercial Truck	Diesel	Off-Network	0.0007	0.0000	0.0000	0.0000
Light Commercial Truck	Diesel	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Light Commercial Truck	Diesel	Rural Unrestricted	0.0010	0.0001	0.0000	0.0001
Light Commercial Truck	Diesel	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Light Commercial Truck	Diesel	Urban Unrestricted	0.0002	0.0000	0.0000	0.0000
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	0.0001	0.0001	0.0000	0.0001
Other Buses	Gasoline	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Other Buses	Gasoline	Rural Unrestricted	0.0001	0.0001	0.0000	0.0001
Other Buses	Gasoline	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Other Buses	Gasoline	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Other Buses	Diesel	Off-Network	0.0016	0.0001	0.0000	0.0001
Other Buses	Diesel	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Other Buses	Diesel	Rural Unrestricted	0.0049	0.0001	0.0000	0.0001
Other Buses	Diesel	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Other Buses	Diesel	Urban Unrestricted	0.0010	0.0000	0.0000	0.0000
Other Buses	CNG	Off-Network	0.0001	0.0000	0.0000	0.0000
Other Buses	CNG	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Other Buses	CNG	Rural Unrestricted	0.0002	0.0001	0.0000	0.0001
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
Transit Bus	Gasoline	Off-Network	0.0000	0.0000	0.0000	0.0000
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	0.0000	0.0000	0.0000	0.0000
Transit Bus	Gasoline	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Transit Bus	Diesel	Off-Network	0.0004	0.0000	0.0000	0.0000
Transit Bus	Diesel	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Transit Bus	Diesel	Rural Unrestricted	0.0013	0.0001	0.0000	0.0001
Transit Bus	Diesel	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Transit Bus	Diesel	Urban Unrestricted	0.0003	0.0000	0.0000	0.0000
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	0.0001	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
School Bus	Gasoline	Off-Network	0.0000	0.0000	0.0000	0.0000
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	0.0000	0.0000	0.0000	0.0000
School Bus	Diesel	Rural Unrestricted	0.0013	0.0000	0.0000	0.0000

Source Type	Fuel Type	Road Type	Door County-Revised 2015 Ozone NAAQS Nonattainment Area – Year 2030			
			NO_x Emissions (tposwd)	VOC Emissions (tposwd)		
			Total	Exhaust	Evaporative	Total
School Bus	Diesel	Urban Restricted	0.0000	0.0000	0.0000	0.0000
School Bus	Diesel	Urban Unrestricted	0.0002	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
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	0.0003	0.0000	0.0000	0.0000
Refuse Truck	Diesel	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Refuse Truck	Diesel	Rural Unrestricted	0.0005	0.0000	0.0000	0.0000
Refuse Truck	Diesel	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Refuse Truck	Diesel	Urban Unrestricted	0.0001	0.0000	0.0000	0.0000
Refuse Truck	CNG	Off-Network	0.0001	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	0.0001	0.0000	0.0001
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
Single Unit Short-haul Truck	Gasoline	Off-Network	0.0022	0.0017	0.0015	0.0032
Single Unit Short-haul Truck	Gasoline	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Single Unit Short-haul Truck	Gasoline	Rural Unrestricted	0.0008	0.0006	0.0001	0.0007
Single Unit Short-haul Truck	Gasoline	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Single Unit Short-haul Truck	Gasoline	Urban Unrestricted	0.0001	0.0001	0.0000	0.0001
Single Unit Short-haul Truck	Diesel	Off-Network	0.0113	0.0004	0.0000	0.0004
Single Unit Short-haul Truck	Diesel	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Single Unit Short-haul Truck	Diesel	Rural Unrestricted	0.0230	0.0008	0.0000	0.0008
Single Unit Short-haul Truck	Diesel	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Single Unit Short-haul Truck	Diesel	Urban Unrestricted	0.0036	0.0001	0.0000	0.0001
Single Unit Short-haul Truck	CNG	Off-Network	0.0001	0.0001	0.0000	0.0001
Single Unit Short-haul Truck	CNG	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Single Unit Short-haul Truck	CNG	Rural Unrestricted	0.0002	0.0002	0.0000	0.0002
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 Long-haul Truck	Gasoline	Off-Network	0.0000	0.0000	0.0001	0.0001
Single Unit Long-haul Truck	Gasoline	Rural Restricted	0.0000	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	0.0000	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	Gasoline	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	Diesel	Off-Network	0.0004	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	Diesel	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	Diesel	Rural Unrestricted	0.0014	0.0001	0.0000	0.0001
Single Unit Long-haul Truck	Diesel	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	Diesel	Urban Unrestricted	0.0002	0.0000	0.0000	0.0000
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
Motor Home	Gasoline	Off-Network	0.0001	0.0001	0.0003	0.0004

Source Type	Fuel Type	Road Type	Door County-Revised 2015 Ozone NAAQS Nonattainment Area – Year 2030			
			NO_x Emissions (tposwd)	VOC Emissions (tposwd)		
			Total	Exhaust	Evaporative	Total
Motor Home	Gasoline	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Motor Home	Gasoline	Rural Unrestricted	0.0006	0.0002	0.0000	0.0002
Motor Home	Gasoline	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Motor Home	Gasoline	Urban Unrestricted	0.0001	0.0000	0.0000	0.0000
Motor Home	Diesel	Off-Network	0.0000	0.0000	0.0000	0.0000
Motor Home	Diesel	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Motor Home	Diesel	Rural Unrestricted	0.0019	0.0002	0.0000	0.0002
Motor Home	Diesel	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Motor Home	Diesel	Urban Unrestricted	0.0002	0.0000	0.0000	0.0000
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
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
Combination Short-haul Truck	Gasoline	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Combination Short-haul Truck	Diesel	Off-Network	0.0069	0.0003	0.0000	0.0003
Combination Short-haul Truck	Diesel	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Combination Short-haul Truck	Diesel	Rural Unrestricted	0.0330	0.0011	0.0000	0.0011
Combination Short-haul Truck	Diesel	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Combination Short-haul Truck	Diesel	Urban Unrestricted	0.0031	0.0001	0.0000	0.0001
Combination Short-haul Truck	CNG	Off-Network	0.0001	0.0001	0.0000	0.0001
Combination Short-haul Truck	CNG	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Combination Short-haul Truck	CNG	Rural Unrestricted	0.0002	0.0002	0.0000	0.0002
Combination Short-haul Truck	CNG	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Combination Short-haul Truck	CNG	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Combination Long-haul Truck	Diesel	Off-Network	0.0068	0.0002	0.0000	0.0002
Combination Long-haul Truck	Diesel	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Combination Long-haul Truck	Diesel	Rural Unrestricted	0.0907	0.0025	0.0000	0.0025
Combination Long-haul Truck	Diesel	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Combination Long-haul Truck	Diesel	Urban Unrestricted	0.0079	0.0002	0.0000	0.0002
ALL (Total)	**ALL (Total)**	**ALL (Total)**	**0.2604**	**0.0432**	**0.0741**	**0.1173**
Motorcycle	ALL	ALL	0.0053	0.0048	0.0109	0.0156
Passenger Car	ALL	ALL	0.0144	0.0113	0.0305	0.0418
Passenger Truck	ALL	ALL	0.0256	0.0140	0.0263	0.0403
Light Commercial Truck	ALL	ALL	0.0064	0.0027	0.0044	0.0071
Other Buses	ALL	ALL	0.0080	0.0006	0.0000	0.0006
Transit Bus	ALL	ALL	0.0021	0.0002	0.0000	0.0002
School Bus	ALL	ALL	0.0021	0.0001	0.0000	0.0001
Refuse Truck	ALL	ALL	0.0010	0.0001	0.0000	0.0001
Single Unit Short-haul Truck	ALL	ALL	0.0414	0.0040	0.0016	0.0056
Single Unit Long-haul Truck	ALL	ALL	0.0022	0.0002	0.0001	0.0002
Motor Home	ALL	ALL	0.0029	0.0006	0.0004	0.0010
Combination Short-haul Truck	ALL	ALL	0.0435	0.0018	0.0000	0.0018
Combination Long-haul Truck	ALL	ALL	0.1054	0.0029	0.0000	0.0029
ALL (Total)	**ALL (Total)**	**ALL (Total)**	**0.2604**	**0.0432**	**0.0741**	**0.1173**

Source Type	Fuel Type	Road Type	Door County-Revised 2015 Ozone NAAQS Nonattainment Area – Year 2030			
			NO_x Emissions (tposwd)	VOC Emissions (tposwd)		
			Total	Exhaust	Evaporative	**Total**
ALL	Gasoline	ALL	0.0461	0.0347	0.0740	0.1086
ALL	Diesel	ALL	0.2130	0.0074	0.0000	0.0074
ALL	CNG	ALL	0.0013	0.0010	0.0000	0.0010
ALL	Ethanol (E-85)	ALL	0.0001	0.0000	0.0001	0.0002
ALL	Electricity	ALL	0.0000	0.0000	0.0000	0.0000
ALL (Total)	**ALL (Total)**	**ALL (Total)**	**0.2604**	**0.0432**	**0.0741**	**0.1173**
ALL	ALL	Off-Network	0.0529	0.0226	0.0592	0.0818
ALL	ALL	Rural Restricted	0.0000	0.0000	0.0000	0.0000
ALL	ALL	Rural Unrestricted	0.1868	0.0179	0.0124	0.0303
ALL	ALL	Urban Restricted	0.0000	0.0000	0.0000	0.0000
ALL	ALL	Urban Unrestricted	0.0208	0.0026	0.0025	0.0052
ALL (Total)	**ALL (Total)**	**ALL (Total)**	**0.2604**	**0.0432**	**0.0741**	**0.1173**
Safety Margin			15%			15%
Emissions Budget			**0.2995**			**0.1349**

Table A7.4. 2035 Onroad NOx and VOC Emissions: tons per ozone season weekday (tposwd) for the Door County-Revised 2015 ozone NAAQS nonattainment area.

Source Type	Fuel Type	Road Type	Door County-Revised 2015 Ozone NAAQS Nonattainment Area – Year 2035			
			NO_x Emissions (tposwd)	VOC Emissions (tposwd)		
			Total	Exhaust	Evaporative	**Total**
Motorcycle	Gasoline	Off-Network	0.0000	0.0001	0.0075	0.0076
Motorcycle	Gasoline	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Motorcycle	Gasoline	Rural Unrestricted	0.0048	0.0039	0.0030	0.0069
Motorcycle	Gasoline	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Motorcycle	Gasoline	Urban Unrestricted	0.0005	0.0006	0.0006	0.0011
Passenger Car	Gasoline	Off-Network	0.0047	0.0057	0.0225	0.0282
Passenger Car	Gasoline	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Passenger Car	Gasoline	Rural Unrestricted	0.0027	0.0020	0.0041	0.0061
Passenger Car	Gasoline	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Passenger Car	Gasoline	Urban Unrestricted	0.0005	0.0004	0.0010	0.0014
Passenger Car	Diesel	Off-Network	0.0001	0.0001	0.0000	0.0001
Passenger Car	Diesel	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Passenger Car	Diesel	Rural Unrestricted	0.0000	0.0000	0.0000	0.0000
Passenger Car	Diesel	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Passenger Car	Diesel	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Passenger Car	Ethanol (E-85)	Off-Network	0.0000	0.0000	0.0000	0.0000
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	0.0065	0.0066	0.0177	0.0244
Passenger Truck	Gasoline	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Passenger Truck	Gasoline	Rural Unrestricted	0.0032	0.0024	0.0038	0.0062
Passenger Truck	Gasoline	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Passenger Truck	Gasoline	Urban Unrestricted	0.0004	0.0004	0.0007	0.0010
Passenger Truck	Diesel	Off-Network	0.0042	0.0003	0.0000	0.0003
Passenger Truck	Diesel	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Passenger Truck	Diesel	Rural Unrestricted	0.0023	0.0002	0.0000	0.0002
Passenger Truck	Diesel	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Passenger Truck	Diesel	Urban Unrestricted	0.0004	0.0000	0.0000	0.0000
Passenger Truck	Ethanol (E-85)	Off-Network	0.0000	0.0000	0.0001	0.0001
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	0.0011	0.0011	0.0031	0.0041
Light Commercial Truck	Gasoline	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Light Commercial Truck	Gasoline	Rural Unrestricted	0.0009	0.0004	0.0007	0.0011
Light Commercial Truck	Gasoline	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Light Commercial Truck	Gasoline	Urban Unrestricted	0.0001	0.0001	0.0001	0.0002

Source Type	Fuel Type	Road Type	Door County-Revised 2015 Ozone NAAQS Nonattainment Area – Year 2035			
			NO_x Emissions (tposwd)	VOC Emissions (tposwd)		
			Total	Exhaust	Evaporative	**Total**
Light Commercial Truck	Diesel	Off-Network	0.0006	0.0000	0.0000	0.0000
Light Commercial Truck	Diesel	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Light Commercial Truck	Diesel	Rural Unrestricted	0.0005	0.0001	0.0000	0.0001
Light Commercial Truck	Diesel	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Light Commercial Truck	Diesel	Urban Unrestricted	0.0001	0.0000	0.0000	0.0000
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	0.0001	0.0001	0.0000	0.0001
Other Buses	Gasoline	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Other Buses	Gasoline	Rural Unrestricted	0.0001	0.0001	0.0000	0.0001
Other Buses	Gasoline	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Other Buses	Gasoline	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Other Buses	Diesel	Off-Network	0.0016	0.0000	0.0000	0.0000
Other Buses	Diesel	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Other Buses	Diesel	Rural Unrestricted	0.0040	0.0001	0.0000	0.0001
Other Buses	Diesel	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Other Buses	Diesel	Urban Unrestricted	0.0008	0.0000	0.0000	0.0000
Other Buses	CNG	Off-Network	0.0001	0.0000	0.0000	0.0000
Other Buses	CNG	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Other Buses	CNG	Rural Unrestricted	0.0001	0.0001	0.0000	0.0001
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
Transit Bus	Gasoline	Off-Network	0.0000	0.0000	0.0000	0.0000
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	0.0000	0.0000	0.0000	0.0000
Transit Bus	Gasoline	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Transit Bus	Diesel	Off-Network	0.0004	0.0000	0.0000	0.0000
Transit Bus	Diesel	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Transit Bus	Diesel	Rural Unrestricted	0.0011	0.0000	0.0000	0.0000
Transit Bus	Diesel	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Transit Bus	Diesel	Urban Unrestricted	0.0002	0.0000	0.0000	0.0000
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
School Bus	Gasoline	Off-Network	0.0000	0.0000	0.0000	0.0000
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	0.0000	0.0000	0.0000	0.0000
School Bus	Diesel	Rural Unrestricted	0.0012	0.0000	0.0000	0.0000

Source Type	Fuel Type	Road Type	Door County-Revised 2015 Ozone NAAQS Nonattainment Area – Year 2035			
			NO_x Emissions (tposwd)	VOC Emissions (tposwd)		
			Total	Exhaust	Evaporative	Total
School Bus	Diesel	Urban Restricted	0.0000	0.0000	0.0000	0.0000
School Bus	Diesel	Urban Unrestricted	0.0002	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
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	0.0003	0.0000	0.0000	0.0000
Refuse Truck	Diesel	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Refuse Truck	Diesel	Rural Unrestricted	0.0006	0.0000	0.0000	0.0000
Refuse Truck	Diesel	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Refuse Truck	Diesel	Urban Unrestricted	0.0001	0.0000	0.0000	0.0000
Refuse Truck	CNG	Off-Network	0.0001	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	0.0001	0.0000	0.0001
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
Single Unit Short-haul Truck	Gasoline	Off-Network	0.0021	0.0017	0.0014	0.0031
Single Unit Short-haul Truck	Gasoline	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Single Unit Short-haul Truck	Gasoline	Rural Unrestricted	0.0006	0.0005	0.0001	0.0007
Single Unit Short-haul Truck	Gasoline	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Single Unit Short-haul Truck	Gasoline	Urban Unrestricted	0.0001	0.0001	0.0000	0.0001
Single Unit Short-haul Truck	Diesel	Off-Network	0.0117	0.0003	0.0000	0.0003
Single Unit Short-haul Truck	Diesel	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Single Unit Short-haul Truck	Diesel	Rural Unrestricted	0.0217	0.0005	0.0000	0.0005
Single Unit Short-haul Truck	Diesel	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Single Unit Short-haul Truck	Diesel	Urban Unrestricted	0.0035	0.0001	0.0000	0.0001
Single Unit Short-haul Truck	CNG	Off-Network	0.0002	0.0001	0.0000	0.0001
Single Unit Short-haul Truck	CNG	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Single Unit Short-haul Truck	CNG	Rural Unrestricted	0.0002	0.0003	0.0000	0.0003
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 Long-haul Truck	Gasoline	Off-Network	0.0000	0.0000	0.0000	0.0001
Single Unit Long-haul Truck	Gasoline	Rural Restricted	0.0000	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	0.0000	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	Gasoline	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	Diesel	Off-Network	0.0005	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	Diesel	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	Diesel	Rural Unrestricted	0.0013	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	Diesel	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Single Unit Long-haul Truck	Diesel	Urban Unrestricted	0.0002	0.0000	0.0000	0.0000
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
Motor Home	Gasoline	Off-Network	0.0001	0.0001	0.0002	0.0003

Source Type	Fuel Type	Road Type	Door County-Revised 2015 Ozone NAAQS Nonattainment Area – Year 2035			
			NO_x Emissions (tposwd)	VOC Emissions (tposwd)		
			Total	Exhaust	Evaporative	Total
Motor Home	Gasoline	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Motor Home	Gasoline	Rural Unrestricted	0.0003	0.0001	0.0000	0.0002
Motor Home	Gasoline	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Motor Home	Gasoline	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Motor Home	Diesel	Off-Network	0.0000	0.0000	0.0000	0.0000
Motor Home	Diesel	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Motor Home	Diesel	Rural Unrestricted	0.0019	0.0001	0.0000	0.0001
Motor Home	Diesel	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Motor Home	Diesel	Urban Unrestricted	0.0003	0.0000	0.0000	0.0000
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
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
Combination Short-haul Truck	Gasoline	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Combination Short-haul Truck	Diesel	Off-Network	0.0067	0.0002	0.0000	0.0002
Combination Short-haul Truck	Diesel	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Combination Short-haul Truck	Diesel	Rural Unrestricted	0.0285	0.0008	0.0000	0.0008
Combination Short-haul Truck	Diesel	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Combination Short-haul Truck	Diesel	Urban Unrestricted	0.0028	0.0001	0.0000	0.0001
Combination Short-haul Truck	CNG	Off-Network	0.0001	0.0001	0.0000	0.0001
Combination Short-haul Truck	CNG	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Combination Short-haul Truck	CNG	Rural Unrestricted	0.0002	0.0003	0.0000	0.0003
Combination Short-haul Truck	CNG	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Combination Short-haul Truck	CNG	Urban Unrestricted	0.0000	0.0000	0.0000	0.0000
Combination Long-haul Truck	Diesel	Off-Network	0.0068	0.0002	0.0000	0.0002
Combination Long-haul Truck	Diesel	Rural Restricted	0.0000	0.0000	0.0000	0.0000
Combination Long-haul Truck	Diesel	Rural Unrestricted	0.0824	0.0022	0.0000	0.0022
Combination Long-haul Truck	Diesel	Urban Restricted	0.0000	0.0000	0.0000	0.0000
Combination Long-haul Truck	Diesel	Urban Unrestricted	0.0072	0.0002	0.0000	0.0002
ALL (Total)	**ALL (Total)**	**ALL (Total)**	**0.2248**	**0.0335**	**0.0667**	**0.1003**
Motorcycle	ALL	ALL	0.0053	0.0046	0.0111	0.0157
Passenger Car	ALL	ALL	0.0080	0.0083	0.0276	0.0358
Passenger Truck	ALL	ALL	0.0170	0.0100	0.0223	0.0323
Light Commercial Truck	ALL	ALL	0.0033	0.0017	0.0039	0.0056
Other Buses	ALL	ALL	0.0068	0.0004	0.0000	0.0005
Transit Bus	ALL	ALL	0.0018	0.0001	0.0000	0.0001
School Bus	ALL	ALL	0.0019	0.0001	0.0000	0.0001
Refuse Truck	ALL	ALL	0.0011	0.0001	0.0000	0.0001
Single Unit Short-haul Truck	ALL	ALL	0.0400	0.0036	0.0015	0.0051
Single Unit Long-haul Truck	ALL	ALL	0.0021	0.0001	0.0001	0.0002
Motor Home	ALL	ALL	0.0025	0.0004	0.0003	0.0007
Combination Short-haul Truck	ALL	ALL	0.0384	0.0015	0.0000	0.0015
Combination Long-haul Truck	ALL	ALL	0.0965	0.0025	0.0000	0.0025
ALL (Total)	**ALL (Total)**	**ALL (Total)**	**0.2248**	**0.0335**	**0.0667**	**0.1003**

Source Type	Fuel Type	Road Type	Door County-Revised 2015 Ozone NAAQS Nonattainment Area – Year 2035			
			NO_x Emissions (tposwd)	VOC Emissions (tposwd)		
			Total	Exhaust	Evaporative	**Total**
ALL	Gasoline	ALL	0.0288	0.0265	0.0666	0.0931
ALL	Diesel	ALL	0.1948	0.0059	0.0000	0.0059
ALL	CNG	ALL	0.0012	0.0011	0.0000	0.0011
ALL	Ethanol (E-85)	ALL	0.0000	0.0000	0.0001	0.0001
ALL	Electricity	ALL	0.0000	0.0000	0.0000	0.0000
ALL (Total)	**ALL (Total)**	**ALL (Total)**	**0.2248**	**0.0335**	**0.0667**	**0.1003**
ALL	ALL	Off-Network	0.0485	0.0170	0.0526	0.0695
ALL	ALL	Rural Restricted	0.0000	0.0000	0.0000	0.0000
ALL	ALL	Rural Unrestricted	0.1588	0.0145	0.0118	0.0263
ALL	ALL	Urban Restricted	0.0000	0.0000	0.0000	0.0000
ALL	ALL	Urban Unrestricted	0.0176	0.0021	0.0024	0.0045
ALL (Total)	**ALL (Total)**	**ALL (Total)**	**0.2248**	**0.0335**	**0.0667**	**0.1003**
Safety Margin			15%			15%
Emissions Budget			**0.2586**			**0.1153**

Table A7.5. Vehicle Activity Data Output from the MOVES3.0.2 Model for the Door County-Revised 2015 ozone NAAQS nonattainment area.

Source Type	Fuel Type	Road Type	Door County-Revised 2015 Ozone NAAQS Nonattainment Area							
			Vehicle Population				Vehicle-Miles of Travel Ozone Season Weekday			
			2014	2019	2030	2035	2014	2019	2030	2035
Motorcycle	Gasoline	Off-Network	619	738	779	812				
Motorcycle	Gasoline	Rural Restricted					0	0	0	0
Motorcycle	Gasoline	Rural Unrestricted					5,687	6,696	6,912	7,031
Motorcycle	Gasoline	Urban Restricted					0	0	0	0
Motorcycle	Gasoline	Urban Unrestricted					729	859	883	894
Passenger Car	Gasoline	Off-Network	6,576	7,394	7,767	8,065				
Passenger Car	Gasoline	Rural Restricted					0	0	0	0
Passenger Car	Gasoline	Rural Unrestricted					183,349	213,115	227,135	239,611
Passenger Car	Gasoline	Urban Restricted					0	0	0	0
Passenger Car	Gasoline	Urban Unrestricted					30,865	35,890	38,128	40,006
Passenger Car	Diesel	Off-Network	41	50	84	124				
Passenger Car	Diesel	Rural Restricted					0	0	0	0
Passenger Car	Diesel	Rural Unrestricted					1,176	1,565	2,620	4,083
Passenger Car	Diesel	Urban Restricted					0	0	0	0
Passenger Car	Diesel	Urban Unrestricted					198	264	440	682
Passenger Car	Ethanol (E-85)	Off-Network	3	4	5	5				
Passenger Car	Ethanol (E-85)	Rural Restricted					0	0	0	0
Passenger Car	Ethanol (E-85)	Rural Unrestricted					95	140	140	148
Passenger Car	Ethanol (E-85)	Urban Restricted					0	0	0	0
Passenger Car	Ethanol (E-85)	Urban Unrestricted					16	24	23	25
Passenger Car	Electricity	Off-Network	0	0	0	0				
Passenger Car	Electricity	Rural Restricted					0	0	0	0
Passenger Car	Electricity	Rural Unrestricted					0	0	0	0
Passenger Car	Electricity	Urban Restricted					0	0	0	0
Passenger Car	Electricity	Urban Unrestricted					0	0	0	0
Passenger Truck	Gasoline	Off-Network	7,903	9,932	9,716	9,487				
Passenger Truck	Gasoline	Rural Restricted					0	0	0	0
Passenger Truck	Gasoline	Rural Unrestricted					250,383	325,095	319,561	312,392
Passenger Truck	Gasoline	Urban Restricted					0	0	0	0
Passenger Truck	Gasoline	Urban Unrestricted					29,795	38,702	37,920	36,870
Passenger Truck	Diesel	Off-Network	256	344	581	648				
Passenger Truck	Diesel	Rural Restricted					0	0	0	0
Passenger Truck	Diesel	Rural Unrestricted					7,821	11,412	20,230	21,832
Passenger Truck	Diesel	Urban Restricted					0	0	0	0
Passenger Truck	Diesel	Urban Unrestricted					931	1,359	2,401	2,577

Source Type	Fuel Type	Road Type	Door County-Revised 2015 Ozone NAAQS Nonattainment Area							
			Vehicle Population				Vehicle-Miles of Travel Ozone Season Weekday			
			2014	2019	2030	2035	2014	2019	2030	2035
Passenger Truck	Ethanol (E-85)	Off-Network	16	26	25	24				
Passenger Truck	Ethanol (E-85)	Rural Restricted					0	0	0	0
Passenger Truck	Ethanol (E-85)	Rural Unrestricted					587	884	805	816
Passenger Truck	Ethanol (E-85)	Urban Restricted					0	0	0	0
Passenger Truck	Ethanol (E-85)	Urban Unrestricted					70	105	96	96
Passenger Truck	Electricity	Off-Network	0	0	0	0				
Passenger Truck	Electricity	Rural Restricted					0	0	0	0
Passenger Truck	Electricity	Rural Unrestricted					0	0	0	0
Passenger Truck	Electricity	Urban Restricted					0	0	0	0
Passenger Truck	Electricity	Urban Unrestricted					0	0	0	0
Light Commercial Truck	Gasoline	Off-Network	743	948	958	939				
Light Commercial Truck	Gasoline	Rural Restricted					0	0	0	0
Light Commercial Truck	Gasoline	Rural Unrestricted					24,557	31,748	30,604	29,827
Light Commercial Truck	Gasoline	Urban Restricted					0	0	0	0
Light Commercial Truck	Gasoline	Urban Unrestricted					3,734	4,830	4,641	4,499
Light Commercial Truck	Diesel	Off-Network	62	66	58	61				
Light Commercial Truck	Diesel	Rural Restricted					0	0	0	0
Light Commercial Truck	Diesel	Rural Unrestricted					1,955	2,037	1,908	2,011
Light Commercial Truck	Diesel	Urban Restricted					0	0	0	0
Light Commercial Truck	Diesel	Urban Unrestricted					297	310	289	303
Light Commercial Truck	Ethanol (E-85)	Off-Network	1	2	3	3				
Light Commercial Truck	Ethanol (E-85)	Rural Restricted					0	0	0	0
Light Commercial Truck	Ethanol (E-85)	Rural Unrestricted					59	89	90	81
Light Commercial Truck	Ethanol (E-85)	Urban Restricted					0	0	0	0
Light Commercial Truck	Ethanol (E-85)	Urban Unrestricted					9	14	14	12
Light Commercial Truck	Electricity	Off-Network	0	0	0	0				
Light Commercial Truck	Electricity	Rural Restricted					0	0	0	0
Light Commercial Truck	Electricity	Rural Unrestricted					0	0	0	0
Light Commercial Truck	Electricity	Urban Restricted					0	0	0	0
Light Commercial Truck	Electricity	Urban Unrestricted					0	0	0	0
Other Buses	Gasoline	Off-Network	2	3	4	4				
Other Buses	Gasoline	Rural Restricted					0	0	0	0
Other Buses	Gasoline	Rural Unrestricted					173	279	331	338
Other Buses	Gasoline	Urban Restricted					0	0	0	0
Other Buses	Gasoline	Urban Unrestricted					25	40	46	47
Other Buses	Diesel	Off-Network	18	23	23	23				
Other Buses	Diesel	Rural Restricted					0	0	0	0
Other Buses	Diesel	Rural Unrestricted					1,293	1,721	1,859	1,927
Other Buses	Diesel	Urban Restricted					0	0	0	0

Source Type	Fuel Type	Road Type	Door County-Revised 2015 Ozone NAAQS Nonattainment Area							
			Vehicle Population				Vehicle-Miles of Travel Ozone Season Weekday			
			2014	2019	2030	2035	2014	2019	2030	2035
Other Buses	Diesel	Urban Unrestricted					189	248	260	265
Other Buses	CNG	Off-Network	1	2	2	2				
Other Buses	CNG	Rural Restricted					0	0	0	0
Other Buses	CNG	Rural Unrestricted					109	147	147	146
Other Buses	CNG	Urban Restricted					0	0	0	0
Other Buses	CNG	Urban Unrestricted					16	21	20	20
Transit Bus	Gasoline	Off-Network	1	1	1	1				
Transit Bus	Gasoline	Rural Restricted					0	0	0	0
Transit Bus	Gasoline	Rural Unrestricted					65	98	101	104
Transit Bus	Gasoline	Urban Restricted					0	0	0	0
Transit Bus	Gasoline	Urban Unrestricted					10	14	14	15
Transit Bus	Diesel	Off-Network	6	7	7	7				
Transit Bus	Diesel	Rural Restricted					0	0	0	0
Transit Bus	Diesel	Rural Unrestricted					458	560	575	587
Transit Bus	Diesel	Urban Restricted					0	0	0	0
Transit Bus	Diesel	Urban Unrestricted					69	83	82	83
Transit Bus	CNG	Off-Network	0	1	1	1				
Transit Bus	CNG	Rural Restricted					0	0	0	0
Transit Bus	CNG	Rural Unrestricted					39	49	44	45
Transit Bus	CNG	Urban Restricted					0	0	0	0
Transit Bus	CNG	Urban Unrestricted					6	7	6	6
School Bus	Gasoline	Off-Network	1	1	1	0				
School Bus	Gasoline	Rural Restricted					0	0	0	0
School Bus	Gasoline	Rural Unrestricted					24	22	14	11
School Bus	Gasoline	Urban Restricted					0	0	0	0
School Bus	Gasoline	Urban Unrestricted					3	3	2	1
School Bus	Diesel	Off-Network	39	44	46	46				
School Bus	Diesel	Rural Restricted					0	0	0	0
School Bus	Diesel	Rural Unrestricted					1,037	1,227	1,313	1,356
School Bus	Diesel	Urban Restricted					0	0	0	0
School Bus	Diesel	Urban Unrestricted					120	140	146	148
School Bus	CNG	Off-Network	0	0	1	1				
School Bus	CNG	Rural Restricted					0	0	0	0
School Bus	CNG	Rural Unrestricted					8	13	20	21
School Bus	CNG	Urban Restricted					0	0	0	0
School Bus	CNG	Urban Unrestricted					1	1	2	2
Refuse Truck	Gasoline	Off-Network	0	0	0	0				
Refuse Truck	Gasoline	Rural Restricted					0	0	0	0
Refuse Truck	Gasoline	Rural Unrestricted					6	1	0	0

Source Type	Fuel Type	Road Type	Door County-Revised 2015 Ozone NAAQS Nonattainment Area							
			Vehicle Population				Vehicle-Miles of Travel Ozone Season Weekday			
			2014	2019	2030	2035	2014	2019	2030	2035
Refuse Truck	Gasoline	Urban Restricted					0	0	0	0
Refuse Truck	Gasoline	Urban Unrestricted					1	0	0	0
Refuse Truck	Diesel	Off-Network	4	5	5	5				
Refuse Truck	Diesel	Rural Restricted					0	0	0	0
Refuse Truck	Diesel	Rural Unrestricted					213	250	262	291
Refuse Truck	Diesel	Urban Restricted					0	0	0	0
Refuse Truck	Diesel	Urban Unrestricted					23	27	27	30
Refuse Truck	CNG	Off-Network	0	0	1	1				
Refuse Truck	CNG	Rural Restricted					0	0	0	0
Refuse Truck	CNG	Rural Unrestricted					9	14	76	87
Refuse Truck	CNG	Urban Restricted					0	0	0	0
Refuse Truck	CNG	Urban Unrestricted					1	2	8	9
Single Unit Short-haul Truck	Gasoline	Off-Network	168	205	187	192				
Single Unit Short-haul Truck	Gasoline	Rural Restricted					0	0	0	0
Single Unit Short-haul Truck	Gasoline	Rural Unrestricted					5,208	6,216	6,838	7,409
Single Unit Short-haul Truck	Gasoline	Urban Restricted					0	0	0	0
Single Unit Short-haul Truck	Gasoline	Urban Unrestricted					553	651	695	742
Single Unit Short-haul Truck	Diesel	Off-Network	431	578	684	720				
Single Unit Short-haul Truck	Diesel	Rural Restricted					0	0	0	0
Single Unit Short-haul Truck	Diesel	Rural Unrestricted					16,930	21,787	25,625	27,894
Single Unit Short-haul Truck	Diesel	Urban Restricted					0	0	0	0
Single Unit Short-haul Truck	Diesel	Urban Unrestricted					1,798	2,281	2,606	2,792
Single Unit Short-haul Truck	CNG	Off-Network	1	3	8	9				
Single Unit Short-haul Truck	CNG	Rural Restricted					0	0	0	0
Single Unit Short-haul Truck	CNG	Rural Unrestricted					87	207	363	409
Single Unit Short-haul Truck	CNG	Urban Restricted					0	0	0	0
Single Unit Short-haul Truck	CNG	Urban Unrestricted					9	22	37	41
Single Unit Long-haul Truck	Gasoline	Off-Network	8	8	8	8				
Single Unit Long-haul Truck	Gasoline	Rural Restricted					0	0	0	0
Single Unit Long-haul Truck	Gasoline	Rural Unrestricted					347	403	453	489
Single Unit Long-haul Truck	Gasoline	Urban Restricted					0	0	0	0
Single Unit Long-haul Truck	Gasoline	Urban Unrestricted					39	45	49	52
Single Unit Long-haul Truck	Diesel	Off-Network	19	26	30	32				
Single Unit Long-haul Truck	Diesel	Rural Restricted					0	0	0	0
Single Unit Long-haul Truck	Diesel	Rural Unrestricted					1,101	1,442	1,700	1,844
Single Unit Long-haul Truck	Diesel	Urban Restricted					0	0	0	0
Single Unit Long-haul Truck	Diesel	Urban Unrestricted					125	161	184	197
Single Unit Long-haul Truck	CNG	Off-Network	0	0	0	0				
Single Unit Long-haul Truck	CNG	Rural Restricted					0	0	0	0

Source Type	Fuel Type	Road Type	Door County-Revised 2015 Ozone NAAQS Nonattainment Area							
			Vehicle Population				Vehicle-Miles of Travel Ozone Season Weekday			
			2014	2019	2030	2035	2014	2019	2030	2035
Single Unit Long-haul Truck	CNG	Rural Unrestricted					6	17	24	27
Single Unit Long-haul Truck	CNG	Urban Restricted					0	0	0	0
Single Unit Long-haul Truck	CNG	Urban Unrestricted					1	2	3	3
Motor Home	Gasoline	Off-Network	39	55	51	50				
Motor Home	Gasoline	Rural Restricted					0	0	0	0
Motor Home	Gasoline	Rural Unrestricted					550	707	750	782
Motor Home	Gasoline	Urban Restricted					0	0	0	0
Motor Home	Gasoline	Urban Unrestricted					58	73	75	77
Motor Home	Diesel	Off-Network	22	25	38	44				
Motor Home	Diesel	Rural Restricted					0	0	0	0
Motor Home	Diesel	Rural Unrestricted					333	359	554	659
Motor Home	Diesel	Urban Restricted					0	0	0	0
Motor Home	Diesel	Urban Unrestricted					35	37	55	65
Motor Home	CNG	Off-Network	0	0	0	0				
Motor Home	CNG	Rural Restricted					0	0	0	0
Motor Home	CNG	Rural Unrestricted					0	0	0	0
Motor Home	CNG	Urban Restricted					0	0	0	0
Motor Home	CNG	Urban Unrestricted					0	0	0	0
Combination Short-haul Truck	Gasoline	Off-Network	0	0	0	0				
Combination Short-haul Truck	Gasoline	Rural Restricted					0	0	0	0
Combination Short-haul Truck	Gasoline	Rural Unrestricted					1	1	0	0
Combination Short-haul Truck	Gasoline	Urban Restricted					0	0	0	0
Combination Short-haul Truck	Gasoline	Urban Unrestricted					0	0	0	0
Combination Short-haul Truck	Diesel	Off-Network	88	111	101	96				
Combination Short-haul Truck	Diesel	Rural Restricted					0	0	0	0
Combination Short-haul Truck	Diesel	Rural Unrestricted					8,402	10,712	11,868	11,689
Combination Short-haul Truck	Diesel	Urban Restricted					0	0	0	0
Combination Short-haul Truck	Diesel	Urban Unrestricted					590	741	797	773
Combination Short-haul Truck	CNG	Off-Network	0	1	2	3				
Combination Short-haul Truck	CNG	Rural Restricted					0	0	0	0
Combination Short-haul Truck	CNG	Rural Unrestricted					72	208	402	419
Combination Short-haul Truck	CNG	Urban Restricted					0	0	0	0
Combination Short-haul Truck	CNG	Urban Unrestricted					5	14	27	28
Combination Long-haul Truck	Diesel	Off-Network	106	135	125	119				
Combination Long-haul Truck	Diesel	Rural Restricted					0	0	0	0
Combination Long-haul Truck	Diesel	Rural Unrestricted					25,687	32,899	32,394	32,080
Combination Long-haul Truck	Diesel	Urban Restricted					0	0	0	0
Combination Long-haul Truck	Diesel	Urban Unrestricted					1,582	1,997	1,910	1,862

Source Type	Fuel Type	Road Type	Door County-Revised 2015 Ozone NAAQS Nonattainment Area							
			Vehicle Population				Vehicle-Miles of Travel Ozone Season Weekday			
			2014	2019	2030	2035	2014	2019	2030	2035
ALL (Total)	**ALL (Total)**	**ALL (Total)**	**17,175**	**20,742**	**21,299**	**21,534**	**609,731**	**761,085**	**787,608**	**799,663**
Motorcycle	ALL	ALL	619	738	779	812	6,416	7,555	7,796	7,925
Passenger Car	ALL	ALL	6,619	7,449	7,856	8,194	215,698	250,998	268,487	284,555
Passenger Truck	ALL	ALL	8,175	10,302	10,322	10,160	289,586	377,556	381,012	374,582
Light Commercial Truck	ALL	ALL	807	1,017	1,019	1,002	30,612	39,027	37,545	36,733
Other Buses	ALL	ALL	21	28	29	29	1,806	2,457	2,664	2,743
Transit Bus	ALL	ALL	7	9	9	9	646	811	823	839
School Bus	ALL	ALL	40	45	47	48	1,192	1,406	1,496	1,540
Refuse Truck	ALL	ALL	4	5	6	6	253	293	373	416
Single Unit Short-haul Truck	ALL	ALL	601	786	878	921	24,586	31,164	36,164	39,285
Single Unit Long-haul Truck	ALL	ALL	26	35	39	41	1,619	2,070	2,413	2,612
Motor Home	ALL	ALL	61	80	89	93	976	1,176	1,435	1,583
Combination Short-haul Truck	ALL	ALL	88	112	103	99	9,071	11,676	13,095	12,908
Combination Long-haul Truck	ALL	ALL	106	135	125	119	27,269	34,896	34,305	33,942
ALL (Total)	**ALL (Total)**	**ALL (Total)**	**17,175**	**20,742**	**21,299**	**21,534**	**609,731**	**761,085**	**787,608**	**799,663**
ALL	Gasoline	ALL	16,059	19,286	19,471	19,559	536,165	665,489	675,154	681,195
ALL	Diesel	ALL	1,091	1,416	1,780	1,926	72,363	93,618	110,107	116,029
ALL	CNG	ALL	4	7	15	17	368	723	1,179	1,262
ALL	Ethanol (E-85)	ALL	21	32	33	32	836	1,255	1,167	1,177
ALL	Electricity	ALL	0	0	0	0	0	0	0	0
ALL (Total)	**ALL (Total)**	**ALL (Total)**	**17,175**	**20,742**	**21,299**	**21,534**	**609,731**	**761,085**	**787,608**	**799,663**
ALL	ALL	Off-Network	17,175	20,742	21,299	21,534				
ALL	ALL	Rural Restricted					0	0	0	0
ALL	ALL	Rural Unrestricted					537,830	672,120	695,718	706,445
ALL	ALL	Urban Restricted					0	0	0	0
ALL	ALL	Urban Unrestricted					71,901	88,965	91,889	93,218
ALL (Total)	**ALL (Total)**	**ALL (Total)**	**17,175**	**20,742**	**21,299**	**21,534**	**609,731**	**761,085**	**787,608**	**799,663**

Table A7.6. Average Speed Distributions Inputted into the MOVES3.0.2 Model for the Door County-Revised 2015 ozone NAAQS nonattainment area.

Road Type	Average Trip Speed	Percent of Vehicle-Hours of Travel (VHT)							
		Light-Duty Classes (1)				Heavy-Duty Classes (2)			
		2014	2019	2030	2035	2014	2019	2030	2035
Rural Unrestricted Access	0.0 to 2.5 mph	0.00%	0.00%	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%	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%	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%	0.00%	0.00%
Rural Unrestricted Access	17.5 to 22.5 mph	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Rural Unrestricted Access	22.5 to 27.5 mph	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Rural Unrestricted Access	27.5 to 32.5 mph	0.09%	0.10%	0.10%	0.10%	0.03%	0.03%	0.03%	0.03%
Rural Unrestricted Access	32.5 to 37.5 mph	4.59%	4.66%	4.80%	4.86%	3.52%	3.61%	3.77%	3.83%
Rural Unrestricted Access	37.5 to 42.5 mph	44.10%	44.02%	43.84%	43.77%	29.54%	29.60%	29.72%	29.78%
Rural Unrestricted Access	42.5 to 47.5 mph	21.91%	22.19%	22.78%	23.04%	20.64%	21.03%	21.77%	22.07%
Rural Unrestricted Access	47.5 to 52.5 mph	29.21%	28.95%	28.41%	28.17%	46.14%	45.62%	44.60%	44.19%
Rural Unrestricted Access	52.5 to 57.5 mph	0.10%	0.09%	0.07%	0.07%	0.12%	0.12%	0.11%	0.10%
Rural Unrestricted Access	57.5 to 62.5 mph	0.00%	0.00%	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%	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%	0.00%	0.00%
Rural Unrestricted Access	72.5+ mph	0.00%	0.00%	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%	100.00%	100.00%

Road Type	Average Trip Speed	Percent of Vehicle-Hours of Travel (VHT)							
		Light-Duty Classes (1)				Heavy-Duty Classes (2)			
		2014	2019	2030	2035	2014	2019	2030	2035
Urban Unrestricted Access	0.0 to 2.5 mph	0.00%	0.00%	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%	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%	0.00%	0.00%
Urban Unrestricted Access	12.5 to 17.5 mph	29.69%	29.74%	29.84%	29.88%	22.53%	22.52%	22.48%	22.48%
Urban Unrestricted Access	17.5 to 22.5 mph	0.05%	0.05%	0.05%	0.05%	0.06%	0.06%	0.05%	0.05%
Urban Unrestricted Access	22.5 to 27.5 mph	13.60%	13.70%	13.90%	13.99%	15.49%	15.59%	15.79%	15.87%
Urban Unrestricted Access	27.5 to 32.5 mph	6.19%	6.05%	5.74%	5.60%	7.97%	7.77%	7.37%	7.20%
Urban Unrestricted Access	32.5 to 37.5 mph	16.50%	16.41%	16.22%	16.14%	12.26%	12.16%	11.96%	11.87%
Urban Unrestricted Access	37.5 to 42.5 mph	15.15%	15.13%	15.08%	15.06%	16.51%	16.51%	16.53%	16.53%
Urban Unrestricted Access	42.5 to 47.5 mph	17.01%	17.13%	17.37%	17.48%	22.66%	22.86%	23.29%	23.46%
Urban Unrestricted Access	47.5 to 52.5 mph	0.86%	0.85%	0.83%	0.82%	0.64%	0.64%	0.63%	0.63%
Urban Unrestricted Access	52.5 to 57.5 mph	0.94%	0.95%	0.97%	0.98%	1.87%	1.88%	1.91%	1.92%
Urban Unrestricted Access	57.5 to 62.5 mph	0.00%	0.00%	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%	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%	0.00%	0.00%
Urban Unrestricted Access	72.5+ mph	0.00%	0.00%	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%	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

Upwind Metropolitan Area Emissions Documentation for 2014, 2019, 2030 and 2035

1. Emissions Calculation Methodologies - Upwind Metropolitan Areas

Reducing emissions in the Door County-Revised 2015 ozone NAAQS nonattainment area will have no impact on the ozone values measured at the Newport monitor. Therefore, to show that the Newport monitor attained the 2015 ozone NAAQS due to permanent and enforceable control measures, WDNR has prepared inventories for three metropolitan areas upwind of the Door County-Revised nonattainment area: Chicago, Green Bay and Milwaukee.

1.1 Point and Area 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. Area sources are stationary sources that are too small and/or too numerous to be tracked individually in the point source inventory, and the area source inventory quantifies emissions collectively. Area 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.

For the 2014 nonattainment year, point and area source emission inventory estimates for upwind areas were based on the 2014 National Emissions Inventory (NEI) version 2 and the 2014 National Air Toxics Assessment (NATA). Emission calculation methodologies used in developing 2014 point and area source emission inventories are available in the EPA's National Emissions Inventory, version 2 Technical Support Document. [1]

For the 2019 attainment year, point and area source emissions inventory estimates for upwind areas were based on the data interpolation between 2016 base year and the 2023 projection year from EPA's 2016 version 1 emissions modeling platform. Methodologies used to develop 2016 and 2023 emissions modeling data are available in the EPA's National Emissions Inventory Collaborative Wiki v1 release page.[2]

The EPA's National Emissions Inventory Collaborative provides emissions data in units of tons per year. For the purpose of estimating regional emission trend from areas upwind of the Door County-Revised nonattainment areas, EGU-point, non-EGU point and area source facilities are assumed to operate steadily over 365 days each year. Therefore, 2014 and 2019 ozone season day emissions are derived by dividing the annual emissions for each sector by 365 days.

1.2 Onroad and Nonroad Mobile Sources

Onroad mobile sources are motorized mobile equipment that is primarily used on public roadways. Examples of onroad mobile sources include cars, trucks, buses and road motorcycles. Nonroad mobile sources are motorized mobile equipment and other small and large engines that

[1] https://www.epa.gov/sites/production/files/2018-07/documents/nei2014v2_tsd_05jul2018.pdf.
[2] http://views.cira.colostate.edu/wiki/wiki/10202.

are primarily used off public roadways. Examples of nonroad mobile sources include commercial marine, construction, lawn and garden, locomotive and agricultural equipment.

For the 2014 nonattainment year, onroad and nonroad mobile source emissions inventory estimates for upwind areas were based on the 2014 National Emissions Inventory (NEI) version 2 and the 2014 National Air Toxics Assessment (NATA). Emission calculation methodologies used in developing 2014 mobile source emissions inventory are available in the EPA's National Emissions Inventory, version 2 Technical Support Document.

For the 2019 attainment year, onroad and nonroad mobile source emissions inventory estimates for upwind areas were based on the data interpolation between 2016 base year and the 2023 projection year from EPA's 2016 version 1 emissions modeling platform. Methodologies used to develop 2016 and 2023 emissions modeling data are available in the EPA's National Emissions Inventory Collaborative Wiki v1 release page.

The EPA's National Emissions Inventory Collaborative provides emissions data in units of tons per year. Mobile source emissions likely don't occur steadily all 365 days per year. The WDNR mobile source experts expect ozone season day emissions to be slightly higher due to increases in VMT and nonroad activity. Therefore, calculating tposd by dividing annual emissions for mobile sources by 365 days may result in underestimating mobile source emissions. To account for this difference, WDNR estimated onroad and nonroad mobile source tposd emissions by dividing the annual emissions for each sector by 330.

2. Upwind Metropolitan Area Emissions Projections (2030 and 2035)

2.1 Point and Area Sources

EPA's 2016 Emissions Modeling Platform, Version 1 includes base year 2016 and projections for the years 2023 and 2028. 2023 EGU-point, non-EGU point, and area source emission projections from this platform were used as the interim year projections. EGU-point, non-EGU point and area source emission projections were estimated by extrapolating EPA's 2023 and 2028 modeling inventories to the interim year (2030) and the maintenance year (2035). Methodologies used to develop the 2023 and 2028 emission projections are available in the EPA's National Emissions Inventory Collaborative Wiki v1 release page.

The same methodology was used to convert annual tons to tposd for the 2030 and 2035 modeling projections as was used for the 2014 and 2019 inventory estimates. EGU-point, non-EGU point and area source facilities are assumed to operate steadily over 365 days each year. Therefore, 2030 and 2035 ozone season day emissions are derived by dividing the annual emissions for each sector by 365 days.

2.2 Onroad and Nonroad Mobile Sources

Onroad and nonroad mobile source emission projections from EPA's 2016 Emissions Modeling Platform, Version 1 formed the basis of the interim year inventory. The interim year (2030) and maintenance year (2035) inventories were projected by extrapolating the 2023 and 2028 onroad and nonroad modeling inventories. Methodologies used to develop the 2023 and 2028 emission projections are available in the EPA's National Emissions Inventory Collaborative Wiki v1 release page.

The same methodology was used to convert annual tons to tposd for the 2030 and 2035 modeling projections as was used for the 2014 and 2019 inventory estimates. Annual emissions were divided by 330 to get tposd emissions for the interim and maintenance years.

APPENDIX 9

Permanent and Enforceable Control Measures in the Door County-Revised 2015 Ozone NAAQS Nonattainment Area

This appendix provides additional details about the permanent and enforceable control measures that have reduced emissions of ozone precursors in the Door County-Revised nonattainment area for the 2015 ozone NAAQS. This information expands upon that presented in Section 6 of the Redesignation Request and Maintenance Plan for the Door County-Revised 2015 Ozone NAAQS Nonattainment Area.

1. Point Source Control Measures

Control Measures for Nitrogen Oxides (NOx)

Wisconsin NO_x Reasonably Available Control Technology (*RACT)* – Wisconsin has implemented RACT for major NO_x sources in nonattainment areas in southeastern Wisconsin to meet requirements for the 1997 ozone NAAQS and the 2008 ozone NAAQS. The NOx RACT requirements are codified under ss. NR 428.20 to 428.26, Wis. Adm. Code. While the NOx RACT requirements do not apply to the facilities located in Door County, WDNR expects that NOx RACT control measures implemented in southeastern Wisconsin counties positively impact air quality in the Door County-Revised 2015 ozone NAAQS nonattainment area.

Wisconsin NO_x Reasonably Available Control Measures (RACM) – Wisconsin first incorporated RACM requirements for NO_x sources in 1997 ozone NAAQS nonattainment areas. The NOx RACM requirements are codified under ss. NR 428.04 to 428.12, Wis. Adm. Code, and apply in six southeastern Wisconsin counties for certain NOx emission units constructed or modified after February 1, 2001, and in eight southeastern counties for units initially constructed on or before February 1, 2001. The WDNR expects compliance with NOx RACM requirements in southeastern Wisconsin counties positively impacts air quality in the Door County-Revised 2015 ozone NAAQS nonattainment area.

Since 2014, point source NOx emissions reported from the Door County-Revised nonattainment area have increased 13.7 percent (Table A9.1).

Table A9.1. 2014-2019 NOx emissions and requirements for point sources in the Door County-Revised 2015 ozone NAAQS nonattainment area.

Facility	NOx Emissions (TPY)		2014-2019 Change	Permanent and Enforceable Control Measures for NOx
	2014	2019		
Fincantieri Bay Shipbuilding Co. (FID #415046060)	2.58	3.66	42%	General NOx emissions regulations in s. NR 428.03, Wis. Adm. Code.
Fincantieri Bay Shipbuilding (FID #415181910)	0.64	Not Reporting	N/A	N/A
Washington Island Electric Cooperative (FID #415186750)	0.15	Not Reporting	N/A	For diesel generators (P03, P04, P08, P09): NESHAP for Stationary Reciprocating Internal Combustion Engines
Total	3.22	3.66	13.7%	

Federal NOx Transport Rules – EGUs in 23 states east of the Mississippi, including 12 states that significantly contribute over the 1 percent significance threshold to the Door monitor, have been subject to a series of federal NOx transport rules since 2009.[1] These rules have included the Clean Air Interstate Rule (CAIR), the Cross-State Air Pollution Rule (CSAPR) and the CSAPR Update Rule.

Beginning January 1, 2009, EGUs in 22 states (including Wisconsin) became subject to ozone season NOx emission budgets under CAIR. CAIR addresses the broad regional interstate transport of NOx affecting attainment and maintenance of the 1997 ozone NAAQS as required under CAA s. 110(a)(2)(D). For the three states contributing most to ozone concentrations in the Door County-Revised 2015 ozone NAAQS nonattainment area ozone concentrations (Illinois, Indiana, and Wisconsin), CAIR resulted in a 35 percent reduction of total EGU NOx emissions across the three states during the ozone season over the 2009-2014 period (Table A9.2).

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. EPA published the CSAPR

[1] LADCO's 2023 source contribution modeling indicates that Illinois, Wisconsin, Indiana, Michigan, Mississippi, Kentucky, Texas, Ohio, Oklahoma, Iowa, Kansas and Arkansas all contribute significantly to the ozone measured in Door County. All of these states are subject to one or more of the federal NOx transport rules discussed.

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. For the three-state area of Illinois, Indiana and Wisconsin, CSAPR and the CSAPR Update resulted in a 39 percent reduction of total EGU NOx emissions across the three states during the ozone season over the 2014-2017 period, and a 19 percent reduction over the 2017-2019 period (Table A9.2).

On April 30, 2021, EPA finalized the Revised CSAPR Update rule in order to fully address 21 states' outstanding interstate pollution transport obligations for the 2008 ozone NAAQS (86 FR 23054).[2] The rule would further reduce EGU NOx emissions in 12 states starting in the 2021 ozone season. Due to this rule and other changes already underway in the power sector, EPA expects ozone season NOx emissions will be nearly 25,000 tons lower in 2021 than in 2019, a reduction of 19 percent.[3]

Table A9.2. EGU NOx emitted under the CAIR and CSAPR programs in Illinois, Indiana and Wisconsin

State	Ozone Season NOx Emissions (Tons)				Percent Reduction		
	2008	2014	2017	2019	2008 – 2014	2014 – 2017	2017 – 2019
Illinois	31,106	18,489	13,039	11,877	41%	29%	9%
Indiana	53,016	40,247	20,396	16,594	24%	49%	19%
Wisconsin	19,951	9,087	8,103	5,186	55%	11%	36%
Total	**104,073**	**67,823**	**41,538**	**33,657**	**35%**	**39%**	**19%**

Source: EPA Clean Air Markets Division, Database of reported emissions.

Control Measures for Volatile Organic Compounds (VOC)

VOC RACT – Wisconsin has implemented permanent and enforceable control measures to fulfill VOC RACT requirements for Wisconsin nonattainment areas under the 1997 ozone NAAQS and the 2008 ozone NAAQS. In moderate (and higher) ozone nonattainment areas, RACT is required for sources covered in Control Technique Guidelines (CTGs) issued by EPA, as well as sources that meet the major stationary source definition after subtracting their CTG-applicable emissions (non-CTG major sources). Wisconsin's VOC RACT requirements are codified under chapters NR 419 through 423, Wis. Adm. Code, and are based on EPA's CTGs (Table A9.3). Due to its "marginal" classification, the Door County-Revised nonattainment area is not required to implement VOC RACT under the 2015 ozone NAAQS, nor are any areas within Door County required to implement VOC RACT under an earlier ozone NAAQS. A few VOC RACT rules, indicated by an "X" in the rightmost column of Table A9.3, do apply in Door County, however. Similar to the NOx control measures described above, most of Wisconsin's VOC RACT rules

[2] The rulemaking responds to a September 2019 ruling by the U.S. Court of Appeals for the D.C. Circuit, *Wisconsin v. EPA*, which remanded the CSAPR Update to EPA for failing to fully eliminate significant contribution to nonattainment and interference with maintenance of the 2008 ozone NAAQS from upwind states by downwind areas' attainment dates.

[3] https://www.epa.gov/sites/default/files/2021-03/documents/revised_csapr_update_factsheet_for_final_rule.pdf.

apply in southeastern counties along the Lake Michigan shoreline. The WDNR expects compliance with VOC RACT rules upwind of Door County positively impact its air quality.

Table A9.3. VOC Control Technique Guidelines Incorporated into Wisconsin Administrative Code.

Source	Title (Description)	EPA CTG Report No.	Wis. Adm. Code Incorporation	Emissions Inventory Classification[1]	Implemented within Door County
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	X
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	X
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					

Source	Title (Description)	EPA CTG Report No.	Wis. Adm. Code Incorporation	Emissions Inventory Classification[1]	Implemented within Door County
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	X
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	X
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	X
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	X
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	X
	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	X
	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	X
Metal Furniture	Control of Volatile Organic Emissions from Existing Stationary Sources – Volume III: Surface Coating of Metal Furniture	EPA-450/2-77-032	NR 422.10	Stationary Point Source	X

Source	Title (Description)	EPA CTG Report No.	Wis. Adm. Code Incorporation	Emissions Inventory Classification[1]	Implemented within Door County
	Control Techniques Guidelines for Metal Furniture Coatings	EPA 453/R-07-005	NR 422.105	Stationary Point Source	
Metal Parts, miscellaneous	Control Techniques Guidelines for Miscellaneous Metal and Plastic Parts Coatings	EPA 453/R-08-003	NR 422.15	Stationary Point Source	X
	Fire Truck and Emergency Response Vehicle Manufacturing - surface coating	(covered under Misc. Metal Parts CTG)	NR 422.155	Stationary Point Source	X
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	X
	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 422.083	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	X
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	X
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 Incorporation	Emissions Inventory Classification[1]	Implemented within Door County
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	X
Dry Cleaning	Control of Volatile Organic Compound Emissions from Large Petroleum Dry Cleaners	EPA-450/3-82-009	NR 423.05	Stationary Area Source	X
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	X
Chemical					
Pharmaceutical	Control of Volatile Organic Emissions from Manufacture of Synthesized Pharmaceutical Products	EPA-450/2-78-029	NR 421.03	Stationary Point Source	X
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	X
Rubber	Control of Volatile Organic Emissions from Manufacture of Pneumatic Rubber Tires	EPA-450/2-78-030	NR 421.04	Stationary Point Source	X
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	

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

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

Point source VOC emissions in the nonattainment area – The Door County-Revised 2015 ozone NAAQS nonattainment area had a single point source required to report VOC emissions during the 2019 attainment year (Table A9.4). The shipbuilding facility emitted 34.9 tons of VOC from painting and coating operations and approximately 0.2 tons of VOC from facility-wide natural gas use. Under its permit, the source is required to meet several general state rules to limit VOC emissions under ss. NR 419.03, 419.04, and 424.03, Wis. Adm. Code. The source is also required to comply with VOC RACT solvent metal cleaning requirements in 423.03 (Table A9.3).

Table A9.4. 2019 VOC emissions and requirements for point sources in the Door County-Revised 2015 ozone NAAQS nonattainment area.

Emission Source Category	2019 VOC (Tons)	Permanent and Enforceable Control Measures
Boiler/Furnace, Natural Gas	0.2	
Painting/Coating	34.9	Individual emission units subject to Wisconsin VOC RACT Administrative Rules and Surface Coating of Miscellaneous Metal Parts and Products NESHAP[1]
Total	**35.1**	

[1] The emissions units are subject to either major source or area source NESHAP emission requirements based on applicability criteria. The applicability of requirements and exemptions for the unit has not been determined for purposes of this assessment.

Federal VOC Control Measures for Point Sources

The Door County-Revised 2015 ozone NAAQS nonattainment area point source is potentially subject to various National Emission Standards for Hazardous Air Pollutant (NESHAP) rules. Federal NESHAP rules are implemented nationally to control hazardous air 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 measures may apply to sources within the Door County-Revised 2015 ozone NAAQS nonattainment area but also apply nationally, thereby reducing the transport of VOC emissions into the nonattainment area.

2. Area Source Control Measures

As noted for point sources, Wisconsin has incorporated the applicable CTGs in VOC RACT rules under chs. NR 419 through 423, Wis. Adm. Code (Table A9.3). A number of these rules limit VOC emissions from area sources. 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) with EPA approval because the equipment was found to defeat onboard vapor recovery systems for some new vehicles. As stage 2 equipment is removed, actual VOC emissions are anticipated to decrease slightly. This SIP revision was based

on a technical demonstration showing a net benefit as required under the CAA to prevent SIP backsliding.

There are also a number of federal programs in place which reduce area source VOC emissions. VOC emission standards for consumer and commercial products were promulgated under 40 CFR Part 59. This program continues to limit VOC emissions emitted from the applicable source categories. Actual emission levels going into the future will depend on population and activity use factors.

3. Onroad Source Control Measures

Both NOx and VOC emissions from onroad mobile sources are substantially controlled through federal new vehicle emission standards programs and fuel standards. Although initial compliance dates in many cases were prior to the 2014 nonattainment year, these regulations have continued to reduce area-wide emissions as fleets turn over to newer vehicles. All of these programs apply nationally and have reduced emissions both within the ozone nonattainment area and within contributing upwind source regions. The federal programs contributing to attainment of the 2015 ozone NAAQS include those listed in Table A9.5.

The Wisconsin-administered I/M program also limits on-road VOC and NOx emissions from onroad sources and is required for seven counties in southeastern Wisconsin (Sheboygan, Washington, Ozaukee, Waukesha, Milwaukee, Racine and Kenosha). As is true for other emission control measures, WDNR expects that Wisconsin's I/M program positively impacts air quality in the Door County-Revised 2015 ozone NAAQS nonattainment area. The Wisconsin I/M program was first implemented in 1984 and has gone through several modifications and enhancements since that time. The I/M program requirements are codified in chs. NR 485 and Trans 131, Wis. Adm. Code. The I/M program reduces average vehicle VOC and NOx emissions and garners some level of continued incremental reduction as fleets turn over to new vehicles.

Table A9.5. Federal onroad mobile source regulations contributing to attainment.

On-road 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 emission requirements as well as the phasing by vehicle size and type.

4. Nonroad Source Control Measures

Similar to onroad sources, 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 Door County-Revised 2015 ozone NAAQS nonattainment area and in the broader regional areas contributing to ozone transport. Table A9.6 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 A9.6. 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.

APPENDIX 10

Classification and Regression Tree (CART) Analysis for LADCO Ozone Nonattainment Areas

LADCO | LAKE MICHIGAN AIR DIRECTORS CONSORTIUM

MEMORANDUM

Subject:	CLASSIFICATION AND REGRESSION TREE (CART) ANALYSIS FOR LADCO OZONE NONATTAINMENT AREAS
Date:	OCTOBER 2021
To:	LADCO Ozone Technical Workgroup
From:	Angie Dickens (dickens@ladco.org), LADCO
Cc:	LADCO Air Directors and Technical Oversight Committee
Attachment:	Appendices 1-9

Please direct questions/comments to dickens@ladco.org.

Overview of CART Analyses

A classification and regression tree (CART) analysis is a statistical tool to classify data. Here, it is applied to 8-hour ozone and meteorological data to determine the meteorological conditions most commonly associated with high ozone days in ozone nonattainment areas in the LADCO region. Once days are classified by their unique, shared meteorological characteristics, ozone concentration trends among days with similar meteorological conditions can be examined. CART analysis normalizes the influence of year-to-year meteorological variability on ozone concentrations, and any remaining trend is assumed to be the result of non-meteorological factors, such as reductions in emissions of ozone precursors.

LADCO conducted the CART analyses using 8-hour ozone monitoring data from regulatory monitors in the ozone nonattainment areas and daily meteorological data from airport weather stations. The analysis included data from the years 2005 through 2020 to identify the trends in ambient, surface ozone concentrations after adjustment for meteorology. This analysis does not include data for either 2015 or 2021. We excluded 2015 because of quality issues that we identified in the data; we excluded 2021 because the meteorological data for this year is not yet complete.[1] The goal of the CART analysis was to determine the meteorological conditions associated with high ozone episodes in the nonattainment areas and to construct trends for the days identified as sharing similar meteorological characteristics.

[1] The meteorological data used in the CART analysis requires significant processing by the National Oceanic and Atmospheric Administration (NOAA), the National Weather Service, the Environmental Protection Agency (EPA) and LADCO. This processing is time-consuming and results in a lag between the end of the year and when the data is available for use.

The CART analysis processed multiple meteorological variables for each day to determine which variables are the most effective at predicting ozone concentrations. Surface meteorological data (daily average temperature, midday average relative humidity, etc.) were taken from National Weather Service (NWS) stations and processed by the U.S. Environmental Protection Agency (EPA).[2] Meteorological parameters related to transport of air masses (southerly transport distance, transport direction, etc.) were determined based on LADCO runs of the Hybrid Single-Particle Lagrangian Integrated Trajectory (HYSPLIT) model. The meteorological variables included in the CART analysis are listed in Table 1.

LADCO developed regression trees to classify each summer day (May – September) by a common set of meteorology variables. Each branch in a regression tree describes the meteorological conditions associated with different ozone concentrations. We assigned meteorologically similar days to day-type groups (known in CART as "nodes"), which are equivalent to branches of the regression tree. Grouping days with similar meteorology normalizes the influence of meteorological variability on the underlying trend in ozone concentrations. The remaining trend in ozone concentrations can be presumed to be due to trends in non-meteorological predictors, such as precursor emissions. We then plotted the ozone trends for each of the different CART nodes.

Description of CART Analysis Results

Appendices 1 through 8 present the results of the CART analyses for each ozone nonattainment area in the LADCO region. These appendices present the results in three different forms: CART trees, trends in ozone concentrations over time within the high-ozone CART nodes, and the importance of different meteorology variables associated with ozone concentrations. Below, we explain how to interpret each type of analysis and, as an example, discuss figures for the Louisville, KY/IN ozone nonattainment area.

Classification and Regression Tree figures

Figure 1 shows an example CART analysis "tree" for Louisville. This tree shows the variables used to split the data (in circles), the p-value for the split (in the same circle) and the values used for each split (the numbers listed along the lines leading from the circles). The "terminal nodes" are shown at the bottom of the figure and are the final groups of meteorologically similar days used for the trends analysis. The boxplots at the very bottom show the distribution of ozone concentrations on days within each final group of meteorologically similar days (terminal node). You can track how CART classifies the data in each of the branches of the tree by starting at the top and moving downward through the different splits in the data to reach

[2] Upper air observations were not included in this analysis (unlike in previous years) because EPA is no longer processing this data.

the terminal nodes at the bottom. Note that nodes are labeled with numbers to allow easy reference to each node, but the node numbers themselves are not inherently meaningful.

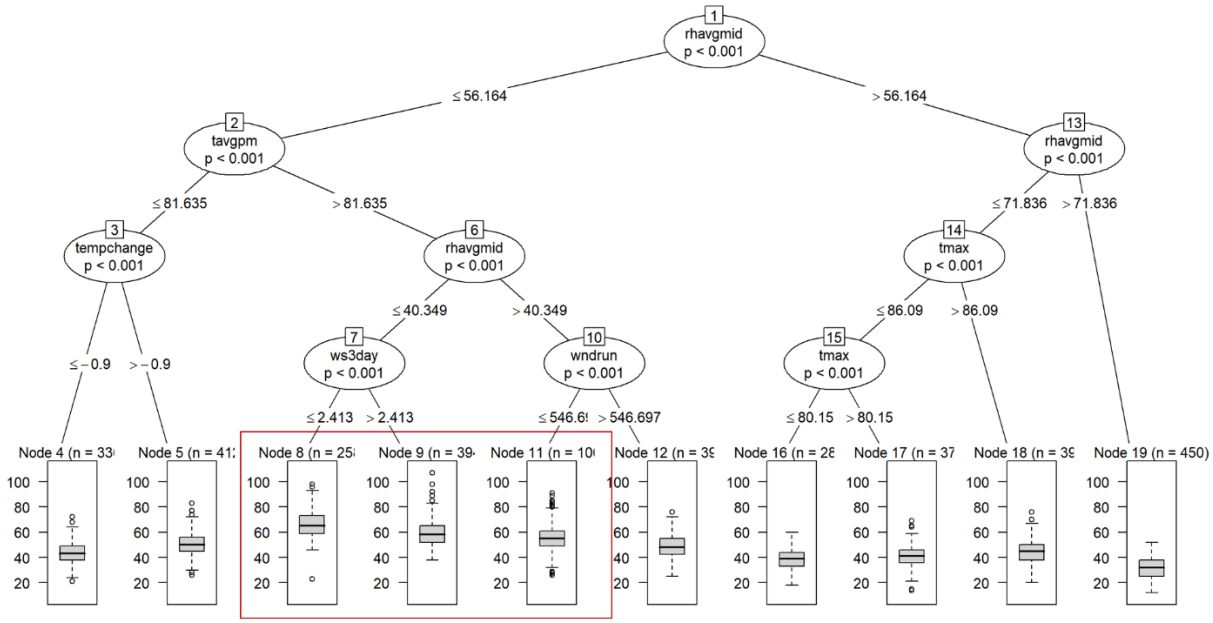


Figure 1. Example Classification and Regression Tree (CART) for the Louisville monitors. The boxplots[3] at the bottom show the distribution of ozone concentrations on the different days in each node. The high-ozone nodes shown in the trends figure below (mean ozone >50 ppb) are outlined by the red boxes. See Table 1 for a description of the different variables.

In the tree shown for Louisville, the first split is made based on average midday relative humidity ("rhavgmid"), shown at the top of the tree. All of the 2005-2020 data are divided into two bins based on whether the average midday relative humidity was above or below 56.164%. The data for days that are below this value (the branch on the left) are then split according to whether the average afternoon temperatures ("tavgpm") are above or below 81.635 °F. Each resulting group of days continues to be split until either the tree reaches the maximum specified vertical number of splits, the group has too few days to be further split, or the resulting nodes don't contain enough days. Note that we defined all of these limits when we configured the CART analysis. The Louisville CART analysis resulted in 10 terminal nodes, such as node 8 (day type "8"), which is the highest ozone concentration node. The days in node 8 have an average ozone concentration of 66 ppb, average midday relative humidity below 40.349% (≤56.164% and ≤40.349%), average afternoon temperatures above 81.635 °F, and 3-day average wind speeds slower than 2.413 m/s.

[3] The line in the middle of each box shows the median ozone concentration value, the gray box encloses the middle 50% of values, and the dashed line and circles show the whole range of values in this node.

Trends in ozone concentrations over time

Figure 2 shows an example plot of ozone concentrations trends over time for high-ozone nodes for Louisville. These nodes were determined using the CART analysis shown in Figure 1 and represent groups of days with similar meteorology. The average ozone concentration and meteorological characteristics for each high-ozone node are listed in Table 2.

The CART analysis for Louisville determined that there were three types of days from the Louisville monitors that had average ozone concentrations of greater than 50 parts per billion (ppb). Day type "8" was the only CART node that had average ozone concentrations over 60 ppb. The meteorology on these days is described in the previous section. The other types of high-ozone days all had high temperatures and low to moderate relative humidity and variable wind speeds or transport distances. Figure 2 shows that ozone concentrations for all three high-ozone day types have decreased over the last 16 years. This analysis demonstrates that, on days with similar meteorology, ozone concentrations on high-ozone days at Louisville monitors have decreased substantially since 2005.

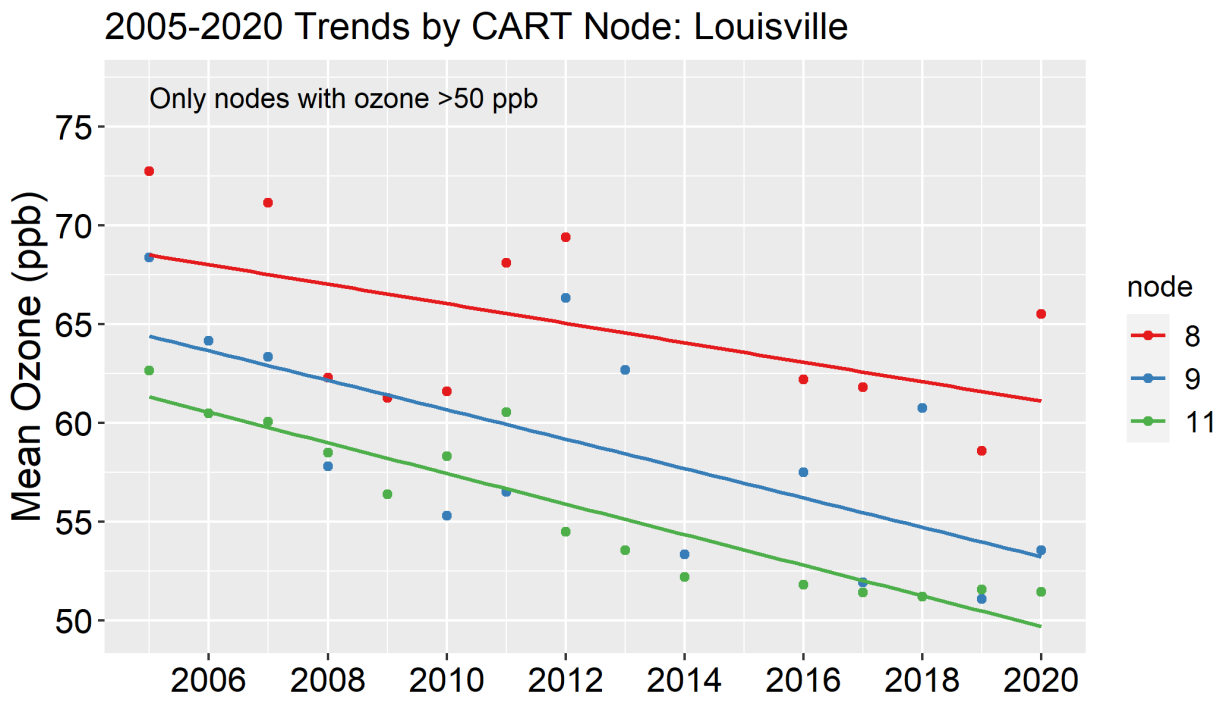


Figure 2. Trends in average (mean) ozone in high-ozone nodes for the Louisville monitors. High-ozone nodes are those with mean ozone concentrations over 50 ppb.

Table 2. Description of each high-ozone node for the Louisville monitors, including its average ozone concentration and the meteorological characteristics of days within the node. Nodes are color-coded to match the colors in the previous figure and are arranged from highest (left) to lowest (right) ozone concentrations.

Node 8	Node 9	Node 11	→ Node name
66 ppb O_3	59 ppb O_3	56 ppb O_3	→ Average ozone concentration
Midday RH <40%	Midday RH <40%	Midday RH <56% & >40%	Meteorological characteristics of days in each group
PM Temp >82 °F	PM Temp >82 °F	PM Temp >82 °F	
3-day winds <2.4 m/s	3-day winds >2.4 m/s	24-hour wind run (transport) <547 km	

Variable importance plots

Figure 3 shows the relative importance of the different meteorological parameters associated with the average ozone concentrations for the example Louisville analysis.[4] For this analysis, the relationship between each variable and ozone concentrations is considered independent of the other variables, and this importance is then ranked. The importance of the most impactful variable is normalized to a value of 100, and the importance of all other variables is adjusted to this value. It is important to note that this analysis is determined separately from the splitting of variables in the CART analysis. Accordingly, the most important variables in this analysis may or may not be used as splitting variables in the CART analysis, and less important variables may be used to split data in the CART analysis.

For Louisville, the top three most important variables impacting ozone concentrations were all relative humidity-based parameters (average midday, whole day, and nighttime relative humidity). Temperature parameters were also very important, with the average afternoon temperatures and maximum temperatures being the fourth and fifth most important variables. A number of parameters related to wind speed and transport distance also appear in the top 20 most important variables, along with the number of hours with rain and southerly transport/winds.

[4] The importance of each predictor is evaluated individually, and a loess smoother is fit between the outcome and the predictor. The R^2 statistic is calculated for this model against the intercept-only null model. This number is returned as a relative measure of variable importance. https://topepo.github.io/caret/variable-importance.html

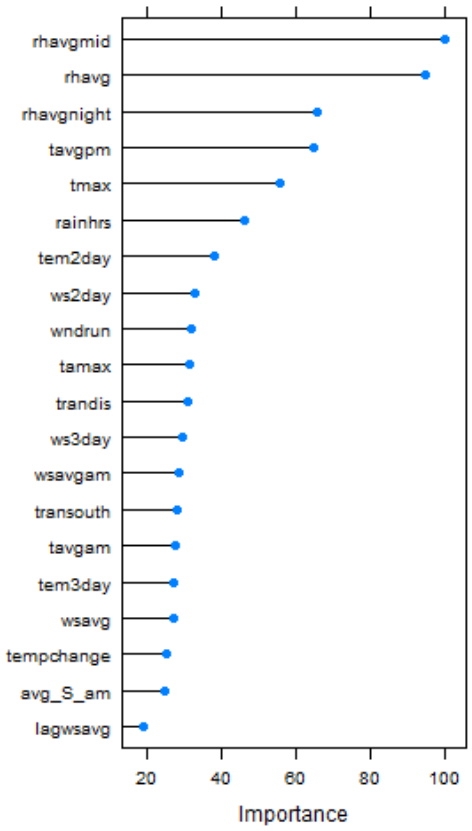


Figure 3. Rankings of the importance of different variables in the CART analysis for the Louisville monitors. Only the top-20 most important variables are shown. See Table 1 for a description of the different variables.

Data Sources & Analytical Methods.

EPA processed surface meteorological data at all airports in the U.S. for the years 2005 through 2020 and provided these data to LADCO. EPA also processed HYSPLIT data for the years 2005 through 2019; LADCO processed the HYSPLIT data for 2020 because EPA is no longer processing these data. Comparisons of 2019 HYSPLIT data prepared by EPA and LADCO demonstrated that LADCO's analysis exactly reproduced EPA's analysis for the variables used here. The meteorological parameters used in the analysis are listed in Table 1. LADCO dropped all 2015 meteorological data because of apparent issues with the temperature data provided by EPA, as described in Appendix 9.

LADCO downloaded daily maximum 8-hour average (MDA8) ozone concentrations for regulatory monitors from EPA's Air Data website (https://aqs.epa.gov/aqsweb/airdata/download_files.html). Ozone data were only included for monitors with long-term records, defined as monitors that were missing no more than one year of data from 2005 to 2020.

LADCO conducted the CART analyses in *R* using the *ctree* function from the package *partykit*. *Ctree* is a non-parametric class of regression tree that avoids overfitting data by applying a statistical approach using a significance test (using a p-value) for each split. We pruned the regression trees using the *ctree_control* options: *maxdepth, minsplit* and *minbucket*, with *maxsurrogate* set to 3; these options control the maximum depth of the tree, the minimum number of days in a node to allow it to be further split, the minimum number of days in a terminal node, and the number of surrogate splits allowed in case of missing data, respectively. The values for these parameters used in each CART analysis are listed in Appendix 10. The variable importance was calculated using the *train* (with *ctree*) and *varImp* functions from the *caret* package. The aim was to produce a tree that (1) had at least one node with relatively high average ozone concentrations (65 to greater than 70 ppb), such that days in this node would impact attainment of the 2015 ozone NAAQS, (2) was not too complicated; ideally, the trees would contain 14 or fewer terminal nodes, however, some trees contained up to 18 terminal nodes, and (3) contained relatively complete records, ideally with data for each node in every year, but minimally missing just a few year-node combinations. Data for nodes with fewer than 3 days in a year were dropped from the trends figures for that year.

Table 1. Daily meteorological parameters used in the CART analysis.

Parameter	Description	Units
avg_S_am	Average Morning Wind South (v) Vector	meters/second (m/s)
avg_S_pm	Average Morning Wind South (v) Vector	meters/second (m/s)
avg_S_win	Average Wind South (v) Vector	meters/second (m/s)
avg_W_am	Average Morning Wind West (u) Vector	meters/second (m/s)
avg_W_pm	Average Afternoon Wind West (u) Vector	meters/second (m/s)
avg_W_win	Average Wind West (u) Vector	meters/second (m/s)
dpavg	Average Daily Dew Point Temperature	Degrees Fahrenheit (°F)
dpmax	Maximum Daily Dew Point Temperature	Degrees Fahrenheit (°F)
foghrs	Hours of Fog	Hours
hazehrs	Hours of Haze	Hours
lag_S_wn	Previous Day Wind South (V) Vector	meters/second (m/s)
lag_W_wn	Previous Day Wind West (U) Vector	meters/second (m/s)
lagstpavg	Previous Day Station Pressure	millibars (mb)
lagtmax	Previous Day Max Temp	Degrees Fahrenheit (°F)
lagwsavg	Previous Day Avg Wind Speed	meters/second (m/s)
mrmax	Maximum Water Vapor Mixing Ratio	grams/kilogram (g/kg)
precip	24-hour Precipitation	inches
presschange	24-hour Pressure Change	millibars (mb)
rainhrs	Hours of Rain	hours
rhavg	Average Daily Relative Humidity	Percent (%)
rhavgmid	Average Midday Relative Humidity	Percent (%)
rhavgnight	Average Nighttime Relative Humidity	Percent (%)
slpavg	Average Sea Level Pressure	millibars (mb)
stpavg	Average Station Pressure	millibars (mb)
taavg	Average Apparent Temperature	Degrees Fahrenheit (°F)
tamax	Maximum Apparent Temperature	Degrees Fahrenheit (°F)
tamin	Minimum Apparent Temperature	Degrees Fahrenheit (°F)
tavgam	Average Morning Temperature	Degrees Fahrenheit (°F)
tavgpm	Average Afternoon Temperature	Degrees Fahrenheit (°F)
tem2day	Average 2-day Temperature	Degrees Fahrenheit (°F)
tem3day	Average 3-day Temperature	Degrees Fahrenheit (°F)
tempchange	24-hr Temperature Change"	Degrees Fahrenheit (°F)
tmax	Maximum Daily Temperature	Degrees Fahrenheit (°F)
trandir	24-hr Transport Direction	Degrees (°)
trandis	24-hr Transport Distance	kilometers (km)
transouth	Southerly (v) Component of 24-hr Transport Vector	kilometers (km)
tranw	Vertical (z) Component of 24-hr Transport Vector	kilometers (km)
tranwest	Westerly (u) Component of 24-hr Transport Vector	kilometers (km)

Table 1 continued.

Parameter	Description	Units
wdavg	Average Daily Wind Direction	Degrees (°)
wdavgam	Average Morning Wind Direction	Degrees (°)
wdavgpm	Average Afternoon Wind Direction	Degrees (°)
weekday	Day of Week	
wndrun	24-hr Scalar Wind Run	kilometers (km)
ws2day	Average 2-day Wind Speed	meters/second (m/s)
ws3day	Average 3-day Wind Speed	meters/second (m/s)
wsavg	Average Daily Wind Speed	meters/second (m/s)
wsavgam	Average Morning Wind Speed	meters/second (m/s)
wsavgpm	Average Afternoon Wind Speed	meters/second (m/s)

CLASSIFICATION AND REGRESSION TREE (CART) ANALYSIS FOR LADCO OZONE NONATTAINMENT AREAS

APPENDICES

OCTOBER 2021

Produced by the Lake Michigan Air Directors Consortiums (LADCO)

Please direct questions/comments to dickens@ladco.org.

Appendix 1

CART analysis results for the Chicago 2008 and 2015 ozone nonattainment areas

Contents:

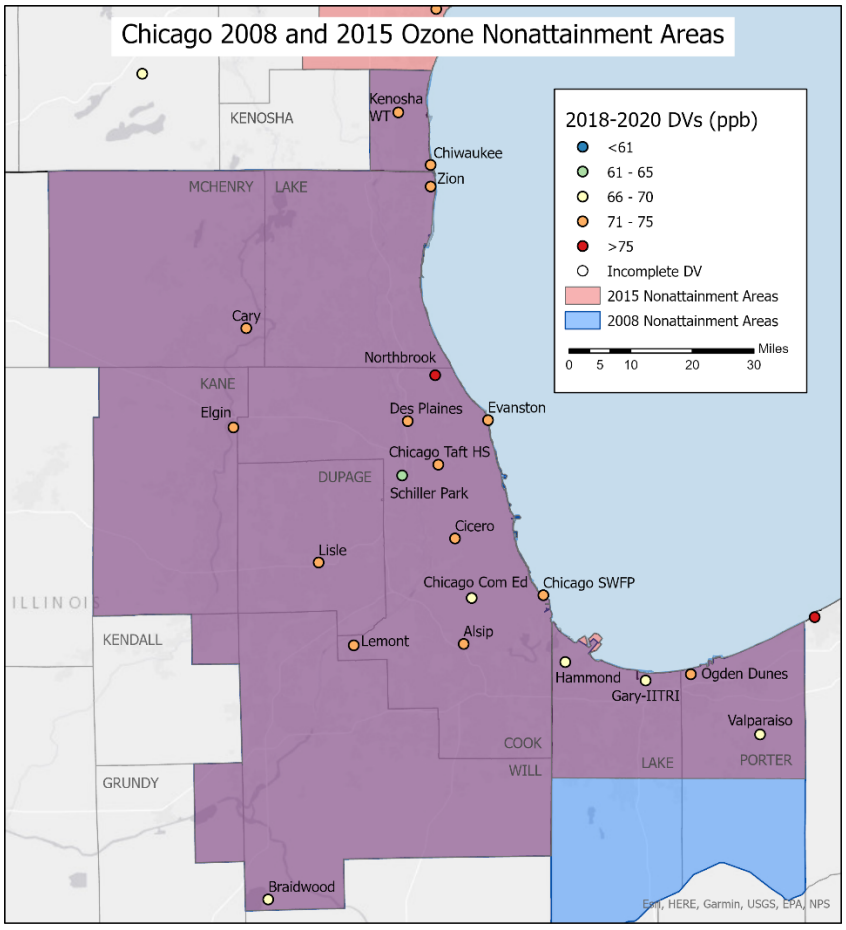


Figure A1.1. Map of the Chicago 2008 and 2015 ozone nonattainment areas.

CART analysis results for the Kenosha (WI) and Lake (IL) County monitors

Data used in the analysis:

Ozone monitors: 170971007 (Zion, IL) and 550590019 (Chiwaukee Prairie, WI)

Meteorological station: Chicago O'Hare International Airport (ORD)

Brief description of the results:

The high-ozone nodes from the CART analysis for the Kenosha and Lake County monitors generally have hot temperatures and low relative humidity (Figure A1.2 and Table A1.1). Some of the nodes are also influenced by southerly transport, which also appear as important variables (Figure A1.4). Temperature-based parameters are the most important variables. Mean ozone concentrations in all of the high-ozone nodes have decreased from 2005 to 2020 (Figure A1.3).

APPENDIX 1: CART analysis results for Chicago

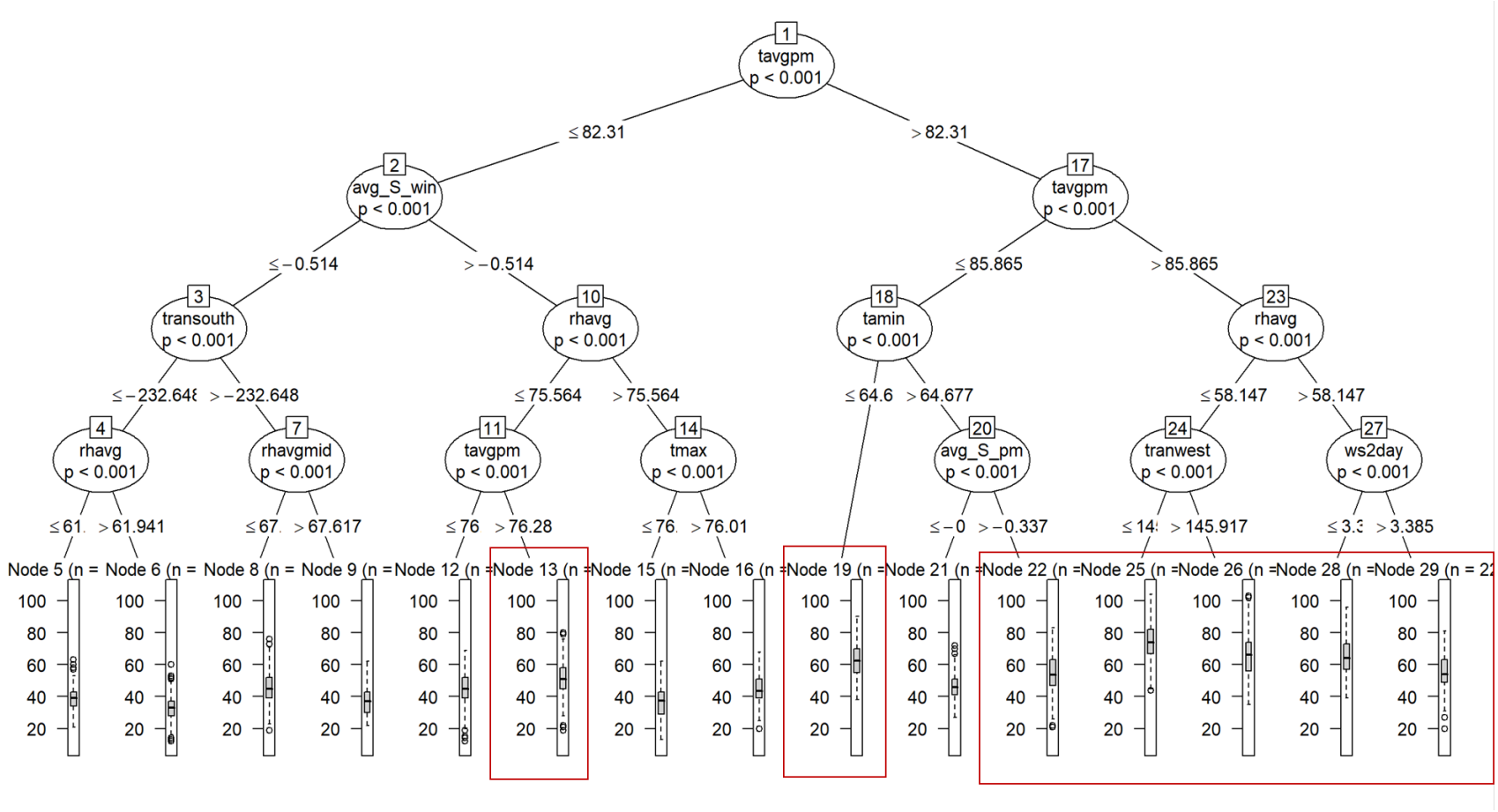


Figure A1.2. Classification and Regression Tree (CART) for the Kenosha (WI) and Lake (IL) County monitors. The boxplots[1] at the bottom show the distribution of ozone concentrations on the different days in each node. The high-ozone nodes shown in the trends figure below (mean ozone >50 ppb) are outlined by the red boxes. See Table 1 in the main document for a description of the different variables.

[1] The line in the middle of each box shows the median ozone concentration value, the gray box encloses the middle 50% of values, and the dashed line and circles show the whole range of values in this node.

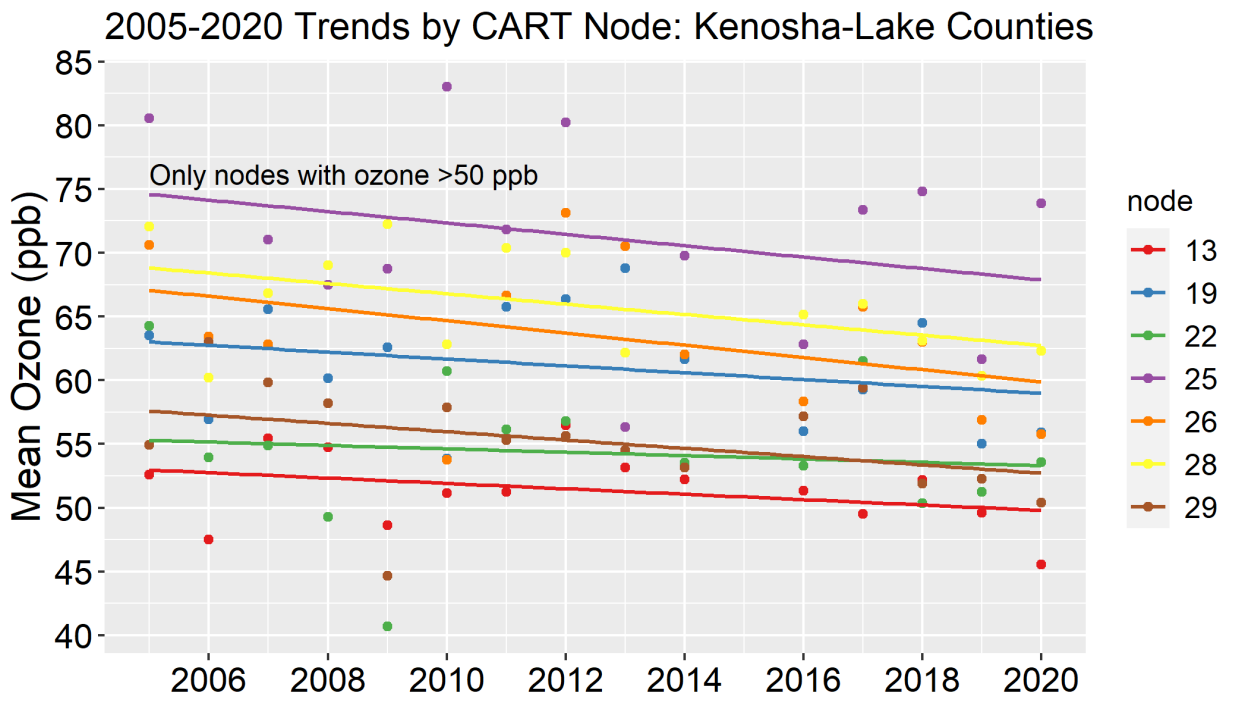


Figure A1.3. Trends in average (mean) ozone in high-ozone nodes for the Kenosha (WI) and Lake (IL) County monitors. High-ozone nodes are those with mean ozone concentrations over 50 ppb.

Table A1.1. Description of each high-ozone node for the Kenosha (WI) and Lake (IL) County monitors, including its average ozone concentration and the meteorological characteristics of days within the node. Nodes are color-coded to match the colors in the previous figure and are arranged from highest (left) to lowest (right) ozone concentrations.

Node 25	**Node 28**	**Node 26**	**Node 19**	**Node 29**	**Node 22**	**Node 13**
74 ppb O_3	65 ppb O_3	66 ppb O_3	62 ppb O_3	55 ppb O_3	54 ppb O_3	51 ppb O_3
PM Temp >86 °F	PM Temp >86 °F	PM Temp >86 °F	PM Temp >82 & <86 °F	PM Temp >86 °F	PM Temp >82 & <86 °F	PM Temp <82 °F
RH <58%	RH >58%	RH <58%	Minimum apparent Temp <65 °F	RH >58%	Minimum apparent Temp >65 °F	Southerly winds
Little westerly transport[2]	2-day winds <3.4 m/s	More westerly transport[1]		2-day winds >3.4 m/s	PM southerly winds	RH <75% PM T >76 °F

[2] "Little westerly transport" = less than 146 km in 24 hours. "More westerly transport" = more than 146 km in 24 hours.

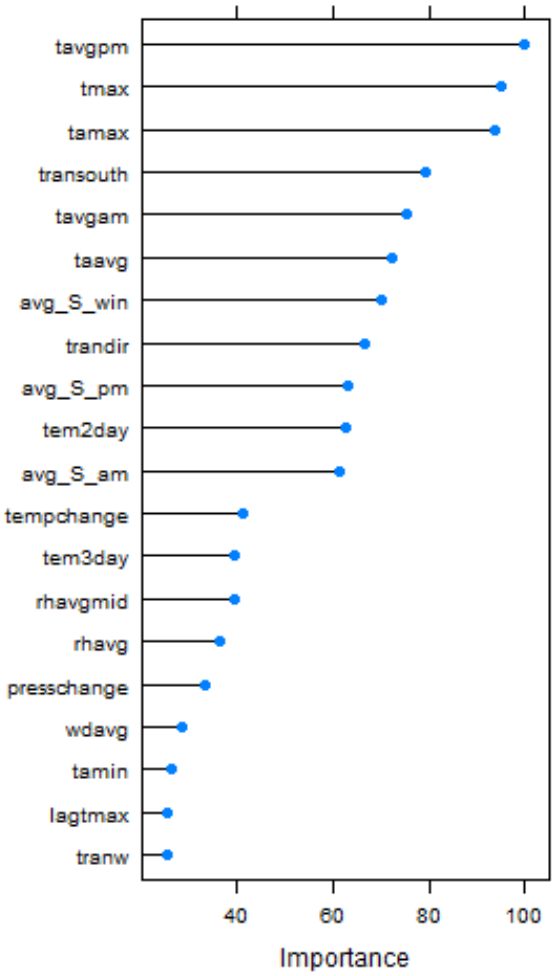


Figure A1.4. Rankings of the importance of different variables in the CART analysis for the Kenosha (WI) and Lake (IL) County monitors. Only the top-20 most important variables are shown. See Table 1 in the main document for a description of the different variables.

CART analysis results for the Cook County (IL) monitors

Data used in the analysis:

Ozone monitors: 170310001 (Alsip), 170310032 (Chicago SWFP), 170310076 (Chicago Com Ed), 170311003 (Chicago Taft HS), 170311601 (Lemont), 170314002 (Cicero), 170314007 (Des Plaines), 170314201 (Northbrook), 170317002 (Evanston)

Meteorological station: Chicago O'Hare International Airport (KORD)

Brief description of the results:

The high-ozone nodes from the CART analysis for the Cook County monitors generally have hot temperatures and low relative humidity (Figure A1.5 and Table A1.2). Some of the nodes are also influenced by southerly transport, which also appears as important variables (Figure A1.7), although southerly transport is less important for the Cook County monitors than for the Kenosha and Lake County monitors to the north (Figure A1.4). Temperature-based parameters are the most important variables. Mean ozone concentrations in most of the high-ozone nodes have increased from 2005 to 2020 (Figure A1.6).

APPENDIX 1: CART analysis results for Chicago

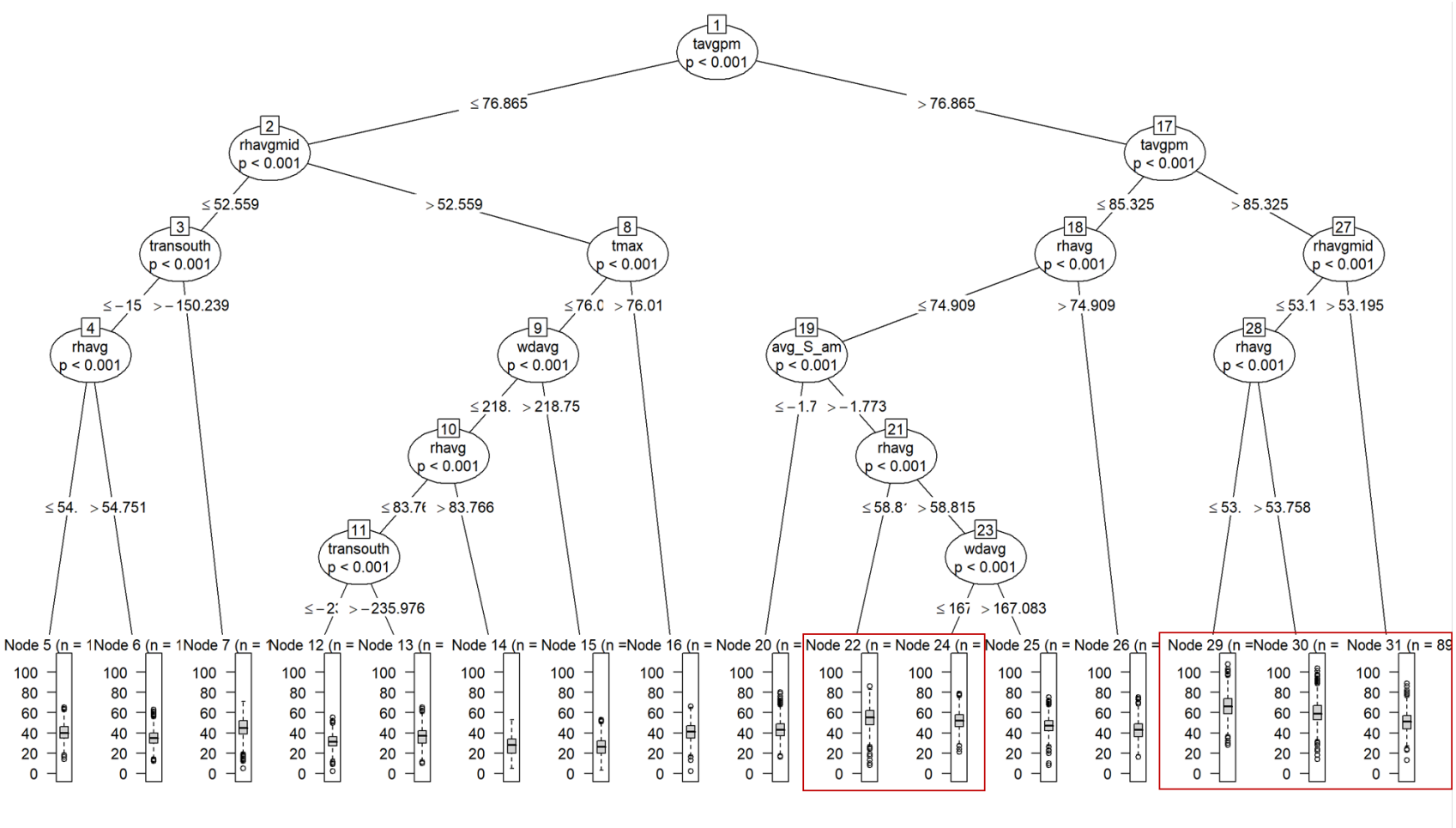


Figure A1.5. Classification and Regression Tree (CART) for the Cook County (IL) monitors. The boxplots[3] at the bottom show the distribution of ozone concentrations on the different days in each node. The high-ozone nodes shown in the trends figure below (mean ozone >50 ppb) are outlined by the red boxes. See Table 1 in the main document for a description of the different variables.

[3] The line in the middle of each box shows the median ozone concentration value, the gray box encloses the middle 50% of values, and the dashed line and circles show the whole range of values in this node.

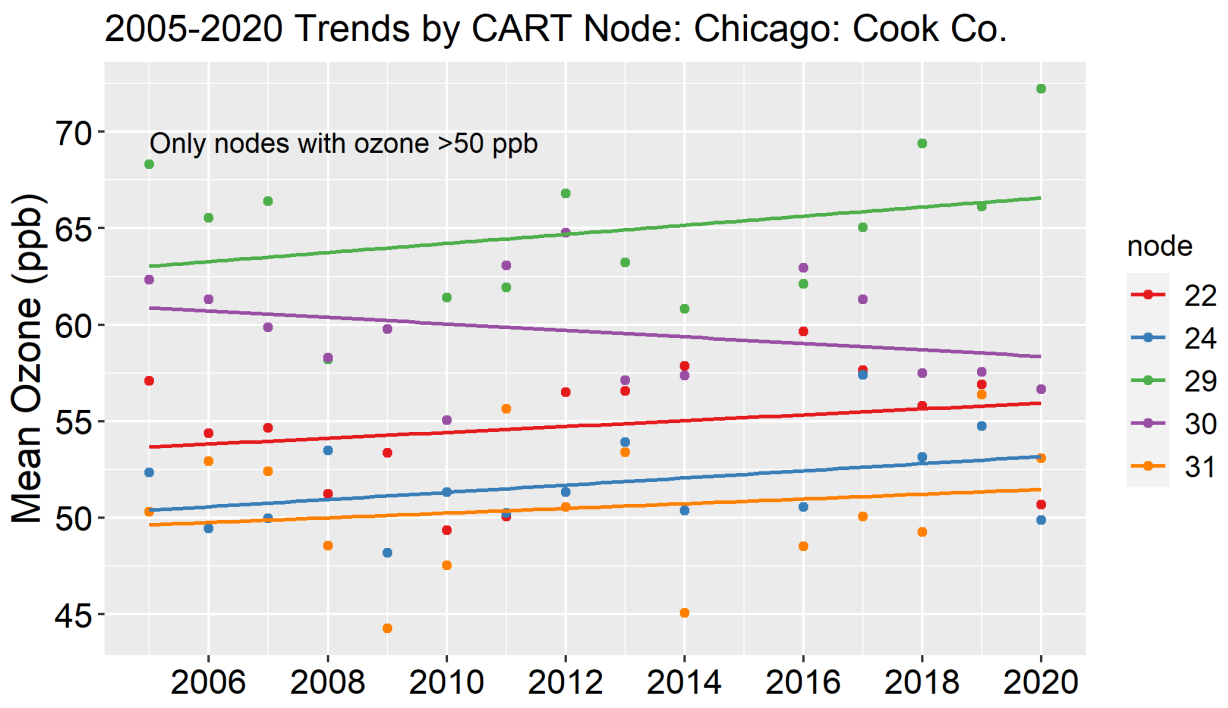


Figure A1.6. Trends in average (mean) ozone in high-ozone nodes for the Cook County (IL) monitors. High-ozone nodes are those with mean ozone concentrations over 50 ppb.

Table A1.2. Description of each high-ozone node for the Cook County (IL) monitors, including its average ozone concentration and the meteorological characteristics of days within the node. Nodes are color-coded to match the colors in the previous figure and are arranged from highest (left) to lowest (right) ozone concentrations.

Node 29	**Node 30**	**Node 22**	**Node 24**	**Node 31**
66 ppb O_3	60 ppb O_3	55 ppb O_3	52 ppb O_3	51 ppb O_3
PM Temp >85 °F	PM Temp >85 °F	PM Temp >77 & <85 °F	PM Temp >77 & <85 °F	PM Temp >85 °F
Midday RH <53%	Midday RH <53%	Average RH <55%	Average RH >59% & <75%	Midday RH >53%
Average RH <54%	Average RH >54%	AM southerly winds (>-1.8 m/s)	AM southerly winds (>-1.8 m/s)	
			Easterly winds (wind direction <167°)	

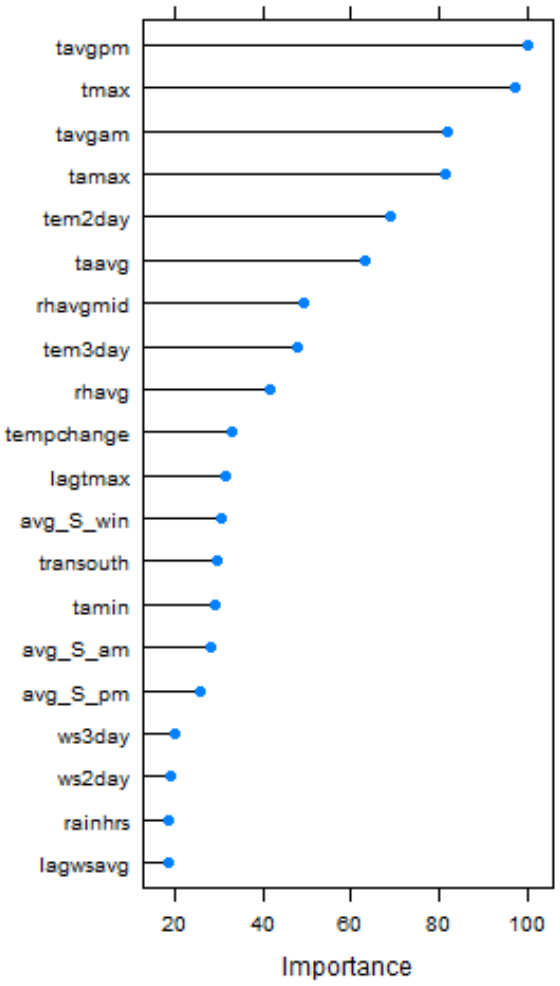


Figure A1.7. Rankings of the importance of different variables in the CART analysis for the Cook County (IL) monitors. Only the top-20 most important variables are shown. See Table 1 in the main document for a description of the different variables.

CART analysis results for the Lake and Porter County (IN) monitors

Data used in the analysis:

Ozone monitors: 180890022 (Gary-IITRI), 180892008 (Hammond), 181270024 (Ogden Dunes), 181270026 (Valparaiso)

Meteorological station: Chicago O'Hare International Airport (KORD)

Brief description of the results:

The high-ozone nodes from the CART analysis for the Lake and Porter County monitors generally have hot temperatures and low relative humidity (Figure A1.8 and Table A1.3). Some of the nodes are also influenced by wind speeds and southerly transport, which also appears as important variables (Figure A1.10). Temperature-based parameters are the most important variables. Mean ozone concentrations in all of the high-ozone nodes have decreased from 2005 to 2020 (Figure A1.9).

APPENDIX 1: CART analysis results for Chicago

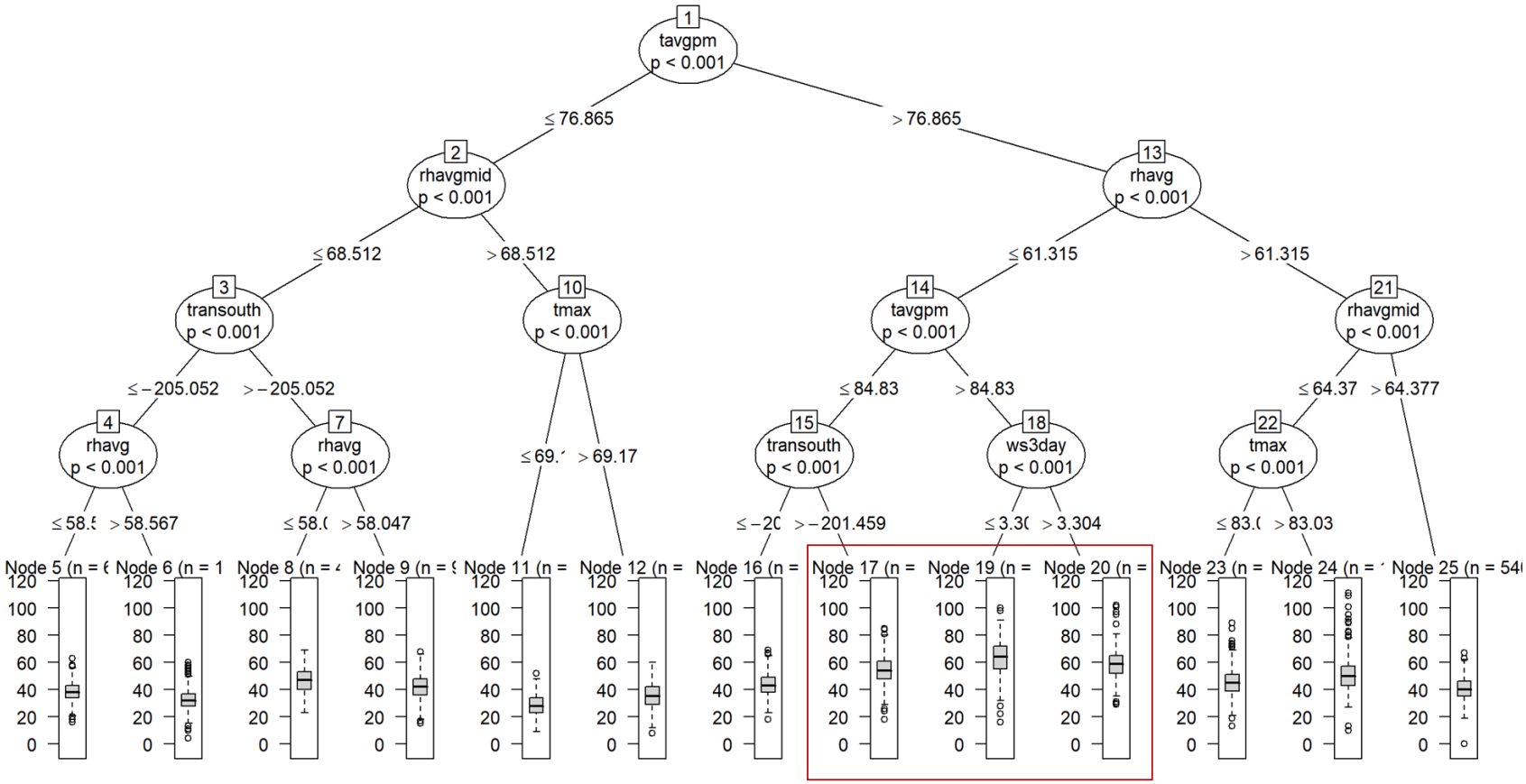


Figure A1.8. Classification and Regression Tree (CART) for the Lake and Porter County (IN) monitors. The boxplots[4] at the bottom show the distribution of ozone concentrations on the different days in each node. The high-ozone nodes shown in the trends figure below (mean ozone >50 ppb) are outlined by the red boxes. See Table 1 in the main document for a description of the different variables.

[4] The line in the middle of each box shows the median ozone concentration value, the gray box encloses the middle 50% of values, and the dashed line and circles show the whole range of values in this node.

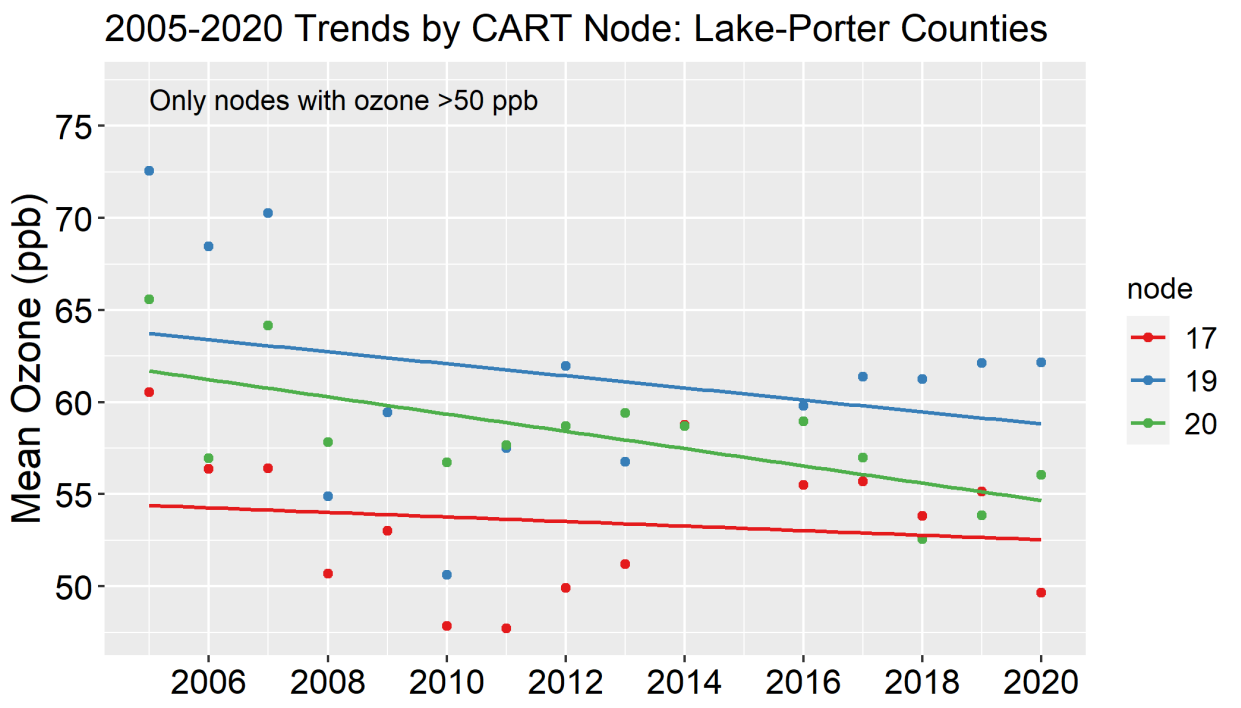


Figure A1.9. Trends in average (mean) ozone in high-ozone nodes for the Lake and Porter County (IN) monitors. High-ozone nodes are those with mean ozone concentrations over 50 ppb.

Table A1.3. Description of each high-ozone node for the Lake and Porter County (IN) monitors, including its average ozone concentration and the meteorological characteristics of days within the node. Nodes are color-coded to match the colors in the previous figure and are arranged from highest (left) to lowest (right) ozone concentrations.

Node 19	**Node 20**	**Node 17**
63 ppb O_3	59 ppb O_3	54 ppb O_3
PM Temp >85 °F	PM Temp >85 °F	PM Temp >77 & <85 °F
Average RH <61%	Average RH <61%	Average RH <61%
3-day wind speed <3.3 m/s	3-day wind speed >3.3 m/s	24-hour southerly transport (>-200 km)

APPENDIX 1: CART analysis results for Chicago

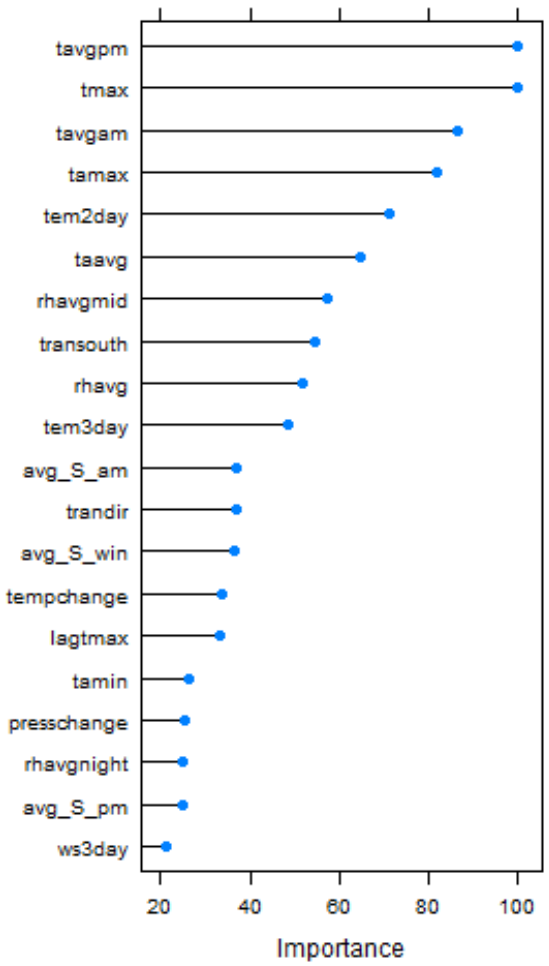


Figure A1.10. Rankings of the importance of different variables in the CART analysis for the Lake and Porter County (IN) monitors. Only the top-20 most important variables are shown. See Table 1 in the main document for a description of the different variables.

Appendix 2

CART analysis results for the Cincinnati 2015 ozone nonattainment area

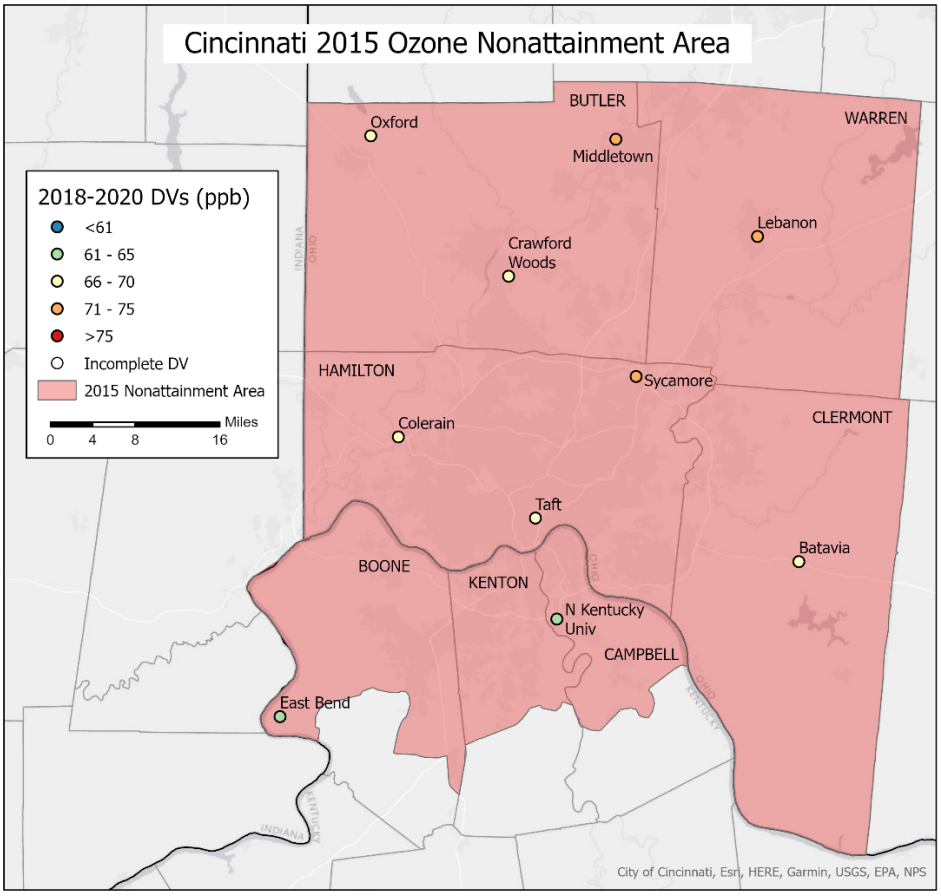


Figure A2.1. Map of the Cincinnati 2015 ozone nonattainment areas.

Data used in the analysis:

Ozone monitors: 390610006 (Sycamore), 390610010 (Colerain), and 390610040 (Taft)

Meteorological station: Cincinnati Municipal Airport-Lunken Field (LUK)

Brief description of the results:

The high-ozone nodes from the CART analysis for the Cincinnati monitors generally have hot temperatures and low relative humidity (Figure A2.2 and Table A2.1). Some of the nodes are also influenced by transport distances, which also appears as an important variable, along with wind speeds (Figure A2.4). Temperature- and relative humidity-based parameters are the most important variables. Mean ozone concentrations in all of the high-ozone nodes have decreased from 2005 to 2020 (Figure A2.3).

APPENDIX 2: CART analysis results for Cincinnati

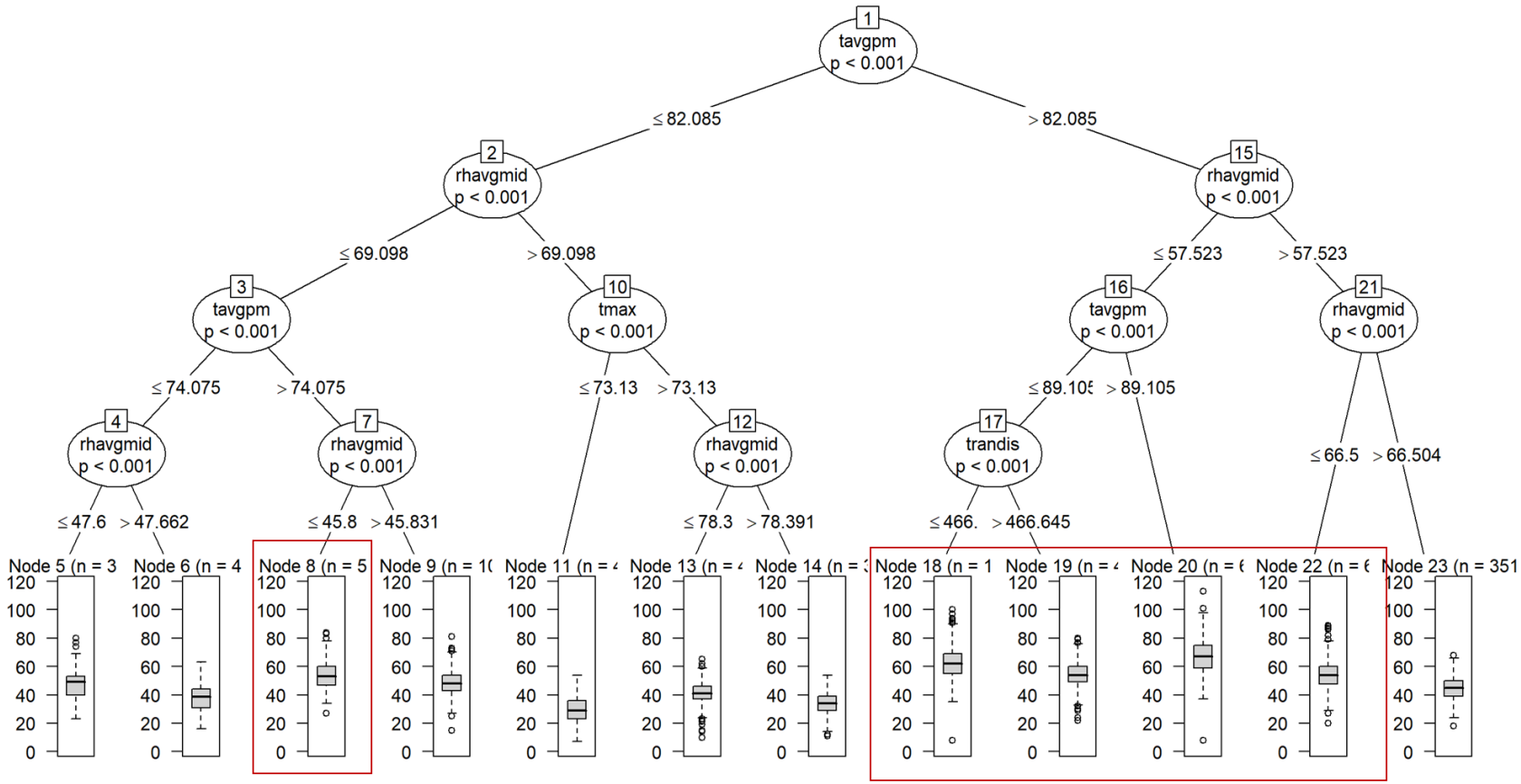


Figure A2.2. Classification and Regression Tree (CART) for the Cincinnati monitors. The boxplots[5] at the bottom show the distribution of ozone concentrations on the different days in each node. The high-ozone nodes shown in the trends figure below (mean ozone >50 ppb) are outlined by the red boxes. See Table 1 in the main document for a description of the different variables.

[5] The line in the middle of each box shows the median ozone concentration value, the gray box encloses the middle 50% of values, and the dashed line and circles show the whole range of values in this node.

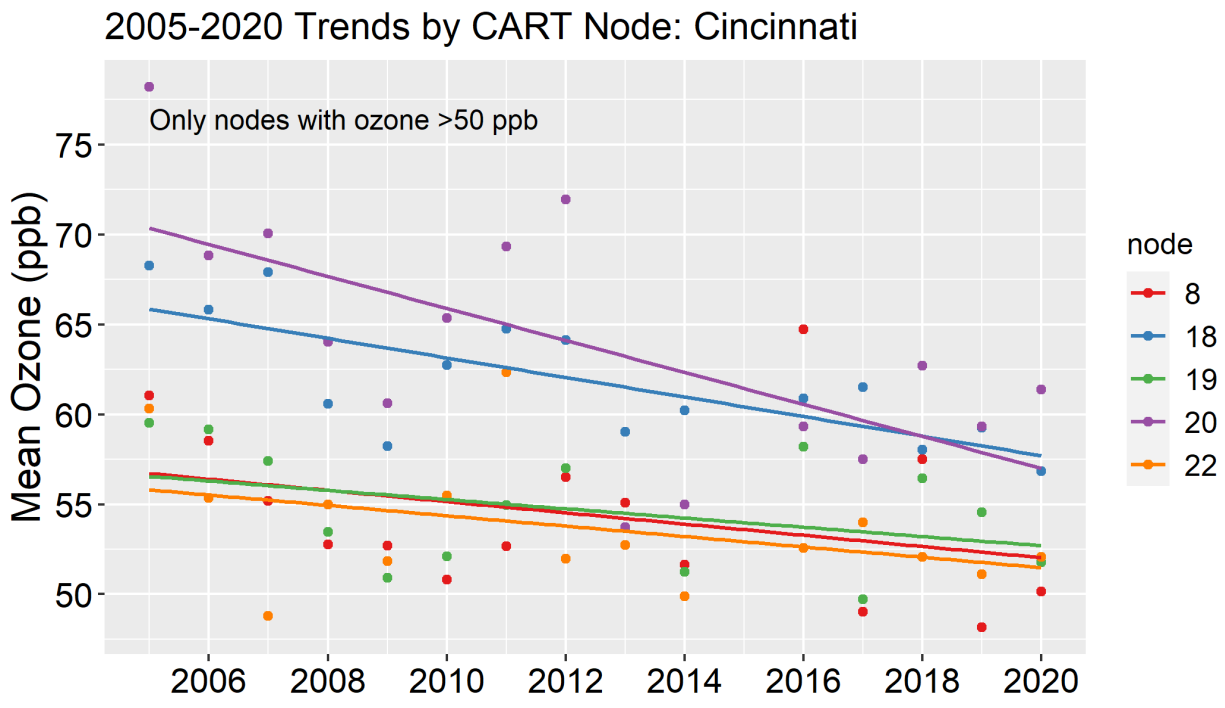


Figure A2.3. Trends in average (mean) ozone in high-ozone nodes for the Cincinnati monitors. High-ozone nodes are those with mean ozone concentrations over 50 ppb.

Table A2.1. Description of each high-ozone node for the Cincinnati monitors, including its average ozone concentration and the meteorological characteristics of days within the node. Nodes are color-coded to match the colors in the previous figure and are arranged from highest (left) to lowest (right) ozone concentrations.

Node 20	**Node 18**	**Node 19**	**Node 8**	**Node 22**
67 ppb O_3	62 ppb O_3	54 ppb O_3	54 ppb O_3	54 ppb O_3
PM Temp >89 °F	PM Temp >82 & <89 °F	PM Temp >82 & <89 °F	PM Temp >74 & <82 °F	PM Temp >82 °F
Midday RH <58%	Midday RH <58%	Midday RH <58%	Midday RH <46%	Midday RH >58% & <66%
	24-hour transport <466 km	24-hour transport >466 km		

APPENDIX 2: CART analysis results for Cincinnati

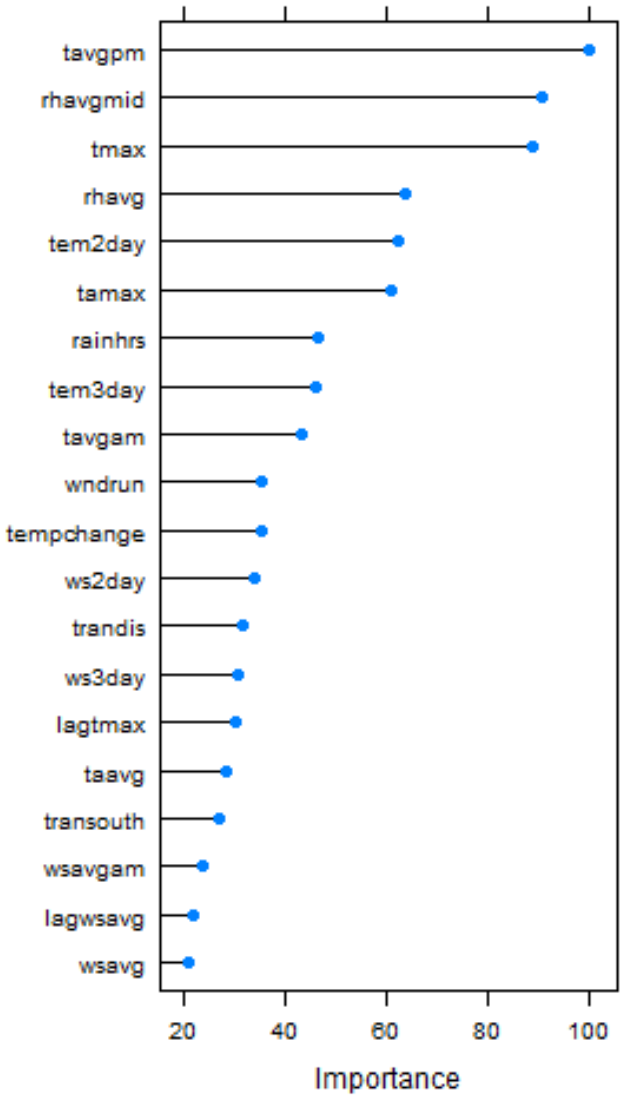


Figure A2.4. Rankings of the importance of different variables in the CART analysis for the Cincinnati monitors. Only the top-20 most important variables are shown. See Table 1 in the main document for a description of the different variables.

Appendix 3

CART analysis results for the Cleveland 2015 ozone nonattainment area

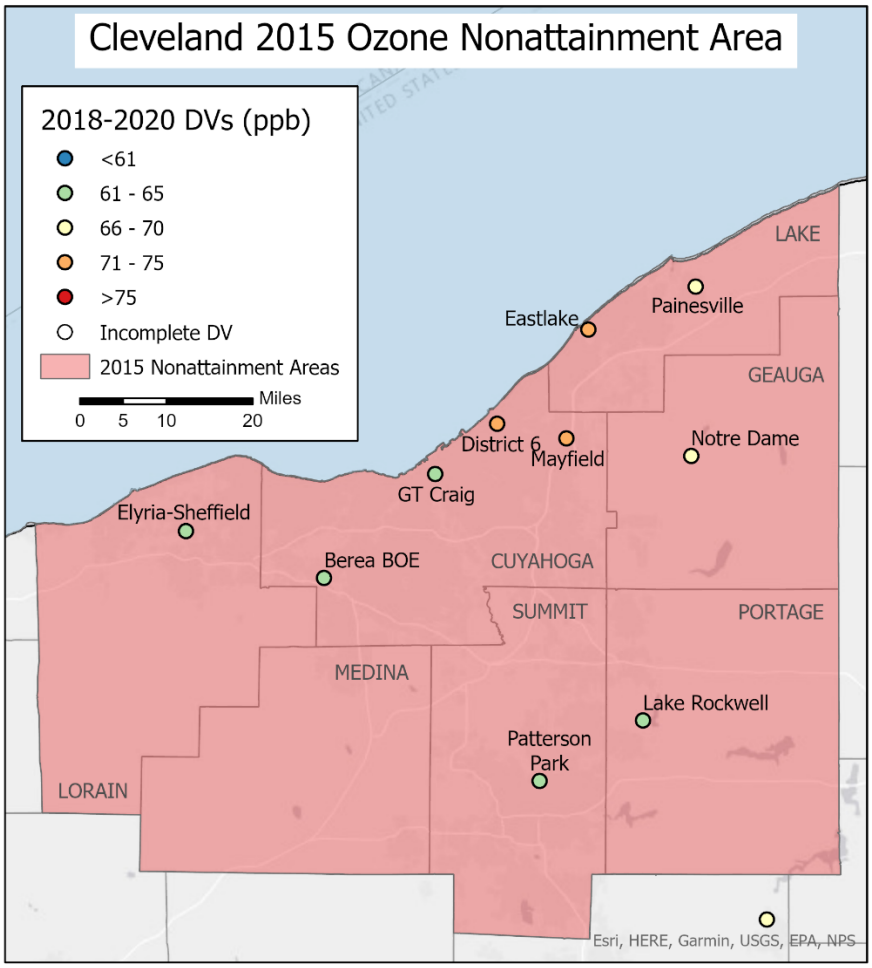


Figure A3.1. Map of the Cleveland 2015 ozone nonattainment areas.

Data used in the analysis:

Ozone monitors: 390350034 (District 6), 390350064 (Berea BOE), 390355002 (Mayfield), and 390850003 (Eastlake)

Meteorological station: Cleveland Hopkins International Airport (CLE)

Brief description of the results:

The high-ozone nodes from the CART analysis for the Cleveland monitors generally have hot temperatures and low relative humidity (Figure A3.2 and Table A3.1). The highest ozone nodes also have low wind speed, which also appears as an important variable, along with southerly transport (Figure A3.4). Temperature-based parameters are the most important variables. Mean ozone concentrations in all of the high-ozone nodes have decreased from 2005 to 2020 (Figure A3.3).

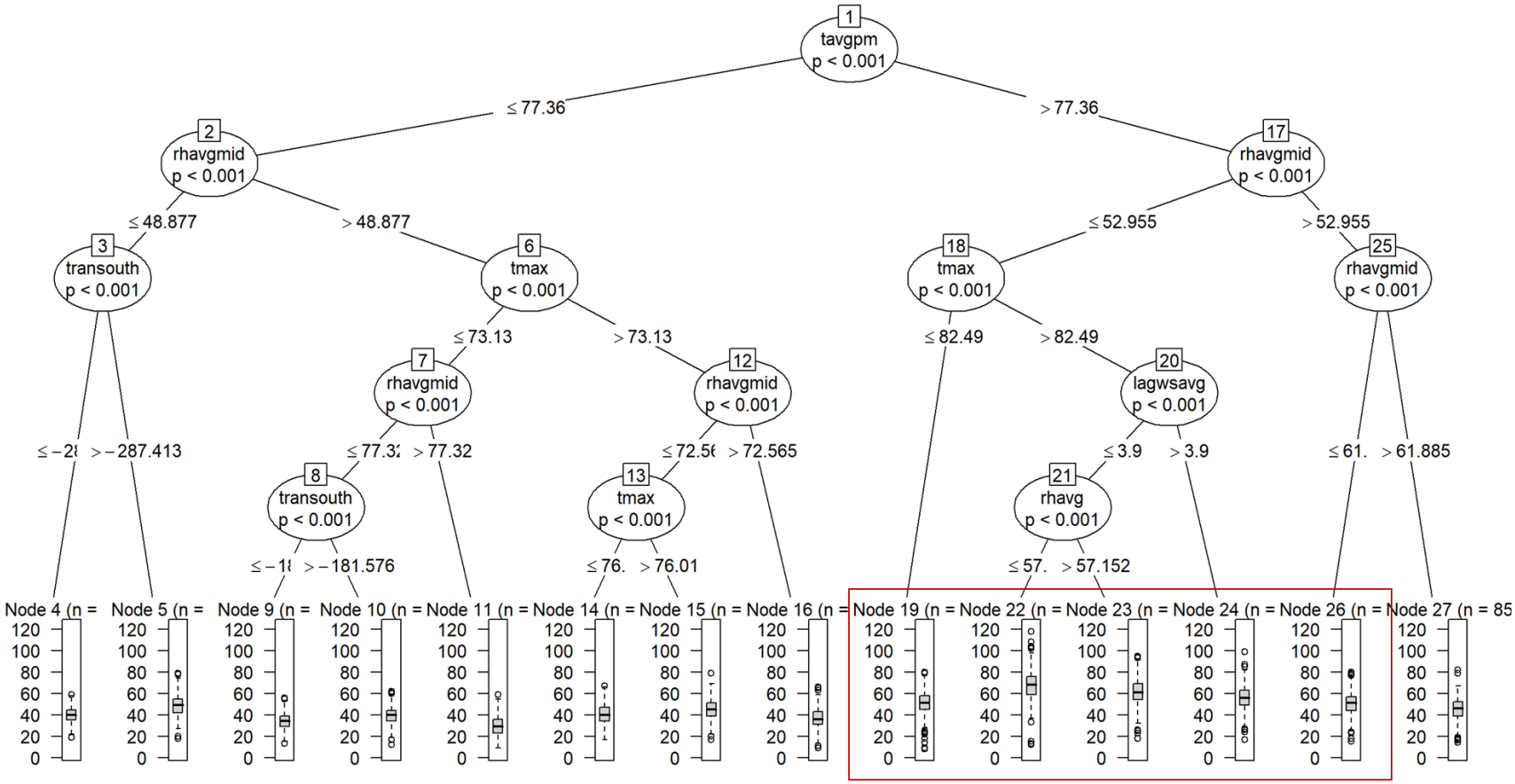


Figure A3.2. Classification and Regression Tree (CART) for the Cleveland monitors. The boxplots[6] at the bottom show the distribution of ozone concentrations on the different days in each node. The high-ozone nodes shown in the trends figure below (mean ozone >50 ppb) are outlined by the red boxes. See Table 1 in the main document for a description of the different variables.

[6] The line in the middle of each box shows the median ozone concentration value, the gray box encloses the middle 50% of values, and the dashed line and circles show the whole range of values in this node.

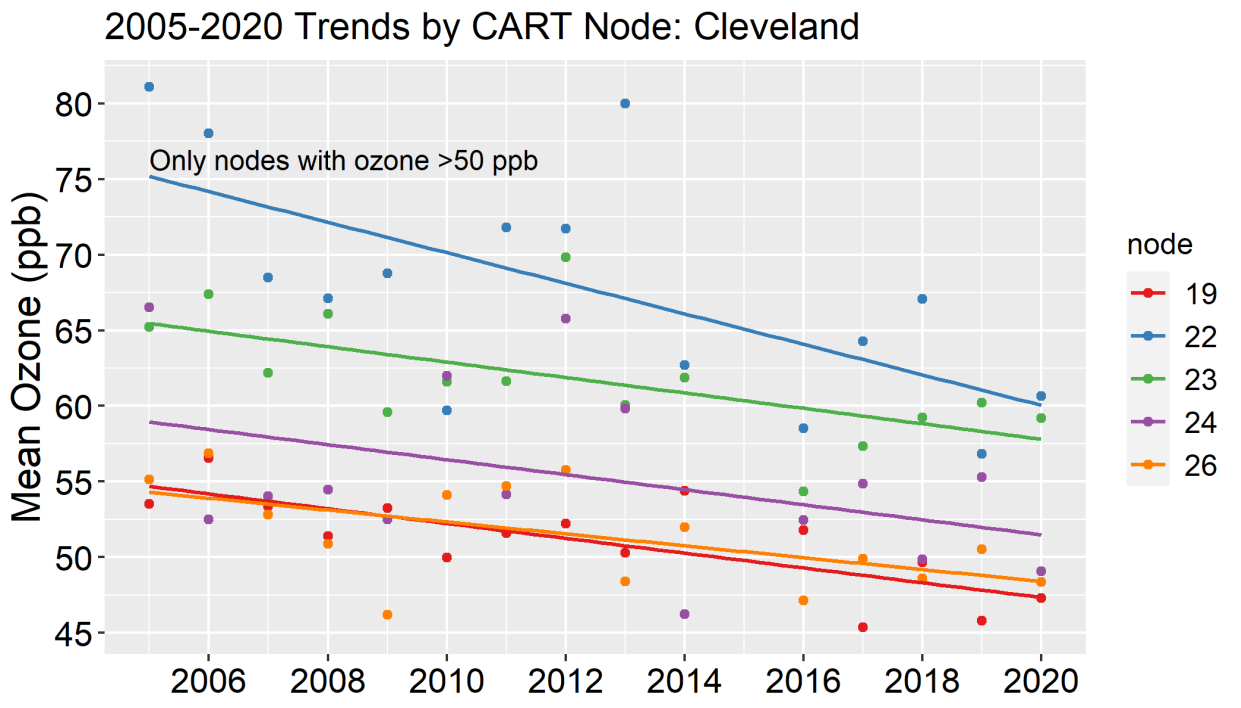


Figure A3.3. Trends in average (mean) ozone in high-ozone nodes for the Cleveland monitors. High-ozone nodes are those with mean ozone concentrations over 50 ppb.

Table A3.1. Description of each high-ozone node for the Cleveland monitors, including its average ozone concentration and the meteorological characteristics of days within the node. Nodes are color-coded to match the colors in the previous figure and are arranged from highest (left) to lowest (right) ozone concentrations.

Node 22	**Node 23**	**Node 24**	**Node 26**	**Node 19**
67 ppb O_3	61 ppb O_3	56 ppb O_3	51 ppb O_3	51 ppb O_3
PM Temp >77 °F	PM Temp >77 °F	PM Temp >77 °F	PM Temp >77 °F	PM Temp >77 °F
Midday RH <53%	Midday RH <53%	Midday RH <53%	Midday RH >53% & <62%	Midday RH <53%
Max. Temp >82 °F	Max. Temp >82 °F	Max. Temp >82 °F		Max. Temp <82 °F
Previous day winds <3.9 m/s	Previous day winds <3.9 m/s	Previous day winds >3.9 m/s		
Average RH <57%	Average RH >57%			

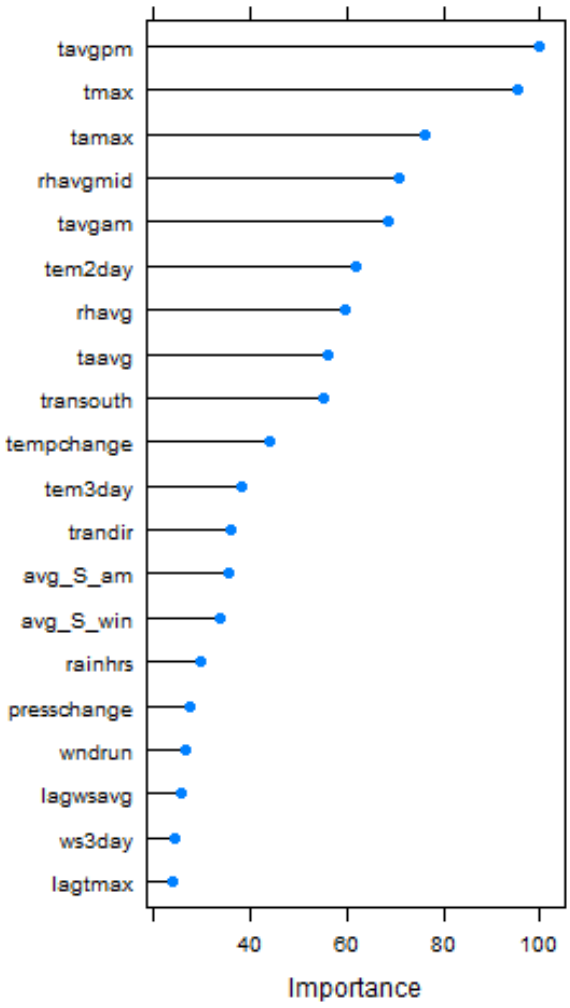


Figure A3.4. Rankings of the importance of different variables in the CART analysis for the Cleveland monitors. Only the top-20 most important variables are shown. See Table 1 in the main document for a description of the different variables.

Appendix 4

CART analysis results for the Detroit 2015 ozone nonattainment area

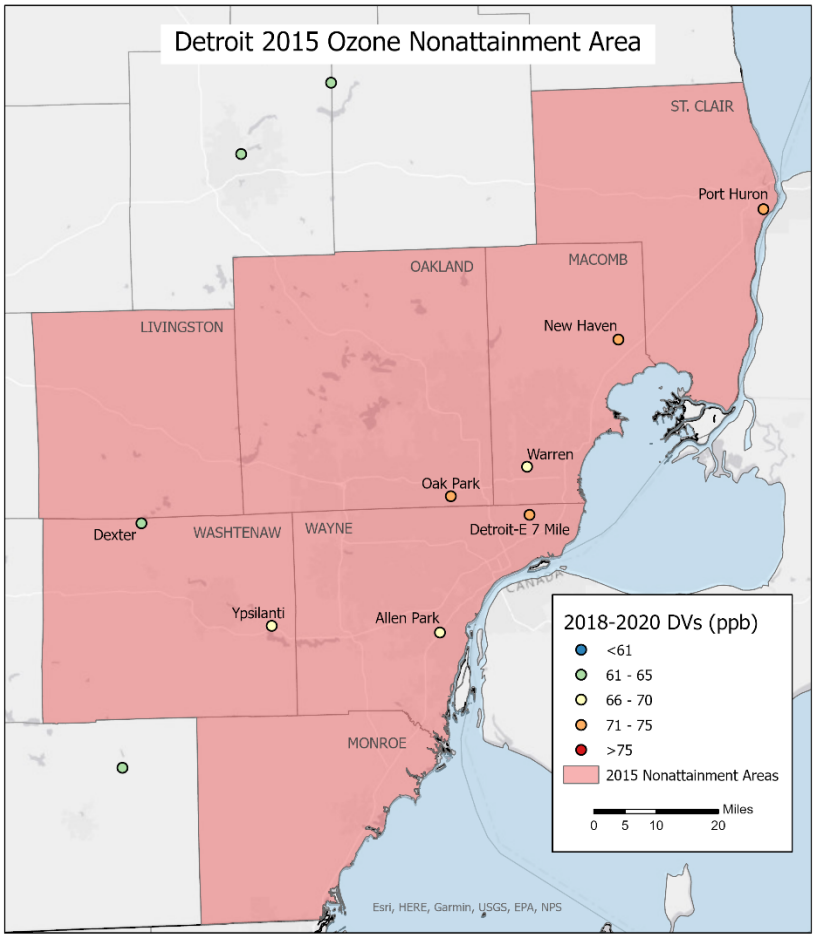


Figure A4.1. Map of the Detroit 2015 ozone nonattainment areas.

Data used in the analysis:

Ozone monitors: 260990009 (New Haven), 260991003 (Warren), 261250001 (Oak Park), 261630001 (Allen Park), 261630019 (Detroit-E 7 Mile)

Meteorological station: Detroit Metropolitan Wayne County Airport (DTE)

Brief description of the results:

The high-ozone nodes from the CART analysis for the Detroit monitors generally have hot temperatures and low relative humidity (Figure A4.2 and Table A4.1). The highest ozone nodes also have winds from the east to south-southwest, and other high-ozone nodes have low wind speeds. Southerly winds and transport appear as important variables (Figure A4.4). Temperature-based parameters are the most important variables. Mean ozone concentrations in all of the high-ozone nodes have decreased from 2005 to 2020 (Figure A4.3).

APPENDIX 4: CART analysis results for Detroit

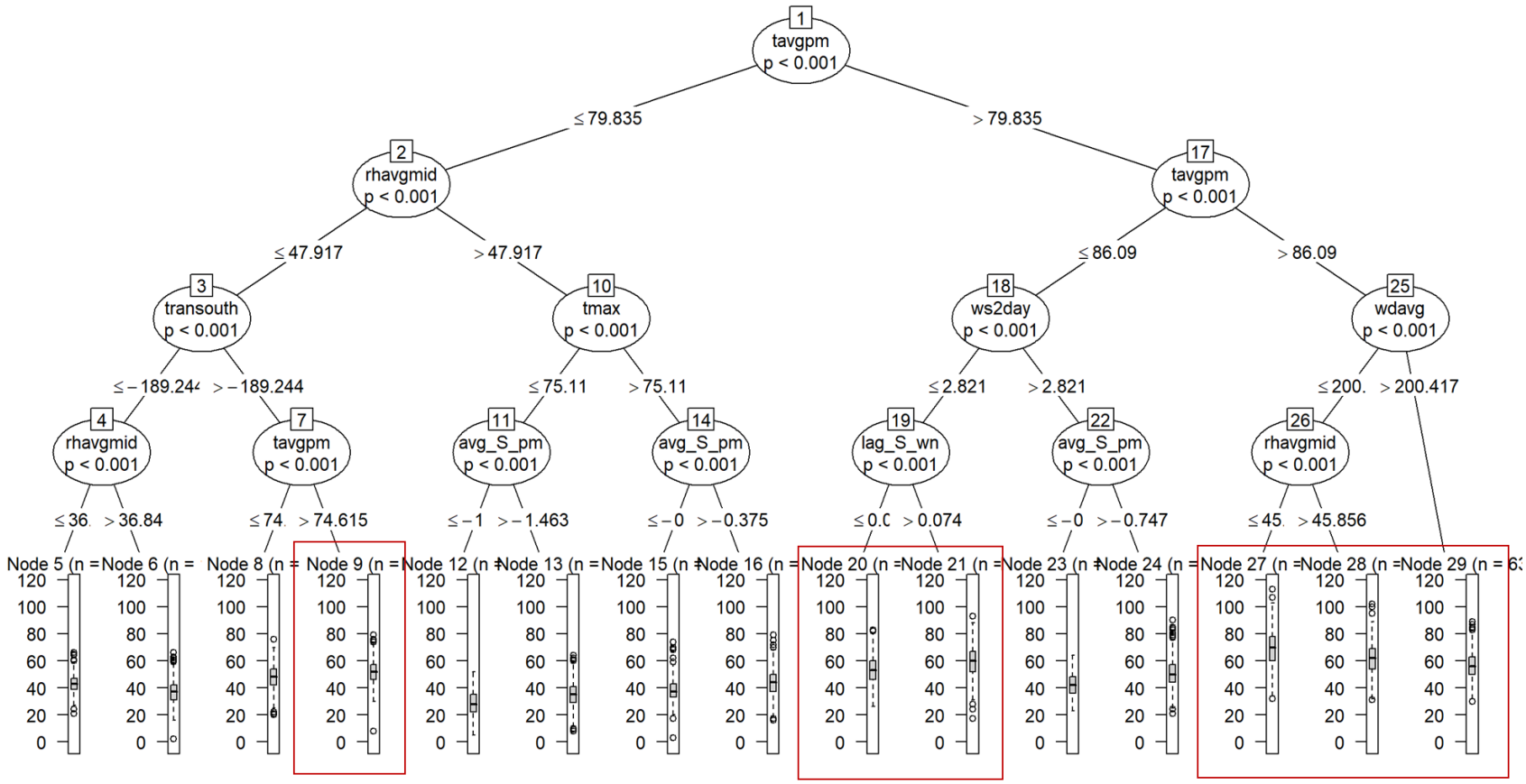


Figure A4.2. Classification and Regression Tree (CART) for the Detroit monitors. The boxplots[7] at the bottom show the distribution of ozone concentrations on the different days in each node. The high-ozone nodes shown in the trends figure below (mean ozone >50 ppb) are outlined by the red boxes. See Table 1 in the main document for a description of the different variables.

[7] The line in the middle of each box shows the median ozone concentration value, the gray box encloses the middle 50% of values, and the dashed line and circles show the whole range of values in this node.

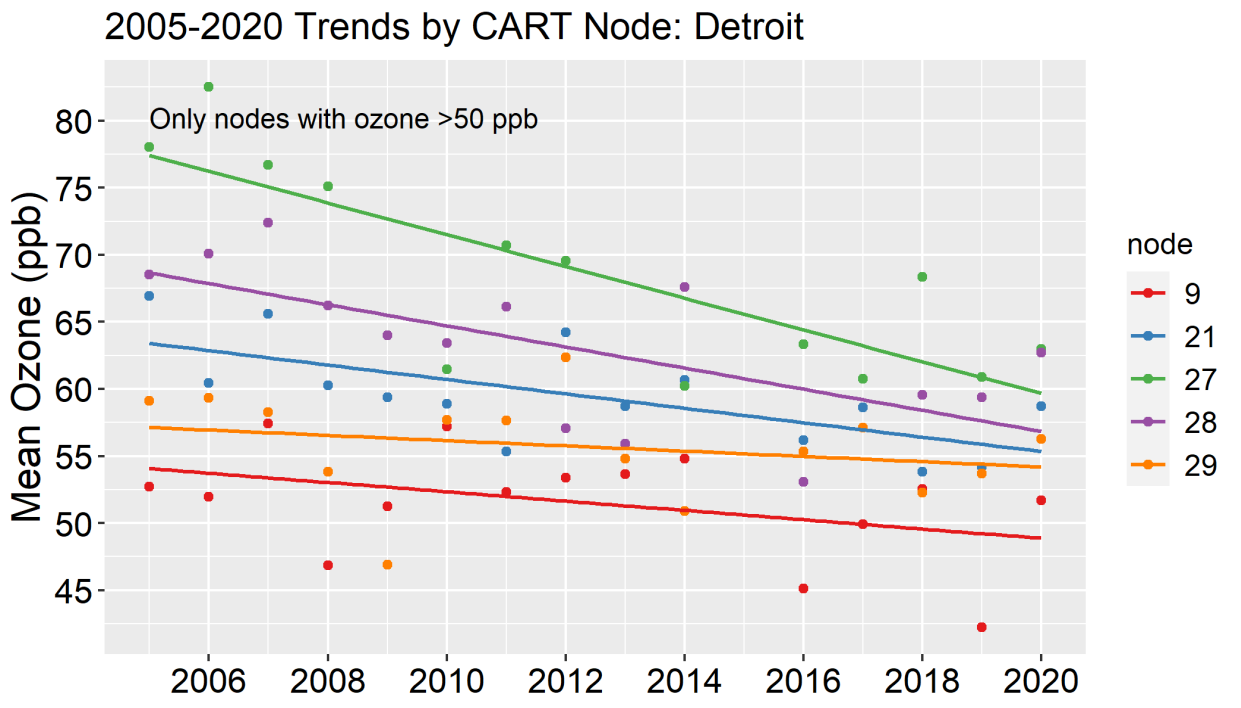


Figure A4.3. Trends in average (mean) ozone in high-ozone nodes for the Detroit monitors. High-ozone nodes are those with mean ozone concentrations over 50 ppb.

Table A4.1. Description of each high-ozone node for the Detroit monitors, including its average ozone concentration and the meteorological characteristics of days within the node. Nodes are color-coded to match the colors in the previous figure and are arranged from highest (left) to lowest (right) ozone concentrations.

Node 27	**Node 28**	**Node 21**	**Node 29**	**Node 9**
69 ppb O_3	62 ppb O_3	60 ppb O_3	57 ppb O_3	52 ppb O_3
PM Temp >86 °F	PM Temp >86 °F	PM Temp >80 & <86 °F	PM Temp >86 °F	PM Temp >75 & <80 °F
Average wind direction <200°	Average wind direction <200°	2-day winds <2.8 m/s	Average wind direction >200°	Midday RH <48%
Midday RH <46%	Midday RH >46%	Previous day winds from the south		24-hour southerly transport (>-189 km)

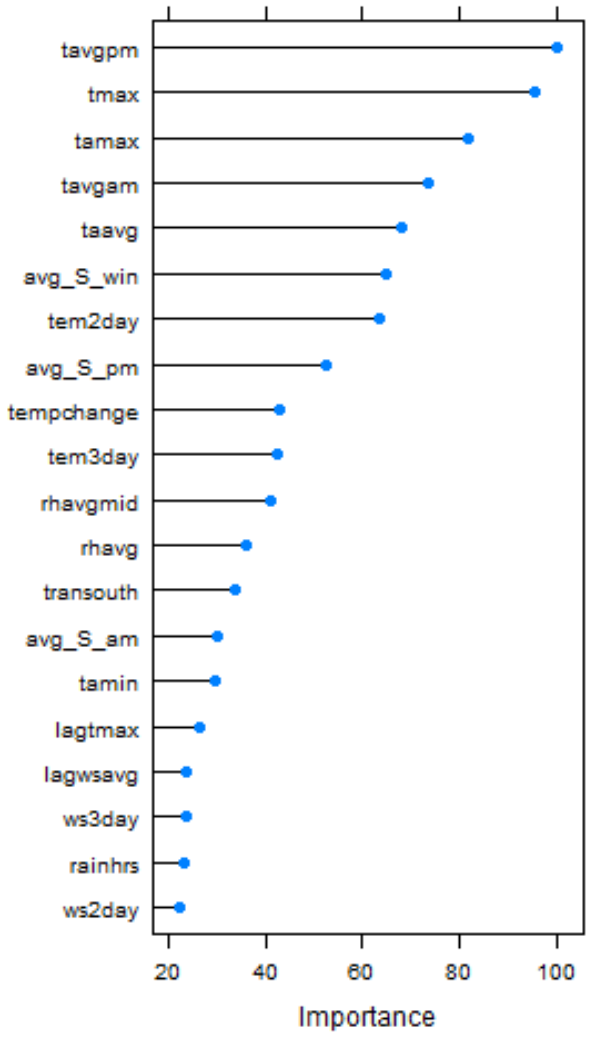


Figure A4.4. Rankings of the importance of different variables in the CART analysis for the Detroit monitors. Only the top-20 most important variables are shown. See Table 1 in the main document for a description of the different variables.

Appendix 5

CART analysis results for the Louisville 2015 ozone nonattainment area

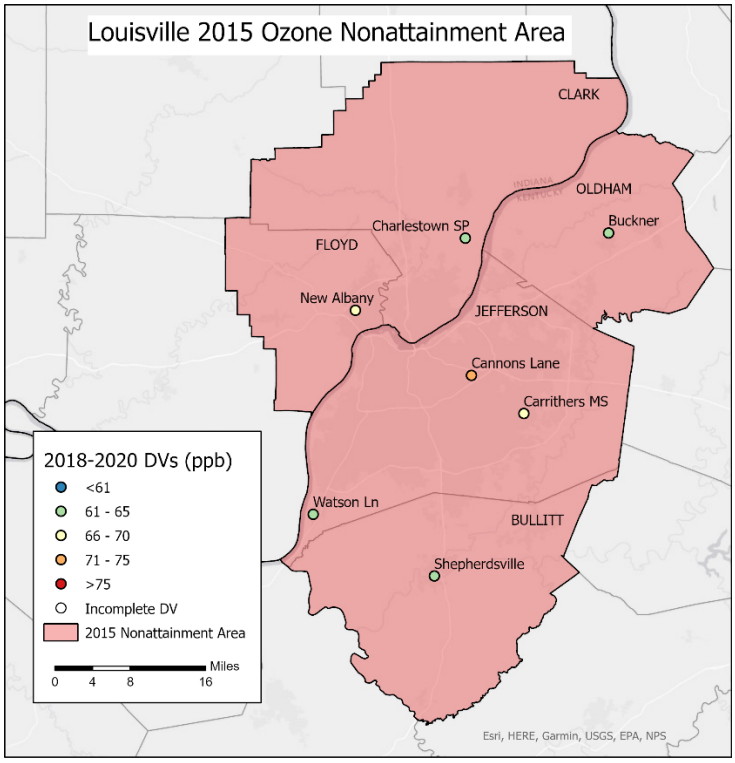


Figure A5.1. Map of the Louisville 2015 ozone nonattainment areas.

Data used in the analysis:

Ozone monitors: 211110027 (Bates, 2005-2017), 211110051 (Watson Ln), 211110080 (Carrithers MS, 2018-2020). (The Bates monitor was relocated to nearby Carrithers MS in 2018.)

Meteorological station: Louisville Muhammad Ali International Airport (SDF)

Brief description of the results:

The high-ozone nodes from the CART analysis for the Louisville monitors generally have low relative humidity, hot temperatures, and gentle winds or shorter transport distances (Figure A5.2 and Table A5.1). These factors also appear as important variables, with relative humidity-related parameters being the most important (Figure A5.4). Mean ozone concentrations in all of the high-ozone nodes have decreased from 2005 to 2020 (Figure A5.3).

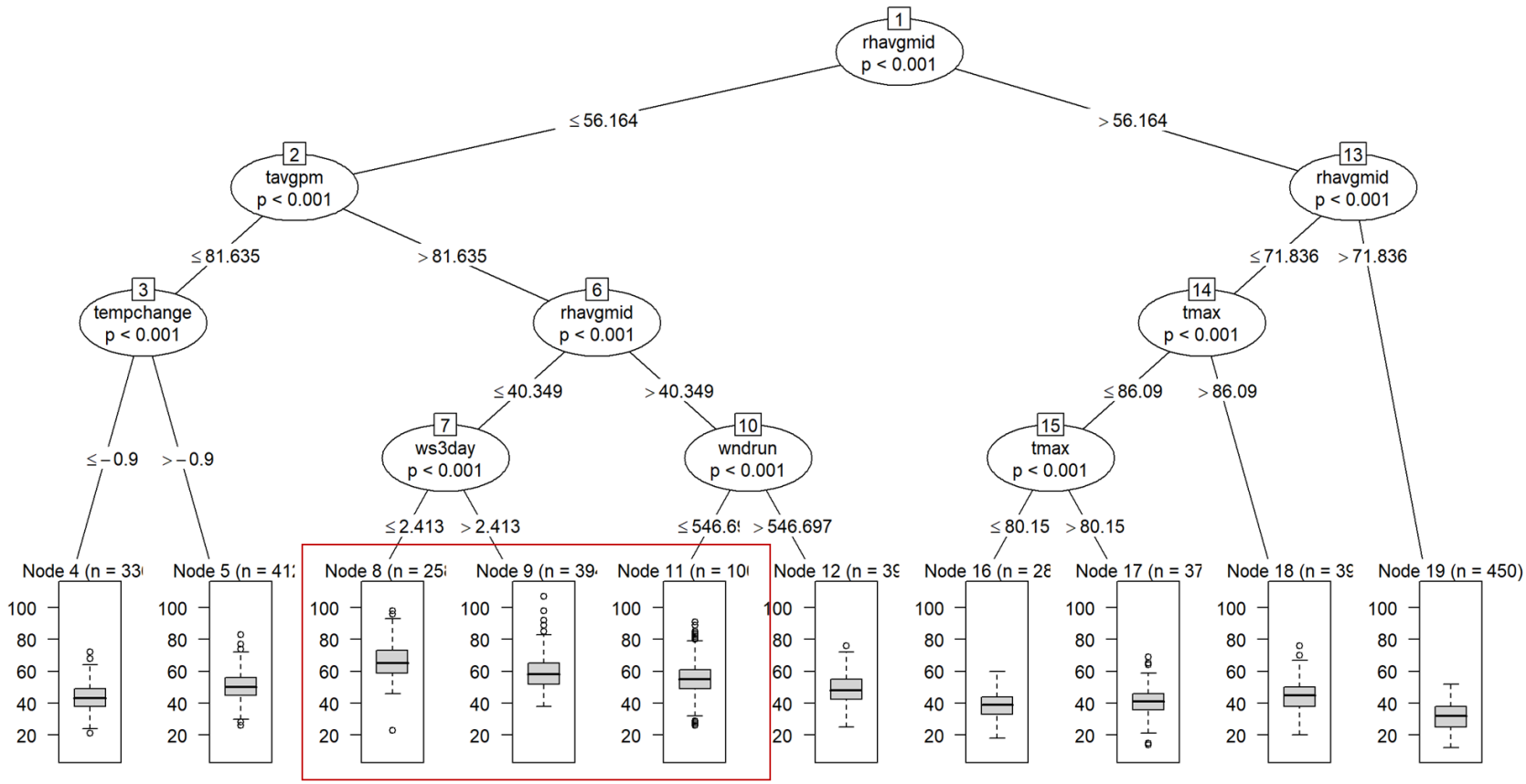


Figure A5.2. Classification and Regression Tree (CART) for the Louisville monitors. The boxplots[8] at the bottom show the distribution of ozone concentrations on the different days in each node. The high-ozone nodes shown in the trends figure below (mean ozone >50 ppb) are outlined by the red boxes. See Table 1 in the main document for a description of the different variables.

[8] The line in the middle of each box shows the median ozone concentration value, the gray box encloses the middle 50% of values, and the dashed line and circles show the whole range of values in this node.

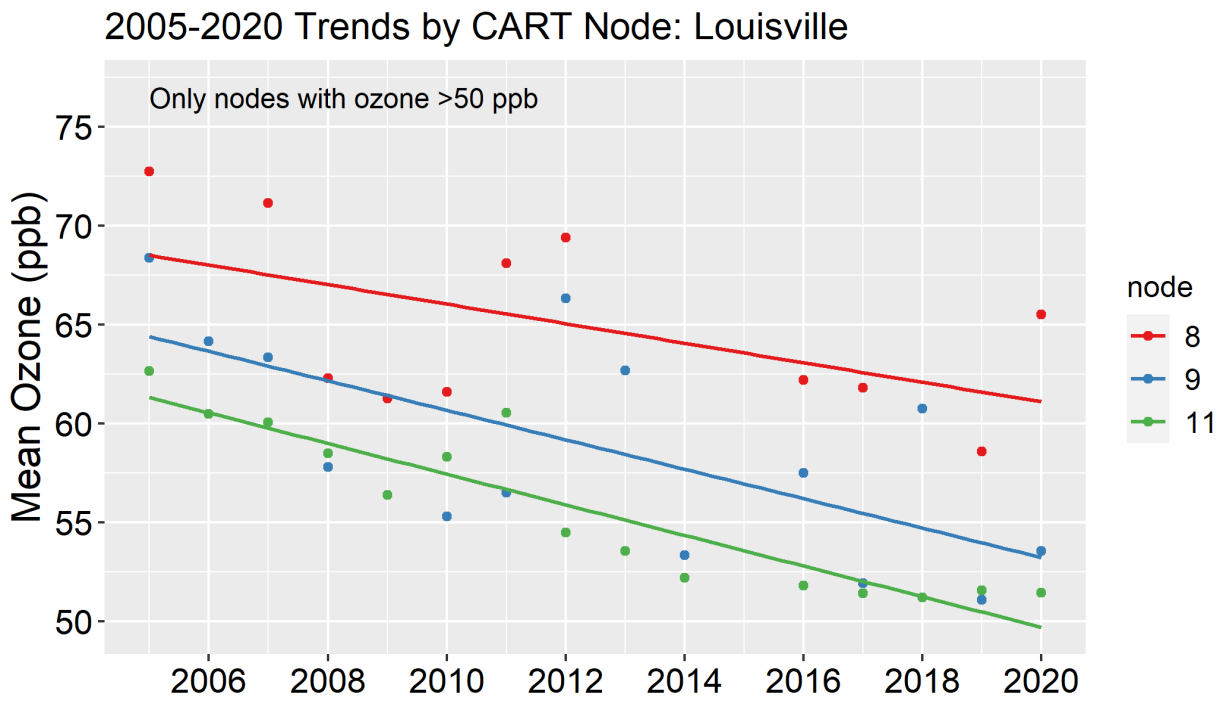


Figure A5.3. Trends in average (mean) ozone in high-ozone nodes for the Louisville monitors. High-ozone nodes are those with mean ozone concentrations over 50 ppb.

Table A5.1. Description of each high-ozone node for the Louisville monitors, including its average ozone concentration and the meteorological characteristics of days within the node. Nodes are color-coded to match the colors in the previous figure and are arranged from highest (left) to lowest (right) ozone concentrations.

Node 8	**Node 9**	**Node 11**
66 ppb O_3	59 ppb O_3	56 ppb O_3
Midday RH <40%	Midday RH <40%	Midday RH <56% & >40%
PM Temp >82 °F	PM Temp >82 °F	PM Temp >82 °F
3-day winds <2.4 m/s	3-day winds >2.4 m/s	24-hour wind run (transport) <547 km

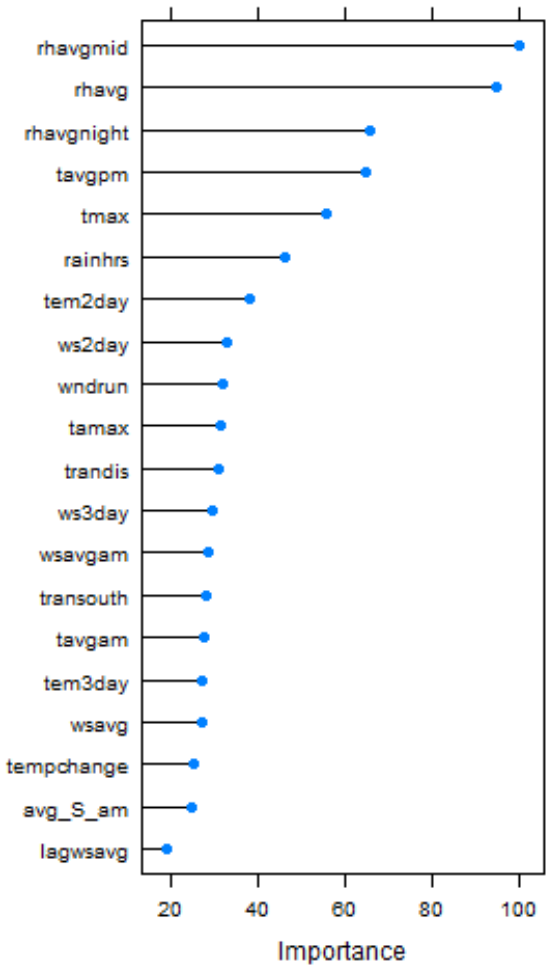


Figure A5.4. Rankings of the importance of different variables in the CART analysis for the Louisville monitors. Only the top-20 most important variables are shown. See Table 1 in the main document for a description of the different variables.

Appendix 6

CART analysis results for the St. Louis 2015 ozone nonattainment area

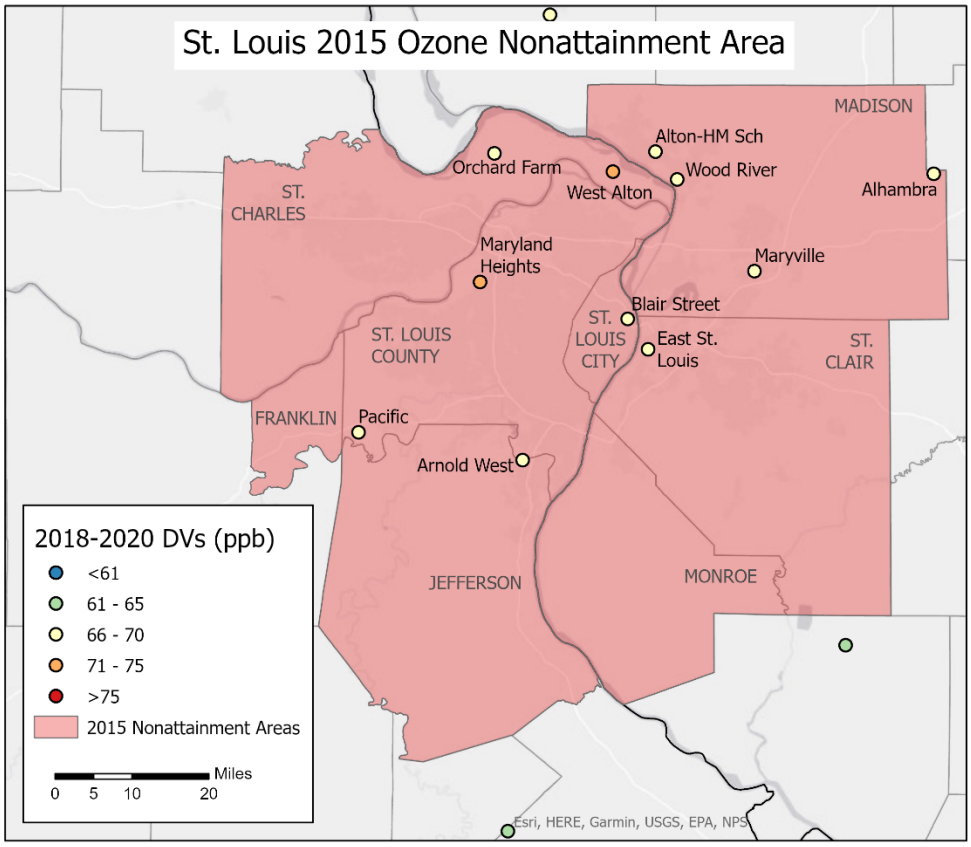


Figure A6.1. Map of the St. Louis 2015 ozone nonattainment areas.

Data used in the analysis:

Ozone monitors: 171190008 (Alton-Clara Barton Sch), 171191009 (Maryville), 171193007 (Wood River), 291831002 (West Alton), 291831004 (Orchard Farm), 291890005 (Pacific), 291890014 (Maryland Heights), 295100085 (Blair Street), 171190120 (Alton-HM Sch)

Meteorological station: St. Louis Lambert International Airport (STL)

Brief description of the results:

The high-ozone nodes from the CART analysis for the Louisville monitors generally have low relative humidity, hot temperatures (Figure A6.2 and Table A6.1). The highest ozone nodes also have gentle winds or shorter transport distances. These factors also appear as important variables, with relative humidity-related parameters being the most important (Figure A6.4). Mean ozone concentrations in all of the high-ozone nodes have decreased from 2005 to 2020 (Figure A6.3).

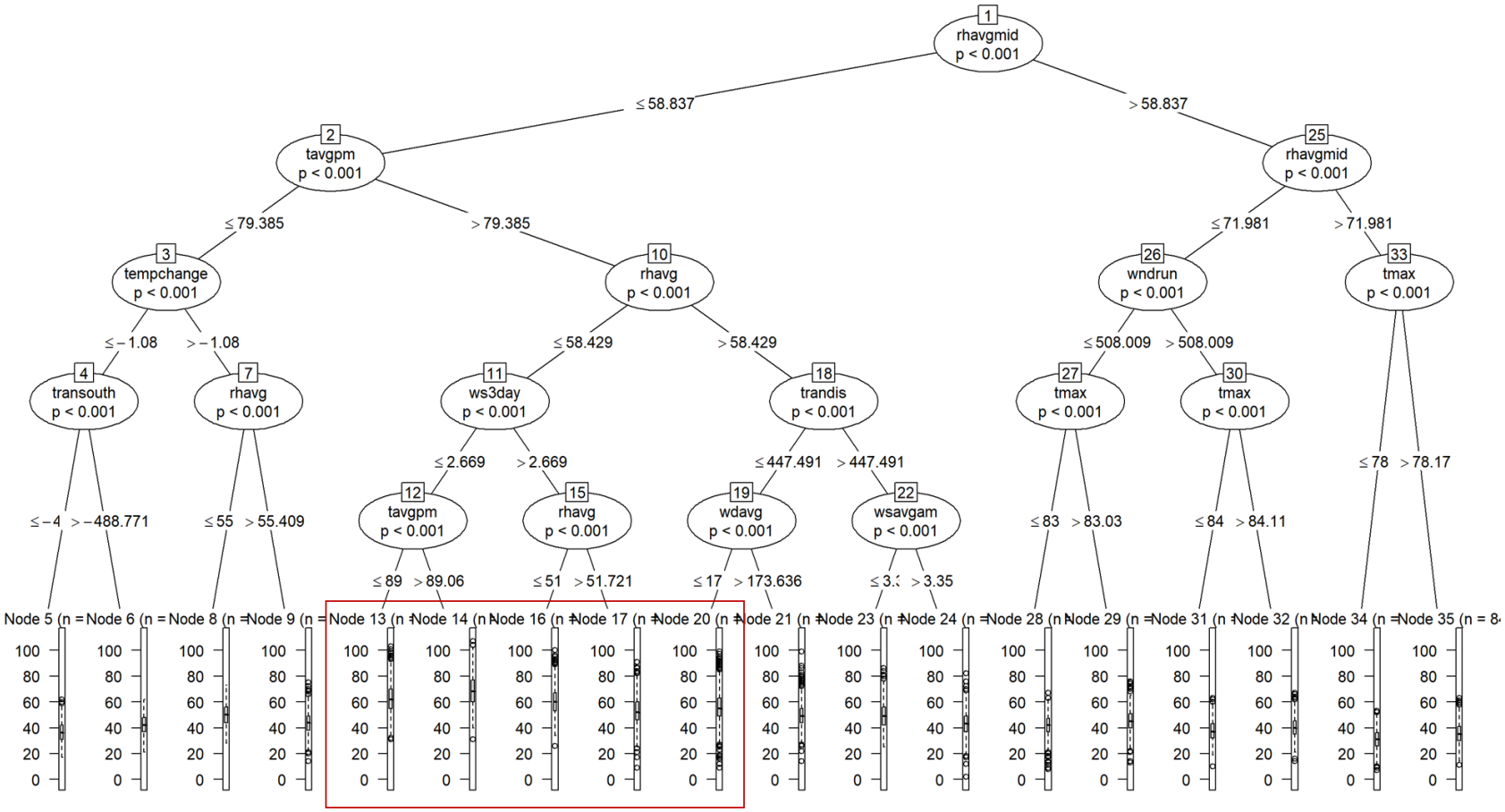


Figure A6.2. Classification and Regression Tree (CART) for the St. Louis monitors. The boxplots[9] at the bottom show the distribution of ozone concentrations on the different days in each node. The high-ozone nodes shown in the trends figure below (mean ozone >50 ppb) are outlined by the red boxes. See Table 1 in the main document for a description of the different variables.

[9] The line in the middle of each box shows the median ozone concentration value, the gray box encloses the middle 50% of values, and the dashed line and circles show the whole range of values in this node.

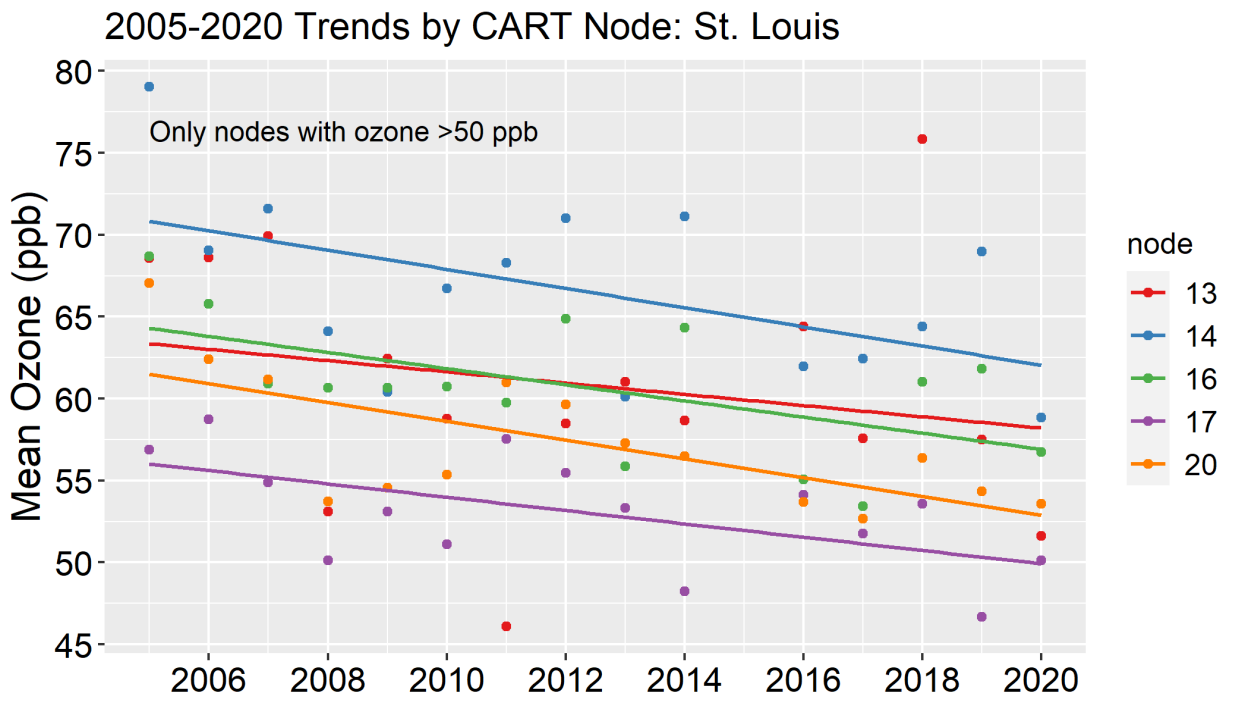


Figure A6.2. Trends in average (mean) ozone in high-ozone nodes for the St. Louis monitors. High-ozone nodes are those with mean ozone concentrations over 50 ppb.

Table A6.1. Description of each high-ozone node for the St. Louis monitors, including its average ozone concentration and the meteorological characteristics of days within the node. Nodes are color-coded to match the colors in the previous figure and are arranged from highest (left) to lowest (right) ozone concentrations.

Node 14	**Node 13**	**Node 16**	**Node 20**	**Node 17**
69 ppb O_3	62 ppb O_3	61 ppb O_3	56 ppb O_3	53 ppb O_3
Midday RH <59%	Midday RH <59%	Midday RH <59%	Midday RH <59%	Midday RH <59%
PM Temp >89 °F	PM Temp >79 & <89 °F	PM Temp >79 °F	PM Temp >79 °F	PM Temp >79 °F
Average RH <58%	Average RH <58%	Average RH <52%	Average RH >58%	Average RH >52% & <58%
3-day winds <2.7 m/s	3-day winds <2.7 m/s	3-day winds >2.7 m/s	24-hour transport <447 km	3-day winds >2.7 m/s
			Average wind direction from east (<174 °)	

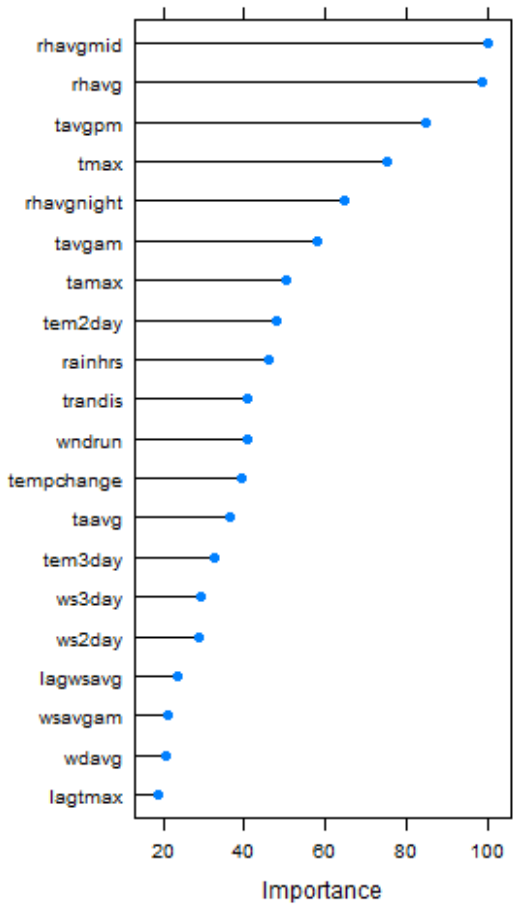


Figure A6.4. Rankings of the importance of different variables in the CART analysis for the St. Louis monitors. Only the top-20 most important variables are shown. See Table 1 in the main document for a description of the different variables.

Appendix 7

CART analysis results for the Western Michigan 2015 ozone nonattainment areas

Contents:

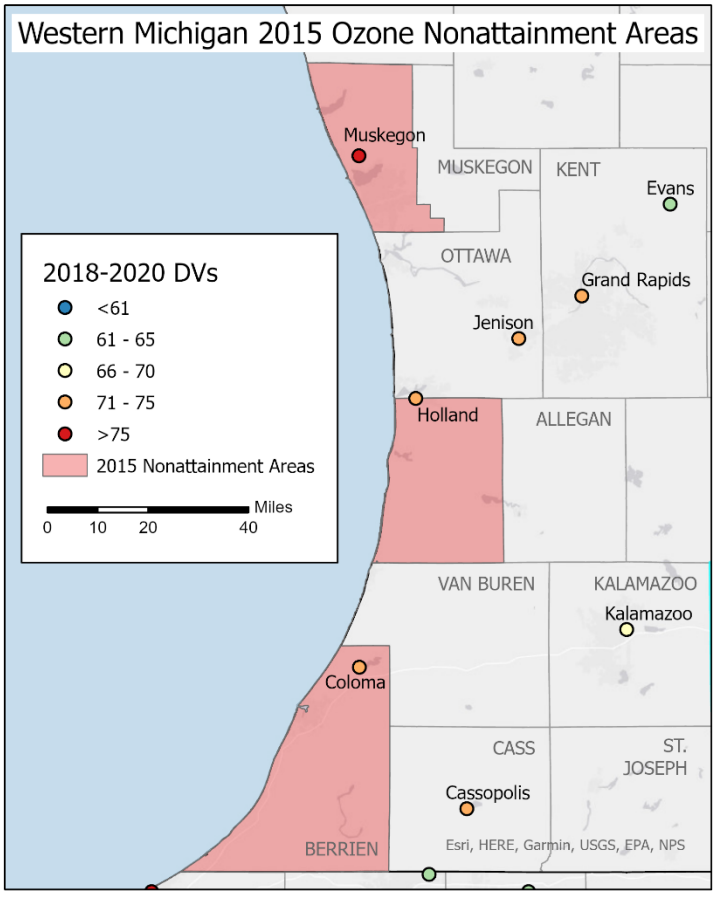


Figure A7.1. Map of the Western Michigan 2015 ozone nonattainment areas.

CART analysis results for the combined Western Michigan monitors

Data used in the analysis:

Ozone monitors: 260050003 (Holland), 260210014 (Coloma), and 261210039 (Muskegon)

Meteorological station: Muskegon County Airport (MKG)

Brief description of the results:

The high-ozone nodes from the CART analysis for the combined Western Michigan monitors generally have southerly transport, hot temperatures, and westerly transport (Figure A7.2 and Table A7.1). All of these factors appear as important variables, with southerly transport being the most important (Figure A7.4). Mean ozone concentrations in all of the high-ozone nodes have decreased from 2005 to 2020 (Figure A7.3).

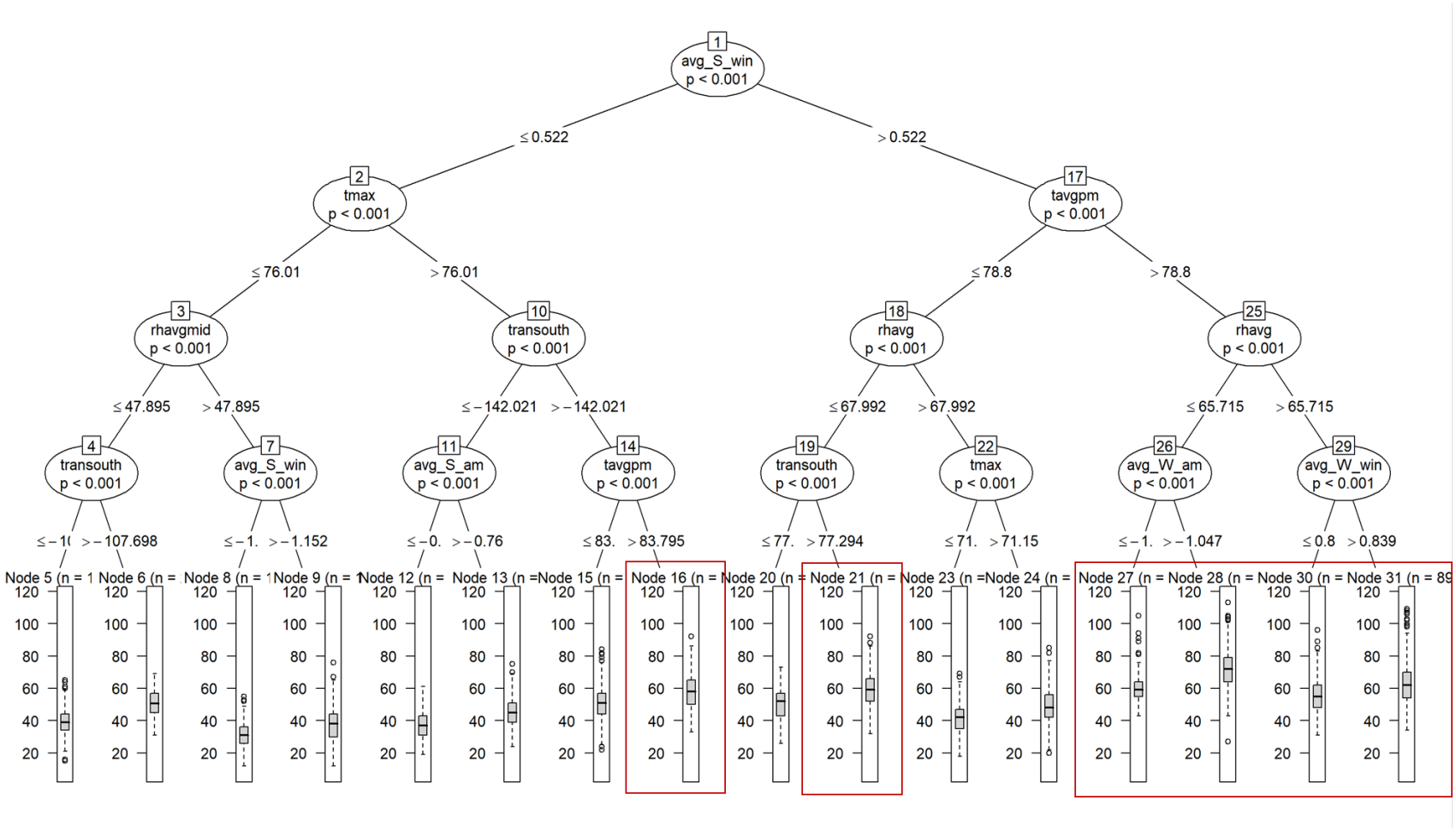


Figure A7.2. Classification and Regression Tree (CART) for the combined Western Michigan monitors. The boxplots[10] at the bottom show the distribution of ozone concentrations on the different days in each node. The high-ozone nodes shown in the trends figure below (mean ozone >50 ppb) are outlined by the red boxes. See Table 1 in the main document for a description of the different variables.

[10] The line in the middle of each box shows the median ozone concentration value, the gray box encloses the middle 50% of values, and the dashed line and circles show the whole range of values in this node.

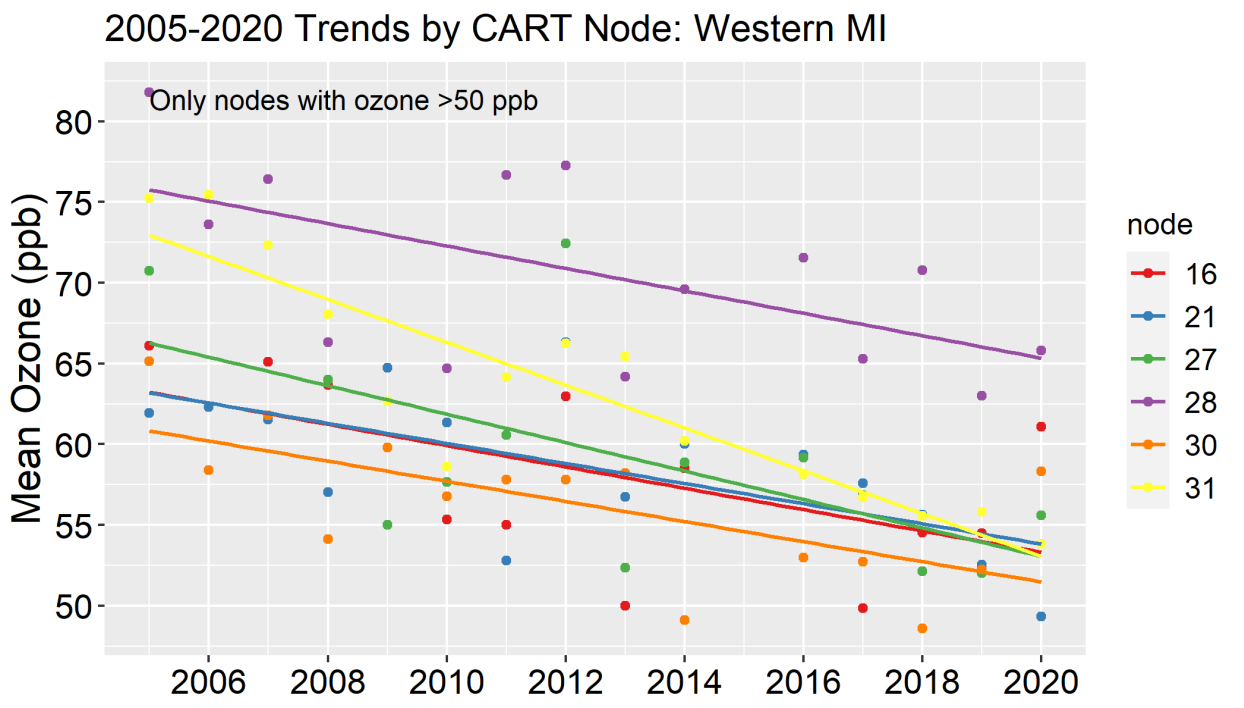


Figure A7.3. Trends in average (mean) ozone in high-ozone nodes for the combined Western Michigan monitors. High-ozone nodes are those with mean ozone concentrations over 50 ppb.

Table A7.1. Description of each high-ozone node for the combined Western Michigan monitors, including its average ozone concentration and the meteorological characteristics of days within the node. Nodes are color-coded to match the colors in the previous figure and are arranged from highest (left) to lowest (right) ozone concentrations.

Node 28	**Node 31**	**Node 27**	**Node 21**	**Node 16**	**Node 30**
72 ppb O_3	63 ppb O_3	60 ppb O_3	59 ppb O_3	59 ppb O_3	55 ppb O_3
Southerly winds (>0.5 m/s)	Southerly winds (>0.5 m/s)	Southerly winds (>0.5 m/s)	Southerly winds (>0.5 m/s)	Northerly winds or very weak southerly winds	Southerly winds (>0.5 m/s)
PM Temp >79 °F	PM Temp >79 °F	PM Temp >79 °F	PM Temp <79 °F	Max Temp >76 °F	PM Temp >79 °F
RH <66%	RH >66%	RH <66%	Average RH <68%	24-hr southerly transport >-142 km	RH >66%
AM westerly winds (>-1 m/s)	Westerly winds (>0.8 m/s)	AM easterly winds	24-hr southerly transport >77 km	PM Temp >84 °F	Easterly winds or very weak westerly winds

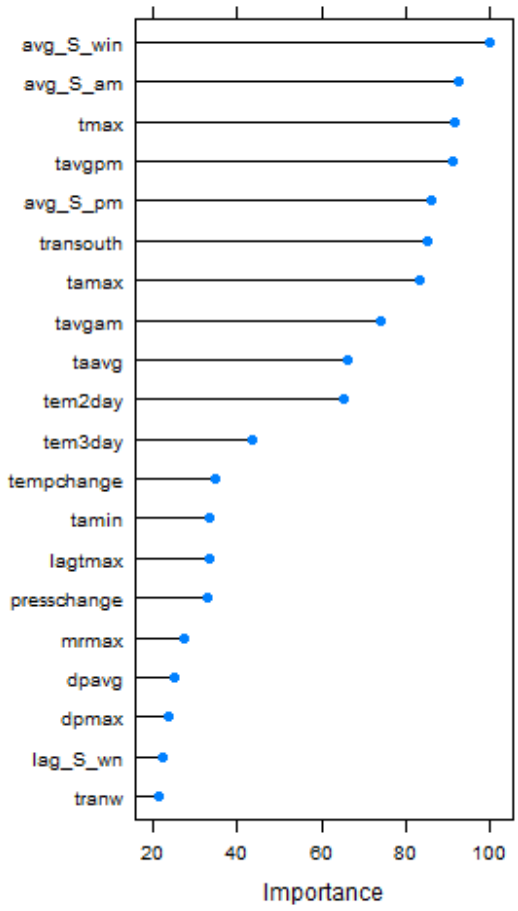


Figure A7.4. Rankings of the importance of different variables in the CART analysis for the combined Western Michigan monitors. Only the top-20 most important variables are shown. See Table 1 in the main document for a description of the different variables.

CART analysis results for the Muskegon County 2015 ozone nonattainment area

Data used in the analysis:

Ozone monitor: 261210039 (Muskegon)

Meteorological station: Muskegon County Airport (MKG)

Brief description of the results:

The high-ozone nodes from the CART analysis for the Muskegon County monitor generally have southerly transport, hot temperatures, and low relative humidity (Figure A7.5 and Table A7.2). Southerly transport-related variables are the most important variables, with temperature also being important. (Figure A7.7). Mean ozone concentrations in all of the high-ozone nodes have decreased from 2005 to 2020 (Figure A7.6).

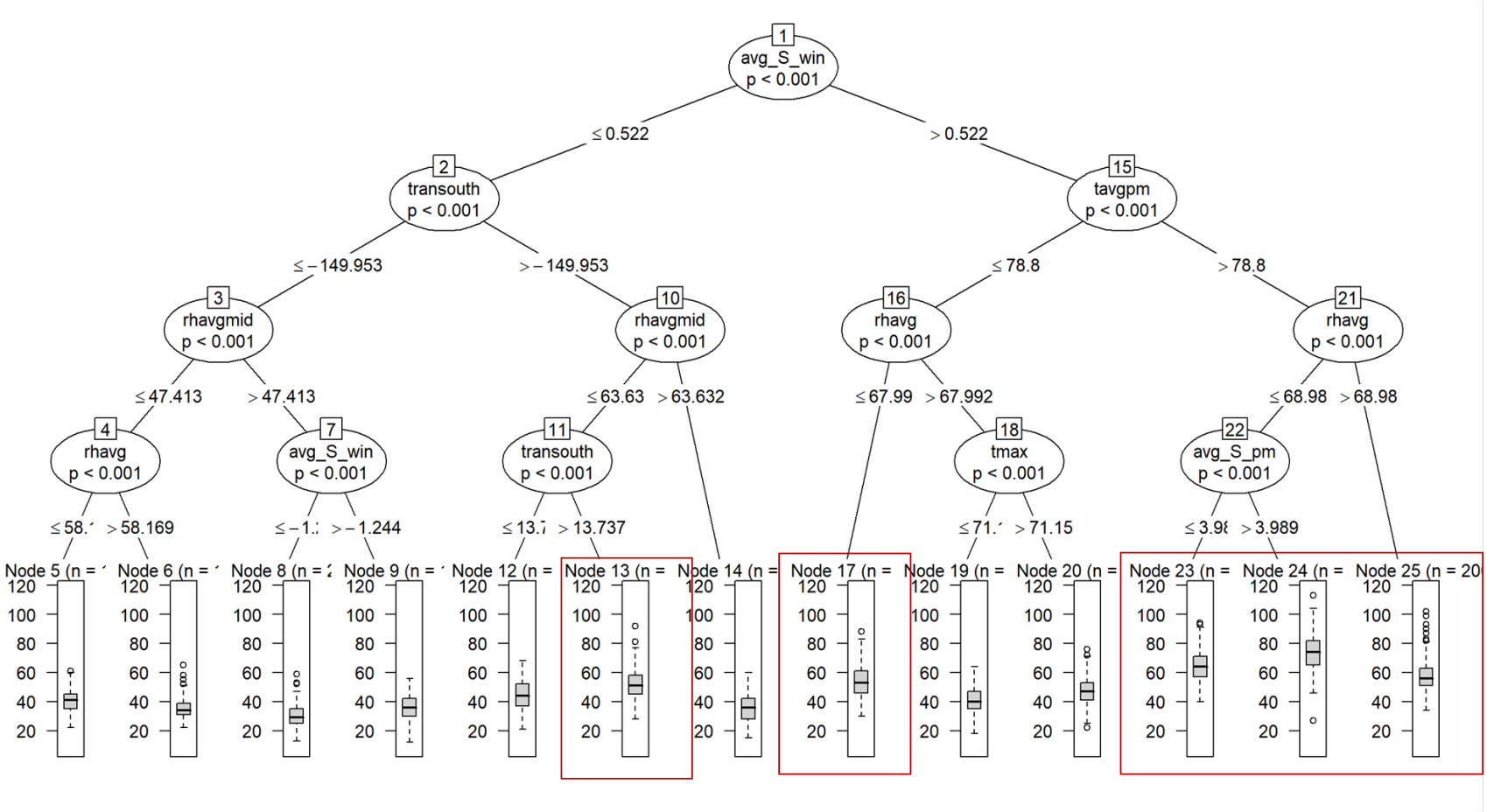


Figure A7.5. Classification and Regression Tree (CART) for the Muskegon County monitor. The boxplots[11] at the bottom show the distribution of ozone concentrations on the different days in each node. The high-ozone nodes shown in the trends figure below (mean ozone >50 ppb) are outlined by the red boxes. See Table 1 in the main document for a description of the different variables.

[11] The line in the middle of each box shows the median ozone concentration value, the gray box encloses the middle 50% of values, and the dashed line and circles show the whole range of values in this node.

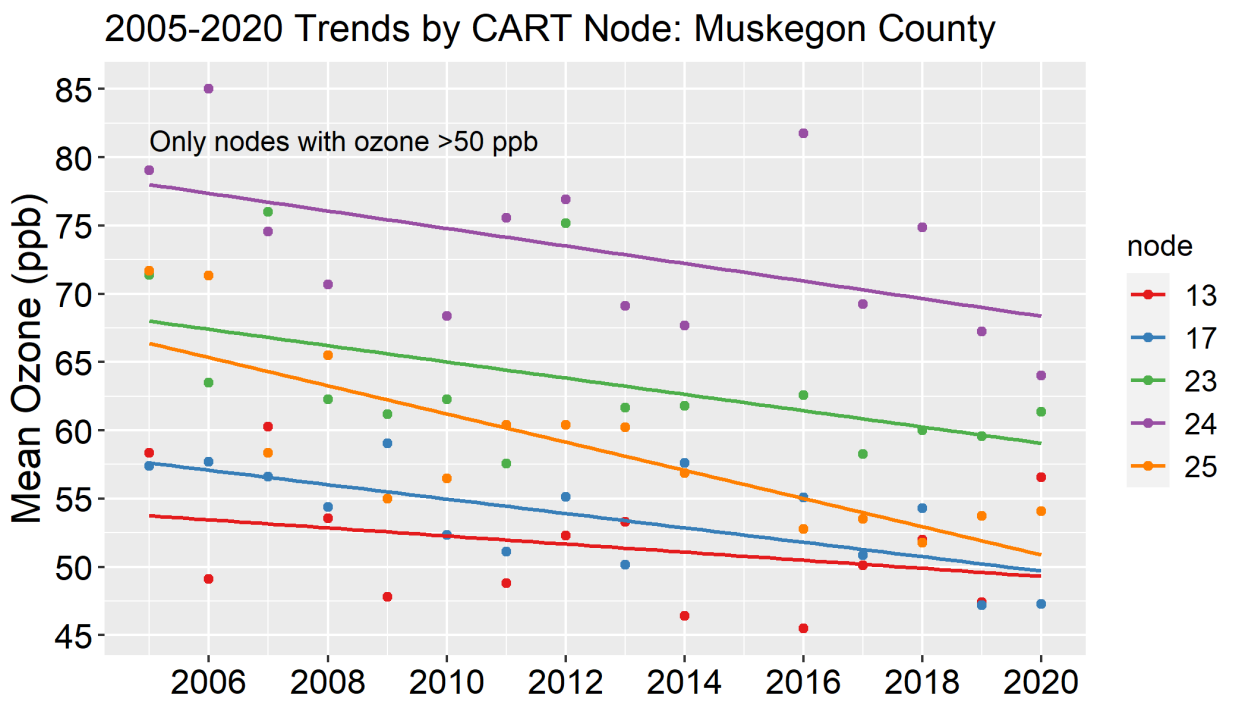


Figure A7.6. Trends in average (mean) ozone in high-ozone nodes for the Muskegon County monitor. High-ozone nodes are those with mean ozone concentrations over 50 ppb.

Table A7.2. Description of each high-ozone node for the Muskegon County monitor, including its average ozone concentration and the meteorological characteristics of days within the node. Nodes are color-coded to match the colors in the previous figure and are arranged from highest (left) to lowest (right) ozone concentrations.

Node 24	**Node 23**	**Node 25**	**Node 17**	**Node 13**
74 ppb O_3	65 ppb O_3	58 ppb O_3	54 ppb O_3	52 ppb O_3
Southerly winds (>0.5 m/s)	Southerly winds (>0.5 m/s)	Southerly winds (>0.5 m/s)	Southerly winds (>0.5 m/s)	Northerly winds or very weak southerly winds
PM Temp >79 °F	PM Temp >79 °F	PM Temp >79 °F	PM Temp <79 °F	24-hr Southerly transport (>14 km)
RH <69%	RH <69%	RH >69%	Average RH <68%	Midday RH <64%
PM southerly winds >4 m/s	PM southerly winds <4 m/s			

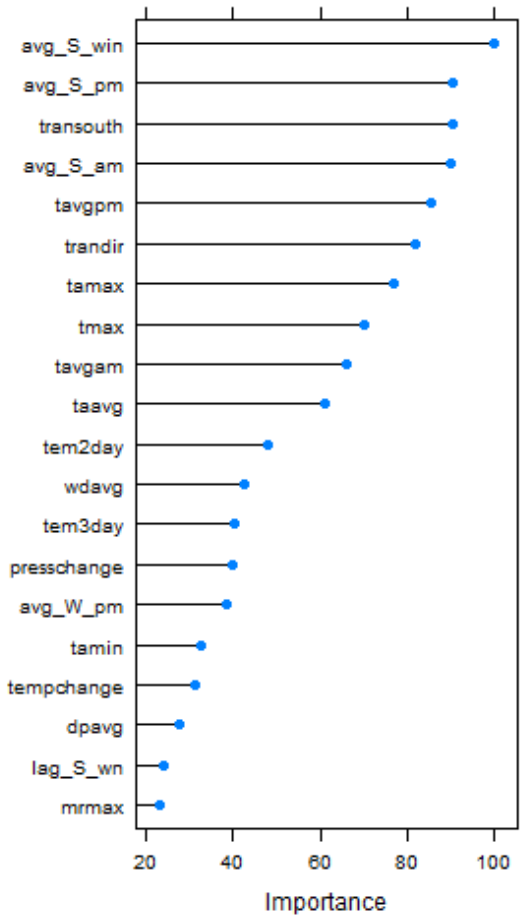


Figure A7.7. Rankings of the importance of different variables in the CART analysis for the Muskegon County monitor. Only the top-20 most important variables are shown. See Table 1 in the main document for a description of the different variables.

CART analysis results for the Allegan County 2015 ozone nonattainment area

Data used in the analysis:

Ozone monitor: 260050003 (Holland)

Meteorological station: Muskegon County Airport (MKG)

Brief description of the results:

The high-ozone nodes from the CART analysis for the Allegan County monitor generally have southerly transport and hot temperatures (Figure A7.8 and Table A7.3). The highest ozone node also has westerly winds. Southerly transport-related variables are the most important variables, with temperature also being important. (Figure A7.10). Mean ozone concentrations in all of the high-ozone nodes have decreased from 2005 to 2020 (Figure A7.9).

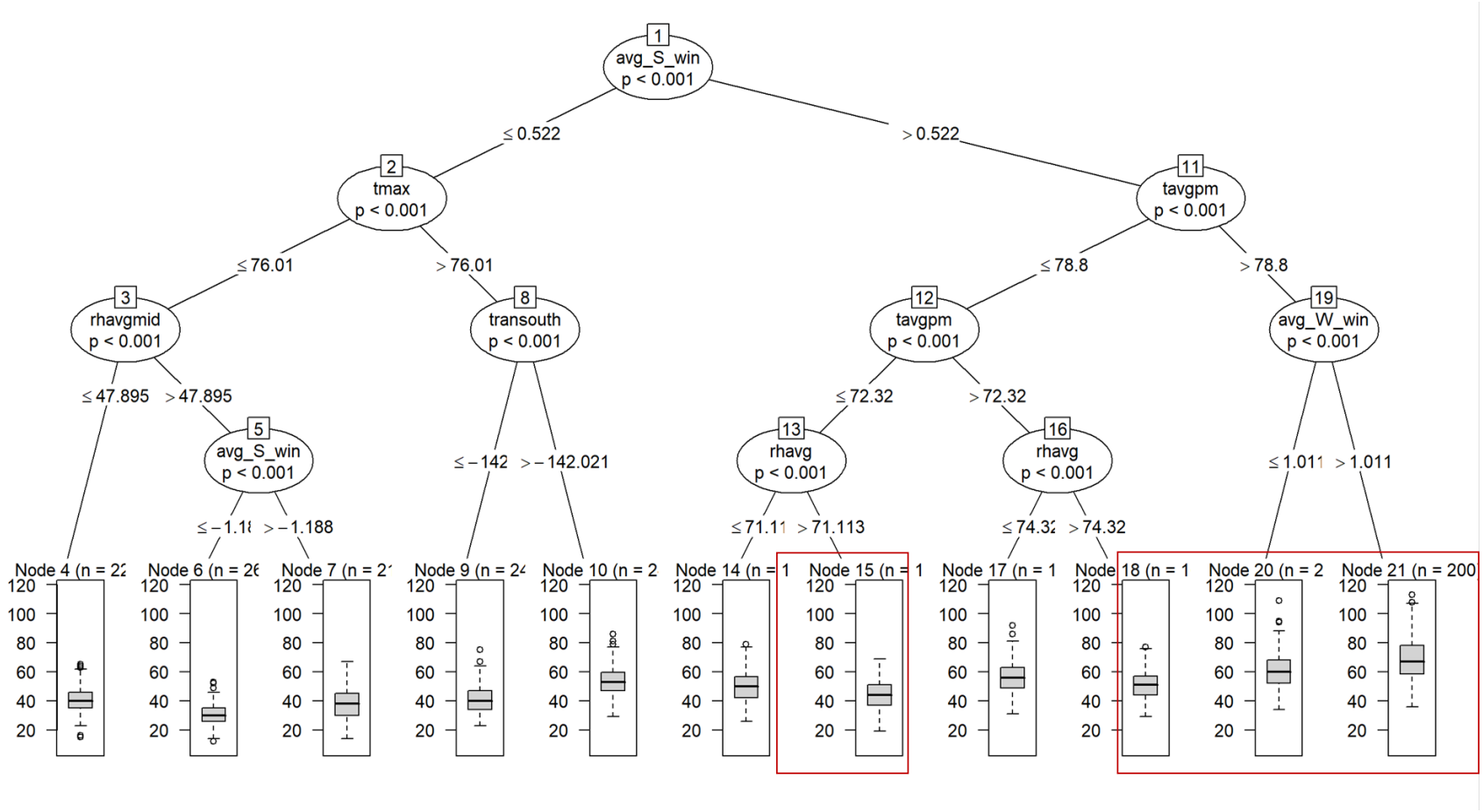


Figure A7.8. Classification and Regression Tree (CART) for the Allegan County monitor. The boxplots[12] at the bottom show the distribution of ozone concentrations on the different days in each node. The high-ozone nodes shown in the trends figure below (mean ozone >50 ppb) are outlined by the red boxes. See Table 1 in the main document for a description of the different variables.

[12] The line in the middle of each box shows the median ozone concentration value, the gray box encloses the middle 50% of values, and the dashed line and circles show the whole range of values in this node.

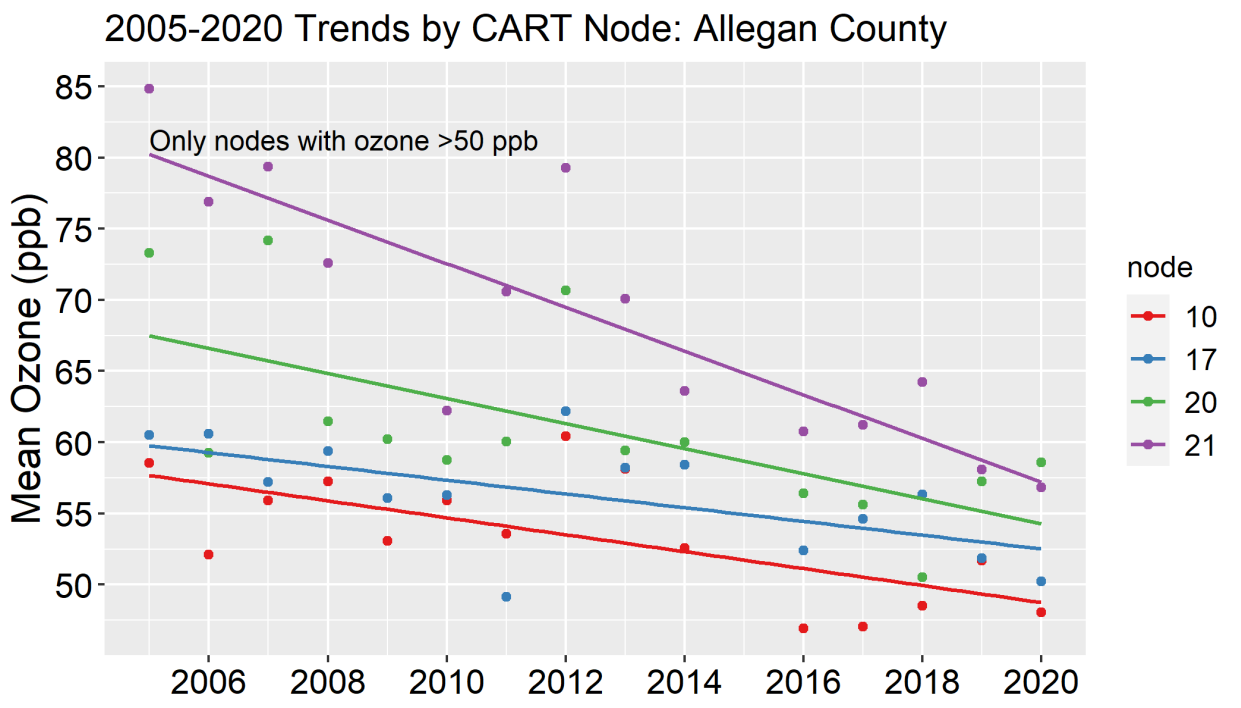


Figure A7.9. Trends in average (mean) ozone in high-ozone nodes for the Allegan County monitor. High-ozone nodes are those with mean ozone concentrations over 50 ppb.

Table A7.3. Description of each high-ozone node for the Allegan County monitor, including its average ozone concentration and the meteorological characteristics of days within the node. Nodes are color-coded to match the colors in the previous figure and are arranged from highest (left) to lowest (right) ozone concentrations.

Node 21	**Node 20**	**Node 17**	**Node 10**
69 ppb O_3	61 ppb O_3	56 ppb O_3	53 ppb O_3
Southerly winds (>0.5 m/s)	Southerly winds (>0.5 m/s)	Southerly winds (>0.5 m/s)	Northerly winds or very weak southerly winds
PM Temp >79 °F	PM Temp >79 °F	PM Temp >72 & <79 °F	Maximum Temp >76 °F
Westerly winds >1.0 m/s	Westerly winds <1.0 m/s	RH >74%	24-hr southerly transport >-142 km

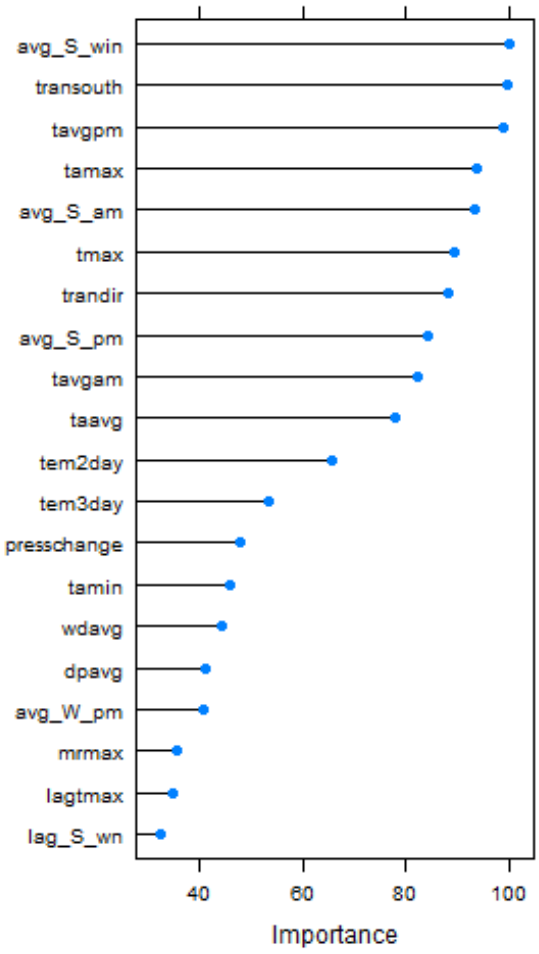


Figure A7.10. Rankings of the importance of different variables in the CART analysis for the Allegan County monitor. Only the top-20 most important variables are shown. See Table 1 in the main document for a description of the different variables.

CART analysis results for the Berrien County 2015 ozone nonattainment area

Data used in the analysis:

Ozone monitor: 260210014 (Coloma)

Meteorological station: South Bend International Airport (SBN)

Brief description of the results:

The high-ozone nodes from the CART analysis for the Berrien County monitor generally have hot temperatures and low relative humidity (Figure A7.11 and Table A7.4). Several nodes also have southerly winds or transport. Temperature-related variables are the most important variables, unlike in Muskegon and Allegan counties, where southerly transport variables were the most important (Figure A7.13). Mean ozone concentrations in all but one of the high-ozone nodes have decreased from 2005 to 2020 (Figure A7.12); the one node whose concentrations have remained steady has a mean ozone concentration of 53 ppb, so these days are unlikely to contribute to ozone nonattainment.

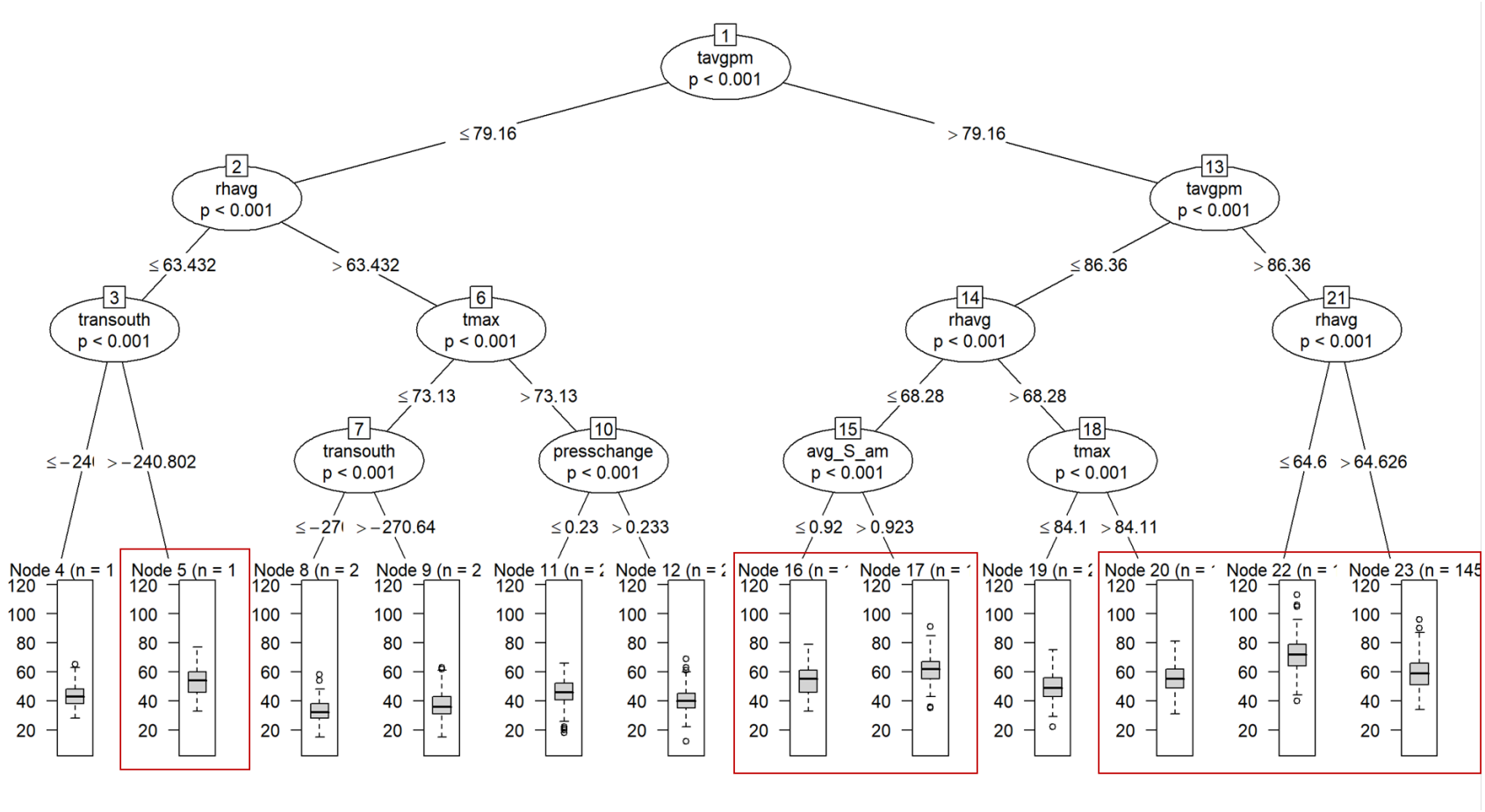


Figure A7.11. Classification and Regression Tree (CART) for the Berrien County monitor. The boxplots[13] at the bottom show the distribution of ozone concentrations on the different days in each node. The high-ozone nodes shown in the trends figure below (mean ozone >50 ppb) are outlined by the red boxes. See Table 1 in the main document for a description of the different variables.

[13] The line in the middle of each box shows the median ozone concentration value, the gray box encloses the middle 50% of values, and the dashed line and circles show the whole range of values in this node.

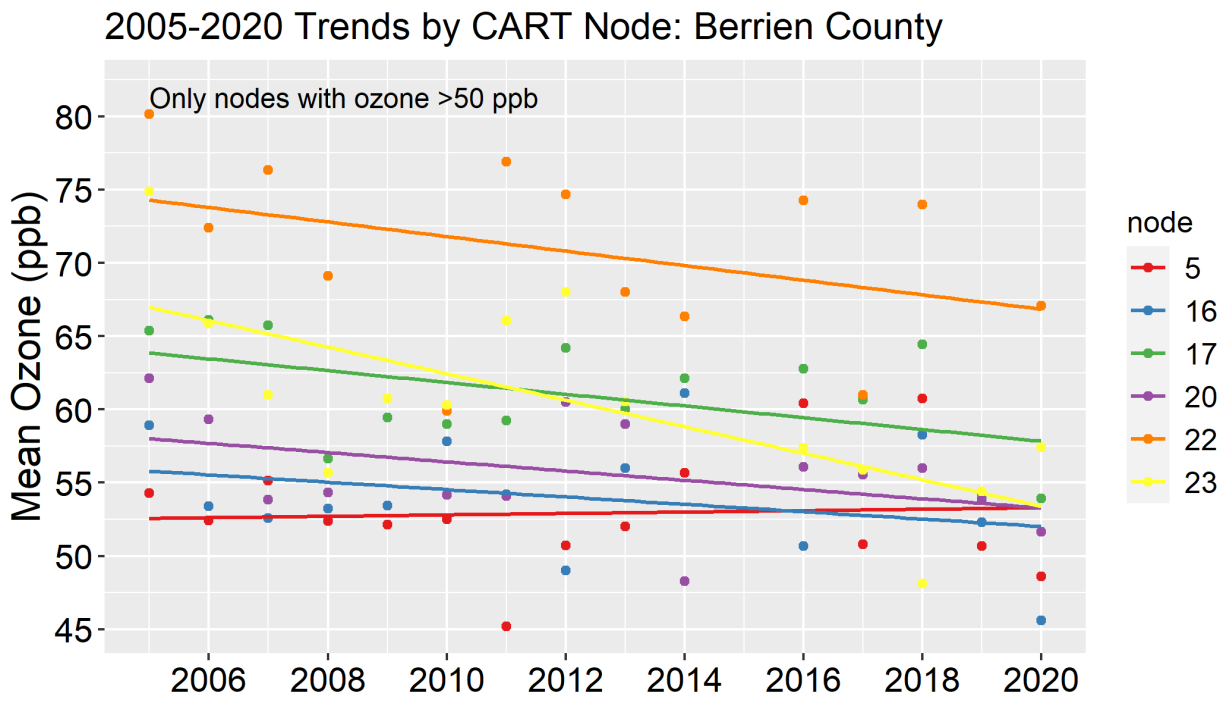


Figure A7.12. Trends in average (mean) ozone in high-ozone nodes for the Berrien County monitor. High-ozone nodes are those with mean ozone concentrations over 50 ppb.

Table A7.4. Description of each high-ozone node for the Berrien County monitor, including its average ozone concentration and the meteorological characteristics of days within the node. Nodes are color-coded to match the colors in the previous figure and are arranged from highest (left) to lowest (right) ozone concentrations.

Node 22	**Node 17**	**Node 23**	**Node 20**	**Node 16**	**Node 5**
72 ppb O_3	61 ppb O_3	60 ppb O_3	55 ppb O_3	54 ppb O_3	53 ppb O_3
PM Temp >86 °F	PM Temp >79 & <86 °F	PM Temp >86 °F	PM Temp >79 & <86 °F	PM Temp >79 & <86 °F	PM Temp <79 °F
Average RH <65%	Average RH <68%	Average RH >65%	Average RH >65%	Average RH <68%	Average RH <63%
	AM southerly winds (>0.9 m/s)		Maximum Temp >84 °F	AM northerly or very weak southerly winds	24-hr southerly transport (>-241 km)

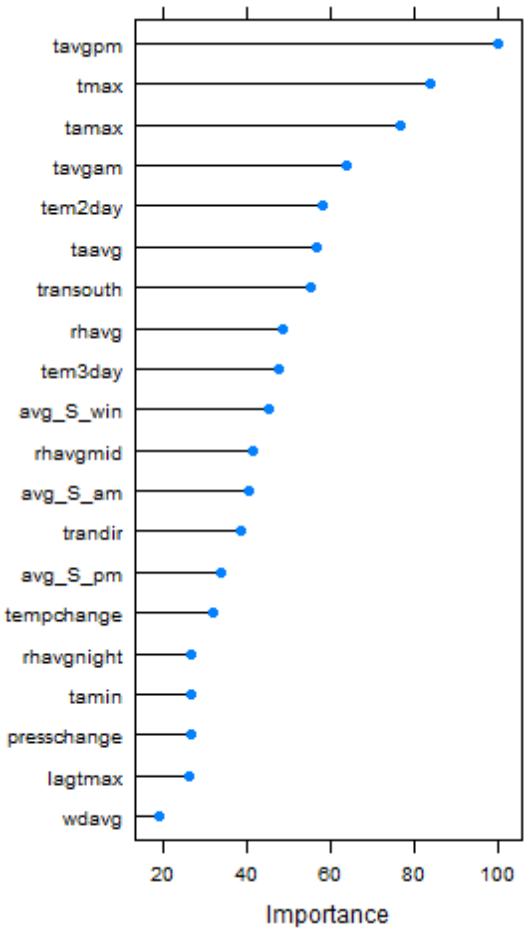


Figure A7.13. Rankings of the importance of different variables in the CART analysis for the Berrien County monitor. Only the top-20 most important variables are shown. See Table 1 in the main document for a description of the different variables.

Appendix 8

CART analysis results for the Wisconsin lakeshore 2015 ozone nonattainment areas

Contents:

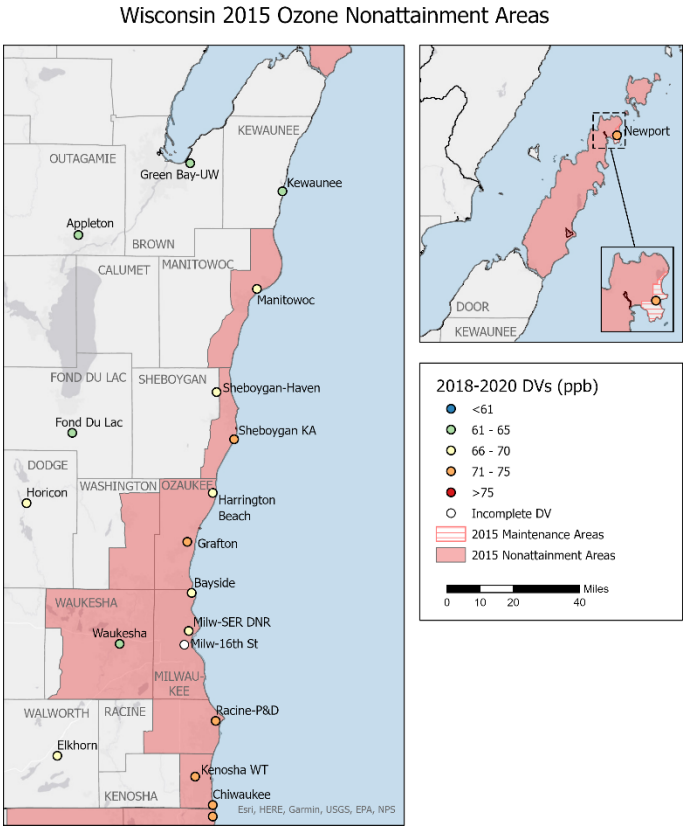


Figure A8.1. Map of the Wisconsin lakeshore 2015 ozone nonattainment areas.

CART analysis results for the Milwaukee 2015 ozone nonattainment area

Data used in the analysis:

Ozone monitors: 550790010 (Milw-16th St), 550790026 (Milw-SER DNR), 550790085 (Bayside), 550890008 (Grafton), 550890009 (Harrington Beach)

Meteorological station: Milwaukee Mitchell International Airport (MKE)

Brief description of the results:

The high-ozone nodes from the CART analysis for the Milwaukee monitors generally have hot temperatures and southerly winds (Figure A8.2 and Table A8.1). The highest ozone node also has winds that are either weak from the west (<2.0 m/s) or from the east. Southerly transport- and temperature-related variables are the most important variables (Figure A8.4). Mean ozone concentrations in all of the high-ozone nodes have decreased from 2005 to 2020 (Figure A8.3).

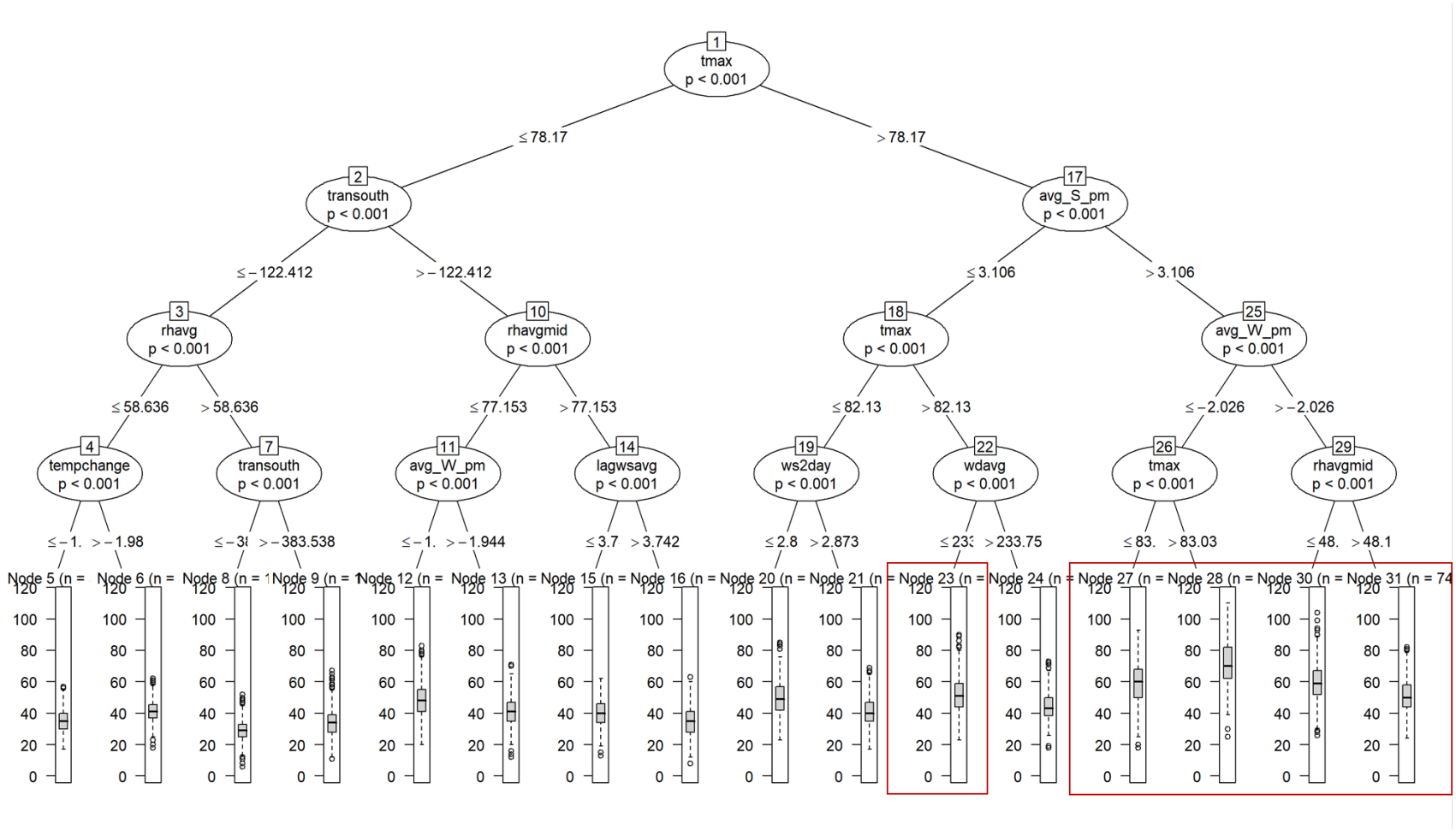


Figure A8.2. Classification and Regression Tree (CART) for the Milwaukee monitors. The boxplots[14] at the bottom show the distribution of ozone concentrations on the different days in each node. The high-ozone nodes shown in the trends figure below (mean ozone >50 ppb) are outlined by the red boxes. See Table 1 in the main document for a description of the different variables.

[14] The line in the middle of each box shows the median ozone concentration value, the gray box encloses the middle 50% of values, and the dashed line and circles show the whole range of values in this node.

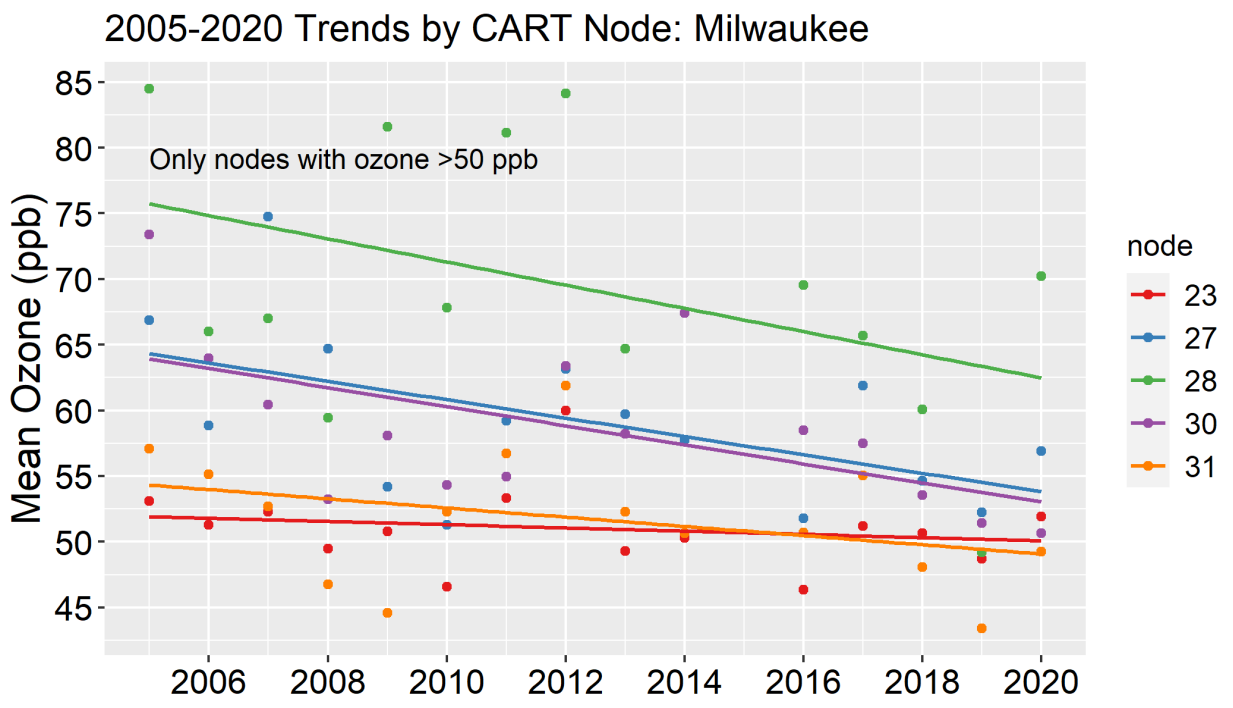


Figure A8.3. Trends in average (mean) ozone in high-ozone nodes for the Milwaukee monitors. High-ozone nodes are those with mean ozone concentrations over 50 ppb.

Table A8.1. Description of each high-ozone node for the Milwaukee monitors, including its average ozone concentration and the meteorological characteristics of days within the node. Nodes are color-coded to match the colors in the previous figure and are arranged from highest (left) to lowest (right) ozone concentrations.

Node 28	**Node 27**	**Node 30**	**Node 31**	**Node 23**
72 ppb O_3	60 ppb O_3	59 ppb O_3	51 ppb O_3	51 ppb O_3
Maximum Temp >83 °F	Maximum Temp >78 & <83 °F	Maximum Temp >78 °F	Maximum Temp >78 °F	Maximum Temp >82 °F
PM southerly winds >3.1 m/s	PM southerly winds >3.1 m/s	PM southerly winds >3.1 m/s	PM southerly winds >3.1 m/s	PM southerly winds <3.1 m/s
PM westerly winds <2.0 m/s	PM westerly winds <2.0 m/s	PM westerly winds >2.0 m/s	PM westerly winds >2.0 m/s	Average wind direction <234° (southwesterly to easterly)
		Midday RH <48%	Midday RH >48%	

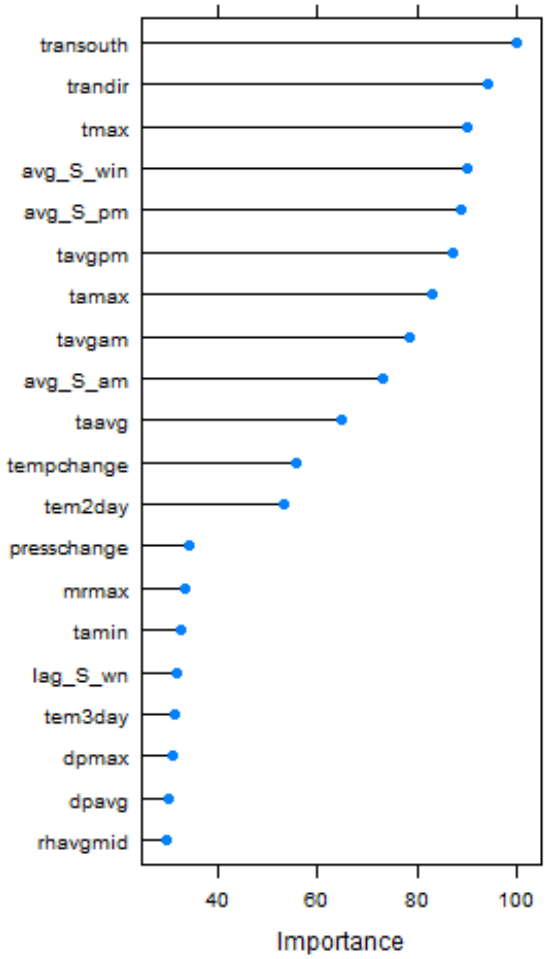


Figure A8.4. Rankings of the importance of different variables in the CART analysis for the Milwaukee monitors. Only the top-20 most important variables are shown. See Table 1 in the main document for a description of the different variables.

CART analysis results for the Sheboygan County 2015 ozone nonattainment area

Data used in the analysis:

Ozone monitors: 551170006 (Sheboygan KA)

Meteorological station: Manitowoc County Airport (MTW)

Brief description of the results:

The high-ozone nodes from the CART analysis for the Sheboygan County monitor generally have southerly winds/transport and hot temperatures (Figure A8.5 and Table A8.2). Southerly transport-related parameters are the most important variables, along with atmospheric pressure and precipitation (Figure A8.7). Mean ozone concentrations in all of the high-ozone nodes have decreased from 2005 to 2020 (Figure A8.6).

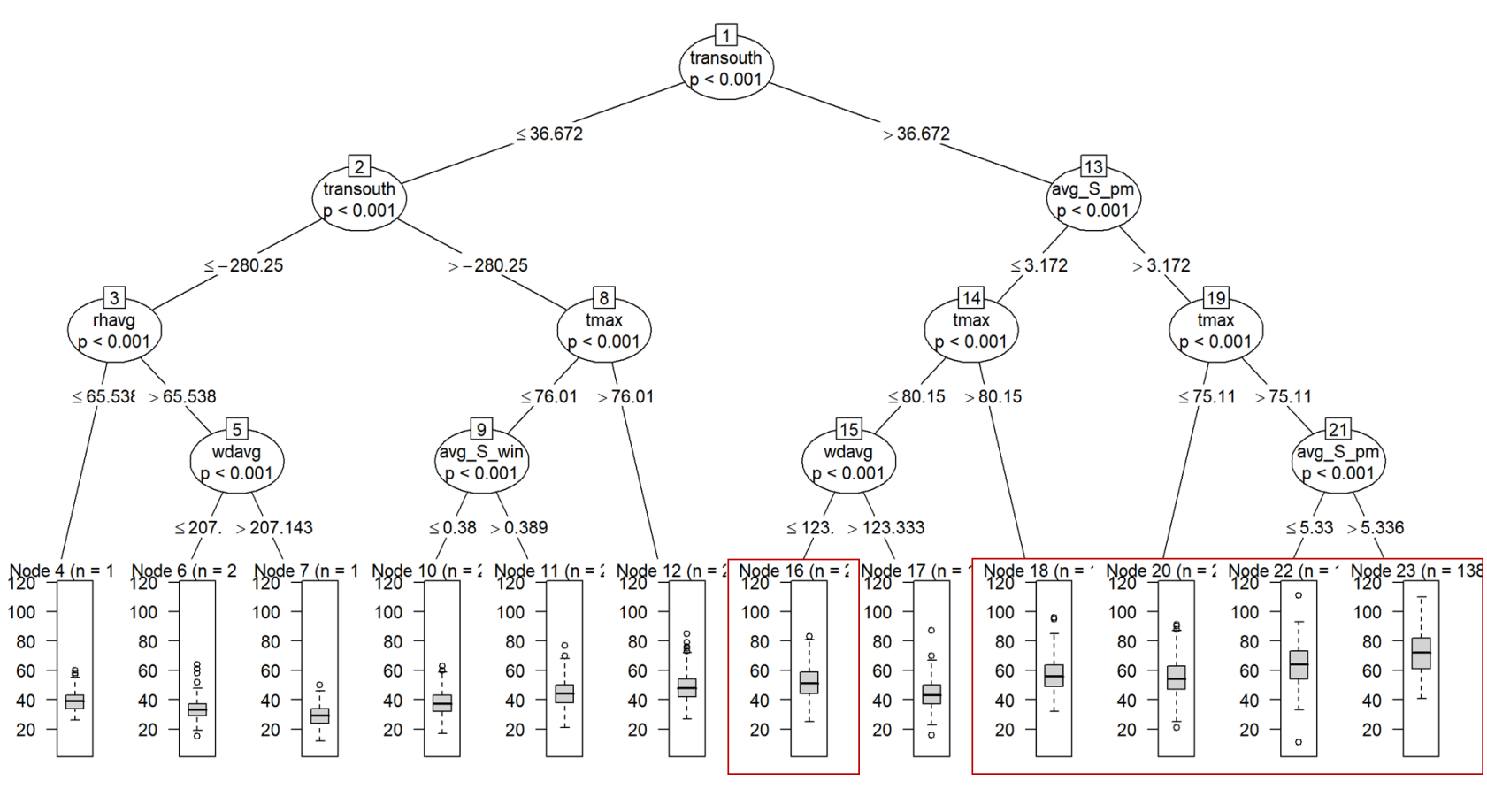


Figure A8.5. Classification and Regression Tree (CART) for the Sheboygan County monitor. The boxplots[15] at the bottom show the distribution of ozone concentrations on the different days in each node. The high-ozone nodes shown in the trends figure below (mean ozone >50 ppb) are outlined by the red boxes. See Table 1 in the main document for a description of the different variables.

[15] The line in the middle of each box shows the median ozone concentration value, the gray box encloses the middle 50% of values, and the dashed line and circles show the whole range of values in this node.

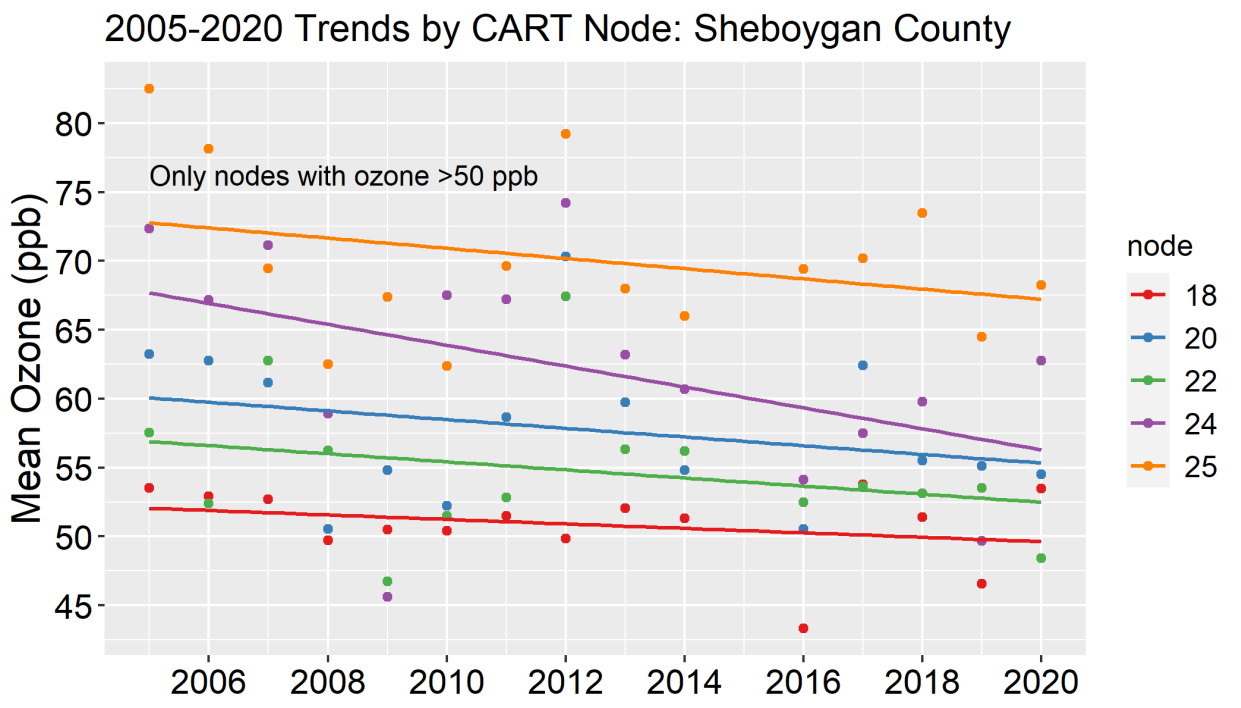


Figure A8.6. Trends in average (mean) ozone in high-ozone nodes for the Sheboygan County monitor. High-ozone nodes are those with mean ozone concentrations over 50 ppb.

Table A8.2. Description of each high-ozone node for the Sheboygan County monitor, including its average ozone concentration and the meteorological characteristics of days within the node. Nodes are color-coded to match the colors in the previous figure and are arranged from highest (left) to lowest (right) ozone concentrations.

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)

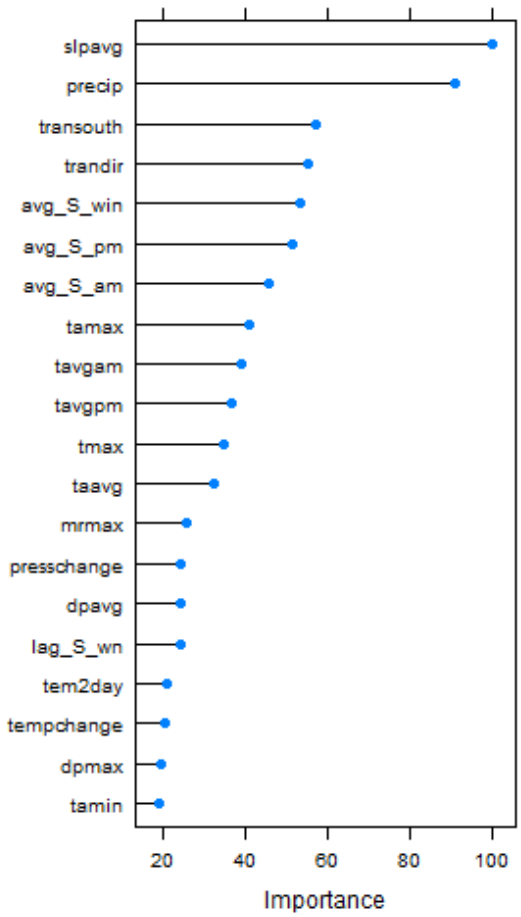


Figure A8.7. Rankings of the importance of different variables in the CART analysis for the Sheboygan County monitor. Only the top-20 most important variables are shown. See Table 1 in the main document for a description of the different variables.

CART analysis results for the Manitowoc County 2015 ozone nonattainment area

Data used in the analysis:

Ozone monitors: 550710007 (Manitowoc)

Meteorological station: Manitowoc County Airport (MTW)

Brief description of the results:

The high-ozone nodes from the CART analysis for the Manitowoc County monitor generally have southerly winds/transport and hot temperatures (Figure A8.8 and Table A8.3). Southerly transport-related parameters are the most important variables, along with atmospheric pressure and precipitation (Figure A8.10). Mean ozone concentrations in all of the high-ozone nodes have decreased from 2005 to 2020 (Figure A8.9).

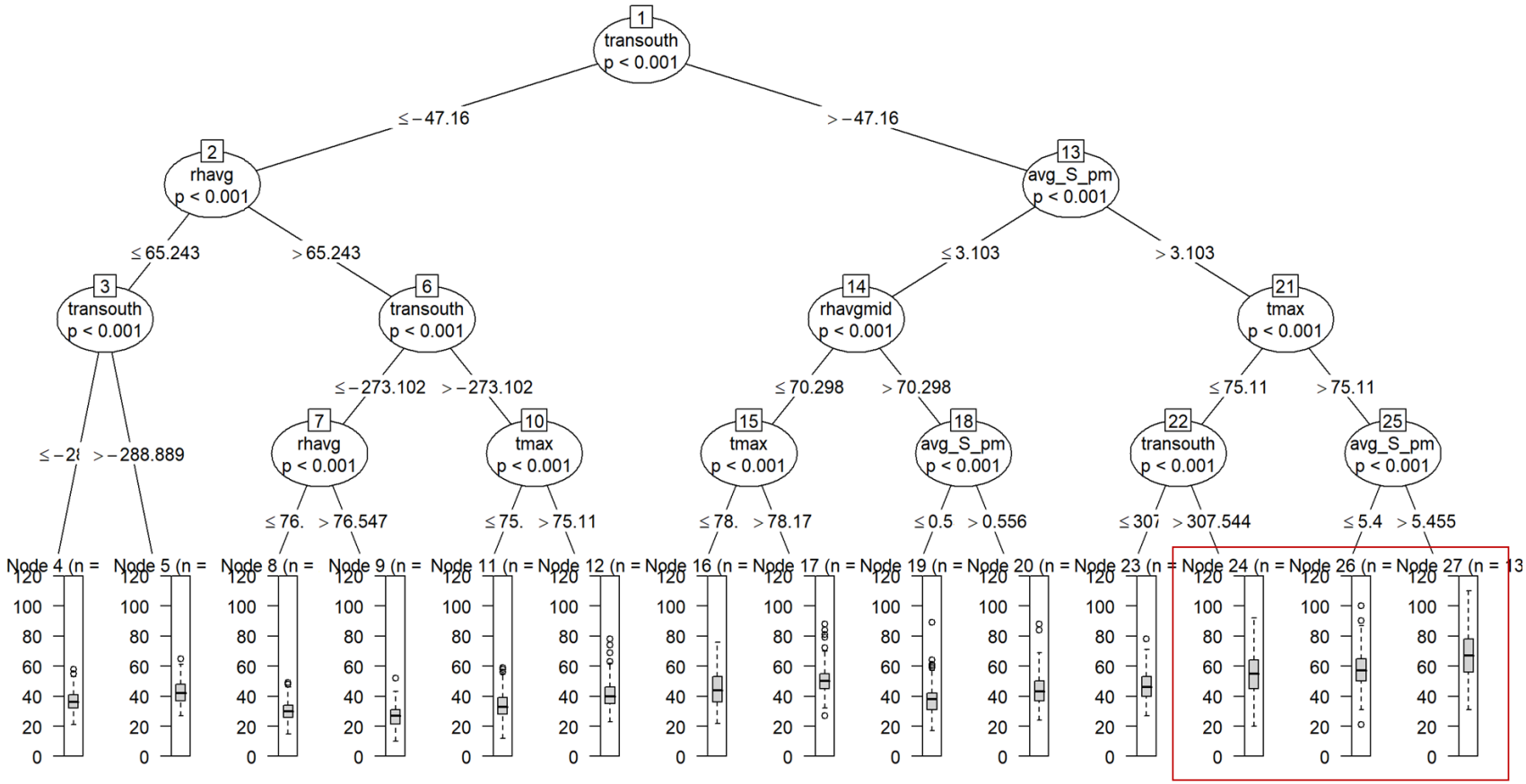


Figure A8.8. Classification and Regression Tree (CART) for the Manitowoc County monitor. The boxplots[16] at the bottom show the distribution of ozone concentrations on the different days in each node. The high-ozone nodes shown in the trends figure below (mean ozone >50 ppb) are outlined by the red boxes. See Table 1 in the main document for a description of the different variables.

[16] The line in the middle of each box shows the median ozone concentration value, the gray box encloses the middle 50% of values, and the dashed line and circles show the whole range of values in this node.

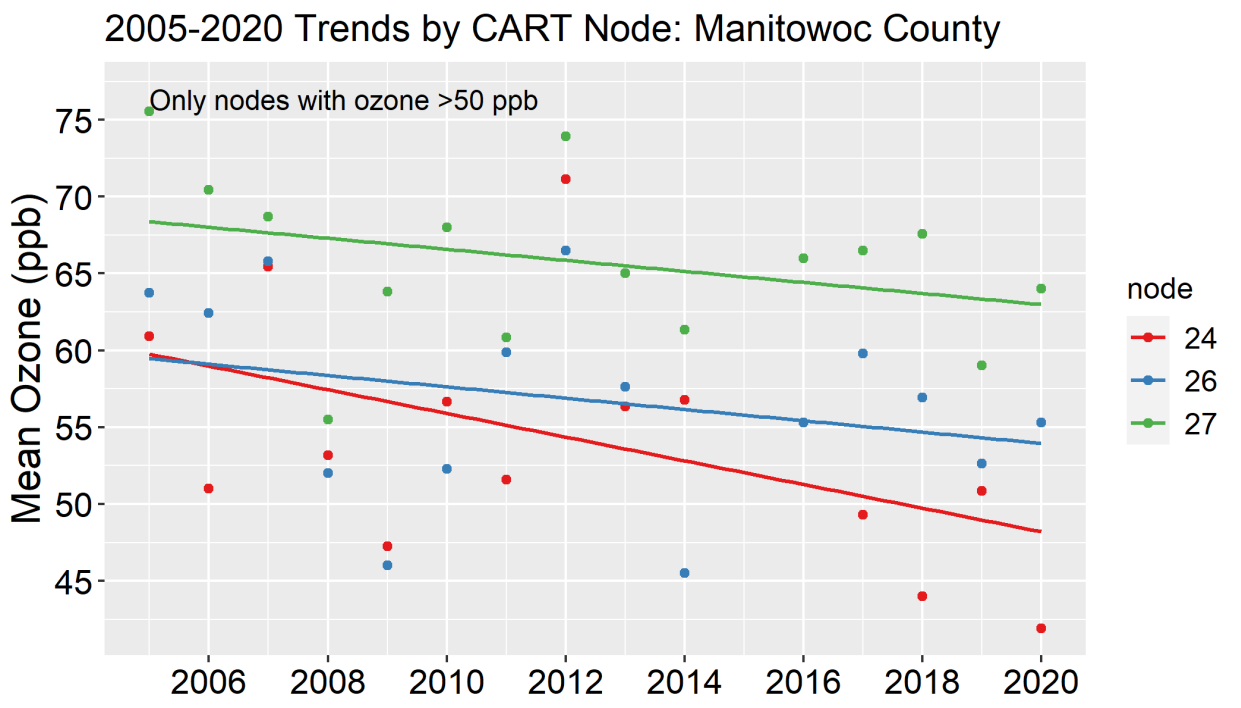


Figure A8.9. Trends in average (mean) ozone in high-ozone nodes for the Manitowoc County monitor. High-ozone nodes are those with mean ozone concentrations over 50 ppb.

Table A8.3. Description of each high-ozone node for the Manitowoc County monitor, including its average ozone concentration and the meteorological characteristics of days within the node. Nodes are color-coded to match the colors in the previous figure and are arranged from highest (left) to lowest (right) ozone concentrations.

Node 27	**Node 26**	**Node 24**
68 ppb O_3	58 ppb O_3	55 ppb O_3
24-hr southerly transport (>-47 km)	24-hr southerly transport (>-47 km)	24-hr southerly transport (>308 km)
PM southerly winds >5.5 m/s	PM southerly winds >3.1 & <5.5 m/s	Southerly winds >3.1 m/s
Maximum Temp >75 °F	Maximum Temp >75 °F	Maximum Temp <75 °F

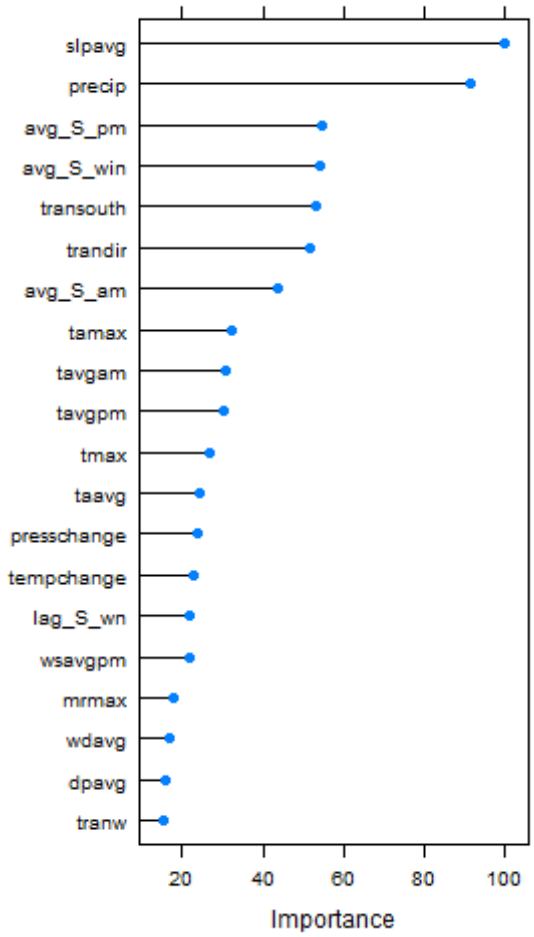


Figure A8.10. Rankings of the importance of different variables in the CART analysis for the Manitowoc County monitor. Only the top-20 most important variables are shown. See Table 1 in the main document for a description of the different variables.

CART analysis results for the Door County-Revised 2015 ozone nonattainment area

Data used in the analysis:

Ozone monitors: 550290004 (Newport)

Meteorological station: Door County Cherryland Airport (SUE)

Brief description of the results:

The high-ozone nodes from the CART analysis for the Door County monitor generally have southerly winds/transport and hot temperatures (Figure A8.11 and Table A8.4). Southerly transport-related parameters are the most important variables, along with atmospheric pressure and precipitation (Figure A8.13). Mean ozone concentrations in all of the high-ozone nodes have decreased from 2005 to 2020 (Figure A8.12).

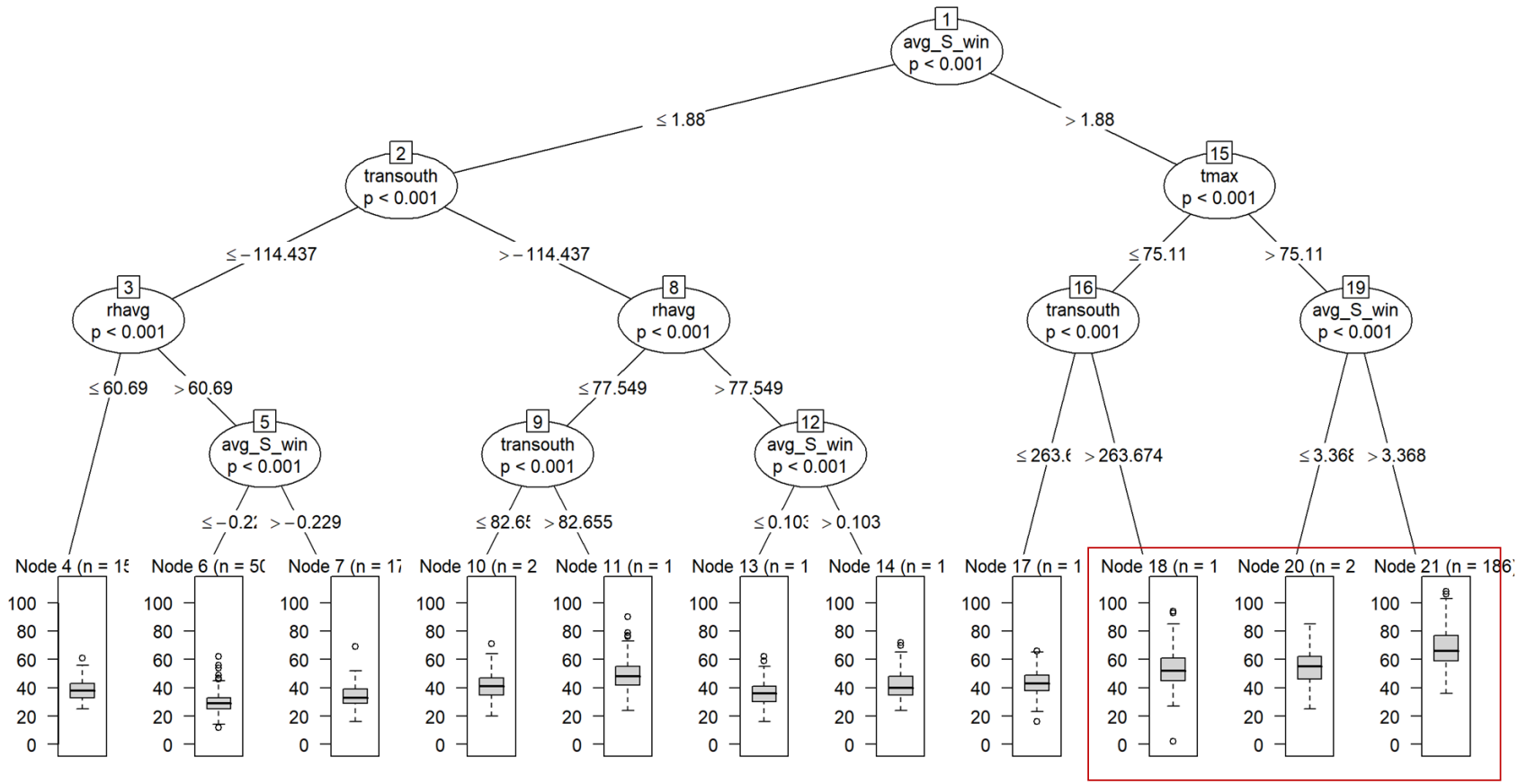


Figure A8.11. Classification and Regression Tree (CART) for the Door County monitor. The boxplots[17] at the bottom show the distribution of ozone concentrations on the different days in each node. The high-ozone nodes shown in the trends figure below (mean ozone >50 ppb) are outlined by the red boxes. See Table 1 in the main document for a description of the different variables.

[17] The line in the middle of each box shows the median ozone concentration value, the gray box encloses the middle 50% of values, and the dashed line and circles show the whole range of values in this node.

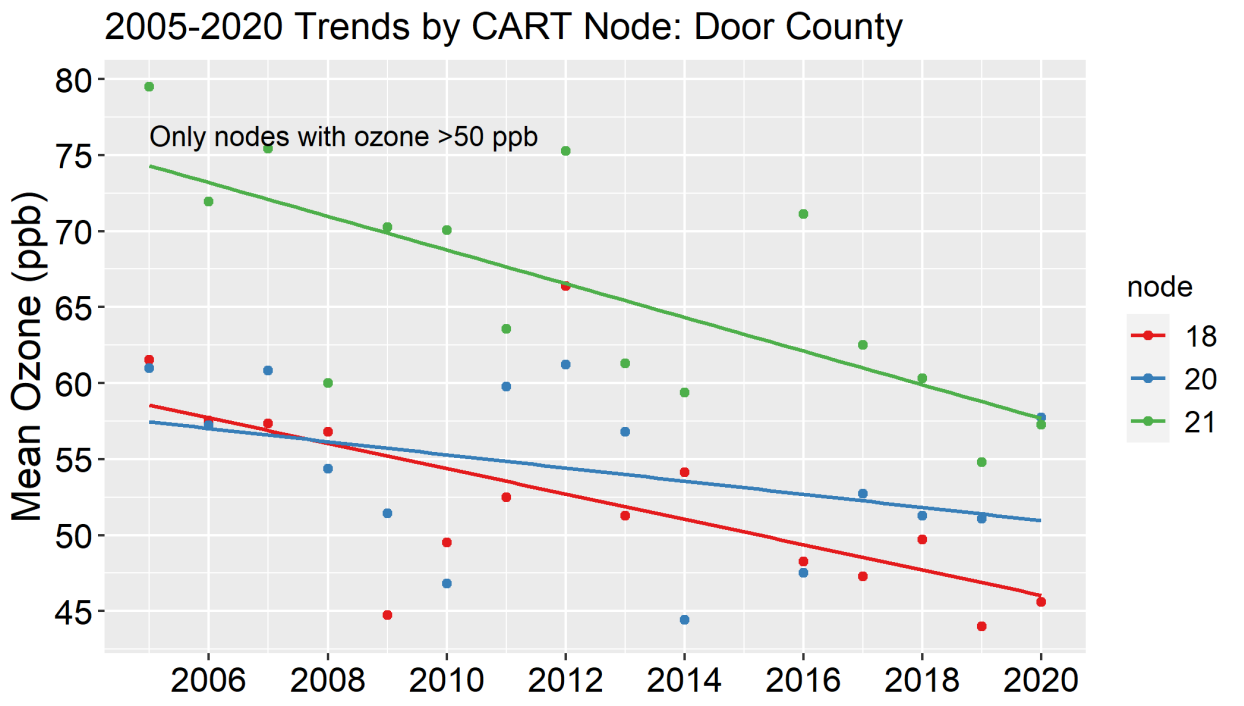


Figure A8.12. Trends in average (mean) ozone in high-ozone nodes for the Door County monitor. High-ozone nodes are those with mean ozone concentrations over 50 ppb.

Table A8.4. Description of each high-ozone node for the Door County monitor, including its average ozone concentration and the meteorological characteristics of days within the node. Nodes are color-coded to match the colors in the previous figure and are arranged from highest (left) to lowest (right) ozone concentrations.

Node 21	**Node 20**	**Node 18**
68 ppb O_3	55 ppb O_3	53 ppb O_3
Southerly winds >3.4 m/s	Southerly winds >1.9 & <3.4 m/s	Southerly winds >1.9 m/s
Maximum Temp >75 °F	Maximum Temp >75 °F	Maximum Temp <75 °F
		24-hr southerly transport >264 km

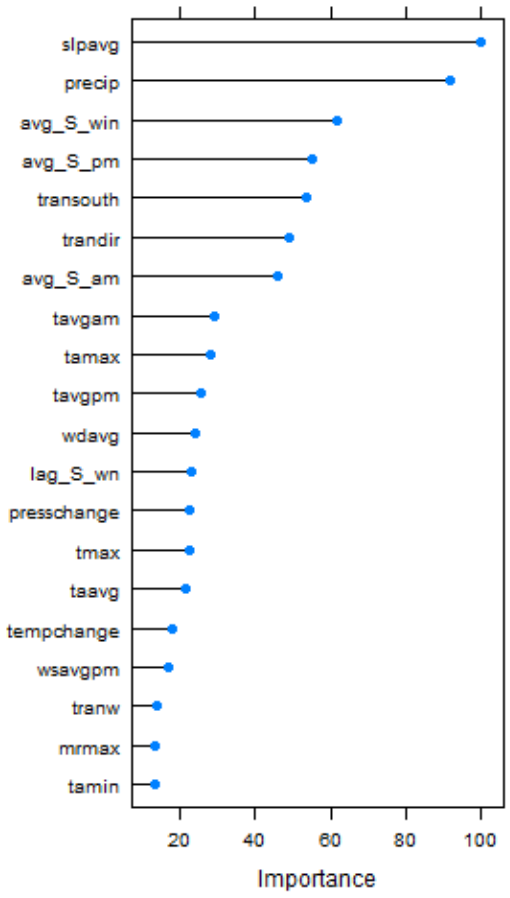


Figure A8.13. Rankings of the importance of different variables in the CART analysis for the Door County monitor. Only the top-20 most important variables are shown. See Table 1 in the main document for a description of the different variables.

Appendix 9

Temperature analysis supporting exclusion of 2015 meteorology

Temperatures at airports in the LADCO region provided by U.S. EPA for the year 2015 seem to be skewed either high or low. For example, Figure A9.1 shows that temperatures skewed high at Chicago O'Hare, with peak temperatures in the 90s (°F). No other year shown has peak temperatures in the 90s. 2015 summer temperatures were below average in the Chicago area (Figure A9.3), so this distribution seems highly unlikely. Figure A9.2 shows that temperatures skewed low at Cincinnati Municipal Airport, with peak temperatures in the mid- to low-70s. While summer temperatures in Cincinnati were 1-2 °F below average, the temperatures in 2009 and 2014 were even lower, and these years had peak temperatures in the upper 70s to low 80s. It appears likely that these temperatures were incorrect as well.

LADCO has excluded this data from the CART analyses because of the apparent issues with this data.

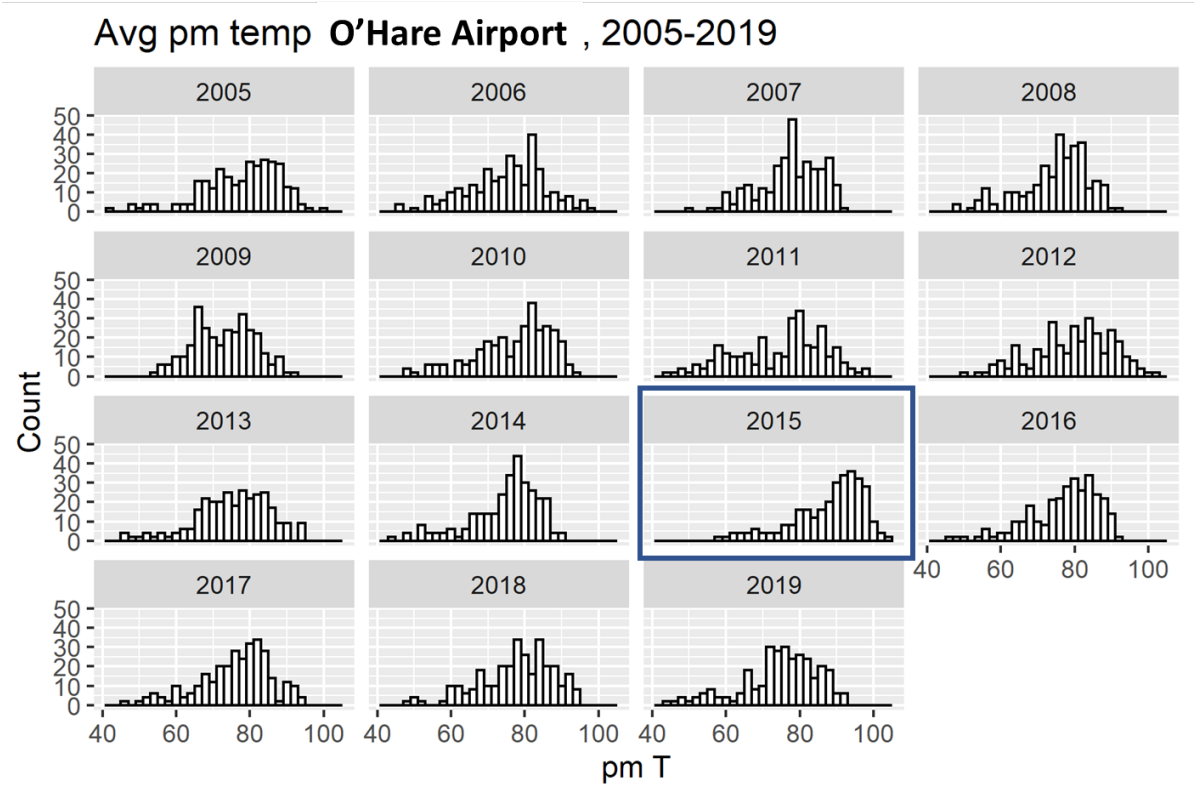


Figure A9.1. Annual afternoon temperature distributions at Chicago O'Hare International Airport, with 2015 data highlighted.

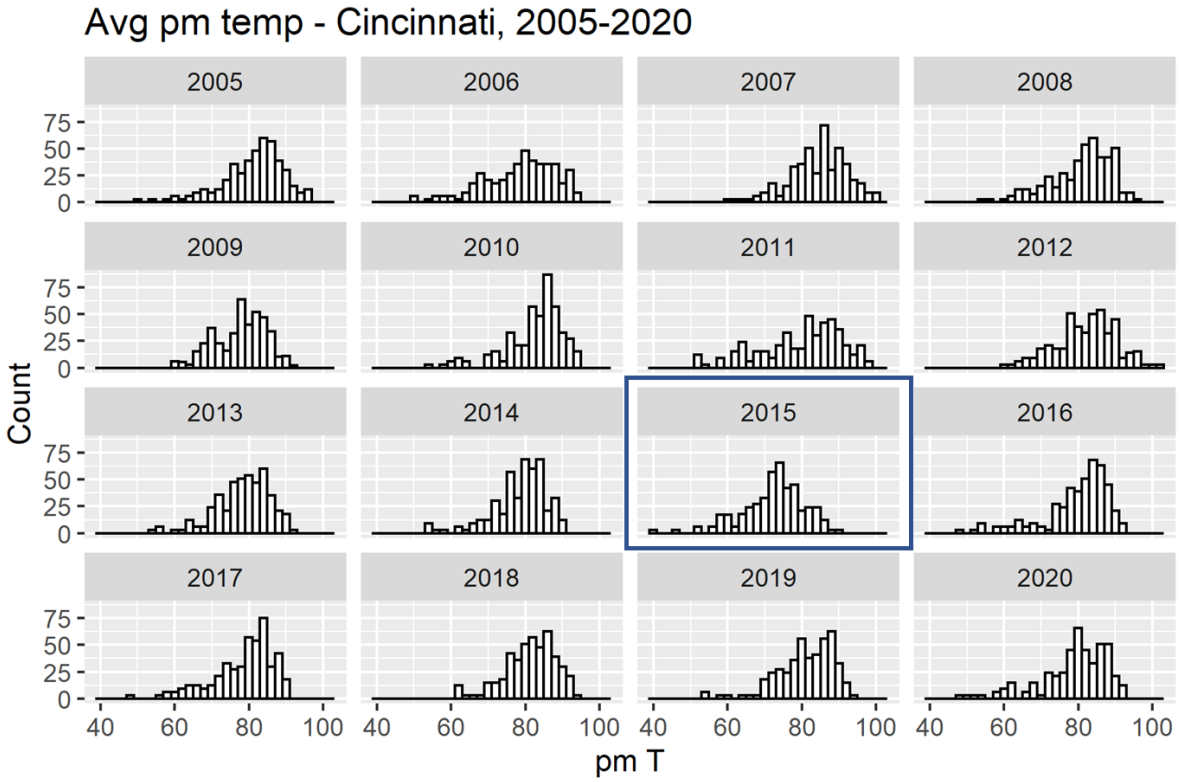


Figure A9.2. Annual afternoon temperature distributions at Cincinnati Municipal Airport-Lunken Field, with 2015 data highlighted.

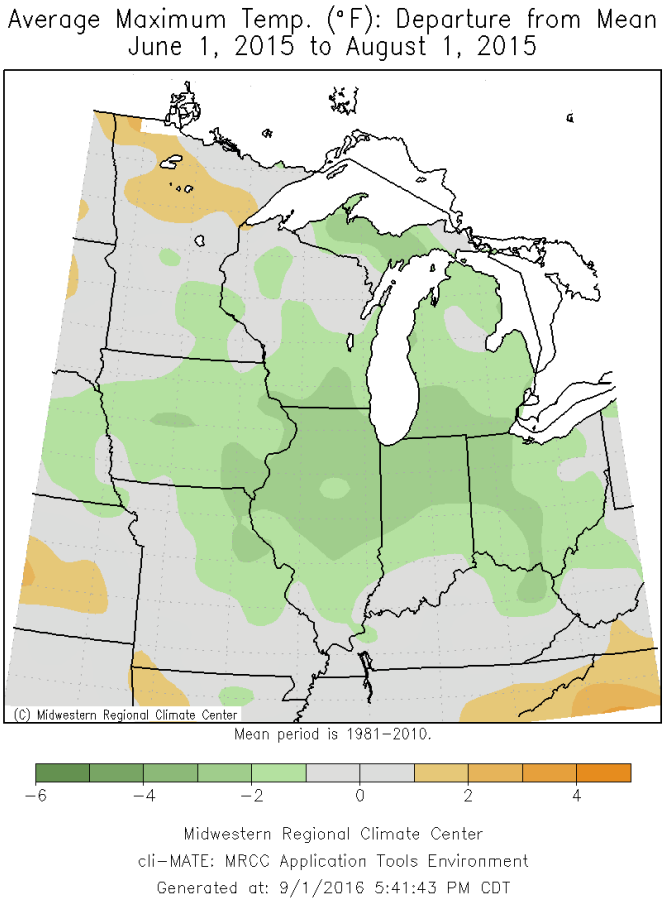


Figure A9.3. Average maximum temperature for June through August 2015, shown as the departure from the mean (in °F).

Appendix 10

Ctree_control settings used for each CART analysis

As discussed in the main document, we adjusted the values of three different parameters under *ctree_control* in the partykit package in *R*: *maxdepth, minsplit* and *minbucket*. We set *maxsurrogate* to 3 for all of the CART runs. *Maxdepth* limits the maximum depth of the tree, *minsplit* sets the minimum number of days in a node to allow it to be further split, and *minbucket* sets the minimum number of days allowed in a terminal node. Table A10.1 lists the values of these parameters for each CART analysis. Values were adjusted in part based on the number of monitors used in the analysis: analyses with more monitors generally had higher values of *minsplit* and *minbucket*.

Table A10.1. Values of *ctree_control* parameters used in different CART analyses.

CART analysis	*maxdepth*	*minsplit*	*minbucket*
Chicago: Kenosha-Lake	4	300	150
Chicago: Cook	6	2500	700
Chicago: Lake-Porter	4	800	400
Cincinnati	4	700	350
Cleveland	5	1000	350
Detroit	4	800	400
Louisville	4	500	250
St. Louis	6	1400	700
West MI: Combined	4	400	200
West MI: Muskegon	4	240	120
West MI: Allegan	4	300	150
West MI: Berrien	4	260	130
WI: Milwaukee	6	600	300
WI: Sheboygan	6	260	130
WI: Manitowoc	4	260	130
WI: Door-Revised	4	300	150