



January 27, 2020

Mr. Kurt Thiede
Regional Administrator
U.S. Environmental Protection Agency - Region 5 (R19J)
77 West Jackson Boulevard
Chicago, IL 60604-3507

Subject: Redesignation Request and Maintenance Plan for the Door County 2015 8-Hour Ozone
National Ambient Air Quality Standard (NAAQS) Nonattainment Area

Dear Regional Administrator Thiede:

The Wisconsin Department of Natural Resources (WDNR) requests approval of the enclosed Redesignation Request and Maintenance Plan for the Door County 2015 ozone NAAQS nonattainment area. Per Section 107(d)(3)(D) of the Clean Air Act, states may request that nonattainment areas be redesignated to attainment provided that certain criteria are met. The WDNR is requesting that EPA redesignate the Door County nonattainment area to attainment and approve the maintenance plan for the 2015 ozone NAAQS based on attainment-level ozone concentrations measured in the nonattainment area for the years 2017 through 2019.

The WDNR provided opportunity for public comment on this SIP submittal and conducted a public hearing in Sturgeon Bay, Wisconsin on January 14, 2020. A copy of the public hearing notice is enclosed. A summary of the public comments the department received, and the department's responses, can be found in Section 8 of this submittal.

This SIP is being submitted using SPeCS. If you have any questions regarding this submittal, please contact Cami Peterson at 608-267-7546 or cami.peterson@wisconsin.gov.

Sincerely,

Gail E. Good
Director
Air Management

cc: Doug Aburano – U.S. EPA Region 5
David Bizot – AM/7
Cami Peterson – AM/7
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Enclosures

REDESIGNATION REQUEST AND MAINTENANCE
PLAN

FOR THE

DOOR COUNTY 2015 8-HOUR OZONE
NONATTAINMENT AREA

Developed By:
The Wisconsin Department of Natural Resources

January 2020

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List of Acronyms

AQS	EPA's Air Quality System database
CAA	Clean Air Act
CAIR	Clean Air Interstate Rule
CDD	Clean Data Determination
CSAPR	Cross-State Air Pollution Rule
CTG	Control Techniques Guideline
EGU	Electric Generating Unit
EPA	U.S. Environmental Protection Agency
I/M	Inspection and Maintenance
iSIP	Infrastructure SIP
LADCO	Lake Michigan Air Directors Consortium
MOVES	EPA's MOtor Vehicle Emission Simulator model
MVEB	Motor Vehicle Emissions Budget
NAAQS	National Ambient Air Quality Standard
NEI	National Emissions Inventory
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO _x	Nitrogen Oxides (NO and NO ₂)
NSR	New Source Review
PM _{2.5}	fine particulates
PM ₁₀	coarse particulates
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
SIP	State Implementation Plan
tpsd	tons per summer day
VOC	Volatile Organic Compounds
WDNR	Wisconsin Department of Natural Resources

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1. INTRODUCTION

Wisconsin requests that the U.S. Environmental Protection Agency (EPA) redesignate the Door County nonattainment area to attainment for the 2015 8-hour ozone National Ambient Air Quality Standard (NAAQS). The Door County nonattainment area has recorded three years of complete, quality-assured ambient air quality monitoring data for the years 2017 through 2019 that demonstrate 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 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 lakeshore of Lake Michigan, including Door County. 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 attainment for the 2008 ozone NAAQS. The history of nonattainment in Door County is shown below in Table 1.1.

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). In April 2018, EPA published a final rulemaking that designated Door County as 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.

Table 1.1. Door County nonattainment history for ozone NAAQS.

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
Classification	Marginal (Rural Transport)	Former Subpart 1	Unclassifiable/ Attainment	Marginal (Rural Transport)
Redesignation to Attainment	4/17/2003 68 FR 18883	7/12/2010 75 FR 39635	N/A	TBD

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1.2. Rural Transport Area (RTA)

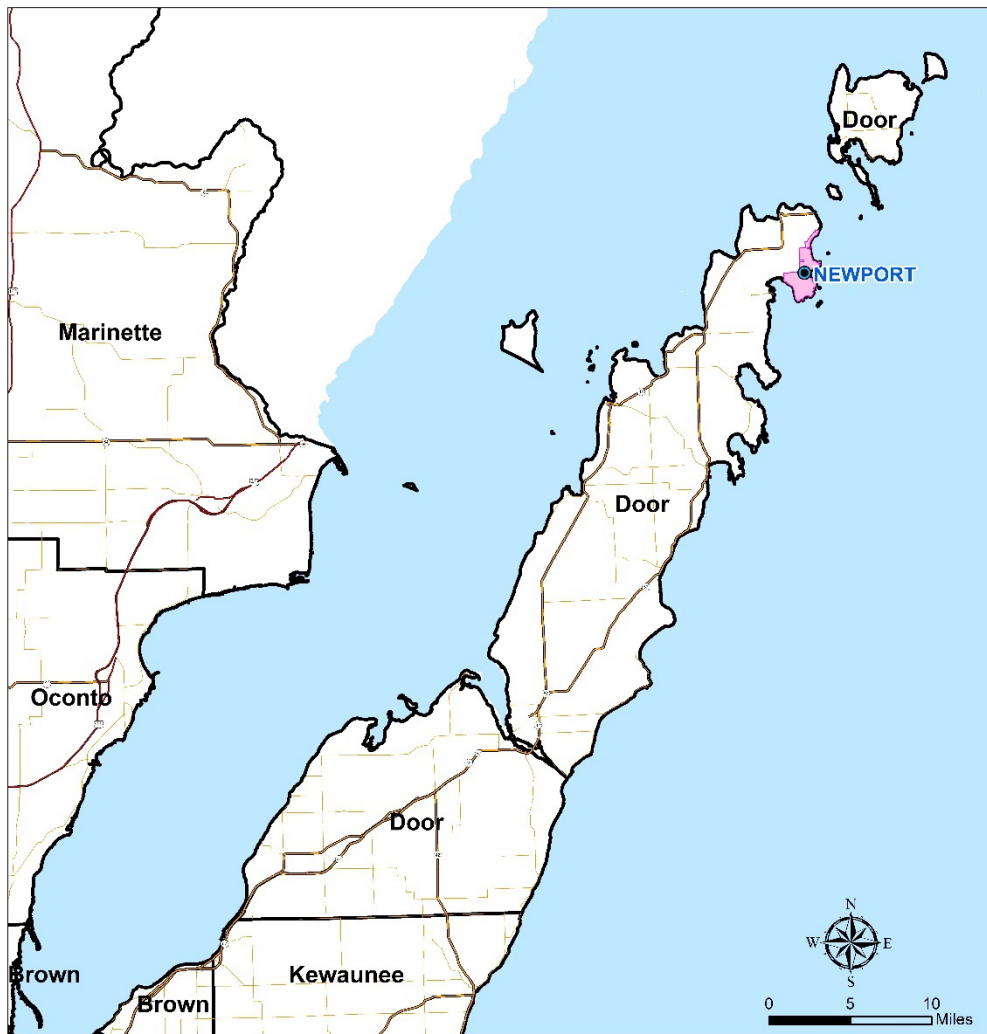
Section 182(h) of the Clean Air Act identifies a category of ozone nonattainment areas referred to as RTAs. An RTA is treated as a marginal nonattainment area for purposes of ozone related-planning and control requirements, regardless of the area's classification. In order for an area to qualify as an 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 NO_x and VOC 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 nonattainment area met these criteria and was therefore eligible to be treated as an RTA.¹

1.3. Geographical Description

Door County is located in eastern Wisconsin along the western shoreline of Lake Michigan (Figure 1.1). The Door County nonattainment area consists of the area within the boundary of Newport State Park. This area has no stationary sources of ozone precursor emissions. 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. The Door County shoreline receives high concentrations of ozone transported from emissions sources in upwind regions located to the south, as described in greater detail in Section 4. Ozone transported from out of state is the dominant source of ozone in Door County, accounting for approximately 89% of the measured ozone concentrations at the Newport monitor (Figure 4.1).

¹ Final Area Designations for the 2015 Ozone National Ambient Air Quality Standards Technical Support Document (TSD), Wisconsin, April 30, 2018.
https://www.epa.gov/sites/production/files/2018-05/documents/wi_tsd_final.pdf

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



1.4. Status of Ozone Air Quality

Ozone monitoring data for the most recent three years, 2017 through 2019, demonstrate that the air quality meets the 2015 ozone NAAQS in the Door County nonattainment area, as discussed in more detail in Section 3. In addition, total summer emissions of ozone precursors—nitrogen oxides (NO_x) and volatile organic compounds (VOC)—are projected to continue declining from upwind areas contributing to the 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 nonattainment area based on Section 107(d)(3)(E) of the CAA.

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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. This document is hereafter referred to as “Redesignation Guidance.” This redesignation request and maintenance plan is based on the Redesignation Guidance, supplemented by additional guidance received from staff at EPA Region 5.

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

- Ozone monitoring data demonstrate that the Newport monitor has attained the 2015 ozone NAAQS (criterion (i), addressed in Section 3).
- Emissions inventories for the nonattainment base year (2014) and attainment year (2017) for both the nonattainment area and upwind metropolitan areas, in combination with a discussion of the control measures in place in upwind areas, indicate that air quality improvements are consistent with observed reductions in NO_x and VOC inventories in those areas and resulted due to permanent and enforceable emissions reductions (criterion (iii), addressed in Sections 4 and 6).
- Discussion of transportation conformity 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 (2023 and 2030) and a contingency plan serve as 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.²

² "Procedures for Processing Requests to Redesignate Areas to Attainment," memo from John Calcagni to EPA Regional Air Directors, September 4, 1992.

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Subpart 1 Requirements

Section 172(c)(3) requires submission 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 under the 1-hour ozone standard and do not need to be addressed again under the 2015 8-hour standard.

Section 182(a)(3)(B) requires the submission of an emission statement SIP. An emission statement is included in Section 4.6 of this redesignation request.

Section 182(b)(5) requires NO_x and VOC emission 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).

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

3. OZONE MONITORING

3.1. Ozone Monitoring Network

The Newport monitor within the Door County nonattainment area has been operating since 1989. This monitor is located within Newport State Park (Figure 1.1). Table 3.1 shows the data collected over the last three years at the Newport monitor.

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 ozone monitor for 2017 through 2019. Table 3.1 also shows the 2017-2019 design value, which meets the 2015 ozone NAAQS. These data confirm that the Newport monitor attained the 2015 ozone NAAQS.

Significant reductions in emissions of ozone precursors, NO_x 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 nonattainment area, showing annual fourth-highest 8-hour concentrations and design values (DV) in parts per million (ppm). 2017 through 2019 data were downloaded from EPA’s Air Quality System (AQS) database.

Site (Site ID)	4th high 8-hr ozone (ppm)			Design value (ppm) 2017-19
	2017	2018	2019	
Newport (55-029-0004)	0.069	0.075	0.066	0.070

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3.3. Quality Assurance

All available data for the Newport ozone monitoring site for 2017 through 2019 has been quality assured and archived in EPA's Air Quality System (AQS).

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 the AQS meets federal criteria. The 2017 through 2019 datasets have been certified and 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 P to 40 CFR Part 50) for the years 2017 through 2019. 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.

The Door County nonattainment area has no permanent emission sources and therefore has no ability to influence ozone concentrations at the Newport monitor. Furthermore, emissions from upwind states contribute much more ozone to the Newport monitor than do sources in Wisconsin, as shown in Figure 4.1 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 nonattainment area still meet the 2015 ozone NAAQS (Table 3.1).

The WDNR is submitting an onroad mobile source inventory for the Door County nonattainment area as well as comprehensive inventories of actual and projected emissions from contributing upwind metropolitan areas.³ Section 6 documents the specific programs responsible for making the emissions reductions permanent and enforceable. These programs are the foundation for the actual emission inventory data discussed in this section. Taken together, this information demonstrates that the improvement in air quality was due to permanent and enforceable reductions in emissions. It should be noted that these emission budgets do not result in a limitation on emissions for any specific source or source category in the future. The emission budgets are a snapshot of recent emission levels and a best estimate of future emission levels 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 beyond the attainment year to demonstrate maintenance ("maintenance year"); and
4. An intermediate year between the attainment year and maintenance year ("interim year").

³ 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 Designations TSD for the 2015 Ozone NAAQS](#) (page 57). 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.

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The WDNR has developed the following NO_x and VOC emission inventories as part of the redesignation request:

1. 2014 nonattainment year emissions inventory;
2. 2017 attainment year emissions inventory;
3. 2023 interim maintenance year emissions inventory; and
4. 2030 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. 2017 is the first year in the attainment design value (2017-2019) 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 2023 as the interim projection year and 2030 as the maintenance year. The emission projections through 2030 are relied upon in the maintenance demonstration presented in Section 7.

4.2. Nonattainment Year (2014) and Attainment Year (2017) 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. As previously discussed, the Door County nonattainment area is comprised only of Newport State Park and has no point, area or nonroad emission sources; therefore, the nonattainment and attainment year inventories prepared for the area include only onroad mobile emissions (Tables 4.1 and 4.2). As the nonattainment area emissions do not contribute to exceedances at the Newport monitor, WDNR also prepared a comprehensive emission inventory for contributing upwind metropolitan areas (Tables 4.3 and 4.4). Appendix 2 includes a discussion of the methodology used to estimate sector-specific emissions for 2014 and 2017 for both the nonattainment area and upwind area emission inventories.

Between 2014 and 2017, NO_x emissions decreased 39%, and VOC emissions decreased 23% in the Door County nonattainment area. These reductions are due to decreases in NO_x and VOC emissions from the onroad mobile sector provided by the federal and state mobile source control programs detailed in Section 6.3. Emissions from metropolitan areas upwind of Door County also decreased between 2014 and 2017. Specifically, NO_x emissions in the three areas decreased by 22-40% and VOC emissions decreased by 12-18%. These reductions were also driven primarily by NO_x and VOC emission reductions from the mobile sector. See Tables 4.1 through 4.4.

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4.3. Maintenance Year Inventories (2023 and 2030)

By designating the Door County 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 area (Newport State Park), WDNR is also providing emissions projections for the upwind metropolitan areas emitting precursors that may influence the ozone levels in the Door County area. Appendix 2 includes information on sector-specific emissions projection methodologies for both areas. Tables 4.1 and 4.2 show the projected NOx and VOC emissions (in tpsd) in 2023 and 2030 for the nonattainment area (Newport State Park) and tables 4.3 and 4.4 show the projected NOx and VOC emissions (in tpsd) for the upwind metropolitan areas. These inventories project that NOx and VOC emissions will continue to decrease in future years. This analysis shows that the Door County area is expected to maintain the air quality standard for more than ten years into the future.

Table 4.1. Door County NOx emissions (tpsd) by source type.

Sector	2014 nonattainment year	2017 attainment year	2023 interim year	2030 maintenance year
Point - EGU	0.00	0.00	0.00	0.00
Point - Non-EGU	0.00	0.00	0.00	0.00
Area	0.00	0.00	0.00	0.00
Onroad	0.00103	0.00063	0.00032	0.00016
Nonroad	0.00	0.00	0.00	0.00
TOTAL	0.00103	0.00063	0.00032	0.00016
Change from 2014 (% change)	NA	-0.0004 (-39%)	-0.00071 (-69%)	-0.00087 (-84%)

Table 4.2. Door County VOC emissions (tpsd) by source type.

Sector	2014 nonattainment year	2017 attainment year	2023 interim year	2030 maintenance year
Point - EGU	0.00	0.00	0.00	0.00
Point - Non-EGU	0.00	0.00	0.00	0.00
Area	0.00	0.00	0.00	0.00
Onroad	0.00052	0.00040	0.00027	0.00019
Nonroad	0.00	0.00	0.00	0.00
TOTAL	0.00052	0.00040	0.00027	0.00019
Change from 2014 (% change)	NA	-0.00012 (-23%)	-0.00025 (-48%)	-0.00033 (-63%)

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Table 4.3. NO_x emissions (tpsd) from upwind metropolitan areas by source type.

Sector	2014 nonattainment year	2017 attainment year	2023 interim year	2030 maintenance year
Chicago Metropolitan Area				
Point - EGU	54.04	32.75	8.69	9.32
Point - Non-EGU	102.20	92.11	92.75	92.52
Area	96.68	96.20	93.29	89.52
Onroad	311.75	202.33	108.40	69.03
Nonroad	158.24	138.44	118.29	113.96
TOTAL	722.92	561.82	421.41	374.35
Change from 2014 (% change)	-	-161.10 (22%)	-301.51 (-42%)	-348.57 (-48%)
Green Bay Area				
Point - EGU	3.28	1.08	0.00	0.01
Point - Non-EGU	12.29	5.59	5.56	5.60
Area	2.63	2.62	2.58	2.56
Onroad	11.20	7.83	3.82	1.86
Nonroad	4.05	2.79	2.15	1.48
TOTAL	33.46	19.91	14.11	11.51
Change from 2014 (% change)	-	-13.55 (-40%)	-19.35 (-58%)	-21.95 (-66%)
Milwaukee Metropolitan Area				
Point - EGU	15.95	12.10	13.09	12.92
Point - Non-EGU	5.11	4.95	4.98	4.98
Area	17.87	17.78	17.40	17.11
Onroad	57.74	34.99	17.49	10.17
Nonroad	28.19	17.57	14.32	13.31
TOTAL	124.86	87.39	67.28	58.48
Change from 2014 (% change)	-	-37.47 (-30%)	-55.56 (-46%)	-66.38 (-53%)

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

Sector	2014 nonattainment year	2017 attainment year	2023 interim year	2030 maintenance year
Chicago Area				
Point - EGU	1.35	1.77	0.83	0.86
Point - Non-EGU	48.85	46.46	45.92	45.59
Area	240.36	241.60	245.29	249.38
Onroad	170.29	113.35	72.56	49.96
Nonroad	91.62	70.54	65.28	66.68
TOTAL	552.47	473.71	429.88	412.46
Change from 2014 (% change)	-	-78.76 (-14%)	-122.59 (-22%)	-140.01 (-25%)
Green Bay Area				
Point - EGU	0.05	0.02	0.00	0.00
Point - Non-EGU	4.22	4.53	4.53	4.54
Area	8.71	8.94	9.15	9.38
Onroad	6.31	4.31	2.72	1.97
Nonroad	2.91	1.72	1.49	1.41
TOTAL	22.21	19.51	17.91	17.30
Change from 2014 (% change)	-	-2.70 (-12%)	-4.30 (-19%)	-4.91 (-22%)
Milwaukee Area				
Point - EGU	0.39	0.43	0.98	0.98
Point - Non-EGU	9.01	8.80	8.80	8.78
Area	50.40	50.69	51.06	51.43
Onroad	31.07	18.55	12.16	8.68
Nonroad	18.77	11.83	10.88	10.82
TOTAL	109.64	90.30	83.87	80.69
Change from 2014 (% change)	-	-19.34 (-18%)	-25.77 (-24%)	-28.95 (-26%)

4.4. Projected Emission Trends

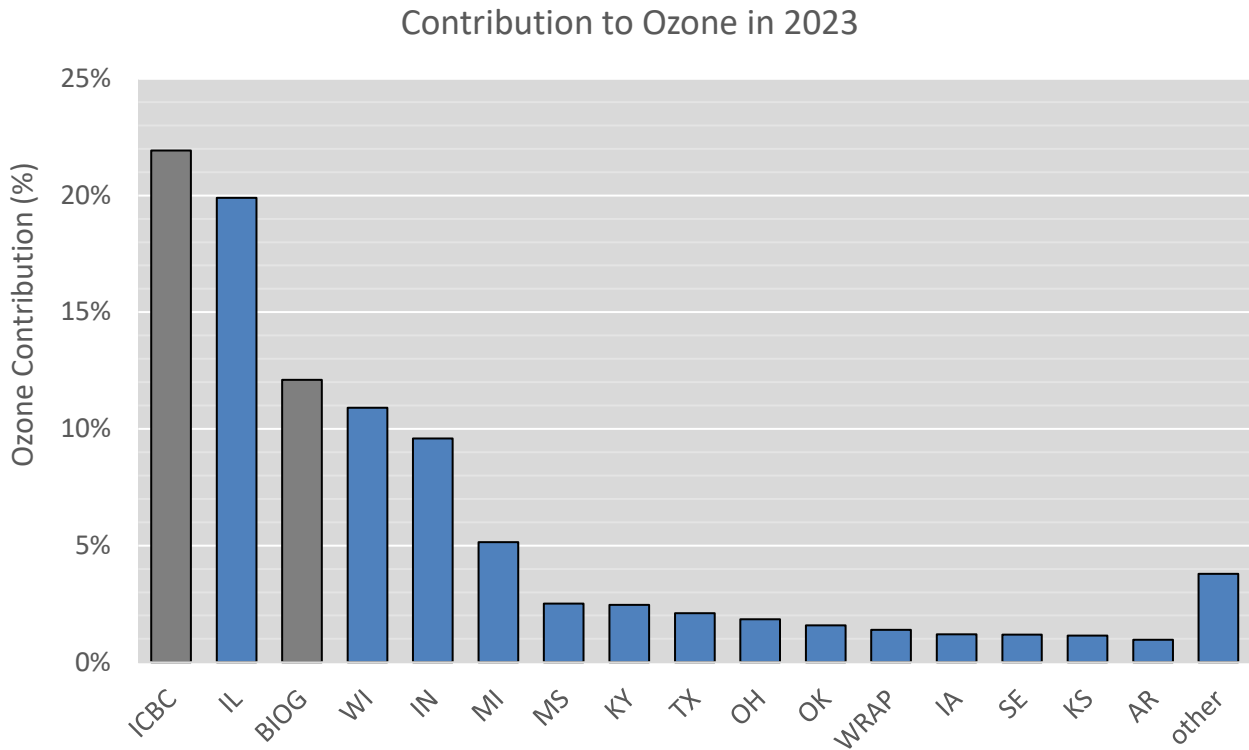
For an area heavily influenced by out-of-state emissions like Door County, it is important to gauge upwind emission trends to ensure continued compliance with the ozone standard. The WDNR compared actual emissions from 2017 to projected emissions from the interim year (2023) and the maintenance year (2030) for the Door County nonattainment area and metropolitan areas upwind of the Door County nonattainment area. Total NO_x emissions across these areas are projected to decrease by approximately 34% (224.78 tpsd) from 2017 to 2030 (Tables 4.1 and 4.3). The largest reductions are projected from the onroad mobile sector (164.09 tpsd) and the nonroad mobile sector (30.05 tpsd), 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% (or 73.06 tpsd) from 2017 to 2030 (Tables 4.2 and 4.4). The largest VOC reductions are projected from the onroad mobile sector (75.59 tpsd) followed by the the nonroad mobile sector (5.17 tpsd).

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

4.5. Out of State Contributions

NO_x 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% 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 are those from Wisconsin sources.

Figure 4.1. Ozone source apportionment modeling from the Lake Michigan Air Directors Consortium (LADCO) for the Newport monitor.⁴



4.6. Emission Statement

Marginal areas are required to submit an emission statement under section 182(a)(3)(B) of the CAA (78 FR 34202). The emissions 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

⁴ Contributions are projected from a 2011 base year. Only source regions that contributed 1% or more to ozone at the monitor are shown individually; other source regions are grouped together into the “other” category. 2017 modeling was provided by LADCO to WDNR in 2017. 2023 projected contributions come 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. The Central region includes MN, IA, NE, KS, OK, TX, AR and LA. The Southeast region includes MS, AL, GA, FL, TN, VA, NC and SC. The West region includes WA, OR, CA, NV, ID, MT, WY, UT, CO, AZ, NM, ND and SD. ICBC refers to “boundary conditions”, which are contributions from outside the U.S. BIOG represents biogenic emissions.

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shall contain a certification that the information contained in the statement is accurate to the best knowledge of the individual certifying the statement (78 FR 34202).

EPA has proposed that this SIP submittal of the emissions statement program be due two years after the effective date of designations (78 FR 34203). Door County has an emission statement program in place due to historic nonattainment designations for an earlier ozone NAAQS. The 2015 Ozone Implementation Rule indicates 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).

WDNR has the authority under Chapter NR 438 of the Wisconsin Administrative Code to require annual NO_x and VOC emission reporting from any facility in the state that emits a pollutant above the thresholds specified in the code. Chapter NR 438 is available at http://docs.legis.wisconsin.gov/code/admin_code/nr/400/438.pdf

EPA approved Wisconsin's emission reporting program as satisfying the CAA emission statement requirement on December 6, 1993 (58 FR 64155).

5. TRANSPORTATION CONFORMITY BUDGETS

Transportation conformity is required under CAA section 176(c) (42 U.S.C. 7506(c)) to ensure that federally funded or approved highway and transit activities are consistent with (“conform to”) the purpose of the SIP. “Conform to” the purpose of the SIP means that transportation activities will not cause or contribute to new air quality violations, worsen existing violations, or delay timely attainment of the relevant NAAQS or any interim milestones. Transportation conformity applies to designated nonattainment and maintenance areas for transportation-related criteria pollutants: ozone, fine particles (PM_{2.5}), coarse particles (PM₁₀), carbon monoxide, and nitrogen dioxide. The EPA’s transportation conformity rule (40 CFR Parts 51 and 93) establishes the criteria and procedures for determining whether metropolitan transportation plans, metropolitan transportation improvement programs, federally supported highways projects, and federally supported transit projects conform to the SIP.

EPA requirements outlined in 40 CFR 93.118(e) (4) stipulate that MVEBs for NO_x and VOC are established as part of a control strategy implementation plan revision or maintenance plan. MVEBs are necessary to demonstrate conformance of transportation plans and improvement programs with the SIP.

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 MOVES2014b model. The MOVES2014b model is used to derive estimates of hot summer day emissions for the ozone precursors NO_x 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. Appendix 2 contains key data used to develop inputs to MOVES2014b.

5.2. Motor Vehicle Emissions Budgets

WDNR is submitting MVEBs for the Door County 2015 ozone NAAQS maintenance area for the years 2023 and 2030. 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 RFP, attainment, or maintenance. To calculate a safety margin, WDNR increased the on-road mobile source portions of the 2023 and 2030 projected emissions inventories by 15% for the Door County maintenance area.

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Table 5.1. Motor vehicle emissions budgets (MVEBs) for the Door County Maintenance Area for 2023 and 2030.

Year	Emissions (tons per hot summer day)	
	VOC	NO _x
2023	0.00027	0.00032
2030	0.00019	0.00016

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 emission reductions. Additionally, EPA’s 1992 Calcagni memo indicates that attainment resulting from temporary reductions in emission rates (e.g., reduced production or shutdown due to temporary adverse economic conditions) or unusually favorable meteorology would not qualify as an air quality improvement due to permanent and enforceable emission reductions.

The Door County nonattainment area is an RTA with NO_x and VOC emissions from only the onroad sector. As described in Section 4.5, the negligible emissions from the onroad sector in the Door County nonattainment area are overwhelmed by transport from upwind sources. This section outlines the permanent and enforceable control measures that applied to the onroad sector in the Door County area and more generally, to metropolitan areas upwind of the Door County nonattainment area. These control measures reduced emissions in this area and regionally by the 2017 attainment year, leading to the emission reductions shown in Section 4.

Table 6.1 lists the permanent and enforceable emission 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. Because a focus of this CAA requirement is to show that permanent and enforceable emission reductions occurred between 2014 (the base nonattainment year) and 2017 (the attainment year), this discussion highlights those control measures or a characterization of emission reductions that have occurred since 2014.

Table 6.1. Emission control programs that have reduced NO_x and VOC emissions in Door County and/or in contributing regions.

Sector	NO _x Control Measures	VOC Control Measures
Point	- Wisconsin NO _x RACT - Federal NO _x Transport Rules	- VOC RACT/CTGs - Federal NESHAP Rules
Area		- VOC RACT/CTGs - Federal VOC emission standards for consumer/commercial products -Area source NESHAP Rules
Onroad	-Numerous federal onroad mobile source control programs (see Section 6.3) -Wisconsin I/M program	
Nonroad	-Numerous federal nonroad mobile source control programs (see Section 6.4)	

It is important to note that: (1) by classifying Door County as an RTA, EPA acknowledged that emissions in the Door County nonattainment area do not contribute to nonattainment; and (2) most of the ozone measured in Door County comes from ozone or ozone precursors originating in upwind areas. For these reasons, even though emission controls in the onroad sector continue to decrease emissions within Door County, emission reductions in upwind areas will have a greater impact on the county’s air quality.

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6.1. Point Source Control Measures

NO_x Control Measures

Wisconsin NO_x RACT- Wisconsin has implemented RACT for major NO_x sources in Wisconsin as part of compliance requirements for the 1997 ozone NAAQS. NO_x RACT applies to several Wisconsin counties upwind of the Door County nonattainment area including the five-county Milwaukee area and Kenosha County. The NO_x RACT requirements are codified under ss. NR 428.20 to 428.25, Wis. Adm. Code and became applicable May 1, 2009.

Federal NO_x Transport Rules- EGUs in 22 states east of the Mississippi, including 10 states that significantly contribute over the 1% significance threshold to the Newport monitor, have been subject to a series of federal NO_x transport rules since 2009⁵. These rules have included the Clean Air Interstate Rule (CAIR), CSAPR and the CSAPR Update Rule. Both the CSAPR and CSAPR Update Rules contributed to emission reductions between the 2014 nonattainment year and the 2017 attainment year. EPA estimated that ozone season NO_x emissions would be 20% lower in 2017 than 2015 due to the CSAPR Update Rule and other changes already underway in the power sector.⁶

VOC Control Measures

VOC RACT/CTG – Wisconsin has implemented various VOC Control Techniques Guidelines (CTG) to fulfill RACT requirements for Wisconsin nonattainment areas upwind of the Door County nonattainment area, including the five-county Milwaukee area and Kenosha County. These VOC RACT/CTG requirements are codified under chapters NR 419 through 424, Wis. Adm. Code. All of these CTG requirements were implemented and effective prior to the 2014 base year.

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

These NESHAP measures apply to sources nationally, thereby reducing the transport of VOC emissions into the Door County nonattainment area. The NESHAP rules that have contributed to attainment by 2017 include the following:

⁵ EPA's 2023en source contribution modeling indicates that Illinois, Wisconsin, Indiana, Michigan, Missouri, Kentucky, Texas, Ohio, Oklahoma, Iowa and Kansas all contribute significantly to the ozone measured in Door County. Of those states all but Oklahoma are subject to federal NO_x rules discussed.

⁶ EPA Fact Sheet Final Cross-State Air Pollution Rule Update for the 2008 NAAQS.

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- *Mercury and Air Toxics (MATS) NESHAP* – On February 16, 2012 EPA promulgated the MATS rule under part 63 subpart UUUUU. Emission requirements were fully applicable by April 16, 2015. Affected sources were required to conduct energy assessments and combustion tuning to ensuring complete combustion.
- *Major Source Industrial, Commercial, and Institutional (ICI) Boiler and Process Heater NESHAP* – On March 21, 2011, EPA promulgated the “National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters” under Part 63 subpart DDDDD. This NESHAP requires all boilers and process heaters, including natural gas fired units, at major source facilities to perform an initial energy assessment and perform periodic tune-ups by January 31, 2016. This action is intended to ensure complete combustion.
- *Area Source (non-major point sources) ICI Boiler and Process Heater NESHAP* – On March 21, 2011 EPA promulgated the “National Emission Standards for Hazardous Air Pollutants for Area Sources: Industrial, Commercial, and Institutional Boilers” under Part 63 subpart JJJJJ. This NESHAP requires solid fuel and oil fuel fired boilers operated by sources that are below the major source threshold to begin periodic combustion tuning by March 21, 2014.
- *Internal Combustion Engine Rules* – EPA has promulgated three rules which limit the total amount of hydrocarbon emissions from internal combustion engines - the “National Emission Standards for Hazardous Pollutants for Reciprocating Internal Combustion Engines” (RICE MACT) was promulgated on June 15, 2004 under Part 63, subpart ZZZZ and revised in January 2008 and March 2010, with the two revisions impacting additional RICE units; the “Standards of Performance for Stationary Spark Ignition Internal Combustion Engines” promulgated on January 18, 2008 under Part 60, subpart JJJJ; and “Standards of Performance for Stationary Compression Ignition Internal Combustion Engines” promulgated on July 11, 2006 under Part 60, subpart IIII. These rules implement hydrocarbon emission limitations prior to and after 2011 based on compliance dates. These rules also act to continuously reduce emissions as existing stationary engines are replaced by new, cleaner-burning engines

6.2. Area Source Control measures

As noted for point sources, Wisconsin has implemented VOC RACT/CTG rules under chs. NR 419 through 424, Wis. Adm. Code.

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 was implemented prior to 2014 and maintains reduced VOC reductions from this source category. Actual emission levels in the future will vary depending on population and activity use factors. Two other federal rules, the NESHAPs for Gasoline Distribution (Stage I) and Area Source ICI Boilers, also control area VOC emissions associated with fuel storage and transfer activities.

6.3. Onroad Source Control Measures

Both NO_x and VOC emissions from on-road 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 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 federal programs contributing to attainment of the 2015 ozone NAAQS include those listed in Table 6.2.

The Wisconsin-administered I/M program also limits on-road VOC and NO_x emissions from on-road sources in areas upwind of Door County, including the Milwaukee 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 NO_x emissions and garners some level of continued incremental reduction as fleets turn over to new vehicles.

Table 6.2. Federal onroad mobile source regulations contributing to attainment.

On-road Control Program	Pollutants	Model Year⁷	Regulation
Passenger vehicles, SUVs, and light duty trucks – emissions and fuel standards	VOC & NO _x	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 & NO _x	2007+	40 CFR Part 86
Heavy-duty spark ignition engines	VOC & NO _x	2005 – 2008+	40 CFR Part 86
Motorcycles	VOC & NO _x	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 ⁸	40 CFR Part 59, 80, 85, & 86
Light duty vehicle corporate average fuel economy (CAFE) standards	Fuel efficiency (VOC & NO _x)	2012-2016 & 2017-2025	40 CFR Part 600

⁷ The range in model years affected can reflect phasing of requirements based on engine size or initial years for replacing earlier tier requirements.

⁸ 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.

6.4. Nonroad Source Control Measures

Similar to on-road sources, VOC and NO_x emitted by non-road mobile sources are significantly controlled via federal standards for new engines. These programs therefore reduce ozone precursor emissions in the broader regional areas contributing to ozone transport. Table 6.3 lists the non-road source categories and applicable federal regulations. The non-road 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 NO_x emission limits.

Table 6.3. Federal nonroad mobile source regulations contributing to attainment.

Nonroad Control Program	Pollutants	Model Year ⁹	Regulation
Aircraft	HC & NO _x	2000 – 2005+	40 CFR Part 87
Compression Ignition ¹⁰	NMHC & NO _x	2000 – 2015+ (Tier 4)	40 CFR Part 89 & 1039
Large Spark Ignition	HC & NO _x	2007+	40 CFR Part 1048
Locomotive Engines 2015+ (Tier 4)	HC & NO _x 40 CFR Part 1033	2012 – 2014 (Tier 3)	
Marine Compression Ignition	HC & NO _x	2012 – 2018	40 CFR Part 1042
Marine Spark Ignition	HC & NO _x	2010+	40 CFR Part 1045
Recreational Vehicle ¹¹	HC & NO _x	2006 – 2012 (Tier 1 – 3) (phasing dependent on vehicle type)	40 CFR Part 1051
Small Spark Ignition Engine ¹² < 19d Kw – emission standards	HC & NO _x	2005 – 2012 (Tier 2 & 3)	

HC – Hydrocarbon (VOCs)

NMHC – Non-Methane Hydrocarbon (VOCs)

⁹ The range in model years affected can reflect phasing of requirements based on engine size or initial years for replacing earlier tier requirements.

¹⁰ Compression ignition applies to diesel non-road compression engines including engines operated in construction, agricultural, and mining equipment.

¹¹ Recreational vehicles include snowmobiles, off-road motorcycles, and ATVs.

¹² Small spark ignition engines include engines operated in lawn and hand-held equipment.

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 attainment of the NAAQS, Rate of Progress (ROP), or 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 2017 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.

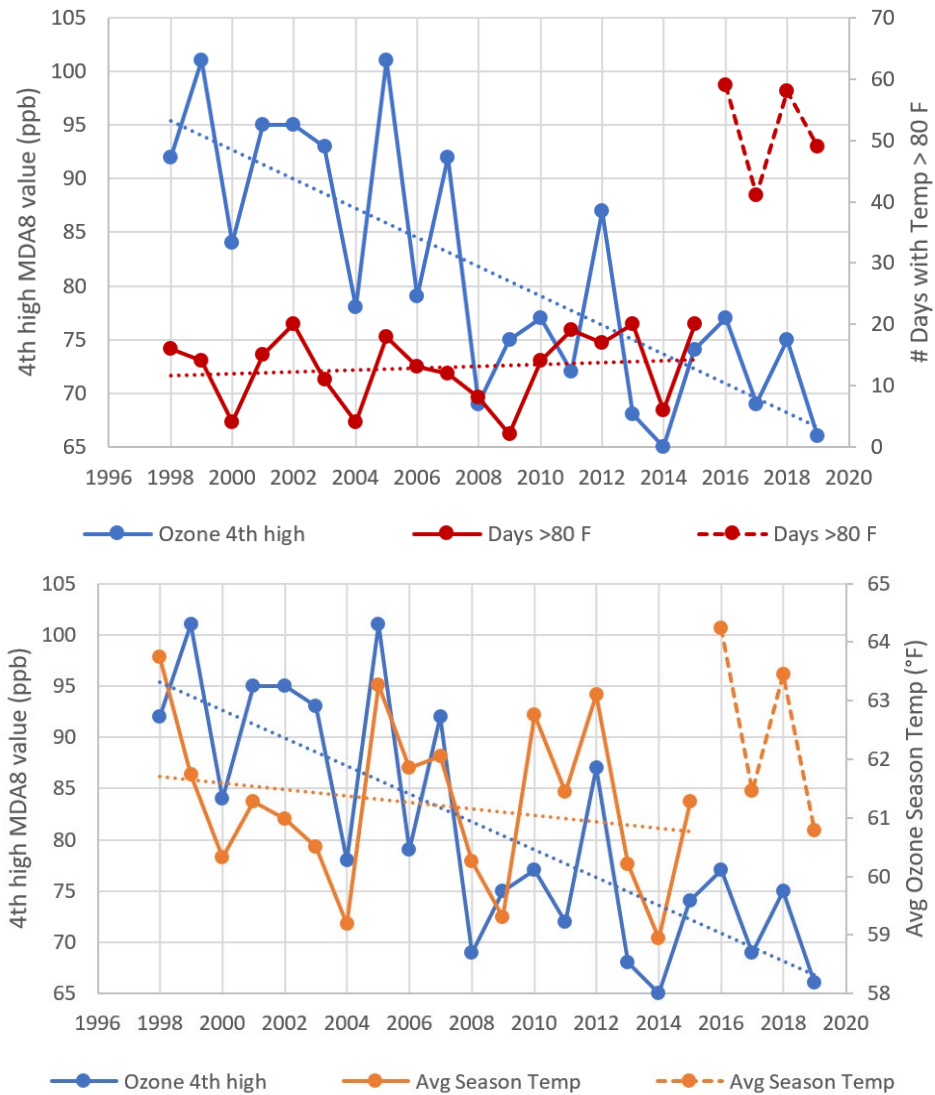
6.6. Impact of Permanent and Enforceable Measures on Monitored Ozone Concentrations

Comparison of trends in ozone concentrations and temperature supports the conclusion that improvement in air quality shown in Section 3 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. All data were collected at the Newport monitor within the Door County nonattainment area. WDNR examined data for the last 22 years in order to eliminate or dampen the influence of other meteorological variables affecting ozone formation, such as wind direction and wind speed.

Figure 6.1 shows that over the last 22 years, ozone concentrations at the Newport monitor have decreased substantially. In contrast, temperatures have remained relatively constant. In 2016, the temperature probe at this monitoring location 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 2019 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. Therefore, this analysis suggests that the observed long-term decreases in ozone concentrations, including the more recent nonattainment to attainment year ozone concentrations, 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.

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Figure 6.1. 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 to September temperatures for the Newport monitor. 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/orange line connects data collected when the temperature probe was located at 15 meters above ground, and the dashed red/orange line connects data collected when the temperature probe was located at 5 meters above ground. Dotted lines are best-fit linear regressions.



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7. MAINTENANCE PLAN FOR DOOR COUNTY 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 2017-2019 design value meets the 2015 NAAQS (Section 3). Comparison of nonattainment (2014) and attainment (2017) year inventories showed that attainment of the NAAQS was accompanied by significant reductions in ozone precursor emissions from the areas that contribute the 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 area is demonstrated via reported and projected summer 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 emission inventory projections are described in Section 4 and summarized in Tables 7.1 through 7.4. 2017 was chosen as the representative attainment year inventory. 2023 and 2030 were chosen as interim and final maintenance years.

The forecast maintenance inventories for 2023 and 2030 demonstrate that emissions of NO_x and VOC are projected to decrease in future years relative to the 2017 attainment year for the nonattainment area (Newport State Park) and the three metropolitan areas upwind of the Door County 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 33-42% for NO_x and 11-13% for VOC from 2017 to 2030. Nonattainment area emissions are also projected to decrease by 75% for NO_x and 53% for VOC from 2017 to 2030. Since the monitor attained the standard in 2017-2019 and contributing emissions are projected to decrease through 2030, this inventory analysis demonstrates that the Door County area is expected to maintain the 2015 NAAQS for more than ten years into the future.

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Table 7.1. NOx emissions in the Door County nonattainment area.

	Total NOx emissions (tons per summer day)			
	2017 attainment year	2023 interim year	2030 maintenance year	Net Change (2017-2030)
Point	0.00	0.00	0.00	NA
Area	0.00	0.00	0.00	NA
Onroad	0.00063	0.00032	0.00016	-0.00047(-75%)
Nonroad	0.00	0.00	0.00	NA
Total	0.00063	0.00032	0.00016	-0.00047(-75%)

Table 7.2. VOC emissions in the Door County nonattainment area.

	Total VOC emissions (tons per summer day)			
	2017 attainment year	2023 interim year	2030 maintenance year	Net Change (2017-2030)
Point	0.00	0.00	0.00	NA
Area	0.00	0.00	0.00	NA
Onroad	0.00040	0.00027	0.00019	-0.00021(-53%)
Nonroad	0.00	0.00	0.00	NA
Total	0.00040	0.00027	0.00019	-0.00021(-53%)

Redesignation Request and Maintenance Plan for the Door County, Wisconsin 2015 Ozone
NAAQS Nonattainment Area

Table 7.3. NO_x emissions in upwind metropolitan areas.

	Total NO _x emissions (tons per summer day)			
	2017 attainment year	2023 interim year	2030 maintenance year	Net Change (2017-2030)
Chicago Metropolitan Area				
Point	124.86	101.44	101.84	-23.43 (-19%)
Area	96.20	93.29	89.52	-6.68 (-7%)
Onroad	202.33	108.40	69.03	-133.30 (-66%)
Nonroad	138.44	118.29	113.96	-24.48 (-18%)
TOTAL	561.82	421.41	374.35	-187.47 (-33%)
Green Bay Metropolitan Area				
Point	6.67	5.56	5.61	-1.06 (-16%)
Area	2.62	2.58	2.56	-0.06 (-2%)
Onroad	7.83	3.82	1.86	-5.97 (-76%)
Nonroad	2.79	2.15	1.48	-1.31 (-47%)
TOTAL	19.91	14.11	11.51	-8.41 (-42%)
Milwaukee Metropolitan Area				
Point	17.05	18.07	17.90	0.85 (5%)
Area	17.78	17.40	17.11	-0.68 (-4%)
Onroad	34.99	17.49	10.17	-24.82 (-71%)
Nonroad	17.57	14.32	13.31	-4.26 (-24%)
TOTAL	87.39	67.23	58.48	-28.91 (-33%)

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Table 7.4. VOC emissions in upwind metropolitan areas.

	Total VOC emissions (tons per summer day)			
	2017 attainment year	2023 interim year	2030 maintenance year	Net Change (2017-2030)
Chicago Metropolitan Area				
Point	48.23	46.75	46.45	-1.78 (-4%)
Area	241.60	245.29	249.38	7.77 (3%)
Onroad	113.35	72.56	49.96	-63.39 (-56%)
Nonroad	70.54	65.28	66.68	-3.86 (-3%)
TOTAL	473.71	429.88	412.46	-61.25 (-13%)
Green Bay Metropolitan Area				
Point	4.55	4.53	4.54	-0.01 (0%)
Area	8.94	9.15	9.38	0.44 (5%)
Onroad	4.31	2.72	1.97	-2.34 (-51%)
Nonroad	1.72	1.49	1.41	-0.31 (-18%)
TOTAL	19.51	17.91	17.30	-2.20 (-11%)
Milwaukee Metropolitan Area				
Point	9.23	9.78	9.76	0.53 (6%)
Area	50.69	51.06	51.43	0.75 (1%)
Onroad	18.55	11.66	8.68	-9.87 (-56%)
Nonroad	11.83	10.88	10.82	-1.01 (-8.5%)
TOTAL	90.30	83.87	80.69	-9.61 (-11%)

7.2. Verification of Continued Attainment

Per EPA’s redesignation request guidance³, WDNR will verify continued attainment of the 2015 8-hour ozone NAAQS in the Door County 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 in siting 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 EPA’s Air Quality System database (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 2020, 2023, 2026, 2029 and 2032 as part of the CAA-required National Emissions Inventory program. These inventories will be compared with the 2017 attainment year inventory and projected 2023 interim and 2030

¹³ Select “View Wisconsin’s current air quality” from the webpage <http://dnr.wi.gov/topic/AirQuality>.

Redesignation Request and Maintenance Plan for the Door County, Wisconsin 2015 Ozone NAAQS Nonattainment Area

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 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 triggered 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 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
- A study 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. The warning level study will be completed no later than the beginning of the following summer ozone control period (May 1).

Action Level Response

An action level response would be triggered if a three-year design value exceeds the level of the 2015 ozone NAAQS (0.070 ppm). This response would follow a study to determine whether additional control measures are needed to assure attainment and maintenance of the 2015 ozone NAAQS. This analysis will 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 emission sources;
- The geographic applicability of possible contingency measures;

Redesignation Request and Maintenance Plan for the Door County, Wisconsin 2015 Ozone NAAQS Nonattainment Area

- Upwind emission trends, including the impact of existing or forthcoming control measures that have not yet been implemented; and
- Air quality contributions from outside the maintenance area.

The selection of emission reduction measures to be implemented will be based upon their potential to reduce ozone concentrations at violating monitors in the nonattainment area, cost-effectiveness, emission 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 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 Door County area monitor (Figure 4.1). As a consequence, additional controls on NO_x 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 area from upwind states. Examples of such programs include:

- Implementation of any federally promulgated rule regulating transport of ozone precursors.
- Updated federal NO_x emission 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 triggered the action level response. Given the impact of upwind emissions on ozone formation along Wisconsin's Lake Michigan shoreline, WDNR

Redesignation Request and Maintenance Plan for the Door County, Wisconsin 2015 Ozone
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notes that the action level study findings may indicate that additional Wisconsin control measures would do little to help the Door County 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

Wisconsin hereby commits to review its maintenance plan eight (8) years after redesignation, as required by Section 175(A) of the CAA. This revised SIP will provide for maintenance for an additional ten years.

Redesignation Request and Maintenance Plan for the Door County, Wisconsin 2015 Ozone
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8. PUBLIC PARTICIPATION

In accordance with section 110(a)(2) of the CAA, the WDNR published a notice on the internet (<https://dnr.wi.gov/Calendar/Hearings/?id=14694>) on November 22, 2019 stating that it would hold a public hearing on the Redesignation Request and Maintenance Plan for Door County, Wisconsin 2015 8-hour Ozone Nonattainment Area. A notice of availability was also posted on the website. The public hearing took place on January 14, 2020 at the Door County Library, Sturgeon Bay (107 4th Ave, Sturgeon Bay, WI 54235). The redesignation request was available for public comment through January 24, 2020.

WNDR received two written comments, both in support of this redesignation request. No changes were made to this submittal in response to comments.

Redesignation Request and Maintenance Plan for the Door County, Wisconsin 2015 Ozone
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9. CONCLUSIONS

Air quality measured at the Newport monitor in the Door County 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, hereby requests that EPA redesignate the Door County area from nonattainment to attainment for the 2015 ozone NAAQS.

APPENDIX 1

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

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
101 S. Webster Street
Box 7921
Madison WI 53707-7921

Scott Walker, Governor
Daniel L. Meyer, Secretary
Telephone 608-266-2621
Toll Free 1-888-936-7463
TTY Access via relay - 711



September 14, 2018

Ms. Cathy Stepp
Regional Administrator
U.S. EPA-Region 5 (R19J)
77 West Jackson Boulevard
Chicago IL 60604-3507

Subject: Wisconsin State Implementation Plan (SIP) Revision - Infrastructure SIP for the 2015 Ozone National Ambient Air Quality Standards (NAAQS)

Dear Ms. Stepp:

The Wisconsin Department of Natural Resources (WDNR) submits this SIP revision to confirm the WDNR has sufficient authorities and resources to implement, maintain, and enforce the 2015 ozone NAAQS. WDNR requests EPA's approval of this revision.

This SIP revision submittal contains documents that satisfy the SIP requirements contained in Sections 110(a)(1) and 110(a)(2) of the Clean Air Act (CAA). The WDNR has the legal authority under Wisconsin law to adopt and implement the requested SIP revision under s. 285.11(6), Wis. Stats.

The WDNR conducted a public hearing in Madison, Wisconsin, on July 17, 2018 regarding this SIP submittal. A copy of the public comment and hearing notice is enclosed. No public comments were received on the proposal.

This SIP is being submitted using EPA's SPeCs submission system. If you have any questions regarding this submittal, please contact Cami Peterson of my staff at (608) 267-7546 or cami.peterson@wisconsin.gov.

Sincerely,

Gail E. Good
Director
Air Management Program

cc: David Bizot – AM/7
Cami Peterson – AM/7
James Bonar-Bridges - LS/8
Doug Aburano – U.S. EPA Region 5 (via email)

Attachments:

1. Wisconsin Infrastructure SIP for the 2015 Ozone NAAQS
2. Public hearing notice
3. Proof of publication for public comment period and public hearing
4. SIP revision certification

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 elements¹. 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. 227.11(2)(a), 285.11(1), 285.17(1)(a) and 285.21(1)(a), *Wis. Stats.* Section 227.11(2)(a),

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.

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 (NO_x) 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

- monitor, compile, and analyze data on ambient air quality, and*
- 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 (SO₂) 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 SO₂ 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 SO₂ (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

Emission Inventory Documentation and Emission Projection Methodology

Redesignation Request and Maintenance Plan for the Door County, Wisconsin 2015 Ozone
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List of Acronyms

EGU	Electric Generating Unit
EPA	Environmental Protection Agency
MVEB	Motor Vehicle Emission Budget
MOVES	Motor Vehicle Emission Simulator
NAAQS	National Ambient Air Quality Standards
RTA	Rural Transport Area
SCC	Source Classification Code
SED	State Energy Data
SIP	State Implementation Plan
tpsd	Tons per Summer Day
VMT	Vehicle-Miles of Travel
VOC	Volatile Organic Compounds
WDNR	Wisconsin Department of Natural Resources
WDOT	Wisconsin Department of Transportation

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1. Introduction

This appendix provides information for the sector-specific NO_x and VOC tons per summer day (tpsd) emission estimates in sections 4.2 (Nonattainment and Attainment Year Inventories) and 4.3 (Interim and Maintenance Year Inventories) of the Wisconsin Department of Natural Resources' (WDNR) Redesignation Request and Maintenance Plan for the Door County, Wisconsin 2015 8-hour Ozone Nonattainment Area ("redesignation request"). This appendix also describes the onroad mobile source emission projections used to determine the Motor Vehicle Emission Budgets (MVEBs) for this area.

2. 2014 and 2017 Emission Calculation Methodologies

For U.S. Environmental Protection Agency (EPA) to redesignate an area from nonattainment to attainment for ozone, a state must show that improvement in air quality is due to permanent and enforceable reductions in emissions. This is accomplished in part by developing and comparing a nonattainment year (2014) emissions inventory and attainment year (2017) emissions inventory. The Door County nonattainment area is classified as a rural transport area (RTA) and is comprised only of Newport State Park. Therefore, in addition to preparing an inventory of emission sources applicable to the Door County nonattainment area, WDNR also compiled comprehensive emissions inventories for three upwind metropolitan areas (Chicago, Green Bay, and Milwaukee)¹ to represent trends in regional emission that potentially impacted the Door County monitor between the nonattainment year (2014) and the attainment year (2017). Note that these upwind inventories were generated to meet the requirement that this redesignation request quantify these emissions; as such, may differ slightly from any nonattainment or maintenance inventories generated specifically for those areas.

2.1 Door County Nonattainment Area

The Door County nonattainment area is an RTA and is comprised only of the area bounded by Newport State Park. The area has no point, area or quantifiable nonroad emission sources; therefore, only an onroad mobile source inventory was prepared for this redesignation request. Onroad mobile sources are motorized mobile equipment that are primarily used on public roadways. Examples of onroad mobile sources include cars and trucks.

¹ 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 identified these three areas as contributors to the Newport monitor in the 2018 Final Designations TSD for the 2015 Ozone NAAQS, p.57.

https://www.epa.gov/sites/production/files/2018-05/documents/wi_tsd_final.pdf.

For the purposes of this analysis the Chicago metropolitan 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, WI. The Green Bay metropolitan area is represented by Brown County, WI. The Milwaukee area is represented by Milwaukee, Ozaukee, Racine, Waukesha and Washington Counties in Wisconsin.

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Vehicle Travel

WDNR has monthly vehicle estimates for many state parks in Wisconsin, including Newport State Park. Table A2.1 displays actual vehicle totals at Newport State Park for the summer of the nonattainment year (2014) and attainment year (2017).

Table A2.1. Actual Number of Vehicles at Newport State Park

Time Period	Number of Vehicles at Park	
	2014 Count	2017 Count
June	16,503	20,486
July	24,325	30,090
August	25,277	27,924
Total Summer	66,105	78,500
Average Summer Day	718.5	853.3

Table A2.2 displays the estimated vehicle miles traveled (VMT) in Newport State Park on an average summer day. The distance from the park entrance to the main parking lot is one mile. Each vehicle is assumed to travel two miles in the park (to and from the parking lot). All travel is assumed to be from passenger cars and passenger trucks, with an equal amount of travel from these two source types.

Table A2.2. Average Summer Day VMT in Newport State Park

Source Type	Average Summer Day VMT (2 miles per vehicle)	
	2014	2017
Passenger Cars	718.5	853.3
Passenger Trucks	718.5	853.3
All Vehicles	1437.1	1706.5

Emissions Factors

The MOVES2014b model was used to calculate emission factors for 2014 and 2017. MOVES2014b was run in inventory mode for Door County and the grams per vehicle-mile emission factors were calculated from the MOVES2014b output by dividing the total countywide emissions for each of the two applicable source types (passenger cars and passenger trucks) by their respective countywide VMTs.

Although these emission factors are in units of grams per vehicle-mile, they are composite emission factors, which, in addition to emissions from running vehicles, include start emissions and evaporative VOC emissions.

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The following four changes were made to the MOVES2014b default inputs for Door County:

1. Vehicle Age Distribution: WDNR developed the age distributions for the years 2014 and 2017 from Wisconsin Department of Transportation (WDOT) vehicle registration data for those two years. Table A2.3 presents the average vehicle ages from the WDNR-developed age distributions.

Table A2.3. Average Vehicle Age in the Modeled Age Distributions

Source Type	Average Vehicle Age (years)	
	2014 Actual	2017 Actual
Passenger Car	10.28	10.43
Passenger Truck	8.74	8.25

2. Average speed distribution: All travel was allocated to the speed bin having average trip speed between 22.5 mph and 27.5 mph (bin number 6). This bin appears most representative of travel on the state park road, which has a speed limit of 25 mph.
3. Road Type Distribution: All travel was allocated to the road type “Rural – Unrestricted Access”, since that is the only road type in the state park.
4. Meteorology Data: Temperatures conducive to peak ozone formation were used. The WDNR has consistently used the same minimum and maximum temperatures for onroad modeling for ozone state implementation plans (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.

The resulting MOVES2014b composite emission factors are shown in Table A2.4 for NO_x and Table A2.5 for VOC. The main reasons for the significant decrease in emission factors over time are fleet turnover and lower gasoline sulfur levels. The emission factors for passenger trucks decrease more than those for passenger cars, because the passenger trucks have a younger age distribution than the passenger cars (see Table A2.3).

Table A2.4. MOVES2014b Emission Factors for NO_x

Source Type	NO _x Emission Factors (grams per vehicle-mile)	
	2014	2017
Passenger Car	0.5448	0.3077
Passenger Truck	0.7569	0.3647

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Table A2.5. MOVES2014b Emission Factors for VOC

Source Type	VOC Emission Factors (grams per vehicle-mile)	
	2014	2017
Passenger Car	0.3151	0.2279
Passenger Truck	0.3445	0.1999

Emission Estimates

Tables A2.6 and A2.7 display the estimated emissions of NOx and VOC, respectively, in units of tons per summer day (tpsd). They were obtained by multiplying the VMTs in Table A2.2 by the emission factors in Tables A2.4 and A2.5.

Table A2.6. NOx Emissions at Newport State Park (tpsd)

Source Type	NOx Emissions (tpsd)	
	2014	2017
Passenger Car	0.00043	0.00029
Passenger Truck	0.00060	0.00034
ALL VEHICLES	0.00103	0.00063

Table A2.7. VOC Emissions at Newport State Park (tpsd)

Source Type	VOC Emissions (tpsd)	
	2014	2017
Passenger Car	0.00025	0.00021
Passenger Truck	0.00027	0.00019
ALL VEHICLES	0.00052	0.00040

2.2 Emissions Calculation Methodologies- Upwind Metropolitan Areas

Reducing emissions in the Door County 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 National Ambient Air Quality Standards (NAAQS) due to permanent and enforceable control measures, WDNR has prepared inventories for three metropolitan areas upwind of the Door County nonattainment areas: Chicago, Green Bay and Milwaukee.

2.2.1 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

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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. 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, 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.²

For the 2017 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 of 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.³

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 nonattainment areas, EGU-point, non-EGU point and area source facilities are assumed to operate steadily over 365 days each year. Therefore, 2014 and 2017 summer day emissions are derived by dividing the annual emissions for each sector by 365 days.

2.2.2 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 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.²

For the 2017 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 of EPA's 2016 version 1 emissions modeling platform. Methodologies used to

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

³ <http://views.cira.colostate.edu/wiki/wiki/10202>

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develop 2016 and 2023 emissions modeling data are available in the EPA's National Emissions Inventory Collaborative Wiki v1 release page.³

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. WDNR mobile source experts expect summer day emissions to be slightly higher due to increases in VMT and nonroad activity. Therefore, calculating tpsd 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 tpsd emissions by dividing the annual emissions for each sector by 330.

3. 2023 and 2030 Emission Projection Methodologies

For EPA to redesignate a nonattainment area to attainment, a state is required to demonstrate continued maintenance of the NAAQS for ten years after redesignation. By designating the Door County nonattainment area an RTA, EPA in part found that NO_x and VOC emissions from sources within the area do not make a significant contribution to ozone concentrations in the area itself, or in other areas. Therefore, WDNR prepared inventories for three upwind metropolitan areas for 2023 as the interim projection year and 2030 as the maintenance year in addition to the 2023 and 2030 inventories prepared for the Door County nonattainment area. The emission projections through 2030 are relied upon in the maintenance demonstration presented in Section 7 of the redesignation request.

3.1 Door County Nonattainment Area

3.1.1 Point and Area Sources

The Door County nonattainment area is an RTA and is comprised only of the area bounded by Newport State Park. The area has no point or area sources.

3.1.2 Onroad and Nonroad Sources

The Door County nonattainment area is an RTA and is comprised only of the area bounded by Newport State Park. The area has onroad sources, vehicles traveling within the state park, but no quantifiable nonroad sources. The methodology to estimate 2023 and 2030 onroad emissions is provided in section 4.

3.2 Upwind Metropolitan Areas

3.2.1 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. 2030 EGU-point, non-

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EGU point and area source emission projections were estimated by extrapolating EPA's 2023 and 2028 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.³

The same methodology was used to convert annual tons to tpsd for the 2023 and 2030 modeling projections as was used for the 2014 and 2017 inventory estimates. EGU-point, non-EGU point and area source facilities are assumed to operate steadily over 365 days each year. Therefore, 2023 and 2030 summer day emissions are derived by dividing the annual emissions for each sector by 365 days.

3.2.2 Onroad and Nonroad Mobile Sources

2023 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 maintenance year inventory (2030) was 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.³

Annual emissions were divided by 330 to get tpsd emissions for the interim and maintenance years, as discussed in Section 2.2.2.

4. 2023 and 2030 Motor Vehicle Emission Budgets (MVEBs)

Mobile source emissions projections for the Door County nonattainment area were required to create MVEBs for the area. The following methodology describes MOVES inputs used to project emissions.

Vehicle Travel

WDNR has monthly vehicle estimates for many state parks in Wisconsin, including Newport State Park. Table A2.8 displays actual (for 2014 and 2017) and projected (for 2023 and 2030) vehicle totals at Newport State Park for the summer. The 2023 and 2030 projections were obtained by increasing the 2017 values by the increase in statewide vehicle-miles of travel (VMT) projected by the Wisconsin Department of Transportation (WDOT) from a November, 2018, run of their Statewide Travel Demand Model (see Table A2.9). These increases are 4.9% for 2017 to 2023 and 10.7% for 2017 to 2030.

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Table A2.8. Actual and Projected Number of Vehicles at Newport State Park

Time Period	Number of Vehicles at Park			
	2014 Count	2017 Count	2023 Projected	2030 Projected
June	16,503	20,486		
July	24,325	30,090		
August	25,277	27,924		
Total Summer	66,105	78,500	82,377	86,900
Average Summer Day	718.5	853.3	895.4	944.6
Increase from 2017			+4.9%	+10.7%

Table A2.9. Wisconsin Statewide VMT from WDOT Statewide Travel Demand Model, November 2018

	Calendar Year		
	2017	2023	2030
VMT per Average Weekday	167,762,969	176,048,778	185,715,554
Increase from 2017		+4.9%	+10.7%

Table A2.10 displays the estimated VMT in Newport State Park on an average summer day. The distance from the park entrance to the main parking lot is one mile. Each vehicle is assumed to travel two miles in the park (to and from the parking lot). All travel is assumed to be from passenger cars and passenger trucks, with an equal amount of travel from these two source types.

Table A2.10. Average Summer Day VMT in Newport State Park

Source Type	Average Summer Day VMT (2 miles per vehicle)			
	2014	2017	2023	2030
Passenger Cars	718.5	853.3	895.4	944.6
Passenger Trucks	718.5	853.3	895.4	944.6
All Vehicles	1437.1	1706.5	1790.8	1889.1

Emission Factors

The MOVES2014b model was used to calculate emission factors for 2023 and 2030. MOVES2014b was run in inventory mode for Door County and then grams per vehicle-mile emission factors were calculated from the MOVES2014b output by dividing the total countywide emissions for each the two applicable source types (passenger cars and passenger trucks) by their respective countywide VMTs.

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Although these emission factors are in units of grams per vehicle-mile, they are composite emission factors, which, in addition to emissions from running vehicles, include start emissions and evaporative VOC emissions.

The following five changes were made to the MOVES2014b default inputs for Door County:

1. Vehicle Age Distribution: WDNR developed the age distributions for the years 2014 and 2017 from Wisconsin Department of Transportation (WDOT) vehicle registration data for those two years. WDNR projected the 2017 age distribution to 2023 and 2030 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. EPA used this same methodology to project age distributions to the years 2020, 2023 and 2028 for their 2016 Emissions Modeling Platform. Table A2.11 presents the average vehicle ages from the WDNR-developed age distributions.

Table A2.11. Average Vehicle Age in the Modeled Age Distributions

Source Type	Average Vehicle Age (years)			
	2014 Actual	2017 Actual	2023 Projected	2030 Projected
Passenger Car	10.28	10.43	10.24	10.30
Passenger Truck	8.74	8.25	8.13	8.21

2. Average speed distribution: All travel was allocated to the speed bin having average trip speed between 22.5 mph and 27.5 mph (bin number 6). This bin appears most representative of travel on the state park road, which has a speed limit of 25 mph.
3. Road Type Distribution: All travel was allocated to the road type “Rural – Unrestricted Access”, since that is the only road type in the state park.
4. Meteorology Data: Temperatures conducive to peak ozone formation were used. The WDNR has consistently used the same minimum and maximum temperatures for onroad modeling for ozone state implementation plans (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.
5. Fuel Data: One update was made to the MOVES2014b default fuel formulation inputs for the years 2023 and 2030. For gasoline blended with 15% ethanol (E15), WDNR used the MOVES Fuel Wizard to change the Reid Vapor Pressure (RVP) from the default value of 8.7 pounds per square inch (psi) to 9.7 psi. This change reflects EPA regulatory changes, finalized May 30, 2019, which allow gasoline blended with up to 15 percent ethanol to take advantage of the one-psi RVP waiver during the summer months. (Previously this waiver applied to only E10.) The effect of this change on total emissions (i.e., all fuels) is negligible for NO_x and less than a one percent increase for VOC.

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The resulting MOVES2014b composite emission factors are shown in Table A2.12 for NOx and Table A2.13 for VOC. The main reasons for the significant decrease in emission factors over time are fleet turnover and lower gasoline sulfur levels. The emission factors for passenger trucks decrease more than those for passenger cars, because the passenger trucks have a younger age distribution than the passenger cars (see Table A2.11).

Table A2.12. MOVES2014b Emission Factors for NOx

Source Type	NOx Emission Factors (grams per vehicle-mile)			
	2014	2017	2023	2030
Passenger Car	0.5448	0.3077	0.1368	0.0688
Passenger Truck	0.7569	0.3647	0.1453	0.0669

Table A2.13. MOVES2014b Emission Factors for VOC

Source Type	VOC Emission Factors (grams per vehicle-mile)			
	2014	2017	2023	2030
Passenger Car	0.3151	0.2279	0.1418	0.0953
Passenger Truck	0.3445	0.1999	0.0990	0.0640

Emission Estimates

Tables A2.14 and A2.15 display the estimated emissions of NOx and VOC, respectively, in units of tons per summer day. They were obtained by multiplying the VMTs in Table A2.10 by the emission factors in Tables A2.12 and A2.13. In addition, a 15% safety margin was applied to the two projection years (2023 and 2030). That is, the emissions for those two years were increased by 15%.

Table A2.14. NOx Emissions at Newport State Park (tpsd)

Source Type	NOx Emissions (tons per summer day)			
	2014	2017	2023	2030
Passenger Car	0.00043	0.00029	0.00016	0.00008
Passenger Truck	0.00060	0.00034	0.00016	0.00008
ALL VEHICLES	0.00103	0.00063	0.00032	0.00016

Table A2.15. VOC Emissions at Newport State Park (tpsd)

Source Type	VOC Emissions (tons per summer day)			
	2014	2017	2023	2030
Passenger Car	0.00025	0.00021	0.00016	0.00011
Passenger Truck	0.00027	0.00019	0.00011	0.00008
ALL VEHICLES	0.00052	0.00040	0.00027	0.00019