

Air Quality Conformity Determination Report

Between

**The Northwestern Indiana 2050 Plan (NWI 2050 Plan) and
The 2020 to 2024 Transportation Improvement Program (2020-2024 TIP)**

and

The Indiana State Implementation Plan (SIP)

May 16, 2019

Northwestern Indiana Regional Planning Commission

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Acknowledgements

This *Air Quality Conformity Determination Report* between the Northwestern Indiana 2050 Plan (NWI 2050 Plan), the 2020 to 2024 Transportation Improvement Program (2020-2024 TIP) and the Indiana State Implementation Plan (SIP) was prepared by the Northwestern Indiana Regional Planning Commission (NIRPC). Individuals from the following agencies (hereafter collectively referred to as the Interagency Consultation Group on Air Quality or ICG) contributed their efforts towards the completion of the *Air Quality Conformity Determination Report*. They include:

- Northwestern Indiana Regional Planning Commission (NIRPC)
- Indiana Department of Transportation (INDOT)
- Indiana Department of Environment Management (IDEM)
- Federal Highway Administration (FHWA)
- Federal Transit Administration (FTA)
- United States Environmental Protection Agency (EPA)

Executive Summary

As part of its transportation planning process as a Metropolitan Planning Organization, NIRPC at least every 4 years is required to develop both a Metropolitan Transportation Plan, a plan of the Northwestern Indiana Region's priorities for the next few decades, as well as a Transportation Improvement Program, a listing of transportation projects that are consistent with the Metropolitan Transportation Plan. Because NIRPC administers these transportation planning requirements in at least one area designated by the United States Environmental Protection Agency (EPA) as nonattainment or maintenance for one or more criteria pollutants in the Clean Air Act (CAA), NIRPC is also subjected to air quality conformity requirements.

The Clean Air Act (CAA) section 176(c) (42 U.S.C. 7506(c)) requires that federally funded or approved highway and transit activities are consistent with ("conform to") the purpose of the State Implementation Plan (SIP). Conformity 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 (42 U.S.C. 7506(c)(1)). EPA's air quality conformity rules establish the criteria and procedures for determining whether metropolitan transportation plans (MTPs), transportation improvement programs (TIPs), and federally supported highway and transit projects conform to the SIP (40 CFR Parts 51.390 and 93).

Of the six criteria pollutants regulated by the CAA (Ozone, Particulate Matter, Carbon Monoxide, Lead, Sulfur Dioxide, and Nitrogen Dioxide), only Ozone applies for this *Air Quality Conformity Determination Report* because it is the only one of the pollutants for which EPA has designated portions of the NIRPC planning area (Lake, Porter, and LaPorte Counties) nonattainment or maintenance that the ICG has found to have transportation-related emissions contributing to the nonattainment or maintenance designation. The EPA has made area designations for Ozone for the 1997, 2008, and 2015 National Ambient Air Quality Standards (NAAQSs). Air quality conformity must be demonstrated for the area designated under each NAAQS, unless an area for a newer designation is completely within the area from an older designation, in which case demonstrating conformity for the larger area is considered adequate for meeting the air quality conformity determination requirements. Lake and Porter Counties are designated as maintenance for the 1997 Ozone NAAQS and nonattainment for the 2008 Ozone NAAQS. Portions of northern Lake County are designated as nonattainment for the 2015 Ozone NAAQS, but since this area is completely within the area designated by the 2008 NAAQS, an air quality conformity determination for the 2008 Ozone NAAQS is adequate for the 2015 NAAQS. LaPorte County is designated maintenance for the 1997 Ozone NAAQS. Per the *South Coast Air Quality Management District v. EPA* decision and EPA's *Transportation Conformity Guidance for the South Coast II Court Decision*, LaPorte County is subjected to less stringent air quality conformity determination requirements.

This *Air Quality Conformity Determination Report* was completed consistent with CAA requirements, existing associated regulations at 40 CFR Parts 51.390 and 93, and the *South Coast II* decision, according to EPA's *Transportation Conformity Guidance for the South Coast II Court Decision* issued on November 29, 2018.

1.0 Background

1.1 Air Quality Conformity Process

The concept of air quality conformity was introduced in the Clean Air Act (CAA) of 1970, which included a provision to ensure that transportation investments conform to a State implementation plan (SIP) for meeting the Federal air quality standards. Conformity requirements were made substantially more rigorous in the CAA Amendments of 1990. The air quality conformity regulations that detail implementation of the CAA requirements were first issued in November 1993, and have been amended several times. The regulations establish the criteria and procedures for transportation agencies to demonstrate that air pollutant emissions from MTPs, TIPs and projects are consistent with (“conform to”) the State’s air quality goals in the SIP. This document has been prepared for State and local officials who are involved in decision making on transportation investments.

Air quality conformity is required under CAA Section 176(c) to ensure that Federally-supported (though not necessarily federally funded) transportation activities are consistent with (“conform to”) the purpose of a State’s SIP. Air quality conformity establishes the framework for improving air quality to protect public health and the environment. Conformity to the purpose of the SIP means Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) funding and approvals are given to highway and transit activities that will not cause new air quality violations, worsen existing air quality violations, or delay timely attainment of the relevant air quality standard, or any interim milestone.

Lake, Porter, and LaPorte Counties were designated as nonattainment for the 1997 Ozone NAAQS effective June 15, 2004 according to 69 FR 23857. On July 19, 2007, LaPorte County was reclassified to attainment with a maintenance plan (became a maintenance area) according to 72 FR 39574. On May 11, 2010, Lake and Porter Counties were reclassified to attainment with a maintenance plan (became a maintenance area) according to 75 FR 26113.

Lake and Porter Counties were designated as nonattainment for the 2008 Ozone NAAQS effective July 20, 2012 according to 77 FR 34221. EPA denied IDEM’s redesignation request for Lake and Porter Counties for attainment on January 9, 2015, so Lake and Porter Counties remain a nonattainment area for the 2008 Ozone NAAQS.

Portions of Lake County (Calumet, Hobart, North, Ross, and St. John Townships) were designated as nonattainment for the 2015 Ozone NAAQS effective August 3, 2018 according to 83 FR 25776. Since these townships are all completely within the 2008 Ozone NAAQS nonattainment area that spans all of Lake and Porter Counties, demonstrating air quality conformity for all of Lake and Porter Counties with respect to the 2008 Ozone NAAQS satisfies the requirement for demonstrating air quality conformity for the Lake County portion of the 2015 Ozone NAAQS.

2.0 Metropolitan Transportation Plan (MTP)

Metropolitan Planning Organizations (MPOs) operating fully or in part in NAAQS nonattainment or maintenance areas such as NIRPC are required to develop a metropolitan transportation plan (MTP) at least every 4 years that looks out to a horizon at least 20 years in the future according to 23 CFR Part 450.324.

2.1 Northwestern Indiana 2050 Plan (NWI 2050 Plan)

The NWI 2050 Plan is scheduled to be adopted by the NIRPC Full Commission on May 16, 2019.¹ This plan satisfies the requirements mentioned in section 2.0 above and upon adoption will be the MTP for the Northwestern Indiana Region that includes all of Lake, Porter, and LaPorte Counties in Indiana.

The NWI 2050 Plan includes the following regionally significant, non-exempt transportation projects completed since the 2017 baseline year subject to the air quality conformity requirements (see Appendix A-2 for Regional Significance Guidance):

¹ Available at: <http://bit.ly/NWI2050Plan>

Table 2.1.1 Air Quality Conformity-Required Projects Included in NWI 2050 Plan

Projects Complete by 2020	Beginning Point	End Point	Sponsor	Federal Estimated Cost (YOE)	Non-Federal Estimated Cost (YOE)
I 65 Added Travel Lanes	US 30	SR 2	INDOT	2018: \$55,800,000	2018: \$6,200,000
Cline Ave Bridge	Riley Rd Interchange	Michigan Ave Interchange	East Chicago	\$0	2019: \$150,000,000
45th Ave Added Center Turn Lane	Chase St	Grant St	Lake County	2016: \$184,780	2016: \$46,195
101st Ave Added Travel Lanes	Georgia St	Mississippi St	Merrillville	2019: \$2,423,000	2019: \$643,546
Parrish Ave Added Center Turn Lane	Joliet St	US 231	St. John	\$0	2018: \$1,950,000
Broadway Metro Express	Gary Metro Center	Methodist Southlake Hospital	Gary Public Transportation Corporation	2017: \$7,600,000	2017: \$1,900,000
US 20 Added Center Turn Lane	US 421	US 35/SR 212	INDOT	2018: \$8,961,600	2018: \$2,240,400
US 20 Interchange Modification at US-35/SR 212	Meer Rd	US 35/SR 212 Interchange	INDOT	2018: \$517,600	2018: \$129,400
US 20 New Interchange at SR 2	1,590 feet from US 20/SR 2 Interchange	1,590 feet from US-20/SR-2 Interchange	INDOT	2019: \$9,398,400	2019: \$2,349,600

Projects Complete by 2025	Beginning Point	End Point	Sponsor	Federal Estimated Cost (YOE)	Non-Federal Estimated Cost (YOE)
US 41 Added Center Turn Lane	Standard Ave	US 231	INDOT	2019: \$3,991,200	2019: \$997,800
SR 49 Consecutive Intersection Improvements	Porter Ave	Gateway Blvd	INDOT	2023: \$10,856,317	2023: \$2,714,079
US 20 Added Center Turn Lane	SR 39	Fail Rd	INDOT	2023: \$14,460,108	2023: \$3,615,027
109th Ave Consecutive Intersection Improvements	SR 53	Iowa St	Crown Point/INDOT	2021: \$2,643,125	2021: \$7,576,875
Gostlin St/Sheffield Ave/Chicago St Added Travel Lanes	Illinois State Line	US 41	Hammond	2020: \$9,400,000	2020: \$2,350,000
45th St Added Center Turn Lane	Whitcomb St	Chase St	Lake County	2020: \$2,255,000	2020: \$563,750
Mississippi St Added Travel Lanes	93rd Ave	101st Ave	Merrillville	2020: \$3,612,000	2020: \$903,250
45th St Grade Separation and Realignment	0.3 miles West of Calumet Ave	Southwood Dr	Munster	2019: \$16,800,000	2019: \$4,843,293
93rd Ave Added Center Turn Lane	White Oak Ave	US 41	St. John	\$0	2024: \$3,487,347
109th Ave Added Center Turn Lane	Calumet Ave	US 41	St. John	\$0	2024: \$3,812,928
Calumet Ave Added Center Turn Lane	101st Ave	109th Ave	St. John	\$0	2024: \$3,398,710
Kennedy Ave Expansion	Oak St	US 30	Schererville	2024: \$12,465,179	2024: \$3,116,295
Vale Park Rd Extension	Winter Park Dr	Windsor Tr	Valparaiso	\$0	2020: \$4,480,000
South Shore Line Double Track	Tennessee St	Michigan Blvd	NICTD	\$0	2022: \$388,603,154
West Lake Corridor commuter rail service	Hammond Gateway Station	Main St - Munster/Dyer	NICTD	\$0	2022: \$768,335,733

Projects Complete by 2030	Beginning Point	End Point	Sponsor	Federal Estimated Cost (YOE)	Non-Federal Estimated Cost (YOE)
US 41 Added Center Turn Lane	US 231	SR 2	INDOT	2028: \$36,877,815	2028: \$9,219,454
Main St Extension	Burnham Ave (Illinois)	Columbia Ave/Sheffield Ave	Munster	2028: \$2,631,548	2028: \$657,887
Willowcreek Rd Extension	700 N	SR 130	Porter County	2025: \$4,617,000	2025: \$1,188,000
85th Ave Added Center Turn Lane	US 41	Parrish Ave	St. John	\$0	2028: \$5,828,139
93rd Ave Added Travel Lanes	Calumet Ave	Cline Ave	St. John	\$0	2028: \$36,217,098
109th Ave Added Travel Lanes	Calumet Ave	US 41	St. John	\$0	2028: \$10,220,018
Blaine Ave Added Center Turn Lane	93rd Ave	101st Ave	St. John	\$0	2028: \$5,438,393
Calumet Ave Added Travel Lanes	101st Ave	109th Ave	St. John	\$0	2028: \$9,906,218
Cline Ave Added Travel Lanes	101st Ave	109th Ave	St. John	\$0	2028: \$4,513,833
White Oak Ave Added Center Turn Lane	93rd Ave	101st Ave	St. John	\$0	2028: \$7,051,199
Kennedy Ave Added Travel Lanes	Main St	Oak St	Schererville	2025: \$4,936,400	2025: \$1,234,100
Vale Park Rd Added Center Turn Lane	Calumet Ave	Silhavy Rd	Valparaiso	2027: \$3,423,275	2027: \$855,819

Projects Complete by 2040	Beginning Point	End Point	Sponsor	Federal Estimated Cost (YOE)	Non-Federal Estimated Cost (YOE)
Division Rd Added Center Turn Lane	Sturdy Rd	375 E	Valparaiso	2038: \$2,868,640	2040: \$717,160
LaPorte County North-South Connector	SR 39	US 35	LaPorte County	2035: \$104,000,000	2035: \$26,000,000

Projects Complete by 2050	Beginning Point	End Point	Sponsor	Federal Estimated Cost (YOE)	Non-Federal Estimated Cost (YOE)
Division Rd Added Center Turn Lane	SR 2	Sturdy Rd	Valparaiso/Porter County	2048: \$6,151,100	2048: \$1,537,775

3.0 Transportation Improvement Program (TIP)

Metropolitan Planning Organizations (MPOs) such as NIRPC are required to develop a Transportation Improvement Program (TIP), which is a listing of FHWA and FTA funded transportation projects, covering a period of at least 4 years and in cooperation with the state and public transit providers according to 23 CFR Part 450.326. MPOs in Indiana produce TIPs covering 5 years.

3.1 2020 to 2024 Transportation Improvement Program (TIP)

The 2020 to 2024 Transportation Improvement Program (2020-2024 TIP) is scheduled to be adopted by the NIRPC Full Commission on May 16, 2019.² The 2020-2024 TIP satisfies the requirements mentioned in section 3.0 above and upon adoption will be the TIP for the Northwestern Indiana Region that includes all of Lake, Porter, and LaPorte Counties in Indiana.

The 2020-2024 TIP includes all federally funded projects in the State Fiscal Years 2020 to 2024 (July 1, 2019 through June 30, 2024) but does not include all of the projects listed in Table 2.1.1 above, namely those beyond the year 2024 or those that are not federally funded.

² Available at <http://bit.ly/20-24TIP>

4.0 Air Quality Conformity Determination: General Process

Generally, demonstrating air quality conformity between an MTP/TIP and a SIP means showing that regionally significant, non-exempt highway and transit projects will not cause new air quality violations, worsen existing air quality violations, or delay timely attainment of the relevant air quality standard, or any interim milestone. The State of Indiana developed a Regional Significance Guidance document included in Appendix A-2 that satisfies the 40 CFR Part 93.101 definition of regionally significant project. A non-exempt project is any project not included as an exempt project type in 40 CFR Part 93.126. Thus, demonstrating air quality conformity is required for any transportation project that meets the Regional Significance Guidance and that is not on the list of exempt projects.

In nonattainment or maintenance areas for transportation-related criteria pollutants, demonstrating air quality conformity is required for all newly adopted MTPs and TIPs, and for any amendments to MTPs or TIPs that include regionally significant, non-exempt projects. Since the NWI 2050 Plan is a newly adopted MTP and the 2020-2024 TIP is a newly adopted TIP, it is necessary to demonstrate air quality conformity to the SIP with respect to the applicable criteria pollutants and their associated precursors. In this case the only applicable criteria pollutant is Ozone, which includes Nitrous Oxides (NO_x) and Volatile Organic Compounds (VOC) as precursors.

5.0 Requirements

5.1 Overview

The air quality conformity regulation at 40 CFR 93.109 sets forth the criteria and procedures for demonstrating air quality conformity. The air quality conformity criteria for MTPs and TIPs include: latest planning assumptions (93.110), latest emissions model (93.111), consultation (93.112), transportation control measures (93.113(b) and (c)), fiscal constraint, consistency with motor vehicle emissions budgets in the SIP, and regional emissions analysis or interim emissions test (93.118 and/or 93.119).

For the 1997 Ozone NAAQS areas that are not designated nonattainment or maintenance for either the 2008 Ozone NAAQS or 2015 Ozone NAAQS (i.e. LaPorte County), air quality conformity can be demonstrated with only the latest planning assumptions, consultation, transportation control measures, and fiscal constraint requirements per 40 CFR 93.109(c) and the EPA Transportation Conformity Guidance for the South Coast II Court Decision.³ Thus, all of the additional requirements in the previous paragraph only are applied to demonstrating air quality conformity with respect to Lake and Porter Counties in this *Air Quality Conformity Determination Report*.

5.2 Latest Planning Assumptions

Use of the latest planning assumptions in demonstrating air quality conformity is required per 40 CFR 93.110 of the Transportation Conformity Rule. Use of the latest planning assumptions ensures that the underlying assumptions and data that are inputted into the regional emissions analysis accurately reflect the planning assumptions of the region demonstrating air quality conformity. As part of the NWI 2050 Plan and 2020 to 2024 TIP development, the Northwestern Indiana Region developed demographic forecasts for population and employment growth as shown on Table 5.2.1.

Table 5.2.1 Demographic Baseline and Forecasts for Lake, Porter, and LaPorte Counties

Year	Population	Households	Employment
2017	766,924	291,750	286,970
2020	773,689	294,313	292,121
2025	784,974	298,567	300,688
2030	796,251	302,838	309,281
2040	818,813	311,378	326,436
2050	841,382	319,903	343,604

Population forecasts are based on the baseline 2017 year as found in the US Census Bureau's American Community Survey, 2013-2017 Estimates Table B01003. The 2050 horizon year population forecast is based on an average of 5 different sources that have already conducted population forecasts for the NWI Region: INDOT Statewide Travel Demand Model, INDOT REMI PI+ 2.0 Model, Woods & Poole Economics, Inc., Louis Berger Group (for the Chicago Metropolitan Agency for Planning), and the Indiana Business Research Center.⁴ The interim years between the 2017 baseline year and the 2050 horizon

³ Available from <https://www.epa.gov/sites/production/files/2018-11/documents/420b18050.pdf>

⁴ INDOT Statewide Travel Demand Model, INDOT REMI PI+ 2.0 Model, and Woods & Poole Economics, Inc. population forecasts were emailed to NIRPC by INDOT on October 11, 2017 and have privacy restrictions—these forecasts are technically for a 2045 horizon year that is extrapolated out to 2050 based on a linear trend model of fit; Louis Berger Group forecasts are available at <https://datahub.cmap.illinois.gov/dataset/89f66569-5f51-4c14-8b02-5ecc1ca00909/resource/a812de2f-d465-47f2-87df->

year are extrapolated from a simple linear trend model of fit. Household forecasts are based on the baseline 2017 year as found in the US Census Bureau's American Community Survey, 2013-2017 Estimates Table S1101. All other years are based on the number of persons per household for each county found by dividing the county's population by its number of households. Employment forecasts are based on the baseline 2017 year as found in the US Bureau of Labor Statistics' Quarterly Census of Employment and Wages (QCEW) State and County Wages series annual average employment. The 2050 horizon year employment forecast is based on an average of 4 different sources that have already conducted employment forecasts for the NWI Region: INDOT Statewide Travel Demand Model, INDOT REMI PI+ 2.0 Model, Woods & Poole Economics, Inc., and Louis Berger Group (for the Chicago Metropolitan Agency for Planning).⁵ The interim years between the 2017 baseline year and the 2050 horizon year are extrapolated from a simple linear trend model of fit.

The Highway Performance Monitoring System (HPMS) data provides the basis or an analysis of the growth in Vehicle-Miles of Travel as shown on Table 5.2.2.

0427e81da2cf/download/CMAPSocioeconomicForecastFinal-Report04Nov2016.pdf; Indiana Business Research Center forecasts available at http://www.stats.indiana.edu/pop_proj/

⁵ INDOT Statewide Travel Demand Model, INDOT REMI PI+ 2.0 Model, and Woods & Poole Economics, Inc. forecasts were emailed to NIRPC by INDOT on October 11, 2017 and have privacy restrictions- these forecasts are technically for a 2045 horizon year that is extrapolated out to 2050 based on a linear trend model of fit; Louis Berger Group forecasts are available at <https://datahub.cmap.illinois.gov/dataset/89f66569-5f51-4c14-8b02-5ecc1ca00909/resource/a812de2f-d465-47f2-87df-0427e81da2cf/download/CMAPSocioeconomicForecastFinal-Report04Nov2016.pdf>

Table 5.2.2 Growth in Vehicle Miles Traveled (VMT) in Lake, Porter, and LaPorte Counties

Year	Daily VMT Estimate (HPMS)	Annual Rate of Growth
1992	17,722,061	
1993	18,160,891	2.48%
1994	18,663,552	2.77%
1995	19,847,112	6.34%
1996	19,842,716	-0.02%
1997	21,058,741	6.13%
1998	21,638,065	2.75%
1999	21,249,847	-1.79%
2000	21,527,000	1.33%
2001	21,987,000	2.11%
2002	22,147,635	0.73%
2003	22,201,000	0.24%
2004	22,154,000	-0.21%
2005	22,216,000	0.28%
2006	22,305,000	0.40%
2007	22,397,000	13.95%
2008	21,792,000	-13.96%
2009	26,507,120	21.21%
2010	20,359,000	-23.19%
2011	26,545,000	30.38%
2012	25,461,000	-4.08%
2013	26,066,000	2.37%
2014	26,797,850	2.81%
2015	29,805,800	11.22%
2016	30,858,000	3.53%
2017	31,044,000	0.60%

Based on this data, the actual annual rate of growth of travel can be determined. For the three-county area as shown in Table 5.2.2, the rates range from -23.19% to 30.38% between 1992 and 2017. Over this period, the annual rate of daily VMT growth is 2.27%.

Vehicle registration data have been received from the Indiana Bureau of Motor Vehicles. These data are split by vehicle type, and have an associated date of approximately December 31, 2014. The Indiana Department of Environmental Management provided vehicle age information for cars and light trucks, from the application of a vehicle identification number (VIN) decoder as well as registrations by vehicle type directly from the Bureau of Motor Vehicles. This vehicle registration data have been used in MOVES, reflecting vehicle fleet age by vehicle type for smaller vehicles. For larger vehicle types, default data have been determined to be the best available fleet age information.

The methods and assumptions for the transportation network model in the regional emissions analysis are included in the NIRPC Travel Demand Model Documentation Report.⁶

⁶ Available at <https://www.nirpc.org/wp-content/uploads/2019/03/NIRPC-Travel-Demand-Model.pdf>

5.3 Latest Emissions Model

For demonstrating air quality conformity for the Lake and Porter Counties 2008 Ozone NAAQS, the MOVES2014a model has been used for this *Air Quality Conformity Determination Report*. Although technically the MOVES2014b is the latest emissions model, EPA allows MOVES2014a to satisfy the latest emissions model requirements for air quality conformity purposes.⁷ The latest emissions model requirement does not apply to demonstrating air quality conformity for the 1997 Ozone NAAQS with respect to LaPorte County as mentioned in the EPA *Transportation Conformity Guidance for the South Coast II Court Decision*. The Motor Vehicles Emissions Budgets (MVEB) for 2008 Ozone NAAQS with respect to Lake and Porter Counties are based on the INDOT Air Quality Post-Processor (AQPP), which combines inputs from the NIRPC Travel Demand Model and MOVES2014a.

5.4 Consultation Requirements

The consultation requirements in 40 CFR 93.112 were addressed both for interagency consultation and public consultation.

Interagency consultation was conducted with NIRPC, INDOT, IDEM, FHWA, FTA, and EPA. NIRPC sent an email to representatives from each of these agencies with a draft copy of this *Air Quality Conformity Determination Report* on March 22, 2019. Representatives from each of these agencies offered feedback and recommended edits as appropriate and during a teleconference call on March 29, 2019, and these are reflected in this *Air Quality Conformity Determination Report*. Interagency consultation was conducted consistent with the Indiana Conformity SIP. See section 7.1 for details of the interagency consultation correspondence.

Public consultation was conducted consistent with planning rule requirements in 23 CFR 450. NIRPC followed its 2014 Public Participation Plan.⁸ The *Air Quality Conformity Determination Report* was made available to public comment on the NIRPC website from April 1, 2019 to April 30, 2019, fulfilling the 30-day public comment period that the 2014 Public Participation Requires for Conformity Determinations. No comments were received.

5.5 Timely Implementation of TCMs

The Indiana SIP with respect to Lake, Porter, and LaPorte Counties does not include any TCMs.

5.6 Fiscal Constraint

Air quality conformity requirements in 40 CFR 93.108 state that transportation plans and TIPs must be fiscally constrained consistent with DOT's metropolitan planning regulations at 23 CFR part 450. The NWI 2050 Plan and 2020-2024 TIP are fiscally constrained, as demonstrated in the Action Plan section of the NWI 2050 Plan⁹ and section Fiscal Constraint section of the 2020-2024 TIP.¹⁰

⁷ See <https://www.epa.gov/moves/latest-version-motor-vehicle-emission-simulator-moves>

⁸ Available at https://nirpc.org/media/48081/nirpc_2014_ppp_final_adopted_12.11.2014.pdf

⁹ Available at <http://bit.ly/NWI2050Plan>

¹⁰ Available at <http://bit.ly/20-24TIP>

5.7 Consistency with the Motor vehicle emissions budgets in the SIP

This *Air Quality Conformity Determination Report* is prepared consistent with the applicable EPA-approved Motor vehicle emissions budgets (MVEB) for the Ozone precursors of NO_x and VOC. The MVEB are based on prior consultation between members of the Interagency Consultation Group on Air Quality (see Acknowledgments section) and are formulated using the latest emissions model and the NIRPC Travel Demand Model. Table 5.9.1 shows the MVEB for the applicable analysis years in the Regional Emissions Analysis. The consistency with the Motor vehicle emissions budgets requirement does not apply to demonstrating air quality conformity for the 1997 Ozone NAAQS with respect to LaPorte County as mentioned in the EPA *Transportation Conformity Guidance for the South Coast II Court Decision*.

5.8 Regional Emissions Analysis Methodology

The regional emissions analysis applicable to Lake and Porter Counties has estimated emissions of VOC and NO_x as ozone precursors. The regional emissions analysis includes estimates of emissions from the entire transportation system, including all regionally significant, non-exempt projects contained in the NWI 2050 Plan (see Table 2.1.1) and all other regionally significant, non-exempt highway and transit projects expected in the nonattainment area in the time frame of the transportation plan. Table 5.9.1 shows that regional emissions for the ozone precursors fall at or below the budgets in the State Implementation Plan for the 2008 Ozone NAAQS with respect to Lake and Porter Counties.

The emissions analysis methodology meets the requirements of 40 CFR 93.122(b) of the Transportation Conformity Rule, for air quality conformity determinations based on estimates of regional transportation-related emissions completed after January 1, 1997.

Implementation of the Lake and Porter County projects in the NWI 2050 Plan and 2020-2024 TIP results in motor vehicle emissions that are at or below the levels of the applicable Motor vehicle emissions budgets, as shown in Table 5.9.1.

The regional emissions analysis for the transportation projects includes calculations of vehicle emissions at the aggregate level for the entire transportation system, including all regionally significant, non-exempt projects expected in the nonattainment area. The analysis includes FHWA/FTA-funded projects proposed in the NWI 2050 Plan, all Indiana Toll Road projects and all other regionally significant, non-exempt projects which are disclosed to NIRPC (see Table 2.1.1 for the complete list). Vehicle miles traveled (VMT) from projects which are not regionally significant and non-exempt are estimated in accordance with reasonable professional practice, using the NIRPC Travel Demand Model.

The regional emissions analysis does not include any TCM. The regional emissions analysis does not include emissions reduction credit from projects, programs, activities, or control measures which require a regulatory action in order to be implemented.

Ambient temperatures used for the regional emissions analysis are consistent with those used to estimate the emissions in 2017. All other factors, for example the fraction of travel in a hot stabilized engine mode, are consistently applied.

Reasonable methods have been used to estimate nonattainment area VMT on off-network roadways within the urban transportation planning area, and on roadways outside the urban transportation planning area. For 2017, 2020, 2025, 2030, 2040, and 2050, estimates of regional transportation-related emissions used to support the conformity determination have been made using the MOVES2014a post-processor updated with the latest vehicle registration data. Regional transportation-related emissions estimates are included for 2011

since 2011 appears in the Lake and Porter Counties 2008 Ozone NAAQS attainment demonstration.

Land use, population, employment, and other network-based travel model assumptions have been documented based on the best available information (see Section 5.3). The distribution of population, households, and employment is based on prior 5-year moving averages of those trends in each of the 380 Travel Analysis Zones (TAZs) in Lake and Porter Counties and is a reasonable state of the practice.

A capacity-sensitive assignment methodology has been used, and emissions estimates are based on a methodology, which differentiates between peak and off-peak link volumes and speeds, and uses speeds based on final assigned volumes, post-processed in the database. TAZ-to-TAZ travel impedances used to distribute trips between origin and destination pairs are in reasonable agreement with the travel times that are estimated from final assigned traffic volumes, using a feedback procedure iterated five times. These times have also been used for modeling mode splits. The network-based travel model is reasonably sensitive to changes in the time(s), cost(s), and other factors affecting travel choices. Reasonable methods in accordance with good practice have been used to estimate traffic speeds and delays in a manner that is sensitive to the estimated volume of travel on each roadway segment represented in the network-based travel model. Highway Performance Monitoring System (HPMS) estimates of vehicle miles traveled (VMT) are considered the primary measure of VMT within the portion of the nonattainment area and for the functional classes of roadways included in the nonattainment area.

The regional emissions analysis requirement does not apply to demonstrating air quality conformity for the 1997 Ozone NAAQS with respect to LaPorte County as mentioned in the EPA *Transportation Conformity Guidance for the South Coast II Court Decision*.

5.9 Regional Emissions Analysis Results

Table 5.9.1 shows the Regional Emissions Analysis Results for demonstrating air quality conformity between the NWI 2050 Plan and 2020 to 2024 TIP and the Indiana SIP for the 2008 Ozone NAAQS with respect to Lake and Porter Counties.

Table 5.9.1 Regional Emissions Analysis for Lake and Porter Counties - 2008 Ozone NAAQS

Year:	2011	2017	2020	2025	2030	2040	2050
NOx Budget	28.41	16.68	16.68	16.68	16.68	16.68	16.68
NOx Emissions	24.70	12.85	13.01	8.53	6.62	5.23	5.34
VOC Budget	11.02	6.85	6.85	6.85	6.85	6.85	6.85
VOC Emission	9.58	6.07	6.18	4.91	3.77	2.59	2.57

As shown in Table 5.9.1, baseline and forecasted emissions for the Ozone precursors of NOx and VOC are at or below the motor vehicle emissions budgets (MVEBs) in the Indiana SIP. Therefore, air quality conformity is demonstrated for the NWI 2050 Plan and 2020-2024 TIP for the 2008 Ozone NAAQS with respect to Lake and Porter Counties. Per the EPA *Transportation Conformity Guidance for the South Coast II Court Decision*, air quality conformity is demonstrated for the NWI 2050 Plan and 2020-2024 TIP for the 1997 Ozone NAAQS with respect to LaPorte County without a regional emissions analysis. Only the latest planning assumptions, consultation, transportation control measures, and fiscal constraint are required to demonstrate air quality conformity with respect to LaPorte County.

6.0 Conclusion

The air quality conformity determination process completed for the Northwestern Indiana 2050 Plan (NWI 2050 Plan) and the 2020 to 2024 Transportation Improvement Program (2020-2024 TIP) demonstrates that these planning documents meet the Clean Air Act and Transportation Conformity Rule requirements for the applicable National Ambient Air Quality Standards (NAAQS).

7.0 Appendices

7.1 Appendix A-1: Interagency Consultation Group Correspondence

NIRPC staff emailed members of the Interagency Consultation Group on Air Quality, comprised of NIRPC, INDOT, IDEM, FHWA, FTA, and EPA, a draft of this *Air Quality Conformity Determination Report* on March 22, 2019.

On March 26, 2019, Anthony Maietta of EPA, and Shawn Seals of IDEM, notified Scott Weber of NIRPC, that the motor vehicle emissions budgets developed for the 2008 Ozone NAAQS with respect to Lake and Porter Counties supersede the Motor vehicle emissions budgets developed for the 1997 Ozone NAAQS with respect to Lake and Porter Counties. Anthony Maeitta and Shawn Seals also notified Scott Weber that demonstrating Air quality conformity to the 2008 Ozone NAAQS with respect to all of Lake and Porter Counties fulfills the requirement to demonstrate Air quality conformity to the 2015 Ozone NAAQS with respect to 5 townships in Lake County since those townships are completely within the Lake and Porter Counties geography for the 2008 Ozone NAAQS and since there are no motor vehicle emissions budgets yet for the 2015 Ozone NAAQS geography.

On March 29, 2019, there was an Interagency Consultation Group on Air Quality teleconference call. Scott Weber and Trey Wadsworth of NIRPC, Frank Baukert and Stephanie Belch of INDOT, Shawn Seals of IDEM, Joyce Newland of FHWA, and Anthony Maietta of EPA participated. All parties agreed with the project list in Table 2.1.1 upon hearing NIRPC's explanation that it included all of the draft STIP INDOT projects as well as Local Public Agency projects that NIRPC staff had heard about from reaching out to the Employees in Responsible Charge (ERCs). All parties agreed with the draft report in terms of the Requirements in Section 5. Scott Weber thanked Anthony Maeitta and Shawn Seals for their correspondence on March 26, 2019 in regards to clarifying which motor vehicle emissions budgets apply to this air quality conformity determination. Joyce Newland asked that all members of the ICG receive the link to the Federal Register and the motor vehicle emissions budgets for Lake and Porter Counties for the 2008 Ozone NAAQS. Shawn Seals responded that he would email the link out to the members of the ICG. Scott Weber thanked Frank Baukert for providing the updated INDOT HPMS Adjustment Fractions and asked that since he had only recently received them from INDOT and did not yet have all of the Air Quality Modeling results using them, that the ICG grant him additional time to revise the emissions in Table 5.9.1 using these latest HPMS Adjustment Fractions. The ICG agreed with Scott Weber's request given information from Scott that when he modeled the 2020 emissions based on the updated HPMS Adjustment Fractions, the emissions only changed by a few hundredths of a ton per summer day. The ICG agreed with NIRPC's planned public comment period and upcoming adoption schedule for this Air Quality Conformity Determination Report as well as the NWI 2050 Plan and 2020-2024 TIP.

NIRPC staff posted this *Air Quality Conformity Determination Report* document to the NIRPC website for public comment on April 1, 2019 through April 30, 2019. No comments were received.

7.2 Appendix A-2: Regional Significance Guidance

Regional Significance Guidance

This document is being provided as a guidance resource for local municipalities and project implementers to:

1. Help define what is meant by the term "regionally significant project"
2. Provide information on the regional air quality conformity process
3. Provide guidance on expected project-level informational requirements of local municipalities.

This document does not in any way change, modify, or supersede any regulatory or statutory requirements of the Clean Air Act, Clean Air Act Amendments, or other related federal and state legislation. The final determination on whether a project can be considered regionally significant is reserved by the air quality consultation committee.

NIRPC provides the conformity process as a service to local governments. By excluding regionally significant projects from the regional emissions analysis, project implementers may risk a violation of the Clean Air Act, and non-conformity for the regional transportation plan and transportation improvement program. The applicable federal regulations are included at the end of this document.

NIRPC's transportation network model includes all roads functionally classified a collector and higher and all interchange ramps. The collectors and some local roads are included to accurately load traffic onto the higher classification roads, including the minor arterials, principal arterials, expressways and interstates. All roads functionally classified as Minor Arterial or above should be considered as regionally significant. This includes all freeways, expressways, interchange ramps, principal arterials and minor arterials. All fixed guide-way transit services, including commuter rail are regionally significant. Fixed route bus services can also be regionally significant when they offer a significant alternative to regional highway travel.

Transportation projects, whether single or multi-jurisdictional, that modify these facilities can be regionally significant. Individually, projects can be considered as regionally significant when they are above certain thresholds. Collectively, when a series of smaller projects on a regionally significant facility are completed, the overall improvements can be regionally significant.

Thresholds of regional significance for the anticipated overall improvement projects are listed:

Interstates, Expressways, Toll Roads	
<u>Expansion Type</u>	<u>Threshold</u>
New Segment	No Minimum
Added Through Lanes	No Minimum
Continuous Auxiliary Lanes	> ¼ mile
New Interchanges	No Minimum
Modification of Existing Interchanges	AQ Consultation Required

Principal Arterials	
<u>Expansion Type</u>	<u>Threshold</u>
New Segment	No Minimum
Added Through Lanes	No Minimum
Continuous Auxiliary Lanes	> 1 mile
New Interchanges	No Minimum
Modification of Existing Interchanges	AQ Consultation Required
Separation of existing railroad grade crossings	Not regionally significant

Minor Arterials	
<u>Expansion Type</u>	<u>Threshold</u>
New Segment	¾ to 1 mile - AQ Consultation Required
New Segment	> 1 mile
Added Through Lanes	¾ to 1 mile - AQ Consultation Required
Added Through Lanes	> 1 mile
Continuous Auxiliary Lanes	> 1 mile
Separation of existing railroad grade crossings	Not regionally significant

Rail and Fixed Guide-way Transit	
Expansion Type	Threshold
New Route or Service	No Minimum
Route Extension with Station	> 1 mile from current terminus
Added track or guide-way capacity	> 1 mile
New Intermediate Station	AQ Consultation Required

Bus and Demand Response Transit	
Expansion Type	Threshold
New Fixed Route	AQ Consultation Required
New Demand Response Service	Not Regionally Significant
Added Service to existing	Not Regionally Significant

New segments or added through lanes on arterials that are also associated with large land development projects may need AQ consultation even if the project is below the threshold in the table. Land development projects can be regionally significant when they have the potential to generate many trips or vehicle-miles of travel. Such developments are incorporated into the regional model during the update of socioeconomic forecasts, at the beginning of the update cycle for a new regional transportation plan. Local agencies shall provide their comprehensive plans to NIRPC as they're updated, which reflect the known development projects.

Local agencies should proactively include anticipated developments in their comprehensive plans without specific reference to potential high profile private sector developments.

Implementation

Conceptual "place-holder" projects can be included in the conformity determination long before commitments are made for their implementation. For plan milestone years, anticipated projects should be included. Local agencies shall submit to NIRPC thoroughfare plans that use the functional classification system as they're adopted. Functional classification changes shall be done in the context of the Regional Transportation Plan.

At the start of each conformity cycle, NIRPC will solicit new project and related development information from all local agencies, so that the analysis will use the latest planning assumptions. Local agencies that wish to proceed with transportation improvement projects, regardless of funding sources, must respond to the solicitation to be sure that their projects are included in the regional emissions analysis. Projects that are excluded from the analysis may be delayed until the next conformity cycle (a minimum of six months), when they will be included in the regional emissions analysis. In addition, at the start of each plan update cycle NIRPC will request an update of land development that local agencies anticipate, for inclusion in the regional emissions analysis, by including updated population, household and employment data.

This guidance is intended to help NIRPC and project sponsors to comply with the following federal regulation: **40 CFR Part 93** (Transportation Conformity Rule Amendments: Flexibility and Streamlining; Final Rule) **§93.101** (Definitions) *Regionally significant project* means a transportation project (other than an exempt project) that is on a facility which serves regional transportation needs (such as access to and from the area outside the region, major activity centers in the region, major planned developments such as new retail malls, sports complexes, etc., or transportation terminals as well as most terminals themselves) and would normally be included in the modeling of a metropolitan area's transportation network, including at a minimum all principal arterial highways and all fixed guideway transit facilities that offer an alternative to regional highway travel.; **§93.105** (Consultation) (c) (Interagency Consultation Procedures: Specific Processes) *Interagency consultation procedures shall also include the following specific processes: (ii) Determining which minor arterials and other transportation projects should be considered "regionally significant" for the purposes of regional emissions analysis (in addition to those functionally classified as principal arterial or higher or fixed guideway systems or extensions that offer an alternative to regional highway travel), and which projects should be considered to have a significant change in design concept and scope from the transportation plan or TIP.; §93.121 (Requirements for adoption or approval of projects by other recipients of funds designated under title 23 U.S.C. or the Federal Transit Laws.) (a) *Except as provided in paragraph (b) of this section, no recipient of Federal funds designated under title 23 U.S.C. or the Federal Transit Laws shall adopt or approve a regionally significant highway or transit project, regardless of funding source, unless the recipient finds that the requirements of one of the following are met: (1) The project was included in the first three years of the most recently conforming transportation plan and TIP (or the conformity determination's regional emissions analysis), even if conformity status is currently lapsed; and the project's design concept and scope have not changed significantly from those analyses; or (2) There is a currently conforming transportation plan and TIP, and a new regional emissions analysis including the project and the currently conforming plan and TIP demonstrates that the transportation plan and TIP would still conform if the project were implemented (consistent with the requirements of §93.118 and/or 93.119 for a project not from a conforming transportation plan and TIP). (b) In isolated rural nonattainment areas and maintenance areas subject to §93.109(g), no recipient...**