

# ***Air Quality Conformity Determination***

Between

**The 2040 Comprehensive Regional Plan as updated and amended  
The Fiscal Year 2016 to 2019 Transportation Improvement Program**

and

**The Indiana State Implementation Plan for Air Quality**

**September 12, 2016**

**Northwestern Indiana Regional Planning Commission  
Portage, Indiana**

[www.nirpc.org](http://www.nirpc.org)

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## Purpose

The purpose of this report is to document compliance with section 176(c) of the Clean Air Act as amended (CAAA), and the related requirements of the Final Transportation Conformity Rule (40 CFR Part 51 and 40 CFR Part 93). The air quality conformity determination establishes the compatibility between the state implementation plan, the regional transportation plan and transportation improvement program. The transportation plan includes the region's guide for transportation system development over a minimum twenty-year period. The transportation improvement program (TIP) includes the region's choices for Federal spending on expansion and preservation of the transportation system over a four to five year period. The State Implementation Plan (SIP) includes strategies for attainment and maintenance of the National Ambient Air Quality Standards (NAAQS). The conformity determination is based on a regional emissions analysis that demonstrates compatibility among these three planning documents. The regional emissions analysis uses the region's transportation network model and the USEPA's MOVES emissions simulator to quantify the emissions from all vehicles on the future transportation system. For Lake and Porter Counties, annual emissions of nitrogen oxides, volatile organic compounds and fine particles must not exceed Motor Vehicle Emissions Budgets as established in the State Implementation Plan. The system that was analyzed includes, regardless of funding sources, all regionally significant capacity expansion projects in the Lake, Porter and LaPorte County area, all significant projects in northeastern Illinois, and a portion of Newton and Jasper Counties in order to satisfy the logical termini consistency with the NEPA process 23 CFR 771.

## Applicability

### *Action Applicability*

This conformity determination is required for: adoption, acceptance, approval or support of the Regional Transportation Plan (2040 Comprehensive Regional Plan as updated and amended) and the Transportation Improvement Program (Fiscal Year 2016 to 2019 Transportation Improvement Program) developed pursuant to 23 CFR Part 450 and 49 CFR Part 613.

### *Geographic Applicability*

This conformity determination is required in the ozone non-attainment area, including the Lake/Porter County non-attainment area with respect to the Summer day mobile-source emissions of VOCs and NOx. Lake and Porter Counties are designated as non-attainment of the 1997 National Ambient Air Quality Standard (NAAQS) for "8-hour" ozone. Lake and Porter Counties are designated nonattainment for the 2008 Ozone NAAQS, but since no approved SIP exists for this NAAQS, conformity is only required for the 1997 Ozone SIP. This analysis examines parts of Newton and Jasper Counties in order to be consistent with the logical termini requirement for the NEPA process. LaPorte County is in attainment of NAAQS.

This conformity determination is not required in the PM<sub>2.5</sub> unclassifiable area, with respect to annual mobile source emissions of NOx and direct PM<sub>2.5</sub>. Lake and Porter Counties in Northwestern Indiana are classified as unclassifiable of the 2012 annual National Ambient Air Quality Standard (NAAQS). However, the Interagency Consultation Group decided the 1997 annual National Ambient Air Quality Standard (NAAQS) for PM<sub>2.5</sub> applies. Lake and Porter Counties are maintenance areas for the 1997 PM<sub>2.5</sub> NAAQS. Also, this analysis examines parts of Newton and Jasper Counties in order to be consistent with the logical termini requirement in the NEPA process.

This conformity determination is based on the requirement of 40 CFR 93.118 (Federal Transportation Conformity Rule) for the regional emissions analysis to indicate compliance with the emissions budgets established in the State Implementation Plan for VOC and NOx emissions in Lake and Porter Counties. The regional transportation plan and transportation improvement program must not result in Summer day

emissions of VOC and NO<sub>x</sub> in 2020, 2025, 2030, 2035 and 2040 in excess of the applicable budgets. 2045 is added as an analysis year in order to satisfy the desires of the Interagency Consultation Group on Air Quality.

This conformity determination is based on 40 CFR 93.119 for the regional emissions analysis to indicate interim reductions of the annual emissions of Nitrogen Oxides and direct PM<sub>2.5</sub> in the PM<sub>2.5</sub> maintenance area, including Lake and Porter Counties. The regional transportation plan and transportation improvement program must not result in annual emissions of direct PM<sub>2.5</sub> and NO<sub>x</sub> from mobile sources in 2015, 2020, 2025, 2030, 2035 and 2040 in excess of the applicable budgets.

## Priority

Transportation Control Measures (TCM) in the State Implementation Plan must be given funding priority in the FHWA/FTA approval of any action with air quality consequences. The State Implementation Plan for Lake and Porter Counties and for LaPorte County includes no transportation control measures. This conformity determination is not required to demonstrate priority for TCMs.

## Consultation

This conformity determination has been conducted with the involvement of the United States Department of Transportation (USDOT) through the Federal Highway Administration Indiana Division (FHWA) and Federal Transit Administration Region 5 (FTA), United States Environmental Protection Agency Region 5 (USEPA), Indiana Department of Transportation (INDOT), Indiana Department of Environmental Management (IDEM), and Northwestern Indiana Regional Planning Commission (NIRPC).

The consultation process included the issues and procedures that are listed in 40.CFR 93.105 of the final conformity rule and the August 2007 Interagency Consultation Guidance.

An Interagency Consultation Group (ICG) meeting was conducted on July 26, 2016 at 10:00 AM Eastern Time by teleconference. The meeting was attended by Scott Weber and Kathy Luther, of NIRPC, Frank Baukert of INDOT, Joyce Newland of FHWA, Tony Maietta of USEPA, and Shawn Seals of IDEM. John Parsons from the Northern Indiana Commuter Transportation (NICTD) and Rick Heimann from Ports of Indiana also joined the call. The teleconference included an overview of the NICTD double tracking project between Gary and Michigan City and the Ports of Indiana Burns Harbor second access bridge. Scott Weber described the NICTD project as an approximately 25 mile long corridor of which about 9 miles is already double tracked, leaving an additional 16 miles needed to be double tracked. This would also include realigning the NICTD tracks through Michigan City in accordance with the TIGER Grant-funded study preferred alternative, which would remove the embedded tracks from the middle of 11<sup>th</sup> Street. John Parsons from NICTD confirmed these details and gave Scott a list of crossings and intersections which would be closed due to the project, none of which are regionally significant in the model. Scott then described the Ports of Indiana Burns Harbor project to add a second bridge from SR-249 over US-12 to access the port. The bridge would accommodate 4 travel lanes and offer a parallel alternative to the existing bridge. Both projects seek to be amended into NIRPC's 2040 Comprehensive Regional Plan as updated and amended as well as NIRPC's FY 2016 to 2019 Transportation Improvement Program. Both projects are regionally significant and therefore require determining conformity with the SIP.

Scott Weber updated the group on the Latest Planning Assumptions, stating that NIRPC intends to use the forecasts as originally adopted as the growth and revitalization hybrid scenario in the 2040 CRP. This is consistent with past Conformity Determinations. The ICG concurred.

Scott then asked to clarify that the emissions that need to be modeled as part of the Regional Emissions Analysis are VOC and NOx for Ozone, and Direct PM and NOx precursor emissions for PM2.5. Shawn Seals said that indeed these were the emissions that need to be modeled and the ICG agreed. Scott wanted to clarify that USEPA's plans to revoke the 1997 PM2.5 NAAQS would not take effect soon enough, and Tony Maietta confirmed that the revocation would likely be around October 2016, too late for the timeline to forego having to make a conformity determination in regards to PM2.5 Motor Vehicle Emissions Budgets.

An Interagency Consultation Group (ICG) teleconference call was held September 8, 2016 at 9:00 a.m. Central Time. Scott Weber and Kathy Luther of NIRPC, Jay Mitchell and Frank Baukert of INDOT, Shawn Seals of IDEM, Tony Maietta of USEPA, and Michelle Allen of FHWA participated. Scott Weber shared the results from the modeling that showed the emissions exceeding the VOC budgets for 2020. Scott shared that a newspaper article had appeared the day before explaining that the NICTD Double Tracking project would not be completed until at earliest late 2020, so it would not in fact be ready by January 1, 2020, the cutoff date for the conformity determination. Therefore, the decision was made pending NICTD approval to move the NICTD project to the 2025 and beyond network, which would show emissions at or below budgets in 2020. The group agreed with this decision instead of claiming offset emissions reductions credits from CMAQ projects. Tony Maietta asked the group if NIRPC would like to consider adding a margin of safety to the VOC budgets, and the group said maybe but it would not be the ideal choice given the long timeframe.

#### *Public consultation*

In compliance with the adopted NIRPC Public Participation Plan, an opportunity for public comment on the proposed conformity determination has been provided. A media release was issued on September 12, 2016 that established a comment period extending from September 12, 2016 to October 11, 2016. This proposed conformity determination is available to the public for review at the NIRPC offices, 6100 Southport Road, Portage and on the web at [www.nirpc.org](http://www.nirpc.org). The comments and responses will be inserted here at the end of the public comment period.

### **Content of the Transportation Plan**

The transportation plan specifically describes the transportation system envisioned for the following horizon years: 2020, 2025, 2030, and 2040. An additional horizon year of 2045 was agreed to by the ICG. These horizon years meet the USEPA's requirements of 40 CFR 93.106 (a)(1) of the conformity rule.

The 2040 Comprehensive Regional Plan quantifies and documents the demographic and employment factors influencing expected transportation demand. The future levels of population, households and employment imply the magnitude of development envisioned for each traffic analysis zone. These forecasts are based on the 2040 Growth and Revitalization Vision adopted by NIRPC on October 28, 2010. The NIRPC 2040 Comprehensive Regional Plan was formally adopted on June 23, 2011 and updated on May 21, 2015. This conformity determination applies adjustments from the 2010 Census to the forecasts, a directive agreed to by the ICG.

The highway and transit systems are described in terms of the regionally significant additions or modifications to the existing transportation network, which the transportation plan envisions to be operational in the analysis years. The capacity-expansion projects in the 2040 Regional Transportation Plan are listed on Table 1.

Additions and modifications to the highway network are sufficiently identified to indicate intersections with existing regionally significant facilities, and to determine their effect on route options between transportation

analysis zones. Each added or modified highway segment is sufficiently identified in terms of its design concept and design scope to allow modeling of travel times under various traffic volumes, consistent with the modeling methods for area-wide transportation analysis in use by NIRPC. The NIRPC transportation model includes network links representing road segments for all collector and higher functional classifications, with nodes representing all significant intersections.

Transit facilities, equipment, and services envisioned for the future are identified in terms of design concept. The design scope and operating policies for these transit projects have been assumed for the regional emissions analysis, based on local transit services. The NIRPC transportation model includes a mode choice model, and the transportation model is used to estimate transit ridership from the implementation of future transit facilities, equipment and services. Table 1 lists the projects, beginning with projects proposed for completion since 2010.

**Table 1. 2040 Comprehensive Regional Plan as Update and FY 2016 to 2019 Transportation Improvement Program Capacity Expansion Projects in the Regional Emissions Analysis**

**2020 Network** (includes the following projects)

ID	Agency	<b>INDOT</b>	Completion before	2020
239	Road	<b>SR-249</b>	Concept	Other Principal Arterial Bridge
	From	US-12	Scope	Added Travel Lanes on New Bridge
	To	Port of Indiana - BH	Model Representation	Add 2 NB & 2 SB travel lanes on new bridge
ID	Agency	<b>INDOT</b>	Completion before	2020
242	Road	<b>I-65</b>	Concept	Interstate Highway
	From	SR-2	Scope	Added Travel Lanes
	To	SR-10	Model Representation	Add 1 NB & 1 SB travel lane
ID	Agency	<b>INDOT</b>	Completion before	2020
243	Road	<b>I-65</b>	Concept	Interstate Highway
	From	US-231	Scope	Added Travel Lanes
	To	SR-2	Model Representation	Add 1 NB & 1 SB travel lane
ID	Agency	<b>INDOT</b>	Completion before	2020
244	Road	<b>SR-912</b>	Concept	Other Expressway
	From	Riley Rd Interchange	Scope	New Construction
	To	0.6 miles West of Michigan Avenue Interchange	Model Representation	New links, 2 travel lanes in each direction, other expressway attributes, \$2.50 tollbooth
ID	Agency	<b>INDOT/IDOT</b>	Completion before	2020
233	Road	<b>Illiana</b>	Concept	Limited access toll road
	From	I-65	Scope	New facility
	To	I-55 (IL)	Model Representation	New 4-lane limited access toll road, \$0.11 per mile
ID	Agency	<b>INDOT</b>	Completion before	2020
234	Road	<b>I-65</b>	Concept	Interstate Highway
	From	US-30	Scope	Added Travel Lanes
	To	US-231	Model Representation	Add 1 NB & 1 SB travel lane

ID	Agency	<b>INDOT</b>	Completion before	2020
250	Road	<b>US-41</b>	Concept	Principal Arterial Highway
	From	93 <sup>rd</sup> Ave	Scope	Added Center Turn Lane
	To	US-231	Model Representation	Increase Capacity by 10%

ID	Agency	<b>Lake County</b>	Completion before	2020
235a	Road	<b>45<sup>th</sup> Avenue</b>	Concept	Minor Arterial Street
	From	Whitcomb Street	Scope	Added Center Turn Lane
	To	Grant Street	Model Representation	Increase Capacity by 10%

ID	Agency	<b>Merrillville</b>	Completion before	2020
105a	Road	<b>Mississippi Street</b>	Concept	Minor Arterial Street
	From	US-30	Scope	Added Travel Lanes
	To	93 <sup>rd</sup> Ave	Model Representation	Add 1 travel lane in each direction

ID	Agency	<b>Munster</b>	Completion before	2020
217	Road	<b>45<sup>th</sup> Avenue</b>	Concept	Minor Arterial Street
	From	At Calumet Avenue	Scope	Intersection Realignment
	To		Model Representation	Reconfigure intersection links

ID	Agency	<b>Hobart</b>	Completion before	2020
226	Road	<b>61<sup>st</sup> Avenue</b>	Concept	Minor Arterial Street
	From	Colorado Street	Scope	Added Center Turn Lane
	To	SR-51	Model Representation	Increase capacity by 10%

ID	Agency	<b>Gary Public Transp. Corp.</b>	Completion before	2020
248	Service	<b>Lakeshore North</b>	Concept	New Fixed Route Bus Service
	From	Hammond	Scope	Added Fixed Route Transit Service
	To	Loop via Horseshoe Casino	Model Representation	Add Transit Line on Road Links

ID	Agency	<b>Gary Public Transp. Corp.</b>	Completion before	2020
249	Service	<b>Livable Broadway</b>	Concept	Enhanced Fixed Route Bus Service
	From	Gary Metro Center	Scope	Added Fixed Route Transit Service
	To	Crown Point	Model Representation	Add Transit Line on Road Links

### 2025 Network (includes the 2020 network, plus the following projects)

ID	Agency	<b>NICTD</b>	Completion before	2020
241	Track	<b>South Shore Line</b>	Concept	Commuter Rail Transit Service Improvement
	From	Tennessee St	Scope	Double Tracking and Michigan City Realignment
	To	Carrol Ave Station	Model Representation	Add Capacity on SSL and change alignment

ID	Agency	<b>Hammond</b>	Completion before	2025
240	Road	<b>Gostlin/Sheffield/Chicago</b>	Concept	Minor Arterial Street
	From	Illinois State Line	Scope	Added Travel Lanes
	To	US-41	Model Representation	Add 1 travel lane in each direction

ID	Agency	<b>Lake County</b>	Completion before	2025
235b	Road	<b>45<sup>th</sup> Avenue</b>	Concept	Minor Arterial Street
	From	Colfax Street	Scope	Added Center Turn Lane
	To	Whitcomb Street	Model Representation	Increase Capacity by 10%

ID	Agency	<b>Merrillville</b>	Completion before	2025
105b	Road	<b>Mississippi Street</b>	Concept	Minor Arterial Street
	From	93 <sup>rd</sup> Ave	Scope	Added Travel Lanes
	To	101 <sup>st</sup> Ave	Model Representation	Add 1 travel lane in each direction

ID	Agency	<b>Merrillville</b>	Completion before	2025
214	Road	<b>101<sup>st</sup> Avenue</b>	Concept	Minor Arterial Highway
	From	SR-53	Scope	Added Travel Lanes
	To	Mississippi Street	Model Representation	Add 1 travel lane in each direction

ID	Agency	<b>Schererville</b>	Completion before	2025
96	Road	<b>Kennedy Avenue</b>	Concept	Minor Arterial Street
	From	Main Street	Scope	Added Travel Lanes
	To	US-30	Model Representation	Add 1 travel lane in each direction

ID	Agency	<b>St. John</b>	Completion before	2025
218	Road	<b>93<sup>rd</sup> Avenue</b>	Concept	Minor Arterial Street
	From	White Oak Avenue	Scope	Added Center Turn Lane
	To	US-41	Model Representation	Increase capacity by 10%

### 2030 Network (includes the 2025 network, plus the following projects)

ID	Agency	<b>Munster</b>	Completion before	2030
86	Road	<b>Main Street</b>	Concept	Minor Arterial Street
	From	Burnham Avenue	Scope	New Construction and added travel lanes
	To	Calumet Avenue	Model Representation	New links, 2 travel lanes in each direction, Minor Arterial attributes, add 1 lane / direction in existing segment

ID	Agency	<b>Valparaiso</b>	Completion before	2030
214	Road	<b>Vale Park Road East</b>	Concept	Minor Arterial Street
	From	Calumet Avenue	Scope	Added Travel Lanes
	To	Silhavy Road	Model Representation	Add 1 travel lane in each direction

ID	Agency	<b>Porter County</b>	Completion before	2030
237	Road	<b>Willowcreek Road</b>	Concept	Minor Arterial Highway
	From	CR-700N	Scope	New Construction
	To	CR-100S	Model Representation	New links, 2 travel lanes in each direction, Minor Arterial attributes



**2040 Network** (includes the 2030 network, plus the following projects)

ID	Agency	<b>Valparaiso</b>	Completion before	2040
238	Road	<b>Division Road</b>	Concept	Minor Arterial Street
	From	SR-2	Scope	Added Travel Lanes
	To	US-30	Model Representation	Add 1 travel lane in each direction

The NIRPC transportation modeling process does not include a land use model. The socioeconomic data for the traffic analysis zones reflect the 2040 Growth and Revitalization Vision for northwestern Indiana.

**Relationship of Transportation Plan and TIP Conformity with the National Environmental Policy Act (NEPA) Process**

The degree of specificity required in the transportation plan and the specific travel network assumed for air quality modeling do not preclude the consideration of alternatives in the NEPA process, including environmental assessment and preparation of environmental impact statements, or other project development studies. Should the NEPA process result in a project with design concept and scope significantly different from that in the transportation plan or transportation improvement program, the project must meet the tests for total annual system emissions equal to or below the level of the 2002 emissions or the applicable budgets for the analysis years, and provide for TCM priority, if applicable, before NEPA process completion.

During the congestion management process and other analyses for the capacity expansion projects in the 2040 Regional Transportation Plan, options other than the assumed design concept and design scope must be considered.

**Fiscal Constraints for the Transportation Plan and TIP**

NIRPC has reviewed all of the projects in the 2040 Comprehensive Regional Plan as updated to determine through project sponsor interviews and the Transportation Policy Committee that the projects meet requirements for fiscal constraint. INDOT has submitted under separate cover a document that describes how the proposed Statewide Transportation Improvement Program (STIP), including those projects in the FY 2016 to 2019 Transportation Improvement Program, meets fiscal constraint requirements. The Transit Operators Roundtable has thoroughly vetted the transit projects in the 2040 Comprehensive Regional Plan as updated to determine that they meet fiscal constraint requirements.

**Criteria and Procedures for the Conformity Determination**

The Interagency Consultation Group Conformity Consultation Guidance establishes the criteria and procedures for the Conformity Determination. The Indiana SIP includes a duplicate of the original Federal transportation conformity rule. On August 15, 1997, after the establishment of the Indiana conformity rule as part of the SIP, the Federal conformity rule was amended to provide flexibility and streamlining. On June 1, 1998, IDEM issued a nonrule policy document that provides guidelines for conformity determination in light of Federal amendments. The nonrule policy document established the intent of IDEM to revise the SIP to mirror the new Federal amendments and to exercise its enforcement discretion to allow the features of the Federal amendments to be used.

The conformity determination for the 2040 Comprehensive Regional Plan as updated and amended and Fiscal Year 2016 to 2019 Transportation Improvement Program meets the requirements of 40 CFR 93.110 (latest planning assumptions), 93.111 (latest emissions model), and 93.112 (consultation) of the Federal conformity rule, for conformity determinations during all periods, and 40 CFR 93.113 (b and c) (transportation control

measures), 93.118 (adherence to motor vehicle emissions budgets), and 93.119 (interim emissions reductions) of the conformity rule, for the transportation improvement program conformity determination with respect to Summer day VOC and NOx emissions and the annual direct PM2.5 and NOx emissions.

### Latest Planning Assumptions

The conformity determination is based on the latest planning assumptions. The transportation model uses the assumptions derived from estimates of current and future population, households, employment, travel and congestion most recently developed by NIRPC and approved by NIRPC. The estimates include 2010 population estimates from the 2010 Census, and employment estimates from the Indiana Department of Workforce Development ES-202 file. Trip generation rates, trip length, mode choice and other model parameters are based on a 1995 Household Travel Survey in Northwestern Indiana and compared to nationwide data. The 2007-2008 Household Travel Survey has not been incorporated into the trip generation rates for the transportation network in time for this Conformity Determination, although this is consistent with prior conformity determinations. The travel demand model was validated with respect to the year 2012 Highway Performance Monitoring System. The 2020, 2025, 2030, 2035 and 2040 population, household and employment forecasts were prepared in March 2011 and intermediate years updated to take into account the 2010 Census in January 2015 by NIRPC, using the latest available information.

The transit operating policies (including fares and service levels) were changed for the previous conformity determination and are reflected in this conformity determination. Changes are assumed in existing transit fares within northwest Indiana over time. The model represents tolls on the Indiana Toll Road, the Illiana Expressway, and Cline Avenue Bridge by links that correspond to tollbooths with a fixed travel time, based on the toll amount. The toll increases have been reflected in the transportation networks.

#### *Planning Assumptions*

1. Population forecasts have been prepared by NIRPC. For the development of the 2040 CRP, NIRPC has been allowed to use forecasts that are not constrained by the county control totals, which have tended to underestimate growth in the region. The population numbers show a large increase in Porter County, and a slight increase in LaPorte County and Lake County. The population, households and employment data are allocated to the traffic analysis zones and are used in the regional emissions analysis. The totals for the three-county area are included in Table 2.

**Table 2. Socioeconomic Totals**

<b>Year</b>	<b>Population</b>	<b>Households</b>	<b>Employment</b>
2000	741,468	277,324	303,850
2010	771,815	292,477	277,584
2015	775,200	291,315	280,147
2020	827,438	337,211	302,828
2025	855,249	359,578	315,450
2030	883,060	381,944	328,071
2035	910,872	404,311	340,693
2040	938,683	426,678	353,315
2045	966,497	449,046	365,937

2. The Highway Performance Monitoring System (HPMS) data provided the basis for an analysis of the growth in Vehicle-Miles of Travel. Based on this data, the actual annual rate of growth of travel can be determined. For the three-county area, the rates range from -0.88% per year to 2.84% per year between 1993 and 2008. Over this period, the annual rate of growth is 1.85% per year.

**Table 3. Vehicle-Miles of Travel**

Data from the Highway Performance Monitoring System (HPMS)

<b>Year</b>	<b>VMT Estimate (HPMS)</b>	<b>Annual Rate of Growth</b>
1993	18,829,591	
1994	18,663,552	-0.88%
1995	19,847,112	2.67%
1996	19,842,716	1.76%
1997	21,058,741	2.84%
1998	21,638,065	2.82%
1999	21,249,847	2.04%
2000	21,527,000	1.93%
2001	21,987,000	1.96%
2002	22,147,635	1.82%
2003	22,201,000	1.66%
2004	22,154,000	1.49%
2005	22,216,000	1.39%
2006	22,305,000	1.31%
2007	22,397,000	1.25%
2008	21,792,000	0.98%
2009	26,507,000	2.55%
2010	20,359,000	0.48%
2011	26,545,000	2.28%
2012	25,461,000	1.85%

3. 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.

#### *Horizon Year*

The horizon year is 2040. An extra horizon year of 2045 was added by consultation with the ICG. The 2040 Comprehensive Regional Plan provides a policy-oriented distribution of population and households. This distribution is reflected in the project selection system for the plan, giving significant weight to projects in the revitalization areas in Gary, Hammond, East Chicago and Michigan City, as well as livable centers that provide for mixed land uses and greater transportation options.

The methods and assumptions for the transportation network model in the regional emissions analysis are included in The Transportation Model Documentation Report.

#### **Latest Emissions Model**

On March 2, 2010 the USEPA officially released the MOVES model, with a two year grace period. The MOVES model was updated in July 2014. INDOT has provided a utility that prepares the output of a TransCAD model for use with MOVES. INDOT has also run the MOVES model and provided emissions factors to all

metropolitan areas in the state for use in conformity analysis. The MOVES2014a model has been used for this conformity analysis. The motor vehicle emissions budgets have been revised to use the MOVES emissions rates.

### **TCM Implementation**

The 2040 Regional Transportation Plan and Fiscal Year 2016 to 2019 Transportation Improvement Program are not required to provide for timely implementation of TCMs from the SIP, since the SIP currently contains no TCMs.

### **Consistency with the Motor Vehicle Emission Budgets in the SIP**

The regional emissions analysis has estimated emissions of VOC and NO<sub>x</sub> as ozone precursors. The regional emissions analysis includes estimates of emissions from the entire transportation system, including all regionally significant projects contained in the transportation plan and all other regionally significant highway and transit projects expected in the nonattainment area in the time frame of the transportation plan. Table 4 shows that regional emissions for the ozone precursors fall at or below the budgets in the State Implementation Plan for the 1997 Ozone Summer Day 8-hour standard (used in lieu of an applicable 2008 Ozone Summer Day 8-hour standard because Indiana has yet to adopt a State Implementation Plan for that standard).

The emissions analysis methodology meets the requirements of 40 CFR 93.122(b) of the Federal Conformity Rule, for 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 regional transportation plan results in motor vehicle emissions that are at or below the levels of the applicable Motor Vehicle Emissions Budgets, as shown in Table 4. This table also indicates that the implementation of the Lake and Porter County projects in the regional transportation plan result in motor vehicle emissions that are at or below the level of the proposed Motor Vehicle Emissions Budgets in the State Implementation Plan for the PM<sub>2.5</sub> unclassifiable area.

### **Emission Reductions in Areas Without Motor Vehicle Emissions Budgets**

The establishment of Motor Vehicle Emissions Budgets that cover ozone and fine particles and their precursor emissions eliminates the requirements to demonstrate emissions reductions.

### **Procedures for Determining Regional Transportation-Related Emissions**

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 expansion projects expected in the nonattainment area. The analysis includes FHWA/FTA-funded projects proposed in the transportation plan, all Indiana Toll Road projects and all other regionally significant projects which are disclosed to NIRPC. Vehicle miles traveled (VMT) from projects which are not regionally significant are estimated in accordance with reasonable professional practice, using the regional travel demand model and the procedure for projects that are regionally significant.

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 2002. 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 2020, 2025, 2030, 2035, 2040 and 2045, 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..

Land use, population, employment, and other network-based travel model assumptions have been documented based on the best available information. The land development and use in the 2040 Growth and Revitalization Vision adopted by NIRPC and underpinning the 2040 Regional Transportation Plan are consistent with the future transportation system alternatives for which emissions have been estimated. The distribution of employment and residences are reasonable.

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. Zone-to-zone 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.

## Regional Transportation-Related Emissions Results

Table 4 presents the results of the regional transportation emissions analysis for the 2040 Comprehensive Regional Plan as updated and amended, and the FY 2016 to 2019 Transportation Improvement Program including the projects as specified in Table 1. As seen in this table, the emissions are at or lower than the budgets for Ozone precursor emissions in 2020, 2025, 2030, 2035, 2040, and 2045. Also, emissions are at or lower than the budgets for PM2.5 and its precursor emissions in 2020, 2025, 2030, 2035, 2040, and 2045.

**Table 4. Regional Emissions Analysis Results**

**Ozone Emissions in U.S. Tons per Day**  
Lake and Porter Counties

	<b>2020</b>	<b>2025</b>	<b>2030</b>	<b>2035</b>	<b>2040</b>	<b>2045</b>
<b>VOC Budget</b>	5.99	5.99	5.99	5.99	5.99	5.99
<b>VOC Emission</b>	5.99	5.20	4.02	3.15	2.81	2.72
<b>NOx Budget</b>	16.69	16.69	16.69	16.69	16.69	16.69
<b>NOx Emissions</b>	14.91	9.86	7.80	6.62	6.37	6.40

**PM2.5 Emissions in U.S. Tons per Year**  
Lake and Porter Counties

	<b>2020</b>	<b>2025</b>	<b>2030</b>	<b>2035</b>	<b>2040</b>	<b>2045</b>
<b>Direct PM Budget</b>	374.30	188.73	188.73	188.73	188.73	188.73
<b>Direct PM Emission</b>	198.65	143.47	123.84	115.64	116.07	116.64
<b>NOx Precursor Budget</b>	10,486.08	5,472.34	5,472.34	5,472.34	5,472.34	5,472.34
<b>NOx Precursor Emissions</b>	6,084.18	4,046.89	3,185.41	2,754.71	2,668.26	2,687.28

## Conclusion

The Summer day on-road mobile source emissions of the precursors of ozone (VOC and NOx) in Lake and Porter Counties that result from the implementation of the projects in the 2040 Regional Transportation Plan as updated and the Fiscal Year 2016 to 2019 Transportation Improvement Program in the years 2020, 2025, 2030, 2035, 2040 and 2045 are at or less than the Motor Vehicle Emission Budgets established in the Maintenance Plan included in the U.S. EPA approved State Implementation Plan for Lake and Porter Counties. The on-road mobile source emissions of annual direct PM2.5 and annual nitrogen oxide in the PM2.5 maintenance area that result from the implementation of the projects in the 2040 Regional Transportation Plan as updated and the Fiscal Year 2016 to 2019 Transportation Improvement Program in the years 2020, 2025, 2030, 2035, 2040 and 2045 are less than the Motor Vehicle Emissions Budgets established in the Maintenance Plan included in the U.S. EPA approved State Implementation Plan for Lake and Porter Counties. Therefore, the Interagency Consultation Group on Air Quality finds the 2040 Regional Transportation Plan as updated and the Fiscal Year 2016 to 2019 Transportation Improvement Program to conform to the requirements of section 176(c) of the Clean Air Act Amendment and the related requirements of the Federal Transportation Conformity Rule (40 CFR Part 51 and 40 CFR Part 93) with respect to ozone and PM2.5.