Air Quality Conformity Determination

Between

The **2040 Comprehensive Regional Plan, as amended**

The **Fiscal Year 2012 to 2015 Transportation Improvement Program, as amended**

and

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

December 8, 2011

Northwestern Indiana Regional Planning Commission
Portage, Indiana

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 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 MOBILE 6.2 emissions model to quantify the emissions from all vehicles on the future transportation system. For Lake and Porter Counties, annual emissions of fine particles and nitrogen oxides must not exceed their levels of 2002 and Summer day emissions of Volatile Organic Compounds and Nitrogen Oxides must not exceed Motor Vehicle Emission Budgets established in the State Implementation Plan. For LaPorte County, Summer day emissions of Volatile Organic Compounds and Nitrogen Oxides must not exceed the Motor Vehicle Emission Budgets in the State Implementation Plan. The system that was analyzed includes all regionally significant capacity expansion projects in the Lake, Porter and Laporte County area, and significant projects in northeastern Illinois, regardless of the funding sources.

Applicability

Action Applicability
This conformity determination is required for: adoption, acceptance, approval or support of the Regional Transportation Plan and the 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 areas, including the Lake/Porter County maintenance area and the La Porte County maintenance area, with respect to the Summer day mobile-source emissions of VOCs and NO_x. Lake and Porter Counties are designated as maintenance of the National Ambient Air Quality Standard (NAAQS) for "8-hour" ozone. La Porte County is also designated as maintenance of the National Ambient Air Quality Standard for "8-hour" ozone. All three counties are currently meeting the standards.

This conformity determination is required in the $PM_{2.5}$ non-attainment area, including the entire Chicago consolidated metropolitan statistical area, with respect to annual mobile source emissions of NO_X and direct $PM_{2.5}$. Lake and Porter Counties in Northwestern Indiana, as part of the Chicago consolidated metropolitan statistical area, are classified as non-attainment of the annual National Ambient Air Quality Standard (NAAQS) for $PM_{2.5}$. A request has been made by the State of Indiana to reclassify Lake and Porter Counties as maintenance of the $PM_{2.5}$ standard. The request includes a maintenance plan with draft motor vehicle emissions budgets.

This conformity determination is based on the requirement of Section 93.118 of the Conformity Rule for the regional emissions analysis to indicate compliance with the emissions budgets established in the State Implementation Plan for VOC and NO_x emissions in Lake and Porter Counties and in LaPorte County. The regional transportation plan and transportation improvement program must not result in Summer day emissions of VOC and NOx in 2016, 2020, 2030 and 2040 in excess of the applicable budgets.

This conformity determination is based on the requirement of Section 93.119 of the Conformity Rule for the regional emissions analysis to indicate interim reductions of the annual emissions of Nitrogen Oxides and direct $PM_{2.5}$ in the overall $PM_{2.5}$ nonattainment area, including Lake and Porter Counties and six counties in northeastern Illinois. The Indiana and Illinois State Implementation Plans for Air Quality have not established annual emissions budgets for highway mobile sources of direct $PM_{2.5}$ and NO_X. The regional transportation plan and transportation improvement program must not result in annual emissions of direct $PM_{2.5}$ and NO_X from mobile sources in 2016, 2020, 2030 and 2040 in excess of the 2002 emissions.

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), Illinois Department of Transportation (IDOT), Indiana Department of Environmental Management (IDEM), Chicago Metropolitan Agency for Planning (CMAP) and Northwestern Indiana Regional Planning Commission (NIRPC).

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

A consultation meeting was conducted on August 3, 2011. The meeting was attended by representatives of the Northwestern Indiana Regional Planning Commission, Indiana Department of Environmental Management, Indiana Department of Transportation and United States Environmental Protection Agency. The proposed action is a conformity analysis to support an amendment to the 2040 Comprehensive Regional Plan and the FY 2012-2015 Transportation Improvement Program. The revision involves two projects. The City of Hammond is initiating work on the reconstruction and added travel lanes on the former SR-312. The reconstruction is on the segments of Chicago Street from Calumet Avenue (US-41) to White Oak Avenue. The added travel lanes are on Gostlin Street from the Illinois State Line to Sheffield Avenue, Sheffield Avenue from Gostlin Street to Chicago Street and Chicago Street from Sheffield Avenue to Calumet Avenue (US-41). All of the added travel lane segments would be constructed between 2016 and 2020. The Schererville project is currently in the 2040 plan in the 2030 to 2040 time frame. The Town of Schererville has identified four phases. The first phase, from US-30 to Junction Street would be complete by December 2014. The second phase, from Junction Avenue to Division Street would be constructed between 2016 and 2020. The third phase, from Division Street to Oak Street would be constructed between 2016 and 2020 and the fourth phase, from Oak Street to Main Street would be constructed between 2016 and 2020. If there is a need to move one or more of these phases to another time frame, another conformity analysis could be completed in the future. Schererville will further define the segmentation and costs in the near future.

The discussion about the conformity analysis included the need to use the latest planning assumptions. The parameters of the analysis will be the same as the recent analysis for the 2040 plan and 2012 to 2015 TIP. INDOT's consultants are not ready to release the new vehicle fleet mix data yet, so the older vehicle fleet mix information is still in effect. The analysis is anticipated to start prior to the release of the newer data. The

IDEM, INDOT and USEPA representatives agreed that the analysis can start immediately using the existing fleet information and all other latest planning assumptions that were used in the recent conformity analysis.

The time frame for the amendments includes an analysis to be completed in early August, with the start of the public comment period to begin as soon as the analysis and documentation are complete. Action on the conformity determination and the amendments of the plan and program are anticipated in September. Pending the concurrence of the Federal Highway Administration, the analysis will begin prior to August 8. The next meeting will be scheduled when the documents are ready for review by the consultation agencies.

A consultation meeting was conducted on December 5, 2011. The meeting was attended by representatives of the Indiana Department of Transportation (Frank Baukert, Audra Blasdel, Laurence Brown, Steve Hauersperger, Jerry Halperin, Roy Nunnally), Federal Highway Administration (Larry Heil, Joyce Newland), Indiana Department of Environmental Management (Gale Ferris, Shawn Seals), United States Environmental Protection Agency (Patricia Morris), Chicago Metropolitan Agency for Planning (Ross Patronsky, Kermit Wies), PB (Ron Shimizu) and NIRPC (Bill Brown, Kevin Garcia, Steve Strains). The meeting included a summary of the comments received during the public comment period from property owners along the two road project areas. The Indiana Department of Natural Resources commented that Kennedy Avenue is adjacent to the Hoosier Prairie Nature Preserve. Owners of Businesses on Gostlin Street near the Illinois State Line had questions about right of way acquisition. The comments were not directly related to the conformity determination.

The second agenda item concerned the projects in the proposed Amendment #6 of the Transportation Improvement Program. The participants agreed that the projects are exempt. A clarification was requested that the intersection improvement on SR-312 is not related to the added travel lanes on the former SR-312. The intersection improvement is on a different segment of SR-312 and is not related to the added travel lanes project.

The third agenda item concerned the development of motor vehicle emissions budgets to implement the MOVES emissions factor model. NIRPC staff will confer with INDOT Staff and Wilbur Smith Associates on the development of the post processor and implementation of MOVES. A conversation will occur the week of December 19. Draft MOVES budgets are anticipated to be ready for submittal to the IDEM by the end of January, 2012. The first phase of implementation of the MOVES model will include the replacement of the existing Mobile 6.2 budgets with MOVES budgets for the same analysis years and with the 2009 vehicle fleet profile. Phase two will include a SIP update to extend the horizon to 2030.

The fourth agenda item included a discussion of forecasts being used in the Illiana Corridor Study. The study is proceeding with market based forecasts of population and employment for the analysis of future revenues and traffic that are required for bonding and private financing. The 2040 Comprehensive Regional Plan included policy-based forecasts that resulted from extensive outreach and public participation and reflected the Regional Growth and Revitalization Vision that NIRPC adopted in October, 2010. While the total numbers at the county level are identical, the distributions of the forecasts are different. The differences were the subject of meetings among the project team, IDOT, INDOT, FHWA, CMAP and NIRPC. Additional meetings are scheduled to discuss these numbers. When the time comes to include the Illiana in the MPO plans, there will be a need to show that the funding to implement the projects will be available, and the Congestion Management Process and Environmental Justice concerns must be addressed. For the CMP, the analysis will need to show that the Illiana helps to attain performance targets, as well as show the results of the evaluation of alternatives, including demand management, operational management, intelligent

transportation system and public transit strategies. The environmental justice concerns to be addressed include fair distribution of the benefits and burdens the transportation system offers to EJ and non-EJ populations as well as outreach and involvement of EJ populations in the decision-making process.

Finally, the group discussed the resolution for the conformity analysis. The resolution will include references to both the interim reductions test and the motor vehicle emissions budget test, given the imminent approval of the motor vehicle emissions budgets for the maintenance SIP for fine particles.

Public consultation

In compliance with the adopted NIRPC Public Involvement Procedure, an opportunity for public comment on the proposed conformity determination has been provided. A media release was issued on October 31, 2011 that established a comment period extending from the November 1, 2011 to December 2, 2011. This proposed conformity determination was made available to the public for review at the NIRPC offices, 6100 Southport Road, Portage and on the web at www.nirpc.org. There were no public comments on the conformity analysis.

Content of the Transportation Plan

The transportation plan specifically describes the transportation system envisioned for the following horizon years: 2016, 2020, 2030 and 2040. These horizon years meet the requirements of Section 93.106 (a)(1) of the conformity rule.

The transportation 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 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.

This table includes the Cline Avenue (SR-912) project with two options currently under consideration. INDOT is reviewing two solutions for Cline Ave: the ground route alternative utilizing Riley and Dickey roads, and a four-lane bridge alternative. The analysis includes both options.

Table 1. 2040 Comprehensive Regional Plan Capacity Expansion Projects in the Regional Emissions Analysis

2016 Network

ID	Agency	**Cedar Lake**	Completion before	2016
241	Road	**133rd Avenue**	Concept	Principal Arterial Street
	From	US-41	Scope	Added Center Turn Lane
	To	Industrial Drive	Model Representation	Increase capacity by 10%

ID	Agency	**Gary**	Completion before	2016
38a	Road	**Buffington Access 2A-3**	Concept	Collector Street
	From	SR-912	Scope	Added Travel Lanes
	To	Casinos	Model Representation	Add 1 lane in each direction

ID	Agency	**Hobart**	Completion before	2016
226	Road	**61st Avenue**	Concept	Minor Arterial Street
	From	Colorado Street	Scope	Added Center Turn Lane
	To	SR-51	Model Representation	Increase capacity by 10%

ID	Agency	**IDOT**	Completion before	2016
232	Road	**I-80**	Concept	Interstate Highway
	From	US-30	Scope	Added travel Lanes
	To	US-45	Model Representation	Add 1 lane in each direction

ID	Agency	**INDOT**	Completion before	2016
121	Road	**SR-2**	Concept	Principal Arterial Highway
	From	one half mile West of I-65	Scope	Added Travel Lanes
	To	one half mile East of I-65	Model Representation	Add 1 travel lane in each direction

ID	Agency	**INDOT**	Completion before	2016
29	Road	**SR-49**	Concept	Principal Arterial Highway Interchange
	From	one half mile N. of CR-400N	Scope	New Interchange to Replace At-grade Intersection
	To	one half mile S. of CR-400N	Model Representation	New links, 1 travel lane in each direction, ramp attributes

ID	Agency	**INDOT**	Completion before	2016
85	Road	**US-421**	Concept	Principal Arterial Highway
	From	N. Jct SR-2	Scope	Added Travel Lanes
	To	S. Jct. SR—2	Model Representation	Add 1 travel lane in each direction

ID	Agency	**INDOT**	Completion before	2016
233	Road	**US-20**	Concept	Principal Arterial Street
	From	Woodland Avenue	Scope	Added Center Turn Lane
	To	Johnson Road	Model Representation	Increase capacity by 10%

ID	Agency	**INDOT**	Completion before	2016
234	Road	**SR-912**	Concept	Expressway
	From	Dickey Road	Scope	Two Options described above Table 1
	To	Riley Road	Model Representation	

Table 1 Continued (2016 Network)

ID	Agency	**Lake County**	Completion before	2016
235	Road	**45th Avenue**	Concept	Minor Arterial Street
	From	Colfax Street	Scope	Added Center Turn Lane
	To	Cleveland Street	Model Representation	Increase capacity by 10%

ID	Agency	**Merrillville**	Completion before	2016
105	Road	**MississippiStreet**	Concept	Minor Arterial Street
	From	US-30	Scope	Added Travel Lanes
	To	101st Avenue	Model Representation	Add 1 travel lane in each direction

ID	Agency	**Munster**	Completion before	2016
86	Road	**Main Street**	Concept	Minor Arterial Street
	From	Burnham Avenue	Scope	New Construction
	To	Columbia Avenue	Model Representation	New links, 2 travel lanes in each direction, Minor Arterial attributes

ID	Agency	**Munster**	Completion before	2016
217	Road	**45th Avenue**	Concept	Minor Arterial Street
	From	At Calumet Avenue	Scope	Intersection Realignment
	To		Model Representation	Reconfigure intersection links

ID	Agency	**Valparaiso**	Completion before	2016
214	Road	**Vale Park Road East**	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	**Schererville**	Completion before	2020
96a	Road	**Kennedy Avenue**	Concept	Minor Arterial Street
	From	Junction Street	Scope	Added Travel Lanes
	To	US-30	Model Representation	Add 1 travel lane in each direction

2020 Network

ID	Agency	**Gary**	Completion before	2020
38b	Road	**Buffington Access 3**	Concept	Collector Road
	From	SR-912	Scope	Added Travel Lanes
	To	Casinos	Model Representation	Add one travel lane in each direction

ID	Agency	**IDOT**	Completion before	2020
236	Road	**I-57**	Concept	Interstate
	From	At I-294	Scope	New Interchange
	To		Model Representation	New links, ramp attributes

ID	Agency	**Merrillville**	Completion before	2020
214	Road	**101st Avenue**	Concept	Minor Arterial Highway
	From	SR-53	Scope	Added Travel Lanes
	To	Mississippi Street	Model Representation	Add one travel lane in each direction

Table 1 Continued (2020 Network)

ID	Agency	**Michigan City**	Completion before	2020
88	Road	**Springland Avenue**	Concept	Collector Road
	From	Karwick Road	Scope	New Construction
	To	Royal Road	Model Representation	New links, 1 travel lane in each direction, Collector attributes

ID	Agency	**St. John**	Completion before	2020
218	Road	**93rd Avenue**	Concept	Minor Arterial Street
	From	White Oak Avenue	Scope	Added Center Turn Lane
	To	US-41	Model Representation	Increase capacity by 10%

ID	Agency	**Schererville**	Completion before	2020
96b	Road	**Kennedy Avenue**	Concept	Minor Arterial Street
	From	Main Street	Scope	Added Travel Lanes
	To	Junction Street	Model Representation	Add 1 travel lane in each direction

ID	Agency	**Hammond**	Completion before	2020
240	Road	**Gostlin/Sheffield/Chicago**	Concept	Minor Arterial Street
	From	Illinois State Line	Scope	Added Travel Lanes
	To	US-41	Model Representation	Add one travel lane in each direction

2030 Network

ID	Agency	**Porter County**	Completion before	2030
237	Road	**Willowcreek Road**	Concept	Minor Arterial Highway
	From	CR-700N	Scope	New Construction
	To	US-30	Model Representation	New links, 2 travel lanes in each direction, Minor Arterial attributes

2040 Network

ID	Agency	**La Porte**	Completion before	2040
238	Road	**Economic Development Corridor Northeast**	Concept	Collector Street
	From	SR-39	Scope	New Construction
	To	SR-2	Model Representation	New Links, 1 travel lane in each direction, collector attributes

ID	Agency	**La Porte**	Completion before	2020
115	Road	**Boyd Boulevard**	Concept	Minor Arterial Street
	From	US-35	Scope	Added Travel Lanes
	To	SR-2	Model Representation	Add 1 travel lane in each direction

ID	Agency	**Valparaiso**	Completion before	2020
239	Road	**Division Road**	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 system 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

The 2040 Regional Transportation Plan and Fiscal Year 2012 to 2015 Transportation Improvement Program are fiscally constrained consistent with DOT's metropolitan planning regulations in 23 CFR part 450. With the long term lease of the Indiana Toll Road, the Indiana Department of Transportation has achieved a funding mechanism, called Major Moves, to implement the projects in the statewide long range transportation plan.

Criteria and Procedures for the Conformity Determination

The Indiana State Implementation Plan for Air Quality 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, the Indiana Department of Environmental Management 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 Regional Transportation Plan and Fiscal Year 2012 to 2015 Transportation Improvement Program meets the requirements of sections 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 sections 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 NO_X emissions and the annual direct $PM_{2.5}$ and NO_X 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 model due to the lack of funding for the proposed model overhaul. The travel demand model was validated with respect to the year 2008 Highway Performance Monitoring System. The 2016, 2020, 2030 and 2040 population, household and employment forecasts were prepared in March, 2011 by NIRPC, using the latest available information.

Since the previous conformity determination, the transit operating policies (including fares and service levels) have changed. The Regional Bus Authority began implementing several new fixed-route transit services, that replace and augment services previously provided by the Hammond Transit System. The new services have been incorporated into the model. Three routes provided by the Gary Public Transportation Corporation have been discontinued. These services have been eliminated from the model. Changes are assumed in existing transit fares within northwest Indiana over time. The model represents tolls on the Indiana Toll Road 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 first time, 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

	Population	Households	Employment
2000	741,468	277,324	303,850
2010	755,677	287,854	314,733
2016	776,834	291,921	281,122
2020	801,957	301,589	292,380
2030	861,956	325,047	320,155
2040	938,683	426,678	353,315

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 -.88% per year to 2.84% per year between 1993 and 2008. Over this period, the annual rate of growth is 0.98% per year.

Table 3. Vehicle-Miles of Travel

data from the Highway Performance Monitoring System (HPMS)

Year	VMT Estimate (HPMS)	Annual Rate of Growth Since 1993
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%

3. Adjustment factors have been produced to relate the vehicle-miles of travel produced by the transportation network model to the Highway Performance Monitoring System estimates for 2008. Overall the model's estimate of VMT is approximately 4% higher than the HPMS. These adjustment factors have been applied to model-generated estimates on a link by link basis.

Table 4. Model Calibration (Year 2008)

Lake County			HPMS vmt	Model vmt	M/H
11	Urban	Interstate	3,566,000	3,570,560	1.00
12	Urban	Other Expressway	564,000	563,015	1.00
14	Urban	Principal Arterial	2,870,000	2,867,692	1.00
16	Urban	Minor Arterial	1,955,000	1,964,341	1.00
17	Urban	Collector	785,000	772,360	0.98
18	Urban	Local	2,182,000	2,174,895	1.00
1	Rural	Interstate	481,000	484,476	1.01
2	Rural	Principal Arterial	135,000	136,512	1.01
6	Rural	Minor Arterial	85,000	85,010	1.00
7	Rural	Major Collector	314,000	316,261	1.01
8	Rural	Minor Collector & Local	80,000	193,965	2.42
Porter County					
11	Urban	Interstate	1,118,000	1,114,514	1.00
14	Urban	Principal Arterial	1,232,000	1,233,414	1.00
16	Urban	Minor Arterial	436,000	440,380	1.01
17	Urban	Collector	205,000	205,021	1.00
18	Urban	Local	550,000	550,399	1.00

Table 4 Continued

1	Rural	Interstate	144,000	446,582	3.10
2	Rural	Principal Arterial	180,000	192,123	1.07
6	Rural	Minor Arterial	143,000	145,355	1.02
7	Rural	Major Collector	644,000	681,285	1.06
8	Rural	Minor Collector & Local	167,000	305,186	1.83
LaPorte County					
11	Urban	Interstate	271,000	451,462	1.67
14	Urban	Principal Arterial	577,000	590,997	1.02
16	Urban	Minor Arterial	317,000	317,676	1.00
17	Urban	Collector	105,000	106,180	1.01
18	Urban	Local	300,000	296,267	0.99
1	Rural	Interstate	884,000	815,149	0.92
2	Rural	Principal Arterial	327,000	324,222	0.99
6	Rural	Minor Arterial	428,000	424,438	0.99
7	Rural	Major Collector	504,000	507,378	1.01
8	Rural	Minor Collector & Local	243,000	431,718	1.78
		TOTAL	21,792,000	22,708,830	1.04

4. 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 January 1, 2004. 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. This vehicle registration data have been used in the Mobile 6.2 input file, 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. An updated set of vehicle registration data is being prepared by the Indiana Department of Transportation. The draft data have been found to be problematic for the conformity process, because the vehicle fleet is seen as older and less efficient than the fleet reflected in the current data. Updated motor vehicle emissions budgets are necessary prior to the next conformity determination once the new data are officially released.

5. There have been recent changes to transit fares in northwest Indiana. The Gary Public Transportation Corporation, Regional Bus Authority and Northern Indiana Commuter Transportation District have increased fares in 2010 and 2011.

Exempt Projects

The reconstruction and two-way left turn lane projects are now treated as nonexempt, with the network modified to represent such continuous two way left turn lane projects with a 10% increase in the per hour per lane capacity. Other exempt projects are listed in the Transportation Improvement Program.

Project Changes

Some of the local projects that were originally proposed have not made sufficient progress to achieve the originally planned 2010 network, and have been delayed and/or removed from the plan. Some of these projects are included in later year networks in the transportation network model used for the regional emissions analysis. The Cline Avenue Bridge (SR-912) over the Indiana Harbor Canal was closed to traffic in November, 2009 after serious structural deficiencies were found. The

preferred alternative is the detour route on Dickey Road and Riley Road. These two collector roads would provide a short link on an expressway corridor. While the NEPA process is underway, INDOT is considering various options for the routing of this highway.

Horizon Year

The horizon year is 2040. 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. KPMG, the consultants for the major investment study of the INDOT facilities in northwestern Indiana, concluded that the NIRPC model is in agreement with acceptable professional practice. The 2009 certification review concluded that the model meets or exceeds the standards of travel demand models in use at small and medium sized Metropolitan Planning Organizations (MPOs).

Latest Emissions Model

On January 23, 2002 the USEPA officially released the Mobile6 Emission Factor model. The emission factor model has been used in the regional emissions analyses for this transportation conformity determination. Discussions with the IDEM staff on the parameters and inputs for Mobile6 have been extensive.

The Mobile 6.2 descriptive output file provided emissions rates for composite types of vehicles. These rates were imported into a Microsoft Excel spreadsheet and applied to the output from the Emme transportation network model. In a Microsoft Access database, the output from the Emme transportation network model for three vehicle types (Personal Vehicles, Non-Heavy Commercial Trucks, and Heavy Duty Vehicles) were split to twenty-eight vehicle types using factors based on a factoring process provided by IDEM and analyzed by NIRPC. The 12-class assignment was also used to identify VMT from vehicles from external trip ends, so that their start and evaporative emissions could be excluded from the analysis as appropriate. The emissions from transit vehicles used the emissions rates for transit buses, as well. The Mobile 6.2 input files are included in Appendix G.

On March 2, 2010 the USEPA officially released the MOVES model, with a two year grace period. The MOVES model must be used instead of Mobile 6.2 beginning on March 2, 2012. As with the vehicle registration data, the motor vehicle emissions budgets will need to be revised prior to the conformity process in 2012 due to the increases in the emissions estimates generated by the new model.

TCM Implementation

The 2040 Regional Transportation Plan and Fiscal Year 2012 to 2015 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_X 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.

The emissions analysis methodology meets the requirements of Section 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 and the La Porte County projects in the regional transportation plan results in motor vehicle emissions that are below the levels of the applicable Motor Vehicle Emissions Budgets, as shown in Table 5. 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 below the level of the proposed Motor Vehicle Emissions Budgets in the proposed Maintenance Plans for the $PM_{2.5}$ nonattainment area, which is under review for redesignation as a maintenance area.

Emission Reductions in Areas Without Motor Vehicle Emissions Budgets

The 2040 Regional Transportation Plan and Fiscal Year 2012 to 2015 Transportation Improvement Program contribute to emissions reductions. Annual Direct $PM_{2.5}$ emissions and annual NO_X $PM_{2.5}$ precursor emissions in the action scenario for each analysis year are less than or equal to the 2002 emissions estimates for the $PM_{2.5}$ nonattainment area, as indicated in Table 5.

Procedures for Determining Regional Transportation-related Emissions

The regional emissions analysis for the transportation plan 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 TCMs for emissions reduction credit. 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 2016, 2020, 2030 and 2040, estimates of regional transportation-related emissions used to support the conformity determination have been made using a network-based travel model with travel calculations performed at the individual link level according to procedures and methods that are available and in practice and supported by current and available documentation (see The Transportation Model Documentation Report). Intrazonal VMT has been added to the link VMT on associated centroid connectors for the analysis. The travel characteristics were calculated separately for three vehicle classes: autos (light duty gasoline vehicles), non-heavy trucks (light duty gasoline trucks 1) and heavy trucks (heavy duty diesel vehicles) and separately for three time periods: morning peak, afternoon peak and off peak. Using factors provided from the Indiana Department of Environmental Management, the travel characteristics were split to represent 28 vehicle types, and the emissions were calculated using a Microsoft Excel spreadsheet. The participating agencies have discussed these modeling procedures and practices through the interagency consultation process.

The Network-based travel model has been validated against observed counts for a 2008 base year, which is not more than 10 years prior to the date of the conformity determination. Model forecasts have been analyzed for reasonableness and compared to historical trends and other factors, and the results have been documented (see The Transportation Model Documentation Report).

Land use, population, employment, and other network-based travel model assumptions have been documented based on the best available information. The scenario of land development and use is consistent with the future transportation system alternative for which emissions have been estimated. The distribution of employment and residences for the preferred transportation alternative 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 feed-back 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 model provides estimates of Vehicle-Miles of Travel that are approximately 4% higher than the HPMS. (See The Transportation Model Documentation Report.)

Table 5. Regional Emissions Analysis Results

(***SR-912 No-Bridge Option***)

Year	2002	2016	2020	2030	2040
Ozone Emissions in US Tons per Day					
Lake and Porter Counties					
VOC Budgets		10.50	6.00	6.00	6.00
VOC Emissions		4.71	4.03	3.95	4.51
NO_x Budgets		40.60	12.60	12.60	12.60
NO_x Emissions		10.26	6.92	4.79	5.07
LaPorte County					
VOC Budgets		5.25	3.40	3.40	3.40
VOC Emissions		1.77	1.53	1.44	1.56
NO_x Budgets		18.85	6.50	6.50	6.50
NO_x Emissions		3.68	2.66	1.88	1.93
$PM_{2.5}$ Emissions in US Tons per Year					
Lake and Porter Counties					
Draft Budgets		145.37	145.37	132.70	132.70
Direct PM Emissions	562.64	111.69	104.38	109.20	122.12
Draft Budgets		5,697.86	5,697.86	2,915.19	2,915.19
NO_x Precursor Emissions	30,397.97	3,906.95	2,721.93	1,955.43	2,102.45
Northeastern Illinois					
Direct PM Emissions	3,070.78	1,073.93	969.63	957.11	1004.53
NO_x Precursor Emissions	167,630.81	40,800.91	27,729.34	19,098.53	19,324.23
Nonattainment Area Total					
Direct PM Emissions	3,633.42	1,185.62	1,074.01	1,066.31	1,126.67
NO_x Precursor Emissions	198,028.78	44,707.86	30,451.27	21,053.96	21,426.68

Table 5 Continued

(***SR-912 With-Bridge Option***)

Year	2002	2016	2020	2030	2040
Ozone Emissions in US Tons per Day					
Lake and Porter Counties					
VOC Budgets		10.50	6.00	6.00	6.00
VOC Emissions		4.71	4.05	3.97	4.50
NO_x Budgets		40.60	12.60	12.60	12.60
NO_x Emissions		10.34	6.96	4.81	5.09
LaPorte County					
VOC Budgets		5.25	3.40	3.40	3.40
VOC Emissions		1.78	1.53	1.44	1.56
NO_x Budgets		18.85	6.50	6.50	6.50
NO_x Emissions		3.68	2.66	1.88	1.93
$PM_{2.5}$ Emissions in US Tons per Year					
Lake and Porter Counties					
Draft Budgets		145.37	145.37	132.70	132.70
Direct PM Emissions	562.64	112.30	104.74	109.60	122.55
Draft Budgets		5,697.86	5,697.86	2,915.19	2,915.19
NO_x Precursor Emissions	30,397.97	3,931.12	2,733.80	1,964.01	2,111.42
Northeastern Illinois					
Direct PM Emissions	3,070.78	1,073.93	969.63	957.11	1,004.53
NO_x Precursor Emissions	167,630.81	40,800.91	27,729.34	19,098.53	19,324.23
Nonattainment Area Total					
Direct PM Emissions	3,633.42	1,186.23	1,074.37	1,066.71	1,127.08
NO_x Precursor Emissions	198,028.78	44,732.03	30,463.14	21,062.54	21,435.65

Conclusion

The Summer day on-road mobile source emissions of the precursors of ozone (VOC and NO_X) in Lake and Porter Counties that result from the implementation of the projects in the 2040 Regional Transportation Plan and the Fiscal Year 2012 to 2015 Transportation Improvement Program, as defined by the action scenarios for 2016, 2020, 2030 and 2040 are 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 Summer day on-road mobile source emissions of the precursors of ozone (VOC and NO_X) in La Porte County that result from the implementation of the projects in the 2040 Regional Transportation Plan and the Fiscal Year 2012 to 2015 Transportation Improvement Program, as defined by the action scenarios for 2016, 2020, 2030 and 2040 are less than the Motor Vehicle Emission Budgets in the Maintenance Plan included in the U.S. EPA approved State Implementation Plan for La Porte County. The on-road mobile source emissions of annual direct $PM_{2.5}$ and annual nitrogen oxide in the bi-state $PM_{2.5}$ nonattainment area that result from the implementation of the projects in the 2040 Regional Transportation Plan and the Fiscal Year 2012 to 2015 Transportation Improvement Program as defined by the action scenarios for 2016, 2020, 2030 and 2040 are no greater than the 2002 emissions. Therefore, **the 2040 Regional Transportation Plan and the Fiscal Year 2012 to 2015 Transportation Improvement Program have been found to conform to the requirements of section 176(c) of the Clean Air Act Amendment and the related requirements of the Final Transportation Conformity Rule (40 CFR Part 51 and 40 CFR Part 93) with respect to ozone and $PM_{2.5}$.**