



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

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Michael R. Pence
Governor

Thomas W. Easterly
Commissioner

July 8, 2013

Ms. Susan Hedman
Regional Administrator
U.S. Environmental Protection Agency
Region 5
77 West Jackson Boulevard
Chicago, IL 60604-3950

Dear Ms. Hedman:

Re: MOBILE6.0 to MOVES MVEB
Replacement Update to the Maintenance
Plan for the 1997 8-Hour Ozone Standard
for Greene County, Indiana

The Indiana Department of Environmental Management (IDEM) submits the enclosed MOBILE6.0 to Motor Vehicle Emissions Simulator (MOVES) Motor Vehicle Emissions Budget (MVEB) replacement update to the maintenance plan for the 1997 8-hour ozone standard for Greene County, Indiana. The United States Environmental Protection Agency (U.S. EPA) approved the *Request for Redesignation and Maintenance Plan for Ozone Attainment in the 8-Hour Ozone Basic Nonattainment Area*, for Greene County, Indiana, submitted by IDEM on September 6, 2005, with an effective date of December 29, 2005. IDEM requests that the United States Environmental Protection Agency (U.S. EPA) process this final submittal for approval into Indiana's State Implementation Plan.

IDEM provided an opportunity for a public hearing on the MVEB replacement update to the maintenance plan for the 1997 8-hour ozone standard for Greene County, Indiana maintenance area if a public hearing request was received by June 5, 2013. A hearing was scheduled for June 12, 2013. IDEM did not receive a request for a public hearing, so the scheduled hearing was cancelled. However, IDEM did receive a number of public comments during the public notice process. Documents related to the public participation process, including a summary of, and responses to; all comments are included in Appendix C of this submittal.

This MOBILE6.0 to MOVES MVEB replacement update incorporates onroad emission estimates and revised MVEBs using U.S. EPA's recently adopted MOVES model. The onroad emission estimates were calculated using the MOVES-based emission factors and data extracted from the Greene County, Indiana, area's travel-demand model.

MVEBs are being revised in anticipation of the mandatory use of the MOVES model in future transportation conformity determinations. Preliminary use of the new model indicates that emission estimates can be considerably different than similar calculations using MOBILE6.0, which was used to create the MVEBs in the original 1997 8-hour ozone maintenance plan.

Onroad safety margins, established through the interagency consultation process, are included for nitrogen oxides (NO_x) and volatile organic compounds (VOCs). These onroad safety margins are allocated to onroad emission estimates in order to account for the wide array of assumptions that are factored into the calculation process. With the addition of onroad safety margins applied to mobile sources, the Greene County, Indiana, ozone maintenance area will continue to remain well below the overall safety margins for all sources. MVEBs are also constrained to ensure that total NO_x and VOC emissions (i.e., all source categories) do not exceed attainment year emissions to ensure continued maintenance of the 1997 8-hour ozone standard.

This submittal consists of one (1) hard copy of the required documentation. An electronic version of the submittal in PDF format that is identical to the hard copy has been sent to Pamela Blakley, Chief of U.S. EPA Region 5's Control Strategies Section.

IDEM respectfully requests that U.S. EPA proceed with review of the MOBILE6.0 to MOVES MVEB replacement update and revised transportation conformity budgets and approval into Indiana's State Implementation Plan for the Greene County, Indiana, maintenance area under the 1997 8-hour ozone standard. If you have any questions or need additional information, please contact Scott Deloney, Chief, Air Programs Branch, at (317) 233-5694.

Sincerely,



Keith Baugues
Assistant Commissioner
Office of Air Quality

KB/sad/ghf

Enclosures:

Onroad Emissions MOBILE6.0 to MOVES Replacement Submittal for the Greene County, Indiana, Maintenance Area under the 1997 8-Hour Ozone Standard and Appendices

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Ms. Hedman

Page 3

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Onroad Emissions MOBILE6.0 to MOVES Replacement Submittal

For the Greene County, Indiana,
Maintenance Area under the 1997
8-Hour Ozone Standard

July 2013

Final

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Introduction

On September 6, 2005, the Indiana Department of Environmental Management (IDEM) submitted a *Request for Redesignation and Maintenance Plan for Ozone Attainment in the 8-Hour Ozone Basic Nonattainment Area*, for Greene County, Indiana. The United States Environmental Protection Agency (U.S. EPA) subsequently approved the Indiana redesignation of Greene County, Indiana, to attainment for the 1997 8-hour ozone standard on November 14, 2005 (70 FR 69085), with an effective date of December 29, 2005. Onroad emissions for the September 6, 2005, submittal were calculated using MOBILE6.0. U.S. EPA has encouraged mobile source stakeholders to transition to the new Motor Vehicle Emissions Simulator (MOVES) model as expeditiously as possible. Therefore, IDEM is providing this MOBILE6.0 to MOVES replacement update to the previously submitted 1997 8-hour ozone maintenance plan for the Greene County, Indiana, ozone maintenance area that incorporates MOVES-based onroad emissions.

Emission Inventory

Table 4.1 titled, "Greene County Basic Nonattainment Area 2002 Baseline and Projected 2010 and 2015 Emissions Inventory" was included in Appendix C of the original Redesignation Petition and Maintenance Plan. Table 4.1 – A (to be considered a replacement of the table included in Appendix C) has been revised to incorporate updated onroad emission estimates for nitrogen oxides (NO_x) and volatile organic compounds (VOCs) for the years 2002, 2010, and 2015; it results in a different overall safety margin for the area.

Table 4.1
Greene County Basic Nonattainment Area 2002 Baseline and Projected 2010 and 2015
Emissions Inventory (MOBILE6.0-based Onroad Emissions)*

(Tons per Day)			
Sector	2002 NO_x	2010 NO_x	2015 NO_x
Area	0.25	0.27	0.27
Non-road	1.61	1.37	1.22
Onroad	3.41	2.09	1.40
Point	0.68	0.46	0.47
Total	5.95	4.19	3.36
Sector	2002 VOC	2010 VOC	2015 VOC
Area	3.73	4.33	4.74
Non-road	1.43	1.14	0.94
Onroad	2.74	1.81	1.33
Point	0.51	0.59	0.64
Total	8.41	7.87	7.65

*Strikeouts represent MOBILE6.0-based onroad emission values being replaced with MOVES-based values.

Table 4.1 – A
Greene County Basic Nonattainment Area 2002 Baseline and Projected 2010 and 2015
Emissions Inventory (MOVES-based Onroad Emissions)

(Tons per Day)			
Sector	2002 NO _x	2010 NO _x	2015 NO _x
Area	0.25	0.27	0.27
Non-road	1.61	1.37	1.22
Onroad	4.50	2.55	2.01
Point	0.68	0.46	0.47
Total	7.04	4.65	3.97
Overall Safety Margin	N/A	N/A	3.07
Sector	2002 VOC	2010 VOC	2015 VOC
Area	3.73	4.33	4.74
Non-road	1.43	1.14	0.94
Onroad	1.92	1.16	0.78
Point	0.51	0.59	0.64
Total	7.59	7.22	7.10
Overall Safety Margin	N/A	N/A	0.49

Onroad emission estimates in Table 4.1 – A were calculated using U.S. EPA's MOVES model-produced emission factors and data extracted from the area's travel-demand model. The MOVES model implements a significantly different approach to emissions estimation than the previous model (MOBILE6.0). Preliminary use of the MOVES model indicates that emission estimates can be considerably different than similar calculations using MOBILE6.0, which was used to create the original MVEBs for the Greene County, Indiana, 1997 8-hour ozone nonattainment area. A general summary of the MOVES methodology used in this area can be found in Appendix A. In addition, MOVES input and output files are being provided electronically with this submittal. Growth and control strategy assumptions for non-mobile sources (i.e. area, nonroad, and point) from the original submittal for the years 2002, 2010, and 2015 were developed before the economic challenges of the last several years. Because of this, the factors included in the original submittal may project more growth than will actually occur in the future. As a result, the growth and control strategy assumptions for the non-mobile sources for the years 2002, 2010, and 2015 continue to be valid and do not affect the overall conclusions of the plan.

Onroad safety margins have been included for onroad emission estimates to accommodate the wide array of assumptions that are factored into the calculation process. Since assumptions change over time, it is necessary to have an onroad safety margin that will accommodate the impact of refined assumptions in the process. The plan continues to meet all applicable Clean Air Act (CAA) requirements as the revised emission inventories clearly illustrate that total NO_x and VOC emissions in the Greene County, Indiana, 1997 8-hour ozone maintenance area will

continue to decline leading to local reductions between 2002 (base year) and 2015 (maintenance plan horizon budget year).

Transportation Conformity Budgets

Table 5.1 titled, “Emission Estimations for On-Road Mobile Sources” was included on Page 17 of the original Redesignation Petition and Maintenance Plan for the Greene County, Indiana, 1997 8-hour ozone maintenance area. Table 5.1 – A (to be considered a replacement of Table 5.1) has been revised to incorporate U.S. EPA’s MOVES model-produced emission factors and data extracted from the region’s travel-demand model.

Table 5.1
Emission Estimations for On-Road Mobile Sources
(MOBILE6.0-based Onroad Emissions)*

	2002	2010	2015	2015 Margin of Safety
VMT	1,292,263	1,580,904	1,763,636	
VOC (tons/day)	2.74	1.81	1.33	10%
NO _x (tons/day)	3.41	2.09	1.40	10%

*Strikeouts represent MOBILE6.0-based onroad emission values being replaced with MOVES-based values.

Table 5.1 – A
Emission Estimations for Onroad Mobile Sources
(MOVES-based Onroad Emissions)

	2002	2010	2015
VOC (tons/day)	1.92	1.16	0.78
NO _x (tons/day)	4.50	2.55	2.01

Table 5.2 titled, “Mobile Vehicle Emission Budgets” was also included on Page 17 of the original Redesignation Petition and Maintenance Plan for the Greene County, Indiana, 1997 8-hour ozone maintenance area. Table 5.2 – A (to be considered a replacement of Table 5.2) has been revised to incorporate MVEBs calculated using U.S. EPA’s MOVES model-produced emission factors and data extracted from the area’s travel-demand model as detailed in Table 5.1 – A.

Table 5.2
Mobile Vehicle Emission Budgets
(MOBILE6.0-based Onroad Emissions)*

2015	tons/day
VOC	1.46
NO _x	1.54

*Strikeouts represent MOBILE6.0-based onroad emission values being replaced with MOVES-based values.

Table 5.2 – A
Mobile Vehicle Emission Budgets
(MOVES-based Onroad Emissions)

	2015
VOC (tons/day)	0.90
NO _x (tons/day)	2.31

Through the interagency consultation process, it was determined that a maintenance plan horizon year budget of 2015, would be appropriate. The interagency consultation group approved onroad margins of safety of fifteen percent (15%) for both VOC and NO_x onroad emission estimates for the year 2015. A summary of this interagency consultation discussion can be found in Appendix B. These revised emission inventories clearly illustrate that onroad VOC and NO_x emissions in the Greene County, Indiana, 1997 8-hour ozone maintenance area will continue to decline leading to local reductions between 2002 (base year) and 2015 (maintenance plan horizon budget year).

Furthermore, when compared to the overall safety margin as defined in the Code of Federal Regulations (CFR) at 40 CFR 93.101, it is evident the onroad safety margin allocation is reasonable and appropriate. More specifically, even with the allocation of an onroad safety margin to mobile sources, emissions will continue to remain well below the overall safety margin for all sources as detailed in Table 4.1 – A. MVEBs are constrained to ensure that the total emissions (i.e., all source categories) do not exceed the 2002 attainment year emissions of either VOC or NO_x, thereby ensuring continued maintenance of the 1997 8-hour ozone standard.

Conclusion

This MOBILE6.0 to MOVES replacement update to the previously submitted *Request for Redesignation and Maintenance Plan for Ozone Attainment in the 8-Hour Ozone Basic Nonattainment Area*, for Greene County, Indiana incorporates onroad emission estimates and a revised MVEB using U.S. EPA's recently adopted MOVES model. MVEBs have been revised in anticipation of the mandatory use of the MOVES model in future transportation conformity determinations. The onroad emission estimates were calculated using the MOVES-based emission factors and data extracted from the area's travel-demand model. Onroad safety margins for VOCs and NO_x, established through the interagency consultation process, are included in order to account

for the wide array of assumptions that are factored into the calculation process. MVEBs are also constrained to ensure that total VOC and NO_x emissions (i.e., all source categories) do not exceed attainment year (2002) emissions to ensure continued maintenance of the 1997 8-hour ozone standard. With the addition of MOVES-based onroad safety margins applied to mobile sources, the Greene County, Indiana, ozone maintenance area will continue to remain well below the overall safety margins for all sources into the future. As such, the 1997 8-hour ozone maintenance plan for Greene County, Indiana, continues to meet all applicable CAA requirements.

Appendix A

Greene County, Indiana, Maintenance Area MOVES Methodology

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Greene County
MOVES2010a Input Data and
Parameters

INDOT Planning Contract

Final Report
October 4, 2012



**CDM
Smith**

Table of Contents

Overview	1
Vehicle Age Distribution	1
Vehicle Population.....	2
Meteorological Data.....	4
Default VMT Distributions	4
Default Hourly Distributions	5
Default Daily and Monthly Distributions	6
Ramp Fractions	6

LIST OF TABLES

Table 1: MOVES2010a Source Type Codes	1
Table 2: MOVES2010a Road Type Codes	1
Table 3: Distribution of MOBILE 6.2 Light Duty Trucks into MOVES Source Types.....	3
Table 4: Inventory of Permanent Count Stations	5

LIST OF APPENDICES

Appendix A – MOVES2010a Input Settings and Assumptions
Appendix B – Vehicle Age Distributions for Greene County
Appendix C – Vehicle Populations for Greene County
Appendix D – Meteorological Data for Greene County
Appendix E – Default Statewide Factors
Appendix F – Statewide Default Hourly Distribution Factors
Appendix G – Statewide Default Daily Distribution Factors
Appendix H – Statewide Default Monthly Distribution Factors
Appendix I – Ramp Fractions

Overview:

This report is being written to document the input parameters for a set of MOVES2010a runs for the Greene County 8-hour Ozone Maintenance Area. This report contains a discussion on the intended input settings used in MOVES2010a and the development of the input datasets. These MOVES2010a runs are intended to develop a default set of emission rates that can be used for conformity determination and is part of a statewide effort being conducted by the Indiana Department of Transportation (INDOT).

Throughout this report references are made to MOVES 2010a codes for two types of data. The values for the source type codes are shown in Table 1. The values for the road type codes are shown in Table 2. MOVES2010a input settings and assumptions for this effort are shown in Appendix A.

Table 1: MOVES2010a Source Type Codes

sourcetypeid	Description
11	Motorcycles
21	Passenger Car
31	Passenger Truck
32	Light Commercial Truck
41	Intercity Bus
42	Transit Bus
43	School Bus
51	Refuse Truck
52	Single Unit Short-haul Truck
53	Single Unit Long-haul Truck
54	Motor Home
61	Combination Short-haul Truck
62	Combination Long-haul Truck

Table 2: MOVES2010a Road Type Codes

roadtypeid	Description
1	Off Network
2	Rural Restricted Access
3	Rural Unrestricted Access
4	Urban Restricted Access
5	Urban Unrestricted Access

Vehicle Age Distribution:

The vehicle age distributions for MOVES source types 21, 31, and 32 (cars, passenger trucks, and light commercial vehicles respectively) were developed through an analysis of Indiana's 2009 vehicle registration data. The analysis was performed by Eastern Research Group (ERG) under contract to the Lake Michigan Air Directors Consortium (LADCO). ERG was provided with vehicle identification numbers (VIN) for vehicles in Indiana.

There were approximately 6.37 million VINs in the statewide data set. Out of these, approximately 1.3 million returned errors. Of these, approximately 200,000 errors were deemed non-critical. This means that the model year and vehicle type assigned to the records were most likely correct despite there being an error in the VIN decoding. These records were included in ERG's analysis. The remaining errors were considered critical enough to call into question the accuracy of the model year and vehicle types. These critical errors were excluded from ERG's analysis.

In all, approximately 5.2 million VINs from around the state were used in the analysis. Each VIN was associated to a specific county. ERG then developed age distributions for each county in the state along with seven combination areas comprised of two or more counties each. Additional information on the methodology used to develop the vehicle age distributions can be found in a May 28, 2010 report written by ERG for LADCO titled MOBILE6 and MOVES Registration Distribution Calculations for Indiana Registration Data. Each set of age distributions was provided in both MOBILE6 and MOVES formats. The MOVES formatted data will be used for these MOVES2010a runs.

Due to limitations in ERG's VIN decoder, it was not possible to develop vehicle age distributions for any source types other than 21, 31, and 32 from the vehicle registration data. For all other source types, MOVES2010a default vehicle age distributions specific to each source types were used. This includes motorcycles and all heavy vehicles. Vehicle age distributions for all source types were kept constant for all future years. The vehicle age distributions for Greene County are shown in Appendix B of this report.

Vehicle Population:

The vehicle populations for source types 21, 31, and 32 were developed directly from the vehicle registration data. All valid records that were identified from the vehicle registration data set were used to determine the number of vehicles for each of these three source types. The VIN decoded data provided to INDOT contained vehicle types according to MOBILE6.2 vehicle categories. There is a direct correlation between MOVES source type 21 (cars) and the MOBILE6.2 vehicle type LDV. All valid LDV records (those records not excluded from the vehicle age distribution analysis due to errors as was described in the section on Vehicle Age Distribution in this report) were counted in the vehicle population.

There is not a direct correlation between MOVES source types 31 (passenger trucks) and 32 (light commercial vehicles) and the MOBILE6.2 light truck vehicle types (LDT1, LDT2, LDT3, and LDT4). All valid records from the vehicle registration data set for MOBILE6.2 light duty trucks were counted in the vehicle populations. The light duty trucks were distributed between MOVES source types 31 and 32 as per the Environmental Protection Agency's (EPA) guidance documented in Table A.1 of the appendix of the Technical Guidance on the Use of MOVES2010 for Emission Inventory Preparation in State Implementation Plans and Transportation Conformity. The guidance provides two sets of factors for distributing MOBILE6.2 light trucks between MOVES source types 31 and 32. These are based on fuel type and are shown in Table 3.

Table 3: Distribution of MOBILE6.2 Light Duty Trucks into MOVES Source Types

Fuel	Source Types	
	31	32
Gas	78%	22%
Diesel	42%	58%

As per ERG's assumption documented in MOBILE6 and MOVES Registration Distribution Calculations for Indiana Registration Data, all light duty trucks that did not have a fuel type identified were counted as diesel trucks. This was to prevent an underestimation of diesel trucks and their related emissions.

Since only valid records from the vehicle registration data were used to calculate vehicle populations for source types 21, 31, and 32, it is reasonable to assume that some of the erroneous records that were discarded from the analysis actually belonged to these source types. The nature of these errors is not that the vehicle does not exist. Rather, it is that the vehicle could not be properly identified with any sense of certainty. It was therefore necessary to adjust the vehicle populations calculated from vehicle registration data to compensate for these discarded records. Based on an analysis of the error rate reported by ERG, vehicle populations for source types 21, 31, and 32 were increased by 5.8 percent.

Vehicle populations were not able to be developed directly from the vehicle registration data for some source types. This was due to the limitations in the VIN decoder used by ERG to process the vehicle registration data. Vehicle populations for all other source types (motorcycles and heavy vehicles) were derived by applying the Mileage Accumulation Rate (MAR) method documented in EPA's Technical Guidance on the Use of MOVES2010 for Emission Inventory Preparation in State Implementation Plans and Transportation Conformity, Section 3.3 Source Type Population.

The default MARs were extracted from MOVES by running MOVES for a single pollutant and a single year for all vehicles, fuels, months, days, and hours. The activity output was set to report both distance and population. A ratio of population to vehicle-miles-traveled (VMT) was calculated from these outputs. The ratios were calculated for each source type.

The Indiana statewide model was used to derive VMTs for the Southwest Indiana Rural Area by MOVES road. Only VMT from the model's highway network corresponding to the analysis area were analyzed. Since the default MARs in MOVES vary by year (but not by location), the MOVES run that was executed to extract the MARs was run for a year consistent with the travel demand model's base year. This resulted in MARs that could be applied directly to the validated VMTs reported by the travel demand model. The travel demand model VMTs were converted into annual VMT and distributed by vehicle types using statewide default VMT distribution factors documented in this report in the section on Default VMT Distributions. The MARs were then applied to the annual vehicle type VMTs. The result was an estimated vehicle population for each source type for the travel demand model's base year. Since the vehicle populations for source types 21, 31, and 32 were developed directly from the vehicle registration data, the population estimates derived for those source types using the MAR method were discarded and the observed data were used instead.

Future year vehicle populations were developed base on socioeconomic growth rates for the maintenance area. The MPO provided base year and horizon year population and employment data for the area. Annual growth rates were calculated for population growth and employment growth individually. Population growth rates were then used to grow the light vehicle populations (source types 11, 21, 31, and 32). Employment growth rates were used to grow the heavy vehicle populations (source types 41, 42, 43, 51, 52, 53, 54, 61, and 62). Vehicle populations were calculated for every year from 2008 to 2040. These vehicle populations for Greene County are shown in Appendix C.

Meteorological Data:

The default set of hourly temperatures and hourly relative humidity was developed using EPA's data converters for changing MOBILE6.2 minimum / maximum temperatures and absolute humidity to the MOVES equivalent formats. The values for the MOBILE6.2 inputs were taken from the Request for Redesignation and Maintenance Plan for Ozone Attainment in the 8-hour Ozone Basic Nonattainment Area, Appendix D, developed by the Indiana Department of Environmental Management in September, 2005. The MOVES formatted meteorological data for Greene County are presented in Appendix D of this report.

Default VMT Distributions:

As part of this effort, INDOT developed a default set of VMT distribution factors by Highway Performance Monitoring System (HPMS) vehicle type and by MOVES road type. These distribution factors were developed by analyzing four consecutive years of continuous traffic count data ending in 2010 for twenty permanent traffic count stations throughout Indiana. The stations were selected to provide a spread of locations corresponding to each of the four MOVES road types. Furthermore, these stations were selected from among sites that were concentrated in nonattainment and maintenance areas. In some cases, data from the requested site were either partially or completely unavailable. An inventory of the sites used to develop the distributions is shown in Table 4.

The vehicle counts reported at each station were provided by vehicle class. These were aggregated into the six basic HPMS vehicle types: motorcycle, passenger car, light truck, bus, single-unit heavy truck, and combination heavy truck. The distribution of VMT by vehicle type was calculated for each road type by taking each vehicle type's percentage of total traffic. These default statewide factors are shown in Appendix E.

Table 4: Inventory of Permanent Count Stations

SiteID	City	County	Location	Road Type	Data Quality
3000	MUNCIE	DELAWARE	SR 332 RM 0.5	3	Closed since 9/26/2006. No data.
3200	CARMEL	HAMILTON	US 31 RM 125.7	5	Good
3300	INDY WEST	MARION	I 465 MM 10.0	4	Closed since 9/1/10
4000	GARY	LAKE	I 80 / I 94 MM 6.0	4	Only 2010 data passed QC
4500	LAPORTE	LAPORTE	SR 2 RM 65.2	3	Good
5600	SELLERSBURG	CLARK	I 65 MM 8.0	4	Bad sensors. Not usable.
6100	EVANSVILLE	GIBSON	I 64 MM 27.9	2	Good
0105	TERRE HAUTE	VIGO	US 41 RM 104.2	3	Good-closed 11/13/08-5/13/09
0201	MIDDLEBURY	ELKHART	SR 120 RM 13.9	3	Good- closed 8/3/10-12/6/10
0210	FORT WAYNE	ALLEN	I-69 0.53 mi N of SR 3	4	Good
0303	MUNCIE	DELAWARE	US 35 RM 44.5	5	Good
0327	DALEVILLE	DELAWARE	I 69 MM 31.4	2	Good-built in 12/10/2007
0403	SOUTH BEND	ST. JOSEPH	US 20 RM 77.1	4	Good
0501	INDY SOUTH	MARION	SR 37 RM 143.5	5	Good-closed 5/22/09-6/1/09
0502	MARTINSVILLE	MORGAN	SR 67 RM 80.6	3	Good
0507	SEYMOUR	JACKSON	I 65 MM 47.0	2	Good
0602	HAZLETON	GIBSON	SR 56 RM 0.6	3	Good
0603	DUBOIS	DUBOIS	SR 56 RM 53.3	3	Good- closed 10/16/08-3/20/09
0608	EVANSVILLE	VANDERBURGH	SR 66 RM 23.5	5	Good
1315	I 70	MARION	I 70 MM 83.5	4	Closed 5/17/06-3/24/08

Default Hourly Distributions:

The same set of twenty permanent traffic count locations discussed in the section on Default VMT Distributions was analyzed to develop a set of hourly distribution factors. These factors were calculated by road type, by HPMS vehicle type. Hourly factors were only calculated for the average weekday. The hourly distribution pattern for each traffic count location was reviewed. Any data that appeared to reflect either an error in the data or an outlier of behavior were removed to prevent bias in the data. The following data were excluded from the analysis:

- Bus data from count stations 0105 and 0603 were excluded due to abnormal midnight peaks in the data;
- An abnormal relationship between passenger cars and light duty trucks at count station 4500 prompted the exclusion of all data from this location due to questions of reliability;
- Peak spreading behavior observed at count station 4000 from traffic related to Chicago was considered to be too unique to be included in a default statewide data set; and,
- Combination truck traffic from station 3200 was excluded due to too much overnight traffic when compared to other vehicles and other stations.

Furthermore, traffic patterns reported by those count stations corresponding to road type 3 (3000, 4500, 0105, 0201, 0502, 0602, and 0603) had a tendency to over represent long distance travel. This was most likely the result of statewide permanent count stations focusing primarily on higher order facilities. Rural collectors and local streets are less likely to reflect long distance travel. The hourly distributions for road type 3 (rural unrestricted access) were adjusted to better account for traffic behavior on lower order facilities in rural areas. A sample of traffic count data from Morgan County, IN was used to introduce more local traffic behavior in the road type 3 hourly distributions. An analysis of the Morgan County data showed a pattern more consistent with AM and PM peaking characteristics reflecting local commuting traffic on collectors and local streets for passenger cars and light duty trucks. The Morgan County data for passenger cars and light duty trucks on collectors and local streets were weighted and added to the road type 3 data set. This analysis assumed that rural collectors and local streets accounted for 20 percent of all VMT for road type 3.

The statewide default hourly distribution factors are presented in Appendix F.

Default Daily and Monthly Distributions:

Default daily and monthly distribution factors were calculated from INDOT's official count adjustment factors which are more commonly used to develop AADT from raw traffic counts. These factors are based on the set of daily traffic counts collected from all permanent count stations throughout the state. The daily distribution factors determine what percentage of VMT is occurring on weekdays and what percentage is occurring on weekends. The monthly distribution factors determine what percentage of annual VMT is occurring in each month of the year. The statewide default daily distribution factors are shown in Appendix G. The statewide default monthly distribution factors are shown in Appendix H.

Ramp Fractions:

The ramp fractions represent the percentage of vehicle-hours-traveled (VHT) for road types 2 (rural restricted access) and 4 (urban restricted access) occurring on the ramps associated with those road types. Since ramps are not a feature coded onto the Indiana statewide model as explicit facilities, the default MOVES ramp fractions of 8% were used.

Appendix A

Number of Runs:

Input Item	Ozone
Years	2002, 2010, 2015, 2020, 2025, 2030, 2035, 2040
Pollutants/ Processes	Volatile Organic Compound (VOC), NOx, and supporting
Meteorology	Summer
# of MOVES runs	8

General Parameters:

MOVES Screen	Input Item	Ozone
Description	Description	User Choice
Scale	Domain/Scale	County
	Calculation Type	Emission Rate
Time Spans	Time Aggregation Level	Hour
	Year	2002, 2010, 2015, 2020, 2025, 2030, 2035, 2040
	Months	July
	Days	Weekday
	Hours	Select All
Geographic Bounds	Geographic Bounds	Greene County
Vehicles	Vehicles	All Gas and Diesel Combinations
Road Type	Road Type	Select All
Pollutants/ Processes	Pollutants/ Processes	VOC, NOx, and supporting
General Output	Database Name	Greene Ozone
	Units	Select "Grams" and "Miles" and "Million BTU"
	Activity	Distance, Population
Output Emissions Detail	On Road	Select "Source Use Type" and "Road Type"

County Data Manager

County Data Manager Input	Excel Sheet Tab Name	Ozone
Source (Vehicle) Type Population	sourceTypeYear	Local Registration for Source Types 21, 31, and 32; Estimated population using default MOVES mileage accumulation rates and local VMT for all other source types. Future year vehicle populations based on population growth rates for source types 11, 21, 31, and 32. Employment growth used for all other source types.
Vehicle Type VMT (by 13 MOVES Vehicle Types)	HPMSVTypeYear	Statewide default vehicle distributions across road types developed by INDOT using an analysis of permanent count station data from a statewide data set.
	MonthVMTFraction	Statewide default monthly fractions developed by INDOT using an analysis of permanent count station data from a statewide data set.
	DayVMTFraction	Statewide default daily fractions developed by INDOT using an analysis of permanent count station data from a statewide data set.
	HourVMTFraction	Statewide default hourly fractions developed by INDOT using an analysis of permanent count station data from a statewide data set.
Average Speed Distribution (% of VHT in each 5 mph speed bin)	avgSpeed Distribution	National defaults.
Road Type Distribution (VMT by 5 MOVES Road Types)	roadType Distribution	Calculated from local VMT data. Use travel demand model base year distributions for all years prior to 2014. Use travel demand model horizon year distributions for 2014 and later to capture new interstate freeway.
Age Distribution (Vehicle Population by Age of Vehicle)	sourceTypeAge Distribution	Local age distributions developed from vehicle registration data for source types 21, 31, and 32. Default MOVES age distributions for all other source types.
Ramp Fraction	RoadType	Based on local travel demand model.
Meteorology Data	ZoneMonthHour	MOBILE6 Summer Met Data Converted to MOVES format
Fuel (% of Market Share by Fuel Type)	FuelFormulation	MOVES Defaults
	FuelSupply	Greene County MOVES Defaults for Summer (check if varies among counties)
I/M Program	IMCoverage	No Program

Appendix B

Vehicle Age Distributions for Greene County:

ageid	Source Types												
	11	21	31	32	41	42	43	51	52	53	54	61	62
0	0.2109690540	0.0165642077	0.0070458404	0.0197280725	0.0643023355	0.0545743076	0.0622220643	0.0494240790	0.0588526168	0.0787544027	0.0615095870	0.0535634660	0.0670845256
1	0.1921154969	0.0426058743	0.0297113752	0.0383897627	0.0626728412	0.0531913309	0.0606452875	0.0481716155	0.0573612230	0.0787586735	0.0589508636	0.0535634660	0.0670845256
2	0.1573471585	0.0486680328	0.0299660441	0.0439882698	0.0624853859	0.0530322328	0.0604638952	0.0480275345	0.0571896519	0.0765290827	0.0597715492	0.0541045093	0.0677621447
3	0.1359771581	0.0432035519	0.0330220713	0.0402559318	0.0624229593	0.0529792497	0.0604034894	0.0479795509	0.0571325186	0.0764526251	0.0597118340	0.0575579884	0.0720873878
4	0.1058454735	0.0455942623	0.0569609508	0.0565182618	0.0617369906	0.0523970560	0.0597397140	0.0474523026	0.0565046834	0.0756124785	0.0590556598	0.0564182312	0.0706599203
5	0.0750909142	0.0486680328	0.0533955857	0.0621167689	0.0559170498	0.0474575929	0.0541080614	0.0429789769	0.0511779950	0.0684845018	0.0534884926	0.0489290859	0.0612802835
6	0.0476805323	0.0561816940	0.0539898132	0.0551852839	0.0468365056	0.0397508123	0.0453212873	0.0359994879	0.0428670388	0.0573630896	0.0448023279	0.0366034411	0.0458432683
7	0.0331026886	0.0544740437	0.0647707980	0.0634497467	0.0425786431	0.0361370941	0.0412011709	0.0327268079	0.0389700355	0.0521482660	0.0407293873	0.0340742206	0.0426755959
8	0.0197278356	0.0578893443	0.0554329372	0.0589176220	0.0468268516	0.0397426124	0.0453119367	0.0359920640	0.0428582007	0.0573512881	0.0447930981	0.0358063100	0.0448486759
9	0.0118473747	0.0683060109	0.0632427844	0.0725139963	0.0534377006	0.0453533365	0.0517089150	0.0410733035	0.0489087688	0.0654479137	0.0511168252	0.0526288382	0.0659139597
10	0.0053251777	0.0649760929	0.0578098472	0.0605171954	0.0532712252	0.0452120443	0.0515478328	0.0409453420	0.0487564067	0.0652440247	0.0509575859	0.0624520143	0.0782168041
11	0.0025378610	0.0575478142	0.0579796265	0.0514529459	0.0407951886	0.0536203440	0.0411075833	0.0313560350	0.0391491717	0.0523881239	0.0302729398	0.0478258601	0.0598985955
12	0.0013011470	0.0601092896	0.0569609508	0.0498533724	0.0331924560	0.0489936472	0.0382933197	0.0255124310	0.0294483131	0.0394065607	0.0466101866	0.0389128550	0.0487354179
13	0.0006124019	0.0467042350	0.0413412564	0.0389229539	0.0277347637	0.0456089741	0.0333751020	0.0545980574	0.0316399801	0.0194774783	0.0291673253	0.0325145854	0.0462990441
14	0.0002476898	0.0505464481	0.0505093379	0.0421221008	0.0364294706	0.0377746681	0.0430863640	0.0632656498	0.0364439725	0.0194681525	0.0347804437	0.0427077419	0.0462072388
15	0.0001527705	0.0396174863	0.0509337861	0.0429218875	0.0283511969	0.0332950401	0.0210164622	0.0395649332	0.0357887614	0.0311848083	0.0335202065	0.0332372597	0.0300444032
16	0.0000668536	0.0375683060	0.0353140917	0.0327912557	0.0235884296	0.0279132162	0.0253671498	0.0341566540	0.0259987277	0.0230196849	0.0233151075	0.0276536739	0.0230524492
17	0.0000299603	0.0313353825	0.0275891341	0.0239938017	0.0175637044	0.0244970846	0.0206833627	0.0146346390	0.0197956396	0.0052258132	0.0206748599	0.0205908442	0.0138452217
18	0.0000127409	0.0246755464	0.0233446520	0.0223940283	0.0201192241	0.0250480695	0.0266888558	0.0401958334	0.0193740288	0.0037212159	0.0155464816	0.0235865809	0.0100066460
19	0.0000055369	0.0218579235	0.0209677419	0.0175953079	0.0225790392	0.0366610768	0.0301447753	0.0342277190	0.0227335396	0.0175775477	0.0203628520	0.0264703224	0.0098603738
20	0.0000022027	0.0169911202	0.0232597623	0.0205278592	0.0226407923	0.0281971934	0.0173882093	0.0270081845	0.0289395633	0.0183874556	0.0265944575	0.0265427135	0.0095755112
21	0.0000010015	0.0135758197	0.0219015280	0.0178619035	0.0212965445	0.0224413685	0.0209032932	0.0367430589	0.0255089927	0.0121624816	0.0238465850	0.0249667984	0.0083402541
22	0.0000005320	0.0100751366	0.0146859083	0.0133297787	0.0221366577	0.0207614938	0.0211741003	0.0294241579	0.0211707159	0.0029207200	0.0232916866	0.0259516972	0.0021970287
23	0.0000002372	0.0075136612	0.0117996604	0.0085310584	0.0187753208	0.0176845935	0.0186862600	0.0367365508	0.0255742899	0.0006595597	0.0173635700	0.0220110680	0.0022815392
24	0.0000001072	0.0063183080	0.0129032258	0.0101306318	0.0165801584	0.0153441343	0.0162223474	0.0195371739	0.0181341022	0.0013228019	0.0186391363	0.0194375881	0.0028947085
25	0.0000000515	0.0055498634	0.0080645161	0.0050653159	0.0130464803	0.0119613578	0.0125269842	0.0202862884	0.0101534224	0.0013255722	0.0189070434	0.0152949162	0.0014963357
26	0.0000000201	0.0025614754	0.0056876061	0.0055985071	0.0052066606	0.0114707358	0.0046276161	0.0058785937	0.0158244798	0.0000000000	0.0123859355	0.0061039775	0.0003051544
27	0.0000000084	0.0016222678	0.0038200340	0.0031991469	0.0044375500	0.0062552616	0.0034269422	0.0066192300	0.0082431519	0.0005853113	0.0073123264	0.0052023202	0.0002365920
28	0.0000000046	0.0016222678	0.0031409168	0.0034657425	0.0038534093	0.0027153367	0.0040227141	0.0058648852	0.0078447522	0.0004224309	0.0040199156	0.0045175071	0.0007539156
29	0.0000000027	0.0017930328	0.0013582343	0.0013329779	0.0050202650	0.0073813428	0.0039557847	0.0014702211	0.0082910352	0.0000000000	0.0005297244	0.0058854602	0.0002483418
30	0.0000000006	0.0152834699	0.0230899830	0.0173287123	0.0041641999	0.0025473919	0.0046291194	0.0021486392	0.0093642209	0.0005969550	0.0069720059	0.0048818593	0.0002641374

Source: Quality assured vehicle registration data for Greene County for source types 21, 32, and 32, MOVES2010a default distributions for all other source types.

Appendix C

Greene County Vehicle Populations:

Vehicle Populations	Source Types												
	11	21	31	32	41	42	43	51	52	53	54	61	62
<i>Annual Populations</i>													
2008	378	12,322	12,510	3,830	5	3	32	4	210	23	48	263	284
2009	380	12,391	12,580	3,852	5	3	33	4	212	23	48	266	287
2010	382	12,461	12,651	3,873	5	3	33	4	214	23	49	269	290
2011	384	12,531	12,722	3,895	5	3	33	4	216	23	49	271	292
2012	386	12,602	12,794	3,917	5	3	34	4	218	24	50	274	295
2013	389	12,673	12,866	3,939	5	3	34	4	220	24	50	277	298
2014	391	12,745	12,939	3,961	5	3	34	4	223	24	51	280	302
2015	393	12,817	13,012	3,984	5	3	35	4	225	24	51	283	305
2016	395	12,889	13,085	4,006	5	3	35	4	227	25	52	286	308
2017	397	12,962	13,159	4,029	5	3	35	4	230	25	52	289	311
2018	400	13,035	13,233	4,052	5	3	36	4	232	25	53	292	314
2019	402	13,108	13,308	4,074	5	3	36	4	234	25	53	294	317
2020	404	13,182	13,383	4,097	5	3	37	4	237	26	54	297	320
2021	406	13,257	13,459	4,121	5	3	37	4	239	26	54	301	324
2022	409	13,331	13,534	4,144	5	3	37	4	242	26	55	304	327
2023	411	13,406	13,611	4,167	5	3	38	4	244	26	55	307	330
2024	413	13,482	13,688	4,191	6	3	38	4	247	27	56	310	334
2025	416	13,558	13,765	4,214	6	3	38	4	249	27	57	313	337
2026	418	13,635	13,842	4,238	6	3	39	4	252	27	57	316	341
2027	420	13,712	13,921	4,262	6	3	39	4	254	27	58	319	344
2028	423	13,789	13,999	4,286	6	3	40	4	257	28	58	323	348
2029	425	13,867	14,078	4,310	6	3	40	5	259	28	59	326	351
2030	428	13,945	14,157	4,335	6	3	40	5	262	28	59	329	355
2031	430	14,023	14,237	4,359	6	3	41	5	265	29	60	333	358
2032	432	14,103	14,318	4,384	6	3	41	5	267	29	61	336	362
2033	435	14,182	14,398	4,408	6	3	42	5	270	29	61	339	366
2034	437	14,262	14,480	4,433	6	3	42	5	273	29	62	343	369
2035	440	14,343	14,561	4,458	6	3	43	5	276	30	63	346	373
2036	442	14,423	14,643	4,483	6	3	43	5	278	30	63	350	377
2037	445	14,505	14,726	4,509	6	3	43	5	281	30	64	354	381
2038	447	14,587	14,809	4,534	6	4	44	5	284	31	65	357	385
2039	450	14,669	14,893	4,560	6	4	44	5	287	31	65	361	389
2040	452	14,752	14,977	4,585	6	4	45	5	290	31	66	364	393

Source: Quality assured vehicle registration data for Greene County for source types 21, 32, and 32, MOVES2010a default mileage accumulation rates for all other source types. Population growth factors are taken from local socioeconomic data forecasts.

Appendix D

Greene County Meteorological Data:

monthID	zoneID	HourID	temperature	relHumidity
7	180550	1	69.6	87.8
7	180550	2	68.4	91.7
7	180550	3	67.4	94.8
7	180550	4	66.7	97.2
7	180550	5	66.2	99.0
7	180550	6	65.5	100.0
7	180550	7	65.0	100.0
7	180550	8	65.4	100.0
7	180550	9	68.1	92.5
7	180550	10	72.4	80.0
7	180550	11	76.7	69.2
7	180550	12	80.4	61.2
7	180550	13	83.7	55.0
7	180550	14	85.5	51.9
7	180550	15	86.1	50.9
7	180550	16	86.3	50.6
7	180550	17	85.9	51.3
7	180550	18	84.6	53.4
7	180550	19	82.5	57.2
7	180550	20	79.7	62.6
7	180550	21	77.0	68.5
7	180550	22	74.6	74.2
7	180550	23	72.9	78.6
7	180550	24	71.2	83.2

Source: Mobile 6.2 reported meteorological data from Appendix D of the *Request for Redesignation and Maintenance Plan for Ozone Attainment in the 8-Hour Ozone Basic Nonattainment Area, Greene County, Indiana* prepared by IDEM on September, 2005 converted using EPA data converter.

Appendix E

Indiana Default VMT Distributions by Vehicle Type and Road Type:

Road Type	Motorcycle	Passenger Car	Light Duty Truck	Bus	Single Unit Truck	Combination Truck
2	0.007033832	0.506408086	0.163786651	0.004174166	0.007773053	0.310824213
3	0.001733929	0.659751199	0.225767175	0.000793168	0.010963315	0.100991214
4	0.003973041	0.569953374	0.254198647	0.002831718	0.009082816	0.159960404
5	0.002785022	0.702754695	0.245240087	0.001402085	0.009764356	0.038053756

Source: Statewide averages developed from Indiana Department of Transportation traffic count data.

Appendix F

Indiana Default Hourly Distribution Factors for Road Type 2 – Rural Restricted Access:

	Source Types													
Hour	11	21	31	32	41	42	43	51	52	53	54	61	62	
1	0.0125903247	0.0101219844	0.0084967341	0.0084967341	0.0254913340	0.0254913340	0.0254913340	0.0126607789	0.0126607789	0.0126607789	0.0126607789	0.0197906895	0.0197906895	
2	0.0104070951	0.0069241973	0.0066421955	0.0066421955	0.0269500431	0.0269500431	0.0269500431	0.0114617645	0.0114617645	0.0114617645	0.0114617645	0.0212124099	0.0212124099	
3	0.0098043179	0.0056567534	0.0061275627	0.0061275627	0.0231103443	0.0231103443	0.0231103443	0.0107741941	0.0107741941	0.0107741941	0.0107741941	0.0201622890	0.0201622890	
4	0.0140329469	0.0069658232	0.0084286563	0.0084286563	0.0234460042	0.0234460042	0.0234460042	0.0128724692	0.0128724692	0.0128724692	0.0128724692	0.0213065902	0.0213065902	
5	0.0165212405	0.0100941552	0.0134026652	0.0134026652	0.0244090660	0.0244090660	0.0244090660	0.0174195788	0.0174195788	0.0174195788	0.0174195788	0.0250478552	0.0250478552	
6	0.0312047458	0.0241732202	0.0316551315	0.0316551315	0.0322923692	0.0322923692	0.0322923692	0.0261005783	0.0261005783	0.0261005783	0.0261005783	0.0304976568	0.0304976568	
7	0.0399082603	0.0390974746	0.0481531313	0.0481531313	0.0302344914	0.0302344914	0.0302344914	0.0420450985	0.0420450985	0.0420450985	0.0420450985	0.0339947725	0.0339947725	
8	0.0482864956	0.0528758381	0.0535145983	0.0535145983	0.0386071681	0.0386071681	0.0386071681	0.0556119122	0.0556119122	0.0556119122	0.0556119122	0.0383435322	0.0383435322	
9	0.0472316355	0.0493101459	0.0541442978	0.0541442978	0.0454144773	0.0454144773	0.0454144773	0.0647383083	0.0647383083	0.0647383083	0.0647383083	0.0447350945	0.0447350945	
10	0.0521292001	0.0488627065	0.0570682751	0.0570682751	0.0533197396	0.0533197396	0.0533197396	0.0711110358	0.0711110358	0.0711110358	0.0711110358	0.0517738130	0.0517738130	
11	0.0559204481	0.0513700269	0.0575854739	0.0575854739	0.0576707709	0.0576707709	0.0576707709	0.0730230234	0.0730230234	0.0730230234	0.0730230234	0.0557712484	0.0557712484	
12	0.0572822100	0.0533048469	0.0582753930	0.0582753930	0.0549541212	0.0549541212	0.0549541212	0.0731872952	0.0731872952	0.0731872952	0.0731872952	0.0571435296	0.0571435296	
13	0.0592008057	0.0551586141	0.0599414146	0.0599414146	0.0541541840	0.0541541840	0.0541541840	0.0739324454	0.0739324454	0.0739324454	0.0739324454	0.0567014536	0.0567014536	
14	0.0615145144	0.0595500442	0.0635019874	0.0635019874	0.0570747392	0.0570747392	0.0570747392	0.0746488056	0.0746488056	0.0746488056	0.0746488056	0.0567500887	0.0567500887	
15	0.0647783324	0.0662712693	0.0683897966	0.0683897966	0.0551925339	0.0551925339	0.0551925339	0.0704234655	0.0704234655	0.0704234655	0.0704234655	0.0578234055	0.0578234055	
16	0.0713500739	0.0764876319	0.0772110428	0.0772110428	0.0551956709	0.0551956709	0.0551956709	0.0628601912	0.0628601912	0.0628601912	0.0628601912	0.0577540296	0.0577540296	
17	0.0754978425	0.0847160034	0.0792545794	0.0792545794	0.0557979766	0.0557979766	0.0557979766	0.0534712990	0.0534712990	0.0534712990	0.0534712990	0.0562910814	0.0562910814	
18	0.0693763461	0.0821220539	0.0693254052	0.0693254052	0.0501011685	0.0501011685	0.0501011685	0.0436895095	0.0436895095	0.0436895095	0.0436895095	0.0527021980	0.0527021980	
19	0.0542187052	0.0620082513	0.0521045300	0.0521045300	0.0459665909	0.0459665909	0.0459665909	0.0363413126	0.0363413126	0.0363413126	0.0363413126	0.0502215100	0.0502215100	
20	0.0432143461	0.0459015588	0.0390794599	0.0390794599	0.0462959768	0.0462959768	0.0462959768	0.0312048570	0.0312048570	0.0312048570	0.0312048570	0.0467116534	0.0467116534	
21	0.0358137860	0.0372595462	0.0311015284	0.0311015284	0.0418602463	0.0418602463	0.0418602463	0.0261242877	0.0261242877	0.0261242877	0.0261242877	0.0421311043	0.0421311043	
22	0.0294294934	0.0312744978	0.0249803003	0.0249803003	0.0366496745	0.0366496745	0.0366496745	0.0215822587	0.0215822587	0.0215822587	0.0215822587	0.0381387483	0.0381387483	
23	0.0223450238	0.0235734666	0.0182964081	0.0182964081	0.0347517842	0.0347517842	0.0347517842	0.0189759266	0.0189759266	0.0189759266	0.0189759266	0.0342326572	0.0342326572	
24	0.0179418099	0.0169198902	0.0133194323	0.0133194323	0.0310595247	0.0310595247	0.0310595247	0.0157396039	0.0157396039	0.0157396039	0.0157396039	0.0307625891	0.0307625891	

Source: Statewide averages developed from Indiana Department of Transportation traffic count data.

Indiana Default Hourly Distribution Factors for Road Type 3 – Rural Unrestricted Access:

	Source Types													
Hour	11	21	31	32	41	42	43	51	52	53	54	61	62	
1	0.0040299464	0.0073183989	0.0054636028	0.0054636028	0.0036998387	0.0036998387	0.0036998387	0.0043986387	0.0043986387	0.0043986387	0.0043986387	0.0164160879	0.0164160879	
2	0.0040299464	0.0041131835	0.0034619242	0.0034619242	0.0045536477	0.0045536477	0.0045536477	0.0041872686	0.0041872686	0.0041872686	0.0041872686	0.0167510731	0.0167510731	
3	0.0041817017	0.0032797517	0.0030691885	0.0030691885	0.0046485153	0.0046485153	0.0046485153	0.0073497934	0.0073497934	0.0073497934	0.0073497934	0.0165479051	0.0165479051	
4	0.0053114356	0.0057247729	0.0048082254	0.0048082254	0.0039844417	0.0039844417	0.0039844417	0.0084039684	0.0084039684	0.0084039684	0.0084039684	0.0195836328	0.0195836328	
5	0.0140963815	0.0151258840	0.0143177758	0.0143177758	0.0082534864	0.0082534864	0.0082534864	0.0153176438	0.0153176438	0.0153176438	0.0153176438	0.0258467673	0.0258467673	
6	0.0292719118	0.0316782840	0.0354335195	0.0354335195	0.0293141068	0.0293141068	0.0293141068	0.0299744215	0.0299744215	0.0299744215	0.0299744215	0.0344245647	0.0344245647	
7	0.0397598894	0.0468485516	0.0516314034	0.0516314034	0.0496157860	0.0496157860	0.0496157860	0.0557776279	0.0557776279	0.0557776279	0.0557776279	0.0440469233	0.0440469233	
8	0.0448183995	0.0633910409	0.0636280878	0.0636280878	0.0768428043	0.0768428043	0.0768428043	0.0778885464	0.0778885464	0.0778885464	0.0778885464	0.0512793380	0.0512793380	
9	0.0370114322	0.0460357746	0.0558633273	0.0558633273	0.1049236315	0.1049236315	0.1049236315	0.0853025536	0.0853025536	0.0853025536	0.0853025536	0.0568238265	0.0568238265	
10	0.0416989849	0.0427840868	0.0547852386	0.0547852386	0.1065363817	0.1065363817	0.1065363817	0.0879727734	0.0879727734	0.0879727734	0.0879727734	0.0599756501	0.0599756501	
11	0.0509391967	0.0444183487	0.0568454275	0.0568454275	0.1186794422	0.1186794422	0.1186794422	0.0886336394	0.0886336394	0.0886336394	0.0886336394	0.0633505956	0.0633505956	
12	0.0563855259	0.0512966366	0.0618918527	0.0618918527	0.1154539418	0.1154539418	0.1154539418	0.0859045570	0.0859045570	0.0859045570	0.0859045570	0.0635864154	0.0635864154	
13	0.0638721209	0.0537246907	0.0610818211	0.0610818211	0.0999905132	0.0999905132	0.0999905132	0.0858537212	0.0858537212	0.0858537212	0.0858537212	0.0644099711	0.0644099711	
14	0.0708697265	0.0545001954	0.0632013074	0.0632013074	0.0864244379	0.0864244379	0.0864244379	0.0852196109	0.0852196109	0.0852196109	0.0852196109	0.0637040231	0.0637040231	
15	0.0774626513	0.0656899700	0.0681384267	0.0681384267	0.0592922873	0.0592922873	0.0592922873	0.0774551039	0.0774551039	0.0774551039	0.0774551039	0.0609657913	0.0609657913	
16	0.0849155229	0.0775959037	0.0765115831	0.0765115831	0.0295038421	0.0295038421	0.0295038421	0.0663381066	0.0663381066	0.0663381066	0.0663381066	0.0570058311	0.0570058311	
17	0.0916096179	0.0871890696	0.0796014405	0.0796014405	0.0317806660	0.0317806660	0.0317806660	0.0433522764	0.0433522764	0.0433522764	0.0433522764	0.0517440242	0.0517440242	
18	0.0855899909	0.0856725476	0.0737419189	0.0737419189	0.0184043260	0.0184043260	0.0184043260	0.0290727541	0.0290727541	0.0290727541	0.0290727541	0.0467760851	0.0467760851	
19	0.0685259502	0.0656330958	0.0545272751	0.0545272751	0.0120481928	0.0120481928	0.0120481928	0.0187744815	0.0187744815	0.0187744815	0.0187744815	0.0413186686	0.0413186686	
20	0.0503658989	0.0457301992	0.0390975413	0.0390975413	0.0118584575	0.0118584575	0.0118584575	0.0129711680	0.0129711680	0.0129711680	0.0129711680	0.0364127078	0.0364127078	
21	0.0353421239	0.0400621944	0.0294058171	0.0294058171	0.0096765013	0.0096765013	0.0096765013	0.0106166656	0.0106166656	0.0106166656	0.0106166656	0.0318882915	0.0318882915	
22	0.0217853168	0.0289018238	0.0218457686	0.0218457686	0.0061663979	0.0061663979	0.0061663979	0.0079972816	0.0079972816	0.0079972816	0.0079972816	0.0290264055	0.0290264055	
23	0.0119380838	0.0205028665	0.0136731866	0.0136731866	0.0048382506	0.0048382506	0.0048382506	0.0061564888	0.0061564888	0.0061564888	0.0061564888	0.0255574344	0.0255574344	
24	0.0061882440	0.0127827290	0.0079763402	0.0079763402	0.0035101034	0.0035101034	0.0035101034	0.0050809093	0.0050809093	0.0050809093	0.0050809093	0.0225579868	0.0225579868	

Source: Statewide averages developed from Indiana Department of Transportation traffic count data.

Indiana Default Hourly Distribution Factors for Road Type 4 –Urban Restricted Access:

	Source Types												
Hour	11	21	31	32	41	42	43	51	52	53	54	61	62
1	0.0114838630	0.0104500369	0.0090397680	0.0090397680	0.0186488577	0.0186488577	0.0186488577	0.0090968023	0.0090968023	0.0090968023	0.0090968023	0.0194173119	0.0194173119
2	0.0071800855	0.0062500477	0.0056304309	0.0056304309	0.0163411464	0.0163411464	0.0163411464	0.0080102618	0.0080102618	0.0080102618	0.0080102618	0.0198708197	0.0198708197
3	0.0063691205	0.0049689741	0.0046493622	0.0046493622	0.0157775876	0.0157775876	0.0157775876	0.0078361983	0.0078361983	0.0078361983	0.0078361983	0.0186489893	0.0186489893
4	0.0073777516	0.0058427101	0.0058801326	0.0058801326	0.0161766037	0.0161766037	0.0161766037	0.0066827231	0.0066827231	0.0066827231	0.0066827231	0.0198231326	0.0198231326
5	0.0108139353	0.0098545059	0.0108999000	0.0108999000	0.0221330492	0.0221330492	0.0221330492	0.0117453229	0.0117453229	0.0117453229	0.0117453229	0.0232515449	0.0232515449
6	0.0235457656	0.0231603609	0.0263517526	0.0263517526	0.0299755654	0.0299755654	0.0299755654	0.0204013312	0.0204013312	0.0204013312	0.0204013312	0.0294638153	0.0294638153
7	0.0461747881	0.0495085217	0.0542414568	0.0542414568	0.0393812372	0.0393812372	0.0393812372	0.0435263184	0.0435263184	0.0435263184	0.0435263184	0.0375553768	0.0375553768
8	0.0567226756	0.0788353145	0.0674512195	0.0674512195	0.0503870867	0.0503870867	0.0503870867	0.0659533819	0.0659533819	0.0659533819	0.0659533819	0.0446175773	0.0446175773
9	0.0493171440	0.0638279223	0.0614111771	0.0614111771	0.0589556475	0.0589556475	0.0589556475	0.0756333178	0.0756333178	0.0756333178	0.0756333178	0.0515843704	0.0515843704
10	0.0406144957	0.0466481655	0.0536303211	0.0536303211	0.0581555587	0.0581555587	0.0581555587	0.0790728466	0.0790728466	0.0790728466	0.0790728466	0.0553194565	0.0553194565
11	0.0415130748	0.0428102606	0.0512594850	0.0512594850	0.0616027281	0.0616027281	0.0616027281	0.0824723032	0.0824723032	0.0824723032	0.0824723032	0.0583081277	0.0583081277
12	0.0465166969	0.0452333632	0.0529793024	0.0529793024	0.0644246353	0.0644246353	0.0644246353	0.0820640679	0.0820640679	0.0820640679	0.0820640679	0.0589378233	0.0589378233
13	0.0517959630	0.0478487216	0.0547982766	0.0547982766	0.0637644078	0.0637644078	0.0637644078	0.0808088903	0.0808088903	0.0808088903	0.0808088903	0.0575925555	0.0575925555
14	0.0566713893	0.0502151226	0.0576880799	0.0576880799	0.0625591325	0.0625591325	0.0625591325	0.0811795580	0.0811795580	0.0811795580	0.0811795580	0.0571667797	0.0571667797
15	0.0671882913	0.0580384620	0.0656779676	0.0656779676	0.0619482678	0.0619482678	0.0619482678	0.0795090490	0.0795090490	0.0795090490	0.0795090490	0.0573429674	0.0573429674
16	0.0810035452	0.0715596945	0.0786905659	0.0786905659	0.0609466141	0.0609466141	0.0609466141	0.0727723312	0.0727723312	0.0727723312	0.0727723312	0.0567213465	0.0567213465
17	0.0863864724	0.0838541123	0.0821371575	0.0821371575	0.0577256909	0.0577256909	0.0577256909	0.0563364761	0.0563364761	0.0563364761	0.0563364761	0.0551911545	0.0551911545
18	0.0843264717	0.0874512168	0.0756929494	0.0756929494	0.0510164625	0.0510164625	0.0510164625	0.0371719560	0.0371719560	0.0371719560	0.0371719560	0.0531125437	0.0531125437
19	0.0645951265	0.0604364374	0.0543673700	0.0543673700	0.0450990958	0.0450990958	0.0450990958	0.0249336618	0.0249336618	0.0249336618	0.0249336618	0.0487199307	0.0487199307
20	0.0469536991	0.0424749554	0.0373951308	0.0373951308	0.0384927066	0.0384927066	0.0384927066	0.0188134711	0.0188134711	0.0188134711	0.0188134711	0.0432101938	0.0432101938
21	0.0373781148	0.0353280630	0.0293181427	0.0293181427	0.0322318571	0.0322318571	0.0322318571	0.0162446774	0.0162446774	0.0162446774	0.0162446774	0.0390319248	0.0390319248
22	0.0316564842	0.0313403787	0.0249971308	0.0249971308	0.0282046747	0.0282046747	0.0282046747	0.0142456600	0.0142456600	0.0142456600	0.0142456600	0.0355118446	0.0355118446
23	0.0245992722	0.0251562568	0.0203505544	0.0203505544	0.0242700475	0.0242700475	0.0242700475	0.0124474209	0.0124474209	0.0124474209	0.0124474209	0.0317711657	0.0317711657
24	0.0198157539	0.0189063955	0.0154623663	0.0154623663	0.0217813392	0.0217813392	0.0217813392	0.0110419727	0.0110419727	0.0110419727	0.0110419727	0.0278292477	0.0278292477

Source: Statewide averages developed from Indiana Department of Transportation traffic count data.

Indiana Default Hourly Distribution Factors for Road Type 5—Urban Unrestricted Access:

Hour	Source Types													
	11	21	31	32	41	42	43	51	52	53	54	61	62	
1	0.0092279794	0.0085268711	0.0060669694	0.0060669694	0.0126828270	0.0126828270	0.0126828270	0.0037158531	0.0037158531	0.0037158531	0.0037158531	0.0106396358	0.0106396358	
2	0.0055316691	0.0048527626	0.0037675180	0.0037675180	0.0099485186	0.0099485186	0.0099485186	0.0038117041	0.0038117041	0.0038117041	0.0038117041	0.0124309233	0.0124309233	
3	0.0047273286	0.0037895145	0.0033129405	0.0033129405	0.0069482800	0.0069482800	0.0069482800	0.0044165887	0.0044165887	0.0044165887	0.0044165887	0.0121505035	0.0121505035	
4	0.0047017359	0.0044201159	0.0042394230	0.0042394230	0.0113599945	0.0113599945	0.0113599945	0.0056282193	0.0056282193	0.0056282193	0.0056282193	0.0144699998	0.0144699998	
5	0.0081859928	0.0079416389	0.0087215410	0.0087215410	0.0153898606	0.0153898606	0.0153898606	0.0086545038	0.0086545038	0.0086545038	0.0086545038	0.0210508569	0.0210508569	
6	0.0225361588	0.0203863353	0.0238668712	0.0238668712	0.0256929528	0.0256929528	0.0256929528	0.0191822890	0.0191822890	0.0191822890	0.0191822890	0.0299165403	0.0299165403	
7	0.0435184779	0.0478282898	0.0541952158	0.0541952158	0.0448331117	0.0448331117	0.0448331117	0.0418068371	0.0418068371	0.0418068371	0.0418068371	0.0436775030	0.0436775030	
8	0.0602121997	0.0721456866	0.0675347974	0.0675347974	0.0691895946	0.0691895946	0.0691895946	0.0731482386	0.0731482386	0.0731482386	0.0731482386	0.0588646976	0.0588646976	
9	0.0556311148	0.0567013667	0.0643660182	0.0643660182	0.0747059425	0.0747059425	0.0747059425	0.0880926125	0.0880926125	0.0880926125	0.0880926125	0.0640862836	0.0640862836	
10	0.0485821670	0.0466493163	0.0603283916	0.0603283916	0.0803995772	0.0803995772	0.0803995772	0.0921313810	0.0921313810	0.0921313810	0.0921313810	0.0680944168	0.0680944168	
11	0.0495985610	0.0468148434	0.0590657789	0.0590657789	0.0774061573	0.0774061573	0.0774061573	0.0943973720	0.0943973720	0.0943973720	0.0943973720	0.0703404942	0.0703404942	
12	0.0573056055	0.0516032787	0.0615645883	0.0615645883	0.0753332651	0.0753332651	0.0753332651	0.0911430924	0.0911430924	0.0911430924	0.0911430924	0.0698309800	0.0698309800	
13	0.0607752380	0.0555323143	0.0626732860	0.0626732860	0.0739763390	0.0739763390	0.0739763390	0.0895629476	0.0895629476	0.0895629476	0.0895629476	0.0685413889	0.0685413889	
14	0.0609214817	0.0552211160	0.0629887267	0.0629887267	0.0779993863	0.0779993863	0.0779993863	0.0912650000	0.0912650000	0.0912650000	0.0912650000	0.0671175363	0.0671175363	
15	0.0649907135	0.0607579027	0.0667909366	0.0667909366	0.0761037810	0.0761037810	0.0761037810	0.0905726397	0.0905726397	0.0905726397	0.0905726397	0.0651260461	0.0651260461	
16	0.0724418316	0.0715477952	0.0751790074	0.0751790074	0.0728035185	0.0728035185	0.0728035185	0.0775387708	0.0775387708	0.0775387708	0.0775387708	0.0605241028	0.0605241028	
17	0.0773519648	0.0803647101	0.0757034489	0.0757034489	0.0526405510	0.0526405510	0.0526405510	0.0464337395	0.0464337395	0.0464337395	0.0464337395	0.0557685235	0.0557685235	
18	0.0770777578	0.0832250581	0.0684911688	0.0684911688	0.0347686748	0.0347686748	0.0347686748	0.0260342365	0.0260342365	0.0260342365	0.0260342365	0.0506461891	0.0506461891	
19	0.0635977420	0.0637849687	0.0526386278	0.0526386278	0.0285090860	0.0285090860	0.0285090860	0.0173341336	0.0173341336	0.0173341336	0.0173341336	0.0402747366	0.0402747366	
20	0.0483079600	0.0462284324	0.0372839274	0.0372839274	0.0220585728	0.0220585728	0.0220585728	0.0112536468	0.0112536468	0.0112536468	0.0112536468	0.0310667712	0.0310667712	
21	0.0383158572	0.0386568197	0.0292289942	0.0292289942	0.0174082029	0.0174082029	0.0174082029	0.0076615624	0.0076615624	0.0076615624	0.0076615624	0.0268533367	0.0268533367	
22	0.0305027859	0.0325107827	0.0236169348	0.0236169348	0.0137124544	0.0137124544	0.0137124544	0.0062358957	0.0062358957	0.0062358957	0.0062358957	0.0231915644	0.0231915644	
23	0.0214502991	0.0238017051	0.0170601049	0.0170601049	0.0139442910	0.0139442910	0.0139442910	0.0053276381	0.0053276381	0.0053276381	0.0053276381	0.0193751364	0.0193751364	
24	0.0145073780	0.0159083752	0.0113147831	0.0113147831	0.0121850602	0.0121850602	0.0121850602	0.0046510979	0.0046510979	0.0046510979	0.0046510979	0.0159618330	0.0159618330	

Source: Statewide averages developed from Indiana Department of Transportation traffic count data.

Appendix G

Indiana Default Daily Distribution Factors:

monthID	dayID	
	2	5
1	0.2325411725	0.7674588275
2	0.2380547378	0.7619452622
3	0.2393402049	0.7606597951
4	0.2396052454	0.7603947546
5	0.2484757701	0.7515242299
6	0.2489743665	0.7510256335
7	0.2481153021	0.7518846979
8	0.2527028648	0.7472971352
9	0.2496078420	0.7503921580
10	0.2462808693	0.7537191307
11	0.2439742406	0.7560257594
12	0.2258784720	0.7741215280

Source: Statewide averages developed from Indiana Department of Transportation traffic count data.

Appendix H

Indiana Default Monthly Distribution Factors:

monthID	monthVMTFraction
1	0.0733424010
2	0.0693661929
3	0.0827036024
4	0.0831789580
5	0.0891346903
6	0.0888150873
7	0.0907968617
8	0.0918542094
9	0.0854175366
10	0.0875162272
11	0.0812354405
12	0.0766387926

Source: Statewide averages developed from Indiana Department of Transportation traffic count data.

Appendix I

Greene County Ramp Fractions:

Road Type	Ramp Fraction
2	1.55%
4	8%

Source: Analysis of VHT from MOVES defaults for urban roads and prevailing rural ramp fractions in Indiana rural roads.

Appendix B

Greene County, Indiana, Maintenance Area Interagency Consultation Group Meeting Minutes/Summary

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Interagency Consultation Group (ICG) Conference Call Minutes

For the MOBILE6.0 to MOVES MVEB Replacement Update Related to the Greene County, Indiana, Maintenance Area under the 1997 8-Hour Ozone Standard

ICG Conference Call Date and Time

- March 22, 2013 at 1:00 p.m. Eastern Standard Time

ICG Attendees

- Shawn Seals (IDEM), Gale Ferris (IDEM), Anthony Maietta (EPA), Greg Katter (INDOT), Jay Mitchell (INDOT), Steve Smith (INDOT), Frank Baukert (INDOT), Larry Heil (FHWA), Joyce Newland (FHWA), and Roberto Miguel (CDM Smith)

ICG Discussion Topics and Conclusions

1. Various mobile source margins of safety were discussed for the Ozone MVEB Replacement submittal for Greene County, Indiana.
 - A. After discussion, the consensus of the ICG was that as long as the a 15% mobile source margin of safety for VOC and NO_x emissions does not result in an exceedance of the all sources margins of safety, it was reasonable and appropriate for inclusion in MVEB replacement submittal.

Appendix C

Greene County, Indiana, Maintenance Area under the 1997 8-Hour Ozone Standard Public Participation Documentation

- **Legal Notice of Public Hearing**
 - **IDEM Webmaster Certification of Legal Notice Publication**
 - **Screenshot Verification of Legal Notice Posting on IDEM Website**
- **Summary of Comments and Responses thereto**

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LEGAL NOTICE OF PUBLIC HEARING

Motor Vehicle Emission Budget Replacement Update to the Maintenance Plan for the 1997 8-Hour Ozone Standard for Greene County, Indiana

Notice is hereby given under 40 CFR 51.102 that the Indiana Department of Environmental Management (IDEM) is accepting written comment and providing an opportunity for public hearing regarding the Motor Vehicle Emission Budget (MVEB) replacement update to the maintenance plan for the 1997 8-hour ozone standard for Greene County, Indiana. Onroad emissions for the original submittal were calculated using the MOBILE6.2 mobile model and are now being replaced with the United States Environmental Protection Agency's (U.S. EPA's) recently adopted Motor Vehicle Emissions Simulator (MOVES) mobile model. All interested persons are invited and will be given reasonable opportunity to express their views concerning the submittal of the proposed MVEB replacement update to the Greene County, Indiana, maintenance area for the 1997 8-hour ozone standard.

The purpose of this notice is to solicit public comment on Indiana's proposed MVEB replacement update. Greene County, Indiana, was designated as nonattainment for the 1997 8-hour ozone standard and is subject to the requirements of Section 172 of the Clean Air Act (CAA). One of the compliance requirements mandated by Section 175A(b) of the CAA, is the development of a plan demonstrating that maintenance areas will continue to meet the 1997 8-hour ozone standard for the next ten years, which includes MVEBs for onroad sources, beyond the current maintenance period. This submittal of the proposed MVEB replacement update to the *Request for Redesignation and Maintenance Plan for Ozone Attainment in the 8-Hour Ozone Basic Nonattainment Area* for Greene County, Indiana, maintenance area that was originally submitted on September 6, 2005, is being drafted and submitted consistent with U.S. EPA guidance. Upon completion of this public notice process, the MOBILE6.2-based to MOVES-based MVEB replacement update will be submitted to U.S. EPA for approval into the State Implementation Plan.

Copies of the draft documents will be available on or before May 24, 2013, to any person upon request and at the following locations:

- Indiana Department of Environmental Management, Office of Air Quality, Indiana Government Center North, 100 North Senate Avenue, Room N1003, Indianapolis, Indiana.
- Linton Public Library, 95 S.E. 1st Street, Linton, Indiana.

The draft documents will also be available on the following web page:

<http://www.in.gov/idem/airquality/2400.htm>

An electronic version of all MOVES mobile model input and output files will be available at the public hearing, if held, or upon request.

Any person may submit written comments on the MVEB replacement update to the Greene County, Indiana, 1997 8-hour ozone maintenance area on or before June 24, 2013. Written comments should be directed to Mr. Gale Ferris, Mail Code 61-50, Office of Air Quality, Indiana Department of Environmental Management, 100 North Senate Avenue, Indianapolis, Indiana 46204; or fax (317) 233-5967; or email at gferris@idem.in.gov. Interested parties may also present oral or written comments at the public hearing, if held. Oral statements will be heard, but for the accuracy of the record, statements should be submitted in writing. Written statements may be submitted to the attendant designated to receive written comments at the public hearing.

A public hearing on the MVEB replacement update to the maintenance plan for the 1997 8-hour ozone standard for Greene County, Indiana will be held if a public hearing request is received by June 5, 2013. A hearing has been scheduled for June 12, 2013. The meeting will convene at 6:00 p.m. (local time) at the Linton Public Library, 95 S.E. 1st Street, Linton, Indiana 47441. If a request for a public hearing is not received by June 5, 2013, the hearing will be cancelled. Interested parties can check the State of Indiana's online calendar at <http://www.in.gov/activecalendar/EventList.aspx> or contact Mr. Gale Ferris at (317) 234-3653, after June 5, 2013, to see if the hearing has been cancelled or will convene.

A transcript of the hearing and all written submissions provided at the public hearing shall be open to public inspection at IDEM and copies may be made available to any person upon payment of reproduction costs. Any person heard or represented at the hearing or requesting notice shall be given written notice of actions resulting from the hearing.

For additional information contact Mr. Gale Ferris, at the Indiana Department of Environmental Management, Office of Air Quality, Room N1001, Indiana Government Center North, 100 North Senate Avenue, Indianapolis, IN 46204 or call (317) 234-3653 or (800) 451-6027 ext. 4-3653 (in Indiana).

Individuals requiring reasonable accommodations for participation in this hearing, if held, should contact the IDEM Americans with Disabilities Act (ADA) coordinator at:

Attn: ADA Coordinator
Indiana Department of Environmental Management – Mail Code 50-10
100 North Senate Avenue
Indianapolis, IN 46204-2251

Or call (317) 233-1785 (voice) or (317) 232-6565 (TDD). Please provide a minimum of 72 hours notification.

MOBILE6.0 to MOVES MVEB Replacement Update to the Maintenance Plan for the 1997 8-Hour Ozone Standard for Greene County, Indiana

Summary/Response to Comments Received at the Public Hearing

IDEM provided an opportunity for a public hearing on the MVEB replacement update to the Greene County, Indiana maintenance area if a public hearing request was received by June 5, 2013. A hearing was scheduled for June 12, 2013. No request for a public hearing was received and the hearing was cancelled.

Summary/Response to Comments Received During the Comment Period

IDEM requested public comment on the MVEB replacement update to the Greene County, Indiana maintenance area from May 24, 2013 to June 24, 2013. IDEM received comments from the following parties:

William A. Boyd, Concerned Citizen	Boyd
Jess A. Gwinn, Concerned Citizen	Gwinn
Tim Maloney, Senior Policy Director, Hoosier Environmental Council	Maloney

Comment: Page 1 of the legal notice states that “Onroad emissions for the original submittal were calculated using the MOBILE6.2 mobile model and are now being replaced with the United States Environmental Protection Agency’s (U.S. EPA’s) recently adopted Motor Vehicle Emissions Simulator (MOVES) mobile model”. MOBILE6.0 was released by U.S. EPA on January 27, 2002, and has been required to be used in transportation conformity analyses since January 27, 2004 throughout the United States. What is meant by “original submittal”, since MOBILE6.2 did not exist in 1997? (Boyd)

Response: The legal notice is referring to the final 8-hour Ozone Redesignation Petition and Maintenance Plan for Greene County, Indiana submitted to U.S. EPA on September 5, 2005. Onroad emissions included in the original submittal were calculated using U.S. EPA’s MOBILE6.0 mobile model, not MOBILE6.2. The MVEB replacement update has been revised accordingly.

Comment: IDEM’s web page listed in the legal notice only contains historical documentation and the draft MVEB replacement update. If there is no other supporting documentation available for public review, U.S. EPA should stamp the submittal as “Revise & Re-submit” for lack of full documentation. (Boyd)

Response: IDEM’s web page includes all historical SIP documentation for Greene County, Indiana, including a copy of the draft MVEB replacement update and all supporting documentation sent to U.S. EPA for review and approval on May 20, 2013. U.S. EPA has recently approved a number of MVEB replacement updates for other areas of the state using similar documentation. As such, IDEM does not believe any additional documentation is required for this submittal at this time.

Comment: U.S. EPA has developed separate revised AP-42 methodologies for estimating re-entrained road dust from paved and unpaved roads. Greene County has many unpaved roads. It does not appear AP-42 was factored into the MVEB replacement update. While AP-42 addresses fugitive dust emissions, these emissions contribute to the over-all air quality in the county and should be figured into the particulate count. (Boyd)

Response: Consistent with the federal implementation rule for 8-hour ozone, IDEM does not consider particulate matter, including fugitive dust emissions, to be a significant contributor to ground-level ozone concentrations. As such, particulate matter emissions have not been included in the MVEB replacement update.

Comment: Various tables in the MVEB replacement update contain strike-outs. It is assumed these existing MOBILE-based emission values are being replaced with MOVES-based values. However, there are no notes regarding what the strikeouts represent, nor is there an in-depth discussion of the changes in the entries, other than the values were generated using the new MOVES model. (Boyd)

Response: The strike-outs represent MOBILE-based VOC and NO_x onroad emission estimates and MVEBs that are being updated using U.S. EPA's MOVES model-produced emission factors and data extracted from the area's travel-demand model. A footnote has been added to these tables to provide additional clarification regarding this matter.

Comment: Page 2 of the MVEB replacement update states that "Growth and control strategy assumptions for non-mobile sources (i.e. area, nonroad, and point) from the original submittal for the years 2002, 2010, and 2015 were developed before the economic challenges of the last several years. Because of this, the factors included in the original submittal may project more growth than will actually occur in the future. As a result, the growth and control strategy assumptions for the non-mobile sources for the years 2002, 2010, and 2015 continue to be valid and do not affect the overall conclusions of the plan." This statement cannot be accurate as it fails to take into account the projections included in the Greene County Comprehensive Plan, which shows the economic and transportation character of the county has been altered significantly. As such, revised emission estimates for all source categories need to be included in the MVEB replacement update. (Boyd)

Response: MVEBs are being revised in anticipation of the mandatory use of the MOVES model in future transportation conformity determinations. This submittal is not intended to update or revise any other data from the original SIP. U.S. EPA and LADCO modeling for future year design values have consistently shown that existing (e.g. NO_x SIP Call, CAIR, Tier 2 Vehicle Standards, Heavy-Duty Gasoline and Diesel Highway Vehicle Standards, Large Non-Road Diesel Engine Standards, Non-Road Spark-Ignition Engines and Recreational Engines Standard) and future (e.g. CASPR, the Portland Cement Rule, and additional Light and Heavy Duty Vehicle Standards) national control measures being implemented over the next several years will ensure that Greene County will continue to maintain compliance with the standard with an increasing margin of safety. If emissions start increasing or monitored violations occur, as part of the maintenance plan, IDEM commits to taking swift action in order to reverse the trend and take whatever action is necessary to ensure that standard is reattained as expeditiously as possible. As such, IDEM believes the SIP continues to meet all applicable Clean Air Act

(CAA) requirements as the revised emission inventories clearly illustrate that total NO_x and VOC emissions in the Greene County, Indiana, 1997 8-hour ozone maintenance area will continue to decline leading to local reductions between 2002 (base year) and 2015 (maintenance plan horizon budget year).

Comment: There is no attempt in the submittal to move Greene County towards a 2-hour window or even to bring the county into full compliance. (Boyd)

Comment: I am a resident of Greene County and am very concerned that the county has been in non-attainment status for many years. There doesn't seem to be any effort to alleviate this status. In fact, the opposite appears to be occurring with the construction of I-69 through Greene County. The increased vehicle traffic in the county can only exacerbate the ozone problem. If this increased traffic makes the problem worse, how can I-69 be allowed to be built? What impact will this continued non-attainment status have on future development within Greene County? Will other commercial or industrial development be curtailed just because I-69 was constructed and Greene County remains in non-attainment of the 1997 8-hour ozone standard? (Gwinn)

Response: Greene County was designated nonattainment effective June 15, 2004. At the close of the 2004 ozone season (i.e. September 30, 2004), Greene County measured air quality that complied with the 1997 8-hour ozone standard. On September 6, 2005, the IDEM submitted a *Request for Redesignation and Maintenance Plan for Ozone Attainment in the 8-Hour Ozone Basic Nonattainment Area*, for Greene County, Indiana. The U.S. EPA subsequently approved the Indiana redesignation of Greene County, Indiana, to attainment for the 1997 8-hour ozone standard on November 14, 2005. Greene County has measured air quality below the 1997 8-hour ozone standard since the redesignation was effective. Redesignating the area to attainment does not mean that public health will no longer be protected; it simply recognizes the fact that the area's air quality meets the health based standard. Indiana's petition includes a long-term maintenance plan that is and will continue to be implemented to ensure that the area continues to attain the 1997 8-hour standard for ground-level ozone. With the addition of MOVES-based onroad safety margins applied to mobile sources, the Greene County, Indiana, ozone maintenance area will continue to remain well below the overall safety margins for all sources into the future. As such, the 1997 8-hour ozone maintenance plan for Greene County, Indiana, continues to meet all applicable CAA requirements.

Indiana is committed to maintaining all emission control measures necessary to ensure continued compliance with the standard. Furthermore, because this area is subject to significant transport of pollutants, significant NO_x reductions from existing and future regional control measures will ensure continued compliance (maintenance) with the standards with an increasing margin of safety over time. If emissions start increasing or monitored violations occur, as part of the maintenance plan, IDEM commits to taking swift action in order to reverse the trend and take whatever action is necessary to ensure that standard is reattained as expeditiously as possible. Large projects that may represent emission increases beyond normal expected growth would be subject to the new source review permitting program for attainment areas known as Prevention of Significant Deterioration (PSD). New major sources or major modifications of existing sources must install best available control technology and demonstrate that the resulting emissions would not cause or contribute to a violation of any national ambient air quality standard. These permits are subject to public review, comment and the opportunity for a public hearing to help ensure that these requirements are satisfied.

Comment: Vehicle age distribution data should be included in this submittal. (Boyd)

Response: Vehicle age distribution data used to generate MOVES-based onroad emission estimates for Greene County is included on Pages 1 and 2 of Appendix A.

Comment: The submittal lacks sufficient detail for meaningful and substantive comment. The commenting public should have all supporting documentation available within the submittal. Instead, the submittal directs both reviewing agencies and the general public to other sources for supporting documentation. (Boyd)

Response: MOVES model-produced mobile emission estimates were calculated using the latest input settings and planning assumptions included in Appendix A of this submittal, consistent with the consensus achieved through interagency consultation, at the time the modeling analysis was performed. U.S. EPA has recently approved a number of MVEB replacement updates for other areas of the state using similar documentation. As such, IDEM does not believe any additional documentation is required for this submittal at this time. It should be noted that the original SIP, the MVEB replacement update, and all supporting documentation for Greene County is readily available for public viewing on IDEM's website at the following location: <http://www.in.gov/idem/airquality/2400.htm>.

Comment: The last sentence in Paragraph 2 on Page 2 of Appendix A states that "The MOVES formatted data will be used for these MOVES2010a runs." This leads the public to the conclusion that the current MOVES-based data has not yet been incorporated into this submittal. This statement requires further clarification to be valid. (Boyd)

Response: Onroad emission estimates included in the MVEB replacement update were calculated using MOVES formatted vehicle age distribution data included in this analysis.

Comment: The vehicle population data for Greene County included in Appendix C of Appendix A of the submittal seems imbalanced in comparison to other available information. This is one area where additional research and verification needs to be performed. Time constraints limit providing additional comment on this topic, as well as many other comments on the current submittal. Why is there no direct correlation between MOVES source types 31 & 32 and the MOBILE-based data? Could this be an error in the algorithm used in the modeling which caused this skew? This vehicle type is not uncommon and quite possibly equal with vehicle type 21 for this county. (Boyd)

Response: Vehicle population data included in this analysis was developed and finalized by the Indiana Department of Transportation (INDOT), through its contractor, independently of this submittal in accordance with U.S. EPA's Technical Guidance on the Use of MOVES2010 for Emission Inventory Preparation in State Implementation Plans and Transportation Conformity. MOVES model-produced mobile emission estimates were calculated using the latest input settings and planning assumptions, consistent with the consensus achieved through interagency consultation, at the time the modeling analysis was performed.

Comment: There is no explanation in Appendix C of Appendix A as to why source types in Table 3 do not equal 100%. Data presentations such as this cause one to have doubt in the accuracy of all data presented. (Boyd)

Response: Vehicle source types 31 and 32 in Table 3 of Attachment A do in fact add up to 100% when separated and calculated by fuel type (i.e. gasoline and diesel-powered vehicles). Vehicle source types were developed and finalized by the INDOT, through its contractor, independently of this submittal in accordance with U.S. EPA's Technical Guidance on the Use of MOVES2010 for Emission Inventory Preparation in State Implementation Plans and Transportation Conformity. MOVES model-produced mobile emission estimates were calculated using the latest input settings and planning assumptions, consistent with the consensus achieved through interagency consultation, at the time the modeling analysis was performed.

Comment: VMT's for Greene County are now heavily impacted by the I-69 project and if fully incorporated into the data set(s) for this submittal show significant increases in all pollutants. (Boyd)

Response: MOVES model-produced mobile emission estimates were calculated using the latest input settings and planning assumptions, consistent with the consensus achieved through interagency consultation, at the time the modeling analysis was performed, including any future projected increases in VMT resulting from the I-69 project.

Comment: Tables 5.1 and 5.1 – A on Page 3 of the MVEB replacement update show a considerable difference in onroad VOC emissions for 2015 with no supporting documentation, yet there is a significant increase in NO_x for the same time period. (Boyd)

Response: MOVES incorporates substantial new vehicle emissions-related data and accounts for changes in vehicle technology and regulations as well as improved understanding of in-use emission levels and the factors that influence them. This allows federal reduction programs to be better accounted for (e.g. new fuel and engine standards) and will likely result in more accurate emission estimates. Preliminary use of the MOVES model indicates that mobile emission estimates can be considerably different than similar calculations using MOBILE6.0, which was used to create the original MVEBs for the Greene County, Indiana, 1997 8-hour ozone nonattainment area. Onroad safety margins have been included for onroad emission estimates to accommodate for the wide array of assumptions that are factored into the calculation process. With the addition of MOVES-based onroad safety margins applied to mobile sources, the Greene County, Indiana, ozone maintenance area will continue to remain well below the overall safety margins for all sources into the future.

Comment: Both Appendix B and C in Appendix A of the submittal contain an error in the source footnote listing vehicle type 32. This appears to be a typographical error. However, the data needs to be verified to assure its validity. Appendix B also appears to be out of balance when looking over the distribution numbers. Vehicle type 11, for which no data was reportedly available, contains the highest numbers. Yet vehicle types 21 and 31, for which there was VIN information, indicates a lesser population, or is more evenly distributed across all vehicle types. This does not seem to indicate true numbers for Greene County, if one is at all familiar with the population of Greene County. (Boyd)

Response: There appears to be a typographical error in the footnotes included below Appendices B and C in Appendix A of the submittal, as source type 32 is listed twice as opposed to listing both vehicle source types 31 and 32. However, these typographical errors do not appear to impact the analysis results. IDEM has not made any revisions to the analysis, as it was developed and finalized by the INDOT, through its contractor, independently of this submittal.

Comment: The data in Appendix C in Appendix A of the submittal does not seem to coincide with other data for Greene County (e.g. the I-69 FEIS and Greene County Comprehensive Plan) since the data shows virtually no growth in vehicle populations. This data appears to invalidate all the data used to support the I-69 project, so which data is correct? The footnote below Appendix C states that the data was taken from socioeconomic data forecast, yet cites no specific report that the general public may refer to for validation. (Boyd)

Response: Various analyses have been developed and finalized for Greene County at separate times for separate purposes independently of this submittal. MOVES model-produced mobile emission estimates were calculated using the latest input settings and planning assumptions, consistent with the consensus achieved through interagency consultation, at the time the modeling analysis was performed, including any future projected increases in VMT resulting from the I-69 project.

Comment: The data included in Appendix D in Appendix A of the submittal appears to be quite old. Current ambient air quality monitoring data is available for the ozone monitor located in Greene County. (Boyd)

Response: MOVES model-produced mobile emission estimates were calculated using the latest input settings and planning assumptions, consistent with the consensus achieved through interagency consultation, at the time the modeling analysis was performed.

Comment: A horizon year budget of 2015 seems totally inappropriate since it is less than 18 months away and will likely be less than 1 year away when this submittal is finalized. This submittal does not reflect the true impact of traffic traveling on I-69, since Section 4 is not scheduled to be open until 2015. The modeling inputs should incorporate results farther into the future, when traffic increases from I-69 show up fully. Why is such a short horizon being used in this submittal? The entire evaluation should be re-studied to incorporate all influences into the data and ensure proper data is used. The use of old data gives the appearance of “cooking the books” to achieve the desired outcome. (Gwinn)

Response: U.S. EPA’s Redesignation Guidance requires SIPs to include a projection of the emission inventory of ozone precursor emissions (VOC and NO_x) representative to a year at least ten (10) years following redesignation. In consultation with the U.S. EPA, IDEM selected 2015 as the horizon budget year in the original SIP submittal. MVEBs are being revised in anticipation of the mandatory use of the MOVES model in future transportation conformity determinations. This submittal is not intended to update or revise any other data from the original SIP.

Comment: The submittal has been poorly researched and contains a number of fatal flaws by not incorporating all available data for input. Non-mobile sources are increasing as a direct impact of I-69 being opened on November 2012, well within the timeframe of this report. Most importantly, the Greene County “Analysis of Volatile Organic Compounds and Nitrogen

Oxides Emissions”, as attached, included in the FEIS for Section 4 of the I-69 project contains data which is contradictory to data report in the MVEB replacement update. These documents and their accompanying data sets need to be correlated and balanced to produce a more accurate and reliable MVEB replacement update for Greene County. (Gwinn)

Response: MVEBs are being revised in anticipation of the mandatory use of the MOVES model in future transportation conformity determinations. This submittal is not intended to update or revise any other data from the original SIP. The FEIS for Section 4 of the I-69 project was developed and finalized by the INDOT, through its contractor, independently of this submittal. MOVES model-produced mobile emission estimates included in the MVEB replacement update were calculated using the latest input settings and planning assumptions, consistent with the consensus achieved through interagency consultation, at the time the modeling analysis was performed, including any future projected increases in VMT/mobile source emissions resulting from the I-69 project. The SIP continues to meet all applicable Clean Air Act (CAA) requirements as the revised emission inventories clearly illustrate that total NO_x and VOC emissions in the Greene County, Indiana, 1997 8-hour ozone maintenance area will continue to decline leading to local reductions between 2002 (base year) and 2015 (maintenance plan horizon budget year).

Comment: The Indiana Department of Transportation (INDOT) used outdated fleet data as part of its conformity demonstration for the Tier 2 EIS process. Why has newer data, available for many years, not been used? If the new data shows continued non-conformity, then there are serious problems with the permitting process that allows I-69 to be constructed. While I am concerned about future motor vehicle emissions and their impact on the ozone standard, what about the present? (Gwinn)

Response: This analysis was developed and finalized by the INDOT, through its contractor, independently of this submittal. MOVES model-produced mobile emission estimates included in the MVEB replacement update were calculated using the latest input settings and planning assumptions, including quality-assured 2009 vehicle registration data, consistent with the consensus achieved through interagency consultation. With the addition of MOVES-based onroad safety margins applied to mobile sources, the Greene County, Indiana, ozone maintenance area will continue to remain well below the overall safety margins for all sources into the future. Indiana is committed to maintaining all emission control measures necessary to ensure continued compliance with the standard. If emissions start increasing or monitored violations occur, as part of the maintenance plan, IDEM commits to taking swift action in order to reverse the trend and take whatever action is necessary to ensure that standard is reattained as expeditiously as possible.

Comment: Why did INDOT/IDEM not incorporate 2009 vehicle fleet data into the new model, regardless of which modeling software is used? As for future modeling, why use a horizon budget year of 2015? I-69 will barely be operational in Greene County at that time. Any impact it will have on air quality will not be felt until after construction is complete and the road is open for traffic, for at least a couple of years. (Gwinn)

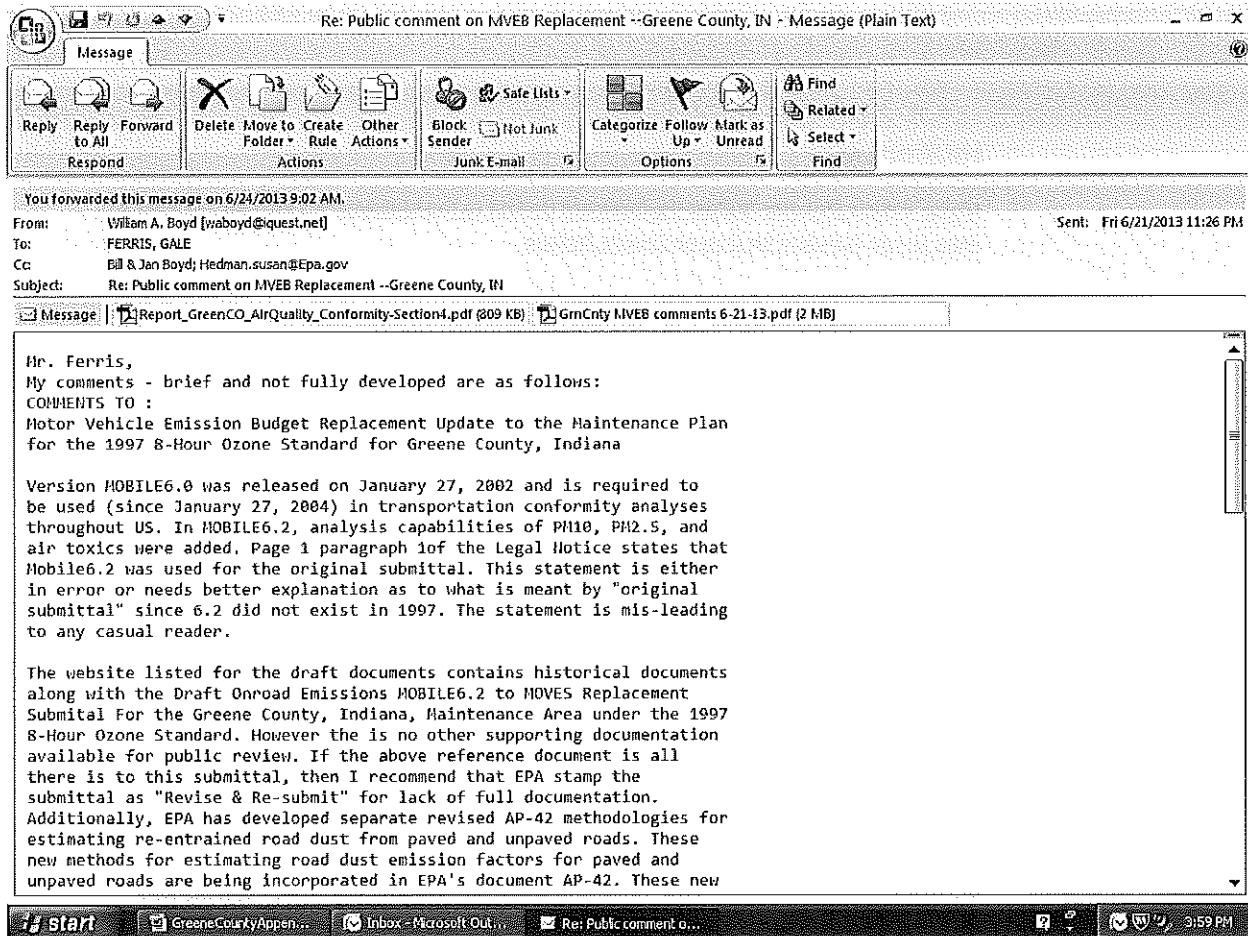
Response: MOVES model-produced mobile emission estimates were calculated using the latest input settings and planning assumptions, consistent with the consensus achieved through interagency consultation, at the time the modeling analysis was performed, including quality-assured 2009 vehicle registration data for Greene County. U.S. EPA’s Redesignation

Guidance requires SIPs to include a projection of the emission inventory of ozone precursor emissions (VOC and NO_x) representative to a year at least ten (10) years following redesignation. In consultation with the U.S. EPA, IDEM selected 2015 as the horizon budget year in the original SIP submittal. MVEBs are being revised in anticipation of the mandatory use of the MOVES model in future transportation conformity determinations. If emissions start increasing or monitored violations occur, as part of the maintenance plan, IDEM commits to taking swift action in order to reverse the trend and take whatever action is necessary to ensure that standard is reattained as expeditiously as possible.

Comment: I am requesting an additional 14 days to prepare substantive comments to the proposed "Motor Vehicle Emission Budget Replacement Update to the Maintenance Plan for the 1997 8-Hour Ozone Standard for Greene County, Indiana". As a member of the general public who wishes to submit comments, I find that the documents to review and comment on are quite technical and voluminous. Fact checking and verification for members of the general public is a more time-consuming process than for those within agencies who are familiar with terms, data relationships, regulations, STIPs and inventory processes. (Boyd)

Comment: I am requesting a 30 day extension of the comment period on this proposed MVEB replacement update. The update request contains a substantial amount of technical information which will take time to review properly. We have just learned of this proposal, and would like additional time to review the materials and prepare substantive comments. (Maloney)

Response: This submittal is only intended to update MVEBs from the original SIP in anticipation of the mandatory use of the MOVES model in future transportation conformity determinations. U.S. EPA has recently approved a number of MVEB replacement updates for other areas of the state using similar documentation. The SIP continues to meet all applicable Clean Air Act (CAA) requirements as the revised emission inventories clearly illustrate that total NO_x and VOC emissions in the Greene County, Indiana, 1997 8-hour ozone maintenance area will continue to decline leading to local reductions between 2002 (base year) and 2015 (maintenance plan horizon budget year). The majority of the public comments received during the original public comment period do not directly pertain to the MVEB replacement submittal (MOVES-based calculations). No significant revisions have been made to the replacement submittal as a result of these comments. As such, IDEM does not believe an extension of the original 30-day comment period (May 24, 2013 to June 24, 2013) is necessary.



COMMENTS TO :

Motor Vehicle Emission Budget Replacement Update to the Maintenance Plan for the 1997 8-Hour Ozone Standard for Greene County, Indiana

Version MOBILE6.0 was released on January 27, 2002 and is required to be used (since January 27, 2004) in transportation conformity analyses throughout US. In MOBILE6.2, analysis capabilities of PM10, PM2.5, and air toxics were added. Page 1 paragraph 1 of the Legal Notice states that Mobile6.2 was used for the original submittal. This statement is either in error or needs better explanation as to what is meant by "original submittal" since 6.2 did not exist in 1997. The statement is mis-leading to any casual reader.

The website listed for the draft documents contains historical documents along with the Draft Onroad Emissions MOBILE6.2 to MOVES Replacement Submittal For the Greene County, Indiana, Maintenance Area under the 1997 8-Hour Ozone Standard. However there is no other supporting documentation available for public review. If the above reference document is all there is to this submittal, then I recommend that EPA stamp the submittal as "Revise & Re-submit" for lack of full documentation. Additionally, EPA has developed separate revised AP-42 methodologies for estimating re-entrained road dust from paved and unpaved roads. These new methods for estimating road dust emission factors for paved and unpaved roads are being incorporated in EPA's document AP-42. These new AP-42 methodologies (AP-42, Sections 13.2.1, Paved Roads and 13.2.2, Unpaved Roads, each dated December 2003) replace previous methods for estimating re-entrained road dust emissions for these categories with some limitations. Greene County has many un-paved roads. There appears to be no incorporation of AP-42 into the plan. While AP-42 may be a fugitive dust issue, it contributes to the over-all air quality in the county and should be figured into the particulate count.

Beginning on page 1, Table 4.1 contains strike-outs, which it is assumed these are old numbers and that new numbers will be entered, however there are no notes regarding what the strike-outs are for. In the Emissions Inventory, there is no in-depth discussion of the changes in the entries, other than the numbers came from the new MOVES model. The general summary referenced does not provide adequate information for a complete public evaluation.

Page 2 makes the statement that "*Growth and control strategy assumptions forwere developed before the economic challenges of the last several years. Because of this, the factors included in the original submittal may project more growth than will actually occur in the future. As a result, the growth and control strategy assumptions for the non-mobile sourcesand 2015 continue to be valid and do not affect the overall conclusions of the plan*". This statement cannot be accurate as it fails to take into account the projections contained in the Greene County Comprehensive Plan. The economic and transportation character of Greene County has been altered significantly. That data needs

to be included in this revision. The indication is that this plan update will only attempt to ensure that Greene County stays marginally within the 8-Hour criteria. There is no attempt to move Greene County towards a 2-Hour window or even to bring the County into full compliance. The data on Vehicle Age Distribution should be included in this submittal. Here again, this submittal document is lacking sufficient detail for meaningful and substantive comment. The commenting public should have all supporting documents available within the submittal. Instead, the submittal's authors direct both reviewing agencies and the general public to other sources for their supporting data. There is a statement of "The MOVES formatted data *will be used*..." leads the public to the conclusion that the current MOVES data has not yet been incorporated into this submittal. This statement requires further clarification to be valid.

The Vehicle Population data for Greene County seems imbalanced in comparison to other available information. This is one area where additional research and verification needs to be performed. Time constraints limit providing additional comment on this topic, as well as many of the other comments on the current submittal. One has to question why there is not a direct correlation between the MOVES source types (31 & 32) and the MOBILE6.2 data. Could this be an error in the algorithm used in the modelling which caused this skew? This vehicle type is not un-common and quite possibly compare equally with vehicle type 21 for this county. For Table 3, there is no explanation why the Source Types do not equal 100% as a casual reader would expect. Data presentation such as this causes one to have doubt in the accuracy of all the data presented. VMT's for Greene County are now heavily impacted by the I-69 project and if fully incorporated into the data set(s) for this submittal may show significant increases in all pollutants.

Page 3 contains a considerable difference (Table 5.1 vs. 5.1-A) in the VOC for 2015 with no supporting data, yet there is a significant increase in the NOx for the same time period. Both Appendix B and C contain an error in the source footnote, listing vehicle type 32 twice. It is assumed this is a typographical error. However, the data needs to be verified to assure it's validity. Appendix B seems out of balance, when looking over the distribution numbers. Vehicle type 11, for which no data was reportedly available contains the highest numbers. Which to the casual reader appears to indicate a higher population. Yet types 21 & 31, for which there was VIN information, indicates a lesser population, or more evenly distributed across all vehicle types. This Appendix does not seem to indicate true numbers for Greene County, if one is at all familiar with the population of Greene County.

Appendix C data does not seem to coincide with other data, see the I-69 FEIS, and the Greene County Comprehensive Plan since the data shows virtually no growth in vehicle populations. This data appears to invalidate all the data used to support the I-69 project, so which data set is correct? The footnote states it was taken from "local socioeconomic data forecasts", yet cites no specific report that the general public may refer to for validation.

Appendix D calls upon data that is quite old. Greene County has current data available from the monitoring station that is part of the maintenance & attainment for which this

submittal is attempting to update.

The horizon year budget of 2015 seems totally inappropriate, since its less than a mere 18 month away, and likely less than 1 year away by the time this submittal is fully commented on, responded to and approved. This submittal does not reflect the true effect of I-69 traffic, since Section 4 is not scheduled to be open until the horizon date. The modeling inputs should incorporate results farther in the future, when traffic increases from I-69 show up fully. Why such a short horizon. The entire evaluation should be re-studied to incorporate all influences into the data. And ensure proper data is used. This approach of a re-hash of old data gives the appearance of "cooking the books" to acheive the desired outcome.

It is quite obvious that this submittal has been poorly researched and contains a number of fatal flaws by not incorporating all available data for input. Non-mobile sources are increasing as a direct impact of I-69 being opened on November of 2012, well within the time-frame of this report. Most importantly the Greene County **"ANALYSIS OF VOLATILE ORGANIC COMPOUND AND NITROGEN OXIDES EMISSIONS"** report of October 2010 (copy attached to these comments) which was included in the FEIS for the I-69, Section 4 project contains data which is contradictory to data reported in the resubmittal document. These two reports and their accompanying data sets need to be correlated and balanced to produce an more accurate and reliable re-submittal document.

For the above reasons and others that time constraints do not permit full development, I ask that this submittal be withdrawn until a more accurate and detailed submittal may be prepared.

A handwritten signature in black ink, appearing to read "William A. Boyce". The signature is fluid and cursive, with a long horizontal line extending from the end.

GREENE COUNTY

ANALYSIS OF VOLATILE ORGANIC COMPOUND AND NITROGEN OXIDES EMISSIONS

DRAFT

Prepared for the
Indiana Department of Transportation



October 2010

Prepared by:
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Table of Contents

<i>Section</i>	<i>Page</i>
Table of Contents	i
List of Tables	ii
List of Figures	ii
Introduction	1
Project Assumptions	2
Travel Demand Model and VMT Growth	2
Travel Model Post-Processing and Other Mobile 6.2 Inputs	4
Analysis Results	6
Appendix A -- Mobile 6.2 Files	10

List of Tables

<i>Table</i>	<i>Page</i>
TABLE 1: HISTORIC HPMS VMT AND GROWTH RATES FROM ISTDM	3
TABLE 2: HOURLY DISTRIBUTION OF TRAFFIC	4
TABLE 3: SUMMARY RESULTS	6
TABLE 4: HISTORIC RESULTS AND TRENDS	6
TABLE 5: 2015 FORECAST - GREENE COUNTY	8
TABLE 6: 2025 FORECAST - GREENE COUNTY	8
TABLE 7: 2035 FORECAST - GREENE COUNTY	8
TABLE 8: 2035 ASSUMING I-69 BRIDGE BUILD-OUT FORECAST - GREENE COUNTY	9

List of Figures

<i>Figure</i>	<i>Page</i>
FIGURE 1: EMISSION ANALYSIS RESULTS	7

INTRODUCTION

Analysis of volatile organic compounds (VOC) and oxides of nitrogen (NO_x) emissions produced by motor vehicles in Greene County, Indiana, demonstrates that these ozone precursors will continue to decrease in future years. Moreover, this decrease will occur irrespective of the construction of I-69 or other transportation infrastructure improvements in the Indiana Department of Transportation (INDOT)'s Long Range Transportation Plan. Cleaner, lower-emitting vehicle fleets will continue to more than offset growth in vehicle miles of travel (VMT) and result in lower overall emissions inventories.

This report documents the process involved in this analysis as well as its findings and is presented in support of a conformity determination for the final environmental impact statement (FEIS) for I-69 Section 4. The goal was to analyze air pollutant emissions levels (VOC and NO_x) corresponding to the latest assumptions in the FEIS for I-69 Section 4 and compare them to the budget for ozone precursor emissions set by the Indiana Department of Environmental Management (IDEM) in its ozone maintenance plan for Greene County.

As per the EPA's final rule published in the Federal Register Vol. 69, No. 126 on July 1, 2004, "Transportation Conformity is required under the Clean Air Act section 176(c) (42 U.S.C. 7506(c)) to ensure that federally supported highway and transit project activities are consistent with ("Conform to") the purpose of the state air quality implementation plan (SIP). Conformity currently applies under EPA's rules to areas that are designated non-attainment or maintenance." Areas are designated "non-attainment" for violating the National Ambient Air Quality Standards (NAAQS). Final Rules published in the Federal Register Vol. 69, No. 84 on April 30, 2004 state "CAA definition of the non-attainment area that is defined in Section 107(d) (1) (A) (i) as an area that is violating the standard. If an area meets this definition, EPA is obligated to designate the area as non-attainment." The non-attainment areas can be re-designated as attainment/maintenance as per section 107(d) (3) of the Clean Air Act. EPA made a determination that the Greene County ozone non-attainment area has attained the 8-hour ozone NAAQS on November 14, 2005. This determination was based on three years of complete quality-assured ambient air quality monitoring data for the 2002-2004 seasons that demonstrated that the 8-hour ozone NAAQS has been attained in the area. In making this re-designation, EPA also approved the State's plans for maintaining the 8-hour ozone NAAQS through 2015 and beyond in this area as a revision to the Indiana State Implementation Plan (SIP). EPA also found adequate and approved the State's 2015 Motor Vehicle Emission Budgets (MVEBs) for the Greene County area which IDEM has determined to be 1.46 tpd for VOC and 1.54 tpd for NO_x. It should be noted that the MVEB exceeds the on-road mobile source NO_x emissions projected by IDEM for 2015. All plans, programs and projects must be reviewed for conformity with the standards to assure that they do not exceed the established budgets as determined in the SIP. Any project subject to the National Environmental Policy Act (NEPA) must be found to conform with the SIP before a final record of decision (ROD) may be issued (40 CFR 93.102).

The air quality analysis presented here involved four procedures. First, the updated Indiana Statewide Travel Demand Model (ISTDM) was used to determine the vehicle-miles-traveled (VMT) for a base year (2006) and for each of the analysis years (2015, 2025 and 2035). The modeled VMT was then used to develop growth rates which were applied to the official estimates of VMT from the Highway Performance Monitoring System (HPMS). Second, a post processing procedure was used to compute average speed for each facility type, and from that data, Mobile 6.2 input files were created. Third, the Mobile 6.2 emission factor model was used to determine the emission rates for VOCs and NO_x. Fourth, the VMT by functional classification was then multiplied by the emission rate factors to determine the total emissions inventories.

PROJECT ASSUMPTIONS

The most significant change since the Greene County emissions analysis that demonstrated conformity for I-69 Section 3 is the accelerated construction schedule for Section 4 and the associated open-to-traffic date of the end of 2014. The representation of I-69 in Greene County in future years reflects this timetable and the latest assumptions regarding the placement of interchanges included in the FEIS for Section 4.

Federal regulations (40 CFR 93.109) stipulate that in isolated rural maintenance areas, regionally significant projects should be included from the statewide long range transportation plan. INDOT is currently updating their Long Range Transportation Plan from 2005-2030 to 2010-2035, and integrating it with their Major Moves construction program. The new plan incorporates the increased near term construction associated with Major Moves, including the acceleration of Section 4, while reflecting a more conservative assumption in later years. Although the new Long Range Plan is still in draft form, it was agreed through interagency consultation on July 28, 2010, that it represented the best and latest planning assumptions.

TRAVEL DEMAND MODEL AND VMT GROWTH

The ISTDM is a mathematical computer model, using state of the art TransCAD software, which relates current and future travel demand to basic socioeconomic information. The model area covers all of Indiana including Greene County. All major roadways are represented in the travel model.

The Indiana State travel demand model uses the standard four steps of modeling: trip generation, trip distribution, mode choice, and traffic assignment. In addition, it considers travel by vehicles (trucks and autos) entering, leaving, and crossing Indiana, and it predicts truck traffic based in part on the representation of commodity flows. The ISTDM was re-validated for a new 2006 base year with improvements to the mode choice and truck models. During the model calibration process, model parameters were adjusted such that the model output matched, within accepted standards, several calibration criteria based on measured data. These criteria included items such as comparisons

against traffic counts, modeled vs. observed vehicle miles of travel, trip lengths by trip purpose, etc. The result of the recalibration was a travel model which replicated travel in Indiana for the year 2006 and is capable of producing reasonable traffic forecasts out to year 2035. This analysis makes use of the official version 5.0 of ISTDM finalized January 28, 2010.

Model outputs are expressed in terms of daily volumes for each roadway segment. The raw model results from each scenario have traffic estimates only for those facilities coded in the model. These modeled traffic estimates generally include facilities that are classified as major collector or higher. Travel on the lower classed roadways (collector and local), while not entirely absent, is under-represented in the model.

TABLE 1: HISTORIC HPMS VMT AND FORECAST GROWTH RATES FROM ISTDM

	Source	HPMS				INDOT	ISTDM										
		Year	2006	2005	2007	2009	July	2006	2005	2015		2025		2035		2035 + I 69 Bridge	
		Measure	Length	DVMT	DVMT	DVMT	Adjust.	Length	DVMT	DVMT	Growth	DVMT	Growth	DVMT	Growth	DVMT	Growth
		Units	Miles	1,000's	1,000's	1,000's	Factor	Miles	1,000's	1,000's	Rate	1,000's	Rate	1,000's	Rate	1,000's	Rate
1	Rural Interstate						1.1274			264		391		470		561	
2	Rural OPA	24.1	129	128	251		1.0638	24.1	119	115	0.965	126	1.057	137	1.154	137	1.156
6	Rural Min Art	32.8	144	144	118		1.0638	33	138	129	0.935	137	0.995	145	1.032	144	1.050
7	Rural Maj Col	155.1	460	463	311		1.0526	154.2	327	245	0.748	280	0.855	310	0.947	311	0.950
8	Rural Min Col	191.3	133	134	95		1.0526	16.1	9	8	0.896	10	1.121	10	1.215	10	1.215
9	Rural Local	695.5	129	130	244		1.0526	695.5			0.819		0.932		1.017		1.018
14	Urban OPA	4.1	53	52	42		1.0111	4.1	38	39	1.007	41	1.058	42	1.107	42	1.103
16	Urban Min Art	4.5	24	24	19		1.0111	4.5	7	7	1.013	8	1.063	8	1.115	8	1.116
17	Urban Col	6.4	5	4	13		1.0111	6.4			1.008		1.059		1.108		1.105
19	Urban Local	95.9	40	40	74		1.0111	95.9			1.008		1.059		1.108		1.105
	Grand Total	1149.0	1117	1119	1266			1149.0	637	607		691		1123		1214	

Adjustment factors, provided by INDOT, were applied to account for the fact that HPMS daily VMT represents an annual average day; whereas, VMT used for the emissions analysis must represent a summer day. Growth rates for predicting future year VMT are estimated by functional classification. For most functional classes, which are represented in the model network, the growth rate is simply taken as the ratio of modeled VMT in the forecast year versus the base year. For rural local roads, urban collectors and urban local roads, which are not represented in the model network for Greene County, growth rates were based on the growth of all rural or urban non-freeway VMT. For rural interstates, which only appear in Greene County in future year scenarios, the model VMT is used directly, without adjustment, since there is no base year HPMS VMT to which growth factors could be applied. The historic HPMS estimates of VMT in Greene County for 2006, 2007 and 2009 are displayed in Table 1 together with the ISTDM estimates of VMT for the base year and 2015, 2025 and 2035 forecast years and resulting growth rates. A second 2035 scenario also assumes construction of the I-69 Ohio River Bridge. This last scenario is not required to demonstrate conformity but is provided for information purposes only, to disclose maximum possible impacts under NEPA.

TRAVEL MODEL POST-PROCESSING AND OTHER MOBILE 6.2 INPUTS

In the Federal Register on March 2, 2010, US EPA formally adopted the new MOVES2010 model as its official mobile source emissions model and announced a two year grace period after which (March 2, 2012) it must be used for conformity purposes. Until that time, it is still permissible to use the Mobile6 emissions factor model. It was decided through interagency consultation on July 28, 2010, that it was appropriate to use the Mobile6 model for this analysis, so as to make a fair, "apples to apples" comparison with the SIP budgets which were developed using Mobile6.

Speeds are included in Mobile6 inputs to produce more accurate emissions rates. The methodology for estimating speeds used in developing the SIP budgets for Greene County was based on an implied default assumption regarding the distribution of traffic throughout the 24 hours of the day. This analysis used the hourly distribution of traffic from the 1995 Indiana Household Travel Survey to post-process the ISTDm results and generally produced slightly higher speeds for most functional classes than were assumed in the SIP development. The previous emissions analysis conducted for I-69 Section 3 estimated emissions both ways, using the SIP's horizon year speeds and using the speeds resulting from post-processing the ISTDm. The results of that analysis demonstrated that there were no significant differences in the emissions resulting from the two methodologies. It was therefore agreed through interagency consultation on July 28, 2010 that it was appropriate to use the ISTDm's post-processed speeds for this analysis.

TABLE 2: HOURLY DISTRIBUTION OF TRAFFIC

DISTRIBUTION OF TOTAL TRAFFIC BY HOUR			
HOUR OF DAY	PERCENT OF DAILY TRAFFIC	HOUR OF DAY	PERCENT OF DAILY TRAFFIC
1:00 AM	0.47%	1:00 PM	4.77%
2:00 AM	0.36%	2:00 PM	5.13%
3:00 AM	0.26%	3:00 PM	8.62%
4:00 AM	0.36%	4:00 PM	9.60%
5:00 AM	1.61%	5:00 PM	9.22%
6:00 AM	6.55%	6:00 PM	5.13%
7:00 AM	8.01%	7:00 PM	3.99%
8:00 AM	6.24%	8:00 PM	2.90%
9:00 AM	4.61%	9:00 PM	2.95%
10:00 AM	4.41%	10:00 PM	3.06%
11:00 AM	4.61%	11:00 PM	1.71%
12:00 AM	4.61%	12:00 PM	0.83%

Source: 1995 Indiana Household Travel Survey

In the post-processing of the ISTDm, accomplished by its POST_ALT program, an average speed and VMT are computed for each time period for each link. In the post-processing, peak period volumes are compared to a peak period capacity to determine a volume to capacity ratio. Capacities use HCM 2000 methodology (described in the model documentation). Volume to capacity (v/c) ratios for each link for each hour are then used to estimate a period specific speed. A BPR volume delay function was used to estimate the link speeds for each time period formulated as follows.

$$Speed_{congested} = \frac{Speed_{freeflow}}{1 + \alpha(v/c)^{\beta}}$$

The alpha and beta parameters are the same as assumed in the ISTDm and specific to each roadway segment. For the base year model in Greene County, alpha's range from 0.42 to 0.72 and betas range from 2.5 to 4.0.

After speeds were estimated for each modeled link and for each of the analysis years, the data was aggregated by FHWA functional classification for use in Mobile 6.2 using the AVERAGE SPEED command. The average speed for each functional class was calculated using a VMT weighted average. The VMT weighted average was computed by multiplying the speed for each link by the link's VMT. Next, the Speed*VMT values were summed for each functional class. The functional class sum was divided by the sum of that functional class's modeled VMT to yield an average speed.

The calculated congested speeds for Rural Interstates, Urban Interstates and Urban Expressways were adjusted for an assumed percentage of ramp VMT according to the procedures outlined in the Mobile6 User's Guide Section 2.8.8.2.d. Speed assumptions are listed in Tables 5 through 8 and in the Mobile6 input files contained in Appendix A.

Indiana specific VMT per vehicle type were also used to improve estimates of emission rates, as in the SIP. The distribution applied was derived by IDEM from the INDOT's 2002 state-wide HPMS data for vehicle classification for each of the twelve INDOT functional classes. The INDOT data covers thirteen vehicle groups which are different from the sixteen vehicle groups required by Mobile6. An adjustment was made by IDEM to convert the INDOT VMT fraction to a Mobile6 VMT fraction, and this data was provided by IDEM for the Greene County. The VMT fraction for each functional class was input to Mobile6 using the VMT FRACTION command. All VMT Fractions used in the analysis are listed in the Mobile6 input files contained in Appendix A.

The Mobile6 emissions analysis, as documented in Appendix A, also includes the use of an age distribution of registered vehicles in Greene County, except for I-69 which assumes the default national fleet age distribution. The vehicles on I-69 are presumed to have characteristics reflective of the national vehicle fleet, rather than of the vehicles registered within Greene County. The Greene County distribution is based on the Lake Michigan Air Directors Consortium's (LADCO) VIN decoding of 2004 registration data for Greene County from the Bureau of Motor Vehicles. Although INDOT has since procured updated registration data for 2009, it had not been quality assured at the time of

this analysis. The vehicle fleet age assumptions for this analysis were agreed to by interagency consultation on August 17, 2010.

Mobile6 also requires certain basic meteorological and other inputs for the estimation of emissions rates. The values for these assumptions must be the same as used in the development of the SIP budgets. For July in Greene County, the SIP assumptions are a minimum daily temperature of 65.0 degrees (Fahrenheit) and maximum daily temperature of 86.3 degrees, absolute humidity of 93.7 grains per pound, 34% cloud cover, 6 am sunrise and 8 pm sunset, and a fuel Reid vapor pressure of 9.0 psi.

ANALYSIS RESULTS

The analysis of volatile organic compounds (VOC) and oxides of Nitrogen (NO_x) emission levels for Greene County demonstrates that motor vehicle emissions have consistently decreased and can be expected to continue to decrease in the future. A summary of the analysis results is presented in Table 3 and in Figure 1.

TABLE 3: SUMMARY RESULTS

Year/Scenario	VMT (1,000's)	VOC	NO _x
2015 Budget – Maintenance Plan		1.46	1.54
2015 Forecast	1,314	0.88	1.38
2025 Forecast	1,566	0.64	0.77
2035 Forecast	1,753	0.69	0.67
2035 Forecast with I-69 Ohio River Bridge*	1,857	0.72	0.71

*For information purposes only

The state, in consultation with FHWA and US EPA, established budgets for VOC and NO_x in Greene County in 2015 and beyond. These budgets are part of the state's plan to maintain safe levels of ozone which attain the national ambient air quality standards (NAAQS) established by the US EPA. VOC and NO_x are regulated since they contribute directly to the production of ozone. The state's ozone maintenance plan for Greene County was approved by US EPA on November 14, 2005. The maintenance plan included estimates of VOC and NO_x emissions from motor vehicles in 2002 and forecasts of emissions in 2010 and 2015. The budgets were established by applying a safety margin to the 2015 estimates.

TABLE 4: HISTORIC RESULTS AND TRENDS

Year/Scenario	VMT (1,000's)	VOC	NO _x
2002 Estimate – Maintenance Plan	1,292	2.74	3.41
2009 Estimate – Historic HPMS VMT / SIP speeds	1,316	1.64	2.02
2010 Forecast – Maintenance Plan	1,581	1.81	2.09
2015 Forecast – Maintenance Plan	1,764	1.33	1.40
2015 Budget – Maintenance Plan		1.46	1.54

Official HPMS data (from 2004-2009) over multiple cycles of INDOT data collection indicate that VMT in Greene County has remained relatively stable relative to the 2002 estimate in the maintenance plan. However, emissions estimates based on HPMS data for 2009 (the most recent year for which data was available at the time of this analysis) demonstrate that emissions had already fallen below the maintenance plan's forecast for 2010 by 2009 despite no decline in VMT.

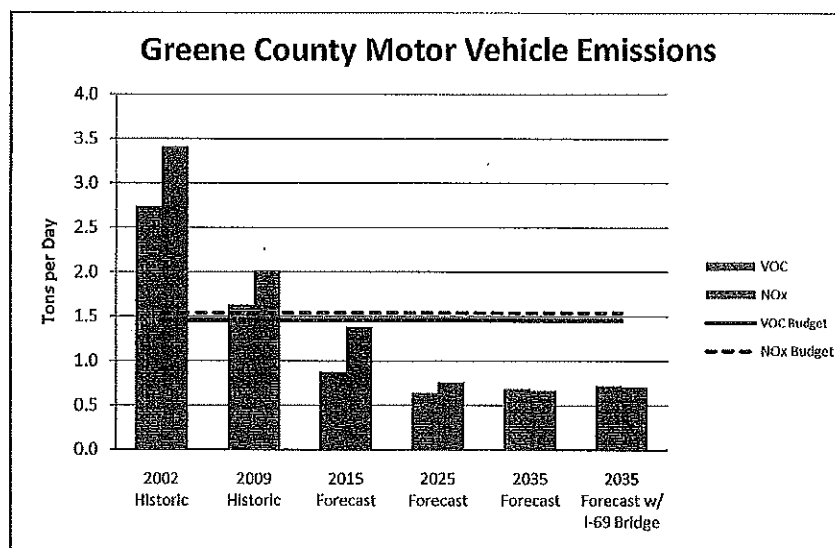


Figure 1: EMISSION ANALYSIS RESULTS

Although VMT in Greene County is forecast to grow in future years with the construction of I-69, emissions are forecast to continue their decline due to lower emission rates from Mobile6 in future years associated with increasingly lower emitting vehicle fleets. The decrease in emissions from the move to cleaner vehicles in future years more than offsets the increase in travel resulting from the construction of I-69 in the county. Detailed analysis results presented in Tables 5 through 8 demonstrate that regardless of whether the I-69 Ohio River Bridge is assumed to be completed by 2035 (see Table 8), future emissions are forecast well below their established budgets.

The draft version of this document is to be made available for public comment and agency review from October 8, 2010 through November 8, 2010. Public notice will be published twice in local print media and online at the project website.

Volatile Organic Compound and Nitrogen Oxide Emissions

TABLE 5: 2015 FORECAST - GREENE COUNTY

Functional Class	2006 HPMS VMT	July Adj. Fact.	ISTDM 2015 / 2006	2015 VMT	ISTDM Speed	VOC rate	NOx rate	VOC tpd	NOx tpd
					mph	g/mi	g/mi		
Rural Interst.		1.127		297,905.5	73.2	0.402	1.683	0.13	0.55
Rural OPA	129,000	1.064	0.965	132,403.2	48.4	0.601	0.936	0.09	0.14
Rur Min Art	144,000	1.064	0.935	143,239.5	48.3	0.624	0.777	0.10	0.12
Rur Maj Col	460,000	1.053	0.748	362,382.6	47.4	0.64	0.713	0.26	0.28
Rur Min Col	133,000	1.053	0.996	139,447.7	40.3	0.671	0.756	0.10	0.12
Rural Local	129,000	1.053	0.839	113,898.0	29.2	0.724	0.695	0.09	0.09
Urban OPA	53,000	1.011	1.007	53,979.8	35.8	0.685	0.655	0.04	0.04
Urb Min Art	24,000	1.011	1.013	24,575.2	35.6	0.691	0.633	0.02	0.02
Urban Col	5,000	1.011	1.008	5,096.7	34.0	0.708	0.604	0.00	0.00
Urban Local	40,000	1.011	1.008	40,773.8		1.052	0.621	0.05	0.03
	1,117,000			1,313,702.0				0.88	1.38

TABLE 6: 2025 FORECAST - GREENE COUNTY

Functional Class	2006 HPMS VMT	July Adj. Fact.	ISTDM 2025 / 2006	2025 VMT	ISTDM Speed	VOC rate	NOx rate	VOC tpd	NOx tpd
					mph	g/mi	g/mi		
Rural Interst.		1.127		440,928.0	73.2	0.267	0.602	0.13	0.29
Rural OPA	129,000	1.064	1.057	145,050.2	48.3	0.371	0.421	0.06	0.07
Rur Min Art	144,000	1.064	0.995	152,446.8	48.4	0.383	0.392	0.06	0.07
Rur Maj Col	460,000	1.053	0.855	413,910.0	47.4	0.393	0.379	0.18	0.17
Rur Min Col	133,000	1.053	1.121	156,872.0	40.3	0.428	0.39	0.07	0.07
Rural Local	129,000	1.053	0.932	126,533.2	29.2	0.454	0.37	0.06	0.05
Urban OPA	53,000	1.011	1.058	56,684.1	35.7	0.425	0.357	0.03	0.02
Urb Min Art	24,000	1.011	1.063	25,799.0	35.4	0.429	0.353	0.01	0.01
Urban Col	5,000	1.011	1.059	5,351.8	34.0	0.44	0.349	0.00	0.00
Urban Local	40,000	1.011	1.059	42,814.7		0.701	0.361	0.03	0.02
	1,117,000			1,566,389.7				0.64	0.77

TABLE 7: 2035 FORECAST - GREENE COUNTY

Functional Class	2006 HPMS VMT	July Adj. Fact.	ISTDM 2035 / 2006	2035 VMT	ISTDM Speed	VOC rate	NOx rate	VOC tpd	NOx tpd
					mph	g/mi	g/mi		
Rural Interst.		1.127		530,302.8	73.2	0.258	0.393	0.15	0.23
Rural OPA	129,000	1.064	1.154	158,339.9	48.2	0.359	0.332	0.06	0.06
Rur Min Art	144,000	1.064	1.052	161,095.5	48.1	0.371	0.328	0.07	0.06
Rur Maj Col	460,000	1.053	0.947	458,705.5	47.4	0.38	0.325	0.19	0.16
Rur Min Col	133,000	1.053	1.215	170,102.4	40.3	0.415	0.329	0.08	0.06
Rural Local	129,000	1.053	1.017	138,079.8	29.2	0.441	0.318	0.07	0.05
Urban OPA	53,000	1.011	1.107	59,302.6	35.6	0.412	0.31	0.03	0.02
Urb Min Art	24,000	1.011	1.115	27,064.8	35.3	0.416	0.31	0.01	0.01
Urban Col	5,000	1.011	1.108	5,601.5	34.0	0.427	0.311	0.00	0.00
Urban Local	40,000	1.011	1.108	44,811.8		0.684	0.32	0.03	0.02
	1,117,000			1,753,406.5				0.69	0.67

Volatile Organic Compound and Nitrogen Oxide Emissions

TABLE 8: 2035 FORECAST ASSUMING I-69 OHIO RIVER BRIDGE BUILT - GREENE COUNTY

Functional Class	2006 HPMS VMT	July Adj. Fact.	ISTDM 2035 / 2006	2035 w/ Bridge VMT	ISTDM Speed mph	VOC rate g/mi	NOx rate g/mi	VOC tpd	NOx tpd
Rural Interst.		1.127		632,736.2	73.2	0.258	0.393	0.18	0.27
Rural OPA	129,000	1.064	1.156	158,640.0	48.2	0.359	0.332	0.06	0.06
Rur Min Art	144,000	1.064	1.050	160,887.5	48.2	0.371	0.328	0.07	0.06
Rur Maj Col	460,000	1.053	0.950	459,879.3	47.4	0.38	0.325	0.19	0.16
Rur Min Col	133,000	1.053	1.215	170,073.5	40.3	0.415	0.329	0.08	0.06
Rural Local	129,000	1.053	1.018	138,278.0	29.2	0.441	0.318	0.07	0.05
Urban OPA	53,000	1.011	1.103	59,123.4	35.7	0.412	0.31	0.03	0.02
Urb Min Art	24,000	1.011	1.116	27,084.8	35.3	0.416	0.31	0.01	0.01
Urban Col	5,000	1.011	1.105	5,587.9	34.0	0.427	0.311	0.00	0.00
Urban Local	40,000	1.011	1.105	44,703.0		0.684	0.32	0.03	0.02
	1,111,000			1,856,993.7				0.72	0.71

APPENDIX A – MOBILE 6.2 FILES GREENE COUNTY VEHICLE REGISTRATION – INPUT FILE

```

REGDIST
* COUNTY 28, GREENE
* FIDV
1.00355 0.0172 0.0100 0.0113 0.0417 0.0415 0.0559 0.2577 0.0519 0.0029
0.0555 0.0572 0.0518 0.0452 0.0121 0.0156 0.0391 0.0785 0.0117 0.0191
0.0165 0.0077 0.0018 0.0025 0.0091
* LDT1
2.00220 0.0194 0.0135 0.0187 0.0257 0.0155 0.0119 0.0130 0.0166 0.0178
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* LDT2
2.00391 0.0468 0.0379 0.0573 0.0219 0.0791 0.0827 0.0039 0.0590 0.0562
0.0156 0.0115 0.0379 0.0015 0.0033 0.0351 0.0310 0.0095 0.0081 0.0118
0.0071 0.0032 0.0031 0.0031 0.0196
* LDT3
1.00415 0.0591 0.0514 0.0510 0.0611 0.0641 0.0510 0.0406 0.0498 0.0595
0.0501 0.0107 0.0352 0.0102 0.0110 0.0132 0.0119 0.0175 0.0193 0.0123
0.0161 0.0109 0.0070 0.0070 0.1073
* LDT4
5.00561 0.0132 0.0615 0.0752 0.0027 0.0662 0.0715 0.0789 0.0391 0.0519
0.0517 0.0197 0.0179 0.0107 0.0090 0.0107 0.0051 0.0090 0.0090 0.0107
0.0115 0.0051 0.0071 0.0051 0.1521

```

MOBILE 6.2 INPUT FILE

```

***** Header Section *****
MOBILE INPUT FILE: Greene County Emissions
DATA BASE OUTPUT
WITH FIELD NAMES:
AGGREGATED OUTPUT:
VEHICLE TYPE: HIC-BOX
REPORT FILE: GreeneS1A4
EMISSIONS TABLE: GreeneS1A4
RUN DATA
***** Run Section *****
* These minimum temperatures are July averages from Greene County
MIN MAX TEMP: -65.0 86.3
ABSOLUTE HUMIDITY: 93.7
CLOUD COVER: 0.31
SUNRISE/SUNSET: 6 8
FUEL RVP: 50
NO REFUELING
***** Scenario Section *****
SCENARIO RECORD: Scenario 1: 2035 w/ 695 HPMS Rural Interstate (M6 Freeway/Bypass Ramp)
CALENDAR YEAR: 2035
EVALUATION MONTH: 7
AVERAGE SPEED: 73.1 FREEWAY 970 0.0 0.0 3.0
VMT FRACTIONS
0.3515 0.0516 0.1781 0.0549 0.0233 0.1065 0.0105 0.0084
0.0061 0.0024 0.0079 0.0040 0.1638 0.0038 0.0028 0.0047
END OF RUN
***** Run Section *****
* These minimum temperatures are July averages from Greene County
MIN MAX TEMP: -65.0 86.3
ABSOLUTE HUMIDITY: 93.7
CLOUD COVER: 0.31
SUNRISE/SUNSET: 6 8
FUEL RVP: 50
NO REFUELING
REGDIST: 78 reg d
***** Scenario Section *****
SCENARIO RECORD: Scenario 2: 2035 w/ 695 HPMS Rural OFA (M6 Non-Ramp)
CALENDAR YEAR: 2035
EVALUATION MONTH: 7
AVERAGE SPEED: 48.2 NON-RAMP
VMT FRACTIONS
0.4333 0.0558 0.1790 0.0625 0.0311 0.0833 0.0607 0.0645
0.0032 0.0116 0.0150 0.0161 0.0393 0.0003 0.0015 0.0092
***** Scenario Section *****
SCENARIO RECORD: Scenario 3: 2035 w/ 695 HPMS Rural Major Collector (M6 Arterial/Collector)
CALENDAR YEAR: 2035
EVALUATION MONTH: 7
AVERAGE SPEED: 48.1 ARTERIAL
VMT FRACTIONS
0.4561 0.0768 0.2137 0.0216 0.0311 0.0374 0.0017 0.0029
0.0021 0.0079 0.0068 0.0107 0.0182 0.0016 0.0013 0.0043
***** Scenario Section *****
SCENARIO RECORD: Scenario 4: 2035 w/ 695 HPMS Rural Major Collector (M6 Arterial/Collector)
CALENDAR YEAR: 2035
EVALUATION MONTH: 7
AVERAGE SPEED: 47.4 ARTERIAL
VMT FRACTIONS
0.4821 0.0733 0.2437 0.0751 0.0545 0.0235 0.0027 0.0022
0.0016 0.0060 0.0072 0.0078 0.0780 0.0024 0.0011 0.0019
***** Scenario Section *****
SCENARIO RECORD: Scenario 5: 2035 w/ 695 HPMS Rural Minor Collector (M6 Arterial/Collector)
CALENDAR YEAR: 2035
EVALUATION MONTH: 7
AVERAGE SPEED: 40.3 ARTERIAL
VMT FRACTIONS
0.4331 0.0619 0.2282 0.0705 0.0235 0.0399 0.0010 0.0031
0.0011 0.0018 0.0010 0.0114 0.0407 0.0016 0.0013 0.0011
***** Scenario Section *****
SCENARIO RECORD: Scenario 6: 2035 w/ 695 HPMS Rural Local (M6 Arterial/Collector)
CALENDAR YEAR: 2035
EVALUATION MONTH: 7
AVERAGE SPEED: 39.2 ARTERIAL
VMT FRACTIONS
0.4788 0.0708 0.2021 0.0716 0.0113 0.0291 0.0029 0.0023
0.0017 0.0065 0.0077 0.0084 0.0010 0.0016 0.0013 0.0015
***** Scenario Section *****
SCENARIO RECORD: Scenario 7: 2035 w/ 695 HPMS Urban OFA (M6 Arterial/Collector)
CALENDAR YEAR: 2035

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Volatile Organic Compound and Nitrogen Oxide Emissions

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EVALUATION MONTH : 7
AVERAGE SPEED : 33.7 ARTERIAL
VMT FRACTIONS :
0.4828 0.0190 0.2462 0.0759 0.0349 0.0151 0.0015 0.0010
0.0914 0.0135 0.0066 0.0071 0.0237 0.0015 0.0007 0.0010
***** Scenario Section *****
SCENARIO RECORD : Scenario 8: 2035 w/ I-69S HPMS Urban Minor Arterial (AS Arterial Collector)
CALENDAR YEAR : 2035
EVALUATION MONTH : 7
AVERAGE SPEED : 31.3 ARTERIAL
VMT FRACTIONS :
0.4944 0.0131 0.2399 0.0730 0.0311 0.0203 0.0030 0.0016
0.0017 0.0015 0.0031 0.0055 0.0207 0.0018 0.0003 0.0012
***** Scenario Section *****
SCENARIO RECORD : Scenario 9: 2035 w/ I-69S HPMS Urban Collector (AS Arterial Collector)
CALENDAR YEAR : 2035
EVALUATION MONTH : 7
AVERAGE SPEED : 31.9 ARTERIAL
VMT FRACTIONS :
0.5021 0.0191 0.2310 0.0783 0.0360 0.0132 0.0015 0.0012
0.0029 0.0011 0.0040 0.0041 0.0135 0.0010 0.0005 0.0005
***** Scenario Section *****
SCENARIO RECORD : Scenario 10: 2035 w/ I-69S HPMS Urban Local (AS Local Road) - 12.9
CALENDAR YEAR : 2035
EVALUATION MONTH : 7
VMT FRACTIONS :
0.5692 0.0775 0.2579 0.0795 0.0166 0.0105 0.0010 0.0008
0.0006 0.0014 0.0028 0.0030 0.0158 0.0018 0.0011 0.0016
END OF RUN :
***** Run Section *****
* These ambient temperatures are July averages from Orange County
MINIMUM TEMP : 65.0 DEG
ABSOLUTE HUMIDITY : 91.7
CLOUD COVER : 0.34
SUNSHINE PERCENT : 6.8
FUEL RVP : 9.0
NO REFUELING :
***** Scenario Section *****
SCENARIO RECORD : Scenario 11: 2035 w/ I-69S HPMS Rural Interstate (AS Freeway/Expressway)
CALENDAR YEAR : 2035
EVALUATION MONTH : 7
AVERAGE SPEED : 71.2 FREEWAY 97.0 0.0 0.0 3.6
VMT FRACTIONS :
0.3523 0.0346 0.1781 0.0339 0.0233 0.0165 0.0106 0.0054
0.0001 0.0014 0.0179 0.0101 0.1081 0.0058 0.0018 0.0107
END OF RUN :
***** Run Section *****
* These ambient temperatures are July averages from Orange County
MINIMUM TEMP : 65.0 DEG
ABSOLUTE HUMIDITY : 91.7
CLOUD COVER : 0.34
SUNSHINE PERCENT : 6.8
FUEL RVP : 9.0
NO REFUELING :
REG DIST : 28 reg
***** Scenario Section *****
SCENARIO RECORD : Scenario 12: 2035 w/ I-69S HPMS Rural OPA (AS Non-Ramp)
CALENDAR YEAR : 2035
EVALUATION MONTH : 7
AVERAGE SPEED : 48.2 NON-RAMP
VMT FRACTIONS :
0.4373 0.0658 0.2190 0.0651 0.0111 0.0033 0.0057 0.0015
0.0033 0.0126 0.0150 0.0164 0.0585 0.0033 0.0015 0.0051
***** Scenario Section *****
SCENARIO RECORD : Scenario 13: 2035 w/ I-69S HPMS Rural Minor Arterial (AS Arterial Collector)
CALENDAR YEAR : 2035
EVALUATION MONTH : 7
AVERAGE SPEED : 48.1 ARTERIAL
VMT FRACTIONS :
0.4662 0.0708 0.2357 0.0736 0.0314 0.0374 0.0037 0.0029
0.0022 0.0042 0.0038 0.0107 0.0352 0.0096 0.0013 0.0011
***** Scenario Section *****
SCENARIO RECORD : Scenario 14: 2035 w/ I-69S HPMS Rural Major Collector (AS Arterial Collector)
CALENDAR YEAR : 2035
EVALUATION MONTH : 7
AVERAGE SPEED : 47.5 ARTERIAL
VMT FRACTIONS :
0.4821 0.0132 0.2137 0.0751 0.0115 0.0175 0.0027 0.0002
0.0016 0.0006 0.0071 0.0078 0.0030 0.0021 0.0017 0.0019
***** Scenario Section *****
SCENARIO RECORD : Scenario 15: 2035 w/ I-69S HPMS Rural Minor Collector (AS Arterial Collector)
CALENDAR YEAR : 2035
EVALUATION MONTH : 7
AVERAGE SPEED : 40.3 ARTERIAL
VMT FRACTIONS :
0.4331 0.0009 0.2197 0.0736 0.0325 0.0199 0.0010 0.0011
0.0073 0.0034 0.0104 0.0114 0.0497 0.0026 0.0013 0.0021
***** Scenario Section *****
SCENARIO RECORD : Scenario 16: 2035 w/ I-69S HPMS Rural Local (AS Arterial Collector)
CALENDAR YEAR : 2035
EVALUATION MONTH : 7
AVERAGE SPEED : 29.2 ARTERIAL
VMT FRACTIONS :
0.4789 0.0728 0.2121 0.0746 0.0343 0.0291 0.0029 0.0011
0.0017 0.0065 0.0077 0.0078 0.0390 0.0036 0.0011 0.0015
***** Scenario Section *****
SCENARIO RECORD : Scenario 17: 2035 w/ I-69S HPMS Urban OPA (AS Arterial Collector)
CALENDAR YEAR : 2035
EVALUATION MONTH : 7
AVERAGE SPEED : 35.6 ARTERIAL
VMT FRACTIONS :
0.4868 0.0740 0.2162 0.0739 0.0340 0.0341 0.0025 0.0020
0.0014 0.0051 0.0066 0.0029 0.0291 0.0015 0.0007 0.0010
***** Scenario Section *****
SCENARIO RECORD : Scenario 18: 2035 w/ I-69S HPMS Urban Minor Arterial (AS Arterial Collector)
CALENDAR YEAR : 2035
EVALUATION MONTH : 7
AVERAGE SPEED : 33.3 ARTERIAL
VMT FRACTIONS :

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Volatile Organic Compound and Nitrogen Oxide Emissions

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0.4911 0.0741 0.2459 0.0740 0.0151 0.0001 0.0020 0.0016
0.0012 0.0047 0.0023 0.0038 0.0007 0.0018 0.0008 0.0010
***** Scenario Section *****
SCENARIO RECORD : Scenario 19: 2015 Info 147511PMS Urban Collector (0.6 Anterior Collector)
CALENDAR YEAR : 2015
EVALUATION MONTH : 7
AVERAGE SPEED : 34.0 ARTERIAL
VMT FRACTIONS :
0.5934 0.0761 0.2540 0.0781 0.0360 0.0152 0.0015 0.0012
0.0007 0.0033 0.0020 0.0013 0.0155 0.0010 0.0005 0.0006
***** Scenario Section *****
SCENARIO RECORD : Scenario 20: 2015 Info 147511PMS Urban Local (0.6 Local Res.) - 12.9
CALENDAR YEAR : 2015
EVALUATION MONTH : 7
VMT FRACTIONS :
VMT FRACTIONS : 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
VMT FRACTIONS :
0.5999 0.0775 0.2579 0.0795 0.0365 0.0155 0.0010 0.0008
0.0006 0.0023 0.0010 0.0010 0.0108 0.0028 0.0013 0.0016
END OF RUN
***** Run Section *****
* These ambient temperatures are July averages from Greene County
HINDMAX TEMP : 65.0 deg
ABSOLUTE HUMIDITY : 93.7
CLOUD COVER : 0.34
SURRHSUNSHINE : 6.8
FUEL RPT : 0.0
NO REFUELING :
***** Scenario Section *****
SCENARIO RECORD : Scenario 30: 2015 Rural Interstate (0.6 Freeway/Passway Ramp)
CALENDAR YEAR : 2015
EVALUATION MONTH : 7
AVERAGE SPEED : 72.2 FREEWAY 97.0 0.0 0.0 3.0
VMT FRACTIONS :
0.3525 0.0536 0.1743 0.0519 0.0033 0.1005 0.0166 0.0084
0.0061 0.0234 0.0279 0.0094 0.1098 0.0038 0.0018 0.0017
END OF RUN
***** Run Section *****
* These ambient temperatures are July averages from Greene County
HINDMAX TEMP : 65.0 deg
ABSOLUTE HUMIDITY : 93.7
CLOUD COVER : 0.34
SURRHSUNSHINE : 6.8
FUEL RPT : 0.0
NO REFUELING :
REGTEST : 78 reg.s
***** Scenario Section *****
SCENARIO RECORD : Scenario 31: 2015 Rural CFA (0.6 Non-Ramp)
CALENDAR YEAR : 2015
EVALUATION MONTH : 7
AVERAGE SPEED : 48.3 NON-RAMP
VMT FRACTIONS :
0.4133 0.0538 0.2199 0.0675 0.0111 0.0523 0.0057 0.0045
0.0033 0.0136 0.0140 0.0161 0.0033 0.0033 0.0015 0.0012
***** Scenario Section *****
SCENARIO RECORD : Scenario 32: 2015 Rural Minor Arterial (0.6 Anterior Collector)
CALENDAR YEAR : 2015
EVALUATION MONTH : 7
AVERAGE SPEED : 43.4 ARTERIAL
VMT FRACTIONS :
0.4502 0.0648 0.2317 0.0726 0.0134 0.0374 0.0037 0.0029
0.0022 0.0043 0.0028 0.0107 0.0047 0.0046 0.0013 0.0013
***** Scenario Section *****
SCENARIO RECORD : Scenario 33: 2015 Rural Major Collector (0.6 Anterior Collector)
CALENDAR YEAR : 2015
EVALUATION MONTH : 7
AVERAGE SPEED : 47.4 ARTERIAL
VMT FRACTIONS :
0.4821 0.0732 0.2417 0.0751 0.0145 0.0273 0.0027 0.0022
0.0016 0.0050 0.0032 0.0078 0.0040 0.0028 0.0011 0.0019
***** Scenario Section *****
SCENARIO RECORD : Scenario 34: 2015 Rural Major Collector (0.6 Anterior Collector)
CALENDAR YEAR : 2015
EVALUATION MONTH : 7
AVERAGE SPEED : 40.3 ARTERIAL
VMT FRACTIONS :
0.4532 0.0689 0.2372 0.0706 0.0125 0.0272 0.0040 0.0041
0.0023 0.0058 0.0041 0.0114 0.0107 0.0026 0.0013 0.0011
***** Scenario Section *****
SCENARIO RECORD : Scenario 35: 2015 Rural Local (0.6 Anterior Collector)
CALENDAR YEAR : 2015
EVALUATION MONTH : 7
AVERAGE SPEED : 29.3 ARTERIAL
VMT FRACTIONS :
0.4769 0.0728 0.2401 0.0715 0.0143 0.0274 0.0029 0.0023
0.0017 0.0065 0.0077 0.0081 0.0100 0.0026 0.0013 0.0015
***** Scenario Section *****
SCENARIO RECORD : Scenario 36: 2015 Urban CFA (0.6 Anterior Collector)
CALENDAR YEAR : 2015
EVALUATION MONTH : 7
AVERAGE SPEED : 35.7 ARTERIAL
VMT FRACTIONS :
0.1859 0.0740 0.2462 0.0755 0.0149 0.0251 0.0025 0.0020
0.0014 0.0035 0.0066 0.0072 0.0237 0.0015 0.0007 0.0000
***** Scenario Section *****
SCENARIO RECORD : Scenario 37: 2015 Urban Minor Arterial (0.6 Anterior Collector)
CALENDAR YEAR : 2015
EVALUATION MONTH : 7
AVERAGE SPEED : 35.4 ARTERIAL
VMT FRACTIONS :
0.4144 0.0535 0.2499 0.0710 0.0351 0.0021 0.0010 0.0014
0.0012 0.0043 0.0050 0.0058 0.0007 0.0018 0.0009 0.0012
***** Scenario Section *****
SCENARIO RECORD : Scenario 38: 2015 Urban Collector (0.6 Anterior Collector)
CALENDAR YEAR : 2015
EVALUATION MONTH : 7
AVERAGE SPEED : 34.9 ARTERIAL
VMT FRACTIONS :
0.5934 0.0761 0.2540 0.0781 0.0360 0.0152 0.0015 0.0012
0.0007 0.0033 0.0020 0.0013 0.0155 0.0010 0.0005 0.0006
***** Scenario Section *****

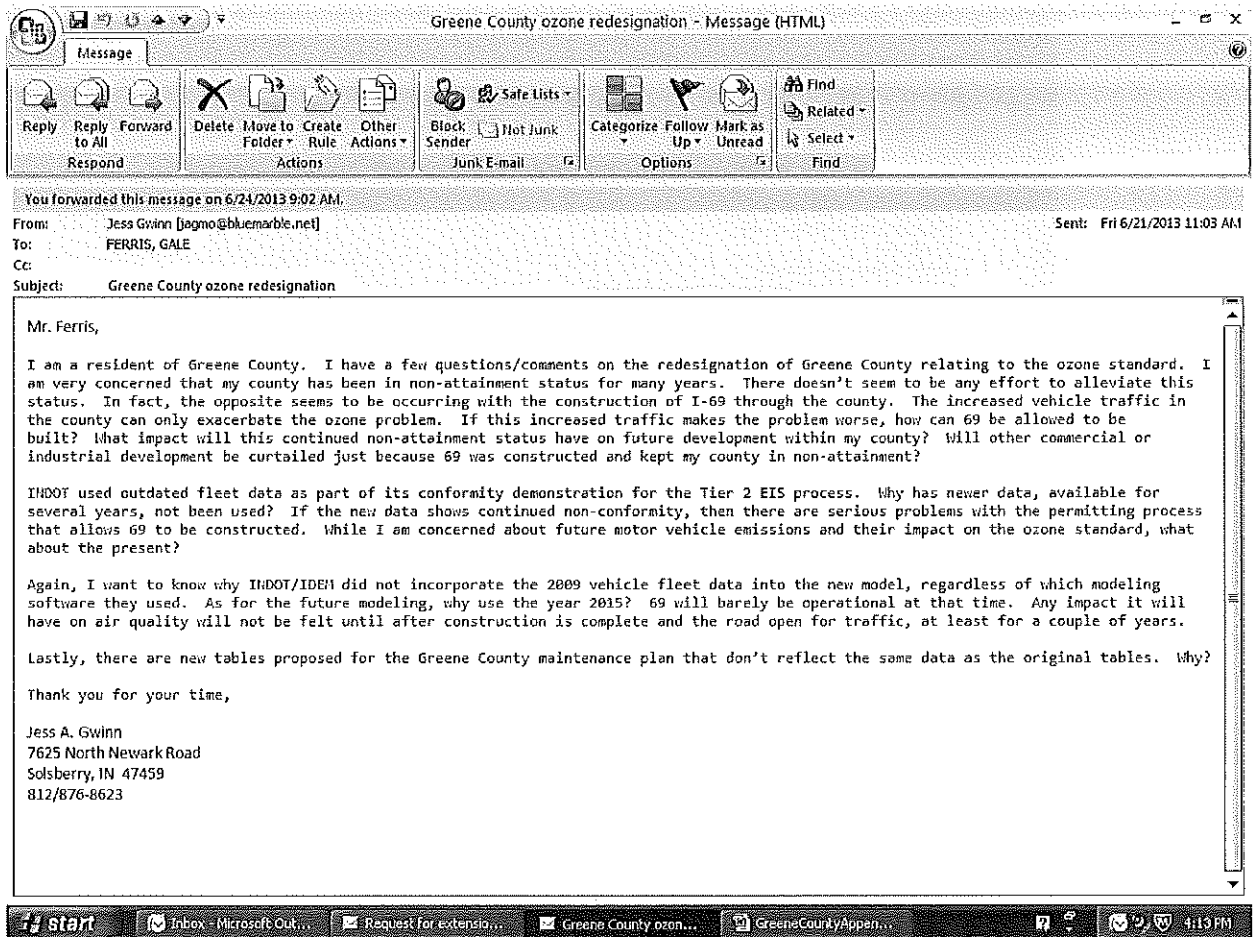
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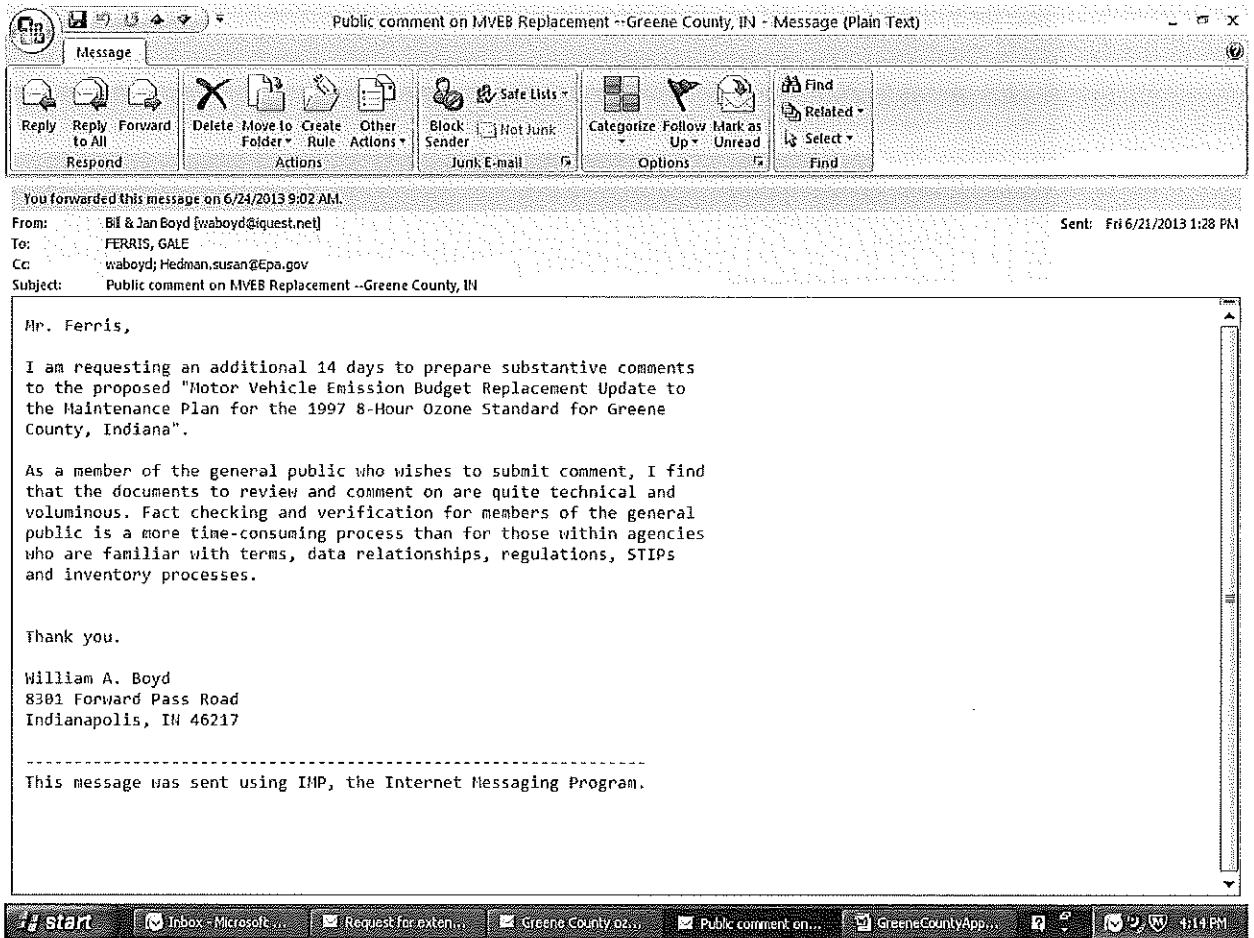
Volatile Organic Compound and Nitrogen Oxide Emissions

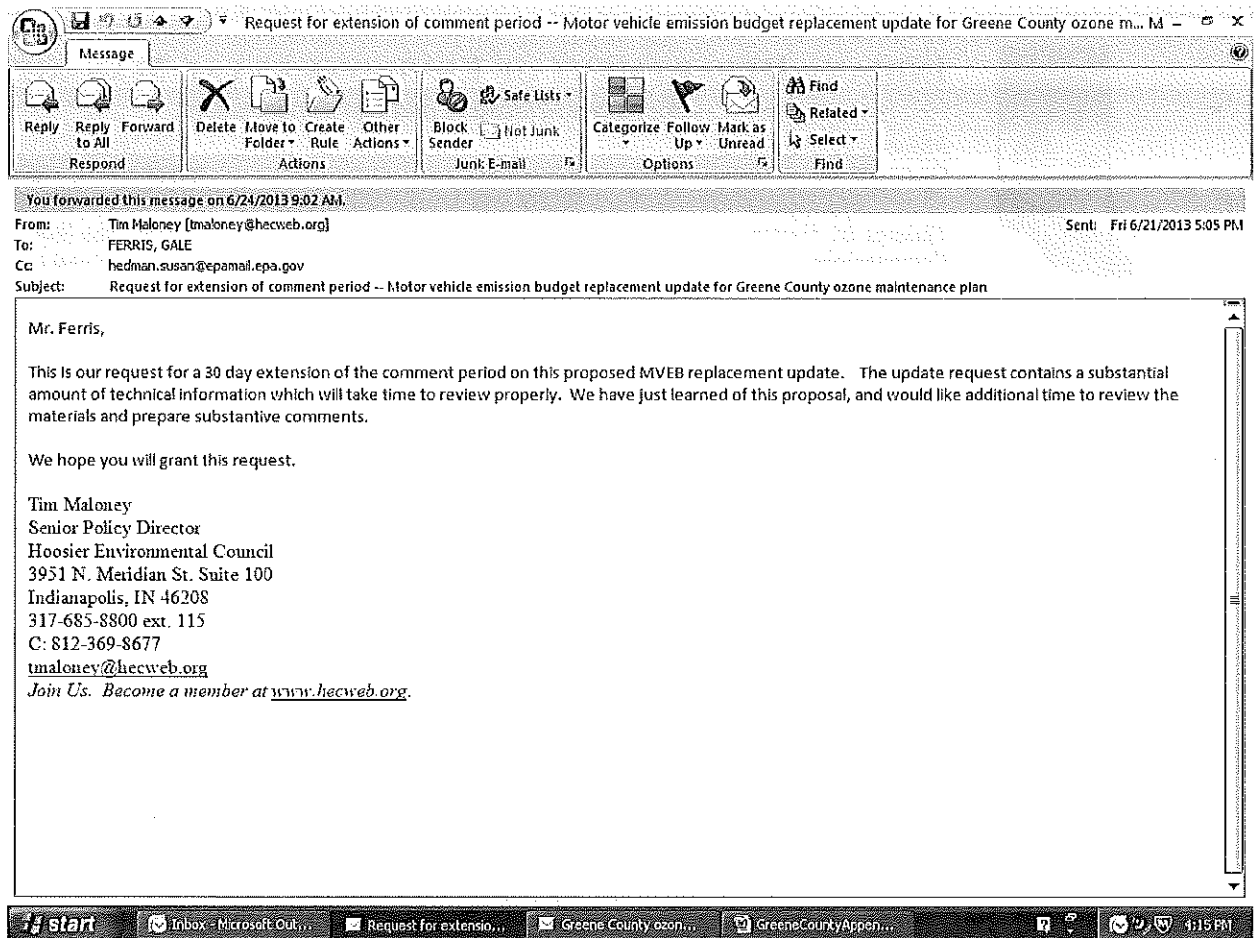
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SCENARIO RECORD : Scenario 39: 2015 Urban Local (B46 Local Road) - 12.9
CALENDAR YEAR : 2015
EVALUATION MONTH : 7
VMT BY FACILITY : Emulokel.def
VMT FRACTIONS :
0.5099 0.0775 0.2179 0.0795 0.0166 0.0106 0.0010 0.0003
0.0006 0.0013 0.0028 0.0009 0.0108 0.0028 0.0013 0.0026
END OF RUN :
***** Run Section *****
* These reference temperatures are July averages from Greene County
AIRMAX TEMP : 65.0 DEG
ABSOLUTE HUMIDITY : 93.7
CLOUD COVER : 0.34
SUNSHINE PERCENT : 6.8
FUEL KVP : 7.0
NO REFUELING :
SCENARIO RECORD : Scenario 49: 2015 Rural Interstate (Q5 Freeway/Interchange)
CALENDAR YEAR : 2015
EVALUATION MONTH : 7
AVERAGE SPEED : 73.2 FREEWAY 97.0 0.0 0.0 1.0
VMT FRACTIONS :
0.3325 0.0936 0.1783 0.0549 0.0153 0.1065 0.0106 0.0081
0.0051 0.0131 0.0279 0.0001 0.1038 0.0098 0.0028 0.0017
END OF RUN :
***** Run Section *****
* These reference temperatures are July averages from Greene County
AIRMAX TEMP : 65.0 DEG
ABSOLUTE HUMIDITY : 93.7
CLOUD COVER : 0.34
SUNSHINE PERCENT : 6.8
FUEL KVP : 7.0
NO REFUELING :
REG DIST : 28 reg d
SCENARIO RECORD : Scenario 50: 2015 Rural CFA (Q55 Main Ramp)
CALENDAR YEAR : 2015
EVALUATION MONTH : 7
AVERAGE SPEED : 48.4 RAMP
VMT FRACTIONS :
0.4333 0.0658 0.1790 0.0675 0.0111 0.0375 0.0057 0.0043
0.0013 0.0018 0.0158 0.0148 0.0540 0.0013 0.0015 0.0052
SCENARIO RECORD : Scenario 51: 2015 Rural Minor Arterial (Q65 Arterial Collector)
CALENDAR YEAR : 2015
EVALUATION MONTH : 7
AVERAGE SPEED : 48.3 ARTERIAL
VMT FRACTIONS :
0.4060 0.0936 0.2357 0.0726 0.0111 0.0374 0.0057 0.0043
0.0072 0.0091 0.0098 0.0107 0.0382 0.0026 0.0013 0.0045
SCENARIO RECORD : Scenario 52: 2015 Rural Major Collector (Q65 Arterial Collector)
CALENDAR YEAR : 2015
EVALUATION MONTH : 7
AVERAGE SPEED : 47.8 ARTERIAL
VMT FRACTIONS :
0.4831 0.0720 0.2437 0.0751 0.0345 0.0775 0.0027 0.0072
0.0036 0.0066 0.0071 0.0078 0.0180 0.0024 0.0031 0.0019
SCENARIO RECORD : Scenario 53: 2015 Rural Minor Collector (Q65 Arterial Collector)
CALENDAR YEAR : 2015
EVALUATION MONTH : 7
AVERAGE SPEED : 40.3 ARTERIAL
VMT FRACTIONS :
0.4333 0.0658 0.1790 0.0675 0.0111 0.0375 0.0057 0.0043
0.0013 0.0018 0.0158 0.0148 0.0540 0.0013 0.0015 0.0052
SCENARIO RECORD : Scenario 54: 2015 Rural Local (Q65 Arterial Collector)
CALENDAR YEAR : 2015
EVALUATION MONTH : 7
AVERAGE SPEED : 39.2 ARTERIAL
VMT FRACTIONS :
0.4789 0.0718 0.2421 0.0746 0.0313 0.0394 0.0029 0.0021
0.0017 0.0064 0.0071 0.0081 0.0301 0.0026 0.0013 0.0045
SCENARIO RECORD : Scenario 55: 2015 Urban CFA (Q65 Arterial Collector)
CALENDAR YEAR : 2015
EVALUATION MONTH : 7
AVERAGE SPEED : 35.6 ARTERIAL
VMT FRACTIONS :
0.4568 0.0719 0.2420 0.0759 0.0349 0.0751 0.0055 0.0030
0.0013 0.0055 0.0066 0.0072 0.0171 0.0015 0.0007 0.0040
SCENARIO RECORD : Scenario 56: 2015 Urban Minor Arterial (Q65 Arterial Collector)
CALENDAR YEAR : 2015
EVALUATION MONTH : 7
AVERAGE SPEED : 35.6 ARTERIAL
VMT FRACTIONS :
0.4914 0.0703 0.2349 0.0710 0.0354 0.0303 0.0020 0.0026
0.0012 0.0043 0.0053 0.0028 0.0207 0.0018 0.0005 0.0012
SCENARIO RECORD : Scenario 57: 2015 Urban Collector (Q65 Arterial Collector)
CALENDAR YEAR : 2015
EVALUATION MONTH : 7
AVERAGE SPEED : 34.0 ARTERIAL
VMT FRACTIONS :
0.3924 0.0930 0.2340 0.0743 0.0300 0.0152 0.0015 0.0012
0.0025 0.0023 0.0010 0.0013 0.0133 0.0010 0.0005 0.0036
SCENARIO RECORD : Scenario 58: 2015 Urban Local (Q66 Local Road) - 12.9
CALENDAR YEAR : 2015
EVALUATION MONTH : 7
VMT BY FACILITY : Emulokel.def
VMT FRACTIONS :
0.5099 0.0775 0.2179 0.0795 0.0166 0.0106 0.0010 0.0003
0.0006 0.0013 0.0028 0.0009 0.0108 0.0028 0.0013 0.0026
END OF RUN :

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INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
Toll Free (800) 451-6027
www.idem.IN.gov

May 23, 2013

CERTIFICATE OF PUBLICATION

This is to certify that the Indiana Department of Environmental Management (IDEM) Notice of the opportunity for a Public Hearing regarding the following:

- Motor Vehicle Emission Budget (MVEB) Replacement Update to the Maintenance Plan for the 1997 8-Hour Ozone Standard for Greene County, Indiana

was published on IDEM's web site on May 22, 2013. It is expected that it will remain posted on the site until at least June 21, 2013.

The notice in full was available online at the following web address, under "Southwestern".

<http://www.in.gov/idem/5474.htm>

Web publication of the notice was at the request of Scott Deloney, Branch Chief, Programs Branch, Office of Air Quality, IDEM.

By:

Mike Finklestein
IDEM Webmaster

Attachments:

Copy of web page as published.

SCREENSHOT VERIFICATION OF LEGAL NOTICE POSTING ON IDEM WEBSITE

IDEM: Public Notices: Southwest Indiana - Windows Internet Explorer

http://www.in.gov/idean/6393.htm

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IDEM Extranet IDEM: Public Notices: Sou... X

Page Safety Tools

<p>Watersheds and Nonpoint Source</p> <p>Water Pollution</p> <p>Certifications & Training</p> <p>Compliance</p> <p>Monitoring</p> <p>Permitting</p> <p>Reporting</p> <p>Video and Audio Library</p> <p>Sign up to receive e-mail and wireless updates from IDEM</p> <p>Find Out Where to Recycle</p>	Holland (town) WWTP	Dubois	NPDDES Final Renewal (PDF)	04/26/2013 - Yes	Address on Notice	John Donnellan
				06/14/2013	Project Manager:	
					Matt Cook	
	City of Jasper	Dubois and Pike	Solid Waste Land Application Permit (DOC)	05/06/2013 - Yes	Address on Notice	
				06/07/2013	Project Manager:	
					Brenda Stephanoff	
	Motor Vehicle Emission Budget Replacement Update to the Maintenance Plan for the 1997 Annual Fine Particles Standard for the Southwestern Indiana Area	Dubois, Gibson, Pike, Spencer, Vanderburgh and Warrick	Legal Notice and Opportunity for Public Hearing (PDF)	05/16/2013 - Yes	Address on Notice	
				06/21/2013	Address on Notice	
	Princeton (city) WWTP	Gibson	NPDDES Draft Renewal (PDF)	04/19/2013 - Yes	Project Manager:	
				05/20/2013	Bill Stenner	
					Address on Notice	
	Gibson County Coal Mine	Gibson	NPDDES Completeness & Availability of an Antidegradation Demonstration (PDF)	04/06/2013 - Yes	Project Manager:	
				05/08/2013	Steve Roush	
					Address on Notice	
	Motor Vehicle Emission Budget Replacement Update to the Maintenance Plan for the 1997 8-Hour Ozone Standard for Greene County, Indiana	Greene	Legal Notice and Opportunity for Public Hearing (PDF)	05/22/2013 - Yes	Address on Notice	
			06/21/2013	Address on Notice		
Countrymark Refining & Logistics LLC - Switz City Terminal	Greene	NPDDES 15-8 "Renewal" General Permit (PDF)	05/15/2013 - No	Project Manager:		
			06/03/2013	Shari Jordan		
Eastern Heights Utilities Water	Greene	Water Well Construction for Drinking Water (PDF)	04/03/2013 - Yes	Address on Notice		
			05/03/2013	Address on Notice		
Soeppler, Inc	Knox	Solid Waste Permit (PDF)	05/20/2013 - No	Project Manager:		
			06/09/2013	Cara Klichen		
SR 88 Bridge Replacement & Curve Correction	Knox	401 Water Quality Certification Public Notice (PDF)	05/14/2013 - Yes	Project Manager:		
			06/04/2013	James Turner		
				Applicant Name:		
				Mr. Thomas Warner		
				Address on Notice		
				Applicant		
				Company: INDOT		
				IDEM ID Number		
				(Permit): 2013-233-		

Done Local intranet 100% 6-11-2013 8:33 AM

start IDEM: Public Notices: ... Legal Notice/Legal No... 1 Reminder FW: Air Quality 101 - ...

