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Introduction

Delaware County, Indiana was designated as a basic non attainment area for ozone under the 8-hour ozone standard in June of 2004. With this designation, the Delaware Muncie Metropolitan Planning Commission, serving as the Metropolitan Planning Organization for the Muncie - Delaware County area, is the agency responsible for conducting the air quality analyses. All plans, programs and projects must be reviewed for conformity with the standards to assure that they do not exceed the established budgets as established in the State Implementation Plan (SIP). Projects under the jurisdiction of the Indiana Department of Transportation (INDOT) and the Madison County Council of Governments (MCCOG) are located within Delaware County and have been included in the 2005-2030 Delaware-Muncie Transportation Plan and the transportation conformity analysis.

In general, examinations for conformity have two major components: (1) an air quality analysis to determine that air pollutant emissions do not exceed the budgets for VOCs and NOx set in the State Implementation Plan (SIP) and (2) a monitoring of the progress in implementation of the Transportation Control Measures (TCMs) contained in the SIP. Delaware County, as a newly designated non-attainment area, does not yet have an established emissions budget based upon a SIP. SIP development is not required to be completed until 3 years after an area is designated, in this case 3 years after June 2004, though it is possible that the SIP may be prepared sometime in 2005. After consultation with the state air agency (IDEM), US EPA, FHWA, and INDOT, it was agreed that an interim “no greater than” year 2002 baseline test would be used for the current Delaware County conformity analysis. Also, since no SIP has been established for Delaware County, there are no approved TCMs to be evaluated at this time. Therefore, it was possible to show conformity of the 2030 Transportation Plan simply by determining that the air pollutant emissions do not exceed the 2002 emissions.

The air quality analysis involved four procedures. First, a travel model using the TransCAD software was used to determine the vehicle-miles-traveled (VMT) for each of the analysis years (2002, 2010, 2015, 2025, and 2030). The VMT was then adjusted using factors which were derived for the base year (2002). These factors allow the model output to be reconciled with estimates of VMT from the Highway Performance Monitoring System (HPMS). Second, a post processing procedure was used to compute speeds, by three time periods of the day, 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 factors for VOCs and NOx. Fourth, the VMT by functional classification was then multiplied by the emission factors to determine the emissions. Further explanation of the components of the analysis is documented in this report.
Federal Conformity Requirements

Federal Regulations for Metropolitan Planning in 23 CFR (Code of Federal Regulations) Part 450 require that federally funded highway and transit projects be included in a conforming plan and Transportation Improvement Program (TIP). 40 CFR Part 93, amended August 15, 1997, outlines the requirements for making conformity determinations under Subpart A. Applicable requirements are listed below.

1. The Transportation Plan must specifically describe the transportation system envisioned for certain future years, which are called horizon years.
   - The horizon years may be no more than 10 years apart.
   - The first horizon year may not be more than 10 years from the base year used to validate the travel demand model.
   - If the attainment year is in the time span of the Transportation Plan, the attainment year must be a horizon year.
   - The last horizon year must be the last year of the Transportation Plan’s forecast year.

The 2030 Transportation Plan lists specific projects by time periods that meet this requirement. Traffic modeling for the conformity analysis was done for the years 2002, 2010, 2015, 2025, and 2030. The attainment year for SIP development will be 2015, thus this additional year was included.

2. The Transportation Plan will quantify and document the demographic and employment factors influencing the expected transportation demand; and the highway and transit system shall be described in terms of the regionally significant additions or modifications to the existing transportation network, which the transportation plan envisions to be operational in the horizon years.

The documentation of how travel demand is estimated using existing and forecasted demographic and employment data is described in the March, 2005 Travel Demand Model Technical Documentation included as an appendix of the 2030 Transportation Plan. Regionally significant additions or modifications to the transportation system included in the financially constrained transportation plan are listed by time period in the next section of this report. Non-capacity increasing projects, which were not used in the conformity analysis, are listed in the main Transportation Plan document.

3. The Transportation Plan must be financially reasonable and the TIP must be fiscally constrained consistent with the U.S. DOT’s metropolitan planning regulations at 23 CFR part 450 in order to be found in conformity.
All projects included in the conformity analysis are fiscally constrained within the plan horizon. A list of illustrative (fiscally unconstrained) projects is also included in the main Transportation Plan document.

4. The conformity determination must be based on the latest emission estimation model available.

This analysis uses the US EPA approved Mobile 6.2 software, which is the latest emission model available for use in Indiana.

5. The MPO must make the conformity determination according to the interagency consultation procedures required in 40 CFR Parts 51 and 93 (sections 51.390 and 93.105), and according to the public involvement procedures established by the MPO in compliance with 23 CFR Part 450.

All major decisions relating to methodology, assumptions, and data used in the conformity analysis have been made via the interagency consultation process. Parties to the interagency consultation process include DMMPC, INDOT, IDEM, FHWA, US EPA, and FTA, each has had the opportunity to participate in the consultation meetings. The plan updated process has also included a public involvement component that is consistent with the MPO’s currently adopted public involvement procedures.

6. The Transportation Plan must provide for the timely implementation of Traffic Control Measures (TCM) from the applicable State Implementation Plan (SIP). Nothing in the plan may interfere with the implementation of any TCM in the applicable implementation plan.

An implementation plan has not yet been developed. No TCMs are currently applicable in the Muncie/Delaware County MPO area.

7. The Transportation Plan must be consistent with the motor vehicle emissions budget in the applicable State Implementation Plan (SIP).

Delaware County was newly designated as a Basic Non-Attainment Area for Ozone in June 2004. A SIP has not yet been developed for this county, and thus a motor vehicle budget has not been created. During the interagency consultation process, an agreement was reached that the conformity determination for this Transportation Plan update would be done using an interim test whereby no future horizon year can exceed 2002 emissions.

8. The regional emissions analysis shall estimate emissions from the entire transportation system, including all regionally significant projects contained in the Transportation Plan and all other regionally significant highway and transit projects expected in the non-attainment area in the time frame of the Transportation Plan.

All regionally significant projects within Delaware County have been included in the 2030 Transportation Plan list of projects. Those projects that involve an
increase in a regionally significant increase in capacity have been included in the conformity analysis.

9. The emissions analysis methodology shall meet the requirement of section 93.122: (a) Regional emissions analysis for the Transportation Plan shall include all regionally significant projects expected in the maintenance area. Projects that are not regionally significant are not required to be explicitly modeled, but VMT from such projects must be estimated in accordance with reasonable professional practices. The effects of TCM’s and similar projects that are not regionally significant may also be estimated in accordance with reasonable professional practices. (b) For TCM’s demonstrating a quantifiable emission reduction benefit, the emissions analysis may include that emissions reduction credit. (c) For areas with a Transportation Plan that meets the content requirements of section 93.106, the emissions analysis shall be performed for each horizon year.

The emissions analysis methodology includes all regionally significant projects. VMT from all facilities is included in the analysis, including off-model facilities. There are no required TCMs for the Delaware County non-attainment area. There are also no additional credits being sought from the Congestion Mitigation and Air Quality (CMAQ) program funded projects that will be implemented in Delaware County.

2030 Long Range Plan

Capacity expansion projects that were explicitly modeled in the conformity analysis are listed below in Table 1. The fiscally constrained listing specifies, by conformity horizons, when projects are expected to be completed. For a complete listing of projects, capacity, non-capacity, financially constrained, and non-financially constrained, please refer to the main 2030 Transportation Plan document.

**TABLE 1: Long Range Project List - Modeled**

<table>
<thead>
<tr>
<th>Model Year</th>
<th>Project Name</th>
<th>Design Number</th>
<th>Miles</th>
<th>Project Type</th>
<th>Jurisdiction</th>
<th>Funding Phase</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005-2010</td>
<td>(#1) Barr Extension</td>
<td>0.61</td>
<td>New Road</td>
<td>City of Muncie</td>
<td>2005-2009</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(#3) Morrison Widening</td>
<td>1.05</td>
<td>Center Turn Lane</td>
<td>Delaware County</td>
<td>2005-2009</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(#18)-99</td>
<td>9700420</td>
<td>0</td>
<td>Added Travel Lanes</td>
<td>State</td>
<td>2005-2009</td>
</tr>
<tr>
<td></td>
<td>(#19) Bypass (US 35/SR 3 &amp; 67)</td>
<td>9901350</td>
<td>0</td>
<td>Grade Separation</td>
<td>State</td>
<td>2005-2009</td>
</tr>
<tr>
<td></td>
<td>(#22) SR 32</td>
<td>9700310</td>
<td>1.71</td>
<td>Added Travel Lanes</td>
<td>State</td>
<td>2005-2009</td>
</tr>
<tr>
<td></td>
<td>(#23) SR 32</td>
<td>9407670</td>
<td>0.65</td>
<td>Added Travel Lanes</td>
<td>State</td>
<td>2005-2009</td>
</tr>
<tr>
<td></td>
<td>(#20) Centennial Grade Separation</td>
<td>9901360</td>
<td>0</td>
<td>Grade Separation</td>
<td>State</td>
<td>2005-2009</td>
</tr>
<tr>
<td></td>
<td>(#23) SR 32</td>
<td>13680</td>
<td>3.84</td>
<td>Center Turn Lane</td>
<td>State</td>
<td>2005-2009</td>
</tr>
<tr>
<td></td>
<td>(#2) Sutherland Extension</td>
<td>0.52</td>
<td>New Road</td>
<td>Yorktown</td>
<td>2005-2009</td>
<td></td>
</tr>
</tbody>
</table>
### Travel Demand Model

The Muncie/Delaware County regional travel demand model 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 Delaware County. This area is divided into 545 smaller units called traffic analysis zones. All major roadways are represented in the travel model.

The Muncie/Delaware County regional travel demand model underwent a recalibration and conversion to TransCAD software as part of the *Western Growth & Arterial Study* which was completed in 2003. This recalibration established 2000 as the new base year for the model. The model update and recalibration in 2003 utilized the latest data from the 2000 Census, ES202 employment dataset, 2000 Census Transportation Planning Package, and several additional sources which are reported in detail in the Travel Demand Model Technical Documentation. 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 the Muncie area for 2002, and is capable of producing accurate traffic forecasts out to year 2030.

The recalibrated travel model was used in the regional air quality analysis. The Muncie/Delaware County 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 the study area. These types of trips are known as external-internal, internal-external, and external-external, respectively.

Trip generation is the process of determining the number of unlinked trip ends—called productions and attractions—and their spatial distribution based on socioeconomic variables such as households and employment. Trip rates used to define these relationships were derived from the travel data collection efforts described above. The internal trip purposes are home-based work, non home-based work, home-based other, home based other, non home-based other, home-based school.

Trip distribution is the process of linking the trip ends thereby creating trips which traverse the area. The travel model uses a gravity model to link all trips except the external-external ones. The gravity model is based on the principle that productions are linked to attractions as a direct function of the number of attractions of a zone and as an inverse function of the travel time between zones. This inverse function of travel time is used to generate parameters called friction factors which, in turn, direct the gravity model. The friction factors used in the gravity model were developed as part of the calibration effort performed during the model update of 2000.

Mode choice is the process used to separate the trips which use transit from those which use automobiles. It is also used to separate the auto drive-alone trips from auto shared-ride trips. In the Muncie/Delaware County travel demand model, mode choice is modeled based on stratifications by trip purpose and travel times using recent household travel survey data from the 2000 Evansville Household Survey. This procedure accounts for person trips that use transit or shared-ride (carpool), and the result is a origin to destination auto trip table.

Traffic assignment is the process used to determine which links of the network an auto or truck trip will use. A capacity restraint provision is used to adjust travel times between assignment iterations, to account for the effects of congestion. This sequence is called an equilibrium assignment. The results of this process produces a forecast of traffic volumes on each link in the network and an estimate of congested travel speeds, which allows for the calculation of vehicle-miles-traveled (VMT) and vehicle-hours-traveled (VHT).

Each of the horizon years contained in the Transportation Plan were coded into the model as a specific socioeconomic forecast with appropriate network
capacity projects for that time period. These scenarios yielded the traffic forecasts used in the conformity analysis. Vehicle miles of travel forecasts from these model runs are summarized in Figure 1.

**Figure 1: Modeled Vehicle Miles of Travel**
Model Post-Processing and Mobile 6.2 Input Files

Model outputs are expressed in terms 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. For estimating total emissions, raw model VMT is summarized by functional classification. These values are adjusted on a functional classification basis using a Model-to-HPMS VMT adjustment factor. The Model-to-HPMS VMT adjustment factor is calculated using the base year 2002 Model VMT compared to the base year HPMS reported VMT. HPMS is considered to be a more complete estimate of vehicle miles of travel in a county, and accounts for travel on all classifications of roadways. The HPMS adjustment factors are used in each of the Transportation Plan scenarios.

Table 2: HPMS Adjustment Factors

<table>
<thead>
<tr>
<th>Functional Classification</th>
<th>Functional Class Code</th>
<th>HPMS Adjustment Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural Interstate</td>
<td>1</td>
<td>1.01</td>
</tr>
<tr>
<td>Rural Principal Arterial</td>
<td>2</td>
<td>0.88</td>
</tr>
<tr>
<td>Rural Minor Arterial</td>
<td>6</td>
<td>0.78</td>
</tr>
<tr>
<td>Rural Major Collector</td>
<td>7</td>
<td>3.52</td>
</tr>
<tr>
<td>Rural Minor Collector</td>
<td>8</td>
<td>0.56</td>
</tr>
<tr>
<td>Rural Local</td>
<td>9</td>
<td>4.22</td>
</tr>
<tr>
<td>Urban Interstate</td>
<td>11</td>
<td>0.92</td>
</tr>
<tr>
<td>Urban Expressway</td>
<td>12</td>
<td>1.06</td>
</tr>
<tr>
<td>Urban Principal Arterial</td>
<td>14</td>
<td>1.08</td>
</tr>
<tr>
<td>Urban Minor Arterial</td>
<td>16</td>
<td>1.03</td>
</tr>
<tr>
<td>Urban Collector</td>
<td>17</td>
<td>0.36</td>
</tr>
<tr>
<td>Urban Local</td>
<td>19</td>
<td>9.46</td>
</tr>
</tbody>
</table>

Additionally, it is necessary to post-process the model estimates of travel speed by each road link to better match observed speeds. In the post-processing, an average speed and VMT are computed for each time period for each link via excel spreadsheet. The spreadsheet also contains an attribute for FHWA functional class. 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). Time of day factors by trip purpose in the Muncie/Delaware Model were derived from the 2000 Evansville Household Travel Survey, see table 3 below.
Table 3: Time of Day Factors

<table>
<thead>
<tr>
<th>PERIOD</th>
<th>HBW</th>
<th>HBSC</th>
<th>HBO</th>
<th>NHBW</th>
<th>NHBO</th>
</tr>
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<tr>
<td>AM PEAK 3 HOURS</td>
<td>36.7%</td>
<td>47.5%</td>
<td>15.9%</td>
<td>17.6%</td>
<td>10.1%</td>
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<tr>
<td>PM PEAK 3 HOURS</td>
<td>30.8%</td>
<td>23.5%</td>
<td>26.1%</td>
<td>28.0%</td>
<td>23.7%</td>
</tr>
<tr>
<td>OFF PEAK 18 HOURS</td>
<td>32.5%</td>
<td>29.0%</td>
<td>58.0%</td>
<td>54.4%</td>
<td>66.2%</td>
</tr>
</tbody>
</table>

Source: 2000 Evansville Household Travel Survey

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.

\[
\text{Speed}_{\text{congested}} = \frac{\text{Speed}_{\text{freeflow}}}{1 + \alpha(v/c)^\beta}
\]

Alpha and Beta parameters are US EPA recommended values, where:

Table 4: BPR Curve Parameters

<table>
<thead>
<tr>
<th>Volume-Delay Curve Parameters</th>
<th>Under 60 mph</th>
<th>Over 60 mph</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alpha</td>
<td>0.20</td>
<td>0.15</td>
</tr>
<tr>
<td>Beta</td>
<td>8.00</td>
<td>10.00</td>
</tr>
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</table>

To avoid unrealistically low average speeds, the V/C ratio is capped at 1.6. Any links that have a V/C ratio that exceeds 1.6 is assumed to remain at 1.6 for speed estimation purposes.

After speeds were estimated for each modeled link for the three daily time periods 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 7 through 11 and in the Mobile 6.2 input files contained in the Appendix.

Indiana specific VMT per vehicle type was derived by IDEM from the Indiana Department of Transportation (INDOT) 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 Muncie/Delaware analysis. 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 Table 5 and in the Mobile 6 input files contained in the Appendix.

Table 5: VMT Fractions

<table>
<thead>
<tr>
<th>HPMS Classification</th>
<th>Mobile 6 Classification</th>
<th>Mobile 6 Vehicle Type</th>
<th>LDV</th>
<th>LDT1</th>
<th>LDT2</th>
<th>LDT3</th>
<th>LDT4</th>
<th>HDV2B</th>
<th>HDV3</th>
<th>HDV4</th>
<th>HDV5</th>
<th>HDV6</th>
<th>HDV7</th>
<th>HDV8</th>
<th>HDV8B</th>
<th>HDBS</th>
<th>HDBT</th>
<th>MC</th>
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<tbody>
<tr>
<td>Rural Interstate</td>
<td>Freeway / Freeway Ramp</td>
<td>0.353</td>
<td>0.054</td>
<td>0.178</td>
<td>0.055</td>
<td>0.025</td>
<td>0.107</td>
<td>0.011</td>
<td>0.008</td>
<td>0.006</td>
<td>0.023</td>
<td>0.022</td>
<td>0.010</td>
<td>0.008</td>
<td>0.001</td>
<td>0.006</td>
<td>0.008</td>
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<tr>
<td>Rural Other Principal Arterial</td>
<td>Non-Ramp</td>
<td>0.435</td>
<td>0.066</td>
<td>0.219</td>
<td>0.089</td>
<td>0.031</td>
<td>0.093</td>
<td>0.009</td>
<td>0.005</td>
<td>0.003</td>
<td>0.013</td>
<td>0.015</td>
<td>0.016</td>
<td>0.059</td>
<td>0.003</td>
<td>0.002</td>
<td>0.006</td>
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<tr>
<td>Rural Minor Arterial</td>
<td>Arterial / Collector</td>
<td>0.466</td>
<td>0.071</td>
<td>0.238</td>
<td>0.073</td>
<td>0.033</td>
<td>0.037</td>
<td>0.004</td>
<td>0.003</td>
<td>0.002</td>
<td>0.008</td>
<td>0.010</td>
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<td>0.075</td>
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<td>0.002</td>
<td>0.002</td>
<td>0.007</td>
<td>0.008</td>
<td>0.008</td>
<td>0.030</td>
<td>0.003</td>
<td>0.001</td>
<td>0.005</td>
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<tr>
<td>Urban Interstate</td>
<td>Freeway / Freeway Ramp</td>
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<td>0.063</td>
<td>0.219</td>
<td>0.086</td>
<td>0.036</td>
<td>0.069</td>
<td>0.007</td>
<td>0.005</td>
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<td>0.002</td>
<td>0.005</td>
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</tr>
<tr>
<td>Urban Freeway/Expressway</td>
<td>Freeway / Freeway Ramp</td>
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<td>0.071</td>
<td>0.033</td>
<td>0.045</td>
<td>0.004</td>
<td>0.004</td>
<td>0.003</td>
<td>0.012</td>
<td>0.013</td>
<td>0.014</td>
<td>0.049</td>
<td>0.003</td>
<td>0.001</td>
<td>0.005</td>
<td></td>
</tr>
<tr>
<td>Urban Other Principal Arterial</td>
<td>Arterial / Collector</td>
<td>0.487</td>
<td>0.074</td>
<td>0.246</td>
<td>0.076</td>
<td>0.035</td>
<td>0.052</td>
<td>0.003</td>
<td>0.002</td>
<td>0.007</td>
<td>0.006</td>
<td>0.007</td>
<td>0.007</td>
<td>0.026</td>
<td>0.002</td>
<td>0.001</td>
<td>0.004</td>
<td></td>
</tr>
<tr>
<td>Urban Minor Arterial</td>
<td>Arterial / Collector</td>
<td>0.494</td>
<td>0.075</td>
<td>0.250</td>
<td>0.077</td>
<td>0.035</td>
<td>0.055</td>
<td>0.002</td>
<td>0.002</td>
<td>0.001</td>
<td>0.005</td>
<td>0.006</td>
<td>0.006</td>
<td>0.021</td>
<td>0.002</td>
<td>0.001</td>
<td>0.004</td>
<td></td>
</tr>
<tr>
<td>Urban Collector</td>
<td>Arterial / Collector</td>
<td>0.502</td>
<td>0.078</td>
<td>0.254</td>
<td>0.079</td>
<td>0.036</td>
<td>0.053</td>
<td>0.002</td>
<td>0.001</td>
<td>0.001</td>
<td>0.004</td>
<td>0.004</td>
<td>0.005</td>
<td>0.025</td>
<td>0.002</td>
<td>0.001</td>
<td>0.006</td>
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</tr>
<tr>
<td>Urban Local</td>
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<td>0.510</td>
<td>0.078</td>
<td>0.256</td>
<td>0.080</td>
<td>0.037</td>
<td>0.061</td>
<td>0.001</td>
<td>0.001</td>
<td>0.001</td>
<td>0.003</td>
<td>0.009</td>
<td>0.009</td>
<td>0.051</td>
<td>0.003</td>
<td>0.001</td>
<td>0.006</td>
<td></td>
</tr>
</tbody>
</table>

Vehicle fleet age distribution was provided for light duty vehicles for Delaware County by IDEM, these values are used in the IN_cyt18.d file. For other vehicle classes, the standard Mobile 6.2 defaults are used. The IN_cyt18.d remains constant in each scenario, the file is listed in the Appendix.

Other assumptions, such as the minimum and maximum July temperatures (64.0 and 84.9) for Muncie; absolute humidity (93.7), cloud cover (0.34), and sunrise/sunset (5am & 8pm respectively) were provided by IDEM. Each of these variables are specified in the Mobile 6.2 input files for each scenario.

The Mobile 6.2 model is run using the above-mentioned user inputs to get emission rates for each of the model scenarios. Emissions are then calculated from the adjusted VMT, by functional classification, using the Mobile 6.2 output emission rates.
Analysis Results

The regional emissions analysis was conducted to provide estimates of the levels of emissions of volatile organic compounds (VOC) and oxides of Nitrogen (NOx) for the various scenarios. VOC and NOx contribute directly to the production of ozone. Because no emission budgets are yet established for VOC and NOx, emissions are not permitted to exceed the 2002 levels.

The results of the regional emissions analysis are summarized in Tables 6 through 12, and in Figure 2. Table 6 shows that for each of the analysis years, the VOC and NOx emissions are less than those in 2002. Figure 2 illustrates that emissions for both ozone precursors is estimated to decline steadily over the next 25 years.

Table 6: Emission Analysis Results

<table>
<thead>
<tr>
<th>Year</th>
<th>Daily VMT</th>
<th>VOC Tons/day</th>
<th>NOX Tons/day</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>4,410,000</td>
<td>8.19</td>
<td>13.89</td>
</tr>
<tr>
<td>2010</td>
<td>4,822,355</td>
<td>4.69</td>
<td>7.66</td>
</tr>
<tr>
<td>2015</td>
<td>5,097,099</td>
<td>3.33</td>
<td>4.59</td>
</tr>
<tr>
<td>2025</td>
<td>5,548,298</td>
<td>2.36</td>
<td>2.38</td>
</tr>
<tr>
<td>2030</td>
<td>5,776,640</td>
<td>2.35</td>
<td>2.14</td>
</tr>
</tbody>
</table>

Figure 2: Emission Analysis Results
Tables 7-11: Detailed Emission Analysis Results

Modeled Vehicle Miles of Travel and Mobile Source Emissions for 2002 Scenario

<table>
<thead>
<tr>
<th></th>
<th>VMT</th>
<th>Average Speed</th>
<th>VOC Tons/day</th>
<th>NOX Tons/day</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Model</td>
<td>Adjusted</td>
<td>Tons/day</td>
<td>Tons/day</td>
</tr>
<tr>
<td>Rural Interstate</td>
<td>563,723</td>
<td>581,000</td>
<td>69.6</td>
<td>0.81</td>
</tr>
<tr>
<td>Rural Principal Arterial</td>
<td>234,090</td>
<td>206,000</td>
<td>57.7</td>
<td>0.32</td>
</tr>
<tr>
<td>Rural Minor Arterial</td>
<td>246,120</td>
<td>193,000</td>
<td>52.0</td>
<td>0.32</td>
</tr>
<tr>
<td>Rural Major Collector</td>
<td>409,791</td>
<td>1,443,000</td>
<td>48.0</td>
<td>2.52</td>
</tr>
<tr>
<td>Rural Minor Collector</td>
<td>65,790</td>
<td>37,000</td>
<td>42.6</td>
<td>0.07</td>
</tr>
<tr>
<td>Rural Local</td>
<td>23,454</td>
<td>99,000</td>
<td>38.0</td>
<td>0.18</td>
</tr>
<tr>
<td>Urban Interstate</td>
<td>18,558</td>
<td>28,000</td>
<td>54.9</td>
<td>0.04</td>
</tr>
<tr>
<td>Urban Expressway</td>
<td>151,217</td>
<td>161,000</td>
<td>55.4</td>
<td>0.26</td>
</tr>
<tr>
<td>Urban Principal Arterial</td>
<td>590,397</td>
<td>637,000</td>
<td>36.0</td>
<td>1.21</td>
</tr>
<tr>
<td>Urban Minor Arterial</td>
<td>604,853</td>
<td>626,000</td>
<td>27.1</td>
<td>1.32</td>
</tr>
<tr>
<td>Urban Collector</td>
<td>223,966</td>
<td>81,000</td>
<td>27.1</td>
<td>0.17</td>
</tr>
<tr>
<td>Urban Local</td>
<td>33,609</td>
<td>318,000</td>
<td>29.0</td>
<td>0.97</td>
</tr>
<tr>
<td>Ramp</td>
<td>23,713</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
</tbody>
</table>

Rural Interstate 626,056 | 645,757 | 69.6 | 0.48 | 2.43 |
Rural Principal Arterial 248,217 | 218,432 | 57.9 | 0.18 | 0.45 |
Rural Minor Arterial 258,360 | 202,598 | 53.7 | 0.18 | 0.30 |
Rural Major Collector 448,083 | 1,577,837 | 48.3 | 1.47 | 1.95 |
Rural Minor Collector 68,073 | 38,284 | 42.6 | 0.04 | 0.05 |
Rural Local 25,547 | 107,835 | 38.1 | 0.11 | 0.13 |
Urban Interstate 20,577 | 31,535 | 54.7 | 0.03 | 0.07 |
Urban Expressway 190,888 | 203,237 | 55.6 | 0.18 | 0.36 |
Urban Principal Arterial 642,095 | 692,779 | 40.5 | 0.68 | 0.78 |
Urban Minor Arterial 636,534 | 658,789 | 32.1 | 0.69 | 0.69 |
Urban Collector 238,830 | 86,376 | 30.3 | 0.09 | 0.09 |
Urban Local 37,931 | 358,897 | 29.5 | 0.56 | 0.35 |
Ramp 27,354 | *      | *    | *    | *    |
Rural Interstate 3,189,280 | 4,410,000 | 8.19 | 13.89 |

* Adjusted vmt contains ramp vmt in Interstate and Expressway

Modeled Vehicle Miles of Travel and Mobile Source Emissions for 2010 Scenario

<table>
<thead>
<tr>
<th></th>
<th>VMT</th>
<th>Average Speed</th>
<th>VOC Tons/day</th>
<th>NOX Tons/day</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Model</td>
<td>Adjusted</td>
<td>Tons/day</td>
<td>Tons/day</td>
</tr>
<tr>
<td>Rural Interstate</td>
<td>626,056</td>
<td>645,757</td>
<td>69.6</td>
<td>0.48</td>
</tr>
<tr>
<td>Rural Principal Arterial</td>
<td>248,217</td>
<td>218,432</td>
<td>57.9</td>
<td>0.18</td>
</tr>
<tr>
<td>Rural Minor Arterial</td>
<td>258,360</td>
<td>202,598</td>
<td>53.7</td>
<td>0.18</td>
</tr>
<tr>
<td>Rural Major Collector</td>
<td>448,083</td>
<td>1,577,837</td>
<td>48.3</td>
<td>1.47</td>
</tr>
<tr>
<td>Rural Minor Collector</td>
<td>68,073</td>
<td>38,284</td>
<td>42.6</td>
<td>0.04</td>
</tr>
<tr>
<td>Rural Local</td>
<td>25,547</td>
<td>107,835</td>
<td>38.1</td>
<td>0.11</td>
</tr>
<tr>
<td>Urban Interstate</td>
<td>20,577</td>
<td>31,535</td>
<td>54.7</td>
<td>0.03</td>
</tr>
<tr>
<td>Urban Expressway</td>
<td>190,888</td>
<td>203,237</td>
<td>55.6</td>
<td>0.18</td>
</tr>
<tr>
<td>Urban Principal Arterial</td>
<td>642,095</td>
<td>692,779</td>
<td>40.5</td>
<td>0.68</td>
</tr>
<tr>
<td>Urban Minor Arterial</td>
<td>636,534</td>
<td>658,789</td>
<td>32.1</td>
<td>0.69</td>
</tr>
<tr>
<td>Urban Collector</td>
<td>238,830</td>
<td>86,376</td>
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<td>0.09</td>
</tr>
<tr>
<td>Urban Local</td>
<td>37,931</td>
<td>358,897</td>
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<td>0.56</td>
</tr>
<tr>
<td>Ramp</td>
<td>27,354</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
</tbody>
</table>

Rural Interstate 3,468,544 | 4,822,355 | 4.69 | 7.66 |

* Adjusted vmt contains ramp vmt in Interstate and Expressway
### Modeled Vehicle Miles of Travel and Mobile Source Emissions for 2015 Scenario

<table>
<thead>
<tr>
<th>Model</th>
<th>VMT</th>
<th>Average Speed</th>
<th>VOC Tons/day</th>
<th>NOX Tons/day</th>
</tr>
</thead>
<tbody>
<tr>
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<td>692,516</td>
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</tr>
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<td>256,741</td>
<td>225,053</td>
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<td>0.13</td>
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<tr>
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<tr>
<td>Rural Minor Collector</td>
<td>69,252</td>
<td>38,947</td>
<td>42.5</td>
<td>0.02</td>
</tr>
<tr>
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<td>26,685</td>
<td>112,637</td>
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<td>0.07</td>
</tr>
<tr>
<td>Urban Interstate</td>
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<td>35,598</td>
<td>54.1</td>
<td>0.02</td>
</tr>
<tr>
<td>Urban Expressway</td>
<td>194,708</td>
<td>207,304</td>
<td>55.5</td>
<td>0.12</td>
</tr>
<tr>
<td>Urban Principal Arterial</td>
<td>662,680</td>
<td>714,990</td>
<td>33.8</td>
<td>0.48</td>
</tr>
<tr>
<td>Urban Minor Arterial</td>
<td>668,679</td>
<td>692,057</td>
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</tr>
<tr>
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<td>245,406</td>
<td>88,754</td>
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<td>0.06</td>
</tr>
<tr>
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<td>46,608</td>
<td>440,992</td>
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<td>0.45</td>
</tr>
<tr>
<td>*</td>
<td>33,003</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>3,629,734</td>
<td>5,097,099</td>
<td>3.33</td>
<td>4.59</td>
</tr>
</tbody>
</table>

* Adjusted vmt contains ramp vmt in Interstate and Expressway

### Modeled Vehicle Miles of Travel and Mobile Source Emissions for 2025 Scenario

<table>
<thead>
<tr>
<th>Model</th>
<th>VMT</th>
<th>Average Speed</th>
<th>VOC Tons/day</th>
<th>NOX Tons/day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural Interstate</td>
<td>758,925</td>
<td>783,912</td>
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</tr>
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<td>Rural Principal Arterial</td>
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<td>244,775</td>
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<td>0.09</td>
</tr>
<tr>
<td>Rural Minor Arterial</td>
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</tr>
<tr>
<td>Rural Major Collector</td>
<td>508,874</td>
<td>1,791,901</td>
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</tr>
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<td>Rural Minor Collector</td>
<td>73,288</td>
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</tr>
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<td>116,872</td>
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</tr>
<tr>
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<td>25,411</td>
<td>39,665</td>
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<td>0.01</td>
</tr>
<tr>
<td>Urban Expressway</td>
<td>207,444</td>
<td>220,865</td>
<td>55.4</td>
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</tr>
<tr>
<td>Urban Principal Arterial</td>
<td>708,277</td>
<td>764,185</td>
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</tr>
<tr>
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<td>717,510</td>
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<td>0.35</td>
</tr>
<tr>
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<td>257,587</td>
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</tr>
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<td>0.34</td>
</tr>
<tr>
<td>*</td>
<td>35,350</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>3,934,000</td>
<td>5,548,298</td>
<td>2.36</td>
<td>2.38</td>
</tr>
</tbody>
</table>

* Adjusted vmt contains ramp vmt in Interstate and Expressway
### Modeled Vehicle Miles of Travel and Mobile Source Emissions for 2030 Scenario

<table>
<thead>
<tr>
<th>Category</th>
<th>Model VMT</th>
<th>Adjusted VMT</th>
<th>Average Speed</th>
<th>VOC Tons/day</th>
<th>NOX Tons/day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural Interstate</td>
<td>807,747</td>
<td>834,011</td>
<td>69.2</td>
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<td>0.43</td>
</tr>
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<td>Rural Principal Arterial</td>
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<td>0.10</td>
</tr>
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<td>292,749</td>
<td>229,565</td>
<td>52.7</td>
<td>0.08</td>
<td>0.08</td>
</tr>
<tr>
<td>Rural Major Collector</td>
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<td>1,858,476</td>
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</tr>
<tr>
<td>Rural Minor Collector</td>
<td>76,625</td>
<td>43,094</td>
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<td>0.02</td>
<td>0.02</td>
</tr>
<tr>
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<td>0.05</td>
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<td>0.02</td>
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<td>215,540</td>
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<td>Urban Principal Arterial</td>
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<td>795,600</td>
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<td>0.32</td>
<td>0.26</td>
</tr>
<tr>
<td>Urban Minor Arterial</td>
<td>740,277</td>
<td>766,159</td>
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<td>0.33</td>
<td>0.25</td>
</tr>
<tr>
<td>Urban Collector</td>
<td>269,022</td>
<td>97,295</td>
<td>27.7</td>
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<td>0.03</td>
</tr>
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<td>502,986</td>
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</tr>
<tr>
<td>Ramp</td>
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<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>4,104,913</td>
<td>5,776,640</td>
<td>2.35</td>
<td>2.14</td>
<td></td>
</tr>
</tbody>
</table>

* Adjusted vmt contains ramp vmt in Interstate and Expressway

The regional emissions analysis of the projects in the 2030 Transportation Plan indicates that the plan contributes to the improvement of air quality. In summary, it can be concluded that the Transportation Plan conforms to the national air quality standards.
**Appendix – Mobile 6.2 Files**

**Delaware County Vehicle Registration – Input File**

<table>
<thead>
<tr>
<th>REG DIST</th>
<th>COUNTY 18, DELAWARE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LDV</strong></td>
<td>LIGHT-DUTY VEHICLES (PASSENGER CARS)</td>
</tr>
<tr>
<td>1</td>
<td>0.0428 0.0571 0.0505 0.0495 0.0617 0.0591 0.0560 0.0588 0.0536 0.0615</td>
</tr>
<tr>
<td>2</td>
<td>0.0564 0.0551 0.0551 0.0488 0.0416 0.0439 0.0343 0.0260 0.0215 0.0167</td>
</tr>
<tr>
<td>3</td>
<td>0.0127 0.0065 0.0031 0.0037 0.0241</td>
</tr>
<tr>
<td><strong>LDT1</strong></td>
<td>LIGHT-DUTY TRUCKS 1 (0-6,000 LBS. GVWR, 0-3750 LBS. LVW)</td>
</tr>
<tr>
<td>1</td>
<td>0.0411 0.0548 0.0485 0.0270 0.0331 0.0205 0.0306 0.0264 0.0459 0.0465</td>
</tr>
<tr>
<td>2</td>
<td>0.0535 0.0475 0.0422 0.0659 0.0436 0.0700 0.0538 0.0600 0.0558 0.0439</td>
</tr>
<tr>
<td>3</td>
<td>0.0254 0.0170 0.0126 0.0115 0.0229</td>
</tr>
<tr>
<td><strong>LDT2</strong></td>
<td>LIGHT-DUTY TRUCKS 2 (0-6,001 LBS. GVWR, 3751-5750 LBS. LVW)</td>
</tr>
<tr>
<td>1</td>
<td>0.0634 0.0845 0.0747 0.0605 0.0896 0.0810 0.0797 0.0761 0.0556 0.0527</td>
</tr>
<tr>
<td>2</td>
<td>0.0511 0.0451 0.0365 0.0291 0.0223 0.0214 0.0239 0.0081 0.0083 0.0066</td>
</tr>
<tr>
<td>3</td>
<td>0.0076 0.0043 0.0021 0.0025 0.00132</td>
</tr>
<tr>
<td><strong>LDT3</strong></td>
<td>LIGHT-DUTY TRUCKS 3 (6,001-8500 LBS. GVWR, 0-3750 LBS. LVW)</td>
</tr>
<tr>
<td>1</td>
<td>0.0468 0.0624 0.0552 0.0531 0.0694 0.0823 0.0549 0.0542 0.0546 0.0638</td>
</tr>
<tr>
<td>2</td>
<td>0.0484 0.0419 0.0349 0.0171 0.0241 0.0321 0.0293 0.0213 0.0219 0.0184</td>
</tr>
<tr>
<td>3</td>
<td>0.0162 0.0103 0.0063 0.0041 0.0772</td>
</tr>
<tr>
<td><strong>LDT4</strong></td>
<td>LIGHT-DUTY TRUCKS 4 (6,001-8500 LBS. GVWR, 3751-5750 LBS. LVW)</td>
</tr>
<tr>
<td>1</td>
<td>0.0679 0.0905 0.0802 0.0761 0.0797 0.0878 0.0662 0.0612 0.0617 0.0504</td>
</tr>
<tr>
<td>2</td>
<td>0.0374 0.0144 0.0243 0.0135 0.0194 0.0041 0.0054 0.0072 0.0104 0.0108</td>
</tr>
<tr>
<td>3</td>
<td>0.0032 0.0009 0.0014 0.0005 0.1256</td>
</tr>
</tbody>
</table>
# 2002 Scenario Files – Mobile 6.2 Input File

<table>
<thead>
<tr>
<th>Scenario Record</th>
<th>Scenario 1: Rural Interstate (M6 Freeway/Freeway Ramp)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calendar Year</td>
<td>2002</td>
</tr>
<tr>
<td>Evaluation Month</td>
<td>7</td>
</tr>
<tr>
<td>Average Speed</td>
<td>69.6 FREEWAY 97.0 0.0 0.0 3.0</td>
</tr>
<tr>
<td>VMT Fractions</td>
<td>0.3525 0.0536 0.1783 0.0549 0.0253 0.1065 0.0106 0.0084</td>
</tr>
<tr>
<td></td>
<td>0.0061 0.0234 0.0279 0.0304 0.1088 0.0058 0.0028 0.0047</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Scenario Record</th>
<th>Scenario 2: Rural OPA (M6 Non-Ramp)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calendar Year</td>
<td>2002</td>
</tr>
<tr>
<td>Evaluation Month</td>
<td>7</td>
</tr>
<tr>
<td>Average Speed</td>
<td>57.7 NON-RAMP</td>
</tr>
<tr>
<td>VMT Fractions</td>
<td>0.4333 0.0658 0.2190 0.0675 0.0311 0.0573 0.0057 0.0045</td>
</tr>
<tr>
<td></td>
<td>0.0033 0.0126 0.0150 0.0164 0.0585 0.0033 0.0058 0.0043</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Scenario Record</th>
<th>Scenario 3: Rural Minor Arterial (M6 Arterial/Collector)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calendar Year</td>
<td>2002</td>
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<tr>
<td>Evaluation Month</td>
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<tr>
<td>Average Speed</td>
<td>52.0 ARTERIAL</td>
</tr>
<tr>
<td>VMT Fractions</td>
<td>0.4662 0.0708 0.2357 0.0726 0.0334 0.0374 0.0037 0.0029</td>
</tr>
<tr>
<td></td>
<td>0.0022 0.0082 0.0098 0.0107 0.0382 0.0026 0.0013 0.0043</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Scenario Record</th>
<th>Scenario 4: Rural Major Collector (M6 Arterial/Collector)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calendar Year</td>
<td>2002</td>
</tr>
<tr>
<td>Evaluation Month</td>
<td>7</td>
</tr>
<tr>
<td>Average Speed</td>
<td>48.0 ARTERIAL</td>
</tr>
<tr>
<td>VMT Fractions</td>
<td>0.4821 0.0732 0.2437 0.0751 0.0345 0.0275 0.0027 0.0022</td>
</tr>
<tr>
<td></td>
<td>0.0016 0.0060 0.0072 0.0078 0.0280 0.0024 0.0011 0.0049</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Scenario Record</th>
<th>Scenario 5: Rural Minor Collector (M6 Arterial/Collector)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calendar Year</td>
<td>2002</td>
</tr>
<tr>
<td>Evaluation Month</td>
<td>7</td>
</tr>
<tr>
<td>Average Speed</td>
<td>42.6 ARTERIAL</td>
</tr>
<tr>
<td>VMT Fractions</td>
<td>0.4532 0.0689 0.2292 0.0706 0.0325 0.0399 0.0040 0.0031</td>
</tr>
<tr>
<td></td>
<td>0.0023 0.0088 0.0104 0.0114 0.0407 0.0026 0.0013 0.0211</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Scenario Record</th>
<th>Scenario 6: Rural Local (M6 Arterial/Collector)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calendar Year</td>
<td>2002</td>
</tr>
<tr>
<td>Evaluation Month</td>
<td>7</td>
</tr>
<tr>
<td>Average Speed</td>
<td>38.0 ARTERIAL</td>
</tr>
<tr>
<td>VMT Fractions</td>
<td>0.4789 0.0728 0.2421 0.0746 0.0343 0.0294 0.0029 0.0023</td>
</tr>
<tr>
<td></td>
<td>0.0017 0.0065 0.0077 0.0084 0.0300 0.0026 0.0013 0.0045</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Scenario Record</th>
<th>Scenario 7: Urban Interstate (M6 Freeway/Freeway Ramp)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calendar Year</td>
<td>2002</td>
</tr>
<tr>
<td>Evaluation Month</td>
<td>7</td>
</tr>
<tr>
<td>Average Speed</td>
<td>54.9 FREEWAY 92.0 0.0 0.0 8.0</td>
</tr>
<tr>
<td>VMT Fractions</td>
<td>0.4155 0.0631 0.2101 0.0647 0.0298 0.0688 0.0068 0.0054</td>
</tr>
<tr>
<td></td>
<td>0.0040 0.0151 0.0180 0.0196 0.0702 0.0043 0.0021 0.0025</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Scenario Record</th>
<th>Scenario 8: Urban Freeway/Expressway (M6 Freeway/Freeway Ramp)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calendar Year</td>
<td>2002</td>
</tr>
<tr>
<td>Evaluation Month</td>
<td>7</td>
</tr>
<tr>
<td>Average Speed</td>
<td>54.9 FREEWAY 92.0 0.0 0.0 8.0</td>
</tr>
<tr>
<td>VMT Fractions</td>
<td>0.4155 0.0631 0.2101 0.0647 0.0298 0.0688 0.0068 0.0054</td>
</tr>
<tr>
<td></td>
<td>0.0040 0.0151 0.0180 0.0196 0.0702 0.0043 0.0021 0.0025</td>
</tr>
</tbody>
</table>
### Scenario Section

**Scenario Record**: Scenario 9: Urban OPA (M6 Arterial/Collector)

**Calendar Year**: 2002

**Evaluation Month**: 7

**Average Speed**: 36.0 Arterial

**VMT Fractions**:

<table>
<thead>
<tr>
<th>Fraction</th>
<th>0.4868</th>
<th>0.0740</th>
<th>0.2462</th>
<th>0.0759</th>
<th>0.0349</th>
<th>0.0251</th>
<th>0.0025</th>
<th>0.0020</th>
<th>0.0014</th>
<th>0.0055</th>
<th>0.0066</th>
<th>0.0072</th>
<th>0.0257</th>
<th>0.0015</th>
<th>0.0007</th>
<th>0.0040</th>
</tr>
</thead>
</table>

---

**Scenario Record**: Scenario 10: Urban Minor Arterial (M6 Arterial/Collector)

**Calendar Year**: 2002

**Evaluation Month**: 7

**Average Speed**: 27.1 Arterial

**VMT Fractions**:

<table>
<thead>
<tr>
<th>Fraction</th>
<th>0.4944</th>
<th>0.0751</th>
<th>0.2499</th>
<th>0.0770</th>
<th>0.0354</th>
<th>0.0203</th>
<th>0.0020</th>
<th>0.0016</th>
<th>0.0012</th>
<th>0.0045</th>
<th>0.0053</th>
<th>0.0058</th>
<th>0.0207</th>
<th>0.0018</th>
<th>0.0008</th>
<th>0.0042</th>
</tr>
</thead>
</table>

---

**Scenario Record**: Scenario 11: Urban Collector (M6 Arterial/Collector)

**Calendar Year**: 2002

**Evaluation Month**: 7

**Average Speed**: 27.1 Arterial

**VMT Fractions**:

<table>
<thead>
<tr>
<th>Fraction</th>
<th>0.5024</th>
<th>0.0763</th>
<th>0.2540</th>
<th>0.0783</th>
<th>0.0360</th>
<th>0.0152</th>
<th>0.0015</th>
<th>0.0012</th>
<th>0.0009</th>
<th>0.0033</th>
<th>0.0040</th>
<th>0.0043</th>
<th>0.0155</th>
<th>0.0010</th>
<th>0.0005</th>
<th>0.0056</th>
</tr>
</thead>
</table>

---

**Scenario Record**: Scenario 12: Urban Local (M6 Local Road) - 12.9

**Calendar Year**: 2002

**Evaluation Month**: 7

**VMT by Facility**: fvmtlocl.def

**VMT Fractions**:

<table>
<thead>
<tr>
<th>Fraction</th>
<th>0.5099</th>
<th>0.0775</th>
<th>0.2579</th>
<th>0.0795</th>
<th>0.0366</th>
<th>0.0106</th>
<th>0.0010</th>
<th>0.0008</th>
<th>0.0006</th>
<th>0.0023</th>
<th>0.0028</th>
<th>0.0030</th>
<th>0.0108</th>
<th>0.0028</th>
<th>0.0013</th>
<th>0.0026</th>
</tr>
</thead>
</table>

---

**End of Run**
**2002 Scenario Files – Mobile 6.2 Output File**

* Bernadin, Lochmueller & Associates, Inc. 18

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**M617 Comment:**
User supplied alternate AC input: Cloud Cover Fraction set to 0.34.

**M618 Comment:**
User supplied alternate AC input: Sunrise at 5 AM, Sunset at 8 PM.

**M603 Comment:**
User has disabled the calculation of REFUELING emissions.

---

**M615 Comment:**
User supplied VMT mix.

**M48 Warning:**
there are no sales for vehicle class HDGV8b

**Calendar Year:** 2002
**Month:** July
**Altitude:** Low
**Minimum Temperature:** 64.0 (F)
**Maximum Temperature:** 84.9 (F)
**Absolute Humidity:** 94. grains/lb
**Nominal Fuel SVP:** 9.0 psi
**Weathered SVP:** 8.8 psi
**Fuel Sulfur Content:** 0.0995
**Exhaust I/M Program:** No
**Evap I/M Program:** No
**ATP Program:** No
**Reformulated Gas:** No

**Vehicle Type:**
LDGV LDGT12 LDGT34 LDGT HDGV LDGV LDGT HDDV MC All Veh
**GVWR:**
<6000 >6000 (All)

**VMT Distribution:**

<table>
<thead>
<tr>
<th>Vehicle Type</th>
<th>LDGV</th>
<th>LDGT12</th>
<th>LDGT34</th>
<th>LDGT</th>
<th>HDGV</th>
<th>LDGV</th>
<th>LDGT</th>
<th>HDDV</th>
<th>MC</th>
<th>All Veh</th>
</tr>
</thead>
<tbody>
<tr>
<td>VMT Distribution</td>
<td>0.3517</td>
<td>0.2317</td>
<td>0.0791</td>
<td>0.0995</td>
<td>0.0008</td>
<td>0.0013</td>
<td>0.2312</td>
<td>0.0047</td>
<td>1.0000</td>
<td></td>
</tr>
</tbody>
</table>

**Composite Emission Factors (g/mi):**

<table>
<thead>
<tr>
<th>Vehicle Type</th>
<th>LDGV</th>
<th>LDGT12</th>
<th>LDGT34</th>
<th>LDGT</th>
<th>HDGV</th>
<th>LDGV</th>
<th>LDGT</th>
<th>HDDV</th>
<th>MC</th>
<th>All Veh</th>
</tr>
</thead>
<tbody>
<tr>
<td>Composite VOC</td>
<td>1.141</td>
<td>1.401</td>
<td>1.902</td>
<td>1.528</td>
<td>1.238</td>
<td>0.668</td>
<td>0.722</td>
<td>0.447</td>
<td>2.47</td>
<td>1.263</td>
</tr>
<tr>
<td>Composite NOX</td>
<td>1.341</td>
<td>1.421</td>
<td>1.726</td>
<td>1.499</td>
<td>3.993</td>
<td>2.780</td>
<td>2.640</td>
<td>25.453</td>
<td>1.59</td>
<td>7.432</td>
</tr>
</tbody>
</table>

---

**M581 Warning:**
The user supplied freeway average speed of 57.7 will be used for all hours of the day. 100% of VMT has been assigned to the freeway roadway type for all hours of the day and all vehicle types.

**M615 Comment:**
User supplied VMT mix.

**N 48 Warning:**
there are no sales for vehicle class HDGV8b

**Calendar Year:** 2002
**Month:** July
**Altitude:** Low
**Minimum Temperature:** 64.0 (F)
**Maximum Temperature:** 84.9 (F)
**Absolute Humidity:** 94. grains/lb
**Nominal Fuel SVP:** 9.0 psi
**Weathered SVP:** 8.8 psi
**Fuel Sulfur Content:** 0.0995
**Exhaust I/M Program:** No
**Evap I/M Program:** No
**ATP Program:** No
**Reformulated Gas:** No

**Vehicle Type:**
LDGV LDGT12 LDGT34 LDGT HDGV LDGV LDGT HDDV MC All Veh
**GVWR:**
<6000 >6000 (All)

**VMT Distribution:**

<table>
<thead>
<tr>
<th>Vehicle Type</th>
<th>LDGV</th>
<th>LDGT12</th>
<th>LDGT34</th>
<th>LDGT</th>
<th>HDGV</th>
<th>LDGV</th>
<th>LDGT</th>
<th>HDDV</th>
<th>MC</th>
<th>All Veh</th>
</tr>
</thead>
<tbody>
<tr>
<td>VMT Distribution</td>
<td>0.3517</td>
<td>0.2317</td>
<td>0.0791</td>
<td>0.0995</td>
<td>0.0008</td>
<td>0.0013</td>
<td>0.2312</td>
<td>0.0047</td>
<td>1.0000</td>
<td></td>
</tr>
</tbody>
</table>

---

**2002 Scenario Files – Mobile 6.2 Output File**

---

**BERNARDIN, LOCHMUELLER & ASSOCIATES, INC.**

18
**Scenario 3: Rural Minor Arterial (M6 Arterial/Collector)**

File 1, Run 1, Scenario 3.

---

**Scenario 4: Rural Major Collector (M6 Arterial/Collector)**

File 1, Run 1, Scenario 4.

---

**Scenario 5: Rural Minor Collector (M6 Arterial/Collector)**

File 1, Run 1, Scenario 5.
<table>
<thead>
<tr>
<th>Vehicle Type</th>
<th>LDGV</th>
<th>LDGT12</th>
<th>LDGT34</th>
<th>LDGT</th>
<th>HDGV</th>
<th>LDGV</th>
<th>LDGT</th>
<th>HDGV</th>
<th>MC</th>
<th>All Veh</th>
</tr>
</thead>
<tbody>
<tr>
<td>GVWR:</td>
<td>&lt;6000</td>
<td>&gt;6000</td>
<td>(All)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**VMT Distribution:**

|                      | 0.4525 | 0.2978 | 0.1017 | 0.0017 | 0.0017 | 0.0871 | 0.0211 | 1.0000 |

**Composite Emission Factors (g/mi):**

- **Composite VOC:**
  - 1.732
  - 1.560
  - 2.099
  - 1.697
  - 1.456
  - 0.722
  - 0.783
  - 0.525
  - 1.93
  - 1.604

- **Composite NOX:**
  - 1.257
  - 1.310
  - 1.613
  - 1.387
  - 1.592
  - 1.546
  - 1.443
  - 13.161
  - 1.14
  - 2.491

---

**Scenario 6:** Rural Local (M6 Arterial/Collector)

- User supplied VMT mix.

**M583 Warning:**

The user supplied arterial average speed of 38.0 will be used for all hours of the day. 100% of VMT has been assigned to the arterial/collector roadway type for all hours of the day and all vehicle types.

**M615 Comment:**

User supplied VMT mix.

---

**Scenario 7:** Urban Interstate (M6 Freeway/Freeway Ramp)

- User supplied VMT mix.

**M582 Warning:**

The user supplied freeway average speed of 54.9 will be used for all hours of the day. 100% of VMT has been assigned to a fixed combination of freeways and freeway ramps for all hours of the day and all vehicle types.

**M615 Comment:**

User supplied VMT mix.

---

**Scenario 8:** Urban Freeway/Expressway (M6 Freeway/Freeway Ramp)

- User supplied VMT mix.

**M582 Warning:**

The user supplied freeway average speed of 55.4 will be used for all hours of the day. 100% of VMT has been assigned to a fixed combination of freeways and freeway ramps for all hours of the day and all vehicle types.

**M615 Comment:**

User supplied VMT mix.
M 48 Warning: there are no sales for vehicle class HDGV8b

Calendar Year: 2002
Month: July
Altitude: Low
Minimum Temperature: 64.0 (F)
Maximum Temperature: 84.9 (F)
Absolute Humidity: 94. grains/lb
Nominal Fuel RVP: 9.0 psi
Weathered RVP: 8.8 psi
Fuel Sulfur Content: 279. ppm

Exhaust I/M Program: No
Evap I/M Program: No
ATP Program: No
Reformatted Gas: No

Vehicle Type: LDGV LDGT12 LDGT34 LDGT HDGV LDGVD LDGTD HDGV MC All Veh
GVWR: <6000 >6000 (All)

VMT Distribution: 0.4544 0.2992 0.1022 0.0416 0.0010 0.0017 0.0966 0.0033 1.0000

Composite Emission Factors (g/mi):
Composite VOC: 1.625 1.465 1.981 1.596 1.267 0.676 0.731 0.456 2.10 1.495
Composite NOX: 1.327 1.401 1.705 1.479 5.705 2.157 2.017 20.536 1.41 3.428

M 48 Warning: there are no sales for vehicle class HDGV8b

Calendar Year: 2002
Month: July
Altitude: Low
Minimum Temperature: 64.0 (F)
Maximum Temperature: 84.9 (F)
Absolute Humidity: 94. grains/lb
Nominal Fuel RVP: 9.0 psi
Weathered RVP: 8.8 psi
Fuel Sulfur Content: 279. ppm

Exhaust I/M Program: No
Evap I/M Program: No
ATP Program: No
Reformatted Gas: No

Vehicle Type: LDGV LDGT12 LDGT34 LDGT HDGV LDGVD LDGTD HDGV MC All Veh
GVWR: <6000 >6000 (All)

VMT Distribution: 0.4933 0.3247 0.1108 0.0192 0.0011 0.0018 0.0548 0.0042 1.0000

Composite Emission Factors (g/mi):
Composite VOC: 1.629 1.622 2.374 1.763 1.635 0.774 0.842 0.600 2.02 1.717
Composite NOX: 1.241 1.286 1.590 1.363 4.935 1.469 1.370 12.583 1.10 2.001

M 48 Warning: there are no sales for vehicle class HDGV8b

Calendar Year: 2002
Month: July
Altitude: Low
Minimum Temperature: 64.0 (F)
Maximum Temperature: 84.9 (F)
Absolute Humidity: 94. grains/lb
Nominal Fuel RVP: 9.0 psi
Weathered RVP: 8.8 psi
Fuel Sulfur Content: 279. ppm

Exhaust I/M Program: No
Evap I/M Program: No
ATP Program: No
Reformatted Gas: No

Vehicle Type: LDGV LDGT12 LDGT34 LDGT HDGV LDGVD LDGTD HDGV MC All Veh
GVWR: <6000 >6000 (All)

VMT Distribution: 0.4544 0.2992 0.1022 0.0416 0.0010 0.0017 0.0966 0.0033 1.0000

Composite Emission Factors (g/mi):
Composite VOC: 1.625 1.784 2.378 1.935 2.127 0.887 0.972 0.765 2.25 1.915
Composite NOX: 1.295 1.329 1.641 1.409 4.626 1.507 1.406 12.867 1.03 1.927
Scenario 11: Urban Collector (M6 Arterial/Collector)
File 1, Run 1, Scenario 11.

M583 Warning:  The user supplied arterial average speed of 27.1
will be used for all hours of the day. 100% of VMT
has been assigned to the arterial/collector roadway
type for all hours of the day and all vehicle types.

M615 Comment:  User supplied VMT mix.

M 48 Warning:  there are no sales for vehicle class HDGV8b

Calendar Year:  2002
Month:  July
Altitude:  Low
Minimum Temperature:  64.0 (F)
Maximum Temperature:  84.9 (F)
Absolute Humidity:  94. grains/lb
Nominal Fuel RVP:  9.0 psi
Weathered RVP:  8.8 psi
Fuel Sulfur Content:  279. ppm
Exhaust I/M Program:  No
Evap I/M Program:  No
ATP Program:  No
Reformulated Gas:  No

Vehicle Type:  LDGV  LDGT12  LDGT34  LDGT  HDGV  LDDV  LDDT  HDDV  MC  All Veh
GVWR:  <6000  >6000 (All)
------  ------  ------  ------  ------  ------  ------  ------  ------  -----
VMT Distribution:  0.5013  0.3300  0.1127  0.0142  0.0011  0.0019  0.0332  0.0056  1.0000

----------------------------------------------------------------------------------------------------------------------
Composite Emission Factors (g/mi):
Composite VOC :  1.997  1.784  2.378  1.935  2.087  0.887  0.971  0.763  2.25  1.928
Composite NOX :  1.295  1.329  1.641  1.409  4.606  1.507  1.406 12.867  1.03  1.775

----------------------------------------------------------------------------------------------------------------------

Scenario 12: Urban Local (M6 Local Road) - 12.9
File 1, Run 1, Scenario 12.

Reading Hourly Roadway VMT distribution from the following external
data file: FVMTLOCL.DEF

M615 Comment:  User supplied VMT mix.

M 48 Warning:  there are no sales for vehicle class HDGV8b

Calendar Year:  2002
Month:  July
Altitude:  Low
Minimum Temperature:  64.0 (F)
Maximum Temperature:  84.9 (F)
Absolute Humidity:  94. grains/lb
Nominal Fuel RVP:  9.0 psi
Weathered RVP:  8.8 psi
Fuel Sulfur Content:  279. ppm
Exhaust I/M Program:  No
Evap I/M Program:  No
ATP Program:  No
Reformulated Gas:  No

Vehicle Type:  LDGV  LDGT12  LDGT34  LDGT  HDGV  LDDV  LDDT  HDDV  MC  All Veh
GVWR:  <6000  >6000 (All)
------  ------  ------  ------  ------  ------  ------  ------  ------  -----
VMT Distribution:  0.5088  0.3351  0.1145  0.0104  0.0011  0.0019  0.0256  0.0026  1.0000

----------------------------------------------------------------------------------------------------------------------
Composite Emission Factors [g/mi]:
Composite VOC :  2.817  2.552  3.274  2.736  4.786  1.957  1.396  1.324  3.10  2.759
Composite NOX :  1.239  1.237  1.546  1.316  4.193  1.957  1.829 14.421  0.88  1.642

----------------------------------------------------------------------------------------------------------------------
### 2010 Scenario Files – Mobile 6.2 Input File

<table>
<thead>
<tr>
<th>Scenario Record</th>
<th>Scenario 1: Rural Interstate (M6 Freeway/Freeway Ramp)</th>
<th>Scenario 2: Rural OPA (M6 Non-Ramp)</th>
<th>Scenario 3: Rural Minor Arterial (M6 Arterial/Collector)</th>
<th>Scenario 4: Rural Major Collector (M6 Arterial/Collector)</th>
<th>Scenario 5: Rural Minor Collector (M6 Arterial/Collector)</th>
<th>Scenario 6: Rural Local (M6 Arterial/Collector)</th>
<th>Scenario 7: Urban Interstate (M6 Freeway/Freeway Ramp)</th>
<th>Scenario 8: Urban Freeway/Expressway (M6 Freeway/Freeway Ramp)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaluation Month</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>7</td>
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<tr>
<td>Average Speed</td>
<td>69.6 FREEWAY 97.0 0.0 0.0 3.0</td>
<td>57.9 NON-RAMP</td>
<td>53.7 ARTERIAL</td>
<td>48.3 ARTERIAL</td>
<td>42.6 ARTERIAL</td>
<td>38.1 ARTERIAL</td>
<td>54.7 FREEWAY 92.0 0.0 0.0 8.0</td>
<td>54.7 FREEWAY 92.0 0.0 0.0 8.0</td>
</tr>
<tr>
<td>VMT Fractions</td>
<td>0.3525 0.0536 0.1783 0.0549 0.0253 0.1065 0.0106 0.0084</td>
<td>0.4333 0.0658 0.2190 0.0675 0.0311 0.0573 0.0057 0.0045</td>
<td>0.0033 0.0126 0.0150 0.0164 0.0585 0.0033 0.0015 0.0052</td>
<td>0.0022 0.0082 0.0098 0.0107 0.0382 0.0026 0.0013 0.0043</td>
<td>0.4662 0.0708 0.2357 0.0726 0.0334 0.0374 0.0037 0.0029</td>
<td>0.0022 0.0082 0.0098 0.0107 0.0382 0.0026 0.0013 0.0043</td>
<td>0.4821 0.0732 0.2437 0.0751 0.0345 0.0275 0.0027 0.0022</td>
<td>0.0016 0.0060 0.0072 0.0078 0.0280 0.0024 0.0011 0.0049</td>
</tr>
<tr>
<td>Average Speed</td>
<td>54.0 84.9</td>
<td>64.0</td>
<td>93.7</td>
<td>92.0</td>
<td>92.0</td>
<td>84.9</td>
<td>92.0</td>
<td>92.0</td>
</tr>
<tr>
<td>Pollutants</td>
<td>HC NOX</td>
<td>HC NOX</td>
<td>HC NOX</td>
<td>HC NOX</td>
<td>HC NOX</td>
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<td>Run Data</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*These min/max temperatures are July averages from Delaware County.*
### Delaware County 2030 Transportation Plan
#### Air Quality Conformity Documentation

| CALENDAR YEAR : 2010 |
| EVOLUTION MONTH : 7 |
| AVERAGE SPEED : 55.6 FREEWAY 92.0 0.0 0.0 8.0 |
| VMT FRACTIONS : |
| 0.4554 0.0692 0.2303 0.0710 0.0326 0.0446 0.0044 0.0033 |
| 0.0026 0.0038 0.0117 0.0127 0.0456 0.0022 0.0011 0.0033 |

*************** Scenario Section ***************

| SCENARIO RECORD : Scenario 9: Urban OPA (M6 Arterial/Collector) |
| CALENDAR YEAR : 2010 |
| EVALUATION MONTH : 7 |
| AVERAGE SPEED : 40.5 ARTERIAL |
| VMT FRACTIONS : |
| 0.4868 0.0740 0.2462 0.0759 0.0251 0.0026 0.0020 |
| 0.0014 0.0055 0.0066 0.0072 0.0257 0.0015 0.0007 |

*************** Scenario Section ***************

| SCENARIO RECORD : Scenario 10: Urban Minor Arterial (M6 Arterial/Collector) |
| CALENDAR YEAR : 2010 |
| EVALUATION MONTH : 7 |
| AVERAGE SPEED : 32.1 ARTERIAL |
| VMT FRACTIONS : |
| 0.4944 0.0751 0.2499 0.0770 0.0354 0.0020 0.0016 |
| 0.0012 0.0045 0.0053 0.0058 0.0207 0.0018 0.0007 |

*************** Scenario Section ***************

| SCENARIO RECORD : Scenario 11: Urban Collector (M6 Arterial/Collector) |
| CALENDAR YEAR : 2010 |
| EVALUATION MONTH : 7 |
| AVERAGE SPEED : 30.3 ARTERIAL |
| VMT FRACTIONS : |
| 0.5024 0.0763 0.2540 0.0783 0.0360 0.0152 0.0012 |
| 0.0009 0.0033 0.0040 0.0043 0.0155 0.0010 0.0005 |

*************** Scenario Section ***************

| SCENARIO RECORD : Scenario 12: Urban Local (M6 Local Road) - 12.9 |
| CALENDAR YEAR : 2010 |
| EVALUATION MONTH : 7 |
| VMT FACILITY : fvmtloc1.def |
| VMT FRACTIONS : |
| 0.5099 0.0775 0.2579 0.0795 0.0366 0.0106 0.0010 |
| 0.0006 0.0023 0.0028 0.0030 0.0108 0.0028 0.0013 |

END OF RUN ;
### 2010 Scenario Files – Mobile 6.2 Output File

| Scenario 1: Rural Interstate (M6 Freeway/Freeway Ramp) |
| ----------- | ----------- |
| File 1, Run 1, Scenario 1. |

- **User supplied alternate AC input:** Cloud Cover Fraction set to 0.34.
- **User supplied alternate AC input:** Sunrise at 5 AM, Sunset at 8 PM.
- **User has disabled the calculation of REFUELING emissions.**

**Reading Registration Distributions from the following external data file:** IN_CTY18.D

#### Warning:
- 1.00 MYR sum not = 1. (will normalize)

**Scenario 1:**
- **File 1, Run 1, Scenario 1.**
- **User supplied VMT mix.**
- **There are no sales for vehicle class HDGV8b.**

**Calendar Year:** 2010  
**Month:** July

- **Altitude:** Low  
- **Minimum Temperature:** 64.0°F (F)  
- **Maximum Temperature:** 84.9°F (F)  
- **Absolute Humidity:** 94. grains/lb  
- **Nominal Fuel SVP:** 9.0 psi  
- **Weathered SVP:** 8.8 psi  
- **Fuel Sulfur Content:** 30. ppm

**Exhaust I/M Program:** No  
**Evap I/M Program:** No  
**ATP Program:** No  
**Reformulated Gas:** No

**Vehicle Type:**  
- LDGV  
- LDGT12  
- LDGT34  
- LDGT  
- HDGV  
- LDDV  
- LDDT  
- HDDV  
- MC  
- All Veh

**GVWR:**  
- <6000  
- >6000  
- (All)

**VMT Distribution:**

<table>
<thead>
<tr>
<th>Vehicle Type</th>
<th>&lt;6000</th>
<th>&gt;6000</th>
<th>(All)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LDGV</td>
<td>0.3522</td>
<td>0.2193</td>
<td>0.0790</td>
</tr>
<tr>
<td>LDGT12</td>
<td>0.742</td>
<td>0.393</td>
<td>0.791</td>
</tr>
<tr>
<td>LDGT34</td>
<td>0.594</td>
<td>0.188</td>
<td>0.318</td>
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<tr>
<td>LDGT</td>
<td>0.0974</td>
<td>0.0003</td>
<td>0.0012</td>
</tr>
<tr>
<td>HDGV</td>
<td>0.233</td>
<td>0.047</td>
<td>1.000</td>
</tr>
<tr>
<td>LDDV</td>
<td>0.0003</td>
<td>0.0012</td>
<td>1.000</td>
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<tr>
<td>LDDT</td>
<td>0.0012</td>
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<td>1.000</td>
</tr>
<tr>
<td>HDDV</td>
<td>1.0000</td>
<td>1.0000</td>
<td>1.000</td>
</tr>
</tbody>
</table>

**Composite Emission Factors (g/mi):**

- **VOC:** 0.850  
- **NOX:** 0.694

#### Warning:
- The combined freeway and ramp average speed entered cannot be greater than 63.3 miles per hour. The average speed will be reset to this value.

**Scenario 2: Rural OPA (M6 Non-Ramp)**

- **File 1, Run 1, Scenario 2.**
- **User supplied VMT mix.**
- **There are no sales for vehicle class HDGV8b.**

**Calendar Year:** 2010  
**Month:** July

- **Altitude:** Low

**Minimum Temperature:** 64.0°F (F)  
**Maximum Temperature:** 84.9°F (F)  
**Absolute Humidity:** 94. grains/lb  
**Nominal Fuel SVP:** 9.0 psi  
**Weathered SVP:** 8.8 psi  
**Fuel Sulfur Content:** 30. ppm

**Exhaust I/M Program:** No  
**Evap I/M Program:** No  
**ATP Program:** No  
**Reformulated Gas:** No

**Vehicle Type:**  
- LDGV  
- LDGT12  
- LDGT34  
- LDGT  
- HDGV  
- LDDV  
- LDDT  
- HDDV  
- MC  
- All Veh

**GVWR:**  
- <6000  
- >6000  
- (All)

**VMT Distribution:**

<table>
<thead>
<tr>
<th>Vehicle Type</th>
<th>&lt;6000</th>
<th>&gt;6000</th>
<th>(All)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LDGV</td>
<td>0.348</td>
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<td>0.003</td>
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<tr>
<td>LDGT12</td>
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<td>0.791</td>
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<tr>
<td>LDGT34</td>
<td>0.594</td>
<td>0.188</td>
<td>0.318</td>
</tr>
<tr>
<td>LDGT</td>
<td>0.0974</td>
<td>0.0003</td>
<td>0.0012</td>
</tr>
<tr>
<td>HDGV</td>
<td>0.233</td>
<td>0.047</td>
<td>1.000</td>
</tr>
<tr>
<td>LDDV</td>
<td>0.0003</td>
<td>0.0012</td>
<td>1.000</td>
</tr>
<tr>
<td>LDDT</td>
<td>0.0012</td>
<td>1.0000</td>
<td>1.000</td>
</tr>
<tr>
<td>HDDV</td>
<td>1.0000</td>
<td>1.0000</td>
<td>1.000</td>
</tr>
</tbody>
</table>

**Composite Emission Factors (g/mi):**

- **VOC:** 0.694  
- **NOX:** 0.450

**Scenario 2: Rural OPA (M6 Non-Ramp)**

- **File 1, Run 1, Scenario 2.**
- **User supplied VMT mix.**
- **There are no sales for vehicle class HDGV8b.**
### Scenario 3: Rural Minor Arterial (M6 Arterial/Collector)

**File 1, Run 1, Scenario 3.**

<table>
<thead>
<tr>
<th>Scenario 3: Rural Minor Arterial (M6 Arterial/Collector)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Warning:</strong> The user supplied arterial average speed of 53.7 will be used for all hours of the day. 100% of VMT has been assigned to the arterial/collector roadway type for all hours of the day and all vehicle types.</td>
</tr>
<tr>
<td><strong>Comment:</strong> User supplied VMT mix.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Vehicle Type:</th>
<th>LDGV</th>
<th>LDGT12</th>
<th>LDGT34</th>
<th>LDGT</th>
<th>HDGV</th>
<th>LDDV</th>
<th>LDDT</th>
<th>HDDV</th>
<th>MC</th>
<th>All Veh</th>
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</thead>
<tbody>
<tr>
<td>GVWR:</td>
<td>&lt;6000</td>
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<td>(All)</td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>VMT Distribution:</td>
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<td>0.306</td>
<td>0.104</td>
<td>0.034</td>
<td>0.001</td>
<td>0.002</td>
<td>0.083</td>
<td>0.043</td>
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</tbody>
</table>

### Scenario 4: Rural Major Collector (M6 Arterial/Collector)

**File 1, Run 1, Scenario 4.**

<table>
<thead>
<tr>
<th>Scenario 4: Rural Major Collector (M6 Arterial/Collector)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Warning:</strong> The user supplied arterial average speed of 48.3 will be used for all hours of the day. 100% of VMT has been assigned to the arterial/collector roadway type for all hours of the day and all vehicle types.</td>
</tr>
<tr>
<td><strong>Comment:</strong> User supplied VMT mix.</td>
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</table>

<table>
<thead>
<tr>
<th>Vehicle Type:</th>
<th>LDGV</th>
<th>LDGT12</th>
<th>LDGT34</th>
<th>LDGT</th>
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<th>LDDV</th>
<th>LDDT</th>
<th>HDDV</th>
<th>MC</th>
<th>All Veh</th>
</tr>
</thead>
<tbody>
<tr>
<td>GVWR:</td>
<td>&lt;6000</td>
<td>&gt;6000</td>
<td>(All)</td>
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<td></td>
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</tr>
<tr>
<td>VMT Distribution:</td>
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<td>0.316</td>
<td>0.108</td>
<td>0.025</td>
<td>0.001</td>
<td>0.002</td>
<td>0.061</td>
<td>0.049</td>
<td>1.000</td>
<td></td>
</tr>
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</table>

### Scenario 5: Rural Minor Collector (M6 Arterial/Collector)

**File 1, Run 1, Scenario 5.**

<table>
<thead>
<tr>
<th>Scenario 5: Rural Minor Collector (M6 Arterial/Collector)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Warning:</strong> The user supplied arterial average speed of 42.6 will be used for all hours of the day. 100% of VMT has been assigned to the arterial/collector roadway type for all hours of the day and all vehicle types.</td>
</tr>
<tr>
<td><strong>Comment:</strong> User supplied VMT mix.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Vehicle Type:</th>
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<th>LDGT12</th>
<th>LDGT34</th>
<th>LDGT</th>
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<th>LDDV</th>
<th>LDDT</th>
<th>HDDV</th>
<th>MC</th>
<th>All Veh</th>
</tr>
</thead>
<tbody>
<tr>
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<td>&gt;6000</td>
<td>(All)</td>
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</tr>
<tr>
<td>VMT Distribution:</td>
<td>0.487</td>
<td>0.316</td>
<td>0.108</td>
<td>0.025</td>
<td>0.001</td>
<td>0.002</td>
<td>0.061</td>
<td>0.049</td>
<td>1.000</td>
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</table>
Exhaust I/M Program: No  
Evap I/M Program: No  
ATP Program: No  
Reformulated Gas: No  

<table>
<thead>
<tr>
<th>Vehicle Type</th>
<th>LDGV</th>
<th>LDGT12</th>
<th>LDGT34</th>
<th>LDGT</th>
<th>HDGV</th>
<th>LDGV</th>
<th>LDGT</th>
<th>HDDV</th>
<th>MC</th>
<th>All Veh</th>
</tr>
</thead>
<tbody>
<tr>
<td>GVWR</td>
<td>&lt;6000</td>
<td>&gt;6000</td>
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<tr>
<td>VMT Distribution</td>
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<td></td>
</tr>
</tbody>
</table>

Composite Emission Factors (g/mi):  
Composite VOC : 0.950     0.815     1.033     0.870     0.685    0.205     0.349     0.297      1.90     0.870  
Composite NOX : 0.646     0.717     0.963     0.779     2.329    0.484     0.623     5.918      1.14     1.235  

Scenario 6: Rural Local (M6 Arterial/Collector)  
File 1, Run 1, Scenario 6.  

M58 Warning:  
The user supplied arterial average speed of 38.1 will be used for all hours of the day. 100% of VMT has been assigned to the arterial/collector roadway type for all hours of the day and all vehicle types.

M615 Comment:  
User supplied VMT mix.

N 48 Warning:  
there are no sales for vehicle class HDGV

Calendar Year: 2010  
Month: July  
Altitude: Low  
Minimum Temperature: 64.0 (F)  
Maximum Temperature: 84.9 (F)  
Absolute Humidity: 94. grains/lb  
Nominal Fuel EVP: 9.0 psi  
Weathered EVP: 8.8 psi  
Fuel Sulfur Content: 30. ppm  

Exhaust I/M Program: No  
Evap I/M Program: No  
ATP Program: No  
Reformulated Gas: No  

VMT Distribution: 0.4785 | 0.3149 | 0.1073 | 0.0270 | 0.0004 | 0.0016 | 0.0658 | 0.0045 | 1.0000

Composite Emission Factors (g/mi):  
Composite VOC : 0.978     0.834     1.058     0.891     0.733    0.216     0.368     0.326      1.96     0.895  
Composite NOX : 0.639     0.707     1.015     0.825     2.263    0.465     0.597     5.724      1.12     1.075  

Scenario 7: Urban Interstate (M6 Freeway/Freeway Ramp)  
File 1, Run 1, Scenario 7.  

M582 Warning:  
The user supplied freeway average speed of 54.7 will be used for all hours of the day. 100% of VMT has been assigned to a fixed combination of freeways and freeway ramps for all hours of the day and all vehicle types.

M615 Comment:  
User supplied VMT mix.

N 48 Warning:  
there are no sales for vehicle class HDGV

Calendar Year: 2010  
Month: July  
Altitude: Low  
Minimum Temperature: 64.0 (F)  
Maximum Temperature: 84.9 (F)  
Absolute Humidity: 94. grains/lb  
Nominal Fuel EVP: 9.0 psi  
Weathered EVP: 8.8 psi  
Fuel Sulfur Content: 30. ppm  

Exhaust I/M Program: No  
Evap I/M Program: No  
ATP Program: No  
Reformulated Gas: No  

VMT Distribution: 0.3199 | 0.1073 | 0.0270 | 0.0016 | 0.0658 | 0.0045 | 1.0000

Composite Emission Factors (g/mi):  
Composite VOC : 0.978     0.834     1.058     0.891     0.733    0.216     0.368     0.326      1.96     0.895  
Composite NOX : 0.639     0.707     1.015     0.825     2.263    0.465     0.597     5.724      1.12     1.075  

Scenario 8: Urban Freeway/Expressway (M6 Freeway/Freeway Ramp)  
File 1, Run 1, Scenario 8.  

M582 Warning:  
The user supplied freeway average speed of 55.6 will be used for all hours of the day. 100% of VMT has been assigned to a fixed combination of freeways and freeway ramps for all hours of the day and all vehicle types.

M615 Comment:  
User supplied VMT mix.

N 48 Warning:  
there are no sales for vehicle class HDGV

Calendar Year: 2010  
Month: July  
Altitude: Low  
Minimum Temperature: 64.0 (F)  
Maximum Temperature: 84.9 (F)  
Absolute Humidity: 94. grains/lb  
Nominal Fuel EVP: 9.0 psi  
Weathered EVP: 8.8 psi  
Fuel Sulfur Content: 30. ppm  

Exhaust I/M Program: No  
Evap I/M Program: No  
ATP Program: No  
Reformulated Gas: No  

VMT Distribution: 0.4151 | 0.2732 | 0.0931 | 0.0630 | 0.0004 | 0.0014 | 0.1513 | 0.0025 | 1.0000

Composite Emission Factors (g/mi):  
Composite VOC : 0.887     0.770     0.974     0.822     0.616    0.191     0.323     0.261      2.02     0.753  
Composite NOX : 0.683     0.761     1.015     0.825     2.552    0.661     0.851     8.653      1.39     2.061  

Scenario 9: Urban Freeway/Expressway (M6 Freeway/Freeway Ramp)  
File 1, Run 1, Scenario 9.  

M582 Warning:  
The user supplied freeway average speed of 55.6 will be used for all hours of the day. 100% of VMT has been assigned to a fixed combination of freeways and freeway ramps for all hours of the day and all vehicle types.

M615 Comment:  
User supplied VMT mix.
### Warning:

User supplied VMT mix.

<table>
<thead>
<tr>
<th>Vehicle Type:</th>
<th>LDGV</th>
<th>LDGT12</th>
<th>LDGT34</th>
<th>LDGT</th>
<th>HDGV</th>
<th>LDGV</th>
<th>LDGV</th>
<th>LDGV</th>
<th>MC</th>
<th>All Veh</th>
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</thead>
<tbody>
<tr>
<td>GVWR:</td>
<td>&lt;6000</td>
<td>&gt;6000</td>
<td>(All)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VMT Distribution:</td>
<td>0.4550</td>
<td>0.2995</td>
<td>0.1021</td>
<td>0.0408</td>
<td>0.0004</td>
<td>0.0015</td>
<td>0.0974</td>
<td>0.0033</td>
<td>1.0000</td>
<td></td>
</tr>
<tr>
<td>Composite Emission Factors (g/mi):</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Composite VOC</td>
<td>0.883</td>
<td>0.767</td>
<td>0.970</td>
<td>0.818</td>
<td>0.611</td>
<td>0.390</td>
<td>0.322</td>
<td>0.259</td>
<td>2.08</td>
<td>0.788</td>
</tr>
<tr>
<td>Composite NOX</td>
<td>0.685</td>
<td>0.764</td>
<td>1.018</td>
<td>0.828</td>
<td>2.562</td>
<td>0.683</td>
<td>0.879</td>
<td>8.882</td>
<td>1.42</td>
<td>1.620</td>
</tr>
</tbody>
</table>

---

### Warning:

User supplied arterial average speed of 40.5 will be used for all hours of the day. 100% of VMT has been assigned to the arterial/collector roadway type for all hours of the day and all vehicle types.

### Scenario 9: Urban OPA (M6 Arterial/Collector)

File 1, Run 1, Scenario 9.

### Warning:

User supplied VMT mix.

Calendar Year: 2010

<table>
<thead>
<tr>
<th>Vehicle Type:</th>
<th>LDGV</th>
<th>LDGT12</th>
<th>LDGT34</th>
<th>LDGT</th>
<th>HDGV</th>
<th>LDGV</th>
<th>LDGV</th>
<th>LDGV</th>
<th>MC</th>
<th>All Veh</th>
</tr>
</thead>
<tbody>
<tr>
<td>GVWR:</td>
<td>&lt;6000</td>
<td>&gt;6000</td>
<td>(All)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VMT Distribution:</td>
<td>0.4864</td>
<td>0.3202</td>
<td>0.1092</td>
<td>0.0229</td>
<td>0.0004</td>
<td>0.0016</td>
<td>0.0553</td>
<td>0.0040</td>
<td>1.0000</td>
<td></td>
</tr>
<tr>
<td>Composite Emission Factors (g/mi):</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Composite VOC</td>
<td>0.983</td>
<td>0.823</td>
<td>1.045</td>
<td>0.880</td>
<td>0.702</td>
<td>0.209</td>
<td>0.357</td>
<td>0.309</td>
<td>1.92</td>
<td>0.888</td>
</tr>
<tr>
<td>Composite NOX</td>
<td>0.642</td>
<td>0.711</td>
<td>0.957</td>
<td>0.774</td>
<td>2.289</td>
<td>0.472</td>
<td>0.606</td>
<td>5.753</td>
<td>1.13</td>
<td>1.021</td>
</tr>
</tbody>
</table>

---

### Warning:

User supplied VMT mix.

Calendar Year: 2010

<table>
<thead>
<tr>
<th>Vehicle Type:</th>
<th>LDGV</th>
<th>LDGT12</th>
<th>LDGT34</th>
<th>LDGT</th>
<th>HDGV</th>
<th>LDGV</th>
<th>LDGV</th>
<th>LDGV</th>
<th>MC</th>
<th>All Veh</th>
</tr>
</thead>
<tbody>
<tr>
<td>GVWR:</td>
<td>&lt;6000</td>
<td>&gt;6000</td>
<td>(All)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VMT Distribution:</td>
<td>0.1029</td>
<td>0.0870</td>
<td>1.106</td>
<td>0.930</td>
<td>0.814</td>
<td>0.235</td>
<td>0.404</td>
<td>0.376</td>
<td>2.08</td>
<td>0.955</td>
</tr>
<tr>
<td>Composite Emission Factors (g/mi):</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Composite VOC</td>
<td>0.643</td>
<td>0.707</td>
<td>0.953</td>
<td>0.770</td>
<td>2.162</td>
<td>0.460</td>
<td>0.590</td>
<td>5.647</td>
<td>1.07</td>
<td>0.955</td>
</tr>
</tbody>
</table>
### Scenario 11: Urban Collector (M6 Arterial/Collector)

- *File 1, Run 1, Scenario 11.*

**Warning:**
- User supplied arterial average speed of 30.3 will be used for all hours of the day. 100% of VMT has been assigned to the arterial/collector roadway type for all hours of the day and all vehicle types.

**Comment:**
- User supplied VMT mix.

**Warning:**
- there are no sales for vehicle class HDGV8b

<table>
<thead>
<tr>
<th>Calendar Year</th>
<th>Month</th>
<th>Altitude</th>
<th>Minimum Temperature</th>
<th>Maximum Temperature</th>
<th>Absolute Humidity</th>
<th>Nominal Fuel RVP</th>
<th>Weathered RVP</th>
<th>Fuel Sulfur Content</th>
<th>Exhaust I/M Program</th>
<th>Evap I/M Program</th>
<th>ATP Program</th>
<th>Reformulated Gas</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>July</td>
<td>Low</td>
<td>64.0 (F)</td>
<td>84.9 (F)</td>
<td>94. grains/lb</td>
<td>9.0 psi</td>
<td>8.8 psi</td>
<td>30. ppm</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Minimum Temp</td>
<td>Max Temp</td>
<td>Humidity</td>
<td>RVP Nominal</td>
<td>RVP Weathered</td>
<td>Sulfur Content</td>
<td>I/M Exhaust</td>
<td>I/M Evap</td>
<td>ATP Program</td>
<td>Reformulated Gas</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>64.0 (F)</td>
<td>84.9 (F)</td>
<td>94. grains/lb</td>
<td>9.0 psi</td>
<td>8.8 psi</td>
<td>30. ppm</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Composite Emission Factors (g/mi):
- **Composite VOC:** 1.049, 0.886, 1.127, 0.947, 0.840, 0.242, 0.418, 0.394, 2.13, 0.984
- **Composite NOX:** 0.649, 0.712, 0.959, 0.775, 2.118, 0.461, 0.592, 5.634, 1.06, 0.894

### Scenario 12: Urban Local (M6 Local Road) - 12.9

- *File 1, Run 1, Scenario 12.*

**Warning:**
- there are no sales for vehicle class HDGV8b

<table>
<thead>
<tr>
<th>Calendar Year</th>
<th>Month</th>
<th>Altitude</th>
<th>Minimum Temperature</th>
<th>Maximum Temperature</th>
<th>Absolute Humidity</th>
<th>Nominal Fuel RVP</th>
<th>Weathered RVP</th>
<th>Fuel Sulfur Content</th>
<th>Exhaust I/M Program</th>
<th>Evap I/M Program</th>
<th>ATP Program</th>
<th>Reformulated Gas</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>July</td>
<td>Low</td>
<td>64.0 (F)</td>
<td>84.9 (F)</td>
<td>94. grains/lb</td>
<td>9.0 psi</td>
<td>8.8 psi</td>
<td>30. ppm</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Minimum Temp</td>
<td>Max Temp</td>
<td>Humidity</td>
<td>RVP Nominal</td>
<td>RVP Weathered</td>
<td>Sulfur Content</td>
<td>I/M Exhaust</td>
<td>I/M Evap</td>
<td>ATP Program</td>
<td>Reformulated Gas</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>64.0 (F)</td>
<td>84.9 (F)</td>
<td>94. grains/lb</td>
<td>9.0 psi</td>
<td>8.8 psi</td>
<td>30. ppm</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Composite Emission Factors (g/mi):
- **Composite VOC:** 1.509, 1.276, 1.360, 1.695, 0.376, 0.661, 0.758, 3.07, 1.426
- **Composite NOX:** 0.646, 0.699, 0.943, 0.761, 1.890, 0.614, 0.791, 7.576, 0.88, 0.892

---

**Reading Hourly Roadway VMT distribution from the following external data file:** FVMTLOCL.DEF | Reading User Supplied ROADWAY VMT Factors | **Comment:** User supplied VMT mix.

**Warning:**
- there are no sales for vehicle class HDGV8b

---

**Vehicle Type: LDGV, LDGT12, LDGT34, LDGT, HDGV, LDDV, LDDT, HDDV, MC, All Veh**

<table>
<thead>
<tr>
<th>GVWR: &lt;6000</th>
<th>&gt;6000</th>
<th>(All)</th>
<th>LDGV</th>
<th>LDGT12</th>
<th>LDGT34</th>
<th>LDGT</th>
<th>HDGV</th>
<th>LDDV</th>
<th>LDDT</th>
<th>HDDV</th>
<th>MC</th>
<th>All Veh</th>
</tr>
</thead>
<tbody>
<tr>
<td>VMT Distribution:</td>
<td>0.5020</td>
<td>0.3303</td>
<td>0.1126</td>
<td>0.0139</td>
<td>0.0004</td>
<td>0.0017</td>
<td>0.0335</td>
<td>0.0056</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Composite Emission Factors (g/mi):**
- **Composite VOC:** 1.049, 0.886, 1.127, 0.947, 0.840, 0.242, 0.418, 0.394, 2.13, 0.984
- **Composite NOX:** 0.649, 0.712, 0.959, 0.775, 2.118, 0.461, 0.592, 5.634, 1.06, 0.894

---

**Vehicle Type: LDGV, LDGT12, LDGT34, LDGT, HDGV, LDDV, LDDT, HDDV, MC, All Veh**

<table>
<thead>
<tr>
<th>GVWR: &lt;6000</th>
<th>&gt;6000</th>
<th>(All)</th>
<th>LDGV</th>
<th>LDGT12</th>
<th>LDGT34</th>
<th>LDGT</th>
<th>HDGV</th>
<th>LDDV</th>
<th>LDDT</th>
<th>HDDV</th>
<th>MC</th>
<th>All Veh</th>
</tr>
</thead>
<tbody>
<tr>
<td>VMT Distribution:</td>
<td>0.5094</td>
<td>0.3354</td>
<td>0.1144</td>
<td>0.0139</td>
<td>0.0004</td>
<td>0.0017</td>
<td>0.0335</td>
<td>0.0056</td>
<td>1.0000</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

**Composite Emission Factors (g/mi):**
- **Composite VOC:** 1.509, 1.276, 1.360, 1.695, 0.376, 0.661, 0.758, 3.07, 1.426
- **Composite NOX:** 0.646, 0.699, 0.943, 0.761, 1.890, 0.614, 0.791, 7.576, 0.88, 0.892

---

**Reading Hourly Roadway VMT distribution from the following external data file:** FVMTLOCL.DEF | Reading User Supplied ROADWAY VMT Factors | **Comment:** User supplied VMT mix.

**Warning:**
- there are no sales for vehicle class HDGV8b

---

**Vehicle Type: LDGV, LDGT12, LDGT34, LDGT, HDGV, LDDV, LDDT, HDDV, MC, All Veh**

<table>
<thead>
<tr>
<th>GVWR: &lt;6000</th>
<th>&gt;6000</th>
<th>(All)</th>
<th>LDGV</th>
<th>LDGT12</th>
<th>LDGT34</th>
<th>LDGT</th>
<th>HDGV</th>
<th>LDDV</th>
<th>LDDT</th>
<th>HDDV</th>
<th>MC</th>
<th>All Veh</th>
</tr>
</thead>
<tbody>
<tr>
<td>VMT Distribution:</td>
<td>0.5094</td>
<td>0.3354</td>
<td>0.1144</td>
<td>0.0139</td>
<td>0.0004</td>
<td>0.0017</td>
<td>0.0335</td>
<td>0.0056</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Composite Emission Factors (g/mi):**
- **Composite VOC:** 1.509, 1.276, 1.360, 1.695, 0.376, 0.661, 0.758, 3.07, 1.426
- **Composite NOX:** 0.646, 0.699, 0.943, 0.761, 1.890, 0.614, 0.791, 7.576, 0.88, 0.892
2015 Scenario Files – Mobile 6.2 Input File

*************** Header Section ***************
MOBILE INPUT FILE: Delaware County Emissions 2015
DATABASE OUTPUT:
WITH FIELDNAMES:
AGGREGATED OUTPUT:
POLUTANTS: HC NOX
REPORT FILE: Muncie15.txt
EMISSIONS TABLE: Muncie15.tb1
RUN DATA

*************** Run Section ***************
* These min/max temperatures are July averages from Greene County
MIN/MAX TEMP: 64.0 84.9
ABSOLUTE HUMIDITY: 93.7
CLOUD COVER: 0.34
SUNRISE/SUNSET: 5 8
FUEL RVP: 9.0
NO REFUELING:
REG DIST: IN_cty18.d

*************** Scenario Section ***************
SCENARIO RECORD: Scenario 1: Rural Interstate (M6 Freeway/Freeway Ramp)
CALENDAR YEAR: 2015
EVALUATION MONTH: 7
AVERAGE SPEED: 69.5 FREEWAY 97.0 0.0 0.0 3.0
VMT FRACTIONS:
0.3525 0.0536 0.1783 0.0549 0.0253 0.1065 0.0106 0.0084
0.0061 0.0214 0.0279 0.0304 0.1088 0.0058 0.0028 0.0047

*************** Scenario Section ***************
SCENARIO RECORD: Scenario 2: Rural OPA (M6 Non-Ramp)
CALENDAR YEAR: 2015
EVALUATION MONTH: 7
AVERAGE SPEED: 57.8 NON-RAMP
VMT FRACTIONS:
0.4333 0.0658 0.2190 0.0675 0.0311 0.0573 0.0057 0.0029
0.0033 0.0126 0.0573 0.0082 0.0098 0.0107 0.0382 0.0013
0.0033 0.0126 0.0234 0.0214 0.0795 0.0033 0.0015 0.0043

*************** Scenario Section ***************
SCENARIO RECORD: Scenario 3: Rural Minor Arterial (M6 Arterial/Collector)
CALENDAR YEAR: 2015
EVALUATION MONTH: 7
AVERAGE SPEED: 53.8 ARTERIAL
VMT FRACTIONS:
0.4662 0.0708 0.2357 0.0726 0.0334 0.0374 0.0037 0.0029
0.0022 0.0082 0.0098 0.0107 0.0382 0.0026 0.0013 0.0043

*************** Scenario Section ***************
SCENARIO RECORD: Scenario 4: Rural Major Collector (M6 Arterial/Collector)
CALENDAR YEAR: 2015
EVALUATION MONTH: 7
AVERAGE SPEED: 47.8 ARTERIAL
VMT FRACTIONS:
0.4821 0.0732 0.2437 0.0751 0.0345 0.0275 0.0027 0.0022
0.0016 0.0060 0.0072 0.0078 0.0280 0.0024 0.0011 0.0049

*************** Scenario Section ***************
SCENARIO RECORD: Scenario 5: Rural Minor Collector (M6 Arterial/Collector)
CALENDAR YEAR: 2015
EVALUATION MONTH: 7
AVERAGE SPEED: 42.5 ARTERIAL
VMT FRACTIONS:
0.4532 0.0689 0.2292 0.0706 0.0325 0.0399 0.0040 0.0031
0.0023 0.0088 0.0104 0.0114 0.0407 0.0026 0.0013 0.0211

*************** Scenario Section ***************
SCENARIO RECORD: Scenario 6: Rural Local (M6 Arterial/Collector)
CALENDAR YEAR: 2015
EVALUATION MONTH: 7
AVERAGE SPEED: 38.1 ARTERIAL
VMT FRACTIONS:
0.4789 0.0728 0.2421 0.0746 0.0343 0.0294 0.0029 0.0023
0.0017 0.0065 0.0077 0.0084 0.0300 0.0026 0.0013 0.0045

*************** Scenario Section ***************
SCENARIO RECORD: Scenario 7: Urban Interstate (M6 Freeway/Freeway Ramp)
CALENDAR YEAR: 2015
EVALUATION MONTH: 7
AVERAGE SPEED: 54.1 FREEWAY 92.0 0.0 0.0 8.0
VMT FRACTIONS:
0.4155 0.0631 0.2101 0.0647 0.0298 0.0688 0.0068 0.0054
0.0040 0.0151 0.0180 0.0196 0.0702 0.0043 0.0021 0.0025

*************** Scenario Section ***************
SCENARIO RECORD: Scenario 8: Urban Freeway/Expressway (M6 Freeway/Freeway Ramp)
### Scenario Records

**Scenario 9: Urban OPA (M6 Arterial/Collector)**
- **Calendary Year**: 2015
- **Evaluation Month**: 7
- **Average Speed**: 33.8 Arterial
- **VMT Fractions**:
  - 0.4868 0.0740 0.2462 0.0759 0.0349 0.0251 0.0025 0.0020
  - 0.0012 0.0045 0.0053 0.0058 0.0207 0.0018 0.0008 0.0042

**Scenario 10: Urban Minor Arterial (M6 Arterial/Collector)**
- **Calendary Year**: 2015
- **Evaluation Month**: 7
- **Average Speed**: 26.4 Arterial
- **VMT Fractions**:
  - 0.4944 0.0751 0.2499 0.0770 0.0354 0.0203 0.0020 0.0016
  - 0.0012 0.0045 0.0053 0.0058 0.0207 0.0018 0.0008 0.0042

**Scenario 11: Urban Collector (M6 Arterial/Collector)**
- **Calendary Year**: 2015
- **Evaluation Month**: 7
- **Average Speed**: 28.0 Arterial
- **VMT Fractions**:
  - 0.5024 0.0763 0.2540 0.0783 0.0360 0.0152 0.0015 0.0012
  - 0.0009 0.0033 0.0040 0.0043 0.0155 0.0010 0.0005 0.0056

**Scenario 12: Urban Local (M6 Local Road) - 12.9**
- **Calendary Year**: 2015
- **Evaluation Month**: 7
- **VMT By Facility**: fvmtlocl.def
- **VMT Fractions**:
  - 0.5099 0.0775 0.2579 0.0795 0.0366 0.0106 0.0010 0.0008
  - 0.0006 0.0023 0.0028 0.0030 0.0108 0.0028 0.0013 0.0026

---

**Bernardin, Lochmueller & Associates, Inc.**

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**Delaware County 2030 Transportation Plan**

**Air Quality Conformity Documentation**
2015 SCENARIO FILES – MOBILE 6.2 OUTPUT FILE

***************************************************************************
* MOBILE6.2.03 (24-Sep-2003)                                              *
* Input file: MUNCIE15.IN (file 1, run 1).                                *
***************************************************************************

M617 Comment:  User supplied alternate AC input: Cloud Cover Fraction set to 0.34.
M618 Comment:  User supplied alternate AC input: Sunrise at 5 AM, Sunset at 8 PM.
M603 Comment:  User has disabled the calculation of REFUELING emissions.

* Reading Registration Distributions from the following external
* data file: IN_CTY18.D

M 49 Warning:  1.00   MYR sum not = 1. (will normalize)
M 49 Warning:  1.00   MYR sum not = 1. (will normalize)
M 49 Warning:  1.00   MYR sum not = 1. (will normalize)
M 49 Warning:  1.00   MYR sum not = 1. (will normalize)

Scenario 1: Rural Interstate (M6 Freeway/Freeway Ramp)
File 1, Run 1, Scenario 1.

Calendar Year:  2015
Month:  July
Altitude:  Low
Minimum Temperature:  64.0 (F)
Maximum Temperature:  84.9 (F)
Absolute Humidity:   94. grains/lb
Nominal Fuel RVP:   9.0 psi
Weathered RVP:   8.8 psi
Fuel Sulfur Content:   30. ppm
Exhaust I/M Program:  No
Evap I/M Program:  No
ATP Program:  No
Reformulated Gas:  No

Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
GVWR:               <6000     >6000     (All)        (All)      (All)      (All)      (All)      (All)        (All) All Veh
VMT Distribution:    0.3522    0.2319    0.0790              0.0970    0.0003    0.0012    0.2337    0.0047    1.0000

Composite Emission Factors (g/mi):
Composite VOC :      0.533     0.500     0.701     0.551     0.398    0.108     0.202     0.194      2.44     0.455
Composite NOX :      0.467     0.515     0.706     0.564     1.309    0.401     0.565     5.380      1.59     1.732

----------------------------------------------------------------------------------------------------------------------

M515 Warning:  The combined freeway and ramp average speed entered
cannot be greater than 63.3 miles per hour.
The average speed will be reset to this value.

M582 Warning:  The user supplied freeway average speed of 63.3
will be used for all hours of the day. 100% of VMT
has been assigned to a fixed combination of freeways
and freeway ramps for all hours of the day and all
vehicle types.

M615 Comment:  User supplied VMT mix.

Calendar Year:  2015
Month:  July
Altitude:  Low
Minimum Temperature:  64.0 (F)
Maximum Temperature:  84.9 (F)
Absolute Humidity:   94. grains/lb
Nominal Fuel RVP:   9.0 psi
Weathered RVP:   8.8 psi
Fuel Sulfur Content:   30. ppm
Exhaust I/M Program:  No
Evap I/M Program:  No
ATP Program:  No
Reformulated Gas:  No

Warning:
there are no sales for vehicle class HDGV8b
there are no sales for vehicle class LDGT12

Calendar Year:  2015
Month:  July
Altitude:  Low
Minimum Temperature:  64.0 (F)
Maximum Temperature:  84.9 (F)
Absolute Humidity:   94. grains/lb
Nominal Fuel RVP:   9.0 psi
Weathered RVP:   8.8 psi
Fuel Sulfur Content:   30. ppm
Exhaust I/M Program:  No
Evap I/M Program:  No
ATP Program:  No
Reformulated Gas:  No

Warning:
there are no sales for vehicle class HDGV8b
there are no sales for vehicle class LDGT12

Scenario 2: Rural OPA (M6 Non-Ramp)
File 1, Run 1, Scenario 2.

Calendar Year:  2015
Month:  July
Altitude:  Low
Minimum Temperature:  64.0 (F)
Maximum Temperature:  84.9 (F)
Absolute Humidity:   94. grains/lb
Nominal Fuel RVP:   9.0 psi
Weathered RVP:   8.8 psi
Fuel Sulfur Content:   30. ppm
Exhaust I/M Program:  No
Evap I/M Program:  No
ATP Program:  No
Reformulated Gas:  No

Warning:
there are no sales for vehicle class HDGV8b
there are no sales for vehicle class LDGT12

Calendar Year:  2015
Month:  July
Altitude:  Low
Minimum Temperature:  64.0 (F)
Maximum Temperature:  84.9 (F)
Absolute Humidity:   94. grains/lb
Nominal Fuel RVP:   9.0 psi
Weathered RVP:   8.8 psi
Fuel Sulfur Content:   30. ppm
Exhaust I/M Program:  No
Evap I/M Program:  No
ATP Program:  No
Reformulated Gas:  No

Warning:
there are no sales for vehicle class HDGV8b
there are no sales for vehicle class LDGT12

Warning:
there are no sales for vehicle class HDGV8b
there are no sales for vehicle class LDGT12
Vehicle Type: LDGV LDGT12 LDGT34 LDGT HDGV LDGV LDGT HDDV MC All Veh
GVWR: <6000 >6000 (All)
------ ------ ------ ------ ------ ------ ------ ------ ------ ------
VMT Distribution: 0.4329 0.2848 0.0972 0.0522 0.0004 0.0014 0.1259 0.0052 1.0000

--- Composite Emission Factors (g/mi) ---

Composite VOC : 0.543 0.508 0.714 0.560 0.402 0.108 0.202 0.193 2.04 0.505
Composite NOX : 0.456 0.502 0.689 0.549 1.259 0.313 0.441 4.286 1.42 1.020

--- Scenario 3: Rural Minor Arterial (M6 Arterial/Collector) ---

M583 Warning: The user supplied arterial average speed of 53.8 will be used for all hours of the day. 100% of VMT has been assigned to the arterial/collector roadway type for all hours of the day and all vehicle types.

M615 Comment: User supplied VMT mix.

--- Scenario 4: Rural Major Collector (M6 Arterial/Collector) ---

M583 Warning: The user supplied arterial average speed of 47.8 will be used for all hours of the day. 100% of VMT has been assigned to the arterial/collector roadway type for all hours of the day and all vehicle types.

M615 Comment: User supplied VMT mix.

--- Scenario 5: Rural Minor Collector (M6 Arterial/Collector) ---

M583 Warning: The user supplied arterial average speed of 42.5 will be used for all hours of the day. 100% of VMT has been assigned to the arterial/collector roadway type for all hours of the day and all vehicle types.

M615 Comment: User supplied VMT mix.

--- Composite Emission Factors (g/mi) ---

Composite VOC : 0.543 0.508 0.714 0.560 0.402 0.108 0.202 0.193 2.04 0.505
Composite NOX : 0.456 0.502 0.689 0.549 1.259 0.313 0.441 4.286 1.42 1.020

--- Scenario 3: Rural Minor Arterial (M6 Arterial/Collector) ---

M583 Warning: The user supplied arterial average speed of 53.8 will be used for all hours of the day. 100% of VMT has been assigned to the arterial/collector roadway type for all hours of the day and all vehicle types.

M615 Comment: User supplied VMT mix.

--- Scenario 4: Rural Major Collector (M6 Arterial/Collector) ---

M583 Warning: The user supplied arterial average speed of 47.8 will be used for all hours of the day. 100% of VMT has been assigned to the arterial/collector roadway type for all hours of the day and all vehicle types.

M615 Comment: User supplied VMT mix.

--- Scenario 5: Rural Minor Collector (M6 Arterial/Collector) ---

M583 Warning: The user supplied arterial average speed of 42.5 will be used for all hours of the day. 100% of VMT has been assigned to the arterial/collector roadway type for all hours of the day and all vehicle types.

M615 Comment: User supplied VMT mix.

--- Composite Emission Factors (g/mi) ---

Composite VOC : 0.543 0.508 0.714 0.560 0.402 0.108 0.202 0.193 2.04 0.505
Composite NOX : 0.456 0.502 0.689 0.549 1.259 0.313 0.441 4.286 1.42 1.020
there are no sales for vehicle class LDDT12

Calendar Year: 2015
Month: July
Altitude: Low
Minimum Temperature: 64.0 (F)
Maximum Temperature: 84.9 (F)
Absolute Humidity: 94. grains/1b
Nominal Fuel SVP: 9.0 psi
Weathered SVP: 8.8 psi
Fuel Sulfur Content: 30. ppm
Exhaust I/M Program: No
Evap I/M Program: No
ATP Program: No
Reformulated Gas: No

Vehicle Type: LDGV  LDGT12  LDGT34  LDGT  HDGV  LDV  LDOT  HDOT  MC  All Veh
GVWR: <6000  >6000  (All)

VMT Distribution: 0.4528  0.2981  0.1016  0.0364  0.0004  0.0015  0.0881  0.0211  1.0000

Composite Emission Factors (g/mi):
Composite VOC: 0.586  0.539  0.762  0.596  0.466  0.118  0.221  0.228  1.90  0.581
Composite NOX: 0.434  0.475  0.658  0.522  1.133  0.222  0.312  2.839  1.14  0.721

---- M683 Warning: The user supplied arterial average speed of 38.1 will be used for all hours of the day. 100% of VMT has been assigned to the arterial/collector roadway type for all hours of the day and all vehicle types.

---- M615 Comment: User supplied VMT mix.

---- M48 Warning: there are no sales for vehicle class HDGV8b

---- M48 Warning: there are no sales for vehicle class LDDT12

Calendar Year: 2015
Month: July
Altitude: Low
Minimum Temperature: 64.0 (F)
Maximum Temperature: 84.9 (F)
Absolute Humidity: 94. grains/1b
Nominal Fuel SVP: 9.0 psi
Weathered SVP: 8.8 psi
Fuel Sulfur Content: 30. ppm
Exhaust I/M Program: No
Evap I/M Program: No
ATP Program: No
Reformulated Gas: No

Vehicle Type: LDGV  LDGT12  LDGT34  LDGT  HDGV  LDV  LDOT  HDOT  MC  All Veh
GVWR: <6000  >6000  (All)

VMT Distribution: 0.4785  0.3149  0.1073  0.0268  0.0004  0.0016  0.0660  0.0045  1.0000

Composite Emission Factors (g/mi):
Composite VOC: 0.586  0.539  0.762  0.596  0.466  0.118  0.221  0.228  1.90  0.581
Composite NOX: 0.434  0.475  0.658  0.522  1.133  0.222  0.312  2.839  1.14  0.721

---- M582 Warning: The user supplied freeway average speed of 54.1 will be used for all hours of the day. 100% of VMT has been assigned to a fixed combination of freeways and freeway ramps for all hours of the day and all vehicle types.

---- M615 Comment: User supplied VMT mix.

---- M48 Warning: there are no sales for vehicle class HDGV8b

---- M48 Warning: there are no sales for vehicle class LDDT12

Calendar Year: 2015
Month: July
Altitude: Low
Minimum Temperature: 64.0 (F)
Maximum Temperature: 84.9 (F)
Absolute Humidity: 94. grains/1b
Nominal Fuel SVP: 9.0 psi
Weathered SVP: 8.8 psi
Fuel Sulfur Content: 30. ppm
Exhaust I/M Program: No
Evap I/M Program: No
ATP Program: No
Reformulated Gas: No

Vehicle Type: LDGV  LDGT12  LDGT34  LDGT  HDGV  LDV  LDOT  HDOT  MC  All Veh
GVWR: <6000  >6000  (All)

VMT Distribution: 0.4151  0.2732  0.0931  0.0627  0.0004  0.0014  0.1516  0.0160  1.0000

---- M582 Warning: The user supplied freeway average speed of 54.1 will be used for all hours of the day. 100% of VMT has been assigned to a fixed combination of freeways and freeway ramps for all hours of the day and all vehicle types.

---- M615 Comment: User supplied VMT mix.
<table>
<thead>
<tr>
<th>Scenario 8: Urban Freeway/Expressway (M6 Freeway/Freeway Ramp)</th>
</tr>
</thead>
<tbody>
<tr>
<td>* File 1, Run 1, Scenario 8.</td>
</tr>
</tbody>
</table>

### Warning:
The user supplied freeway average speed of 55.5 will be used for all hours of the day. 100% of VMT has been assigned to a fixed combination of freeways and freeway ramps for all hours of the day and all vehicle types.

### Comment:
User supplied VMT mix.

### Warning:
there are no sales for vehicle class LDGV8b

### Warning:
there are no sales for vehicle class LDGT12

<table>
<thead>
<tr>
<th>Calendar Year: 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Month: July</td>
</tr>
<tr>
<td>Altitude: Low</td>
</tr>
</tbody>
</table>

| Minimum Temperature: 64.0 (F) |
| Maximum Temperature: 84.9 (F) |
| Absolute Humidity: 94. grains/lb |
| Nominal Fuel RVP: 9.0 psi |
| Weathered RVP: 8.8 psi |
| Fuel Sulfur Content: 30. ppm |

| Exhaust I/M Program: No |
| Dvgp I/M Program: No |
| ATP Program: No |
| Reformulated Gas: No |

### VMT Distribution: 1.0000

| Vehicle Type: LDGV LDGT12 LDGT34 LDGT HDGV LDDV LDOT HDDV MC All Veh |
|------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| GVWR:                | <6000 | >6000 | (All) | <6000 | >6000 | (All) | <6000 | >6000 | (All) | <6000 | >6000 | (All) | <6000 | >6000 | (All) | <6000 | >6000 | (All) | <6000 | >6000 | (All) |
| VMT Distribution: | 0.4550 | 0.2995 | 0.1021 | 0.0406 | 0.0004 | 0.0015 | 0.0976 | 0.0033 | 1.0000 |

### Composite Emission Factors (g/mi):

#### Composite VOC: 2.07
#### Composite NOX: 1.41

---

<table>
<thead>
<tr>
<th>Scenario 9: Urban OPA (M6 Arterial/Collector)</th>
</tr>
</thead>
<tbody>
<tr>
<td>* File 1, Run 1, Scenario 9.</td>
</tr>
</tbody>
</table>

### Warning:
The user supplied arterial average speed of 33.8 will be used for all hours of the day. 100% of VMT has been assigned to the arterial/collector roadway type for all hours of the day and all vehicle types.

### Comment:
User supplied VMT mix.

### Warning:
there are no sales for vehicle class HDGV8b

### Warning:
there are no sales for vehicle class LDGT12

<table>
<thead>
<tr>
<th>Calendar Year: 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Month: July</td>
</tr>
<tr>
<td>Altitude: Low</td>
</tr>
</tbody>
</table>

| Minimum Temperature: 64.0 (F) |
| Maximum Temperature: 84.9 (F) |
| Absolute Humidity: 94. grains/lb |
| Nominal Fuel RVP: 9.0 psi |
| Weathered RVP: 8.8 psi |
| Fuel Sulfur Content: 30. ppm |

| Exhaust I/M Program: No |
| Dvgp I/M Program: No |
| ATP Program: No |
| Reformulated Gas: No |

### VMT Distribution: 1.0000

| Vehicle Type: LDGV LDGT12 LDGT34 LDGT HDGV LDDV LDOT HDDV MC All Veh |
|------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| GVWR:                | <6000 | >6000 | (All) | <6000 | >6000 | (All) | <6000 | >6000 | (All) | <6000 | >6000 | (All) | <6000 | >6000 | (All) | <6000 | >6000 | (All) | <6000 | >6000 | (All) |
| VMT Distribution: | 0.4864 | 0.3208 | 0.1092 | 0.0229 | 0.0004 | 0.0016 | 0.0533 | 0.0040 | 1.0000 |

### Composite Emission Factors (g/mi):

#### Composite VOC: 2.04
#### Composite NOX: 1.09

---

<table>
<thead>
<tr>
<th>Scenario 10: Urban Minor Arterial (M6 Arterial/Collector)</th>
</tr>
</thead>
<tbody>
<tr>
<td>* File 1, Run 1, Scenario 10.</td>
</tr>
</tbody>
</table>

### Warning:
The user supplied arterial average speed of 26.4 will be used for all hours of the day. 100% of VMT has been assigned to the arterial/collector roadway type for all hours of the day and all vehicle types.

### Comment:
User supplied VMT mix.

### Warning:
there are no sales for vehicle class HDGV8b

### Warning:
there are no sales for vehicle class LDGT12

<table>
<thead>
<tr>
<th>Calendar Year: 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Month: July</td>
</tr>
<tr>
<td>Altitude: Low</td>
</tr>
</tbody>
</table>

| Minimum Temperature: 64.0 (F) |
| Absolute Humidity: 94. grains/lb |
| Nominal Fuel RVP: 9.0 psi |
| Weathered RVP: 8.8 psi |
| Fuel Sulfur Content: 30. ppm |

| Exhaust I/M Program: No |
| Dvgp I/M Program: No |
| ATP Program: No |
| Reformulated Gas: No |

### VMT Distribution: 1.0000

| Vehicle Type: LDGV LDGT12 LDGT34 LDGT HDGV LDDV LDOT HDDV MC All Veh |
|------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| GVWR:                | <6000 | >6000 | (All) | <6000 | >6000 | (All) | <6000 | >6000 | (All) | <6000 | >6000 | (All) | <6000 | >6000 | (All) | <6000 | >6000 | (All) | <6000 | >6000 | (All) |
| VMT Distribution: | 0.4864 | 0.3208 | 0.1092 | 0.0229 | 0.0004 | 0.0016 | 0.0533 | 0.0040 | 1.0000 |

### Composite Emission Factors (g/mi):

#### Composite VOC: 2.04
#### Composite NOX: 1.09

---
Minimum Temperature: 64.0 (F)
Maximum Temperature: 84.9 (F)
Absolute Humidity: 94. grains/lb
Nominal Fuel RVP: 9.0 psi
Weathered RVP: 8.8 psi
Pert Sulfur Content: 10. ppm

Exhaust I/M Program: No
Evap I/M Program: No
ATP Program: No
Reformulated Gas: No

Vehicle Type: LDGV LDGT12 LDGT34 LDGT HDGV LDGV LDGT HDDV NC All Veh

GVWR: <6000 >6000 (All)

VMT Distribution: 0.4940 0.3250 0.1108 0.0185 0.0004 0.0016 0.0459 0.0042 1.0000

Composite Emission Factors (g/mi):
Composite VOC: 0.673 0.603 0.856 0.667 0.605 0.150 0.340 2.24 0.660
Composite NOx: 0.450 0.484 0.672 0.532 1.003 0.218 0.307 2.821 1.02 0.606

---

Scenario 11: Urban Collector (M6 Arterial/Collector)
File 1, Run 1, Scenario 11.

---

Warning:
The user supplied arterial average speed of 28.0 will be used for all hours of the day. 100% of VMT has been assigned to the arterial/collector roadway type for all hours of the day and all vehicle types.

Comment:
User supplied VMT mix.

---

Warning:
there are no sales for vehicle class HDGV8b

Warning:
there are no sales for vehicle class LDDT12

---

Scenario 12: Urban Local (M6 Local Road) - 12.9
File 1, Run 1, Scenario 12.

---

Warning:
there are no sales for vehicle class HDGV8b

Warning:
there are no sales for vehicle class LDDT12

---

Reading Hourly Roadway VMT distribution from the following external:
Data file: FVTLOCL.DDF

Reading User Supplied ROADWAY VMT Factors

Comment:
User supplied VMT mix.

---

Warning:
there are no sales for vehicle class HDGV8b

Warning:
there are no sales for vehicle class LDDT12

---

Calendar Year: 2015
Month: July
Altitude: Low
Minimum Temperature: 64.0 (F)
Maximum Temperature: 84.9 (F)
Absolute Humidity: 94. grains/lb
Nominal Fuel RVP: 9.0 psi
Weathered RVP: 8.8 psi
Pert Sulfur Content: 10. ppm

Exhaust I/M Program: No
Evap I/M Program: No
ATP Program: No
Reformulated Gas: No

Vehicle Type: LDGV LDGT12 LDGT34 LDGT HDGV LDGV LDGT HDDV NC All Veh

GVWR: <6000 >6000 (All)

VMT Distribution: 0.5019 0.3303 0.1126 0.0139 0.0005 0.0017 0.0335 0.0056 1.0000

Composite Emission Factors (g/mi):
Composite VOC: 0.660 0.593 0.842 0.656 0.580 0.145 0.273 0.322 2.19 0.654
Composite NOx: 0.444 0.478 0.684 0.526 1.013 0.215 0.303 2.751 1.04 0.568н

---

Warning:
there are no sales for vehicle class HDGV8b

Warning:
there are no sales for vehicle class LDDT12

---

Reading Hourly Roadway VMT distribution from the following external:
Data file: FVTLOCL.DDF

Reading User Supplied ROADWAY VMT Factors

Comment:
User supplied VMT mix.

---

Warning:
there are no sales for vehicle class HDGV8b

Warning:
there are no sales for vehicle class LDDT12

---