Delaware County Transportation Plan
2009 - 2030

Air Quality Conformity Documentation

Prepared for the
Delaware Muncie Metropolitan Plan Commission

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EXECUTIVE SUMMARY

The Air Quality Conformity Determination for the 2009-2030 Delaware-Muncie Transportation Plan was performed in order to meet federal regulations from the Clean Air Act Amendment of 1990 and the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). Delaware County was designated non-attainment for ozone in June, 2004. Delaware County was re-designated from non-attainment to attainment for ozone under the 8-hour standard in January, 2006. Delaware County is considered a maintenance area for conformity purposes with an established budget in the State Implementation Plan (SIP).

The Delaware-Muncie Metropolitan Plan Commission, as the Metropolitan Planning Organization (MPO) for the Delaware County Maintenance Area, must demonstrate that the Transportation Plan will conform to air quality emission budgets for the ozone precursors of volatile organic compounds (VOC's) and nitrogen oxides (NOx) for the year 2015. Air quality conformity for the 2009-2030 Delaware-Muncie Transportation Plan was determined based on the analysis of each of the study years of the Plan (2010, 2015, 2025 & 2030) and it was determined that VOC and NOx emissions would not exceed the 2015 SIP budget if the projects are implemented as set forth in the Plan. The original conformity analysis for Delaware County established the 2002 baseline emissions. The 2010 emission analysis was included to show an interim test that was below the baseline.

The conformity analysis demonstrates that vehicle emissions based on the 2009-2030 Delaware-Muncie Transportation Plan are below the 2002 baseline budget for 2010 and below the 2015 SIP budget for 2015, 2025 and 2030. The 2010 analysis year to 2002 baseline year comparison supports the finding that there are no factors which would cause or contribute to a new violation or exacerbate an existing violation in the years 2006 to 2015. Based on this documentation, the 2009-2030 Delaware-Muncie Transportation Plan conforms to the Clean Air Act as amended and Delaware County meets the conformity requirements of the Clean Air Act as amended.

Table ES-1: Interim 2010 Analysis Year Comparison to Baseline Emissions

Analysis Year	Total VOC Emissions Tons/Day	2002 VOC Baseline Tons/Day	Total NOx Emissions Tons/Day	2002 NOx Baseline Tons/Day
2010	3.87	8.19	6.52	13.89

Table ES-2: 2015, 2025 and 2030 Analysis Year Comparison to 2015 SIP Budget

Analysis Year	Total VOC Emissions Tons/Day	2015 VOC SIP Budget Tons/Day	Total NOx Emissions Tons/Day	2015 NOx SIP Budget Tons/Day
2015	3.14	3.5	4.28	4.82
2025	2.16	3.5	2.26	4.82
2030	2.18	3.5	2.01	4.82

INTRODUCTION

Delaware County, Indiana was designated as a basic non-attainment area in June 2004 and redesignated a maintenance area in January 2006 for ozone under the 8-hour ozone standard. 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 mobile source 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 2009-2030 Delaware-Muncie Transportation Plan Update 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, a maintenance area, has an established emissions budget (since 2007) based upon a SIP.

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: 2010 (Base Year and within 5 years of last conformity determination), 2015 (within 10 years of last conformity determination), 2025, and 2030(the final Transportation Plan horizon year). The VMT was then adjusted using factors that were derived for Base Year (2010) using 2007 estimated VMT's from the Highway Performance Monitoring System (HPMS). Second, a post processing procedure was used to compute average speeds for each FHWA functional classification, 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 2010, 2015, 2025, and 2030. The target attainment year under the maintenance plan in the SIP now is 2015, thus this year was included along with 2025 and 2030 in the current analysis.

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 a designated Maintenance Area for Ozone in January 2006. A SIP was developed for this county and a motor vehicle budget is in effect.

> *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

2015 Model Year Expansion Projects – Construction in 2014 or Sooner

Gov.	Des #	Project	Location	Type of Work
Muncie	0710092 0501031	(#3) Morrison Widening (# 5) Everbrook Extension (# 6) Evermore Extension (#49) Morrison Widening	from Jackson St. to Keller Rd. from SR 332 to Bethel Avenue. from Marleon Dr. to Morrison Rd. from Evermore to Bethel Avenue	Center Turn Lane New Road New Road Center Turn Lane
Yorktown / Muncie		(#10) Nebo Rd. Widening2	from Norfolk S.R.R. to SR 332	Center Turn Lane
Yorktown		(# 2) Sutherland Extension (# 9) Nebo Road Widening	from Broadway St. to CR 600W from River Road to Norfolk S.R.R.	New Road Center Turn Lane
Delaware County		(#10.5) Nebo Rd. Widen 3	from SR 332 to Bethel Avenue	Center Turn Lane
State	9700420 9901350 9901360 9700310 9901680 0013780 0013840 0400893	(#18) I-69 (#19) SR 67 over NSRR (#20) Bypass (US35/SR3,67) (#22) SR 32 Widening (#25) SR 67 Widening (#26) SR 67 at Cowan Road (#27) US 35 at McGalliard (#29) SR 3 Widening	ramps to and from SR 67 Bypass east of Cowan Road Bypass at Centennial Ave. from Nebo Rd. to Andrews to Tiger from Bypass to SR 28 new interchange for Bypass new interchange for Bypass Bypass to SR 28	Added Lanes (2) Grade Separation Grade Separation Added Lanes (4,3) Center Turn Lane Interchange Interchange Center Turn Lane

2025 Model Year Expansion Projects – Contruction in 2024 or Sooner

Gov.	Des #	Project	Location	Type of Work
Muncie	9786020	(# 1) Barr Extension (# 4&8) Wheeling Widening (# 7) Jackson Widening (#12) Riggin Widening (#16) Morrison Widening	from Princeton Av. to Riggin Rd. from Riverside Ave. to Haines St. from Celia Ave. to White River Blvd. from Wheeling Ave. to Walnut St. from River Rd. to Jackson St.	New Road Center Turn Lane Center Turn Lane Center Turn Lane Center Turn Lane
Yorktown /County	0710090	(#11) Andrews/500W Exten. (#13) CR 600W Extension	from SR 32 to River Road from SR 32 to River Rd.	New Road/Bridge New Road

2030 Model Year Expansion Projects – Construction in 2029 or Sooner

Gov.	Des #	Project	Location	Type of Work
Yorktown		(#14) CR 200S Extension (#17) Nebo Widening	from Andrews-500W to CR 600W.from River Rd. to SR 332.	Added Lanes New Road
Delaware County		(#17.5) Nebo Widening	from SR 332 to Bethel Avenue.	Added Lanes

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 calibration and conversion to TransCAD software as part of the *Western Growth & Arterial Study* which was completed in 2003. This calibration established 2000 as the 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 was capable of producing accurate traffic forecasts out to year 2030.

The Muncie/Delaware County travel demand model was recalibrated by Bernardin, Lochmueller & Associates in 2009 using 2010 as the base year. 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.

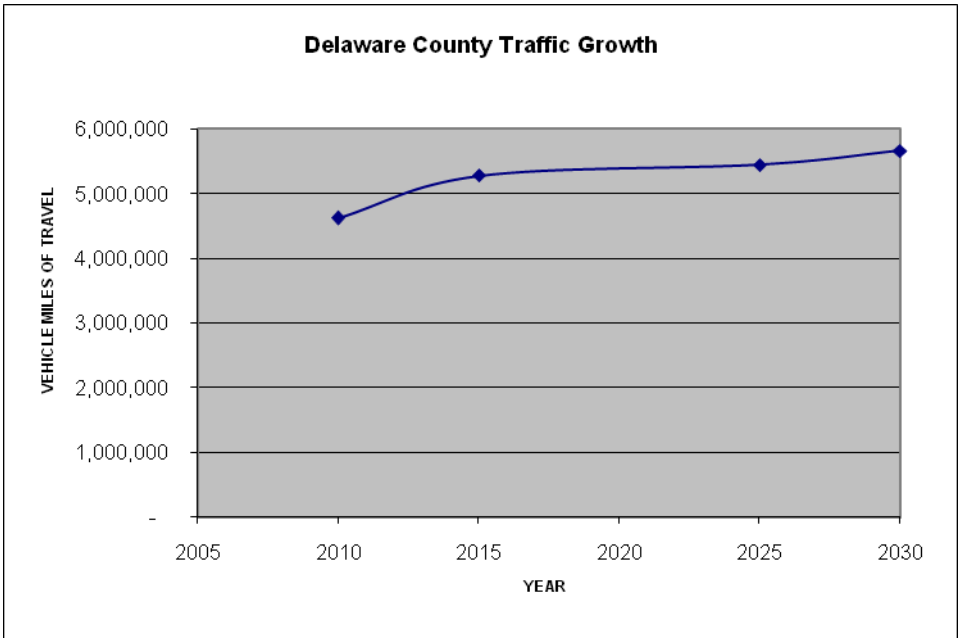
Mode choice is the process used to separate the trips which use transit from those which use automobiles. It is also used to separate the auto drive-alone trips from auto shared-ride trips.

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

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

Functional Classification	Functional Class Code	HPMS Adjustment Factor
Rural Interstate	1	0.86
Rural Principal Arterial	2	1.26
Rural Minor Arterial	6	0.86
Rural Major Collector	7	5.45
Rural Minor Collector	8	0.94
Rural Local	9	2.68
Urban Interstate	11	3.34
Urban Expressway	12	1.09
Urban Principal Arterial	14	1.03
Urban Minor Arterial	16	1.13
Urban Collector	17	0.52
Urban Local	19	4.98

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 on the next page.

TABLE 3: TIME OF DAY FACTORS

TIME OF DAY FACTORS BY TRIP PURPOSE					
PERIOD	**HBW**	**HBSC**	**HBO**	**NHBW**	**NHBO**
AM PEAK 3 HOURS	36.7%	47.5%	15.9%	17.6%	10.1%
PM PEAK 3 HOURS	30.8%	23.5%	26.1%	28.0%	23.7%
OFF PEAK 18 HOURS	32.5%	29.0%	58.0%	54.4%	66.2%

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.

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

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

TABLE 4: BPR CURVE PARAMETERS

Volume-Delay Curve Parameters		
	Under 60 mph	**Over 60 mph**
Alpha	0.20	0.15
Beta	8.00	10.00

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

		Mobile 6 Vehicle Type															
HPMS Classification	**Mobile 6 Classification**	**LDV**	**LDT1**	**LDT2**	**LDT3**	**LDT4**	**HDV2B**	**HDV3**	**HDV4**	**HDV5**	**HDV6**	**HDV7**	**HDV8A**	**HDV8B**	**HDBS**	**HDBT**	**MC**
Rural Interstate	Freeway / Freeway Ramp	0.353	0.054	0.178	0.055	0.025	0.107	0.011	0.008	0.006	0.023	0.028	0.030	0.109	0.006	0.003	0.005
Rural Other Principal Arterial	Non-Ramp	0.433	0.066	0.219	0.068	0.031	0.057	0.006	0.005	0.003	0.013	0.015	0.016	0.059	0.003	0.002	0.005
Rural Minor Arterial	Arterial / Collector	0.466	0.071	0.236	0.073	0.033	0.037	0.004	0.003	0.002	0.008	0.010	0.011	0.038	0.003	0.001	0.004
Rural Major Collector	Arterial / Collector	0.482	0.073	0.244	0.075	0.035	0.028	0.003	0.002	0.002	0.006	0.007	0.008	0.028	0.002	0.001	0.005
Rural Minor Collector	Arterial / Collector	0.453	0.069	0.229	0.071	0.033	0.040	0.004	0.003	0.002	0.009	0.010	0.011	0.041	0.003	0.001	0.021
Rural Local	Arterial / Collector	0.479	0.073	0.242	0.075	0.034	0.029	0.003	0.002	0.002	0.007	0.008	0.008	0.030	0.003	0.001	0.005
Urban Interstate	Freeway / Freeway Ramp	0.416	0.063	0.210	0.065	0.030	0.069	0.007	0.005	0.004	0.015	0.018	0.020	0.070	0.004	0.002	0.003
Urban Freeway/Expressway	Freeway / Freeway Ramp	0.455	0.069	0.230	0.071	0.033	0.045	0.004	0.004	0.003	0.010	0.012	0.013	0.046	0.002	0.001	0.003
Urban Other Principal Arterial	Arterial / Collector	0.487	0.074	0.246	0.076	0.035	0.025	0.003	0.002	0.001	0.006	0.007	0.007	0.026	0.002	0.001	0.004
Urban Minor Arterial	Arterial / Collector	0.494	0.075	0.250	0.077	0.035	0.020	0.002	0.002	0.001	0.005	0.005	0.006	0.021	0.002	0.001	0.004
Urban Collector	Arterial / Collector	0.502	0.076	0.254	0.078	0.036	0.015	0.002	0.001	0.001	0.003	0.004	0.004	0.016	0.001	0.001	0.006
Urban Local	Local Road	0.510	0.078	0.258	0.080	0.037	0.011	0.001	0.001	0.001	0.002	0.003	0.003	0.011	0.003	0.001	0.003

Vehicle fleet age distribution was provided for light duty vehicles for Delaware County by IDEM, these values are used in the IN_cty18.d file. For other vehicle classes, the standard Mobile 6.2 defaults are used. The IN_cty18.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

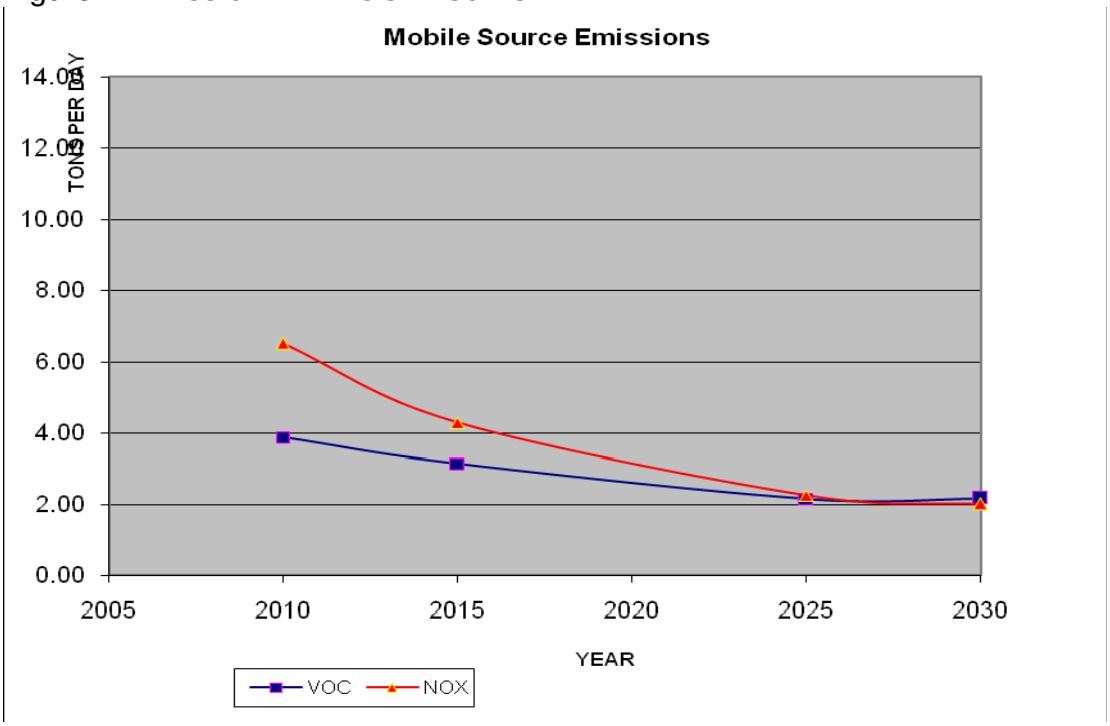
The regional emissions analysis was conducted to provide estimates of the levels of emissions of volatile organic compounds (VOC) and oxides of Nitrogen (NOx) for the various scenarios. VOC and NOx contribute directly to the production of ozone. The revised Indiana State Implementation Plan (SIP) with was approved effective January 2, 2006 with a maintenance plan mobile source emissions budget for VOC and NOx for Delaware County.

The results of the regional emissions analysis are summarized in Tables 6 through 12, and in Figure 2. Table 6 shows that Analysis Year 2010 emissions for VOC and NOx are lower than in 2002 and near the Maintenance Plan Budget, while the analysis years from 2015 on are below the Maintenance Plan Budget. Figure 2 illustrates that emissions for both ozone precursors is estimated to decline steadily over the next 25 years.

TABLE 6: EMISSION ANALYSIS RESULTS

Year	Daily VMT	VOC *Tons/day*	NOX *Tons/day*
2002	4,410,000	8.19	13.89
Budget		3.50	4.82
2010	4,626,495	3.87	6.52
2015	5,283,346	3.14	4.28
2025	5,448,718	2.16	2.26
2030	5,663,927	2.18	2.01

Figure 2: EMISSION ANALYSIS RESULTS



TABLES 7-10: DETAILED EMISSION ANALYSIS RESULTS

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

Functional Class System	Model VMT	Adjusted VMT	Average Speed	VOC Tons/day	NOx Tons/day
Rural Interstate	707,939	615,165	69.6	0.479	1.137
Rural Principal Arterial	174,249	219,554	57.9	0.173	0.353
Rural Minor Arterial	240,438	206,777	56.8	0.164	0.313
Rural Major Collector	273,643	1,491,354	47.7	1.230	1.986
Rural Minor Collector	41,112	38,645	43.8	0.033	0.050
Rural Local	35,356	94,754	41.3	0.081	0.119
Urban Interstate	26,560	113,325	64.0	0.089	0.206
Urban Expressway	142,878	163,770	56.4	0.131	0.267
Urban Principal Arterial	606,198	624,384	41.9	0.531	0.789
Urban Minor Arterial	546,738	617,814	34.4	0.552	0.755
Urban Collector	147,122	76,503	31.6	0.070	0.094
Urban Local	72,779	362,439	28.9	0.342	0.450
Ramp	22,109	*		*	*
Forecast 2015 Totals	3,037,121	4,626,495		3.87	6.52

*Adjusted VMT contains ramp VMT in Interstate and Expressway

Modeled Vehicle Miles of Travel and Mobile Source Emissions for 2015 Scenario

Functional Class System	Model VMT	Adjusted VMT	Average Speed	VOC Tons/day	NOx Tons/day
Rural Interstate	769,351	668,500	69.5	0.374	0.688
Rural Principal Arterial	199,660	251,572	58.2	0.142	0.230
Rural Minor Arterial	294,600	253,356	56.8	0.143	0.219
Rural Major Collector	311,676	1,698,634	48.2	0.994	1.318
Rural Minor Collector	42,609	40,052	43.8	0.024	0.030
Rural Local	39,446	105,715	41.3	0.064	0.078
Urban Interstate	27,824	119,569	64.0	0.067	0.121
Urban Expressway	151,941	178,731	56.4	0.102	0.165
Urban Principal Arterial	720,275	741,883	42.9	0.445	0.551
Urban Minor Arterial	630,475	712,437	34.9	0.448	0.510
Urban Collector	185,605	96,515	32.6	0.062	0.069
Urban Local	50,772	414,366	29.7	0.274	0.300
Ramp	83,206	*		*	*
Forecast 2015 Totals	3,484,651	5,283,346		3.14	4.28

*Adjusted vmt contains ramp vmt in Interstate and Expressway

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

Functional Class System	Model VMT	Adjusted VMT	Average Speed	VOC Tons/day	NOx Tons/day
Rural Interstate	857,185	744,425	69.4	0.277	0.364
Rural Principal Arterial	204,361	257,495	57.2	0.097	0.115
Rural Minor Arterial	285,739	245,736	47.4	0.092	0.107
Rural Major Collector	322,046	1,755,151	46.8	0.683	0.708
Rural Minor Collector	41,709	39,206	42.2	0.016	0.015
Rural Local	40,244	107,854	38.2	0.044	0.042
Urban Interstate	31,794	134,331	54.5	0.050	0.065
Urban Expressway	152,479	180,057	55.1	0.068	0.081
Urban Principal Arterial	721,872	743,528	31.2	0.298	0.289
Urban Minor Arterial	646,160	730,161	27.4	0.309	0.275
Urban Collector	194,368	101,071	28.1	0.044	0.038
Urban Local	81,863	407,678	28.5	0.184	0.157
Ramp	29,561	*		*	*
Forecast 2015 Totals	3,609,382	5,448,718		2.16	2.26

*Adjusted vmt contains ramp vmt in Interstate and Expressway

Modeled Vehicle Miles of Travel and Mobile Source Emissions for 2030 Scenario

Functional Class System	Model VMT	Adjusted VMT	Average Speed	VOC Tons/day	NOx Tons/day
Rural Interstate	905,011	785,880	69.3	0.283	0.321
Rural Principal Arterial	213,168	268,592	57.8	0.097	0.102
Rural Minor Arterial	295,761	254,354	45.9	0.093	0.095
Rural Major Collector	331,711	1,807,825	45.9	0.682	0.630
Rural Minor Collector	42,555	40,002	42.1	0.015	0.014
Rural Local	42,102	112,833	38.3	0.044	0.038
Urban Interstate	33,570	141,525	54.3	0.052	0.058
Urban Expressway	157,527	186,181	55.1	0.069	0.071
Urban Principal Arterial	746,281	768,669	29.9	0.299	0.259
Urban Minor Arterial	674,569	762,263	26.8	0.313	0.250
Urban Collector	201,184	104,616	27.7	0.044	0.034
Urban Local	86,176	429,156	28.3	0.186	0.142
Ramp	30,887	*		*	*
Forecast 2015 Totals	4,094,628	5,663,927		2.18	2.01

*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. The historic trends for Delaware County in recent decades include: decreased manufacturing including the recent closing of a major GM factory, slow population growth, and active local environmental groups. An ethanol plant is planned in the Shideler area, but its emissions would have a minor impact. There are no known factors that would cause or seriously contribute to an air quality violation

from now in 2007 to the year 2015. 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

```
REG DIST
*
* THIS FILE CONTAINS THE DEFAULT MOBILE6 VALUES FOR THE DISTRIBUTION OF
* VEHICLES BY AGE FOR JULY OF ANY CALENDAR YEAR.  THERE ARE SIXTEEEN (16)
* SETS OF VALUES REPRESENTING 16 COMBINED GASOLINE/DIESEL VEHICLE CLASS
* DISTRIBUTIONS.  THESE DISTRIBUTIONS ARE SPLIT FOR GASOLINE AND DIESEL
* USING THE SEPARATE INPUT (OR DEFAULT) VALUES FOR DIESEL SALES FRACTIONS.
* EACH DISTRIBUTION CONTAINS 25 VALUES WHICH REPRESENT THE FRACTION OF
* ALL VEHICLES IN THAT CLASS (GASOLINE AND DIESEL) OF THAT AGE IN JULY.
* THE FIRST NUMBER IS FOR AGE 1 (CALENDAR YEAR MINUS MODEL YEAR PLUS ONE)
* AND THE LAST NUMBER IS FOR AGE 25.  THE LAST AGE INCLUDES ALL VEHICLES
* OF AGE 25 OR OLDER.  THE FIRST NUMBER IN EACH DISTRIBUTION IS AN INTEGER
* WHICH INDICATES WHICH OF THE 16 VEHICLE CLASSES ARE REPRESENTED BY THE
* DISTRIBUTION.  THE SIXTEEN VEHICLE CLASSES ARE:
*
*  1  LDV    LIGHT-DUTY VEHICLES (PASSENGER CARS)
*  2  LDT1   LIGHT-DUTY TRUCKS 1 (0-6,000 LBS. GVWR, 0-3750 LBS. LVW)
*  3  LDT2   LIGHT DUTY TRUCKS 2 (0-6,001 LBS. GVWR, 3751-5750 LBS. LVW)
*  4  LDT3   LIGHT DUTY TRUCKS 3 (6,001-8500 LBS. GVWR, 0-3750 LBS. LVW)
*  5  LDT4   LIGHT DUTY TRUCKS 4 (6,001-8500 LBS. GVWR, 3751-5750 LBS. LVW)
*  6  HDV2B  CLASS 2B HEAVY DUTY VEHICLES (8501-10,000 LBS. GVWR)
*  7  HDV3   CLASS 3 HEAVY DUTY VEHICLES (10,001-14,000 LBS. GVWR)
*  8  HDV4   CLASS 4 HEAVY DUTY VEHICLES (14,001-16,000 LBS. GVWR)
*  9  HDV5   CLASS 5 HEAVY DUTY VEHICLES (16,001-19,500 LBS. GVWR)
* 10  HDV6   CLASS 6 HEAVY DUTY VEHICLES (19,501-26,000 LBS. GVWR)
* 11  HDV7   CLASS 7 HEAVY DUTY VEHICLES (26,001-33,000 LBS. GVWR)
* 12  HDV8A  CLASS 8A HEAVY DUTY VEHICLES (33,001-60,000 LBS. GVWR)
* 13  HDV8B  CLASS 8B HEAVY DUTY VEHICLES (>60,000 LBS. GVWR)
* 14  HDBS   SCHOOL BUSSES
* 15  HDBT   TRANSIT AND URBAN BUSSES
* 16  MC     MOTORCYCLES (ALL)
*
* THE 25 AGE VALUES ARE ARRANGED IN TWO ROWS OF 10 VALUES FOLLOWED BY A ROW
* WITH THE LAST 5 VALUES.  COMMENTS (SUCH AS THIS ONE) ARE INDICATED BY
* AN ASTERISK IN THE FIRST COLUMN. EMPTY ROWS ARE IGNORED.  VALUES ARE
* READ "FREE FORMAT," MEANING ANY NUMBER MAY APPEAR IN ANY ROW WITH AS
* MANY CHARACTERS AS NEEDED (INCLUDING A DECIMAL) AS LONG AS 25 VALUES
* FOLLOW THE INITIAL INTEGER VALUE SEPARATED BY A SPACE.
*
* IF ALL 28 VEHICLE CLASSES DO NOT NEED TO BE ALTERED FROM THE DEFAULT
* VALUES, THEN ONLY THE VEHICLE CLASSES THAT NEED TO BE CHANGED NEED TO
* BE INCLUDED IN THIS FILE.  THE ORDER IN WHICH THE VEHICLE CLASSES ARE
* READ DOES NOT MATTER, HOWEVER EACH VEHICLE CLASS SET MUST CONTAIN 25
* VALUES AND BE IN THE PROPER AGE ORDER.
*
REG DIST
* COUNTY 18, DELAWARE
* LDV
1 0.0428 0.0571 0.0505 0.0495 0.0617 0.0591 0.0560 0.0588 0.0536 0.0615
  0.0564 0.0551 0.0551 0.0488 0.0416 0.0439 0.0343 0.0260 0.0215 0.0167
  0.0127 0.0065 0.0031 0.0037 0.0241
* LDT1
2 0.0411 0.0548 0.0485 0.0270 0.0331 0.0205 0.0306 0.0264 0.0459 0.0465
  0.0535 0.0475 0.0422 0.0659 0.0436 0.0700 0.0538 0.0600 0.0558 0.0439
  0.0254 0.0170 0.0126 0.0115 0.0229
* LDT2
3 0.0634 0.0845 0.0747 0.0605 0.0896 0.0810 0.0797 0.0761 0.0556 0.0527
  0.0511 0.0451 0.0365 0.0291 0.0223 0.0214 0.0239 0.0081 0.0083 0.0066
  0.0076 0.0043 0.0021 0.0025 0.0132
* LDT3
4 0.0468 0.0624 0.0552 0.0531 0.0694 0.0823 0.0549 0.0542 0.0546 0.0638
  0.0484 0.0419 0.0349 0.0171 0.0241 0.0321 0.0293 0.0213 0.0219 0.0184
  0.0162 0.0103 0.0063 0.0041 0.0772
* LDT4
5 0.0679 0.0905 0.0802 0.0761 0.0797 0.0878 0.0662 0.0612 0.0617 0.0504
  0.0374 0.0144 0.0243 0.0135 0.0194 0.0041 0.0054 0.0072 0.0104 0.0108
  0.0032 0.0009 0.0014 0.0005 0.1256
```

2010 SCENARIO FILES – MOBILE 6.2 INPUT FILE

```
MOBILE6 INPUT FILE :
DATABASE AGES      : 5, 1
POLLUTANTS         : HC NOX
DATABASE OUTPUT    :
DATABASE OPTIONS   : C:\PROGRA~1\TRANSC~3\Muncie10.d
EMISSIONS TABLE    : C:\PROGRA~1\TRANSC~3\Muncie10.tb1

RUN DATA
```

```
MIN/MAX TEMP       : 64.0 84.9
ABSOLUTE HUMIDITY  : 93.7
CLOUD COVER        : 0.34
SUNRISE/SUNSET     : 6  9
FUEL RVP           : 9.0
SEASON             : 1

SCENARIO REC       : Scenario 1: Rural Interstate (M6 Freeway/Freeway Ramp)
CALENDAR YEAR      : 2010
EVALUATION MONTH   : 7
AVERAGE SPEED      : 69.6 FREEWAY 97.0 0.0 0.0 3.0

SCENARIO REC       : Scenario 2: Rural OPA (M6 Non-Ramp)
CALENDAR YEAR      : 2010
EVALUATION MONTH   : 7
AVERAGE SPEED      : 57.9 NON-RAMP

SCENARIO REC       : Scenario 3: Rural Minor Arterial (M6 Arterial/Collector)
CALENDAR YEAR      : 2010
EVALUATION MONTH   : 7
AVERAGE SPEED      : 56.8 ARTERIAL

SCENARIO REC       : Scenario 4: Rural Major Collector (M6 Arterial/Collector)
CALENDAR YEAR      : 2010
EVALUATION MONTH   : 7
AVERAGE SPEED      : 47.7 ARTERIAL

SCENARIO REC       : Scenario 5: Rural Minor Collector (M6 Arterial/Collector)
CALENDAR YEAR      : 2010
EVALUATION MONTH   : 7
AVERAGE SPEED      : 43.8 ARTERIAL

SCENARIO REC       : Scenario 6: Rural Local (M6 Arterial/Collector)
CALENDAR YEAR      : 2010
EVALUATION MONTH   : 7
AVERAGE SPEED      : 41.3 ARTERIAL

SCENARIO REC       : Scenario 7: Urban Interstate (M6 Freeway/Freeway Ramp)
CALENDAR YEAR      : 2010
EVALUATION MONTH   : 7
AVERAGE SPEED      : 64.0 FREEWAY 92.0 0.0 0.0 8.0

SCENARIO REC       : Scenario 8: Urban Freeway/Expressway (M6 Freeway/Freeway Ramp)
CALENDAR YEAR      : 2010
EVALUATION MONTH   : 7
AVERAGE SPEED      : 56.4 FREEWAY 92.0 0.0 0.0 8.0

SCENARIO REC       : Scenario 9: Urban OPA (M6 Arterial/Collector)
CALENDAR YEAR      : 2010
EVALUATION MONTH   : 7
AVERAGE SPEED      : 41.9 ARTERIAL

SCENARIO REC       : Scenario 10: Urban Minor Arterial (M6 Arterial/Collector)
CALENDAR YEAR      : 2010
EVALUATION MONTH   : 7
AVERAGE SPEED      : 34.4 ARTERIAL

SCENARIO REC       : Scenario 11: Urban Collector (M6 Arterial/Collector)
CALENDAR YEAR      : 2010
EVALUATION MONTH   : 7
AVERAGE SPEED      : 31.6 ARTERIAL
SCENARIO REC       : Scenario 12: Urban Local (M6 Arterial/Collector)
CALENDAR YEAR      : 2010
EVALUATION MONTH   : 7
AVERAGE SPEED      : 28.9 ARTERIAL
END OF RUN         :
```

2010 SCENARIO FILES – MOBILE 6.2 OUTPUT FILE

```
************************************************************************
* MOBILE6.2.03 (24-Sep-2003)                                           *
* Input file: C:\PROGRA~1\TRANSCAD\~X4H1.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  6 AM, Sunset at  9 PM.

* # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 1: Rural Interstate (M6 Freeway/Freeway Ramp)
* File 1, Run 1, Scenario 1.
* # # # # # # # # # # # # # # # # # # # # # # # #
  M 96 Warning: 69.6     speed reduced to 65 mph maximum
  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.
```

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

                     Calendar Year:  2010
                             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)
                  ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.3478    0.3890    0.1336              0.0359    0.0003    0.0020    0.0860    0.0054    1.0000
  -----------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :      0.613     0.691     1.186     0.818     0.837     0.138     0.338     0.253      2.44     0.706
     Composite NOX :      0.543     0.699     1.057     0.790     2.689     0.658     1.147    11.251      1.59     1.677
  -----------------------------------------------------------------------------------------------------------------



* # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 2: Rural OPA (M6 Non-Ramp)
* File 1, Run 1, Scenario 2.
* # # # # # # # # # # # # # # # # # # # # # # # #
  M581 Warning: The user supplied freeway average speed of 57.9 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.
  M 48 Warning: there are no sales for vehicle class HDGV8b

                     Calendar Year:  2010
                             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)
                  ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.3478    0.3890    0.1336              0.0359    0.0003    0.0020    0.0860    0.0054    1.0000
  -----------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :      0.625     0.702     1.210     0.832     0.843     0.138     0.337     0.252      2.04     0.716
     Composite NOX :      0.529     0.680     1.033     0.770     2.586     0.515     0.897     8.975      1.43     1.460
  -----------------------------------------------------------------------------------------------------------------



 * # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 3: Rural Minor Arterial (M6 Arterial/Collector)
* File 1, Run 1, Scenario 3.
* # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning: The user supplied arterial average speed of 56.8 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.
  M 48 Warning: there are no sales for vehicle class HDGV8b

                     Calendar Year:  2010
                             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)
                      ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.3478    0.3890    0.1336              0.0359    0.0003    0.0020    0.0860    0.0054    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      0.627     0.705     1.216     0.835     0.847     0.138     0.338     0.253      1.98     0.718
    Composite NOX :      0.527     0.677     1.029     0.767     2.567     0.497     0.866     8.021      1.40     1.375
  ---------------------------------------------------------------------------------------------------------------------



* # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 4: Rural Major Collector (M6 Arterial/Collector)
* File 1, Run 1, Scenario 4.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning: The user supplied arterial average speed of 47.7 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.
  M 48 Warning: there are no sales for vehicle class HDGV8b

                   Calendar Year:  2010
                           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)
                      ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.3478    0.3890    0.1336              0.0359    0.0003    0.0020    0.0860    0.0054    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      0.657     0.730     1.269     0.868     0.890     0.145     0.354     0.275      1.87     0.748
    Composite NOX :      0.510     0.655     1.003     0.744     2.412     0.394     0.686     6.365      1.19     1.208
  ---------------------------------------------------------------------------------------------------------------------



* # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 5: Rural Minor Collector (M6 Arterial/Collector)
* File 1, Run 1, Scenario 5.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning: The user supplied arterial average speed of 43.8 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.
  M 48 Warning: there are no sales for vehicle class HDGV8b

                   Calendar Year:  2010
                           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)
                     ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.3478    0.3890    0.1336              0.0359    0.0003    0.0020    0.0860    0.0054    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :      0.672     0.742     1.293     0.883     0.917     0.149     0.365     0.291      1.89     0.764
     Composite NOX :      0.503     0.645     0.992     0.734     2.345     0.369     0.642     5.957      1.14     1.163
  ---------------------------------------------------------------------------------------------------------------------
```

```
* # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 6: Rural Local (M6 Arterial/Collector)
* File 1, Run 1, Scenario 6.
* # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
             The user supplied arterial average speed of 41.3
             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.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b

                    Calendar Year:  2010
                           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)
                     ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.3478    0.3890    0.1336              0.0359    0.0003    0.0020    0.0860    0.0054    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :      0.682     0.750     1.308     0.892     0.938     0.153     0.375     0.304      1.92     0.774
     Composite NOX :      0.499     0.639     0.986     0.728     2.303     0.358     0.624     5.786      1.13     1.142
  ---------------------------------------------------------------------------------------------------------------------
```

```
* # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 7: Urban Interstate (M6 Freeway/Freeway Ramp)
* File 1, Run 1, Scenario 7.
* # # # # # # # # # # # # # # # # # # # # # # # #
  M515 Warning:
             The combined freeway and ramp average speed entered
             cannot be greater than 60.7 miles per hour.
             The average speed will be reset to this value.
  M582 Warning:
             The user supplied freeway average speed of 60.7
             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.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b

                    Calendar Year:  2010
                           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)
                      ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.3478    0.3890    0.1336              0.0359    0.0003    0.0020    0.0860    0.0054    1.0000
 ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      0.622     0.698     1.199     0.826     0.846    0.140     0.341     0.258      2.42     0.714
    Composite NOX :      0.545     0.701     1.062     0.793     2.664    0.642     1.118    10.942      1.57     1.651
 ---------------------------------------------------------------------------------------------------------------------
```

```
* # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 8: Urban Freeway/Expressway (M6 Freeway/Freeway Ramp)
* File 1, Run 1, Scenario 8.
* # # # # # # # # # # # # # # # # # # # # # # # #
  M582 Warning:
             The user supplied freeway average speed of 56.4
             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.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b

                   Calendar Year:  2010
                           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)
                      ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.3478    0.3890    0.1336              0.0359    0.0003    0.0020    0.0860    0.0054    1.0000
 ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      0.632     0.708     1.221     0.839     0.853    0.140     0.341     0.258      2.13     0.724
    Composite NOX :      0.536     0.688     1.046     0.780     2.580    0.527     0.918     9.090      1.44     1.478
 ---------------------------------------------------------------------------------------------------------------------
```

```
* # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 9: Urban OPA (M6 Arterial/Collector)
* File 1, Run 1, Scenario 9.
* # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
             The user supplied arterial average speed of 41.9
             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.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b

                   Calendar Year:  2010
                           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)
                    ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.3478    0.3890    0.1336              0.0359    0.0003    0.0020    0.0860    0.0054    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :      0.679     0.748     1.304     0.890     0.933     0.152     0.372     0.300      1.91     0.772
     Composite NOX :      0.500     0.641     0.987     0.730     2.314     0.361     0.628     5.829      1.13     1.147
  ---------------------------------------------------------------------------------------------------------------------
```

```
* # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 10: Urban Minor Arterial (M6 Arterial/Collector)
* File 1, Run 1, Scenario 10.
* # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
             The user supplied arterial average speed of 34.4
             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.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b

                    Calendar Year:  2010
                            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)
                    ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.3478    0.3890    0.1336              0.0359    0.0003    0.0020    0.0860    0.0054    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :      0.714     0.775     1.357     0.924     1.015     0.168     0.410     0.352      2.03     0.810
     Composite NOX :      0.492     0.629     0.975     0.717     2.185     0.344     0.599     5.554      1.09     1.109
  ---------------------------------------------------------------------------------------------------------------------
```

```
* # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 11: Urban Collector (M6 Arterial/Collector)
* File 1, Run 1, Scenario 11.
* # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
             The user supplied arterial average speed of 31.6
             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.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b

                    Calendar Year:  2010
                            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)
                      ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.3478    0.3890    0.1336              0.0359    0.0003    0.0020    0.0860    0.0054    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      0.734     0.793     1.390     0.945     1.058     0.176     0.430     0.379      2.09     0.832
    Composite NOX :      0.499     0.635     0.982     0.723     2.138     0.345     0.601     5.581      1.07     1.115
  ---------------------------------------------------------------------------------------------------------------------
```

```
* # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 12: Urban Local (M6 Arterial/Collector)
* File 1, Run 1, Scenario 12.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 28.9
            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.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b

                    Calendar Year:  2010
                            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)
                      ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.3478    0.3890    0.1336              0.0359    0.0003    0.0020    0.0860    0.0054    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      0.755     0.812     1.424     0.969     1.108     0.185     0.452     0.409      2.17     0.856
    Composite NOX :      0.508     0.643     0.994     0.733     2.092     0.349     0.608     5.644      1.04     1.127
  ---------------------------------------------------------------------------------------------------------------------
```

2015 SCENARIO FILES – MOBILE 6.2 INPUT FILE

```
MOBILE6 INPUT FILE :
DATABASE AGES      : 5, 1
POLLUTANTS         : HC NOX
DATABASE OUTPUT    :
DATABASE OPTIONS   : C:\PROGRA~1\TRANSC~3\Muncie15.d
EMISSIONS TABLE    : C:\PROGRA~1\TRANSC~3\Muncie15.tb1

RUN DATA
MIN/MAX TEMP       : 64.0 84.9
ABSOLUTE HUMIDITY  : 93.7
CLOUD COVER        : 0.34
SUNRISE/SUNSET     : 6  9
FUEL RVP           : 9.0
SEASON             : 1
```

```
SCENARIO REC       : Scenario 1: Rural Interstate (M6 Freeway/Freeway Ramp)
CALENDAR YEAR      : 2015
EVALUATION MONTH   : 7
AVERAGE SPEED      : 69.6 FREEWAY 97.0 0.0 0.0 3.0

SCENARIO REC       : Scenario 2: Rural OPA (M6 Non-Ramp)
CALENDAR YEAR      : 2015
EVALUATION MONTH   : 7
AVERAGE SPEED      : 58.2 NON-RAMP

SCENARIO REC       : Scenario 3: Rural Minor Arterial (M6 Arterial/Collector)
CALENDAR YEAR      : 2015
EVALUATION MONTH   : 7
AVERAGE SPEED      : 56.8 ARTERIAL

SCENARIO REC       : Scenario 4: Rural Major Collector (M6 Arterial/Collector)
CALENDAR YEAR      : 2015
EVALUATION MONTH   : 7
AVERAGE SPEED      : 48.2 ARTERIAL

SCENARIO REC       : Scenario 5: Rural Minor Collector (M6 Arterial/Collector)
CALENDAR YEAR      : 2015
EVALUATION MONTH   : 7
AVERAGE SPEED      : 43.8 ARTERIAL

SCENARIO REC       : Scenario 6: Rural Local (M6 Arterial/Collector)
CALENDAR YEAR      : 2015
EVALUATION MONTH   : 7
AVERAGE SPEED      : 41.3 ARTERIAL

SCENARIO REC       : Scenario 7: Urban Interstate (M6 Freeway/Freeway Ramp)
CALENDAR YEAR      : 2015
EVALUATION MONTH   : 7
AVERAGE SPEED      : 64.0 FREEWAY 92.0 0.0 0.0 8.0

SCENARIO REC       : Scenario 8: Urban Freeway/Expressway (M6 Freeway/Freeway Ramp)
CALENDAR YEAR      : 2015
EVALUATION MONTH   : 7
AVERAGE SPEED      : 56.4 FREEWAY 92.0 0.0 0.0 8.0

SCENARIO REC       : Scenario 9: Urban OPA (M6 Arterial/Collector)
CALENDAR YEAR      : 2015
EVALUATION MONTH   : 7
AVERAGE SPEED      : 42.9 ARTERIAL

SCENARIO REC       : Scenario 10: Urban Minor Arterial (M6 Arterial/Collector)
CALENDAR YEAR      : 2015
EVALUATION MONTH   : 7
AVERAGE SPEED      : 34.9 ARTERIAL

SCENARIO REC       : Scenario 11: Urban Collector (M6 Arterial/Collector)
CALENDAR YEAR      : 2030
EVALUATION MONTH   : 7
AVERAGE SPEED      : 32.6 ARTERIAL

SCENARIO REC       : Scenario 12: Urban Local (M6 Arterial/Collector)
CALENDAR YEAR      : 2030
EVALUATION MONTH   : 7
AVERAGE SPEED      : 29.7 ARTERIAL
END OF RUN         :
```

2015 SCENARIO FILES – MOBILE 6.2 OUTPUT FILE

```
************************************************************************
* MOBILE6.2.03 (24-Sep-2003)                                           *
* Input file: C:\PROGRA~1\TRANSCAD\~X4H3.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  6 AM, Sunset at  9 PM.

* # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 1: Rural Interstate (M6 Freeway/Freeway Ramp)
```

```
* File 1, Run 1, Scenario 1.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M 96 Warning: 69.6     speed reduced to 65 mph maximum
  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.
  M 48 Warning: there are no sales for vehicle class HDGV8b
  M 48 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
                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:    0.3031    0.4218    0.1449              0.0360    0.0003    0.0021    0.0866    0.0053    1.0000
  -------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      0.397     0.496     0.878     0.594     0.569     0.075     0.234     0.193      2.44     0.507
    Composite NOX :      0.344     0.456     0.796     0.543     1.310     0.241     0.662     5.357      1.59     0.933
  -------------------------------------------------------------------------------------------------------------------


* # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 2: Rural OPA (M6 Non-Ramp)
* File 1, Run 1, Scenario 2.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M581 Warning: The user supplied freeway average speed of 58.2 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.
  M 48 Warning: there are no sales for vehicle class HDGV8b
  M 48 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
                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:    0.3031    0.4218    0.1449              0.0360    0.0003    0.0021    0.0866    0.0053    1.0000
  -------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      0.402     0.502     0.893     0.602     0.572     0.075     0.234     0.192      2.06     0.512
    Composite NOX :      0.335     0.445     0.778     0.530     1.262     0.191     0.523     4.313      1.43     0.830
  -------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 3: Rural Minor Arterial (M6 Arterial/Collector)
* File 1, Run 1, Scenario 3.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning: The user supplied arterial average speed of 56.8 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.
  M 48 Warning: there are no sales for vehicle class HDGV8b
  M 48 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
                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:    0.3031    0.4218    0.1449              0.0360    0.0003    0.0021    0.0866    0.0053    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :      0.404     0.504     0.897     0.604     0.575     0.075     0.234     0.193      1.98     0.513
     Composite NOX :      0.334     0.442     0.775     0.528     1.251     0.182     0.500     3.828      1.40     0.785
  ---------------------------------------------------------------------------------------------------------------------



* # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 4: Rural Major Collector (M6 Arterial/Collector)
* File 1, Run 1, Scenario 4.
* # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning: The user supplied arterial average speed of 48.2 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.
  M 48 Warning: there are no sales for vehicle class HDGV8b
  M 48 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
                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:    0.3031    0.4218    0.1449              0.0360    0.0003    0.0021    0.0866    0.0053    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :      0.420     0.518     0.929     0.623     0.600     0.079     0.244     0.208      1.87     0.531
     Composite NOX :      0.324     0.429     0.757     0.513     1.179     0.146     0.401     3.069      1.19     0.704
  ---------------------------------------------------------------------------------------------------------------------




* # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 5: Rural Minor Collector (M6 Arterial/Collector)
* File 1, Run 1, Scenario 5.
* # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 43.8
            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.
  M 48 Warning:
             there are no sales for vehicle class HDGV8b
  M 48 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
                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:    0.3031    0.4218    0.1449              0.0360    0.0003    0.0021    0.0866    0.0053    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      0.431     0.527     0.946     0.634     0.619     0.082     0.252     0.222      1.89     0.542
    Composite NOX :      0.319     0.422     0.748     0.505     1.143     0.135     0.372     2.848      1.14     0.678
  ---------------------------------------------------------------------------------------------------------------------
```

```
* # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 6: Rural Local (M6 Arterial/Collector)
* File 1, Run 1, Scenario 6.
* # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning: The user supplied arterial average speed of 41.3 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.
  M 48 Warning: there are no sales for vehicle class HDGV8b
  M 48 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
                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:    0.3031    0.4218    0.1449              0.0360    0.0003    0.0021    0.0866    0.0053    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      0.437     0.532     0.956     0.640     0.633     0.084     0.259     0.232      1.92     0.549
    Composite NOX :      0.316     0.418     0.743     0.501     1.122     0.132     0.361     2.767      1.13     0.667
  ---------------------------------------------------------------------------------------------------------------------
```

```
* # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 7: Urban Interstate (M6 Freeway/Freeway Ramp)
* File 1, Run 1, Scenario 7.
* # # # # # # # # # # # # # # # # # # # # # # # #
  M515 Warning: The combined freeway and ramp average speed entered
            cannot be greater than 60.7 miles per hour. The average speed will be reset to this value.
  M582 Warning: The user supplied freeway average speed of 60.7 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.
  M 48 Warning: there are no sales for vehicle class HDGV8b
  M 48 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
                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:    0.3031    0.4218    0.1449              0.0360    0.0003    0.0021    0.0866    0.0053    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      0.402     0.501     0.887     0.599     0.574     0.076     0.237     0.197      2.42     0.512
    Composite NOX :      0.345     0.457     0.799     0.545     1.298     0.235     0.646     5.209      1.57     0.921
  ---------------------------------------------------------------------------------------------------------------------
```

```
* # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 8: Urban Freeway/Expressway (M6 Freeway/Freeway Ramp)
* File 1, Run 1, Scenario 8.
* # # # # # # # # # # # # # # # # # # # # # # # #
  M582 Warning: The user supplied freeway average speed of 56.4  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.
  M 48 Warning: there are no sales for vehicle class HDGV8b
  M 48 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
                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:    0.3031    0.4218    0.1449              0.0360    0.0003    0.0021    0.0866    0.0053    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      0.408     0.506     0.901     0.607     0.578     0.076     0.237     0.197      2.13     0.517
    Composite NOX :      0.339     0.449     0.788     0.536     1.257     0.193     0.530     4.330      1.44     0.835
  ---------------------------------------------------------------------------------------------------------------------
```

```
* # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 9: Urban OPA (M6 Arterial/Collector)
* File 1, Run 1, Scenario 9.
* # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning: The user supplied arterial average speed of 42.9 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.
  M 48 Warning: there are no sales for vehicle class HDGV8b
  M 48 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
                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:    0.3031    0.4218    0.1449              0.0360    0.0003    0.0021    0.0866    0.0053    1.0000
  ---------------------------------------------------------------------------------------------------------------------
```

```
 Composite Emission Factors (g/mi):
     Composite VOC :      0.433     0.528     0.950     0.636     0.624     0.082     0.255     0.226      1.90     0.544
     Composite NOX :      0.318     0.421     0.746     0.504     1.135     0.134     0.368     2.820      1.14     0.674
  ---------------------------------------------------------------------------------------------------------------------



* # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 10: Urban Minor Arterial (M6 Arterial/Collector)
* File 1, Run 1, Scenario 10.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
             The user supplied arterial average speed of 34.9
             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.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 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
                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:    0.3031    0.4218    0.1449              0.0360    0.0003    0.0021    0.0866    0.0053    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :      0.456     0.546     0.985     0.658     0.677     0.091     0.280     0.266      2.02     0.570
     Composite NOX :      0.312     0.411     0.734     0.494     1.068     0.126     0.347     2.655      1.10     0.649
  ---------------------------------------------------------------------------------------------------------------------



* # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 11: Urban Collector (M6 Arterial/Collector)
* File 1, Run 1, Scenario 11.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
             The user supplied arterial average speed of 32.6
             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.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 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
                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:    0.3031    0.4218    0.1449              0.0360    0.0003    0.0021    0.0866    0.0053    1.0000
 -------------------------------------------------------------------------------------------------------------------
Composite Emission Factors (g/mi):
    Composite VOC :      0.466     0.556     1.002     0.670     0.698     0.094     0.290     0.282      2.07     0.582
    Composite NOX :      0.315     0.414     0.739     0.497     1.050     0.127     0.348     2.664      1.08     0.652
 -------------------------------------------------------------------------------------------------------------------
```

```
* # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 12: Urban Local (M6 Arterial/Collector)
* File 1, Run 1, Scenario 12.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 29.7
            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.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 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
              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:    0.3031    0.4218    0.1449              0.0360    0.0003    0.0021    0.0866    0.0053    1.0000
 -------------------------------------------------------------------------------------------------------------------
Composite Emission Factors (g/mi):
    Composite VOC :      0.481     0.569     1.027     0.686     0.729     0.099     0.305     0.305      2.14     0.599
    Composite NOX :      0.320     0.418     0.746     0.502     1.025     0.128     0.350     2.683      1.05     0.657
 -------------------------------------------------------------------------------------------------------------------
```

2025 SCENARIO FILES – MOBILE 6.2 INPUT FILE

```
MOBILE6 INPUT FILE :
DATABASE AGES      : 5, 1
POLLUTANTS         : HC NOX
DATABASE OUTPUT    :
DATABASE OPTIONS   : C:\PROGRA~1\TRANSC~3\Muncie25.d
EMISSIONS TABLE    : C:\PROGRA~1\TRANSC~3\Muncie25.tb1

RUN DATA
MIN/MAX TEMP       : 64.0 84.9
ABSOLUTE HUMIDITY  : 93.7
CLOUD COVER        : 0.34
SUNRISE/SUNSET     : 6  9
FUEL RVP           : 9.0
SEASON             : 1

SCENARIO REC       : Scenario 1: Rural Interstate (M6 Freeway/Freeway Ramp)
CALENDAR YEAR      : 2025
EVALUATION MONTH   : 7
AVERAGE SPEED      : 69.6 FREEWAY 97.0 0.0 0.0 3.0

SCENARIO REC       : Scenario 2: Rural OPA (M6 Non-Ramp)
CALENDAR YEAR      : 2025
EVALUATION MONTH   : 7
AVERAGE SPEED      : 57.9 NON-RAMP
```

```
SCENARIO REC       : Scenario 3: Rural Minor Arterial (M6 Arterial/Collector)
CALENDAR YEAR      : 2025
EVALUATION MONTH   : 7
AVERAGE SPEED      : 56.8 ARTERIAL

SCENARIO REC       : Scenario 4: Rural Major Collector (M6 Arterial/Collector)
CALENDAR YEAR      : 2025
EVALUATION MONTH   : 7
AVERAGE SPEED      : 48.4 ARTERIAL

SCENARIO REC       : Scenario 5: Rural Minor Collector (M6 Arterial/Collector)
CALENDAR YEAR      : 2025
EVALUATION MONTH   : 7
AVERAGE SPEED      : 43.8 ARTERIAL

SCENARIO REC       : Scenario 6: Rural Local (M6 Arterial/Collector)
CALENDAR YEAR      : 2025
EVALUATION MONTH   : 7
AVERAGE SPEED      : 41.0 ARTERIAL

SCENARIO REC       : Scenario 7: Urban Interstate (M6 Freeway/Freeway Ramp)
CALENDAR YEAR      : 2025
EVALUATION MONTH   : 7
AVERAGE SPEED      : 64.0 FREEWAY 92.0 0.0 0.0 8.0

SCENARIO REC       : Scenario 8: Urban Freeway/Expressway (M6 Freeway/Freeway Ramp)
CALENDAR YEAR      : 2025
EVALUATION MONTH   : 7
AVERAGE SPEED      : 56.4 FREEWAY 92.0 0.0 0.0 8.0

SCENARIO REC       : Scenario 9: Urban OPA (M6 Arterial/Collector)
CALENDAR YEAR      : 2025
EVALUATION MONTH   : 7
AVERAGE SPEED      : 42.7 ARTERIAL

SCENARIO REC       : Scenario 10: Urban Minor Arterial (M6 Arterial/Collector)
CALENDAR YEAR      : 2025
EVALUATION MONTH   : 7
AVERAGE SPEED      : 34.9 ARTERIAL

SCENARIO REC       : Scenario 11: Urban Collector (M6 Arterial/Collector)
CALENDAR YEAR      : 2025
EVALUATION MONTH   : 7
AVERAGE SPEED      : 33.0 ARTERIAL

SCENARIO REC       : Scenario 12: Urban Local (M6 Arterial/Collector)
CALENDAR YEAR      : 2025
EVALUATION MONTH   : 7
AVERAGE SPEED      : 28.9 ARTERIAL

END OF RUN         :
```

2025 SCENARIO FILES – MOBILE 6.2 OUTPUT FILE

```
************************************************************************
* MOBILE6.2.03 (24-Sep-2003)                                           *
* Input file: C:\PROGRA~1\TRANSCAD\~X4H4.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  6 AM, Sunset at  9 PM.

* # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 1: Rural Interstate (M6 Freeway/Freeway Ramp)
* File 1, Run 1, Scenario 1.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M 96 Warning: 69.6     speed reduced to 65 mph maximum
  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.
  M 48 Warning: there are no sales for vehicle class HDGV8b
  M 48 Warning: there are no sales for vehicle class LDDT12

                  Calendar Year:  2025
```

```
                          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: / GVWR:	LDGV	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh
VMT Distribution:	0.2788	0.4388	0.1507		0.0365	0.0003	0.0022	0.0876	0.0051	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	0.265	0.338	0.513	0.383	0.306	0.038	0.119	0.161	2.44	0.338
Composite NOX :	0.218	0.325	0.540	0.380	0.405	0.050	0.288	1.534	1.59	0.443

```
* # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 2: Rural OPA (M6 Non-Ramp)
* File 1, Run 1, Scenario 2.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M581 Warning: The user supplied freeway average speed of 57.9 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.
  M 48 Warning: there are no sales for vehicle class HDGV8b
  M 48 Warning: there are no sales for vehicle class LDDT12

                     Calendar Year:  2025
                          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: / GVWR:	LDGV	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh
VMT Distribution:	0.2788	0.4388	0.1507		0.0365	0.0003	0.0022	0.0876	0.0051	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	0.269	0.342	0.522	0.388	0.308	0.037	0.119	0.160	2.04	0.340
Composite NOX :	0.213	0.315	0.527	0.369	0.390	0.039	0.226	1.202	1.43	0.404

```
* # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 3: Rural Minor Arterial (M6 Arterial/Collector)
* File 1, Run 1, Scenario 3.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:   The user supplied arterial average speed of 56.8 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.
  M 48 Warning: there are no sales for vehicle class HDGV8b
  M 48 Warning: there are no sales for vehicle class LDDT12

                     Calendar Year:  2025
                          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: / GVWR:	LDGV	LDGT12 <6000	LDGT34 >6000	LDGT (All)	HDGV	LDDV	LDDT	HDDV	MC	All Veh
VMT Distribution:	0.2788	0.4388	0.1507		0.0365	0.0003	0.0022	0.0876	0.0051	1.0000

```
 ---------------------------------------------------------------------------------------------------------------------
Composite Emission Factors (g/mi):
    Composite VOC :      0.271     0.344     0.524     0.390     0.310    0.038     0.119     0.161      1.98     0.341
    Composite NOX :      0.212     0.314     0.525     0.368     0.387    0.038     0.218     1.126      1.40     0.396
 ---------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 4: Rural Major Collector (M6 Arterial/Collector)
* File 1, Run 1, Scenario 4.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning: The user supplied arterial average speed of 48.4 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.
  M 48 Warning: there are no sales for vehicle class HDGV8b
  M 48 Warning: there are no sales for vehicle class LDDT12

                     Calendar Year:  2025
                             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)
                      ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.2788    0.4388    0.1507              0.0365    0.0003    0.0022    0.0876    0.0051    1.0000
 ---------------------------------------------------------------------------------------------------------------------
Composite Emission Factors (g/mi):
    Composite VOC :      0.283     0.354     0.543     0.402     0.326    0.039     0.124     0.173      1.87     0.353
    Composite NOX :      0.206     0.304     0.511     0.357     0.365    0.030     0.175     0.898      1.20     0.366
 ---------------------------------------------------------------------------------------------------------------------

 * # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 5: Rural Minor Collector (M6 Arterial/Collector)
* File 1, Run 1, Scenario 5.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 43.8
            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.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12

                     Calendar Year:  2025
                             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)
                      ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.2788    0.4388    0.1507              0.0365    0.0003    0.0022    0.0876    0.0051    1.0000
 ---------------------------------------------------------------------------------------------------------------------
Composite Emission Factors (g/mi):
    Composite VOC :      0.292     0.361     0.554     0.410     0.339    0.041     0.129     0.185      1.89     0.362
    Composite NOX :      0.203     0.298     0.503     0.351     0.353    0.028     0.162     0.827      1.14     0.355
 ---------------------------------------------------------------------------------------------------------------------
```

```
* # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 6: Rural Local (M6 Arterial/Collector)
* File 1, Run 1, Scenario 6.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 41.0
            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.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12

                    Calendar Year:  2025
                           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)
                     ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.2788    0.4388    0.1507              0.0365    0.0003    0.0022    0.0876    0.0051    1.0000
 ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      0.298     0.365     0.561     0.415     0.350     0.042     0.133     0.194      1.92     0.368
    Composite NOX :      0.202     0.295     0.499     0.347     0.346     0.027     0.156     0.799      1.13     0.350
  ---------------------------------------------------------------------------------------------------------------------
```

```
* # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 7: Urban Interstate (M6 Freeway/Freeway Ramp)
* File 1, Run 1, Scenario 7.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M515 Warning:
            The combined freeway and ramp average speed entered
            cannot be greater than 60.7 miles per hour.
            The average speed will be reset to this value.
  M582 Warning:
            The user supplied freeway average speed of 60.7
            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.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12

                    Calendar Year:  2025
                           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)
                     ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.2788    0.4388    0.1507              0.0365    0.0003    0.0022    0.0876    0.0051    1.0000
 ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      0.269     0.342     0.519     0.387     0.309     0.038     0.121     0.164      2.42     0.341
    Composite NOX :      0.219     0.325     0.543     0.381     0.401     0.049     0.281     1.494      1.57     0.440
```

```
  ------------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 8: Urban Freeway/Expressway (M6 Freeway/Freeway Ramp)
* File 1, Run 1, Scenario 8.
* # # # # # # # # # # # # # # # # # # # # # # # #
  M582 Warning:
            The user supplied freeway average speed of 56.4
            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.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12

                    Calendar Year:  2025
                            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)
                      ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.2788    0.4388    0.1507              0.0365    0.0003    0.0022    0.0876    0.0051    1.0000
  ------------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :      0.273     0.346     0.527     0.392     0.312     0.038     0.121     0.164      2.13     0.344
     Composite NOX :      0.215     0.319     0.534     0.374     0.389     0.040     0.231     1.226      1.44     0.410
  ------------------------------------------------------------------------------------------------------------------------


* # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 9: Urban OPA (M6 Arterial/Collector)
* File 1, Run 1, Scenario 9.
* # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 42.7
            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.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12

                    Calendar Year:  2025
                            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)
                      ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.2788    0.4388    0.1507              0.0365    0.0003    0.0022    0.0876    0.0051    1.0000
  ------------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :      0.294     0.363     0.557     0.412     0.343     0.041     0.130     0.188      1.90     0.364
     Composite NOX :      0.203     0.297     0.502     0.349     0.351     0.028     0.160     0.817      1.14     0.353
  ------------------------------------------------------------------------------------------------------------------------



* # # # # # # # # # # # # # # # # # # # # # # # #
```

```
* Scenario 10: Urban Minor Arterial (M6 Arterial/Collector)
* File 1, Run 1, Scenario 10.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 34.9
            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.
  M 48 Warning:
               there are no sales for vehicle class HDGV8b
  M 48 Warning:
               there are no sales for vehicle class LDDT12

                     Calendar Year:  2025
                             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)
                      ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.2788    0.4388    0.1507              0.0365    0.0003    0.0022    0.0876    0.0051    1.0000
  ----------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :      0.313     0.376     0.579     0.428     0.378    0.046     0.143     0.221      2.02     0.384
     Composite NOX :      0.199     0.290     0.492     0.341     0.330    0.026     0.151     0.768      1.10     0.342
  ----------------------------------------------------------------------------------------------------------------------
```

```
* # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 11: Urban Collector (M6 Arterial/Collector)
* File 1, Run 1, Scenario 11.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 33.0
            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.
  M 48 Warning:
               there are no sales for vehicle class HDGV8b
  M 48 Warning:
               there are no sales for vehicle class LDDT12

                     Calendar Year:  2025
                             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)
                      ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.2788    0.4388    0.1507              0.0365    0.0003    0.0022    0.0876    0.0051    1.0000
  ----------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :      0.320     0.382     0.588     0.435     0.389    0.047     0.148     0.232      2.06     0.391
     Composite NOX :      0.201     0.291     0.495     0.343     0.326    0.026     0.151     0.771      1.08     0.344
  ----------------------------------------------------------------------------------------------------------------------
```

```
* # # # # # # # # # # # # # # # # # # # # # # # # #
```

```
* Scenario 12: Urban Local (M6 Arterial/Collector)
* File 1, Run 1, Scenario 12.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 28.9
            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.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12

                    Calendar Year:  2025
                            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)
                      ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.2788    0.4388    0.1507              0.0365    0.0003    0.0022    0.0876    0.0051    1.0000
 -------------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :      0.337     0.398     0.611     0.452     0.417    0.051     0.159     0.260      2.17     0.410
     Composite NOX :      0.206     0.297     0.503     0.350     0.315    0.027     0.153     0.782      1.04     0.349
  -------------------------------------------------------------------------------------------------------------------------
```

2030 SCENARIO FILES – MOBILE 6.2 INPUT FILE

```
MOBILE6 INPUT FILE :
DATABASE AGES      : 5, 1
POLLUTANTS         : HC NOX
DATABASE OUTPUT    :
DATABASE OPTIONS   : C:\PROGRA~1\TRANSC~3\Muncie30.d
EMISSIONS TABLE    : C:\PROGRA~1\TRANSC~3\Muncie30.tb1

RUN DATA
MIN/MAX TEMP       : 64.0 84.9
ABSOLUTE HUMIDITY  : 93.7
CLOUD COVER        : 0.34
SUNRISE/SUNSET     : 6  9
FUEL RVP           : 9.0
SEASON             : 1

SCENARIO REC       : Scenario 1: Rural Interstate (M6 Freeway/Freeway Ramp)
CALENDAR YEAR      : 2030
EVALUATION MONTH   : 7
AVERAGE SPEED      : 69.6 FREEWAY 97.0 0.0 0.0 3.0

SCENARIO REC       : Scenario 2: Rural OPA (M6 Non-Ramp)
CALENDAR YEAR      : 2030
EVALUATION MONTH   : 7
AVERAGE SPEED      : 58.0 NON-RAMP

SCENARIO REC       : Scenario 3: Rural Minor Arterial (M6 Arterial/Collector)
CALENDAR YEAR      : 2030
EVALUATION MONTH   : 7
AVERAGE SPEED      : 56.8 ARTERIAL

SCENARIO REC       : Scenario 4: Rural Major Collector (M6 Arterial/Collector)
CALENDAR YEAR      : 2030
EVALUATION MONTH   : 7
AVERAGE SPEED      : 48.5 ARTERIAL

SCENARIO REC       : Scenario 5: Rural Minor Collector (M6 Arterial/Collector)
```

```
CALENDAR YEAR       : 2030
EVALUATION MONTH    : 7
AVERAGE SPEED       : 43.9 ARTERIAL

SCENARIO REC        : Scenario 6: Rural Local (M6 Arterial/Collector)
CALENDAR YEAR       : 2030
EVALUATION MONTH    : 7
AVERAGE SPEED       : 41.1 ARTERIAL

SCENARIO REC        : Scenario 7: Urban Interstate (M6 Freeway/Freeway Ramp)
CALENDAR YEAR       : 2030
EVALUATION MONTH    : 7
AVERAGE SPEED       : 64.0 FREEWAY 92.0 0.0 0.0 8.0

SCENARIO REC        : Scenario 8: Urban Freeway/Expressway (M6 Freeway/Freeway Ramp)
CALENDAR YEAR       : 2030
EVALUATION MONTH    : 7
AVERAGE SPEED       : 56.4 FREEWAY 92.0 0.0 0.0 8.0

SCENARIO REC        : Scenario 9: Urban OPA (M6 Arterial/Collector)
CALENDAR YEAR       : 2030
EVALUATION MONTH    : 7
AVERAGE SPEED       : 42.7 ARTERIAL

SCENARIO REC        : Scenario 10: Urban Minor Arterial (M6 Arterial/Collector)
CALENDAR YEAR       : 2030
EVALUATION MONTH    : 7
AVERAGE SPEED       : 34.9 ARTERIAL

SCENARIO REC        : Scenario 11: Urban Collector (M6 Arterial/Collector)
CALENDAR YEAR       : 2030
EVALUATION MONTH    : 7
AVERAGE SPEED       : 33.1 ARTERIAL

SCENARIO REC        : Scenario 12: Urban Local (M6 Arterial/Collector)
CALENDAR YEAR       : 2030
EVALUATION MONTH    : 7
AVERAGE SPEED       : 29.9 ARTERIAL

END OF RUN          :
```

2030 SCENARIO FILES – MOBILE 6.2 OUTPUT FILE

```
************************************************************************
* MOBILE6.2.03 (24-Sep-2003)                                           *
* Input file: C:\PROGRA~1\TRANSCAD\~X4H5.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  6 AM, Sunset at  9 PM.

* # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 1: Rural Interstate (M6 Freeway/Freeway Ramp)
* File 1, Run 1, Scenario 1.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M 96 Warning: 69.6     speed reduced to 65 mph maximum
  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.
  M 48 Warning: there are no sales for vehicle class HDGV8b
  M 48 Warning: there are no sales for vehicle class LDDT12

                    Calendar Year:  2030
                            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)
```

```
                    ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.2788    0.4388    0.1507              0.0365    0.0003    0.0022    0.0876    0.0051    1.0000
 ---------------------------------------------------------------------------------------------------------------------
Composite Emission Factors (g/mi):
    Composite VOC :      0.262     0.335     0.467     0.369     0.283    0.036     0.085     0.155      2.44     0.327
    Composite NOX :      0.211     0.314     0.466     0.353     0.223    0.045     0.204     0.994      1.59     0.371
 ---------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 2: Rural OPA (M6 Non-Ramp)
* File 1, Run 1, Scenario 2.
* # # # # # # # # # # # # # # # # # # # # # # # #
  M581 Warning: The user supplied freeway average speed of 58.0 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.
  M 48 Warning: there are no sales for vehicle class HDGV8b
  M 48 Warning: there are no sales for vehicle class LDDT12

                     Calendar Year:  2030
                             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)
                    ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.2788    0.4388    0.1507              0.0365    0.0003    0.0022    0.0876    0.0051    1.0000
 ---------------------------------------------------------------------------------------------------------------------
Composite Emission Factors (g/mi):
    Composite VOC :      0.266     0.339     0.475     0.374     0.286    0.036     0.085     0.154      2.05     0.329
    Composite NOX :      0.206     0.305     0.454     0.343     0.215    0.035     0.160     0.775      1.43     0.343
 ---------------------------------------------------------------------------------------------------------------------


* # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 3: Rural Minor Arterial (M6 Arterial/Collector)
* File 1, Run 1, Scenario 3.
* # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 56.8
            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.
  M 48 Warning:
             there are no sales for vehicle class HDGV8b
  M 48 Warning:
             there are no sales for vehicle class LDDT12

                     Calendar Year:  2030
                             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)
                    ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.2788    0.4388    0.1507              0.0365    0.0003    0.0022    0.0876    0.0051    1.0000
 ---------------------------------------------------------------------------------------------------------------------
Composite Emission Factors (g/mi):
    Composite VOC :      0.268     0.341     0.477     0.376     0.288    0.036     0.085     0.155      1.98     0.330
    Composite NOX :      0.205     0.303     0.452     0.341     0.213    0.034     0.154     0.744      1.40     0.339
 ---------------------------------------------------------------------------------------------------------------------


* # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 4: Rural Major Collector (M6 Arterial/Collector)
* File 1, Run 1, Scenario 4.
* # # # # # # # # # # # # # # # # # # # # # # # #
```

```
  M583 Warning: The user supplied arterial average speed of 48.5 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.
  M 48 Warning: there are no sales for vehicle class HDGV8b
  M 48 Warning: there are no sales for vehicle class LDDT12

                     Calendar Year:  2030
                             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)
                      ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
    VMT Distribution:    0.2788    0.4388    0.1507              0.0365    0.0003    0.0022    0.0876    0.0051    1.0000
   ---------------------------------------------------------------------------------------------------------------------
  Composite Emission Factors (g/mi):
      Composite VOC :      0.280     0.351     0.494     0.388     0.303     0.038     0.089     0.167      1.87     0.342
      Composite NOX :      0.200     0.293     0.439     0.331     0.201     0.027     0.124     0.594      1.20     0.316
   ---------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 5: Rural Minor Collector (M6 Arterial/Collector)
* File 1, Run 1, Scenario 5.
* # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 43.9
            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.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12

                     Calendar Year:  2030
                             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)
                      ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
    VMT Distribution:    0.2788    0.4388    0.1507              0.0365    0.0003    0.0022    0.0876    0.0051    1.0000
   ---------------------------------------------------------------------------------------------------------------------
  Composite Emission Factors (g/mi):
      Composite VOC :      0.289     0.358     0.505     0.395     0.316     0.039     0.093     0.178      1.89     0.351
      Composite NOX :      0.197     0.288     0.432     0.325     0.195     0.025     0.114     0.546      1.14     0.307
   ---------------------------------------------------------------------------------------------------------------------



* # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 6: Rural Local (M6 Arterial/Collector)
* File 1, Run 1, Scenario 6.
* # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning: The user supplied arterial average speed of 41.1 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.
  M 48 Warning: there are no sales for vehicle class HDGV8b
  M 48 Warning: there are no sales for vehicle class LDDT12

                     Calendar Year:  2030
                             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)
                      ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.2788    0.4388    0.1507              0.0365    0.0003    0.0022    0.0876    0.0051    1.0000
 ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      0.295     0.362     0.512     0.400     0.325     0.040     0.096     0.187      1.92     0.357
    Composite NOX :      0.195     0.285     0.427     0.321     0.191     0.024     0.110     0.528      1.13     0.303
 ---------------------------------------------------------------------------------------------------------------------
```

```
* # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 7: Urban Interstate (M6 Freeway/Freeway Ramp)
* File 1, Run 1, Scenario 7.
* # # # # # # # # # # # # # # # # # # # # # # # #
  M515 Warning:
            The combined freeway and ramp average speed entered
            cannot be greater than 60.7 miles per hour.
            The average speed will be reset to this value.
  M582 Warning:
            The user supplied freeway average speed of 60.7
            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.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12

                    Calendar Year:  2030
                           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)
                      ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.2788    0.4388    0.1507              0.0365    0.0003    0.0022    0.0876    0.0051    1.0000
 ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      0.265     0.339     0.472     0.373     0.287     0.036     0.086     0.158      2.42     0.331
    Composite NOX :      0.212     0.314     0.469     0.354     0.221     0.043     0.199     0.969      1.57     0.369
 ---------------------------------------------------------------------------------------------------------------------
```

```
* # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 8: Urban Freeway/Expressway (M6 Freeway/Freeway Ramp)
* File 1, Run 1, Scenario 8.
* # # # # # # # # # # # # # # # # # # # # # # # #
  M582 Warning:
            The user supplied freeway average speed of 56.4
            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.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12

                    Calendar Year:  2030
                            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)
                     ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.2788    0.4388    0.1507              0.0365    0.0003    0.0022    0.0876    0.0051    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :      0.270     0.343     0.480     0.378     0.290     0.036     0.086     0.158      2.13     0.334
     Composite NOX :      0.209     0.309     0.461     0.347     0.214     0.036     0.163     0.791      1.44     0.348
  ---------------------------------------------------------------------------------------------------------------------


* # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 9: Urban OPA (M6 Arterial/Collector)
* File 1, Run 1, Scenario 9.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
             The user supplied arterial average speed of 42.7
             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.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12

                    Calendar Year:  2030
                            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)
                     ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.2788    0.4388    0.1507              0.0365    0.0003    0.0022    0.0876    0.0051    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :      0.291     0.360     0.508     0.397     0.320     0.040     0.094     0.182      1.90     0.353
     Composite NOX :      0.196     0.287     0.430     0.323     0.193     0.025     0.112     0.539      1.14     0.306
  ---------------------------------------------------------------------------------------------------------------------




* # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 10: Urban Minor Arterial (M6 Arterial/Collector)
* File 1, Run 1, Scenario 10.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
             The user supplied arterial average speed of 34.9
             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.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12
```

```
                    Calendar Year:  2030
                            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)
                      ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.2788    0.4388    0.1507              0.0365    0.0003    0.0022    0.0876    0.0051    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      0.310     0.373     0.528     0.413     0.352     0.044     0.105     0.213      2.02     0.372
    Composite NOX :      0.193     0.279     0.420     0.315     0.182     0.023     0.106     0.506      1.10     0.297
  ---------------------------------------------------------------------------------------------------------------------
```

```
* # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 11: Urban Collector (M6 Arterial/Collector)
* File 1, Run 1, Scenario 11.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
             The user supplied arterial average speed of 33.1
             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.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12

                    Calendar Year:  2030
                            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)
                      ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.2788    0.4388    0.1507              0.0365    0.0003    0.0022    0.0876    0.0051    1.0000
  ---------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      0.317     0.379     0.537     0.419     0.361     0.045     0.108     0.223      2.06     0.379
    Composite NOX :      0.195     0.281     0.423     0.317     0.180     0.023     0.106     0.508      1.08     0.298
  ---------------------------------------------------------------------------------------------------------------------
```

```
* # # # # # # # # # # # # # # # # # # # # # # # # #
* Scenario 12: Urban Local (M6 Arterial/Collector)
* File 1, Run 1, Scenario 12.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
             The user supplied arterial average speed of 29.9
             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.
  M 48 Warning:
              there are no sales for vehicle class HDGV8b
  M 48 Warning:
              there are no sales for vehicle class LDDT12

                    Calendar Year:  2030
```

```
                     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)						
VMT Distribution:	0.2788	0.4388	0.1507		0.0365	0.0003	0.0022	0.0876	0.0051	1.0000
Composite Emission Factors (g/mi):										
Composite VOC :	0.329	0.391	0.553	0.432	0.381	0.048	0.115	0.244	2.14	0.393
Composite NOX :	0.198	0.284	0.427	0.321	0.175	0.023	0.107	0.511	1.05	0.301