Appendix F: Air Quality Conformity Analysis Results

An air quality analysis is performed on the new 2035 Long Range Transportation Plan (LRTP) to determine the impact of proposed transportation projects on vehicle emissions. The Federal Highway Administration (FHWA) and the United States Environmental Protection Agency (USEPA) require that a new LRTP or any significant changes of projects in the LRTP do not result in mobile source emissions greater than the current emission budget assigned for the Grand Rapids Metropolitan Area in the State Implementation Plan (SIP).

The Grand Rapids Metropolitan Area was previously designated as a Maintenance Area for Ozone under the one-hour rule. The new eight-hour designations administered by the USEPA have tied both Kent and Ottawa counties under the more lenient sub-part 1 "Basic" non-attainment classification. The new designation still requires careful monitoring of air quality in the region. Therefore, the LRTP air quality conformity analysis examines changes in Volatile Organic Compounds (VOCs) and Oxides of Nitrogen (NOx). The emission levels are then compared to numerical emission budgets developed by the state in the regional maintenance plan.

Air Quality Assessment Criteria

The LRTP conformity demonstration was made in compliance with all applicable conformity requirements. The Transportation Plan satisfies the following conformity criteria and procedures set forth in the USEPA's Transportation Conformity Rule:

1. The conformity demonstration was based on the latest planning assumptions.
2. The conformity demonstration was based on the latest emission model available.
3. The conformity demonstration was made according to the consultation procedures of the final conformity rule and the implementation plan revision.
4. The determination was made that the new LRTP does not increase the frequency or severity of the existing violation of the National Ambient Air Quality Standards (NAAQS) for which the area is designated in non-attainment. Completing the components of the Transportation Plan does not increase emissions over the emission budget.

Background

The following documentation describes the best practices available for the travel demand estimation and analysis in Kent and Ottawa Counties. The Grand Valley Metropolitan Council (GVMC), the Macatawa Area Coordinating Council (MACC), and the West Michigan Shoreline Regional Development Commission (WestPlan) have approved socioeconomic data for 2009, 2014, 2018, 2025 and 2035. This data is the basis for forecasting travel demand in the respective study areas, which in turn generates the inputs required for air quality conformity analysis. These inputs are the amount of travel expressed as Vehicle Miles of Travel (VMT) and average speed by National Functional Classification (NFC) or a combination of similar functional classified facilities grouped together to address the new Mobile 6.2 model input data structure. One of the latest travel demand forecasting technologies available, the TransCad model has been used in all urban area travel demand forecasting efforts. However, air quality conformity analysis must be performed on a county wide basis, and the urban area travel demand forecast models cover all of Kent and a portion of Ottawa Counties.

The VMT and speed data generated by the TransCad model for the GVMC, MACC, and WestPlan areas, and county wide Highway Performance Monitoring System (HPMS) VMT figures provide the basis for the estimation of present and future VMT and speeds by NFC for the entire counties. The air quality conformity analysis performed for the 2035 LRTP includes the following assumptions:

1. Emission budget for VOC of 40.70tons/day, based on Federal Register Vol. 72, No.94, May 16, 2007, Sec 52.1174
2. Emission budget for NOx of 97.87 tons/day, based on Federal Register Vol. 72, No. 94, May 16, 2007, Sec 52.1174
3. Projects are included in year 2014, 2018, 2025, or 2035 depending when they could be built, and open to traffic.
4. Include off model credits from 1995-2000 approved CMAQ projects and Transit fleet turn-over.
5. No Inspection/Maintenance (I/M) Program.

Modeling Procedures

GVMC has developed and calibrated the travel demand model (TransCad) which covers all of Kent and the eastern part of Ottawa Counties. The travel demand model uses the standard four-step transportation planning process:

1. Trip generation model
2. Trip distribution model
3. Mode choice model
4. Highway assignment model

The trip generation model uses a combination of local and QRS (NCHRP 187) trip generation rates. The trip generation variables used in the model are Dwelling units, Retail Employment, and Non-Retail Employment. The trip distribution model uses the standard model to estimate origin/destination tables. It also uses Friction Factors for trip attractiveness. The mode choice model is a single mode model. It uses vehicle occupancy rate to estimate vehicle trips on the network. Transit trips are estimated separately using different post processing methods. The trip assignment model uses two different techniques, all-or- nothing and capacity restrained algorithms. The model was calibrated according to the strict calibration standards used by MDOT and suggested by FHWA. The network is coded to output information based on area type, facility type, number of lanes, speeds, national functional classification, capacity, street names, and vehicle assignment. The MACC and WestPlan have similar models which were developed and calibrated by the Michigan Department of Transportation (MDOT).

Model Data

The modeled VMT and speeds for the portions of each study area within Kent and Ottawa Counties are summarized in Tables 1 and 2. The overall modeled speeds by NFC are determined by dividing total VMT by total VHT generated by the travel demand models. In some instances, where modeled speeds are unrealistic, speeds were adjusted to reflect real time speeds.

Table 1 – Kent County Vehicle Miles of Travel and Speeds for Analysis Years

KENT COUNTY	HPMS	MODELED	NORMALIZED	2009
2009	2009 VMT	2009 VMT	2009 VMT	SPEED
NFC				
Rural Interstate/Freeway	388,200	373,729	388,200	67.38
Rural Major & Minor Arterial/Collector/Local Street	1,712,357	1,690,312	1,712,357	41.20
Urban Interstate/Freeway	4,560,448	4,838,290	4,560,448	56.44
Urban Principal & Minor Arterial/Collector/Local Street	9,817,488	7,729,728	9,817,488	37.35
TOTALS	16,478,493	14,632,059	16,478,493	
KENT COUNTY	HPMS	MODELED	NORMALIZED	2014
2014	2009 VMT	2014 VMT	2014 VMT	SPEED
NFC				
Rural Interstate/Freeway	388,200	381,962	396,508	67.25
Rural Major & Minor Arterial/Collector/Local Street	1,712,357	1,754,621	1,771,252	41.05
Urban Interstate/Freeway	4,560,448	4,973,963	4,686,861	56.25
Urban Principal & Minor Arterial/Collector/Local Street	9,817,488	7,986,229	10,172,727	37.28
TOTALS	16,478,493	15,096,775	17,027,348	
KENT COUNTY	HPMS	MODELED	NORMALIZED	2018
2018	2009 VMT	2018 VMT	2018 VMT	SPEED
NFC				
Rural Interstate/Freeway	388,200	391,253	406,268	66.95
Rural Major & Minor Arterial/Collector/Local Street	1,712,357	1,809,184	1,809,655	40.94
Urban Interstate/Freeway	4,560,448	5,095,870	4,800,917	56.05
Urban Principal & Minor Arterial/Collector/Local Street	9,817,488	8,179,789	10,432,529	37.21
TOTALS	16,478,493	15,476,096	17,449,369	
KENT COUNTY	HPMS	MODELED	NORMALIZED	2025
2025	2009 VMT	2025 VMT	2025 VMT	SPEED
NFC				
Rural Interstate/Freeway	388,200	410,124	426,317	66.68
Rural Major & Minor Arterial/Collector/Local Street	1,712,357	1,888,333	1,885,242	40.88
Urban Interstate/Freeway	4,560,448	5,348,673	5,040,258	55.87
Urban Principal & Minor Arterial/Collector/Local Street	9,817,488	8,499,315	10,873,199	37.21
TOTALS	16,478,493	16,146,445	18,225,015	
KENT COUNTY	HPMS	MODELED	NORMALIZED	2035
2035	2009 VMT	2035 VMT	2035 VMT	SPEED
NFC				
Rural Interstate/Freeway	388,200	446,701	464,633	66.60
Rural Major & Minor Arterial/Collector/Local Street	1,712,357	2,093,607	2,065,488	40.75
Urban Interstate/Freeway	4,560,448	5,865,432	5,525,907	55.21
Urban Principal & Minor Arterial/Collector/Local Street	9,817,488	9,286,679	11,953,077	36.94
TOTALS	16,478,493	17,692,419	20,009,105	

Table 2 – Ottawa County Vehicle Miles of Travel and Speeds for Analysis Years

OTTAWA COUNTY	HPMS	MODELED	NORMALIZED	2009
2009	2009 VMT	2009 VMT	2009 VMT	SPEED
NFC				
Rural Interstate/Freeway	1,018,097	933,992	1,018,097	60.40
Rural Major & Minor Arterial/Collector/Local Street	803,908	831,946	803,908	43.58
Urban Interstate/Freeway	649,622	743,297	649,622	60.65
Urban Principal & Minor Arterial/Collector/Local Street	3,559,803	3,224,954	3,559,803	32.63
TOTALS	6,031,430	5,734,189	6,031,430	
OTTAWA COUNTY	HPMS	MODELED	NORMALIZED	2014
2014	2009 VMT	2014 VMT	2014 VMT	SPEED
NFC				
Rural Interstate/Freeway	1,018,097	1,278,555	1,078,807	60.20
Rural Major & Minor Arterial/Collector/Local Street	803,908	1,326,211	815,178	43.63
Urban Interstate/Freeway	649,622	488,822	681,853	60.80
Urban Principal & Minor Arterial/Collector/Local Street	3,559,803	3,020,128	3,672,807	32.68
TOTALS	6,031,430	6,113,716	6,248,645	
OTTAWA COUNTY	HPMS	MODELED	NORMALIZED	2018
2018	2009 VMT	2018 VMT	2018 VMT	SPEED
NFC				
Rural Interstate/Freeway	1,018,097	1,005,260	1,097,695	58.80
Rural Major & Minor Arterial/Collector/Local Street	803,908	946,445	895,187	43.93
Urban Interstate/Freeway	649,622	792,433	693,374	60.85
Urban Principal & Minor Arterial/Collector/Local Street	3,559,803	3,404,799	3,749,527	32.65
TOTALS	6,031,430	6,148,937	6,435,783	
OTTAWA COUNTY	HPMS	MODELED	NORMALIZED	2025
2025	2009 VMT	2025 VMT	2025 VMT	SPEED
NFC				
Rural Interstate/Freeway	1,018,097	1,059,743	1,156,777	58.40
Rural Major & Minor Arterial/Collector/Local Street	803,908	992,191	938,339	43.53
Urban Interstate/Freeway	649,622	821,479	719,613	60.70
Urban Principal & Minor Arterial/Collector/Local Street	3,559,803	3,549,404	3,914,456	32.63
TOTALS	6,031,430	6,422,817	6,729,185	
OTTAWA COUNTY	HPMS	MODELED	NORMALIZED	2035
2035	2009 VMT	2035 VMT	2035 VMT	SPEED
NFC				
Rural Interstate/Freeway	1,018,097	1,131,141	1,234,266	57.75
Rural Major & Minor Arterial/Collector/Local Street	803,908	1,087,391	1,033,329	43.05
Urban Interstate/Freeway	649,622	898,690	786,326	60.20
Urban Principal & Minor Arterial/Collector/Local Street	3,559,803	3,900,395	4,303,982	32.33
TOTALS	6,031,430	7,017,617	7,357,903	

Highway Performance Monitoring System (HPMS) Data

HPMS data provides estimates of 2009 VMT for the entire Kent and Ottawa counties, stratified by NFC. The model is based in 2009 and the 8-hour budget is based on the 2009 base model. The 2009 HPMS VMT distribution was normalized to 2009, 2014, 2018, 2025, and 2035 distribution among the functional classes. Thus, the 2009 total HPMS VMT remained the same while the distribution changed to reflect what it would have been had the 2009 NFC coding been identical in the model.

The Environmental Protection Agency (EPA) and the United States Department of Transportation (USDOT) have both endorsed HPMS as the appropriate source of VMT estimates. HPMS is the FHWA's annual program to collect roadway data in all 50 states to assess the condition of the highway system in terms of traffic congestion, accessibility, and pavement condition. The FHWA requires counts to determine the area wide VMT for all urban areas. MDOT supplements the counts outside the urbanized area with additional counts in small cities, rural areas, and especially in rural areas of counties with non-attainment status. These supplemental counts follow the same random selection procedures as those inside the urban areas.

The HPMS data used is from MDOT's Universe file and is stratified by NFC. MDOT is currently undertaking a data improvement process to update the HPMS universe, non-sample traffic data. Shown in Tables 1 and 2 are the 2009 HPMS VMT estimates for Kent and Ottawa Counties.

Methodology to Scale Total Model VMT to HPMS VMT

The base year modeled VMT from the GVMC, WestPlan, and MACC models are combined and compared to the 2009 HPMS VMT for each functional class. The HPMS data by NFC by county for the base year (calibrated year) of the travel demand models is obtained from MDOT. The VMT by NFC from the three urban models base year are added together to generate a "county-wide" travel demand model VMT by NFC for the base year. Then, the base year HPMS VMT by NFC is divided by the base year "county-wide" travel demand model VMT for corresponding NFC. These divisions produce ratios, proportions, or "factors" for each NFC. For each conformity analysis year, these factors are multiplied to each travel demand model's VMT to produce a scaled VMT by NFC. For each year, the scaled travel demand model's VMT by NFC are aggregated to a "county-wide" total. Thus the VMT is aggregated so each NFC has a county-wide total. Then the scaled VMT by NFC are collapsed into four groups to meet the requirements of MOBILE 6.2. These groups are:1) rural interstate, 2) rural major & minor arterials/collectors/local streets, 3) urban interstate/freeway, and 4) urban principal & minor arterials/collectors/ local streets. This is done for all interim and future analysis years. To get scaled VHT (Vehicle Hours of Travel) the factors developed above are applied to each travel demand model's VHT by NFC. The process follows the same steps and arrives at VHT by NFC collapsed into four groups. Next, to arrive at a speed, each individual group VMT is divided by the corresponding VHT. Thus, achieving the variables needed to express demand for travel within a county, VMT and speed, as required for input into MOBILE 6.2.

The speeds on un-modeled rural links are assumed to be the same as the speeds on modeled rural links. In addition, these speeds in rural Ottawa County are assumed to be constant over time, as substantial excess capacity generally exists on rural roads.

Conformity Analysis

GVMC staff combined Mobile 6.2 output for each VOC and NOx to get a total for each compound for the maintenance area. The conformity is performed using the MOBILE 6.2 program. MOBILE 6.2 is a computer program that estimates volatile organic compounds (VOC), carbon monoxide (CO), and oxides of nitrogen (NOx) emission factors for gasoline-fueled and diesel highway motor vehicles. The model was developed by the United States Environmental Protection Agency (USEPA). MOBILE 6.2 calculates emission factors for eight individual vehicle types in two regions of the country. MOBILE 6.2 emission factor estimates depend on various conditions such as average travel speed, operating modes, fuel volatility, and mileage accrual rates. Many of the variables affect-

ing vehicle emissions can be specified by the user. The analyses cover 2009, 2014, 2018, 2025, and 2035. The analysis is based on comparing the total emissions from the Long Range Transportation Plan and the Transportation Improvement Program projects to the official emission budget in the SIP and a calculated budget by Mobile 6.2, and the analysis does not include an I/M Program. Tables 3 and 6 reflect the emissions of VOC and NOx with the implementation of projects included in the Long Range Transportation Plan and the Transportation Improvement Program.

Table 3 – Kent County Year 2009, 2014, 2018, 2025 & 2035 VOC & NOX Emissions

Functional Classification	Base Year	VOC (kg/day)	NOx (kg/day)
Rural Interstate/Freeway	2009	314.33	754.04
Rural Major & Minor Arterial/Collector/Local Street	2009	1,547.36	2,265.92
Urban Interstate/Freeway	2009	3,819.47	7,761.89
Urban Principal & Minor Arterial/Collector/Local Street	2009	9,096.39	12,765.54
TOTALS		14,777.55	23,547.39
Functional Classification	Base Year	VOC (kg/day)	NOx (kg/day)
Rural Interstate/Freeway	2014	224.12	430.49
Rural Major & Minor Arterial/Collector/Local Street	2014	1,099.43	1,372.91
Urban Interstate/Freeway	2014	2,722.55	4,521.36
Urban Principal & Minor Arterial/Collector/Local Street	2014	6,463.87	7,762.81
TOTALS		10,509.98	14,087.57
Functional Classification	Base Year	VOC (kg/day)	NOx (kg/day)
Rural Interstate/Freeway	2018	185.94	294.38
Rural Major & Minor Arterial/Collector/Local Street	2018	909.53	975.31
Urban Interstate/Freeway	2018	2,256.65	3,128.10
Urban Principal & Minor Arterial/Collector/Local Street	2018	5,368.23	5,547.61
TOTALS		8,720.36	9,945.41
Functional Classification	Base Year	VOC (kg/day)	NOx (kg/day)
Rural Interstate/Freeway	2025	148.55	200.69
Rural Major & Minor Arterial/Collector/Local Street	2025	726.96	711.82
Urban Interstate/Freeway	2025	1,807.60	2,191.14
Urban Principal & Minor Arterial/Collector/Local Street	2025	4,305.75	4,057.53
TOTALS		6,988.86	7,161.17
Functional Classification	Base Year	VOC (kg/day)	NOx (kg/day)
Rural Interstate/Freeway	2035	155.74	174.07
Rural Major & Minor Arterial/Collector/Local Street	2035	768.62	653.67
Urban Interstate/Freeway	2035	1,910.64	1,944.22
Urban Principal & Minor Arterial/Collector/Local Street	2035	4,574.54	3,744.31
TOTALS		**7,409.54**	**6,516.26**

Table 4 – Ottawa County Year 2009, 2014, 2018, 2025 & 2035 VOC & NOX Emissions

Functional Classification	Budget Year	VOC (kg/day)	NOx (kg/day)
Rural Interstate/Freeway	2009	835.60	1,788.89
Rural Major & Minor Arterial/Collector/Local Street	2009	715.97	1,081.54
Urban Interstate/Freeway	2009	536.39	1,231.45
Urban Principal & Minor Arterial/Collector/Local Street	2009	3,437.07	4,611.63
TOTALS		5,525.03	8,713.52
Functional Classification	**Budget Year**	**VOC (kg/day)**	**NOx (kg/day)**
Rural Interstate/Freeway	2014	616.09	1,066.63
Rural Major & Minor Arterial/Collector/Local Street	2014	498.90	641.72
Urban Interstate/Freeway	2014	391.87	724.87
Urban Principal & Minor Arterial/Collector/Local Street	2014	2,422.48	2,795.60
TOTALS		3,929.34	5,228.81
Functional Classification	**Budget Year**	**VOC (kg/day)**	**NOx (kg/day)**
Rural Interstate/Freeway	2018	508.82	717.83
Rural Major & Minor Arterial/Collector/Local Street	2018	442.09	490.76
Urban Interstate/Freeway	2018	322.60	493.97
Urban Principal & Minor Arterial/Collector/Local Street	2018	2,005.63	1,992.05
TOTALS		3,279.137	3,694.610
Functional Classification	**Budget Year**	**VOC (kg/day)**	**NOx (kg/day)**
Rural Interstate/Freeway	2025	408.58	501.36
Rural Major & Minor Arterial/Collector/Local Street	2025	355.55	358.81
Urban Interstate/Freeway	2025	255.33	335.54
Urban Principal & Minor Arterial/Collector/Local Street	2025	1,619.08	1,462.40
TOTALS		2,638.55	2,658.12
Functional Classification	**Budget Year**	**VOC (kg/day)**	**NOx (kg/day)**
Rural Interstate/Freeway	2035	420.17	432.05
Rural Major & Minor Arterial/Collector/Local Street	2035	378.43	330.32
Urban Interstate/Freeway	2035	268.70	291.82
Urban Principal & Minor Arterial/Collector/Local Street	2035	1,723.49	1,354.11
TOTALS		2,790.78	2,408.30

Table 5 – Conformity Analysis Total Results Tons/Day

Model Year	Total VOC Before Credit (tons/day)	Total NOx Before Credit (tons/day)	VOC Cred-its (tons/day)	NOx Cred-its (tons/day)	Adjusted VOC (tons/day)	Adjusted NOx (tons/day)	VOC Emission Budget (tons/day)	NOx Emission Budget (tons/day)
2009 W/O IM	22.380	35.562	-0.19	-0.17	22.19	35.39	**40.7**	**97.87**
2014 W/O IM	15.917	21.293	-0.19	-0.17	15.73	21.12	**40.7**	**97.87**
2018 W/O IM	13.227	15.036	-0.19	-0.17	13.04	14.87	**40.7**	**97.87**
2025 W/O IM	10.613	10.824	-0.19	-0.17	10.42	10.65	**40.7**	**97.87**
2035 W/O IM	11.244	9.838	-0.19	-0.17	11.05	9.67	**40.7**	**97.87**

Table 6 – Conformity Analysis Total Results Kgs/Day

Model Year	Total VOC Before Credit (tons/day)	Total NOx Before Credit (tons/day)	VOC Cred-its (tons/day)	NOx Cred-its (tons/day)	Adjusted VOC (tons/day)	Adjusted NOx (tons/day)	VOC Emission Budget (tons/day)	NOx Emission Budget (tons/day)
2009 W/O IM	20,302.584	32,260.906	-168.73	-154.22	20,133.85	32,106.69	**36,921.57**	**88,784.14**
2014 W/O IM	14,439.320	19,316.379	-168.73	-154.22	14,270.59	19,162.16	**36,921.57**	**88,784.14**
2018 W/O IM	11,999.493	13,640.017	-168.73	-154.22	11,830.76	13,485.80	**36,921.57**	**88,784.14**
2025 W/O IM	9,627.408	9,819.283	-168.73	-154.22	9,458.68	9,665.06	**36,921.57**	**88,784.14**
2035 W/O IM	10,200.322	8,924.563	-168.73	-154.22	10,031.59	8,770.34	**36,921.57**	**88,784.14**

Conclusion

Tables 3 through 6 clearly indicate that implementing the proposed projects of the new 2035 Long Range Transportation Plan will result in lower emissions than the emission budgets approved by the EPA as listed in the Federal Register for each of the milestone years. Consequently, the Grand Valley Metropolitan Council, West Michigan Shoreline Regional Development Commission (West-Plan), and the Macatawa Area Coordinating Council's 2035 LRTPs comply with the transportation plan conformity criteria contained in the USDOT/USEPA Conformity Guidance, and therefore meet the requirement of the CAAA and related SAFETEA-LU provisions.

Example Air Quality Runs

Sample Output File

ID: OTTAWA COUNTY 2018 ACTION FOR 2035 LRTP 12/20/2010
File: C:\DATA\MOBILE62\TESTRUN\OTTAWA\OT18.TB1

Printed: 12/20/2010

File	Run	Scenario	Year	Pollutant	VType	GM Mile	GM Day	Starts	Ends	Miles	MPG	VMT
1	1	1	2018	1	1	0.3471	10.118	7.2800	5.3799	29.1514	24.10	0.286212
1	1	1	2018	1	2	0.4275	14.882	8.0600	5.7548	34.8103	18.51	0.100219
1	1	1	2018	1	3	0.4678	16.285	8.0600	5.7548	34.8103	18.51	0.333626
1	1	1	2018	1	4	0.7700	26.157	8.0600	5.7548	33.9707	14.22	0.102082
1	1	1	2018	1	5	0.8047	27.337	8.0600	5.7548	33.9707	14.22	0.046944
1	1	1	2018	1	6	0.4230	15.293	6.8800	4.9123	36.1569	10.13	0.030552
1	1	1	2018	1	7	0.7816	28.573	6.8800	4.9123	36.5565	9.39	0.001083
1	1	1	2018	1	8	1.0978	33.635	6.8800	4.9123	30.6389	9.34	0.000307
1	1	1	2018	1	9	1.1445	35.520	6.8800	4.9123	31.0361	8.01	0.001044
1	1	1	2018	1	10	1.1560	35.665	6.8800	4.9123	30.8515	8.13	0.002258
1	1	1	2018	1	11	1.2440	38.055	6.8800	4.9123	30.5896	7.45	0.000928
1	1	1	2018	1	12	1.3344	40.252	6.8800	4.9123	30.1659	7.06	0.000003
1	1	1	2018	1	13	0.0000	0.000	0.0000	0.0000	0.0000	0.00	0.000000
1	1	1	2018	1	14	0.0539	1.580	7.2800	5.1979	29.3272	32.40	0.000257
1	1	1	2018	1	15	0.0000	0.000	0.0000	0.0000	0.0000	0.00	0.000000
1	1	1	2018	1	16	0.0731	3.073	6.6500	4.7481	42.0156	12.96	0.009045
1	1	1	2018	1	17	0.0808	3.541	6.6500	4.7481	43.8549	11.66	0.002814
1	1	1	2018	1	18	0.1043	5.218	6.6500	4.7481	50.0473	10.20	0.002975
1	1	1	2018	1	19	0.1149	5.795	6.6500	4.7481	50.4478	9.88	0.001426
1	1	1	2018	1	20	0.1374	7.603	6.6500	4.7481	55.3547	8.71	0.006646

Sample Output File

ID: KENT COUNTY 2009 BASE 2035 LRTP 12/14/2010
File: C:\DATA\MOBILE62\TESTRUN\KENT\KENT09.TB1

Printed: 12/14/2010

File	Run	Scenario	Year	Pollutant	VType	GM Mile	GM Day	Starts	Ends	Miles	MPG	VMT
1	1	1	2009	1	21	0.2671	14.915	6.6500	4.7481	55.8355	7.52	0.009391
1	1	1	2009	1	22	0.2723	29.502	6.6500	4.7481	108.3296	6.56	0.011229
1	1	1	2009	1	23	0.3270	54.676	6.6500	4.7481	167.2209	6.25	0.040017
1	1	1	2009	1	24	3.0425	30.733	1.3500	0.9639	10.1013	50.00	0.005480
1	1	1	2009	1	25	3.6847	100.335	6.8800	4.9123	27.2301	6.29	0.000202
1	1	1	2009	1	26	0.1976	19.162	6.6500	4.7481	96.9596	4.34	0.000948
1	1	1	2009	1	27	0.3932	10.708	6.6500	4.7481	27.2301	6.20	0.001780
1	1	1	2009	1	28	0.3534	14.037	8.0600	5.7548	39.7228	17.03	0.001902
1	1	1	2009	3	1	0.6502	18.954	7.2800	5.3799	29.1528	24.09	0.359696
1	1	1	2009	3	2	0.6460	22.492	8.0600	5.7548	34.8158	18.58	0.087789
1	1	1	2009	3	3	0.8786	30.588	8.0600	5.7548	34.8158	18.58	0.292250
1	1	1	2009	3	4	1.1110	37.738	8.0600	5.7548	33.9682	14.30	0.089434
1	1	1	2009	3	5	1.4115	47.945	8.0600	5.7548	33.9682	14.30	0.041127
1	1	1	2009	3	6	2.9144	106.014	6.8800	4.9123	36.3765	10.07	0.030046
1	1	1	2009	3	7	3.0727	113.789	6.8800	4.9123	37.0322	9.34	0.001047
1	1	1	2009	3	8	4.5482	103.210	6.8800	4.9123	22.6926	9.09	0.000362
1	1	1	2009	3	9	4.0360	116.207	6.8800	4.9123	28.7928	7.95	0.001078
1	1	1	2009	3	10	3.9294	115.994	6.8800	4.9123	29.5197	8.04	0.002305
1	1	1	2009	3	11	4.5250	129.161	6.8800	4.9123	28.5439	7.37	0.000962
1	1	1	2009	3	12	5.3037	135.523	6.8800	4.9123	25.5526	6.95	0.000003