



Development of Methodology for Estimating VMT Weighting by Facility Type

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Scientific peer review expressed substantial shortcomings with this document.*

*The peer review comments, and EPA's response to them,
have been added to this report as Appendix 4A.*

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1 BACKGROUND AND METHODOLOGY DEVELOPMENT

BACKGROUND

This report summarizes the results of work conducted for the U.S. Environmental Protection Agency (EPA) Office of Mobile Sources (OMS) involving the development and application of methods to estimate certain aspects of on-road vehicle activity. In particular, this work was designed to estimate vehicle miles of travel (VMT) on different classes of roadways by time of day and speed, and to investigate other vehicle activity characteristics. The principal motivation for this work is that the next version of EPA's highway vehicle emission factor model, MOBILE6, will provide emission factors disaggregated by facility type¹. For this reason, emission inventory development will require that vehicle activity inputs identify the fraction of travel by roadway type.

This report is organized around the three tasks which comprised this work. The first task, summarized in this section, was the investigation of available data sources and development of a methodology for estimating VMT allocation by facility type, time of day, and speed. The second task, summarized in section 2, was a demonstration of the methodology to a selected set of cities. The third task, summarized in section 3, was the development of an estimate of national VMT distributions for use by OMS in estimating national emissions. The focus of this report is the development and application of appropriate methods for developing vehicle activity inputs. A companion document (SAI, 1998) presents guidance designed to assist state and local agencies in the development of vehicle activity inputs for emissions estimation.

MOBILE6 will produce emissions for four facility types: freeways, arterials, ramps, and local roadways. The selection of these four classes derives from a project conducted by Sierra Research for EPA (Carlson and Austin, 1997) to develop light duty vehicle driving cycles for estimating the speed-dependence of emissions. In that project, eleven cycles were developed:

- High speed freeway;
- Freeway under levels of service² (LOS) A-C;
- Freeway under LOS D;
- Freeway under LOS E;
- Freeway under LOS F;
- Freeway under LOS "G" (a hypothetical, highly congested LOS);
- Arterial under LOS A-B;
- Arterial under LOS C-D;
- Arterial under LOS E-F;
- Freeway ramp; and
- Local roadways.

¹ "Facility type" and "functional class" are transportation planning terms that mean type of roadway.

² "Level of service" is a term describing the amount of traffic congestion on a particular roadway segment at a given time; LOS A is uncongested.

The freeway and arterial cycles have different average speeds and underlying speed distributions, and MOBILE6 freeway and arterial emission factors will be speed-dependent. Ramp and local roadway speed distributions will be assumed to be those of the ramp and local roadway cycles, and the emission factors will not be speed dependent.

SOURCES OF VEHICLE ACTIVITY INFORMATION

Direct measurement or modeling of vehicle activity has traditionally been conducted in support of highway planning and traffic engineering decisions. State and local transportation and traffic management agencies collect traffic count data at both permanent and temporary locations. In addition to their use in the analysis of traffic patterns and trends, these data are commonly used in the development and calibration of travel demand models³. In addition to counts, a variety of data collection techniques are used to characterize travel, including household surveys and trip diaries, license plate surveys, and “floating car” studies. None of these methods provide truly comprehensive data on all travel activity, and the costs of data collection further limit the availability of sound vehicle activity data. In response to the EPA transportation conformity rules, many Metropolitan Planning Organizations (MPOs) are conducting a range of efforts to enhance the quality of vehicle activity estimates for air quality planning. These efforts focus on both expanded and improved data collection, as well as studies targeted on model improvement (see, for example: Janik, 1997; Stopher and Fu, 1997; and Suhrbier et al., 1997).

Count data and travel demand modeling provide the most widely available information regarding travel activity in urban areas. Nevertheless, because of their primary historical use in evaluating transportation system performance, rather than characterizing regional travel, there are limitations and assumptions associated with their use in emissions estimation and forecasting. For count data, key issues are associated with extrapolation from necessarily limited numbers of locations to regional travel totals. Formalized methods exist based on data from the Highway Performance Monitoring System (HPMS), but the number of HPMS count sites, frequency of sampling, and representativeness of sites are possible sources of uncertainty. For example, in Charlotte, N.C. there are only six HPMS count sites.

Selection of either count data or travel demand model outputs for estimating VMT must consider the possibility of hidden flaws which could bias calculated VMT distributions. For example, a comparison of FHWA, local, and modeled VMT estimates was conducted by the Charlotte Department of Transportation. Table 1-1 summarizes VMT distributions in 1989 for Mecklenberg County, as reported in this study. (CDOT, 1997).

The VMT distributions based on the FHWA classifications result in approximately eight percent more travel on freeways, provide no estimate of ramp travel, and result in over

³ Most commonly used travel demand models follow the “four-step” process in which socioeconomic data are used to describe the number and type of trips between zones in an urban area, and assign trips to specific paths along the roadway network. The results are used to evaluate the performance of the roadway network and the effects of growth, highway construction, etc. on roadway congestion and travel time.

ten percent more travel on local roads than the classifications used by CDOT. The CDOT ramp estimates presumably overestimate ramp activity, since they include vehicles driven on frontage roads also. The modeled VMT distributions agree well with those developed by CDOT. Because the data shown in Table 1-1 are at a very aggregated level (e.g., no attempt to resolve differences by time of day or vehicle class), one would expect that these show less variation between methodologies than if the data were viewed at higher levels of resolution.

Table 1-1: Comparison of daily VMT distributions from different methods.

FHWA	Percent	CDOT	Percent	Model	Percent
Interstate	22.6	Freeway	22.6	Freeway	21.7
Freeway	6.0	Major	54.0	Major	52.9
Primary	20.7	Minor	10.3	Minor	12.3
Minor	20.9	Collector	5.6	Collector	5.9
Collector	10.9	Local	5.5	Local	5.3
Local	18.9	Ramp*	1.9	Ramp*	1.8

* Includes frontage roads.

For this study, two methods are developed for development of VMT distributions by facility class and speed. The first of these works directly from vehicle count data. The second requires processing of regional travel demand model outputs. These two methods use data which are most likely to be available to local and state agencies, and neither method relies on databases of observed speeds. In these methods, speeds are estimated using facility characteristics and level of traffic congestion. Actual speed data can and should be used where available if city-specific speed distributions are desired. Such data can address the effects of local characteristics that influence driver behavior and speeds, such as roadway lay-out (curves, hills, visibility, and distances between intersections) and signal coordination.

METHOD 1 - WORKING WITH TRAFFIC COUNT DATA

Most state and local transportation agencies have available to them sizable bodies of traffic count data for a subset of roadways. Some of these counts may be collected as part of the HPMS system, but typically agencies create their own databases that expand upon and provide greater (although not necessarily statistically balanced) coverage of roadways. Count data are commonly maintained at hourly or daily resolution, and in some areas are maintained at 15-minute resolution. Although data are not always available in electronic format, there has been significant expansion of permanent electronic “loop detector” counting on arterials and freeways. Basic count data sets are typically maintained by site, with site descriptors (county, route, distance from a reference point, direction, lane, facility type, segment length, area type) and the actual count data (date, day of week, time of day, duration, vehicle count).

VMT Estimation Procedures

It is relatively straightforward to estimate total VMT from vehicle count datasets, although as noted later in this section, there are a number of ways in which biases can enter the calculation. Most regions use similar methods to estimate total VMT by functional class. Area type is available and used in many areas. The VMT estimation procedure is:

1. Calculate the sum of counts in each functional class (by area type if possible).
2. Determine the sample size in each functional class (the number of counters).
3. Determine the average volume by dividing total count by sample size.
4. Obtain miles of facility in each class (available from Department of Transportation or GIS databases).
5. Calculate VMT by class as average volume multiplied by the number of miles of facility.

The result of this procedure is a distribution of VMT by facility type. Often, total centerline miles for each functional class can also be obtained by area type from GIS databases used in conjunction with regional travel demand models. If such data are available, one can use the data in the above procedure in order to obtain VMT by functional class and area type. At a minimum, we would expect that most urban areas will have the capability to arrive at these types of estimates using similar methods to those described above.

Typically, the above procedure is carried out with average annual daily traffic (AADT) counts. However, one can make assumptions, by extrapolating from available hourly count data, as to the time of day distribution of vehicle activity by facility type. The result of these calculations is VMT distributions by facility type and time of day. Seasonal, day-of-week, or episodic variations in activity can be estimated if the raw count data are maintained in a disaggregated and accessible (i.e., electronic) form. Again, most regions have some hourly count data although these data may only be representative of average weekdays or may not fully represent the combination of facility and area types in the region. In the absence of local data, it is possible, but not recommended, to apply temporal traffic patterns observed in another “similar” city. In general, some level of locale-specific temporal data will be available, and additional data can be collected at modest cost.

Several key issues are immediately apparent if the VMT estimates are intended to be used in emission calculations. First, the classification of roadways must be matched to the four functional classes used in MOBILE6. Thus, data for major and minor arterials and collectors may need to be merged into the MOBILE “arterial” class. The MOBILE “freeway” class might include data reported for “interstate” and “expressway” classes as well.

Frequently, counts will not be available for ramps. For example, in the FHWA count studies in the Charlotte example, estimated ramp VMT was assigned to the functional class of the road connected to the freeway by the ramp. However, in the absence of actual count data, ramp VMT can be estimated as a fraction of freeway VMT, possibly by area type, based upon VMT estimates from a regional travel demand model. Rapid acceleration events on on-ramps can be significant contributors to total emissions, so realistic estimation of ramp VMT is important.

Common problems with count data include biases arising from the selection of roadways that are sampled or from idiosyncrasies of the counting device. For example, areas using road tube counters may have undercounts on multilane facilities, especially during peak traffic periods. These result from two cars crossing the tube at the same time. (On freeways, this problem can be corrected by switching to ramp on/off counts). Also,

sometimes data are combined without correcting for underlying differences in the collection method. For example, in Charlotte, NCDOT average daily traffic (ADT) counts were combined with CDOT average annual weekday traffic (AAWT) counts without correcting for the difference in averaging periods (they note that the ADT counts were around nine percent lower than AAWT counts).

Agencies providing data should be consulted to identify known data set limitations and methods that can be used to address them. The traffic count data set can be adjusted to remove inherent biases. For example, counts on freeways in high density travel areas may be over-represented, leading to an overestimate of the average freeway volume. If count locations can be matched to area type and distributions of land use by area type are available, the counts can be proportionately weighed to ensure that they reflect average land use characteristics. Although many areas have fairly detailed GIS databases that provide area types, at a minimum estimates of the proportion of land in different area types should be available from standard USGS databases. Assigning specific count locations to area types may, in the absence of GIS databases, require cumbersome review by planning personnel who are familiar with local land use patterns.

Another problem that can occur is having too little count data for a particular facility type (or facility/area type combination). In these cases, one can combine two similar classes or extrapolate data from another, similar class. The overall result, however, is an increase in the associated uncertainty of these estimates.

Speed Estimation Procedures

Addressing the speed dependence of emission rates in MOBILE6 requires that VMT for arterials and freeways be further disaggregated by either speed or LOS. As discussed above, detailed databases of observed speeds are not available for many areas. Therefore, procedures are needed to estimate speeds or LOS from the traffic count data. LOS is a measure of congestion defined in terms of vehicle density (e.g., vehicles per lane-mile). As such, LOS is difficult to measure directly, except by techniques such as aerial photography. Roadway characteristics and traffic volumes can be used to infer LOS, however it is also possible to estimate speeds based on traffic engineering relationships. Although uncertainties arise in any such calculations (particularly during conditions of severe congestion), characterizing traffic behavior using speed estimates provides better precision and sensitivity than would the relatively coarse LOS classes. For this reason, this section focuses on deriving speed distributions rather than LOS.

Much of the information presented here on speed estimation procedures is taken from a NCHRP sponsored study, "Planning Techniques to Estimate Speeds and Service Volumes" (Dowling et al., 1996). There are generally two methods available for estimating speeds. The first uses procedures from the Highway Capacity Manual (HCM). The second uses volume/capacity relationships expressed in the Bureau of Public Roads (BPR) curves (or modified BPR curves). The accuracy of both methods falls substantially when applied to arterials, due to the complications caused by controls (e.g., signalization). Table 1-2 summarizes features of both methods.

HCM Procedure

The HCM method requires more facility-specific information than is likely to be available. On a regional basis, therefore, the BPR method appears the most practical for typical urban areas and it is our recommended method for speed estimation. We note, however, that with the use of GIS for collecting network data, urban areas are beginning to develop richer databases that could allow application of the HCM procedure on a regional basis. For general information, the data requirements for the HCM procedure are listed in Table 1-3. Note that, for both facility types, default look-up tables can be created for many of these variables allowing one to apply these methods provided one has facility and area type. Of course, use of defaults rather than facility-specific data reduces the accuracy of the resultant speeds.

Table 1-2: Summary of Speed Estimation Method Features (Source: Dowling et al., 1996)

Criteria	Volume/Capacity Curves (BPR)	Highway Capacity Manual
I. Data Requirements		
Amount	-volume, capacity, free speed	-volume, free speed, plus numerous additional facility characteristics
Precision	-a 10% error in volume or capacity translates into a 19% change in the estimated speed at $v/c = 1.00$	-complexity of procedures make it difficult to determine impacts of data errors
Feasibility	-all required data are feasible for all agencies to easily obtain	-40% of MPOs indicated it is unfeasible to obtain some of the required data items (% heavy vehicles, quality of coordination were most difficult)
2. Ease of Use		
Complexity	-single equation	-multiple equations
Training Required	-few minutes to learn	-one-day training
Spreadsheet	-spreadsheet friendly	-adaptable to spreadsheets, but figures must be translated to look-up tables
3. Reliability		
Accuracy	-not accurate at high v/c ratios	-most accurate of available techniques not in traffic model software
Facilities	-all, but not reliable for interrupted flow facilities	-no planning technique for uninterrupted flow facilities systems
Area Types	-all	-interrupted flow technique designed for only urban application -rural road procedure limited to 60 mph design speed
Planning Applications	-good only for regional transportation planning (RTP) models	-good for all except RTP models
4. User Confidence and Acceptance		
Overall Use	-used by 22% of all respondents	-used by 33% of respondents
Planning Applications	-predominant technique for RTPs	-predominant technique for site impact and congestion management
Agencies	-most popular with MPOs -least popular with local traffic agencies	-most popular with state DOTs -least popular with MPOs
Geographic Spread	-used throughout USA	-most frequently used across the country but less popular on west coast
5. Significant Strengths and Deficiencies		
Strengths	-simple, quick, well-behaved function	-comprehensive, sensitive to many factors
Deficiencies	1. Not accurate at $v/c > 1.00$ 2. Needs to be refitted to new HCM data 3. Not sensitive to signal timing	1. Extensive data required 2. Complex procedures 3. No procedure for freeway systems 4. Can't do $v/c > 1.00$ 5. Rural roads procedure limited

Table 1-3. Data Requirements for the HCM Techniques.

Uninterrupted Flow Facilities	Interrupted Flow Facilities
Hourly volume	Hourly volumes
Number of lanes	Number of lanes
Free-flow speed	Free-flow speed
Peak hour factor	Arterial class
Lane and shoulder widths	Density of signals per mile
Percent trucks	Peak hour factor
Percent recreational vehicles	Percentage turning traffic from exclusive lanes
Terrain type	Medians
Predominant driver type.	Exclusive turn lanes
	Green time per cycle
	Cycle length
	Quality of signal progression
	Signal controller type.

BPR Procedure

In contrast to the Highway Capacity Manual, the BPR is not data intensive. Default tables of capacity by functional class are available, although the accuracy of the method is improved if individual facility capacities are used (Dowling et al., 1996). The standard BPR equation is:

$$s = s_f / (1 + a(v/c)^b)$$

where:

s = predicted mean speed

s_f = free-flow speed

v = volume

c = practical capacity

a = 0.05 for signalized facilities (arterials, collector, and local)

a = 0.20 for unsignalized facilities (freeways, highways, and expressways)

b = 10

Different values of the parameters a and b have been developed by some urban areas based upon speed data sets, resulting in customized BPR curves. Practical capacity is defined as 80% of maximum capacity. Free-flow speed is defined as the space mean speed of traffic when volumes are so light that they have negligible effect on speed and is estimated to be 1.15 times the speed at capacity. (Dowling et al, 1996). Relationships for free-flow speed (s_f) have been developed by Dowling et al., as follows:

Uninterrupted facilities with posted speed limits > 50 mph:
 Mean speed (mph) = 0.88 * (posted speed limit in mph) + 14

Uninterrupted facilities with posted speed limits < 50 mph:
 Mean speed (mph) = 0.79 * (posted speed limit in mph) + 12

By entering either coded capacities by facility type or using default look-up tables, along with the link volumes from traffic count data, link speeds can be predicted with the BPR equation. VMT within each functional class can be grouped by speed, resulting in distributions of VMT by speed for freeways.

The accuracy with which the BPR curves predicts speeds for both arterials and freeways can reportedly approach those of the HCM and traffic simulation models, provided that accurate free-flow speeds and capacities for each facility are known. Predicted speeds are proportional to free-flow speed, but drop rapidly as v/c approaches 1.0, making it particularly important to use reliable capacity values.

As noted above, the accuracy of these speed relationships is reduced for arterials and locals because of traffic control effects. However, unless local data on control parameters by facility and area type are available to at least construct look-up tables, regional planners are probably limited to the BPR curves for estimating arterial speeds as well. A simple method

to better estimate speeds as a function of facility type is to differentiate the parameter “a” for signalized ($a = 0.05$) and unsignalized ($a = 0.20$) facility classes. As discussed in the next section regarding travel demand models, speed processors have been developed that use default signalization parameters to improve speed estimates for arterials, but the accuracy of these methods is still limited.

Time of day variations in speeds can be accounted for by distributing traffic volumes by time of day, as discussed above, and then applying the BPR equation with the appropriate capacities and volumes. If available, day-of-week and seasonal effects can also be incorporated by applying appropriate adjustments to link volumes or using traffic count data specific to the temporal period of interest. The use of adjustment factors, particularly for time of day, can result in peak hour traffic volumes that exceed roadway capacity, conditions under which uncertainties in the BPR relationships are greatest. While significant congestion does occur in many areas, it is possible for adjustments to cause unrealistically low estimated speeds for some roadways, requiring care and judgment on the part of the analyst.

Future year estimates can be developed by projecting VMT estimates by functional class and area type to the desired year based either on past trends or travel demand model predictions. Regional growth and its effects on congestion, travel demand, and spatial distribution of travel can cause significant shifts in VMT between functional classes and areas. Therefore, agencies should review and update their VMT distributions when projecting inventories.

Variations in distributions by vehicle class (light versus heavy duty or by FHWA classifications) can be obtained from HPMS data by functional class by state. Obtaining similar distributions for a specific urban area or by speed bin is more difficult. The survey conducted as part of the NCHRP planning techniques study found that forty percent of respondents would not be able to obtain data on percent trucks by roadway type (Dowling et al., 1996). In the absence of local data, the state HPMS estimates could be assumed to be applicable. HPMS estimates do differentiate between urban and rural area types. In some cases, the particular urban area under study may be the predominate source of data for the HPMS statistics which makes this less of an extrapolation. We are unaware of any readily available sources of data that would allow agencies to develop distributions of VMT on freeways and arterials by vehicle class and speed.

METHOD 2 - WORKING WITH TRAVEL DEMAND MODELS

Travel demand models (TDMs) provide another source of estimates of vehicle activity by functional class, time of day, and speed. The modeling process assigns trips (defined by an origin and a destination within the roadway network) to roadway segments. To the extent that model inputs capture all trips within a region, TDMs provide comprehensive regional VMT estimates and avoid the uncertainties associated with extrapolation of traffic volumes from count data at selected locations. They provide less detail, however, regarding volume fluctuation by time of day, vehicle type, and speeds than can be obtained from measurements, except to the extent that available data are used to

provide such detail in model output. Agencies with access to TDMs can readily obtain VMT distributions from the link-level traffic volumes and other outputs of these models. The November 1993 transportation conformity regulations require network-based modeling for metropolitan planning areas in ozone and carbon monoxide nonattainment areas classified as serious and higher (40CFR51.452). Modeling improvements have been made in many areas in response to these regulations, as well as other planning needs.

The assignment of traffic to the roadway network in travel demand models uses calculated speeds and route choices to minimize travel time. The effect of speeds on assignments is evaluated primarily in terms of how well the assigned traffic volumes agree with count data. Historically, lack of agreement between TDM speeds and observed speeds was of little concern provided that congestion and traffic volumes were well characterized. TDM inputs (especially the “trip tables” identifying numbers of trips between each pair of zones) are prepared for specific time periods, and simulation results provide a single assignment representative of that period. For average daily travel (ADT) assignments, it is not possible within the model to describe hourly variation in congestion and speeds. Even if modeling is conducted separately for different times of day (e.g., AM peak, midday, PM peak, and overnight), congestion and speeds can vary within each period. Consultation with transportation planners and modelers should include assessment of whether TDM speeds have been calibrated or evaluated against observations.

Because of the difficulties that can arise in achieving both accurate assignments and accurate speeds in TDMs, it may be preferable to calculate speeds externally. Post-processing software is available that uses HCM procedures and BPR curves to calculate hourly congested speeds and produce summaries of regional VMT distributions. TDM networks can be quite large (thousands of individual links), making the use of computer processing with either database or specialized software extremely desirable. Table 1-4 provides an example of the type of data that are summarized from these models, in this case taken from a run of Caltrans’ Direct Travel Impact Model (DTIM2) for travel activity in a portion of Imperial County, California. Packages such as DTIM2 were actually developed to produce emissions estimates, and can be expected to be adapted to work with MOBILE6. The general speed post-processing algorithm used in these packages operates on hourly link volumes (even if the TDM outputs are multiple hour or daily assignments) as follows:

1. Distribute link-level volumes by hour of day using user-provided or default temporal distributions (usually from count data sets).
2. Calculate hourly VMT by multiplying link distance by hourly volume.
3. Calculate the V/C ratio using either link-specific capacities or lookup tables.
4. Apply the BPR curve, using link-specific free flow speeds or lookup tables, to arrive at hourly congested speeds.

Exogenous volume adjustments can be applied to the loaded networks to account for variations by day of week or season prior to post-processing speeds. Note that this results in higher inaccuracies in the assignments, since ideally traffic should be assigned with the actual trip productions and attractions that correspond to the modeling episode. Such data are not commonly available. However, future year loaded networks are usually available

from local planners which simplifies the development of future year VMT distributions. The procedure described above is simply repeated, this time with the future year assignment.

Table 1-4: Distribution of VMT by speed and facility type from DTIM.

Speed	Type1	Type2	Type3	Type4
0.0 - 2.5	0	0	0	0
2.5 - 7.5	0	0	0	0
7.5 - 12.5	0	0	0	0
12.5 - 17.5	0	0	0	0
17.5 - 22.5	0	0	0	0
22.5 - 27.5	0	0	0	0
27.5 - 32.5	6777	18753	3157.3	1833.6
32.5 - 37.5	0	0	0	0
37.5 - 42.5	93515.9	232859	37876.8	18861.2
42.5 - 47.5	52922.1	131922	20552.1	9910
47.5 - 52.5	27248.3	53392	8431.6	7476.7
52.5 - 57.5	0	0	0	0
57.5 - 62.5	0	0	0	0
62.5 - 67.5	1297.6	1122	176	307.9
67.5 - 72.5	0	0	0	0
Total	181761	438048	70193.8	38389.5

There are several areas in which TDMs may fail to provide comprehensive VMT estimates. These relate to both the preparation of inputs used in modeling and in the level of detail incorporated in trip and network inputs. For example, “intra-zonal” travel (trips whose origin and destination are within the same zone of the TDM) and other travel on local roads⁴ are not directly assigned to the network, and must be separately addressed. This is typically accomplished through calculations based on assumptions about intra-zonal trip lengths, the sizes of zones, and local roadway speeds. Alternatively, local road travel can be estimated from count data. Like local roads that are not “coded” into the TDM network, separate freeway on- and off-ramp links may not be included in network specification. Ramp travel may therefore be either omitted from TDM VMT estimates, or included as a portion of freeway VMT.

Information on travel by vehicle class is typically not available directly in TDMs. The “trip table” inputs that identify the number of trips for each purpose (e.g., home-based work trips) between each pair of spatially defined zones in the model, and this information can be used if data exist on fleet composition for different trip purposes. However, as TDMs focus primarily on travel by individuals rather than goods movement, this approach provides little value for identifying medium and heavy truck activity. Goods movement models are under development, but at present, simple adjustment factors are more commonly used to estimate incremental freight-related VMT to be added to modeled volumes. Time of day, day of week, and seasonal variation of freight travel should be evaluated separately, based on local data.

⁴ TDM networks typically include all freeways and arterials, but may not explicitly include minor streets.

2 APPLICATION OF METHODS TO SELECTED URBAN AREAS

In Section 1, two methodologies were outlined that could be used to develop distributions of vehicle miles traveled (VMT) by functional class and speed, using either traffic count data or travel demand model assignments as the primary vehicle activity indicator. This section presents the results of the application of these methods in five selected urban areas: Chicago IL; Houston TX; Charlotte NC; Ada County (Boise) ID; and New York NY. DTIM2 was used to produce VMT and speed distributions directly from TDM outputs for Chicago, Ada County and Houston. For all five areas, speeds were estimated using the BPR curves, as the available data sets did not include sufficient detail to allow the use of the HCM procedures.

For emission inventory preparation using MOBILE6, VMT distributions are needed for four functional classes: freeways; arterials; ramps; and local roads. For freeways and arterials, distributions of VMT by speed are also needed. This classification scheme is that used in new speed correction cycles developed for MOBILE6 (Sierra Research, 1997) which spanned a range of levels-of-service, speeds, and accelerations, as summarized in Table 2-1.

Table 2-1. Characteristics of Speed Correction Cycles Developed for MOBILE6.

Cycle	Average Speed (mph)	Maximum Speed (mph)	Maximum Acceleration Rate (mph/s)
Freeway, High Speed	63.2	74.7	2.7
Freeway, LOS A-C	59.7	73.1	3.4
Freeway, LOS D	52.9	70.6	2.3
Freeway, LOS E	30.5	63.0	5.3
Freeway, LOS F	18.6	49.9	6.9
Freeway, LOS "G"	13.1	35.7	3.8
Freeway Ramps	34.6	60.2	5.7
Arterials/Collectors, LOS A-B	24.8	58.9	5.0
Arterials/Collectors, LOS C-D	19.2	49.5	5.7
Arterials/Collectors, LOS E-F	11.6	39.9	5.8
Local Roadways	12.9	38.3	3.7

DATABASES

Two types of data were collected for the analysis. For some cities, actual hourly or daily traffic count data were obtained. These data generally included some information about the count locations, such as functional class and/or area type, as well as temporal information for each count (e.g., time of day, day of year). For other cities, transportation activity estimates and network information from the regional transportation model were obtained. The choice of method to be tested in each city was dependent upon the type of data obtained. Although efforts were made to obtain both count data and TDM output for the same area to allow a comparison of the methods, but the data were not received in time to conduct this comparison. Tables 2-2 through 2-6 summarize the data that were assembled and used for the five areas.

Table 2-2a. Charlotte Department of Transportation (CDOT) counts for 1995.

Item	Description
Card Number	= 1 (card 1)
Location	Description of count site
LNKNM	Link number, as used in the transportation model (not available for all links)
CODE	Internal CDOT code
DATE	mmddyy
DAYWEEK	0=Sunday, 1=Monday, ...
TIME	Time counter placed (counts stored 001 - 2400)
TOWWAY	Two-way count? T/F
COMPASS DIR	Direction (NEWS) of A direction counts
AADT	Average-annual daily traffic
AAWT	Average-annual weekday traffic
SUMCNT	Sum of counts
AAWT factor	Month/Day factor to calculate AAWT
Card Number	= 2 (card 2)
Vol0000-0015	Volume 0000-0015 - compass direction A
Vol0016-0030	Volume 0016-0030
...	
Vol1145-1200	Volume 1145-1200 - compass direction A (total of 48 15-min counts) Repeat for 1201 - 2400 - compass direction A (total of 48 15-min counts) Repeat for 001 - 1200 - compass direction B (total of 48 15-min counts) Repeat for 1201 - 2400 - compass direction B (total of 48 15-min counts)

Table 2-2b. CDOT and North Carolina DOT count data (CDOT counts are AAWT, NCDOT counts are ADT).

Item	Description
FUNCL	CDOT functional class
AREATP	CDOT area type (1 = CBD, 2 = CBD fringe, 3 = residential, 4 = commercial area, 5 = rural)
DOTF	FHWA functional class (First letter: I = interstate, F = oth. freeway, P = principal arterial, M = minor arterial, C = collector, L = local; Second letter: U = urban, R = rural)
LINKLEN	Link length (miles)
LNKNM	Travel demand model ID (matches data set above as well)
LOCATION	From demand model - different method than count dataset
85VOL	Volume - 1985
86VOL	Volume - 1986
87VOL	Volume - 1987
88VOL	Volume - 1988
89VOL	Volume - 1989
90VOL	Volume - 1990
91VOL	Volume - 1991
92VOL	Volume - 1992
93VOL	Volume - 1993
94VOL	Volume - 1994
95VOL	Volume - 1995

Table 2-3. Content of four record formats in the New York traffic count dataset.

TF1 Records	TF2 Records	TF3 Records	TF4 Records
Region	Region	Region	Region
County	County	County	County
Route	Route	Route	Route
Milepoint	Milepoint	Milepoint	Milepoint
Station	Station	Station	Station
Card Code (“1”)	Card Code (“2”)	Card Code (“3”)	Year
Section Length	Year	Year	Count Number
Year	Month	Month of First Days Count	Section Length
Functional Class	Day of Month	Day-of-Month of First Days Count	Beginning Description
Factor Group	Direction	Direction	Ending Description
Description	Day of Week	Factor Group	AADT
Not Used	Week of Year	Reference Marker	Design Hour
Not Used	Reference Marker	Hourly Counts (xxxx 24 Times)	Reference Marker
Not Used	Hour Counts (4 positions)	Not Used	Direction
Not Used	Not Used	Not Used	Bridge Identification Number
Not Used	Not Used	Not Used	Functional Class
Not Used	Not Used	Not Used	Factor Group
Not Used	Not Used	Not Used	HPMS Number

Table 2-4. Chicago 1996 transportation model outputs.

Description
<ul style="list-style-type: none"> • Anode - link end point • Bnode - link end point • Link distance • Functional class (0 = dummy links; 1 = freeway; 2 = major highway; 3 = area service (arterial); 4 = other principal arterials; 5 = minor arterial (urban); 6 = collector (urban); 7 = local; 8 = major collector (rural); 9 = minor collector) • Daily link volume • Link capacity • Link freeflow speed • Anode coordinates • Bnode coordinates

Table 2-5. Ada County 1995 and 2015 transportation model outputs.

Description
<ul style="list-style-type: none"> • Anode - link end point • Bnode - link end point • Link distance • Functional class (1 = freeway; 2 = arterial; 3 = collector; 4 = local) • Daily link volume • Link freeflow speed • Anode coordinates • Bnode coordinates

Table 2-6. Houston 2020 transportation model outputs

Description
<ul style="list-style-type: none"> • Anode - link end point

- Bnode - link end point
- Link distance
- Functional class (0 = locals; 1 = radial freeways w/o frontage road; 2 = radial freeways w/ frontage road; 3 = crc freeways w/o frontage road; 4 = crc freeways w/ frontage road; 5 = radial tollways w/o frontage road; 6 = radial tollways w/ frontage road; 7 = crc tollways w/o frontage road; 8 = crc tollways w/ frontage road; 9 = principal arterial w/ grade separator; 10 = principal arterials divided; 11 = principal arterials undivided; 12 = other arterials divided; 13 = other arterials undivided; 14 = one-way pairs; 15 = one-way facilities; 16 = collectors divided; 17 = collectors undivided; 18 = ferries; 19 = saturated arterials; 20 = transitways; 21 = saturated arterials)
- Peak and Off-peak period link volumes
- Link capacity
- Link freeflow speed
- Anode coordinates
- Bnode coordinates

Some additional sets of traffic data were obtained but not used in this task. These were

- Traffic count data for Ada County, ID., which were not used because functional classes were not identified;
- Hourly count data for twelve count locations in Chicago, which were not used because they were not a representative, robust sample;
- Transportation model outputs for Las Vegas, NV, which were not used because of time constraints; and
- HPMS traffic count data for Chicago and Houston, which were not used because of time constraints.

None of the datasets obtained for this project contained direct count or volume estimates for freeway ramps. A methodology for estimating ramp VMT, developed by the Charlotte Department of Transportation (CDOT), was provided with the Charlotte dataset. It was used to develop rough estimates of ramp VMT for all five cities as discussed in the next section.

APPLICATION OF METHODOLOGIES

There are two alternate methodologies that were tested with these data to determine vehicle miles traveled (VMT) distributions by functional class and speeds. The first method that will be discussed uses transportation model outputs to arrive at VMT by functional class and speed. This method was applied for Ada County, Houston, and Chicago. The second method, applied for Charlotte and New York, uses actual vehicle count data to arrive at the VMT distributions. For both methods, VMT and speed distributions by time of day are estimated for each functional class identified in the underlying data bases. These functional classes do not correspond unambiguously to the four classes used in MOBILE6. For example, some data sets include “minor arterial” and “minor collector,” either of which might be classified as “local” in other areas. MOBILE6 does not provide for different speed distributions for the “local” functional class. Speed distributions are shown here for local roadways for purposes of evaluation.

Travel demand model outputs were processed using a standard software package, Caltrans' Direct Travel Impact Model (DTIM2, Fieber et al., 1994). In some instances, simple preprocessor programs were created in FORTRAN to reformat datasets or to add specific parameters, such as capacity, to the data. The DTIM2 model includes a speed processor that works with hourly volume to capacity ratios, freeflow speeds, and the standard Bureau of Public Roads (BPR) speed curve to arrive at hourly link-level speeds (Dowling, 1994). Although this speed processor can modify speeds to reflect the impacts of signalization and queuing, these two functions were turned off for this analysis. Signalization was partially accounted for by using different parameters in the BPR equations as outlined in Section 1.

The DTIM2 speed processor requires that the functional class and capacity be explicitly coded for each link in the network. These parameters were available for both Houston and Chicago. Therefore, the DTIM2 speed processor was used for both cities. For Ada County, functional class was available but capacity was not available. Therefore, the predicted speeds from the local transportation model, which are provided by link, were used in developing the VMT distributions for Ada County.

For areas with vehicle count data (Charlotte and New York), these data were used as described in section 1 to estimate regional VMT by functional class. The second method required directly estimating hourly VMT distributions by functional class and speed. We developed a FORTRAN program for manipulating the traffic count data for Charlotte and New York in order to accomplish this. The source code listing for this program is provided in Appendix 2A.

Ada County - Transportation Model Outputs

The transportation model estimates of traffic volumes and network characteristics that were obtained for the Ada County region were processed using the DTIM2 software system. Both current (1995) and future year (2015) predictions of vehicle activity were analyzed. Initially, distributions were developed for an entire day of travel. Subsequently, distributions were developed separately for the AM-, PM-, and off-peak travel periods.

The Ada County network assigns roadway links to one of the following four functional classes:

- Freeway
- Arterial
- Collector
- Local

In many ways, this was the least detailed database used in this effort. For example, local data for developing hourly distributions were not available. As a result, the Ada Planning Association had used distributions developed by the California Department of Transportation for San Luis Obispo CA (Caltrans, 1993), a city which has a similar population to Boise, ID. Also, as noted above, individual link capacities were not available, so the DTIM2 speed processor could not be applied for this region. Rather, the link-level

speeds provided by the local transportation model were assumed to be applicable regardless of time-of-day or congestion. As a result, speed distributions are unvarying by time of day.

Tables 2-7a through 2-7c show the allocation of VMT by functional class and speed for the 1995 Ada County transportation files for three hours of the day that are representative of AM peak (8 a.m.), PM peak (5 p.m.), and OFF peak (1 p.m.) travel periods, respectively. Similar tables for 2015 were also developed, which reflected the effects of growth and highway network changes. Tables 2-8 and 2-9 show the fractional VMT by speed and functional class for the two years. Because the speed processor could not be applied, and because only a daily traffic assignment was available, the distribution of VMT by speed and functional class was constant for all time periods. Table 2-10 summarizes VMT distribution by functional class, using the class designations in the Ada County model and then re-expressed using the designations from the Sierra speed cycles. The Ada County model does not track ramp VMT. Ramp VMT was assumed to be 8.7 percent of freeway VMT, based on a Charlotte Department of Transportation analysis (CDOT, 1997) that estimated ramp VMT to be 19.4 percent of freeway VMT in the central business district, 8.7 percent in commercial areas, and 2.4 percent in residential areas. Estimated Ada County VMT distributions for all hours are provided in Appendix 2B for 1995 and Appendix 2C for 2015.

Table 2-7a. Summary of 1995 VMT by functional class and speed during AM peak hour (8 a.m.) for Ada County (miles/day).

Speed Range	Vehicle Miles					Total
	Freeway	Arterial	Collector	Local		
0.0 - 2.5	0	0	0	0	0	0
2.5 - 7.5	0	0	0	0	0	0
7.5 - 12.5	0	0	0	0	0	0
12.5 - 17.5	147	5	0	26989		27142
17.5 - 22.5	230	1669	6705	2593		11197
22.5 - 27.5	2318	7720	6135	441		16614
27.5 - 32.5	468	56278	7241	493		64481
32.5 - 37.5	0	67940	3214	912		72067
37.5 - 42.5	0	15866	3381	513		19760
42.5 - 47.5	7407	20578	0	0		27985
47.5 - 52.5	42903	0	0	0		42903
52.5 - 57.5	14612	0	0	0		14612
57.5 - 62.5	15574	0	0	0		15574
62.5 - 67.5	0	0	0	0		0
67.5 - 72.5	0	0	0	0		0
Total	83659	170056	26676	31942		312332

Table 2-7b. Summary of 1995 VMT by functional class and speed during PM peak hour (5 p.m.) for Ada County (miles/day).

Speed Range	Vehicle Miles				
	Freeway	Arterial	Collector	Local	Total
0.0 - 2.5	0	0	0	0	0
2.5 - 7.5	0	0	0	0	0
7.5 - 12.5	0	0	0	0	0
12.5 - 17.5	222	8	0	40651	40881
17.5 - 22.5	346	2514	10099	3906	16864
22.5 - 27.5	3491	11628	9240	665	25024
27.5 - 32.5	705	84766	10907	743	97121
32.5 - 37.5	0	102333	4841	1374	108548
37.5 - 42.5	0	23897	5092	773	29762
42.5 - 47.5	11156	30994	0	0	42151
47.5 - 52.5	64621	0	0	0	64621
52.5 - 57.5	22009	0	0	0	22009
57.5 - 62.5	23458	0	0	0	23458
62.5 - 67.5	0	0	0	0	0
67.5 - 72.5	0	0	0	0	0
Total	126008	256141	40179	48112	470440

Table 2-7c. Summary of 1995 VMT by functional class and speed during OFF peak hour (1 p.m.) for Ada County (miles/day).

Speed Range	Vehicle Miles				
	Freeway	Arterial	Collector	Local	Total
0.0 - 2.5	0	0	0	0	0
2.5 - 7.5	0	0	0	0	0
7.5 - 12.5	0	0	0	0	0
12.5 - 17.5	193	7	0	35330	35530
17.5 - 22.5	301	2185	8777	3394	14657
22.5 - 27.5	3034	10106	8031	578	21749
27.5 - 32.5	612	73671	9479	646	84408
32.5 - 37.5	0	88938	4207	1194	94340
37.5 - 42.5	0	20769	4426	672	25866
42.5 - 47.5	9696	26937	0	0	36633
47.5 - 52.5	56163	0	0	0	56163
52.5 - 57.5	19128	0	0	0	19128
57.5 - 62.5	20388	0	0	0	20388
62.5 - 67.5	0	0	0	0	0
67.5 - 72.5	0	0	0	0	0
Total	109514	222613	34920	41814	408862

Table 2-8. Summary of 1995 VMT fractions by functional class and speed for Ada County.

Speed Range	Fraction of Total VMT				
	Freeway	Arterial	Collector	Local	Total
0.0 - 2.5	0	0	0	0	0
2.5 - 7.5	0	0	0	0	0
7.5 - 12.5	0	0	0	0	0
12.5 - 17.5	0.0005	0	0	0.0864	0.0869
17.5 - 22.5	0.0007	0.0053	0.0215	0.0083	0.0359
22.5 - 27.5	0.0074	0.0247	0.0196	0.0014	0.0532
27.5 - 32.5	0.0015	0.1802	0.0232	0.0016	0.2064
32.5 - 37.5	0	0.2175	0.0103	0.0029	0.2307
37.5 - 42.5	0	0.0508	0.0108	0.0016	0.0633
42.5 - 47.5	0.0237	0.0659	0	0	0.0896
47.5 - 52.5	0.1374	0	0	0	0.1374
52.5 - 57.5	0.0468	0	0	0	0.0468
57.5 - 62.5	0.0499	0	0	0	0.0499
62.5 - 67.5	0	0	0	0	0
67.5 - 72.5	0	0	0	0	0
Total	0.2679	0.5445	0.0854	0.1022	1.0000

Table 2-9. Summary of 2015 VMT fractions by functional class and speed for Ada County.

Speed Range	Fraction of Total VMT				
	Freeway	Arterial	Collector	Local	Total
0.0 - 2.5	0	0	0	0	0
2.5 - 7.5	0	0	0	0	0
7.5 - 12.5	0	0	0	0	0
12.5 - 17.5	0.0004	0	0	0.0833	0.0837
17.5 - 22.5	0.0005	0.0043	0.0229	0.0084	0.0362
22.5 - 27.5	0.0064	0.0221	0.0175	0.0012	0.0471
27.5 - 32.5	0.0023	0.1748	0.0350	0.0020	0.2141
32.5 - 37.5	0	0.2284	0.0170	0.0036	0.2490
37.5 - 42.5	0	0.0542	0.0116	0.0015	0.0673
42.5 - 47.5	0.0201	0.0727	0	0	0.0928
47.5 - 52.5	0.1298	0	0	0	0.1298
52.5 - 57.5	0.0379	0	0	0	0.0379
57.5 - 62.5	0.0421	0	0	0	0.0421
62.5 - 67.5	0	0	0	0	0
67.5 - 72.5	0	0	0	0	0
Total	0.2395	0.5566	0.1040	0.1000	1.0000

Table 2-10. Overall VMT distributions for Ada County in 1995 and 2015 (miles/day).

Functional Class	1995 VMT	2015 VMT	1995 VMT	2015 VMT
			Fraction	Fraction
Freeway	1486240	2303441	0.26	0.23
Arterial & Collector	3495042	6354025	0.62	0.65
Ramp	129303	200399	0.02	0.02
Local	567470	961803	0.10	0.10

Chicago Transportation Model Data

Transportation model data for 1996 on traffic volumes and network characteristics were processed using the DTIM2 system to arrive at VMT distributions by functional class and speed for the Chicago region. The DTIM2 speed processor was used to calculate speeds as a function of hourly volume to capacity and freeflow speeds. Tables 2-11 and 2-12 summarize total VMT by functional class and speed for light and heavy duty traffic,

respectively, during peak and off-peak travel periods. The estimates for heavy duty travel activity are arrived at by applying a fraction of VMT attributable to heavy duty vehicles to the link volumes, producing heavy duty vehicle volumes by link. This fraction does not vary by area type or functional class. However, a separate temporal distribution is then applied to the heavy duty portion of the fleet, which results in different VMT distributions for this portion of the fleet. Tables 2-13 and 2-14 show the corresponding fractional VMT distributions by functional class and speed for peak and off-peak travel hours. Hourly VMT by functional class and speed for the entire fleet are included in Appendix 2D.

Table 2-15 summarizes VMT distributions by functional classes used for the Sierra speed cycles for light duty, heavy duty, and total fleet, respectively. As for Ada County, ramp VMT is assumed to be 8.7 percent of freeway VMT, because ramps are not a functional class within the Chicago model.

Table 2-11a. Summary of 1996 light duty vehicle VMT distribution by functional class and speed during AM peak (8 a.m.) for Chicago (miles/day).

Speed Range	Vehicle Miles					Total
	Freeway	Highway	Arterial	Collector	Local	
0.0 - 2.5	0	0	0	0	0	0
2.5 - 7.5	3362	856	4970	7607	6416	23211
7.5 - 12.5	0	17769	29132	25812	3652	76365
12.5 - 17.5	105660	66463	137749	123324	10492	443688
17.5 - 22.5	182753	201406	530801	340752	51658	1307370
22.5 - 27.5	181568	327280	929526	409209	115174	10328487
27.5 - 32.5	156724	348149	804607	224273	72144	1605897
32.5 - 37.5	251344	240993	538417	161452	44870	1237076
37.5 - 42.5	198653	160016	222657	152032	102912	836270
42.5 - 47.5	133224	117340	116133	101917	61213	529827
47.5 - 52.5	517441	57882	22251	35996	34334	667904
52.5 - 57.5	309012	18407	1153	881	1131	330584
57.5 - 62.5	107232	0	0	0	0	107232
62.5 - 67.5	135870	0	0	0	0	135870
67.5 - 72.5	0	0	0	0	0	0
Total	2282844	1556560	3337395	1583256	503996	9264051

Table 2-11b. Summary of 1996 light duty vehicle VMT distribution by functional class and speed during PM peak (5 p.m.) for Chicago (miles/day).

Speed Range	Vehicle Miles					Total
	Freeway	Highway	Arterial	Collector	Local	
0.0 - 2.5	0	0	0	0	0	0
2.5 - 7.5	3025	212	4088	5924	3871	17120
7.5 - 12.5	0	10158	21490	18529	4639	54816
12.5 - 17.5	1701	33679	95554	101361	10295	242590
17.5 - 22.5	15470	171620	411720	304258	43192	946260
22.5 - 27.5	157342	269882	933747	450492	116905	1928368
27.5 - 32.5	175214	386551	861157	235206	76967	1735095
32.5 - 37.5	221112	285715	586290	167360	50317	1310794
37.5 - 42.5	218530	167157	259992	156157	99061	900897
42.5 - 47.5	234804	129711	120438	102666	63603	651222
47.5 - 52.5	272700	63964	23874	37409	33757	431704
52.5 - 57.5	549013	18167	1137	2175	1153	571645
57.5 - 62.5	57486	0	0	0	0	57486
62.5 - 67.5	179798	0	0	0	0	179798
67.5 - 72.5	0	0	0	0	0	0
Total	2086196	1536814	3319486	1581536	503760	9027792

Table 2-11c. Summary of 1996 light duty vehicle VMT distribution by functional class and speed during off-peak (1 p.m.) for Chicago (miles/day).

Speed Range	Vehicle Miles					Total
	Freeway	Highway	Arterial	Collector	Local	
0.0 - 2.5	0	0	0	0	0	0
2.5 - 7.5	3210	143	1445	2383	3656	10837
7.5 - 12.5	0	2289	5535	4799	2646	15269
12.5 - 17.5	33910	19369	28002	29733	2756	113770
17.5 - 22.5	119250	73544	206142	206140	22519	627595
22.5 - 27.5	144141	219036	699970	414256	101912	1579315
27.5 - 32.5	166722	323552	763080	210690	61068	1525112
32.5 - 37.5	206150	268007	600483	158096	39161	1271897
37.5 - 42.5	212025	188692	314913	140233	87767	943630
42.5 - 47.5	202133	135433	118122	106234	59732	621654
47.5 - 52.5	483888	59031	29619	31649	32869	637056
52.5 - 57.5	323268	17641	2231	718	902	344760
57.5 - 62.5	124669	0	0	0	0	124669
62.5 - 67.5	118201	0	0	0	0	118201
67.5 - 72.5	0	0	0	0	0	0
Total	2137567	1306738	2769541	1304929	414987	7933762

Table 2-12a. Summary of 1996 heavy duty vehicle VMT distribution by functional class and speed during AM peak (8 a.m.) for Chicago (miles/day).

Speed Range	Vehicle Miles					Total
	Freeway	Highway	Arterial	Collector	Local	
0.0 - 2.5	0	0	0	0	0	0
2.5 - 7.5	981	86	403	605	588	2663
7.5 - 12.5	0	1914	2658	2150	290	7012
12.5 - 17.5	23528	8074	12554	9896	771	54823
17.5 - 22.5	37181	21387	51742	28838	4249	143397
22.5 - 27.5	35764	36103	85488	33821	8755	199931
27.5 - 32.5	31576	36346	70946	17884	5243	161995
32.5 - 37.5	51636	23862	47134	12242	2924	137798
37.5 - 42.5	42259	16994	20102	11981	8067	99403
42.5 - 47.5	31789	12817	10093	9361	5895	69955
47.5 - 52.5	143395	6516	3156	3269	3968	160304
52.5 - 57.5	100161	1978	126	59	45	102369
57.5 - 62.5	35520	0	0	0	0	35520
62.5 - 67.5	64592	0	0	0	0	64592
67.5 - 72.5	0	0	0	0	0	0
Total	598382	166076	304401	130104	40793	1239756

Table 2-12b. Summary of 1996 heavy duty vehicle VMT distribution by functional class and speed during PM peak (5 p.m.) for Chicago (miles/day).

Speed Range	Vehicle Miles					Total
	Freeway	Highway	Arterial	Collector	Local	
0.0 - 2.5	0	0	0	0	0	0
2.5 - 7.5	497	14	161	219	81	972
7.5 - 12.5	0	447	823	749	281	2300
12.5 - 17.5	139	1785	4180	3948	349	10401
17.5 - 22.5	1605	8971	19132	12431	1556	43695
22.5 - 27.5	17864	14848	44196	19290	4596	100794
27.5 - 32.5	18265	21381	39067	9742	2957	91412
32.5 - 37.5	22543	15184	26782	6603	1727	72839
37.5 - 42.5	23979	9154	12657	6226	3927	55943
42.5 - 47.5	26617	7479	5384	4599	3156	47235
47.5 - 52.5	34169	3852	1733	1732	2010	43496
52.5 - 57.5	100051	1002	64	359	23	101499
57.5 - 62.5	11152	0	0	0	0	11152
62.5 - 67.5	46197	0	0	0	0	46197
67.5 - 72.5	0	0	0	0	0	0
Total	303076	84116	154177	65897	20662	627928

Table 2-12c. Summary of 1996 heavy duty vehicle VMT distribution by functional class and speed during OFF peak (1 p.m.) for Chicago (miles/day).

Speed Range	Vehicle Miles					
	Freeway	Highway	Arterial	Collector	Local	Total
0.0 - 2.5	0	0	0	0	0	0
2.5 - 7.5	1096	29	178	275	368	1946
7.5 - 12.5	0	389	832	538	373	2132
12.5 - 17.5	9638	3249	3645	3502	367	20401
17.5 - 22.5	33052	11492	28302	23195	2458	98499
22.5 - 27.5	36342	31585	89381	47355	10383	215046
27.5 - 32.5	41647	47975	92642	22996	6631	211891
32.5 - 37.5	52544	35458	68733	16227	3595	176557
37.5 - 42.5	56644	25315	37967	15323	9050	144299
42.5 - 47.5	57545	18774	13472	11997	7459	109247
47.5 - 52.5	160665	8763	4520	3836	4827	182611
52.5 - 57.5	110470	2459	310	66	50	113355
57.5 - 62.5	49079	0	0	0	0	49079
62.5 - 67.5	59601	0	0	0	0	59601
67.5 - 72.5	0	0	0	0	0	0
Total	668322	185488	339980	145311	45561	1384662

Table 2-13a. Summary of 1996 light duty VMT fraction by functional class and speed during AM peak (8 a.m.) for Chicago.

Speed Range	Fraction of Total VMT					
	Freeway	Highway	Arterial	Collector	Local	Total
0.0 - 2.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.5 - 7.5	0.0004	0.0001	0.0005	0.0008	0.0007	0.0025
7.5 - 12.5	0.0000	0.0019	0.0031	0.0028	0.0004	0.0082
12.5 - 17.5	0.0114	0.0072	0.0149	0.0133	0.0011	0.0479
17.5 - 22.5	0.0197	0.0217	0.0573	0.0368	0.0056	0.1411
22.5 - 27.5	0.0196	0.0353	0.1003	0.0442	0.0124	1.1149
27.5 - 32.5	0.0169	0.0376	0.0869	0.0242	0.0078	0.1733
32.5 - 37.5	0.0271	0.0260	0.0581	0.0174	0.0048	0.1335
37.5 - 42.5	0.0214	0.0173	0.0240	0.0164	0.0111	0.0903
42.5 - 47.5	0.0144	0.0127	0.0125	0.0110	0.0066	0.0572
47.5 - 52.5	0.0559	0.0062	0.0024	0.0039	0.0037	0.0721
52.5 - 57.5	0.0334	0.0020	0.0001	0.0001	0.0001	0.0357
57.5 - 62.5	0.0116	0.0000	0.0000	0.0000	0.0000	0.0116
62.5 - 67.5	0.0147	0.0000	0.0000	0.0000	0.0000	0.0147
67.5 - 72.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.2464	0.1680	0.3603	0.1709	0.0544	1.0000

Table 2-13b. Summary of 1996 light duty VMT fraction by functional class and speed during PM peak (5 p.m.) for Chicago.

Speed Range	Fraction of Total VMT					
	Freeway	Highway	Arterial	Collector	Local	Total
0.0 - 2.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.5 - 7.5	0.0003	0.0000	0.0005	0.0007	0.0004	0.0019
7.5 - 12.5	0.0000	0.0011	0.0024	0.0021	0.0005	0.0061
12.5 - 17.5	0.0002	0.0037	0.0106	0.0112	0.0011	0.0269
17.5 - 22.5	0.0017	0.0190	0.0456	0.0337	0.0048	0.1048
22.5 - 27.5	0.0174	0.0299	0.1034	0.0499	0.0129	0.2136
27.5 - 32.5	0.0194	0.0428	0.0954	0.0261	0.0085	0.1922
32.5 - 37.5	0.0245	0.0316	0.0649	0.0185	0.0056	0.1452
37.5 - 42.5	0.0242	0.0185	0.0288	0.0173	0.0110	0.0998
42.5 - 47.5	0.0260	0.0144	0.0133	0.0114	0.0070	0.0721
47.5 - 52.5	0.0302	0.0071	0.0026	0.0041	0.0037	0.0478
52.5 - 57.5	0.0608	0.0020	0.0001	0.0002	0.0001	0.0633
57.5 - 62.5	0.0064	0.0000	0.0000	0.0000	0.0000	0.0064
62.5 - 67.5	0.0199	0.0000	0.0000	0.0000	0.0000	0.0199
67.5 - 72.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.2311	0.1702	0.3677	0.1752	0.0558	1.0000

Table 2-13c. Summary of 1996 light duty VMT fraction by functional class and speed during off-peak (1 p.m.) for Chicago.

Speed Range	Fraction of Total VMT					
	Freeway	Highway	Arterial	Collector	Local	Total
0.0 - 2.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.5 - 7.5	0.0004	0.0000	0.0002	0.0003	0.0005	0.0014
7.5 - 12.5	0.0000	0.0003	0.0007	0.0006	0.0003	0.0019
12.5 - 17.5	0.0043	0.0024	0.0035	0.0037	0.0003	0.0143
17.5 - 22.5	0.0150	0.0093	0.0260	0.0260	0.0028	0.0791
22.5 - 27.5	0.0182	0.0276	0.0882	0.0522	0.0128	0.1991
27.5 - 32.5	0.0210	0.0408	0.0962	0.0266	0.0077	0.1922
32.5 - 37.5	0.0260	0.0338	0.0757	0.0199	0.0049	0.1603
37.5 - 42.5	0.0267	0.0238	0.0397	0.0177	0.0111	0.1189
42.5 - 47.5	0.0255	0.0171	0.0149	0.0134	0.0075	0.0784
47.5 - 52.5	0.0610	0.0074	0.0037	0.0040	0.0041	0.0803
52.5 - 57.5	0.0407	0.0022	0.0003	0.0001	0.0001	0.0435
57.5 - 62.5	0.0157	0.0000	0.0000	0.0000	0.0000	0.0157
62.5 - 67.5	0.0149	0.0000	0.0000	0.0000	0.0000	0.0149
67.5 - 72.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.2694	0.1647	0.3491	0.1645	0.0523	1.0000

Table 2-14a. Summary of 1996 heavy duty VMT fraction by functional class and speed during AM peak (8 a.m.) for Chicago.

Speed Range	Fraction of Total VMT					Total
	Freeway	Highway	Arterial	Collector	Local	
0.0 - 2.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.5 - 7.5	0.0008	0.0001	0.0003	0.0005	0.0005	0.0021
7.5 - 12.5	0.0000	0.0015	0.0021	0.0017	0.0002	0.0057
12.5 - 17.5	0.0190	0.0065	0.0101	0.0080	0.0006	0.0442
17.5 - 22.5	0.0300	0.0173	0.0417	0.0233	0.0034	0.1157
22.5 - 27.5	0.0288	0.0291	0.0690	0.0273	0.0071	0.1613
27.5 - 32.5	0.0255	0.0293	0.0572	0.0144	0.0042	0.1307
32.5 - 37.5	0.0417	0.0192	0.0380	0.0099	0.0024	0.1111
37.5 - 42.5	0.0341	0.0137	0.0162	0.0097	0.0065	0.0802
42.5 - 47.5	0.0256	0.0103	0.0081	0.0076	0.0048	0.0564
47.5 - 52.5	0.1157	0.0053	0.0025	0.0026	0.0032	0.1293
52.5 - 57.5	0.0808	0.0016	0.0001	0.0000	0.0000	0.0826
57.5 - 62.5	0.0287	0.0000	0.0000	0.0000	0.0000	0.0287
62.5 - 67.5	0.0521	0.0000	0.0000	0.0000	0.0000	0.0521
67.5 - 72.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.4827	0.1340	0.2455	0.1049	0.0329	1.0000

Table 2-14b. Summary of 1996 heavy duty VMT fraction by functional class and speed during PM peak (5 p.m.) for Chicago.

Speed Range	Fraction of Total VMT					Total
	Freeway	Highway	Arterial	Collector	Local	
0.0 - 2.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.5 - 7.5	0.0008	0.0000	0.0003	0.0003	0.0001	0.0015
7.5 - 12.5	0.0000	0.0007	0.0013	0.0012	0.0004	0.0037
12.5 - 17.5	0.0002	0.0028	0.0067	0.0063	0.0006	0.0166
17.5 - 22.5	0.0026	0.0143	0.0305	0.0198	0.0025	0.0696
22.5 - 27.5	0.0284	0.0236	0.0704	0.0307	0.0073	0.1605
27.5 - 32.5	0.0291	0.0341	0.0622	0.0155	0.0047	0.1456
32.5 - 37.5	0.0359	0.0242	0.0427	0.0105	0.0028	0.1160
37.5 - 42.5	0.0382	0.0146	0.0202	0.0099	0.0063	0.0891
42.5 - 47.5	0.0424	0.0119	0.0086	0.0073	0.0050	0.0752
47.5 - 52.5	0.0544	0.0061	0.0028	0.0028	0.0032	0.0693
52.5 - 57.5	0.1593	0.0016	0.0001	0.0006	0.0000	0.1616
57.5 - 62.5	0.0178	0.0000	0.0000	0.0000	0.0000	0.0178
62.5 - 67.5	0.0736	0.0000	0.0000	0.0000	0.0000	0.0736
67.5 - 72.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.4827	0.1340	0.2455	0.1049	0.0329	1.0000

Table 2-14c. Summary of 1996 heavy duty VMT fraction by functional class and speed during off-peak (1 p.m.) for Chicago.

Speed Range	Fraction of Total VMT					
	Freeway	Highway	Arterial	Collector	Local	Total
0.0 - 2.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.5 - 7.5	0.0008	0.0000	0.0001	0.0002	0.0003	0.0014
7.5 - 12.5	0.0000	0.0003	0.0006	0.0004	0.0003	0.0015
12.5 - 17.5	0.0070	0.0023	0.0026	0.0025	0.0003	0.0147
17.5 - 22.5	0.0239	0.0083	0.0204	0.0168	0.0018	0.0711
22.5 - 27.5	0.0262	0.0228	0.0646	0.0342	0.0075	0.1553
27.5 - 32.5	0.0301	0.0346	0.0669	0.0166	0.0048	0.1530
32.5 - 37.5	0.0379	0.0256	0.0496	0.0117	0.0026	0.1275
37.5 - 42.5	0.0409	0.0183	0.0274	0.0111	0.0065	0.1042
42.5 - 47.5	0.0416	0.0136	0.0097	0.0087	0.0054	0.0789
47.5 - 52.5	0.1160	0.0063	0.0033	0.0028	0.0035	0.1319
52.5 - 57.5	0.0798	0.0018	0.0002	0.0000	0.0000	0.0819
57.5 - 62.5	0.0354	0.0000	0.0000	0.0000	0.0000	0.0354
62.5 - 67.5	0.0430	0.0000	0.0000	0.0000	0.0000	0.0430
67.5 - 72.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.4827	0.1340	0.2455	0.1049	0.0329	1.0000

Table 2-15a. Light Duty Vehicle VMT distributions for Chicago in 1996 (miles/day).

Functional Class	1996 LDV VMT	1996 LDV VMT Fraction
Freeway	47071489	0.40
Arterial & Collector	59593980	0.51
Ramp	4095213	0.04
Local	6098846	0.05

Table 2-15b. Heavy Duty Vehicle VMT distributions for Chicago in 1996 (miles/day).

Functional Class	1996 HDV VMT	1996 HDV VMT Fraction
Freeway	9928019	0.59
Arterial & Collector	5642914	0.33
Ramp	863738	0.05
Local	529783	0.03

Table 2-15c. Total VMT distributions for Chicago in 1996 (miles/day).

Functional Class	1996 Total VMT	1996 Total VMT Fraction
Freeway	56999508	0.43
Arterial & Collector	65236894	0.49
Ramp	4958957	0.04
Local	6628629	0.05

Houston Transportation Model Data

Transportation model outputs for the Houston region were processed using DTIM2 to arrive at VMT distributions by functional class and speed. Three speed estimation

procedures were evaluated in this analysis. DTIM2 speed processor output provided the initial distributions, however these results appeared to be unreasonable, due to values of capacities and freeflow speeds included in the network files. A revised set of capacities and freeflow speeds were developed, based on values used in other cities, FHWA recommendations, and engineering judgment. Table 2-16 summarizes these speed and capacity assumptions, which produced somewhat better results from the DTIM2 speed processor. We then reran the model using the link-specific speeds originally provided by the Houston-Galveston Area Council (HGAC) transportation model. This also resulted in reasonable speeds, but failed to capture any variation in speed by time of day.

The VMT distributions by functional class and speed as calculated by the speed processor (using the assumed capacities and freeflow speeds in Table 2-16) are summarized in Table 2-17 for AM peak (7 a.m.), Midday (1 p.m.), PM peak (5 p.m.), and Overnight (10 p.m.) travel periods. The fractional VMT distributions for this run are provided in Table 2-18. The fractional VMT distributions by functional class and speed using the speeds produced by the HGAC transportation model are summarized in Table 2-19. In Table 2-19, the speed distributions differ from those of Table 2-18, but the VMT allocation by facility class for different times of day is unchanged. In Table 2-20, the overall distribution of VMT by functional class has been remapped into the functional classes used in the Sierra speed cycles. As with the Chicago results, ramp VMT has been calculated as 8.7 percent of freeway VMT, based on the CDOT procedure. VMT distributions by functional class and speed for all hours using the speed processor are provided in Appendix 2E, and hourly VMT model output by functional class and speed using HGAC transportation speeds are provided in Appendix 2F.

Table 2-16. Freeflow speeds (mph) and capacities for Houston.

	Freeway	Expressway	Arterial	Collector	Local
Speed	61	49	41	41	25
Capacity	1750	1660	1400	1400	10000

Table 2-17a. Summary of 2020 AM Peak (7 a.m.) VMT by functional class and speed for Houston using speed processor (miles/day).

Speed Range	Vehicle Miles – AM Peak (7 a.m.)					Total
	Freeway	Expressway	Arterial	Collector	Local	
0.0 - 2.5	0	0	0	0	0	0
2.5 - 7.5	15060	0	2233	5979	0	23272
7.5 - 12.5	45973	0	4958	0	0	50931
12.5 - 17.5	31427	0	10446	0	0	41873
17.5 - 22.5	26966	0	9296	884	0	37146
22.5 - 27.5	23502	0	18086	292	888859	930739
27.5 - 32.5	37771	0	88668	3222	0	129660
32.5 - 37.5	61283	1582	694526	35969	0	793359
37.5 - 42.5	104387	0	1318814	2989	160101	1586291
42.5 - 47.5	172218	1096	419284	4023	0	596621
47.5 - 52.5	395709	6491	545047	80779	0	1028027
52.5 - 57.5	1822985	22570	201017	6231	0	2052803
57.5 - 62.5	1226196	0	286898	42317	0	1555410
62.5 - 67.5	25136	0	0	0	0	25136
67.5 - 72.5	14744	0	0	0	0	14744
Total	4003357	31739	3599272	182684	1048960	8866012

Table 2-17b. Summary of 2020 Midday (1 p.m.) VMT by functional class and speed for Houston using speed processor (miles/day).

Speed Range	Vehicle Miles – Midday (1 p.m.)					Total
	Freeway	Expressway	Arterial	Collector	Local	
0.0 - 2.5	0	0	0	0	0	0
2.5 - 7.5	0	0	405	3128	0	3533
7.5 - 12.5	0	0	94	1932	0	2025
12.5 - 17.5	0	0	0	0	0	0
17.5 - 22.5	0	0	2346	53	0	2399
22.5 - 27.5	20569	0	6926	99	815934	843528
27.5 - 32.5	5973	0	22745	986	0	29703
32.5 - 37.5	7720	254	435044	28353	0	471370
37.5 - 42.5	35000	0	1056670	962	139772	1232404
42.5 - 47.5	28672	1076	291357	134	0	321239
47.5 - 52.5	70314	4773	421308	51975	0	548370
52.5 - 57.5	681688	13244	123973	1721	0	820626
57.5 - 62.5	2066541	0	260062	31001	0	2357604
62.5 - 67.5	4832	0	0	0	0	4832
67.5 - 72.5	28334	0	0	0	0	28334
Total	2949643	19347	2620927	120342	955706	6665965

Table 2-17c. Summary of 2020 PM Peak (5 p.m.) VMT by functional class and speed for Houston using speed processor (miles/day).

Speed Range	Vehicle Miles – PM Peak (5 P.M.)					
	Freeway	Expressway	Arterial	Collector	Local	Total
0.0 - 2.5	0	0	0	0	0	0
2.5 - 7.5	40328	1945	52579	6241	0	101094
7.5 - 12.5	19328	0	28473	590	0	48391
12.5 - 17.5	37612	0	21826	1252	0	60690
17.5 - 22.5	32532	0	18235	310	0	51077
22.5 - 27.5	28383	0	33471	0	866111	927965
27.5 - 32.5	111107	0	67263	1410	0	179780
32.5 - 37.5	31885	173	435580	25626	1654	494917
37.5 - 42.5	70849	0	992053	2061	151609	1216572
42.5 - 47.5	138444	0	319085	6095	0	463623
47.5 - 52.5	263919	4565	422125	58011	0	748619
52.5 - 57.5	893947	14715	156327	2391	0	1067380
57.5 - 62.5	1743590	0	256274	38804	0	2038668
62.5 - 67.5	25997	0	0	0	0	25997
67.5 - 72.5	16152	0	0	0	0	16152
Total	3454072	21398	2803290	142789	1019374	7440921

Table 2-17d. Summary of 2020 Overnight (10 p.m.) VMT by functional class and speed for Houston using speed processor (miles/day).

Speed Range	Vehicle Miles – Overnight (10 p.m.)					
	Freeway	Expressway	Arterial	Collector	Local	Total
0.0 - 2.5	0	0	0	0	0	0
2.5 - 7.5	0	0	0	0	0	0
7.5 - 12.5	0	0	0	0	0	0
12.5 - 17.5	0	0	0	0	0	0
17.5 - 22.5	0	0	0	0	0	0
22.5 - 27.5	0	0	1013	0	293082	294095
27.5 - 32.5	0	0	0	0	0	0
32.5 - 37.5	1063	273	146013	11719	0	159069
37.5 - 42.5	1627	0	446211	371	52265	500473
42.5 - 47.5	0	0	117423	12	0	117436
47.5 - 52.5	674	2290	172792	25710	0	201466
52.5 - 57.5	19432	6145	53202	718	0	79497
57.5 - 62.5	1091633	0	106366	13376	0	1211375
62.5 - 67.5	2073	0	0	0	0	2073
67.5 - 72.5	11266	0	0	0	0	11266
Total	1127768	8708	1043021	51905	345346	2576748

Table 2-18a. Summary of 2020 AM Peak (7 a.m.) VMT fractions by functional class and speed for Houston using speed processor.

Speed Range	Vehicle Miles – AM Peak (7 a.m.)					
	Freeway	Expressway	Arterial	Collector	Local	Total
0.0 - 2.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.5 - 7.5	0.0017	0.0000	0.0003	0.0007	0.0000	0.0026
7.5 - 12.5	0.0052	0.0000	0.0006	0.0000	0.0000	0.0057
12.5 - 17.5	0.0035	0.0000	0.0012	0.0000	0.0000	0.0047
17.5 - 22.5	0.0030	0.0000	0.0010	0.0001	0.0000	0.0042
22.5 - 27.5	0.0027	0.0000	0.0020	0.0000	0.1003	0.1050
27.5 - 32.5	0.0043	0.0000	0.0100	0.0004	0.0000	0.0146
32.5 - 37.5	0.0069	0.0002	0.0783	0.0041	0.0000	0.0895
37.5 - 42.5	0.0118	0.0000	0.1487	0.0003	0.0181	0.1789
42.5 - 47.5	0.0194	0.0001	0.0473	0.0005	0.0000	0.0673
47.5 - 52.5	0.0446	0.0007	0.0615	0.0091	0.0000	0.1160
52.5 - 57.5	0.2056	0.0025	0.0227	0.0007	0.0000	0.2315
57.5 - 62.5	0.1383	0.0000	0.0324	0.0048	0.0000	0.1754
62.5 - 67.5	0.0028	0.0000	0.0000	0.0000	0.0000	0.0028
67.5 - 72.5	0.0017	0.0000	0.0000	0.0000	0.0000	0.0017
Total	0.4515	0.0036	0.4060	0.0206	0.1183	1.0000

Table 2-18b. Summary of 2020 Midday (1 p.m.) VMT fractions by functional class and speed for Houston using speed processor.

Speed Range	Vehicle Miles – Midday (1 p.m.)					
	Freeway	Expressway	Arterial	Collector	Local	Total
0.0 - 2.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.5 - 7.5	0.0000	0.0000	0.0001	0.0005	0.0000	0.0005
7.5 - 12.5	0.0000	0.0000	0.0000	0.0003	0.0000	0.0003
12.5 - 17.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.5 - 22.5	0.0000	0.0000	0.0004	0.0000	0.0000	0.0004
22.5 - 27.5	0.0031	0.0000	0.0010	0.0000	0.1224	0.1265
27.5 - 32.5	0.0009	0.0000	0.0034	0.0001	0.0000	0.0045
32.5 - 37.5	0.0012	0.0000	0.0653	0.0043	0.0000	0.0707
37.5 - 42.5	0.0053	0.0000	0.1585	0.0001	0.0210	0.1849
42.5 - 47.5	0.0043	0.0002	0.0437	0.0000	0.0000	0.0482
47.5 - 52.5	0.0105	0.0007	0.0632	0.0078	0.0000	0.0823
52.5 - 57.5	0.1023	0.0020	0.0186	0.0003	0.0000	0.1231
57.5 - 62.5	0.3100	0.0000	0.0390	0.0047	0.0000	0.3537
62.5 - 67.5	0.0007	0.0000	0.0000	0.0000	0.0000	0.0007
67.5 - 72.5	0.0043	0.0000	0.0000	0.0000	0.0000	0.0043
Total	0.4425	0.0029	0.3932	0.0181	0.1434	1.0000

Table 2-18c. Summary of 2020 PM Peak (5 p.m.) VMT fractions by functional class and speed for Houston using speed processor.

Speed Range	Vehicle Miles – PM Peak (5 p.m.)					
	Freeway	Expressway	Arterial	Collector	Local	Total
0.0 - 2.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.5 - 7.5	0.0054	0.0003	0.0071	0.0008	0.0000	0.0136
7.5 - 12.5	0.0026	0.0000	0.0038	0.0001	0.0000	0.0065
12.5 - 17.5	0.0051	0.0000	0.0029	0.0002	0.0000	0.0082
17.5 - 22.5	0.0044	0.0000	0.0025	0.0000	0.0000	0.0069
22.5 - 27.5	0.0038	0.0000	0.0045	0.0000	0.1164	0.1247
27.5 - 32.5	0.0149	0.0000	0.0090	0.0002	0.0000	0.0242
32.5 - 37.5	0.0043	0.0000	0.0585	0.0034	0.0002	0.0665
37.5 - 42.5	0.0095	0.0000	0.1333	0.0003	0.0204	0.1635
42.5 - 47.5	0.0186	0.0000	0.0429	0.0008	0.0000	0.0623
47.5 - 52.5	0.0355	0.0006	0.0567	0.0078	0.0000	0.1006
52.5 - 57.5	0.1201	0.0020	0.0210	0.0003	0.0000	0.1434
57.5 - 62.5	0.2343	0.0000	0.0344	0.0052	0.0000	0.2740
62.5 - 67.5	0.0035	0.0000	0.0000	0.0000	0.0000	0.0035
67.5 - 72.5	0.0022	0.0000	0.0000	0.0000	0.0000	0.0022
Total	0.4642	0.0029	0.3767	0.0192	0.1370	1.0000

Table 2-18d. Summary of 2020 Overnight (10 p.m.) VMT fractions by functional class and speed for Houston using speed processor.

Speed Range	Vehicle Miles – Overnight (10 p.m.)					
	Freeway	Expressway	Arterial	Collector	Local	Total
0.0 - 2.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.5 - 7.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.5 - 12.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.5 - 17.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.5 - 22.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
22.5 - 27.5	0.0000	0.0000	0.0004	0.0000	0.1137	0.1141
27.5 - 32.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
32.5 - 37.5	0.0004	0.0001	0.0567	0.0045	0.0000	0.0617
37.5 - 42.5	0.0006	0.0000	0.1732	0.0001	0.0203	0.1942
42.5 - 47.5	0.0000	0.0000	0.0456	0.0000	0.0000	0.0456
47.5 - 52.5	0.0003	0.0009	0.0671	0.0100	0.0000	0.0782
52.5 - 57.5	0.0075	0.0024	0.0206	0.0003	0.0000	0.0309
57.5 - 62.5	0.4236	0.0000	0.0413	0.0052	0.0000	0.4701
62.5 - 67.5	0.0008	0.0000	0.0000	0.0000	0.0000	0.0008
67.5 - 72.5	0.0044	0.0000	0.0000	0.0000	0.0000	0.0044
Total	0.4377	0.0034	0.4048	0.0201	0.1340	1.0000

Table 2-19a. Summary of 2020 AM Peak (7 a.m.) VMT fractions by functional class and speed for Houston using HGAC transportation model speeds.

Speed Range	Fraction of Total VMT – AM Peak (7 a.m.)					
	Freeway	Expressway	Arterial	Collector	Local	Total
0.0 - 2.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.5 - 7.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.5 - 12.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.5 - 17.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.5 - 22.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
22.5 - 27.5	0.0000	0.0000	0.0003	0.0000	0.1003	0.1006
27.5 - 32.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
32.5 - 37.5	0.0004	0.0002	0.0563	0.0045	0.0000	0.0614
37.5 - 42.5	0.0007	0.0000	0.1726	0.0002	0.0181	0.1914
42.5 - 47.5	0.0000	0.0000	0.0451	0.0000	0.0000	0.0451
47.5 - 52.5	0.0002	0.0009	0.0683	0.0104	0.0000	0.0798
52.5 - 57.5	0.0078	0.0025	0.0215	0.0003	0.0000	0.0322
57.5 - 62.5	0.4373	0.0000	0.0418	0.0052	0.0000	0.4843
62.5 - 67.5	0.0009	0.0000	0.0000	0.0000	0.0000	0.0009
67.5 - 72.5	0.0042	0.0000	0.0000	0.0000	0.0000	0.0042
Total	0.4515	0.0036	0.4060	0.0206	0.1183	1.0000

Table 2-19b. Summary of 2020 Midday (1 p.m.) VMT fractions by functional class and speed for Houston using HGAC transportation model speeds.

Speed Range	Fraction of Total VMT – Midday (1 p.m.)					
	Freeway	Expressway	Arterial	Collector	Local	Total
0.0 - 2.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.5 - 7.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.5 - 12.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.5 - 17.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.5 - 22.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
22.5 - 27.5	0.0000	0.0000	0.0005	0.0000	0.1224	0.1229
27.5 - 32.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
32.5 - 37.5	0.0004	0.0000	0.0575	0.0044	0.0000	0.0623
37.5 - 42.5	0.0006	0.0000	0.1684	0.0001	0.0210	0.1901
42.5 - 47.5	0.0000	0.0000	0.0432	0.0000	0.0000	0.0432
47.5 - 52.5	0.0002	0.0009	0.0649	0.0086	0.0000	0.0746
52.5 - 57.5	0.0077	0.0020	0.0190	0.0002	0.0000	0.0289
57.5 - 62.5	0.4286	0.0000	0.0396	0.0047	0.0000	0.4730
62.5 - 67.5	0.0007	0.0000	0.0000	0.0000	0.0000	0.0007
67.5 - 72.5	0.0043	0.0000	0.0000	0.0000	0.0000	0.0043
Total	0.4425	0.0029	0.3932	0.0181	0.1434	1.0000

Table 2-19c. Summary of 2020 PM Peak (5 p.m.) VMT fractions by functional class and speed for Houston using HGAC transportation model speeds.

Speed Range	Fraction of Total VMT – PM Peak (5 p.m.)					
	Freeway	Expressway	Arterial	Collector	Local	Total
0.0 - 2.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.5 - 7.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.5 - 12.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.5 - 17.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.5 - 22.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
22.5 - 27.5	0.0000	0.0000	0.0004	0.0000	0.1164	0.1168
27.5 - 32.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
32.5 - 37.5	0.0004	0.0000	0.0498	0.0038	0.0000	0.0540
37.5 - 42.5	0.0006	0.0000	0.1531	0.0001	0.0206	0.1744
42.5 - 47.5	0.0000	0.0000	0.0434	0.0000	0.0000	0.0434
47.5 - 52.5	0.0003	0.0009	0.0689	0.0094	0.0000	0.0795
52.5 - 57.5	0.0086	0.0020	0.0189	0.0002	0.0000	0.0297
57.5 - 62.5	0.4487	0.0000	0.0421	0.0057	0.0000	0.4965
62.5 - 67.5	0.0007	0.0000	0.0000	0.0000	0.0000	0.0007
67.5 - 72.5	0.0050	0.0000	0.0000	0.0000	0.0000	0.0050
Total	0.4642	0.0029	0.3767	0.0192	0.1370	1.0000

Table 2-19d. Summary of 2020 Overnight (10 p.m.) VMT fractions by functional class and speed for Houston using HGAC transportation model speeds.

Speed Range	Fraction of Total VMT – Overnight (10 p.m.)					
	Freeway	Expressway	Arterial	Collector	Local	Total
0.0 - 2.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2.5 - 7.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7.5 - 12.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
12.5 - 17.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
17.5 - 22.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
22.5 - 27.5	0.0000	0.0000	0.0004	0.0000	0.1137	0.1141
27.5 - 32.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
32.5 - 37.5	0.0004	0.0001	0.0567	0.0045	0.0000	0.0617
37.5 - 42.5	0.0006	0.0000	0.1732	0.0001	0.0203	0.1942
42.5 - 47.5	0.0000	0.0000	0.0456	0.0000	0.0000	0.0456
47.5 - 52.5	0.0003	0.0009	0.0671	0.0100	0.0000	0.0782
52.5 - 57.5	0.0075	0.0024	0.0206	0.0003	0.0000	0.0309
57.5 - 62.5	0.4236	0.0000	0.0413	0.0052	0.0000	0.4701
62.5 - 67.5	0.0008	0.0000	0.0000	0.0000	0.0000	0.0008
67.5 - 72.5	0.0044	0.0000	0.0000	0.0000	0.0000	0.0044
Total	0.4377	0.0034	0.4048	0.0201	0.1340	1.0000

Table 2-20. Overall VMT distributions for Houston in 2020 (miles/day).

Functional Class	2020 VMT	VMT Fraction
Freeway	54357162	0.43
Arterial & Collector	50073142	0.40
Ramp	4729073	0.04
Local	16366908	0.13

Charlotte Traffic Count Data

The traffic count databases obtained for Charlotte, N.C. were processed using the FORTRAN program documented in Appendix 2A. Two sets of count data were received from CDOT, only one of which had functional class identified. Therefore, the LNKNM variable was used to match the functional class for each count location from one data set with count locations in the other data set. Further, only counts on freeways, major arterials, and minor arterials were available for this project. The VMT estimates for collectors, locals, and ramps are estimated using procedures developed by CDOT (CDOT, 1997).

For collectors, VMT is estimated as a fraction of total VMT on major and minor arterials. The fraction varies by area type and is drawn from the 1990 calibrated transportation model (CDOT, 1997). These fractions are:

CBD	0.5 percent
Commercial	4.9 percent
Residential/Rural	12.9 percent.

Local street VMT was estimated by CDOT using local GIS data and then distributed by area type using the following assumptions for fraction of total local VMT by area type (CDOT, 1997):

CBD	1.6 percent
Commercial	12.9 percent
Residential/Rural	85.6 percent.

Total 1995 local street VMT was estimated by CDOT as 1,118,051 miles/day.

Ramp VMT was estimated as a fraction of freeway VMT, with area-specific fractions developed by CDOT (CDOT, 1997):

CBD	19.4 percent
Commercial	8.7 percent
Residential/Rural	2.4 percent.

The CDOT procedures for estimating collector, local, and ramp VMT were combined with the information derived from the count data to arrive at overall VMT distributions.

Count data were allocated by hour of day (based upon the 15-minute counts supplied by CDOT) and then used in the BPR formula to calculate speed by hour by count site. Table

2-21 summarizes the hourly distributions by functional class derived from the count data. Table 2-22 summarizes total link VMT calculated by hour and functional class.

Table 2-21. Hourly distributions of travel by functional class for Charlotte.

Hour	Total	Freeway	Major	Minor
1	0.0080	0.0076	0.0080	0.0084
2	0.0046	0.0057	0.0046	0.0051
3	0.0035	0.0074	0.0035	0.0037
4	0.0030	0.0066	0.0029	0.0032
5	0.0040	0.0126	0.0038	0.0052
6	0.0112	0.0365	0.0106	0.0147
7	0.0352	0.0691	0.0342	0.0426
8	0.0708	0.0688	0.0701	0.0797
9	0.0765	0.0511	0.0772	0.0713
10	0.0538	0.0460	0.0543	0.0494
11	0.0492	0.0474	0.0496	0.0455
12	0.0537	0.0530	0.0540	0.0500
13	0.0612	0.0568	0.0616	0.0562
14	0.0623	0.0571	0.0627	0.0586
15	0.0618	0.0676	0.0618	0.0611
16	0.0674	0.0717	0.0670	0.0707
17	0.0754	0.0805	0.0750	0.0794
18	0.0866	0.0658	0.0868	0.0865
19	0.0665	0.0456	0.0668	0.0653
20	0.0460	0.0368	0.0463	0.0446
21	0.0359	0.0376	0.0359	0.0353
22	0.0294	0.0306	0.0294	0.0286
23	0.0203	0.0241	0.0202	0.0208
24	0.0137	0.0141	0.0137	0.0139

Table 2-22. Distribution of link VMT by functional class for Charlotte.

Functional Class	VMT (miles/day)	VMT Fractional Distribution
Freeway	1729473	0.17
Major Arterial	5584962	0.55
Minor Arterial	1227056	0.12
Ramps	150464	0.02
Collectors	333789	0.03
Local	1118051	0.11

The hourly count estimates were used to arrive at VMT distributions by speed by functional class. This procedure is very sensitive to the assumptions made for the number of lanes, freeflow speed and capacity for each count site. Different assumptions for these parameters were used for each area and functional class combination. Assumptions for speeds and capacities are summarized in Tables 2-23 and 2-24, respectively. They are based upon a combination of datasets that have been developed for other areas of the country, FHWA assumptions in the Highway Capacity Manual, and engineering judgment. Freeflow speeds were determined by using an assumed posted speed limit with the equations for space mean speed as outlined in section 1 (Dowling et al, 1996). We assumed that freeways had on average three lanes in each direction, major arterials had two lanes in each direction, and minor arterials had one lane in each direction. We also ran the data through our programs

assuming that freeways had two lanes in each direction; this produced nearly identical results to the first run. Table 2-25 summarizes the resulting VMT distributions by functional class for the AM-peak (8 a.m.), PM-peak (5 p.m.), and off-peak (1 p.m.) periods.

Table 2-23. Freeflow speeds for Charlotte (mph).

Area Type	CBD	CBD fringe	Residential	Commercial	Rural
Freeway	62	62	62	62	62
Major	32	48	40	48	40
Minor	32	40	32	40	32

Table 2-24. Capacity (vehicles per hour) for Charlotte.

Area Type	CBD	CBD fringe	Residential	Commercial	Rural
Freeway	3500	3500	3500	3500	3500
Major	1200	1600	1600	1600	1600
Minor	600	550	550	550	550

Table 2-25a. Summary of AM Peak (8 a.m.) VMT distributions by functional class and speed for Charlotte.

Speed	Freeway	Major Arterial	Minor Arterial
0.0 - 2.5		0	0
2.5 - 7.5		0	0.0213
7.5 - 12.5		0	0
12.5 - 17.5		0	0
17.5 - 22.5		0	0.0213
22.5 - 27.5		0	0.0106
27.5 - 32.5		0.1281	0.5319
32.5 - 37.5		0	0
37.5 - 42.5		0.2838	0.4149
42.5 - 47.5		0.0023	0
47.5 - 52.5		0.5858	0
52.5 - 57.5		0	0
57.5 - 62.5		1	0
62.5 - 67.5		0	0
67.5 - 72.5		0	0
72.5 - 77.5		0	0

Table 2-25b. Summary of PM Peak (5 p.m.) VMT distributions by functional class and speed for Charlotte.

Speed	Freeway	Major Arterial	Minor Arterial
0.0 - 2.5		0	0
2.5 - 7.5		0	0
7.5 - 12.5		0	0
12.5 - 17.5		0	0.0106
17.5 - 22.5		0	0.0319
22.5 - 27.5		0	0
27.5 - 32.5		0	0.0092
32.5 - 37.5		0	0.0023
37.5 - 42.5		0	0.3364
42.5 - 47.5		0	0.0046
47.5 - 52.5		0	0.6476
52.5 - 57.5		0	0
57.5 - 62.5		1	0
62.5 - 67.5		0	0
67.5 - 72.5		0	0
72.5 - 77.5		0	0

Table 2-25c. Summary of Off-peak (1 p.m.) VMT distributions by functional class and speed for Charlotte.

Speed	Freeway	Major Arterial	Minor Arterial
0.0 - 2.5		0	0
2.5 - 7.5		0	0
7.5 - 12.5		0	0
12.5 - 17.5		0	0
17.5 - 22.5		0	0.0106
22.5 - 27.5		0	0
27.5 - 32.5		0	0.0709
32.5 - 37.5		0	0.0106
37.5 - 42.5		0	0.341
42.5 - 47.5		0	0.0023
47.5 - 52.5		0	0.5858
52.5 - 57.5		0	0
57.5 - 62.5		1	0
62.5 - 67.5		0	0
67.5 - 72.5		0	0
72.5 - 77.5		0	0

Overall, the distributions appear to underestimate congestion and overestimate speeds for freeways. The results for major arterials appear reasonable. The VMT speed distributions for minor arterials appear to overestimate congestion somewhat. The results suggest that this method should be applied cautiously, and preferably local or link-level data on the number of lanes, freeflow speeds, and capacities should be used. Table 2-26 summarizes the number of count sites in the Charlotte database for each functional class.

There were only four freeway sites, underscoring the possibility that limited data sets can compromise the representativeness of data.

Table 2-26. Total number of count sites by functional class for Charlotte.

	Freeway	Major	Minor
Counts	4	437	94

New York Traffic Count Data

The New York region traffic count databases were processed using procedures similar to those described for Charlotte. As with Charlotte, a FORTRAN program (see Appendix 2A) was used to develop VMT distributions by time of day, functional class, and speed. Assumed freeflow speeds and capacities for each functional class were used for speed calculations. Speed estimates were quite dependent upon these assumptions.

The hourly distributions of travel as calculated from count data are summarized in Tables 2-27 and 2-28 for rural and urban count sites, respectively. Freeflow speed and capacity assumptions are summarized in Table 2-29. These assumptions were used in calculating the hourly congested speeds at each count site, based on hourly volumes and functional class which were provided in the count databases. Table 2-30 provides total calculated VMT by functional class, and the corresponding VMT fractions, on a daily basis. Tables 2-31 and 2-32 summarize speed distributions by functional class for rural and urban count sites during the AM peak (8 a.m.), PM peak (5 p.m.), and off-peak (1 p.m.) travel periods. Table 2-33 presents the number of count sites for which data were available by functional class and area type. Hourly speed distributions by functional class are provided in Appendix 2H.

Table 2-27. Hourly distributions of travel by functional class for rural New York.

Hour	Interstate	Principal Arterial	Minor Arterial	Major Collector	Minor Collector	Local
1	0.0157	0.0089	0.0072	0.0069	0.0067	0.0064
2	0.0117	0.0051	0.0039	0.0036	0.0035	0.0033
3	0.0108	0.0041	0.003	0.0028	0.0027	0.0025
4	0.0105	0.0043	0.0031	0.0027	0.0025	0.0021
5	0.0127	0.0072	0.0055	0.0049	0.0052	0.004
6	0.0215	0.0184	0.0159	0.0148	0.0159	0.0121
7	0.0417	0.0431	0.0386	0.0391	0.0429	0.0338
8	0.0591	0.0622	0.0599	0.0639	0.0647	0.0586
9	0.0569	0.0592	0.0576	0.0583	0.0573	0.0543
10	0.0554	0.0551	0.0554	0.0542	0.0517	0.0517
11	0.0592	0.0564	0.0582	0.0558	0.0527	0.0546
12	0.0616	0.0593	0.061	0.059	0.0566	0.0602
13	0.0578	0.0604	0.0621	0.0608	0.0588	0.0642
14	0.0578	0.0608	0.0622	0.0603	0.0581	0.0625
15	0.0611	0.0653	0.0671	0.0664	0.0652	0.0677
16	0.0662	0.0747	0.0769	0.0779	0.0792	0.0816
17	0.0675	0.079	0.083	0.0838	0.0842	0.085
18	0.0638	0.0751	0.0772	0.0798	0.0809	0.0799
19	0.0508	0.0576	0.0581	0.061	0.0622	0.0632
20	0.0422	0.043	0.0451	0.0464	0.0487	0.0507
21	0.0368	0.0356	0.0371	0.0379	0.0396	0.0416
22	0.0323	0.0298	0.0296	0.0289	0.0296	0.0299
23	0.026	0.0211	0.0196	0.019	0.0191	0.0184
24	0.0206	0.0143	0.0126	0.0121	0.012	0.0117

Table 2-28. Hourly distributions of travel by functional class for urban New York.

Hour	Interstate	Freeways & Expressways	Principal Arterial	Minor Arterial	Collector	Local
1	0.0137	0.0152	0.012	0.0086	0.0087	0.0097
2	0.0093	0.009	0.0071	0.0049	0.005	0.0051
3	0.0082	0.0064	0.005	0.0035	0.0034	0.0034
4	0.0086	0.0062	0.0043	0.003	0.003	0.003
5	0.0116	0.0097	0.0058	0.0046	0.0041	0.0042
6	0.0251	0.0213	0.0141	0.0123	0.0105	0.0118
7	0.0523	0.0487	0.036	0.0335	0.0307	0.0358
8	0.0742	0.0713	0.0589	0.0618	0.061	0.0666
9	0.07	0.07	0.0623	0.0647	0.0653	0.0705
10	0.054	0.0558	0.0542	0.0546	0.0538	0.0539
11	0.049	0.0483	0.0527	0.053	0.053	0.0488
12	0.0495	0.0476	0.0565	0.0584	0.059	0.0524
13	0.0499	0.0481	0.0602	0.0636	0.0651	0.0571
14	0.0505	0.0489	0.0593	0.0618	0.0618	0.0554
15	0.0553	0.0543	0.0627	0.066	0.065	0.0615
16	0.0634	0.0624	0.0687	0.0734	0.0737	0.0722
17	0.069	0.0677	0.0736	0.0782	0.0795	0.0802
18	0.0687	0.0698	0.0739	0.0786	0.0789	0.0821
19	0.0555	0.0597	0.0607	0.061	0.0622	0.0649
20	0.0445	0.049	0.05	0.0484	0.0506	0.0503
21	0.0373	0.0408	0.0415	0.0386	0.0397	0.0394
22	0.0327	0.0361	0.0347	0.0313	0.0309	0.0319
23	0.0273	0.0304	0.0263	0.0216	0.0207	0.0231
24	0.0205	0.0232	0.0194	0.0147	0.0145	0.0166

Table 2-29. Freeflow speeds, capacities, and number of lanes for New York.

Functional Class	Freeflow Speed	Capacity	# Lanes
Rural			
Interstate System	71	3500	2
Other Principal Arterial	62	1600	2
Minor Arterial	52	550	1
Major Collector	40	800	1
Minor Collector	32	800	1
Local	32	550	1
Urban			
Interstate System	62	5250	3
Other Freeways and Expressways	48	2400	3
Other Principal Arterial	40	1600	2
Minor Arterial	32	600	1
Collector	32	800	1
Local	32	550	1

Table 2-30. Distribution of link VMT by functional class for New York.

Functional Class	VMT	VMT Fractional Distribution
Rural		
Interstate	4116370	0.05
Other Principal Arterial	10974453	0.13
Minor Arterial	15369426	0.18
Major Collector	1496244	0.17
Minor Collector	11855440	0.14
Local	29424596	0.34
Ramps	358124	0.004
Urban		
Interstate	25368696	0.12
Other Freeways and Expressways	19505362	0.09
Other Principal Arterial	27778980	0.13
Minor Arterial	37607872	0.18
Collector	14566768	0.07
Local	85913472	0.41
Ramps	2207077	0.01

Table 2-31a. Summary of AM Peak (8 a.m.) VMT distributions by functional class and speed for rural New York.

Speed	Interstate	Principal Arterial	Minor Arterial	Major Collector	Minor Collector	Local
0.0 - 2.5	0	0	0.002	0	0	0
2.5 - 7.5	0	0	0.006	0	0	0
7.5 - 12.5	0	0	0	0	0	0
12.5 - 17.5	0	0	0.002	0	0	0
17.5 - 22.5	0	0	0.002	0	0	0
22.5 - 27.5	0	0	0.002	0	0	0
27.5 - 32.5	0	0	0	0.0021	1	1
32.5 - 37.5	0	0	0.002	0	0	0
37.5 - 42.5	0	0	0.002	0.9979	0	0
42.5 - 47.5	0	0	0.004	0	0	0
47.5 - 52.5	0	0.0032	0.978	0	0	0
52.5 - 57.5	0	0.0032	0	0	0	0
57.5 - 62.5	0	0.9936	0	0	0	0
62.5 - 67.5	0	0	0	0	0	0
67.5 - 72.5	1	0	0	0	0	0
72.5 - 77.5	0	0	0	0	0	0

Table 2-31b. Summary of PM Peak (5 p.m.) VMT distributions by functional class and speed for rural New York.

Speed	Interstate	Principal Arterial	Minor Arterial	Major Collector	Minor Collector	Local
0.0 - 2.5	0	0	0.004	0	0	0.0012
2.5 - 7.5	0	0	0.002	0	0	0
7.5 - 12.5	0	0	0.002	0	0	0
12.5 - 17.5	0	0	0	0	0	0
17.5 - 22.5	0	0	0.002	0.0021	0	0
22.5 - 27.5	0	0	0.004	0	0	0
27.5 - 32.5	0	0	0	0	1	0.9988
32.5 - 37.5	0	0	0.004	0.0021	0	0
37.5 - 42.5	0	0	0.006	0.9959	0	0
42.5 - 47.5	0	0	0.016	0	0	0
47.5 - 52.5	0	0	0.9599	0	0	0
52.5 - 57.5	0	0.0032	0	0	0	0
57.5 - 62.5	0	0.9968	0	0	0	0
62.5 - 67.5	0	0	0	0	0	0
67.5 - 72.5	1	0	0	0	0	0
72.5 - 77.5	0	0	0	0	0	0

Table 2-31c. Summary of off-peak (1 p.m.) VMT distributions by functional class and speed for rural New York.

Speed	Interstate	Principal Arterial	Minor Arterial	Major Collector	Minor Collector	Local
0.0 - 2.5	0	0	0	0	0	0.0012
2.5 - 7.5	0	0	0	0	0	0
7.5 - 12.5	0	0	0	0	0	0
12.5 - 17.5	0	0	0	0	0	0
17.5 - 22.5	0	0	0.002	0	0	0
22.5 - 27.5	0	0	0.002	0	0	0.0012
27.5 - 32.5	0	0	0	0	1	0.9976
32.5 - 37.5	0	0	0.004	0	0	0
37.5 - 42.5	0	0	0.002	1	0	0
42.5 - 47.5	0	0	0.012	0	0	0
47.5 - 52.5	0	0	0.978	0	0	0
52.5 - 57.5	0	0	0	0	0	0
57.5 - 62.5	0	1	0	0	0	0
62.5 - 67.5	0	0	0	0	0	0
67.5 - 72.5	1	0	0	0	0	0
72.5 - 77.5	0	0	0	0	0	0

Table 2-32a. Summary of AM Peak (8 a.m.) VMT distributions by functional class and speed for urban New York.

Speed	Interstate	Freeways & Expressways	Principal Arterial	Minor Arterial	Collector	Local
0.0 - 2.5	0	0.1116	0.003	0.0213	0.0029	0.025
2.5 - 7.5	0	0.0223	0	0.0085	0	0.0058
7.5 - 12.5	0	0.0134	0.001	0.0075	0	0.0038
12.5 - 17.5	0	0.0134	0.002	0.0085	0.0029	0
17.5 - 22.5	0.0192	0.0045	0	0.0085	0	0.0019
22.5 - 27.5	0.0064	0.0045	0.001	0.0043	0	0.0019
27.5 - 32.5	0.0128	0.0045	0.003	0.9414	0.9942	0.9616
32.5 - 37.5	0.0192	0	0.005	0	0	0
37.5 - 42.5	0.0064	0.0268	0.9849	0	0	0
42.5 - 47.5	0.0192	0.0536	0	0	0	0
47.5 - 52.5	0.0321	0.7455	0	0	0	0
52.5 - 57.5	0.0641	0	0	0	0	0
57.5 - 62.5	0.8205	0	0	0	0	0
62.5 - 67.5	0	0	0	0	0	0
67.5 - 72.5	0	0	0	0	0	0
72.5 - 77.5	0	0	0	0	0	0

Table 2-32b. Summary of PM Peak (5 p.m.) VMT distributions by functional class and speed for urban New York.

Speed	Interstate	Freeways & Expressways	Principal Arterial	Minor Arterial	Collector	Local
0.0 - 2.5	0	0.067	0.002	0.0319	0.0029	0.0307
2.5 - 7.5	0	0.0357	0.002	0.0117	0.0058	0.0058
7.5 - 12.5	0	0.0268	0.002	0.0106	0.0029	0.0058
12.5 - 17.5	0.0064	0.0134	0.001	0.0085	0	0.0077
17.5 - 22.5	0	0.0134	0	0.0106	0.0145	0.0058
22.5 - 27.5	0	0	0	0.0224	0.0058	0.0038
27.5 - 32.5	0	0.0089	0.004	0.9042	0.968	0.9405
32.5 - 37.5	0.0128	0.0089	0.0101	0	0	0
37.5 - 42.5	0.0064	0.0134	0.9788	0	0	0
42.5 - 47.5	0.0064	0.058	0	0	0	0
47.5 - 52.5	0.0064	0.7545	0	0	0	0
52.5 - 57.5	0.0321	0	0	0	0	0
57.5 - 62.5	0.9295	0	0	0	0	0
62.5 - 67.5	0	0	0	0	0	0
67.5 - 72.5	0	0	0	0	0	0
72.5 - 77.5	0	0	0	0	0	0

Table 2-32c. Summary of off-peak (1 p.m.) VMT distributions by functional class and speed for urban New York.

Speed	Interstate	Freeways & Expressways	Principal Arterial	Minor Arterial	Collector	Local
0.0 - 2.5	0	0.0446	0	0.0288	0	0.0154
2.5 - 7.5	0	0.0089	0	0.0106	0	0.0019
7.5 - 12.5	0	0.0268	0.002	0.0075	0.0029	0.0038
12.5 - 17.5	0	0.0223	0.001	0.0096	0.0116	0.0077
17.5 - 22.5	0	0.0089	0.001	0.0096	0	0.0058
22.5 - 27.5	0	0.0134	0.001	0.017	0	0
27.5 - 32.5	0	0.0089	0.002	0.9169	0.9855	0.9655
32.5 - 37.5	0	0.0089	0.0081	0	0	0
37.5 - 42.5	0	0.0223	0.9849	0	0	0
42.5 - 47.5	0	0.0446	0	0	0	0
47.5 - 52.5	0	0.7902	0	0	0	0
52.5 - 57.5	0	0	0	0	0	0
57.5 - 62.5	1	0	0	0	0	0
62.5 - 67.5	0	0	0	0	0	0
67.5 - 72.5	0	0	0	0	0	0
72.5 - 77.5	0	0	0	0	0	0

Table 2-33. Total number of count sites by functional class for New York.

	Interstate	Principal Arterial	Minor Arterial	Major Collector	Minor Collector	Local
Rural Counts	25	274	442	405	88	13
Urban Counts	127	152	521	574	44	19

3 DEVELOPMENT OF NATIONAL DEFAULT VMT AND SPEED DISTRIBUTIONS

In the preceding section, vehicle activity estimates derived from both traffic counts and travel demand models were used to develop distributions of vehicle miles traveled (VMT) by functional class, speed, and time of day for five urban areas. Although individual areas used different sets of functional classes, the data were merged to the four functional classes in MOBILE6: freeways; arterials and collectors; local roads; and ramps. The five urban areas were: Chicago, IL; Houston, TX; Charlotte, NC; Ada County ID (Boise region); and New York NY. In this section estimated national default distributions of VMT by speed, functional class, and time of day are developed.

Results for Chicago, Houston, and Boise were obtained using travel demand model outputs and the Caltrans Direct Travel Impact Model (DTIM2). Results for Charlotte and New York were based on traffic count data and a FORTRAN program developed for this purpose (see Appendix 2A). Both methods produce hourly speed estimates based on the level of congestion (ratio of volume to capacity), roadway type, and freeflow speed. In addition to these five areas, VMT and speed statistics by functional class were also obtained for three additional cities from chase car data collected by EPA and CARB, (Sierra Research, 1997). These cities were: Baltimore, MD; Spokane WA; and Los Angeles CA.

To develop national default distributions, the area-specific results are extrapolated, using the assumption that the cities for which distributions are available can be used as surrogates or prototypes for other urban areas. The distributions for these eight areas, along with Highway Performance Monitoring System VMT data (HPMS, 1995), provided a basis for calculating a national default VMT weighting. Although the data from all eight cities are summarized here, it was not possible to use data for all cities in developing national defaults because of insufficient data to determine both functional class and temporal dependence of volume and speed.

Table 3-1 summarizes the VMT distribution by functional class for all eight cities. A similar distribution by time of day is shown in Table 3-2 for the four cities where temporally resolved data were available. Some portion of the variability between cities in the amount of VMT on different roadway types may result from differences in the assignment of roads to functional classes. On an aggregate basis for an individual city, VMT distributions and speeds do not show large variations by time of day. However, speed-congestion relationships and relatively minor changes in the distribution of VMT between freeway, arterial/collector, and local streets can have larger effects on emissions estimates. Some variation is apparent in the average speeds by functional class by time of day for the cities as displayed in Table 3-3. Figure 3-1 shows the speed distributions obtained for Chicago freeways and arterials for the 5-6 a.m. and 7-8 a.m. periods. Here, significant reductions in speed are apparent due to congestion increases during the morning peak period.

Table 3-1. Fractional VMT by functional class for prototype cities.

CITIES	FREEWAYS	ARTERIALS & COLLECTORS	LOCALS	RAMPS ⁴
Spokane ¹	0.21	0.70	0.06	0.02
Baltimore ²	0.34	0.52	0.08	0.05
Los Angeles ³	0.44	0.50	0.01	0.06
Chicago	0.43	0.49	0.05	0.04
Houston	0.43	0.40	0.13	0.04
Charlotte	0.17	0.70	0.11	0.01
Boise	0.26	0.62	0.10	0.02
New York	0.21	0.38	0.41	0.01

¹Sierra Report, 1997: Appendix A-3: Spokane Self-Weighting Chase Car Data

²Sierra Report, 1997: Appendix A-1: Baltimore Self-Weighting Chase Car Data

³Sierra Report, 1997: Appendix A-2: Los Angeles Self-Weighting Chase Car Data

⁴Ramp VMT was calculated as 8.7% of freeway VMT, based on CDOT, 1997.

Table 3-2. Fractional VMT by time of day for prototype cities.

CITIES	FREEWAYS	ARTERIALS & COLLECTORS	LOCALS	RAMPS ¹
Chicago				
AM peak (8 a.m.)	0.42	0.49	0.05	0.04
PM peak (5 p.m.)	0.40	0.51	0.05	0.03
Off Peak (1 p.m.)	0.44	0.47	0.05	0.04
Houston				
AM peak (7 a.m.)	0.44	0.41	0.11	0.04
PM peak (5 p.m.)	0.45	0.38	0.13	0.04
Off Peak (1 p.m.)	0.43	0.40	0.14	0.04
Charlotte				
AM peak (8 a.m.)	0.19	0.79	N/A	0.02
PM peak (5 p.m.)	0.21	0.77	N/A	0.02
Off Peak (1 p.m.)	0.19	0.79	N/A	0.02
New York				
AM peak (8 a.m.)	0.23	0.34	0.41	0.02
PM peak (5 p.m.)	0.19	0.38	0.42	0.02
Off Peak (1 p.m.)	0.18	0.41	0.40	0.02

¹Ramp VMT was calculated as 8.7% of freeway VMT, based on CDOT, 1997.

Table 3-3. Average speeds for prototype cities.

	Spokane ¹	Baltimore ²	Los Angeles ³	Chicago	Houston	Charlotte	Boise	New York
Freeways								
AM Peak				38	53	60		49
Offpeak				40	54	60		51
PM Peak				41	58	60		52
Unspecified	59	56	45				51	
Arterials & Collectors								
AM Peak				28	43	39		33
Offpeak				29	42	40		32
PM Peak				31	44	40		33
Unspecified	25	24	20				34	
Locals								
AM Peak				33	27	N/A		29
Offpeak				33	27	N/A		29
PM Peak				34	27	N/A		29
Unspecified	16	14	12				17	
Ramps								
AM Peak				N/A	N/A	N/A		N/A
Offpeak				N/A	N/A	N/A		N/A
PM Peak				N/A	N/A	N/A		N/A
Unspecified	37	40	29				N/A	

¹Sierra Report, 1997: Appendix A-3: Spokane Self-Weighting Chase Car Data

²Sierra Report, 1997: Appendix A-1: Baltimore Self-Weighting Chase Car Data

³Sierra Report, 1997: Appendix A-2: Los Angeles Self-Weighting Chase Car Data

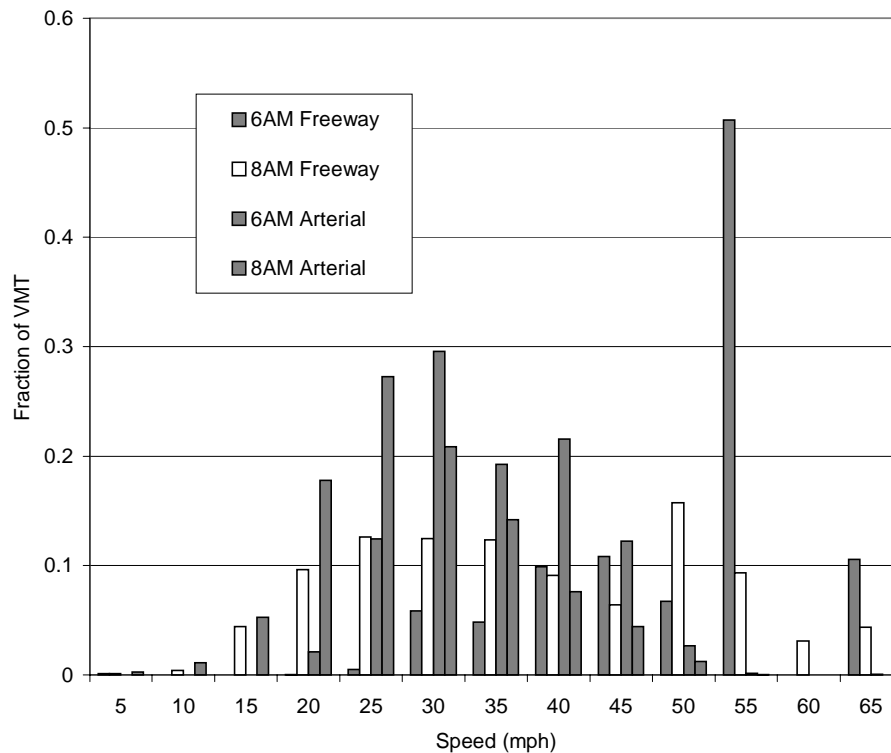


Figure 3-1. Speed distribution variation by functional class and time of day for Chicago.

Speeds by time of day were not available for the Spokane, Baltimore, and Los Angeles chase car data, and. Further, ramp speeds could not be determined directly for the five cities whose data are documented in section 2, since ramp volumes and city-specific data on ramp speeds were not available.

METHODOLOGY

In order to develop estimates of national VMT by functional class, time of day, and speed, the characteristics identified for the four cities for which hourly speeds could be obtained as described in section 2 were assigned to urban areas throughout the country. Urbanized area 1995 daily VMT by functional class were obtained from HPMS (1995), as shown in Appendix 3A. A “best-fit” procedure was used to select which of the four cities’ characteristic temporal and speed profiles would be assigned to each urban area. The basis for this assignment was the relative amount of VMT accumulated on different functional classes. HPMS-defined functional classes were the following:

- Interstate
- Other freeways and expressways
- Other principal arterial
- Minor arterial

- Collector
- Local.

HPMS interstate and freeway/expressway classes were combined, as were arterial and collector classes to provide VMT values corresponding to the MOBILE6 functional classes. As per the method in section 2, ramp VMT was assumed to be 8.7 percent of freeway VMT. Fractional VMT for the four functional classes was then calculated for each urban area.

The temporal variation and speed distributions of VMT by functional class for either Chicago, Houston, Charlotte, or New York were assigned to each HPMS urban area based on which had a functional class VMT distribution that was most similar. Similarity was determined by a “distance” calculation based on the sum of squares of the differences between fractional VMT for each functional class. The sum of HPMS functional class VMT values for all urban areas assigned to a particular prototype city was determined and was used as the prototype city’s weight in calculating national VMT distributions. The following equation was used to calculate “distances” between the prototype cities and HPMS urban areas:

$$\begin{aligned} \text{“Distance” from HPMS urban area to prototype city} = & \\ & ((\text{fracVMT_freeway}_{\text{HPMS}}) - (\text{fracVMT_freeway}_{\text{proto-hpms}}))^2 + \\ & ((\text{fracVMT_art/col}_{\text{HPMS}}) - (\text{fracVMT_art/col}_{\text{proto-hpms}}))^2 + \\ & ((\text{fracVMT_local}_{\text{HPMS}}) - (\text{fracVMT_local}_{\text{proto-hpms}}))^2 + \\ & ((\text{fracVMT_ramp}_{\text{HPMS}}) - (\text{fracVMT_ramp}_{\text{proto-hpms}}))^2 \end{aligned}$$

where:

$\text{fracVMT_freeway}_{\text{hpms}}$	=	fraction of VMT by freeway class for HPMS urban area
$\text{fracVMT_freeway}_{\text{proto-hpms}}$	=	fraction of VMT by freeway class for prototype city from HPMS
$\text{fracVMT_art/col}_{\text{hpms}}$	=	fraction of VMT by arterial/collector class for HPMS urban area
$\text{fracVMT_art/col}_{\text{proto-hpms}}$	=	fraction of VMT by arterial/collector class for prototype city
$\text{fracVMT_local}_{\text{hpms}}$	=	fraction of VMT by local class for HPMS urban area
$\text{fracVMT_local}_{\text{proto-hpms}}$	=	fraction of VMT by local class for prototype city
$\text{fracVMT_ramp}_{\text{hpms}}$	=	fraction of VMT by ramp class for HPMS urban area
$\text{fracVMT_ramp}_{\text{proto-hpms}}$	=	fraction of VMT by ramp class for prototype city.

RESULTS

The assignment of HPMS functional class VMT to the four prototype cities is shown in Table 3-4. The underlying “distance” calculation and assignment of urban areas to prototype cities are shown in Appendix 3B. Chicago and New York were assigned the largest amounts of VMT. Approximately 50 percent of total VMT occurs on arterials and collectors, 34 percent on freeways, and 13 percent on local roads. Ramp VMT is estimated as a percentage of freeway VMT. HPMS data include VMT accumulated by all vehicle types. National summary data from HPMS (HPMS, 1995) show approximately 7.8 percent of urban interstate VMT to be accumulated by buses, combination trucks, and single unit 6-tire or more trucks, and approximately 4.1 percent of other urban VMT to be attributable to these classes.

Table 3-4. Total HPMS VMT assigned to each prototype city (thousands).

	Freeways	Arterials & Collectors	Locals	Ramps	Total
Charlotte	87631	127404	72689	7623	295348
Chicago	291757	749362	165148	25382	1231650
Houston	395167	358956	107253	34379	895756
New York	504841	626451	142653	43921	1317866
Total	1279396	1862173	487743	111307	3740620

For emission calculations using MOBILE6, both the freeway and arterial/collector functional classes are speed dependent, and default values for temporal distribution of travel may be needed to estimate congestion and speeds in urban areas. In addition, distribution of vehicle activity by time of day for all facility types is obviously needed for the preparation of hourly emission estimates, and also if diurnal temperature variations are to be used in estimating emissions. Table 3-5 and Figure 3-2 show the hourly distribution of VMT derived as a weighted average of the four prototype city distributions, using the assigned HPMS VMT values as weights. As no hourly data were available for local roadways in Charlotte, the hourly traffic profile for minor arterials for that area was assumed to be representative of locals. No hourly ramp data were available for any of the cities. It is reasonable to assume that hourly ramp distributions are similar to those for freeways. The distributions in this table can be used in conjunction with the methods described in section 2 to estimate hourly VMT and speed distributions based on daily traffic volumes from either travel demand models or traffic count data. For national urban emissions estimation, the national VMT totals by facility type in Table 3-4 can be multiplied by the corresponding hourly fractions in Table 3-5 to obtain hourly VMT by facility type.

Table 3-5. Hourly distribution of national VMT by functional class.

Hour	Freeways	Arterials & Collectors	Locals
1	0.0135	0.0091	0.0098
2	0.0112	0.0070	0.0076
3	0.0108	0.0064	0.0068
4	0.0108	0.0063	0.0066
5	0.0130	0.0079	0.0081
6	0.0227	0.0162	0.0159
7	0.0652	0.0523	0.0509
8	0.0744	0.0739	0.0733
9	0.0648	0.0655	0.0679
10	0.0566	0.0549	0.0548
11	0.0546	0.0540	0.0526
12	0.0567	0.0595	0.0577
13	0.0576	0.0631	0.0614
14	0.0557	0.0580	0.0573
15	0.0584	0.0608	0.0603
16	0.0594	0.0662	0.0653
17	0.0750	0.0790	0.0804
18	0.0666	0.0764	0.0782
19	0.0432	0.0541	0.0542
20	0.0352	0.0411	0.0407
21	0.0296	0.0315	0.0313
22	0.0264	0.0263	0.0264
23	0.0216	0.0179	0.0187
24	0.0171	0.0126	0.0136

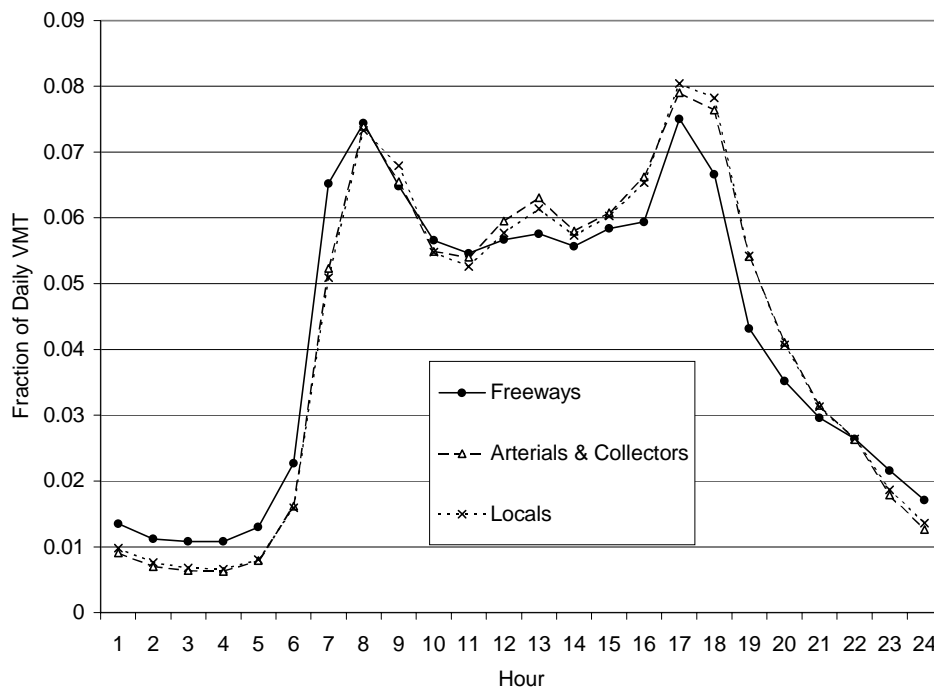


Figure 3-2. Hourly distributions of national VMT.

The hour-by-hour speed distributions for the four prototype cities were applied to the HPMS functional class VMT values assigned to each city in order to develop national average hourly speed distributions. These distributions are shown in Table 3-6⁵. For purposes of evaluation, this table includes the speed distributions calculated for local roadways and ramps. Ramp speed distributions were assumed to be an average of arterial and freeway speed distributions.

Table 3-6. National average hourly speed distributions.

Hour 1	Speed (mph)	Freeways	Art/Col	Locals	Ramps
	0.0 - 2.5	0.0000	0.0001	0.0000	0.0001
	2.5 - 7.5	0.0002	0.0000	0.0000	0.0001
	7.5 - 12.5	0.0010	0.0000	0.0007	0.0005
	12.5 - 17.5	0.0000	0.0000	0.0000	0.0000
	17.5 - 22.5	0.0011	0.0087	0.0042	0.0031
	22.5 - 27.5	0.0012	0.0502	0.2977	0.0149
	27.5 - 32.5	0.0140	0.3303	0.4230	0.1628
	32.5 - 37.5	0.0119	0.1054	0.0269	0.0502
	37.5 - 42.5	0.0240	0.3306	0.1414	0.1948
	42.5 - 47.5	0.0302	0.0699	0.0658	0.0456
	47.5 - 52.5	0.2422	0.0733	0.0396	0.1659
	52.5 - 57.5	0.1208	0.0100	0.0008	0.0682
	57.5 - 62.5	0.5271	0.0211	0.0000	0.2805
	62.5 - 67.5	0.0233	0.0002	0.0000	0.0117
	67.5 - 72.5	0.0031	0.0000	0.0000	0.0015
Hour 2	Speed (mph)	Freeways	Art/Col	Locals	Ramps
	0.0 - 2.5	0.0000	0.0001	0.0000	0.0001
	2.5 - 7.5	0.0013	0.0000	0.0000	0.0006
	7.5 - 12.5	0.0000	0.0000	0.0000	0.0000
	12.5 - 17.5	0.0000	0.0000	0.0000	0.0000
	17.5 - 22.5	0.0000	0.0082	0.0041	0.0023
	22.5 - 27.5	0.0010	0.0496	0.2945	0.0146
	27.5 - 32.5	0.0115	0.3302	0.4227	0.1613
	32.5 - 37.5	0.0097	0.1057	0.0265	0.0492
	37.5 - 42.5	0.0200	0.3293	0.1412	0.1922
	42.5 - 47.5	0.0241	0.0696	0.0679	0.0425
	47.5 - 52.5	0.2450	0.0757	0.0425	0.1686
	52.5 - 57.5	0.1285	0.0101	0.0007	0.0720
	57.5 - 62.5	0.5271	0.0211	0.0000	0.2805
	62.5 - 67.5	0.0287	0.0004	0.0000	0.0145
	67.5 - 72.5	0.0031	0.0000	0.0000	0.0015

Table 3-6. National average hourly speed distributions (continued).

⁵The speed distributions for freeways for hours 21 through 24 have been adjusted from their nominal calculated values to address an observed anomaly arising from the New York expressway speed distributions. As shown in Appendix 2H, as much as 7 percent of urban expressway VMT was estimated to occur in the lowest two speed bins (less than 7.5 mph) during the last few hours before midnight. This is believed to be the result of either miscoded volumes or unrealistic capacities. Adjusted freeway speed distributions these hours were calculated by taking a weighted average of the distributions for hour 20 and hour 1. The weights used for these four hours were, respectively: 0.7 and 0.3; 0.4 and 0.6; 0.2 and 0.8; and 0.1 and 0.9.

Hour 3	Speed (mph)	Freeways	Art/Col	Locals	Ramps
	0.0 - 2.5	0.0000	0.0000	0.0000	0.0000
	2.5 - 7.5	0.0003	0.0000	0.0000	0.0001
	7.5 - 12.5	0.0010	0.0000	0.0000	0.0005
	12.5 - 17.5	0.0000	0.0000	0.0000	0.0000
	17.5 - 22.5	0.0000	0.0080	0.0039	0.0023
	22.5 - 27.5	0.0008	0.0491	0.2921	0.0145
	27.5 - 32.5	0.0103	0.3306	0.4219	0.1607
	32.5 - 37.5	0.0086	0.1060	0.0262	0.0488
	37.5 - 42.5	0.0181	0.3298	0.1411	0.1915
	42.5 - 47.5	0.0206	0.0693	0.0695	0.0407
	47.5 - 52.5	0.2464	0.0755	0.0447	0.1692
	52.5 - 57.5	0.1321	0.0101	0.0006	0.0738
	57.5 - 62.5	0.5271	0.0211	0.0000	0.2805
	62.5 - 67.5	0.0313	0.0004	0.0000	0.0158
	67.5 - 72.5	0.0031	0.0000	0.0000	0.0015
Hour 4	Speed (mph)	Freeways	Art/Col	Locals	Ramps
	0.0 - 2.5	0.0000	0.0000	0.0000	0.0000
	2.5 - 7.5	0.0013	0.0000	0.0000	0.0006
	7.5 - 12.5	0.0000	0.0000	0.0000	0.0000
	12.5 - 17.5	0.0000	0.0000	0.0000	0.0000
	17.5 - 22.5	0.0000	0.0077	0.0039	0.0022
	22.5 - 27.5	0.0008	0.0489	0.2904	0.0143
	27.5 - 32.5	0.0107	0.3291	0.4214	0.1601
	32.5 - 37.5	0.0081	0.1060	0.0260	0.0484
	37.5 - 42.5	0.0170	0.3316	0.1410	0.1920
	42.5 - 47.5	0.0199	0.0692	0.0706	0.0402
	47.5 - 52.5	0.2451	0.0758	0.0462	0.1687
	52.5 - 57.5	0.1341	0.0101	0.0005	0.0748
	57.5 - 62.5	0.5271	0.0211	0.0000	0.2805
	62.5 - 67.5	0.0328	0.0005	0.0000	0.0165
	67.5 - 72.5	0.0031	0.0000	0.0000	0.0015
Hour 5	Speed (mph)	Freeways	Art/Col	Locals	Ramps
	0.0 - 2.5	0.0021	0.0000	0.0000	0.0010
	2.5 - 7.5	0.0003	0.0000	0.0000	0.0001
	7.5 - 12.5	0.0000	0.0000	0.0007	0.0000
	12.5 - 17.5	0.0010	0.0000	0.0000	0.0005
	17.5 - 22.5	0.0000	0.0082	0.0041	0.0024
	22.5 - 27.5	0.0010	0.0497	0.2950	0.0147
	27.5 - 32.5	0.0118	0.3286	0.4222	0.1607
	32.5 - 37.5	0.0100	0.1056	0.0266	0.0493
	37.5 - 42.5	0.0205	0.3311	0.1413	0.1934
	42.5 - 47.5	0.0224	0.0697	0.0675	0.0416
	47.5 - 52.5	0.2452	0.0756	0.0420	0.1686
	52.5 - 57.5	0.1274	0.0101	0.0007	0.0715
	57.5 - 62.5	0.5271	0.0211	0.0000	0.2805
	62.5 - 67.5	0.0280	0.0003	0.0000	0.0141
	67.5 - 72.5	0.0031	0.0000	0.0000	0.0015

Table 3-6. National average hourly speed distributions (continued).

Hour 6	Speed (mph)	Freeways	Art/Col	Locals	Ramps
	0.0 - 2.5	0.0031	0.0000	0.0000	0.0015
	2.5 - 7.5	0.0003	0.0000	0.0000	0.0001
	7.5 - 12.5	0.0000	0.0000	0.0000	0.0000
	12.5 - 17.5	0.0010	0.0000	0.0007	0.0005
	17.5 - 22.5	0.0001	0.0085	0.0041	0.0025
	22.5 - 27.5	0.0011	0.0502	0.2971	0.0149
	27.5 - 32.5	0.0134	0.3271	0.4229	0.1609
	32.5 - 37.5	0.0124	0.1054	0.0269	0.0504
	37.5 - 42.5	0.0240	0.3324	0.1414	0.1958
	42.5 - 47.5	0.0267	0.0699	0.0662	0.0438
	47.5 - 52.5	0.2404	0.0752	0.0401	0.1660
	52.5 - 57.5	0.1226	0.0100	0.0008	0.0691
	57.5 - 62.5	0.5271	0.0211	0.0000	0.2805
	62.5 - 67.5	0.0246	0.0002	0.0000	0.0124
	67.5 - 72.5	0.0031	0.0000	0.0000	0.0015
Hour 7	Speed (mph)	Freeways	Art/Col	Locals	Ramps
	0.0 - 2.5	0.0083	0.0004	0.0020	0.0044
	2.5 - 7.5	0.0272	0.0052	0.0007	0.0178
	7.5 - 12.5	0.0210	0.0061	0.0015	0.0152
	12.5 - 17.5	0.0224	0.0053	0.0046	0.0153
	17.5 - 22.5	0.0217	0.0158	0.0082	0.0184
	22.5 - 27.5	0.0381	0.0854	0.3114	0.0476
	27.5 - 32.5	0.0344	0.3210	0.4001	0.1763
	32.5 - 37.5	0.0536	0.1382	0.0345	0.0888
	37.5 - 42.5	0.0614	0.2804	0.1354	0.1820
	42.5 - 47.5	0.0700	0.0595	0.0654	0.0613
	47.5 - 52.5	0.2507	0.0628	0.0354	0.1618
	52.5 - 57.5	0.1150	0.0103	0.0009	0.0654
	57.5 - 62.5	0.2550	0.0095	0.0000	0.1351
	62.5 - 67.5	0.0200	0.0002	0.0000	0.0101
	67.5 - 72.5	0.0011	0.0000	0.0000	0.0006
Hour 8	Speed (mph)	Freeways	Art/Col	Locals	Ramps
	0.0 - 2.5	0.0260	0.0036	0.0086	0.0151
	2.5 - 7.5	0.0066	0.0029	0.0071	0.0047
	7.5 - 12.5	0.0076	0.0059	0.0042	0.0060
	12.5 - 17.5	0.0156	0.0234	0.0082	0.0152
	17.5 - 22.5	0.0282	0.0735	0.0415	0.0356
	22.5 - 27.5	0.0326	0.1114	0.3101	0.0486
	27.5 - 32.5	0.0344	0.2842	0.3870	0.1582
	32.5 - 37.5	0.0361	0.0950	0.0349	0.0645
	37.5 - 42.5	0.0360	0.2633	0.1205	0.1758
	42.5 - 47.5	0.0435	0.0396	0.0490	0.0441
	47.5 - 52.5	0.2453	0.0698	0.0280	0.1661
	52.5 - 57.5	0.1729	0.0107	0.0009	0.0950
	57.5 - 62.5	0.3023	0.0168	0.0000	0.1646
	62.5 - 67.5	0.0118	0.0000	0.0000	0.0059
	67.5 - 72.5	0.0011	0.0000	0.0000	0.0006

Table 3-6. National average hourly speed distributions (continued).

Hour 9	Speed (mph)	Freeways	Art/Col	Locals	Ramps
	0.0 - 2.5	0.0260	0.0033	0.0092	0.0149
	2.5 - 7.5	0.0033	0.0021	0.0055	0.0028
	7.5 - 12.5	0.0064	0.0032	0.0032	0.0047
	12.5 - 17.5	0.0057	0.0085	0.0034	0.0059
	17.5 - 22.5	0.0126	0.0436	0.0231	0.0191
	22.5 - 27.5	0.0281	0.1130	0.3207	0.0469
	27.5 - 32.5	0.0342	0.2914	0.3856	0.1581
	32.5 - 37.5	0.0349	0.1076	0.0367	0.0651
	37.5 - 42.5	0.0407	0.2835	0.1219	0.1875
	42.5 - 47.5	0.0369	0.0424	0.0584	0.0411
	47.5 - 52.5	0.2181	0.0719	0.0314	0.1537
	52.5 - 57.5	0.1066	0.0091	0.0008	0.0604
	57.5 - 62.5	0.4339	0.0205	0.0000	0.2333
	62.5 - 67.5	0.0098	0.0000	0.0000	0.0049
	67.5 - 72.5	0.0029	0.0000	0.0000	0.0015
Hour 10	Speed (mph)	Freeways	Art/Col	Locals	Ramps
	0.0 - 2.5	0.0145	0.0030	0.0053	0.0090
	2.5 - 7.5	0.0096	0.0015	0.0022	0.0057
	7.5 - 12.5	0.0021	0.0011	0.0040	0.0016
	12.5 - 17.5	0.0022	0.0015	0.0024	0.0017
	17.5 - 22.5	0.0041	0.0183	0.0113	0.0075
	22.5 - 27.5	0.0166	0.1001	0.3211	0.0373
	27.5 - 32.5	0.0232	0.2910	0.3891	0.1529
	32.5 - 37.5	0.0373	0.1246	0.0396	0.0711
	37.5 - 42.5	0.0418	0.3013	0.1218	0.1936
	42.5 - 47.5	0.0449	0.0535	0.0673	0.0482
	47.5 - 52.5	0.2248	0.0743	0.0353	0.1581
	52.5 - 57.5	0.1190	0.0094	0.0008	0.0668
	57.5 - 62.5	0.4422	0.0205	0.0000	0.2375
	62.5 - 67.5	0.0147	0.0000	0.0000	0.0074
	67.5 - 72.5	0.0029	0.0000	0.0000	0.0015
Hour 11	Speed (mph)	Freeways	Art/Col	Locals	Ramps
	0.0 - 2.5	0.0083	0.0030	0.0053	0.0059
	2.5 - 7.5	0.0086	0.0014	0.0009	0.0051
	7.5 - 12.5	0.0052	0.0005	0.0040	0.0029
	12.5 - 17.5	0.0032	0.0017	0.0011	0.0024
	17.5 - 22.5	0.0040	0.0181	0.0095	0.0075
	22.5 - 27.5	0.0163	0.1008	0.3193	0.0376
	27.5 - 32.5	0.0232	0.2898	0.3952	0.1523
	32.5 - 37.5	0.0364	0.1246	0.0396	0.0707
	37.5 - 42.5	0.0375	0.3015	0.1218	0.1914
	42.5 - 47.5	0.0420	0.0537	0.0673	0.0468
	47.5 - 52.5	0.2352	0.0751	0.0353	0.1637
	52.5 - 57.5	0.1170	0.0094	0.0008	0.0657
	57.5 - 62.5	0.4454	0.0205	0.0000	0.2391
	62.5 - 67.5	0.0148	0.0000	0.0000	0.0074
	67.5 - 72.5	0.0029	0.0000	0.0000	0.0015

Table 3-6. National average hourly speed distributions (continued).

Hour 12	Speed (mph)	Freeways	Art/Col	Locals	Ramps
	0.0 - 2.5	0.0073	0.0034	0.0046	0.0056
	2.5 - 7.5	0.0034	0.0017	0.0032	0.0026
	7.5 - 12.5	0.0042	0.0021	0.0032	0.0032
	12.5 - 17.5	0.0098	0.0049	0.0035	0.0067
	17.5 - 22.5	0.0121	0.0344	0.0188	0.0164
	22.5 - 27.5	0.0244	0.1091	0.3174	0.0440
	27.5 - 32.5	0.0289	0.2894	0.3973	0.1539
	32.5 - 37.5	0.0327	0.1125	0.0351	0.0654
	37.5 - 42.5	0.0401	0.2932	0.1205	0.1908
	42.5 - 47.5	0.0392	0.0460	0.0620	0.0433
	47.5 - 52.5	0.2294	0.0735	0.0335	0.1601
	52.5 - 57.5	0.1011	0.0093	0.0008	0.0577
	57.5 - 62.5	0.4538	0.0205	0.0000	0.2433
	62.5 - 67.5	0.0108	0.0000	0.0000	0.0054
	67.5 - 72.5	0.0029	0.0000	0.0000	0.0015
Hour 13	Speed (mph)	Freeways	Art/Col	Locals	Ramps
	0.0 - 2.5	0.0104	0.0040	0.0053	0.0075
	2.5 - 7.5	0.0023	0.0021	0.0041	0.0023
	7.5 - 12.5	0.0064	0.0027	0.0039	0.0045
	12.5 - 17.5	0.0087	0.0078	0.0054	0.0072
	17.5 - 22.5	0.0147	0.0427	0.0236	0.0200
	22.5 - 27.5	0.0281	0.1134	0.3176	0.0472
	27.5 - 32.5	0.0335	0.2857	0.3903	0.1546
	32.5 - 37.5	0.0328	0.1083	0.0369	0.0643
	37.5 - 42.5	0.0345	0.2886	0.1214	0.1867
	42.5 - 47.5	0.0354	0.0427	0.0581	0.0405
	47.5 - 52.5	0.2294	0.0724	0.0325	0.1596
	52.5 - 57.5	0.0964	0.0091	0.0008	0.0554
	57.5 - 62.5	0.4547	0.0205	0.0000	0.2438
	62.5 - 67.5	0.0099	0.0000	0.0000	0.0050
	67.5 - 72.5	0.0029	0.0000	0.0000	0.0015
Hour 14	Speed (mph)	Freeways	Art/Col	Locals	Ramps
	0.0 - 2.5	0.0083	0.0038	0.0073	0.0064
	2.5 - 7.5	0.0075	0.0025	0.0022	0.0052
	7.5 - 12.5	0.0052	0.0020	0.0041	0.0037
	12.5 - 17.5	0.0043	0.0022	0.0032	0.0031
	17.5 - 22.5	0.0054	0.0216	0.0117	0.0094
	22.5 - 27.5	0.0182	0.1034	0.3205	0.0395
	27.5 - 32.5	0.0257	0.2834	0.3900	0.1500
	32.5 - 37.5	0.0381	0.1243	0.0380	0.0715
	37.5 - 42.5	0.0380	0.3020	0.1206	0.1922
	42.5 - 47.5	0.0421	0.0515	0.0669	0.0463
	47.5 - 52.5	0.2258	0.0736	0.0348	0.1583
	52.5 - 57.5	0.1118	0.0094	0.0008	0.0632
	57.5 - 62.5	0.4512	0.0205	0.0000	0.2420
	62.5 - 67.5	0.0154	0.0000	0.0000	0.0077
	67.5 - 72.5	0.0029	0.0000	0.0000	0.0015

Table 3-6. National average hourly speed distributions (continued).

Hour 15	Speed (mph)	Freeways	Art/Col	Locals	Ramps
	0.0 - 2.5	0.0114	0.0041	0.0079	0.0081
	2.5 - 7.5	0.0065	0.0024	0.0038	0.0046
	7.5 - 12.5	0.0052	0.0020	0.0052	0.0038
	12.5 - 17.5	0.0023	0.0034	0.0024	0.0026
	17.5 - 22.5	0.0039	0.0249	0.0121	0.0096
	22.5 - 27.5	0.0206	0.1049	0.3213	0.0411
	27.5 - 32.5	0.0279	0.2844	0.3889	0.1513
	32.5 - 37.5	0.0358	0.1215	0.0369	0.0696
	37.5 - 42.5	0.0383	0.2986	0.1197	0.1910
	42.5 - 47.5	0.0517	0.0489	0.0666	0.0504
	47.5 - 52.5	0.2147	0.0751	0.0344	0.1535
	52.5 - 57.5	0.1151	0.0093	0.0008	0.0647
	57.5 - 62.5	0.4484	0.0205	0.0000	0.2406
	62.5 - 67.5	0.0154	0.0000	0.0000	0.0077
	67.5 - 72.5	0.0029	0.0000	0.0000	0.0015
Hour 16	Speed (mph)	Freeways	Art/Col	Locals	Ramps
	0.0 - 2.5	0.0156	0.0052	0.0079	0.0108
	2.5 - 7.5	0.0075	0.0027	0.0061	0.0053
	7.5 - 12.5	0.0034	0.0032	0.0045	0.0034
	12.5 - 17.5	0.0042	0.0085	0.0064	0.0050
	17.5 - 22.5	0.0081	0.0450	0.0284	0.0177
	22.5 - 27.5	0.0272	0.1151	0.3199	0.0475
	27.5 - 32.5	0.0324	0.2822	0.3766	0.1521
	32.5 - 37.5	0.0363	0.1024	0.0419	0.0621
	37.5 - 42.5	0.0315	0.2835	0.1213	0.1824
	42.5 - 47.5	0.0390	0.0419	0.0558	0.0420
	47.5 - 52.5	0.2124	0.0777	0.0301	0.1546
	52.5 - 57.5	0.0644	0.0096	0.0009	0.0398
	57.5 - 62.5	0.5000	0.0230	0.0000	0.2684
	62.5 - 67.5	0.0148	0.0000	0.0000	0.0074
	67.5 - 72.5	0.0033	0.0000	0.0000	0.0016
Hour 17	Speed (mph)	Freeways	Art/Col	Locals	Ramps
	0.0 - 2.5	0.0156	0.0049	0.0106	0.0107
	2.5 - 7.5	0.0411	0.0165	0.0050	0.0328
	7.5 - 12.5	0.0225	0.0087	0.0057	0.0162
	12.5 - 17.5	0.0199	0.0222	0.0107	0.0190
	17.5 - 22.5	0.0284	0.0652	0.0359	0.0354
	22.5 - 27.5	0.0316	0.1222	0.3135	0.0541
	27.5 - 32.5	0.0500	0.2809	0.3839	0.1637
	32.5 - 37.5	0.0488	0.0959	0.0395	0.0689
	37.5 - 42.5	0.0446	0.2557	0.1166	0.1714
	42.5 - 47.5	0.0555	0.0405	0.0507	0.0507
	47.5 - 52.5	0.2223	0.0651	0.0271	0.1497
	52.5 - 57.5	0.1092	0.0095	0.0009	0.0621
	57.5 - 62.5	0.2957	0.0125	0.0000	0.1579
	62.5 - 67.5	0.0144	0.0000	0.0000	0.0072
	67.5 - 72.5	0.0003	0.0000	0.0000	0.0002

Table 3-6. National average hourly speed distributions (continued).

Hour 18	Speed (mph)	Freeways	Art/Col	Locals	Ramps
	0.0 - 2.5	0.0187	0.0055	0.0112	0.0125
	2.5 - 7.5	0.0113	0.0071	0.0100	0.0103
	7.5 - 12.5	0.0046	0.0082	0.0036	0.0061
	12.5 - 17.5	0.0110	0.0219	0.0107	0.0128
	17.5 - 22.5	0.0183	0.0675	0.0396	0.0294
	22.5 - 27.5	0.0261	0.1169	0.3150	0.0481
	27.5 - 32.5	0.0488	0.2771	0.3786	0.1609
	32.5 - 37.5	0.0383	0.0915	0.0421	0.0612
	37.5 - 42.5	0.0314	0.2637	0.1138	0.1726
	42.5 - 47.5	0.0534	0.0394	0.0480	0.0489
	47.5 - 52.5	0.2235	0.0712	0.0265	0.1558
	52.5 - 57.5	0.1237	0.0106	0.0009	0.0702
	57.5 - 62.5	0.3736	0.0194	0.0000	0.2023
	62.5 - 67.5	0.0160	0.0000	0.0000	0.0080
	67.5 - 72.5	0.0014	0.0000	0.0000	0.0007
Hour 19	Speed (mph)	Freeways	Art/Col	Locals	Ramps
	0.0 - 2.5	0.0176	0.0043	0.0106	0.0113
	2.5 - 7.5	0.0064	0.0024	0.0050	0.0046
	7.5 - 12.5	0.0010	0.0016	0.0007	0.0013
	12.5 - 17.5	0.0024	0.0038	0.0046	0.0027
	17.5 - 22.5	0.0034	0.0255	0.0213	0.0095
	22.5 - 27.5	0.0155	0.1005	0.3165	0.0370
	27.5 - 32.5	0.0191	0.2849	0.3815	0.1460
	32.5 - 37.5	0.0315	0.1205	0.0433	0.0651
	37.5 - 42.5	0.0357	0.2996	0.1229	0.1919
	42.5 - 47.5	0.0515	0.0497	0.0616	0.0506
	47.5 - 52.5	0.2134	0.0761	0.0312	0.1540
	52.5 - 57.5	0.0674	0.0100	0.0009	0.0415
	57.5 - 62.5	0.5178	0.0211	0.0000	0.2758
	62.5 - 67.5	0.0141	0.0001	0.0000	0.0071
	67.5 - 72.5	0.0031	0.0000	0.0000	0.0015
Hour 20	Speed (mph)	Freeways	Art/Col	Locals	Ramps
	0.0 - 2.5	0.0135	0.0038	0.0099	0.0090
	2.5 - 7.5	0.0043	0.0021	0.0007	0.0034
	7.5 - 12.5	0.0031	0.0018	0.0025	0.0026
	12.5 - 17.5	0.0010	0.0014	0.0032	0.0013
	17.5 - 22.5	0.0012	0.0115	0.0080	0.0044
	22.5 - 27.5	0.0094	0.0734	0.3132	0.0263
	27.5 - 32.5	0.0177	0.2923	0.3929	0.1477
	32.5 - 37.5	0.0258	0.1219	0.0320	0.0622
	37.5 - 42.5	0.0264	0.3170	0.1385	0.1923
	42.5 - 47.5	0.0550	0.0641	0.0635	0.0564
	47.5 - 52.5	0.2060	0.0794	0.0349	0.1514
	52.5 - 57.5	0.0980	0.0100	0.0009	0.0567
	57.5 - 62.5	0.5209	0.0211	0.0000	0.2774
	62.5 - 67.5	0.0145	0.0001	0.0000	0.0073
	67.5 - 72.5	0.0031	0.0000	0.0000	0.0015

Table 3-6. National average hourly speed distributions (continued).

Hour 21	Speed (mph)	Freeways	Art/Col	Locals	Ramps
	0.0 - 2.5	0.0095	0.0037	0.0073	0.0068
	2.5 - 7.5	0.0031	0.0017	0.0026	0.0052
	7.5 - 12.5	0.0025	0.0012	0.0007	0.0017
	12.5 - 17.5	0.0007	0.0019	0.0000	0.0011
	17.5 - 22.5	0.0012	0.0103	0.0096	0.0038
	22.5 - 27.5	0.0069	0.0558	0.2999	0.0181
	27.5 - 32.5	0.0166	0.3040	0.4095	0.1517
	32.5 - 37.5	0.0216	0.1067	0.0273	0.0555
	37.5 - 42.5	0.0257	0.3309	0.1416	0.1986
	42.5 - 47.5	0.0476	0.0702	0.0638	0.0516
	47.5 - 52.5	0.2169	0.0824	0.0368	0.1551
	52.5 - 57.5	0.1048	0.0100	0.0009	0.0636
	57.5 - 62.5	0.5228	0.0211	0.0000	0.2784
	62.5 - 67.5	0.0171	0.0001	0.0000	0.0069
	67.5 - 72.5	0.0031	0.0000	0.0000	0.0015
Hour 22	Speed (mph)	Freeways	Art/Col	Locals	Ramps
	0.0 - 2.5	0.0054	0.0036	0.0079	0.0052
	2.5 - 7.5	0.0018	0.0018	0.0007	0.0042
	7.5 - 12.5	0.0018	0.0009	0.0020	0.0026
	12.5 - 17.5	0.0004	0.0012	0.0007	0.0022
	17.5 - 22.5	0.0011	0.0109	0.0063	0.0058
	22.5 - 27.5	0.0045	0.0530	0.3036	0.0174
	27.5 - 32.5	0.0155	0.3056	0.4085	0.1527
	32.5 - 37.5	0.0175	0.1064	0.0273	0.0534
	37.5 - 42.5	0.0250	0.3320	0.1416	0.2007
	42.5 - 47.5	0.0401	0.0707	0.0638	0.0494
	47.5 - 52.5	0.2277	0.0827	0.0368	0.1573
	52.5 - 57.5	0.1117	0.0100	0.0009	0.0616
	57.5 - 62.5	0.5246	0.0211	0.0000	0.2789
	62.5 - 67.5	0.0198	0.0001	0.0000	0.0070
	67.5 - 72.5	0.0031	0.0000	0.0000	0.0015
Hour 23	Speed (mph)	Freeways	Art/Col	Locals	Ramps
	0.0 - 2.5	0.0027	0.0034	0.0053	0.0056
	2.5 - 7.5	0.0010	0.0009	0.0020	0.0053
	7.5 - 12.5	0.0014	0.0007	0.0013	0.0015
	12.5 - 17.5	0.0002	0.0015	0.0013	0.0014
	17.5 - 22.5	0.0011	0.0104	0.0076	0.0039
	22.5 - 27.5	0.0028	0.0531	0.3019	0.0171
	27.5 - 32.5	0.0147	0.3065	0.4102	0.1547
	32.5 - 37.5	0.0147	0.1064	0.0273	0.0548
	37.5 - 42.5	0.0245	0.3325	0.1416	0.1999
	42.5 - 47.5	0.0352	0.0706	0.0638	0.0494
	47.5 - 52.5	0.2350	0.0829	0.0368	0.1573
	52.5 - 57.5	0.1162	0.0100	0.0009	0.0616
	57.5 - 62.5	0.5259	0.0211	0.0000	0.2789
	62.5 - 67.5	0.0215	0.0001	0.0000	0.0070
	67.5 - 72.5	0.0031	0.0000	0.0000	0.0015

Table 3-6. National average hourly speed distributions (concluded).

Hour 24	Speed (mph)	Freeways	Art/Col	Locals	Ramps
	0.0 - 2.5	0.0014	0.0030	0.0046	0.0059
	2.5 - 7.5	0.0006	0.0013	0.0020	0.0029
	7.5 - 12.5	0.0012	0.0016	0.0013	0.0020
	12.5 - 17.5	0.0001	0.0018	0.0007	0.0016
	17.5 - 22.5	0.0011	0.0103	0.0076	0.0034
	22.5 - 27.5	0.0020	0.0528	0.3002	0.0170
	27.5 - 32.5	0.0144	0.3057	0.4127	0.1532
	32.5 - 37.5	0.0133	0.1061	0.0273	0.0538
	37.5 - 42.5	0.0242	0.3327	0.1416	0.2014
	42.5 - 47.5	0.0327	0.0704	0.0641	0.0509
	47.5 - 52.5	0.2386	0.0831	0.0372	0.1566
	52.5 - 57.5	0.1185	0.0100	0.0009	0.0630
	57.5 - 62.5	0.5265	0.0211	0.0000	0.2789
	62.5 - 67.5	0.0224	0.0001	0.0000	0.0080
	67.5 - 72.5	0.0031	0.0000	0.0000	0.0015

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APPENDIX 2A**SOURCE CODE LISTING FOR PROGRAMS
USED TO CALCULATE VMT DISTRIBUTIONS
FOR NEW YORK AND CHARLOTTE**

Note: With the exception of subroutines VMT.F and RDCOUNT.F, essentially the same code was used for each city. Therefore, only the code for New York is presented in this Appendix. The main differences in the version of VMT.F for New York are the number of functional classes and DATA statements for free-flow speed and capacities. The New York version has been modularized further to make modification to the program easier. Electronic versions of the source code used for both cities have been provided to EPA.


```

*****
      PROGRAM vmt
*      vmt.f  by Stuart Malkin
*      9/18/97 for SAI
*
* This program reads in New York hourly count data
* and calculates the hourly distribution of travel by functional class;
* total VMT(Vehicle Miles Traveled) per day as a function of functional
* class (freeway, major arterial, minor arterial); and the hourly,
* am peak, pm peak, and off-peak speed distribution by functional
* class.  In addition, output is separated by area type into two
* categories:  Urban and Rural.
*
* Note that this program was developed for the New York traffic count
* data base.  It was necessary to hard-code several variables in the
* include file 'vmt.inc'.  The following DATA statement variables may need
* to be adjusted to apply this program to other data sets:  heading,
* lnklen, c, and sf.  Modify the subroutine rdcount.f, which reads in
* the count data as needed.
*
c All variables must be declared
      implicit none
*
c Variables are declared in the include file: vmt.inc
      include 'vmt.inc'
*
* Read from standard input and open files
      write(*,*) 'Count (input) file ?'
      read (*,'(a)') nmfile
      write(*,*) nmfile
      open(30,file=nmfile,status='old')
*
      write(*,*) 'Output file ?'
      read (*,'(a)') nmfile
      write(*,*) nmfile
      open(40,file=nmfile,status='unknown')
*
* Call subroutines
c Read count data
      call rdcount
*
c Calculate hourly distribution of traffic volume
      call volcalc
c Write out hourly distribution data
      call wrtvol
*
c Calculate daily VMT
      call vmtcalc
c Write out daily VMT
      call wrtvmt
*
c Estimate VMT distributions by calculating speed distributions
c using the BPR curves (NCHRP 3-55(2), 1996).
      call spdcalc
c Write out speed distributions
      call wrtspd
*
      close (40)
*
      end
*****
      subroutine rdcount

```

```

*      rdcount.f  by Stuart Malkin

      implicit none
      include 'vmt.inc'

*      Initialize a few variables and counters
      do i=1,MXSTA
         FUNCLA(i)=0
      enddo
      count=1
      countvmt=1

*

*      Read in data as a string until EOF
      45  continue
         read(30,'(a)',end=888,err=900) string
         goto 50

c      Indicates problem reading data
      900  STOP 'ERROR IN READING RAW DATA'

c      Parse string to look for New York TF3 record
      50  if (string(17:17).eq.'1') then
         read(string(42:43),'(i2)') FUNCLA(count)
         if (FUNCLA(count) .eq. 0) then
            write (*,*) 'FUNCLA(count)=0, count',FUNCLA(count),count
         endif
         goto 45
      elseif (string(17:17).eq.'2') then
         goto 45
      elseif (string(17:17).eq.'3') then
         if (FUNCLA(count).gt.0 .and. FUNCLA(count).lt.20) then
c      For New York, we don't care about compass direction
c      if (string(24:24).eq.'1') then
c      read(string,1200) (volhr(count,j),j=1,24)
c      count = count + 1
c      elseif (string(24:24).eq.'2') then
c      read(string,1200) (volhr(count,j),j=1,24)
c      write (*,*)'count',count
c      count = count + 1
c      else
c      read(string,1200) (volhr(count,j),j=1,24)
c      count = count + 1
c      goto 45
         else
            write(*,*)'INVALID FUNCLA(count),count',FUNCLA(count),count
         endif
         goto 45
      else
         print*, 'ERROR: Invalid card code or FUNCLA: ',string
         goto 45
      endif

c      The ubiquitous format statement
      1200 format(39x,24i4)

      888  continue

         count=count-1
         write (*,*) 'END of READ--count',count

c      Return to main vmt.f
      return
      end

```



```

*****
      subroutine volcalc
*****
*       by Stuart Malkin for SAI 9/17/97
*       volcalc.f calculates the hourly volume for each facility class.

      implicit none
      include 'vmt.inc'

*       Initialize variables
      do hr=1,24
         tsumvolhr(hr)=0
         tfraction(hr)=0.
         do j=1,MFAC
            sumvolhr(j,hr)=0
            sumvol(j)=0
            class(j)=0
            fraction(j,hr)=0.
         enddo
      enddo

      do i=1,count
         dysumvol(i)=0
      enddo

      tsumvol=0
      sumclass=0
*
*       Calculate sum of hourly volume by facility class(sumvolhr), sum of daily
volu
*       me for each location(dysumvol), sum of volume for each facility
*       class(sumvol), sum of volume for each hour(tsumvolhr), sum of total daily
*       volume(tsumvol)
      do i=1,count
         do hr=1,24
c          Check again to make sure functional class is recognized
            if (FUNCLA(i).lt.1 .or. FUNCLA(i).gt.19) then
               write (*,*) 'FUNCLA -bad '
               write (*,*) 'FUNCLA(i),i',FUNCLA(i),i
               STOP 'ERROR on FUNCLA'
            endif
            sumvolhr(FUNCLA(i),hr)=sumvolhr(FUNCLA(i),hr)+volhr(i,hr)
            dysumvol(i)=dysumvol(i)+volhr(i,hr)
            sumvol(FUNCLA(i))=sumvol(FUNCLA(i))+volhr(i,hr)
c           write(*,*) 'sumvolhr(FUNCLA(i),hr)',sumvolhr(FUNCLA(i),hr)
c           write(*,*) 'sumvol(FUNCLA(i))',sumvol(FUNCLA(i))
c           write(*,*) 'FUNCLA(i),i,hr',FUNCLA(i),i,hr
            tsumvolhr(hr)=tsumvolhr(hr)+volhr(i,hr)
            tsumvol=tsumvol+volhr(i,hr)
         enddo
         class(FUNCLA(i))=class(FUNCLA(i))+1
      enddo

      do j=1,MFAC
         sumclass=sumclass+class(j)
      enddo
*
*       Calculate fractions by dividing sum of hourly and daily volume by
functional
*       type by total hourly and daily volume
      do j=1,24

```

```
      do i=1,MFAC
        fraction(i,j)=float(sumvolhr(i,j))/float(sumvol(i))
      enddo
      tfraction(j)=float(tsumvolhr(j))/float(tsumvol)
    enddo
*

    return
  end
```

```
subroutine wrtvol
c wrtvol.f writes the hourly and total volume for each facility class.

implicit none
include 'vmt.inc'

write(40,'(a50)')'Distribution of volume by hour by facility type'
write(40,3000)'Hour ',(heading(i),i=1,12)
do j=1,24
    write(40,3010) j,(fraction(heading(i),j),i=1,12)
    write(*,*) j,(fraction(heading(i),j),i=1,12)
enddo

write(40,*)''
write(40,'(a12)') 'Sample size'
write(40,'(a5,1x,12(3x,i2,3x))') 'Total',(heading(i),i=1,12)
write(40,'(2x,i4,12(2x,i4,2x))'),count,(class(heading(i)),i=1,12)

write(40,*)''
write(40,'(a37)')'Distribution of total volume by hour '
write(40,3020)'Hour ','Total volume '
do j=1,24
    write(40,3030) j,tfraction(j)
    write(*,*) j,tfraction(j)
enddo

3000 format(a5,1x,12(3x,i2,3x))
3010 format(2x,i2,2x,12(1x,f6.4,1x))
3020 format(a5,1x,a13)
3030 format(2x,i2,2x,6x,f6.4,1x)

return
end
```

```
*****
      subroutine vmtcalc
*****
c  vmtcalc.f by Stuart Malkin for SAI 9/17/97

      implicit none
      include 'vmt.inc'

*   initialize vmt variables
      do i=1,MFAC
          vmt2(i)=0.
          do j=1,24
              vmthr(i,j)=0.
          enddo
      enddo
*

*   calculate vmt and average volume for each day and hour by facility class
      do i=1,MFAC
          vmt2(i)=float(sumvol(i))
          *LNKLEN(i)/float(class(i))
          avevol(i)=float(sumvol(i))/
          (24.*float(class(i)))
          do j=1,24
              vmthr(i,j)=float(sumvolhr(i,j))*
          LNKLEN(i)/float(class(i))
              avevolhr(i,j)=float(sumvolhr(i,j))/
          float(class(i))
          enddo
      enddo
*

      return
      end
```



```

*****
      subroutine wrtvmt
*****
c  wrtvmt.f by Stuart Malkin for SAI 9/17/98

      implicit none
      include 'vmt.inc'

*  Write out vmt hour, total vmt, average volumes for each hour, and total
*  volume as a function of facility class.
      write(40,*) ''
      write(40,4000)'Hour ',(heading(i),i=1,12)
      write(*,4000)'Hour ',(heading(i),i=1,12)
      do j=1,24
         write(40,4010) j,(vmthr(heading(i),j),i=1,12)
         write(*,*) j,(vmthr(heading(i),j),i=1,12)
      enddo
      write(40,4020) 'Tvmt',(vmt2(heading(i)),i=1,12)
      write(40,*) ''

      write(40,*) ''
      write(40,*) 'These are average volumes for each hour'
      write(40,4005)'Hour ',(heading(i),i=1,12)
      do j=1,24
         write(40,4030) j,(avevolhr(heading(i),j),i=1,12)
      enddo
      write(40,*) ''
      write(40,*) 'These are the total average for each facility type'
      write(40,4040) 'AVEVOL',(avevol(heading(i)),i=1,12)
*

4000 format(a5,6x,12(i2,14x))
4010 format(2x,i2,2x,12(2x,f12.,2x))
4020 format(1x,a4,1x,12(2x,f12.,2x))
4005 format(a5,6x,12(i2,8x))
4030 format(2x,i2,2x,12(2x,f6.,2x))
4040 format(a6,12(2x,f6.,2x))
      return
      end

```

```

*****
      subroutine spdcalc
*****8
c   spdcalc.f by Stuart Malkin for SAI 9/19/97

      implicit none
      include 'vmt.inc'
      real a

* initialize speed estimate and count variables
      do i=1,MFAC
        Tstcount(i)=0
        do h=1,count
          Stotal(i,h)=0.
          do j=1,24
            Shr(i,j,h)=0.
          enddo
        enddo
        do k=0,BINS
          do j=1,24
            Shrcount(i,j,k)=0
            Thrcount(i,j,k)=0
            FHRVMT(i,j,k)=0.
          enddo
          Stcount(i,k)=0
          FVMT(i,k)=0.
        enddo
      enddo

      do i=1,MFAC
        do k=0,BINS
          FHRAM(i,k)=0.
          FHRPM(i,k)=0.
          FHROF(i,k)=0.
          FHRAMRURAL(k)=0.
          FHRPMRURAL(k)=0.
          FHROFRURAL(k)=0.
          FHRAMURBAN(k)=0.
          FHRPMURBAN(k)=0.
          FHROFURBAN(k)=0.
        end do
      end do
*

* Calculate speed (VMT estimates) by using BRP curves
      do k=1,count
c   old BRP curve
c       Stotal(FUNCLA(k),k)=sf(FUNCLA(k))/
c       1      (1.+a*(float(dysumvol(k))/(24.*c(FUNCLA(k))))**b)
c   new BRP curve
c   new values for 'a'. Taken out of include file
c       if (FUNCLA(k) .eq. 1 .or. FUNCLA(k) .eq. 11 .or. FUNCLA(k)
c       1      .eq. 12) then
c           a=0.20
c       else
c           a=0.05
c       end if
c
c       Stotal(FUNCLA(k),k)=sf(FUNCLA(k))/
c       1      (1.+a*(float(dysumvol(k))/(24.*c(FUNCLA(k))))**b)
cstm
c       write (*,*) 'Stotal(FUNCLA(k),k)',Stotal(FUNCLA(k),k)
c       write (*,*) 'dysumvol(k)',dysumvol(k)
c       write (*,*) 'sf(FUNCLA(k))',sf(FUNCLA(k))
c       write (*,*) 'c(FUNCLA(k))',c(FUNCLA(k))

```

```

c      write(*,*) 'v/c',a*(float(dysumvol(k))/
c      1      (24.*c(FUNCLA(k))))**b
c      write (*,*)''
cstm
      enddo

      do k=1,count
        do j=1,24
c old BRP curve
c      Shr(FUNCLA(k),k,j)=sf(FUNCLA(k))/
c      1      (1+a*(float(volhr(k,j))/(c(FUNCLA(k))))**b)
c new BRP curve
      if (FUNCLA(k) .eq. 1 .or. FUNCLA(k) .eq. 11 .or. FUNCLA(k)
1      .eq. 12) then
        a=0.20
      else
        a=0.05
      end if
      Shr(FUNCLA(k),k,j)=sf(FUNCLA(k))/
1      (1+a*(float(volhr(k,j))/(c(FUNCLA(k))))**b)
      enddo
    enddo
*
* count speed BINS for Total
  do k=1,count
    if (Stotal(FUNCLA(k),k) .lt. 2.5) then
      Stcount(FUNCLA(k),0)=Stcount(FUNCLA(k),0)+1
    else if (Stotal(FUNCLA(k),k) .lt. 7.5) then
      Stcount(FUNCLA(k),1)=Stcount(FUNCLA(k),1)+1
    else if (Stotal(FUNCLA(k),k) .lt. 12.5) then
      Stcount(FUNCLA(k),2)=Stcount(FUNCLA(k),2)+1
    else if (Stotal(FUNCLA(k),k) .lt. 17.5) then
      Stcount(FUNCLA(k),3)=Stcount(FUNCLA(k),3)+1
    else if (Stotal(FUNCLA(k),k) .lt. 22.5) then
      Stcount(FUNCLA(k),4)=Stcount(FUNCLA(k),4)+1
    else if (Stotal(FUNCLA(k),k) .lt. 27.5) then
      Stcount(FUNCLA(k),5)=Stcount(FUNCLA(k),5)+1
    else if (Stotal(FUNCLA(k),k) .lt. 32.5) then
      Stcount(FUNCLA(k),6)=Stcount(FUNCLA(k),6)+1
    else if (Stotal(FUNCLA(k),k) .lt. 37.5) then
      Stcount(FUNCLA(k),7)=Stcount(FUNCLA(k),7)+1
    else if (Stotal(FUNCLA(k),k) .lt. 42.5) then
      Stcount(FUNCLA(k),8)=Stcount(FUNCLA(k),8)+1
    else if (Stotal(FUNCLA(k),k) .lt. 47.5) then
      Stcount(FUNCLA(k),9)=Stcount(FUNCLA(k),9)+1
    else if (Stotal(FUNCLA(k),k) .lt. 52.5) then
      Stcount(FUNCLA(k),10)=Stcount(FUNCLA(k),10)+1
    else if (Stotal(FUNCLA(k),k) .lt. 57.5) then
      Stcount(FUNCLA(k),11)=Stcount(FUNCLA(k),11)+1
    else if (Stotal(FUNCLA(k),k) .lt. 62.5) then
      Stcount(FUNCLA(k),12)=Stcount(FUNCLA(k),12)+1
    else if (Stotal(FUNCLA(k),k) .lt. 67.5) then
      Stcount(FUNCLA(k),13)=Stcount(FUNCLA(k),13)+1
    else if (Stotal(FUNCLA(k),k) .lt. 72.5) then
      Stcount(FUNCLA(k),14)=Stcount(FUNCLA(k),14)+1
    else if (Stotal(FUNCLA(k),k) .ge. 72.5) then
      Stcount(FUNCLA(k),15)=Stcount(FUNCLA(k),15)+1
    endif
  enddo

c Count speed BINS for hourly
  do k=1,count
    do j=1,24

```

```

    if (Shr(FUNCLA(k),k,j).lt.2.5) then
      Shrcount(FUNCLA(k),j,0)=Shrcount(FUNCLA(k),j,0)+1
    else if (Shr(FUNCLA(k),k,j).lt.7.5) then
      Shrcount(FUNCLA(k),j,1)=Shrcount(FUNCLA(k),j,1)+1
    else if (Shr(FUNCLA(k),k,j).lt.12.5) then
      Shrcount(FUNCLA(k),j,2)=Shrcount(FUNCLA(k),j,2)+1
    else if (Shr(FUNCLA(k),k,j).lt.17.5) then
      Shrcount(FUNCLA(k),j,3)=Shrcount(FUNCLA(k),j,3)+1
    else if (Shr(FUNCLA(k),k,j).lt.22.5) then
      Shrcount(FUNCLA(k),j,4)=Shrcount(FUNCLA(k),j,4)+1
    else if (Shr(FUNCLA(k),k,j).lt.27.5) then
      Shrcount(FUNCLA(k),j,5)=Shrcount(FUNCLA(k),j,5)+1
    else if (Shr(FUNCLA(k),k,j).lt.32.5) then
      Shrcount(FUNCLA(k),j,6)=Shrcount(FUNCLA(k),j,6)+1
    else if (Shr(FUNCLA(k),k,j).lt.37.5) then
      Shrcount(FUNCLA(k),j,7)=Shrcount(FUNCLA(k),j,7)+1
    else if (Shr(FUNCLA(k),k,j).lt.42.5) then
      Shrcount(FUNCLA(k),j,8)=Shrcount(FUNCLA(k),j,8)+1
    else if (Shr(FUNCLA(k),k,j).lt.47.5) then
      Shrcount(FUNCLA(k),j,9)=Shrcount(FUNCLA(k),j,9)+1
    else if (Shr(FUNCLA(k),k,j).lt.52.5) then
      Shrcount(FUNCLA(k),j,10)=Shrcount(FUNCLA(k),j,10)+1
    else if (Shr(FUNCLA(k),k,j).lt.57.5) then
      Shrcount(FUNCLA(k),j,11)=Shrcount(FUNCLA(k),j,11)+1
    else if (Shr(FUNCLA(k),k,j).lt.62.5) then
      Shrcount(FUNCLA(k),j,12)=Shrcount(FUNCLA(k),j,12)+1
    else if (Shr(FUNCLA(k),k,j).lt.67.5) then
      Shrcount(FUNCLA(k),j,13)=Shrcount(FUNCLA(k),j,13)+1
    else if (Shr(FUNCLA(k),k,j).lt.72.5) then
      Shrcount(FUNCLA(k),j,14)=Shrcount(FUNCLA(k),j,14)+1
    else if (Shr(FUNCLA(k),k,j).ge.72.5) then
      Shrcount(FUNCLA(k),j,15)=Shrcount(FUNCLA(k),j,15)+1
    endif
  enddo
enddo
*
* Calculate total hourly count and daily count for each class
do i=1,MFAC
  do k=0,BINS
    do j=1,24
      Thrcount(i,j)=Thrcount(i,j)+Shrcount(i,j,k)
c      if (k.eq.0) then
c        write(*,*) 'i,k,j',i,k,j
c        write(*,*) 'Thrcount(i,j)',Thrcount(i,j)
c        write(*,*) 'Shrcount(i,j,k)',Shrcount(i,j,k)
c        write(*,*) ''
c      endif
    enddo
    Tstcount(i)=Tstcount(i)+Stcount(i,k)
  enddo
enddo
* Calculate fractional speed estimates for AM/PM/Off peak and Urban and Rural
do i=1,MFAC
  do k=0,BINS
    do j=1,24
      FHRVMT(i,j,k)=float(Shrcount(i,j,k))/float(Thrcount(i,j))
    enddo
    FVMT(i,k)=float(Stcount(i,k))/float(Tstcount(i))
  enddo
enddo

do i=1,MFAC
  do k=0,BINS

```

```

c AM peak is defined as hours 7-9
  FHRAM(i,k)=(FHRVMT(i,7,k)+FHRVMT(i,8,k)+FHRVMT(i,9,k))/3.
c   write (*,*) 'FHRAM(i,k),i,k',FHRAM(i,k),i,k
c   write (*,*) FHRVMT(i,7,k),FHRVMT(i,8,k),FHRVMT(i,9,k)
c   write (*,*) 'FHRAM(i,k)',FHRAM(i,k)
c   write (*,*) ''
c PM peak is defined as hours 16-18
  FHRPM(i,k)=(FHRVMT(i,16,k)+FHRVMT(i,17,k)+FHRVMT(i,18,k))
  1   /3.
  do j=1,24
c OFF peak is defined as all other hours
  if (j.ne.7 .and. j.ne.8 .and. j.ne.9) then
    if (j.ne.16 .and. j.ne.17 .and. j.ne.18) then
      FHROF(i,k)=FHROF(i,k)+FHRVMT(i,j,k)
c     write (*,*) 'FHROF--j',j
    endif
  endif
  enddo
  FHROF(i,k)=FHROF(i,k)/18.
  enddo
enddo

c Calcualte rural and urban fractional speeds
  do k=0,BINS
  do i=1,9
c Facility class 3-5 have not meaning
  if (i.lt.3 .or. i.gt.5) then
    FHRAMRURAL(k)=FHRAMRURAL(k)+FHRAM(i,k)
c   write (*,*) 'i,k',i,k
c   write (*,*) 'FHRAMRURAL(k),FHRAM(i,k)',FHRAMRURAL(k),
c   1   FHRAM(i,k)
    FHRPMRURAL(k)=FHRPMRURAL(k)+FHRPM(i,k)
    FHROFRURAL(k)=FHROFRURAL(k)+FHROF(i,k)
  endif
  enddo
enddo

  do k=0,BINS
  do i=11,19
c Facility class 13,15,18 have not meaning
  if (i.ne.13 .and. i.ne.15 .and. i.ne.18) then
    FHRAMURBAN(k)=FHRAMURBAN(k)+FHRAM(i,k)
    FHRPMURBAN(k)=FHRPMURBAN(k)+FHRPM(i,k)
    FHROFURBAN(k)=FHROFURBAN(k)+FHROF(i,k)
  endif
  enddo
enddo

c Six classes for Urban and Rural
  do k=0,BINS
    FHRAMRURAL(k)=FHRAMRURAL(k)/6.
    FHRPMRURAL(k)=FHRPMRURAL(k)/6.
    FHROFRURAL(k)=FHROFRURAL(k)/6.
    FHRAMURBAN(k)=FHRAMURBAN(k)/6.
    FHRPMURBAN(k)=FHRPMURBAN(k)/6.
    FHROFURBAN(k)=FHROFURBAN(k)/6.
  enddo
*
  return
end

```

```

*****
      subroutine wrtspd
*****
c    wrtspd.f by Stuart Malkin for SAI 9/18/97
      implicit none
      include 'vmt.inc'

      character*80 dumc

* Write out fractional speeds(estimate of VMT) by facility class for
* AM peak, PM peak Off peak by facility class and for Area
* (Urban and Rural). In addition write out fractional speed by hour
* and total fractional speed.

      dumc='-----'

      write(45,*)''
      write(45,'(a36,10x,a5,1x,a7)')
1     '**** SAI VMT Output, March 98 ****', 'Hour', 'AM PEAK'
      write(45,*)''
      write(45,'(a13,2x,a27,4x,a5)') 'New York, NY:',
1     'Fraction of VMT for AM PEAK', 'RURAL'
      write(45,*)''
      write(45,5050) 'Speed Bin', 'TOTAL RURAL'
c    write(45,5000) 'Speed Bin', 'INTERSTATE', 'MAJOR ART',
c    1     'MINOR ART', 'MAJOR COL', 'MINOR COL', 'LOCAL'
      write(45,'(a59)') dumc
      do k=0,bins
          write(45,6050)k*5, FHRAMRURAL(k)
      enddo
      write(45,'(a59)') dumc
      write(45,*)''

      write(45,*)''
      write(45,'(a36,10x,a5,1x,a7)')
1     '**** SAI VMT Output, March 98 ****', 'Hour', 'PM PEAK'
      write(45,*)''
      write(45,'(a13,2x,a27,4x,a5)') 'New York, NY:',
1     'Fraction of VMT for PM PEAK', 'RURAL'
      write(45,*)''
      write(45,5050) 'Speed Bin', 'TOTAL RURAL'
c    write(45,5000) 'Speed Bin', 'INTERSTATE', 'MAJOR ART',
c    1     'MINOR ART', 'MAJOR COL', 'MINOR COL', 'LOCAL'
      write(45,'(a59)') dumc
      do k=0,bins
          write(45,6050)k*5, FHRPMRURAL(k)
      enddo
      write(45,'(a59)') dumc
      write(45,*)''

      write(45,*)''
      write(45,'(a36,10x,a5,1x,a8)')
1     '**** SAI VMT Output, March 98 ****', 'Hour', 'OFF PEAK'
      write(45,*)''
      write(45,'(a13,2x,a28,4x,a5)') 'New York, NY:',
1     'Fraction of VMT for OFF PEAK', 'RURAL'
      write(45,*)''
      write(45,5050) 'Speed Bin', 'TOTAL RURAL'
c    write(45,5000) 'Speed Bin', 'INTERSTATE', 'MAJOR ART',
c    1     'MINOR ART', 'MAJOR COL', 'MINOR COL', 'LOCAL'
      write(45,'(a59)') dumc
      do k=0,bins
          write(45,6050)k*5, FHROFRURAL(k)
      enddo
      write(45,'(a59)') dumc

```

```

write(45,*)''

write(45,*)''
write(45,'(a36,10x,a5,1x,a7)')
1  '**** SAI VMT Output, March 98 ****', 'Hour', 'AM PEAK'
write(45,*)''
write(45,'(a13,2x,a27,4x,a5)') 'New York, NY:',
1  'Fraction of VMT for AM PEAK', 'URBAN'
write(45,*)''
write(45,5050) 'Speed Bin', 'TOTAL URBAN'
write(45,'(a59)') dumc
do k=0,bins
  write(45,6050)k*5,FHRAMURBAN(k)
enddo
write(45,'(a59)') dumc
write(45,*)''

write(45,*)''
write(45,'(a36,10x,a5,1x,a7)')
1  '**** SAI VMT Output, March 98 ****', 'Hour', 'PM PEAK'
write(45,*)''
write(45,'(a13,2x,a27,4x,a5)') 'New York, NY:',
1  'Fraction of VMT for PM PEAK', 'URBAN'
write(45,*)''
write(45,5050) 'Speed Bin', 'TOTAL URBAN'
write(45,'(a59)') dumc
do k=0,bins
  write(45,6050)k*5,FHRPMURBAN(k)
enddo
write(45,'(a59)') dumc
write(45,*)''

write(45,*)''
write(45,'(a36,10x,a5,1x,a8)')
1  '**** SAI VMT Output, March 98 ****', 'Hour', 'OFF PEAK'
write(45,*)''
write(45,'(a13,2x,a28,4x,a5)') 'New York, NY:',
1  'Fraction of VMT for OFF PEAK', 'URBAN'
write(45,*)''
write(45,5050) 'Speed Bin', 'TOTAL URBAN'
write(45,'(a59)') dumc
do k=0,bins
  write(45,6050)k*5,FHROFURBAN(k)
enddo
write(45,'(a59)') dumc
write(45,*)''

write(50,*)''
write(50,'(a36,10x,a5,1x,a7)')
1  '**** SAI VMT Output, March 98 ****', 'Hour', 'AM PEAK'
write(50,*)''
write(50,'(a13,2x,a27,4x,a5)') 'New York, NY:',
1  'Fraction of VMT for AM PEAK', 'RURAL'
write(50,*)''
write(50,5000) 'Speed Bin', 'INTERSTATE', 'MAJOR ART',
1  'MINOR ART', 'MAJOR COL', 'MINOR COL', 'LOCAL'
write(50,'(a59)') dumc
do k=0,bins
  write(50,6000)k*5,(FHRAM(heading(i),k),i=1,6)
enddo
write(50,'(a59)') dumc
write(50,*)''

write(50,*)''

```

```

write(50,'(a36,10x,a5,1x,a7)')
1  '**** SAI VMT Output, March 98 ****', 'Hour', 'AM PEAK'
write(50,*)''
write(50,'(a13,2x,a27,4x,a5)')'New York, NY:',
1  'Fraction of VMT for AM PEAK', 'URBAN'
write(50,*)''
write(50,5000)'Speed Bin', 'INTERSTATE', 'EXPRESSWAY',
1  'MAJOR ART', 'MINOR ART', 'COLLECTOR', 'LOCAL'
write(50,'(a59)') dumc
do k=0,bins
    write(50,6000)k*5,(FHRAM(heading(i),k),i=7,12)
enddo
write(50,'(a59)') dumc
write(50,*)''
write(50,*)''
write(50,'(a36,10x,a5,1x,a7)')
1  '**** SAI VMT Output, March 98 ****', 'Hour', 'PM PEAK'
write(50,*)''
write(50,'(a13,2x,a27,4x,a5)')'New York, NY:',
1  'Fraction of VMT for PM PEAK', 'RURAL'
write(50,*)''
write(50,5000)'Speed Bin', 'INTERSTATE', 'MAJOR ART',
1  'MINOR ART', 'MAJOR COL', 'MINOR COL', 'LOCAL'
write(50,'(a59)') dumc
do k=0,bins
    write(50,6000)k*5,(FHRPM(heading(i),k),i=1,6)
enddo
write(50,'(a59)') dumc
write(50,*)''
write(50,*)''
write(50,'(a36,10x,a5,1x,a7)')
1  '**** SAI VMT Output, March 98 ****', 'Hour', 'PM PEAK'
write(50,*)''
write(50,'(a13,2x,a27,4x,a5)')'New York, NY:',
1  'Fraction of VMT for PM PEAK', 'URBAN'
write(50,*)''
write(50,5000)'Speed Bin', 'INTERSTATE', 'EXPRESSWAY'
1  ', 'MAJOR ART', 'MINOR ART', 'COLLECTOR', 'LOCAL'
write(50,'(a59)') dumc
do k=0,bins
    write(50,6000)k*5,(FHRPM(heading(i),k),i=7,12)
enddo
write(50,'(a59)') dumc
write(50,*)''

write(50,*)''
write(50,'(a36,10x,a5,1x,a8)')
1  '**** SAI VMT Output, March 98 ****', 'Hour', 'OFF PEAK'
write(50,*)''
write(50,'(a13,2x,a28,4x,a5)')'New York, NY:',
1  'Fraction of VMT for OFF PEAK', 'RURAL'
write(50,*)''
write(50,5000)'Speed Bin', 'INTERSTATE', 'MAJOR ART',
1  'MINOR ART', 'MAJOR COL', 'MINOR COL', 'LOCAL'
write(50,'(a59)') dumc
do k=0,bins
    write(50,6000)k*5,(FHROF(heading(i),k),i=1,6)
enddo
write(50,'(a59)') dumc
write(50,*)''

write(50,*)''
write(50,'(a36,10x,a5,1x,a8)')
1  '**** SAI VMT Output, March 98 ****', 'Hour', 'OFF PEAK'
write(50,*)''

```



```

write(50,'(a13,2x,a28,4x,a5)')'New York, NY:',
1  'Fraction of VMT for OFF PEAK','URBAN'
write(50,*)''
write(50,5000)'Speed Bin','INTERSTATE','EXPRESSWAY','MAJOR ART',
1  'MINOR ART','COLLECTOR','LOCAL'
write(50,'(a59)') dumc
do k=0,bins
    write(50,6000)k*5,(FHROF(heading(i),k),i=7,12)
enddo
write(50,'(a59)') dumc
write(50,*)''

do j=1,24
    write(60,*)''
c add 16 spaces to get 2 per page
    if (j .ne. 1) then
        do i=1,16
            write(60,*)''
        end do
    end if

c
    write(60,'(a36,10x,a5,1x,i2)')
1  '**** SAI VMT Output, March 98 ****','Hour',j
write(60,*)''
write(60,'(a13,2x,a23,4x,a5)')'New York, NY:',
1  'Fraction of VMT by Hour','RURAL'
write(60,*)''
write(60,5000)'Speed Bin','INTERSTATE','MAJOR ART',
1  'MINOR ART','MAJOR COL','MINOR COL','LOCAL'
write(60,'(a59)') dumc
do k=0,bins
    write(60,6000)k*5,(FHRVMT(heading(i),j,k),i=1,6)
enddo
write(60,'(a59)') dumc
c
write(60,'(a53)') (dumc
write(60,*)''
write(60,*)''
write(60,'(a36,10x,a5,1x,i2)')
1  '**** SAI VMT Output, March 98 ****','Hour',j
write(60,*)''
write(60,'(a13,2x,a23,4x,a5)')'New York, NY:',
1  'Fraction of VMT by Hour','URBAN'
write(60,*)''
write(60,5000)'Speed Bin','INTERSTATE','EXPRESSWAY'
1  ', 'MAJOR ART','MINOR ART','COLLECTOR','LOCAL'
write(60,'(a59)') dumc
do k=0,bins
    write(60,6000)k*5,(FHRVMT(heading(i),j,k),i=7,12)
enddo
write(60,'(a59)') dumc
write(60,*)''
end do

write(70,*)''
write(70,'(a36,10x,a5,1x,a5)')
1  '**** SAI VMT Output, March 98 ****','Hour','TOTAL'
write(70,*)''
write(70,'(a13,2x,a21,4x,a5)')'New York, NY:',
1  'Fraction of TOTAL VMT','RURAL'
write(70,*)''
write(70,5000)'Speed Bin','INTERSTATE','MAJOR ART',
1  'MINOR ART','MAJOR COL','MINOR COL','LOCAL'
write(70,'(a59)') dumc
do k=0,bins

```

```
        write(70,6000)k*5,(FVMT(heading(i),k),i=1,6)
    enddo
    write(70,'(a59)') dunc
    write(70,*)''
    write(70,*)''
    write(70,'(a36,10x,a5,1x,a5)')
1      '**** SAI VMT Output, March 98 ****', 'Hour', 'TOTAL'
    write(70,*)''
    write(70,'(a13,2x,a21,4x,a5)') 'New York, NY:',
1      'Fraction of TOTAL VMT', 'URBAN'
    write(70,*)''
    write(70,5000) 'Speed Bin', 'INTERSTATE', 'EXPRESSWAY', 'MAJOR ART',
1      'MINOR ART', 'COLLECTOR', 'LOCAL'
    write(70,'(a59)') dunc
    do k=0,bins
        write(70,6000)k*5,(FVMT(heading(i),k),i=7,12)
    enddo
    write(70,'(a59)') dunc
    write(70,*)''

    close (70)
    close (60)
    close (50)
    close (45)

5000 format(1x,a9,3x,6(1x,a10))
5050 format(1x,a9,3x,1(1x,a11))
6000 format(7x,i2,4x,6(5x,f6.4))
6050 format(7x,i2,4x,1(5x,f6.4))

    return
end
```

```

c vmt.inc
integer*4 MXSTA,MFAC,BINS
PARAMETER (MXSTA=6000,MFAC=19,BINS=15)
integer FUNCLA(MXSTA)
real LNKLEN(MFAC)
integer i,j
logical llen(MXSTA)

character nmfile*80,string*200
integer count,countvmt

common /reference/ FUNCLA,count,countvmt,llen

integer*4 volhr(MXSTA,24),sumvolhr(MFAC,24),sumvol(MFAC),
1 tsumvolhr(24),tsumvol,dysumvol(MXSTA)
integer hr, ihr, k, sumclass,class(MFAC),heading(12),
1 classvmt(MFAC)
real fraction(MFAC,24),tfraction(24)
common /volume/volhr,hr,class,
1 sumclass,sumvol,sumvolhr,tsumvolhr,tsumvol,
2 fraction,tfraction,dysumvol
c Facility class headers in write statements
DATA heading/1,2,6,7,8,9,11,12,14,16,17,19/

c VMT variables
real tsumlength(MFAC)
real vmt2(MFAC),
1 length(MFAC),vmthr(MFAC,24),avevol(MFAC),avevolhr(MFAC,24)
common /vmtvar/vmt2,tsumlength,length,vmthr,avevol,avevolhr
DATA LNKLEN/796., 2000.,0.,0.,0.,4149.,6060.,10434.,48434.,
1 0.,702.,830.,0.,2515.,0.,5026.,4002.,0.,27245./

c Speed variables
c old 'a' factor
c real a,b,c(MFAC),sf(MFAC)
real b,c(MFAC),sf(MFAC)
real Stotal(MFAC,MXSTA),Shr(MFAC,24,MXSTA),FHRVMT(MFAC,24,0:BINS),
1 FVMT(MFAC,0:BINS)
c old a and b factors
c parameter(a=0.15, b=4.)
c new b factor. factor 'a' depends on facility type.
parameter(b=10.)
integer Shrcount(MFAC,24,0:BINS),Thrcount(MFAC,24),
1 Stcount(MFAC,0:BINS),Tstcount(MFAC),h
real FHROF(MFAC,0:BINS),FHRAM(MFAC,0:BINS),FHRPM(MFAC,0:BINS)
real FHROFRURAL(0:BINS),FHRAMRURAL(0:BINS),FHRPMRURAL(0:BINS)
real FHROFURBAN(0:BINS),FHRAMURBAN(0:BINS),FHRPMURBAN(0:BINS)
common /speed/
1 FHROF,FHRAM,FHRPM,FHRVMT,FVMT,
2 FHROFRURAL,FHRAMRURAL,FHRPMRURAL,
3 FHROFURBAN,FHRAMURBAN,FHRPMURBAN
cChange c (lane capacity) and sf (free-flow speed) as necessary for area
cand number and type of facility class.
c The BPR curves are very sensitive to
c these parameters.
c
c new DATA statement for 'a' factor
c DATA a/0.20, 0.05,0.05,0.05,0.05,0.05,0.05,0.05,0.05,0.05,
c 1 0.20,0.20,0.05,0.05,0.05,0.05,0.05,0.05,0.05/
c
DATA c/3500.,1600.,0.,0.,0.,550.,800.,800.,550.,0.,5250.,2400.,
1 0.,1600.,0.,600.,800.,0.,550./

```

```
c old free flow speeds
c   DATA sf/71.,59.,0.,0.,0.,54.,40.,30.,25.,0.,58.,48.,0.,29.8,0.,
c   1      26.,26.,0.,25./
c new free flow speeds (based on speed limits 65,55,50,35,25,25,
c                       55,45,35,25,25,25) 3/10/98
c   DATA sf/71.,62.,0.,0.,0.,52.,40.,32.,32.,0.,62.,48.,0.,40.,0.,
c   1      32.,32.,0.,32./
```

APPENDIX 2B
HOURLY VMT MODEL OUTPUT BY FUNCTIONAL CLASS
AND SPEED FOR ADA COUNTY IN 1995

----- PSRC-EMS Module 2.0 Sept 96XTR -----

Ada County Base Scenario 1995 (Hour 1)

Speed Processor: Off

SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range

Vehicle Miles

	FREEWAY	ARTERIAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	2.4	0.1	2.4
17.5 - 22.5	3.7	26.7	30.4
22.5 - 27.5	37.1	123.4	160.5
27.5 - 32.5	7.5	899.6	907.1
32.5 - 37.5	0.0	1086.1	1086.1
37.5 - 42.5	0.0	253.6	253.6
42.5 - 47.5	118.4	328.9	447.4
47.5 - 52.5	685.8	0.0	685.8
52.5 - 57.5	233.6	0.0	233.6
57.5 - 62.5	249.0	0.0	249.0
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0
Total	1337.3	2718.5	4055.8

Speed Range

Vehicle Miles

	COLLECTOR	LOCAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	0.0	431.4	431.4
17.5 - 22.5	107.2	41.4	148.6
22.5 - 27.5	98.1	7.1	105.1
27.5 - 32.5	115.8	7.9	123.6
32.5 - 37.5	51.4	14.6	66.0
37.5 - 42.5	54.0	8.2	62.3
42.5 - 47.5	0.0	0.0	0.0
47.5 - 52.5	0.0	0.0	0.0
52.5 - 57.5	0.0	0.0	0.0
57.5 - 62.5	0.0	0.0	0.0
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0
Total	426.4	510.6	937.1

----- PSRC-EMS Module 2.0 Sept 96XTR -----

Ada County Base Scenario 1995 (Hour 2)

Speed Processor: Off

SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles		
	FREEWAY	ARTERIAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	1.8	0.1	1.9
17.5 - 22.5	2.9	20.8	23.6
22.5 - 27.5	28.8	96.0	124.8
27.5 - 32.5	5.8	699.7	705.5
32.5 - 37.5	0.0	844.7	844.7
37.5 - 42.5	0.0	197.3	197.3
42.5 - 47.5	92.1	255.9	347.9
47.5 - 52.5	533.4	0.0	533.4
52.5 - 57.5	181.7	0.0	181.7
57.5 - 62.5	193.6	0.0	193.6
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0
Total	1040.2	2114.4	3154.5

Speed Range	Vehicle Miles		
	COLLECTOR	LOCAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	0.0	335.6	335.6
17.5 - 22.5	83.4	32.2	115.6
22.5 - 27.5	76.3	5.5	81.8
27.5 - 32.5	90.0	6.1	96.2
32.5 - 37.5	40.0	11.3	51.3
37.5 - 42.5	42.0	6.4	48.4
42.5 - 47.5	0.0	0.0	0.0
47.5 - 52.5	0.0	0.0	0.0
52.5 - 57.5	0.0	0.0	0.0
57.5 - 62.5	0.0	0.0	0.0
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0
Total	331.7	397.1	728.8

----- PSRC-EMS Module 2.0 Sept 96XTR -----

Ada County Base Scenario 1995 (Hour 3)

Speed Processor: Off

SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range

Vehicle Miles

	FREEWAY	ARTERIAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	0.8	0.0	0.8
17.5 - 22.5	1.2	8.9	10.1
22.5 - 27.5	12.4	41.1	53.5
27.5 - 32.5	2.5	299.9	302.4
32.5 - 37.5	0.0	362.0	362.0
37.5 - 42.5	0.0	84.5	84.5
42.5 - 47.5	39.5	109.7	149.1
47.5 - 52.5	228.6	0.0	228.6
52.5 - 57.5	77.9	0.0	77.9
57.5 - 62.5	83.0	0.0	83.0
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0
Total	445.8	906.2	1351.9

Speed Range

Vehicle Miles

	COLLECTOR	LOCAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	0.0	143.8	143.8
17.5 - 22.5	35.7	13.8	49.5
22.5 - 27.5	32.7	2.4	35.0
27.5 - 32.5	38.6	2.6	41.2
32.5 - 37.5	17.1	4.9	22.0
37.5 - 42.5	18.0	2.7	20.8
42.5 - 47.5	0.0	0.0	0.0
47.5 - 52.5	0.0	0.0	0.0
52.5 - 57.5	0.0	0.0	0.0
57.5 - 62.5	0.0	0.0	0.0
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0
Total	142.1	170.2	312.4

----- PSRC-EMS Module 2.0 Sept 96XTR -----

Ada County Base Scenario 1995 (Hour 4)

Speed Processor: Off

SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles		
	FREEWAY	ARTERIAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	9.7	0.3	10.0
17.5 - 22.5	15.1	109.7	124.8
22.5 - 27.5	152.3	507.4	659.7
27.5 - 32.5	30.7	3698.5	3729.3
32.5 - 37.5	0.0	4465.0	4465.0
37.5 - 42.5	0.0	1042.7	1042.7
42.5 - 47.5	486.8	1352.4	1839.1
47.5 - 52.5	2819.6	0.0	2819.6
52.5 - 57.5	960.3	0.0	960.3
57.5 - 62.5	1023.5	0.0	1023.5
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0

Total	5498.0	11176.0	16674.0

Speed Range	Vehicle Miles		
	COLLECTOR	LOCAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	0.0	1773.7	1773.7
17.5 - 22.5	440.6	170.4	611.0
22.5 - 27.5	403.2	29.0	432.2
27.5 - 32.5	475.9	32.4	508.3
32.5 - 37.5	211.2	59.9	271.2
37.5 - 42.5	222.2	33.7	255.9
42.5 - 47.5	0.0	0.0	0.0
47.5 - 52.5	0.0	0.0	0.0
52.5 - 57.5	0.0	0.0	0.0
57.5 - 62.5	0.0	0.0	0.0
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0

Total	1753.1	2099.2	3852.3

----- PSRC-EMS Module 2.0 Sept 96XTR -----

Ada County Base Scenario 1995 (Hour 5)

Speed Processor: Off

SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles		
	FREEWAY	ARTERIAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	33.7	1.2	35.0
17.5 - 22.5	52.6	382.4	435.1
22.5 - 27.5	531.1	1768.9	2300.0
27.5 - 32.5	107.2	12894.9	13002.1
32.5 - 37.5	0.0	15567.2	15567.2
37.5 - 42.5	0.0	3635.2	3635.2
42.5 - 47.5	1697.1	4715.0	6412.1
47.5 - 52.5	9830.4	0.0	9830.4
52.5 - 57.5	3348.0	0.0	3348.0
57.5 - 62.5	3568.5	0.0	3568.5
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0
Total	19168.7	38964.8	58133.5

Speed Range	Vehicle Miles		
	COLLECTOR	LOCAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	0.0	6184.0	6184.0
17.5 - 22.5	1536.3	594.1	2130.4
22.5 - 27.5	1405.6	101.1	1506.8
27.5 - 32.5	1659.2	113.0	1772.2
32.5 - 37.5	736.4	209.0	945.4
37.5 - 42.5	774.6	117.6	892.3
42.5 - 47.5	0.0	0.0	0.0
47.5 - 52.5	0.0	0.0	0.0
52.5 - 57.5	0.0	0.0	0.0
57.5 - 62.5	0.0	0.0	0.0
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0
Total	6112.2	7318.9	13431.1

----- PSRC-EMS Module 2.0 Sept 96XTR -----

Ada County Base Scenario 1995 (Hour 6)

Speed Processor: Off

SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles		
	FREEWAY	ARTERIAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	101.2	3.7	104.9
17.5 - 22.5	157.9	1147.3	1305.2
22.5 - 27.5	1593.2	5306.8	6900.0
27.5 - 32.5	321.6	38684.7	39006.2
32.5 - 37.5	0.0	46701.5	46701.5
37.5 - 42.5	0.0	10905.7	10905.7
42.5 - 47.5	5091.4	14144.9	19236.3
47.5 - 52.5	29491.1	0.0	29491.1
52.5 - 57.5	10043.9	0.0	10043.9
57.5 - 62.5	10705.6	0.0	10705.6
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0

Total	57506.0	116894.5	174400.5

Speed Range	Vehicle Miles		
	COLLECTOR	LOCAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	0.0	18552.0	18552.0
17.5 - 22.5	4608.8	1782.3	6391.2
22.5 - 27.5	4216.9	303.4	4520.3
27.5 - 32.5	4977.6	339.1	5316.7
32.5 - 37.5	2209.3	627.0	2836.3
37.5 - 42.5	2323.9	352.9	2676.8
42.5 - 47.5	0.0	0.0	0.0
47.5 - 52.5	0.0	0.0	0.0
52.5 - 57.5	0.0	0.0	0.0
57.5 - 62.5	0.0	0.0	0.0
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0

Total	18336.5	21956.7	40293.2

----- PSRC-EMS Module 2.0 Sept 96XTR -----

Ada County Base Scenario 1995 (Hour 7)

Speed Processor: Off

SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles		
	FREEWAY	ARTERIAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	188.6	6.8	195.4
17.5 - 22.5	294.2	2137.5	2431.7
22.5 - 27.5	2968.3	9886.8	12855.1
27.5 - 32.5	599.1	72071.4	72670.5
32.5 - 37.5	0.0	87007.0	87007.0
37.5 - 42.5	0.0	20317.9	20317.9
42.5 - 47.5	9485.6	26352.6	35838.1
47.5 - 52.5	54943.4	0.0	54943.4
52.5 - 57.5	18712.4	0.0	18712.4
57.5 - 62.5	19945.0	0.0	19945.0
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0
Total	107136.5	217780.0	324916.5

Speed Range	Vehicle Miles		
	COLLECTOR	LOCAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	0.0	34563.3	34563.3
17.5 - 22.5	8586.5	3320.6	11907.0
22.5 - 27.5	7856.3	565.2	8421.5
27.5 - 32.5	9273.5	631.8	9905.3
32.5 - 37.5	4116.1	1168.1	5284.2
37.5 - 42.5	4329.5	657.4	4987.0
42.5 - 47.5	0.0	0.0	0.0
47.5 - 52.5	0.0	0.0	0.0
52.5 - 57.5	0.0	0.0	0.0
57.5 - 62.5	0.0	0.0	0.0
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0
Total	34161.9	40906.4	75068.2

----- PSRC-EMS Module 2.0 Sept 96XTR -----

Ada County Base Scenario 1995 (Hour 8)

Speed Processor: Off

SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles		
	FREEWAY	ARTERIAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	147.3	5.3	152.6
17.5 - 22.5	229.7	1669.1	1898.8
22.5 - 27.5	2317.8	7720.2	10038.0
27.5 - 32.5	467.8	56277.7	56745.6
32.5 - 37.5	0.0	67940.4	67940.4
37.5 - 42.5	0.0	15865.5	15865.5
42.5 - 47.5	7406.9	20577.7	27984.6
47.5 - 52.5	42903.1	0.0	42903.1
52.5 - 57.5	14611.7	0.0	14611.7
57.5 - 62.5	15574.3	0.0	15574.3
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0
Total	83658.5	170055.9	253714.4

Speed Range	Vehicle Miles		
	COLLECTOR	LOCAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	0.0	26989.2	26989.2
17.5 - 22.5	6704.8	2592.9	9297.7
22.5 - 27.5	6134.6	441.3	6576.0
27.5 - 32.5	7241.3	493.3	7734.6
32.5 - 37.5	3214.1	912.1	4126.2
37.5 - 42.5	3380.8	513.4	3894.1
42.5 - 47.5	0.0	0.0	0.0
47.5 - 52.5	0.0	0.0	0.0
52.5 - 57.5	0.0	0.0	0.0
57.5 - 62.5	0.0	0.0	0.0
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0
Total	26675.6	31942.2	58617.9

----- PSRC-EMS Module 2.0 Sept 96XTR -----

Ada County Base Scenario 1995 (Hour 9)

Speed Processor: Off

SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles		
	FREEWAY	ARTERIAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	150.9	5.4	156.4
17.5 - 22.5	235.4	1710.6	1946.0
22.5 - 27.5	2375.5	7912.2	10287.6
27.5 - 32.5	479.5	57677.1	58156.5
32.5 - 37.5	0.0	69630.0	69630.0
37.5 - 42.5	0.0	16260.0	16260.0
42.5 - 47.5	7591.1	21089.3	28680.4
47.5 - 52.5	43969.9	0.0	43969.9
52.5 - 57.5	14975.1	0.0	14975.1
57.5 - 62.5	15961.5	0.0	15961.5
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0
Total	85738.9	174284.6	260023.5

Speed Range	Vehicle Miles		
	COLLECTOR	LOCAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	0.0	27660.2	27660.2
17.5 - 22.5	6871.5	2657.4	9528.9
22.5 - 27.5	6287.2	452.3	6739.5
27.5 - 32.5	7421.4	505.6	7927.0
32.5 - 37.5	3294.0	934.8	4228.8
37.5 - 42.5	3464.8	526.1	3991.0
42.5 - 47.5	0.0	0.0	0.0
47.5 - 52.5	0.0	0.0	0.0
52.5 - 57.5	0.0	0.0	0.0
57.5 - 62.5	0.0	0.0	0.0
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0
Total	27339.0	32736.4	60075.4

----- PSRC-EMS Module 2.0 Sept 96XTR -----

Ada County Base Scenario 1995 (Hour 10)

Speed Processor: Off

SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles		
	FREEWAY	ARTERIAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	182.0	6.6	188.6
17.5 - 22.5	284.0	2063.4	2347.4
22.5 - 27.5	2865.4	9544.0	12409.3
27.5 - 32.5	578.3	69572.1	70150.5
32.5 - 37.5	0.0	83990.3	83990.3
37.5 - 42.5	0.0	19613.4	19613.4
42.5 - 47.5	9156.7	25438.8	34595.5
47.5 - 52.5	53038.3	0.0	53038.3
52.5 - 57.5	18063.5	0.0	18063.5
57.5 - 62.5	19253.4	0.0	19253.4
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0

Total	103421.6	210228.6	313650.3

Speed Range	Vehicle Miles		
	COLLECTOR	LOCAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	0.0	33364.9	33364.9
17.5 - 22.5	8288.7	3205.4	11494.2
22.5 - 27.5	7583.9	545.6	8129.5
27.5 - 32.5	8952.0	609.9	9561.8
32.5 - 37.5	3973.4	1127.6	5101.0
37.5 - 42.5	4179.4	634.6	4814.0
42.5 - 47.5	0.0	0.0	0.0
47.5 - 52.5	0.0	0.0	0.0
52.5 - 57.5	0.0	0.0	0.0
57.5 - 62.5	0.0	0.0	0.0
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0

Total	32977.4	39488.1	72465.5

----- PSRC-EMS Module 2.0 Sept 96XTR -----

Ada County Base Scenario 1995 (Hour 11)

Speed Processor: Off

SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles		
	FREEWAY	ARTERIAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	191.5	6.9	198.4
17.5 - 22.5	298.6	2170.2	2468.8
22.5 - 27.5	3013.6	10037.6	13051.2
27.5 - 32.5	608.3	73170.9	73779.1
32.5 - 37.5	0.0	88334.6	88334.6
37.5 - 42.5	0.0	20627.9	20627.9
42.5 - 47.5	9630.3	26754.6	36384.9
47.5 - 52.5	55781.6	0.0	55781.6
52.5 - 57.5	18997.9	0.0	18997.9
57.5 - 62.5	20249.3	0.0	20249.3
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0

Total	108771.0	221102.7	329873.7
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Speed Range	Vehicle Miles		
	COLLECTOR	LOCAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	0.0	35090.5	35090.5
17.5 - 22.5	8717.5	3371.2	12088.7
22.5 - 27.5	7976.1	573.8	8550.0
27.5 - 32.5	9415.0	641.4	10056.4
32.5 - 37.5	4178.9	1185.9	5364.8
37.5 - 42.5	4395.6	667.5	5063.0
42.5 - 47.5	0.0	0.0	0.0
47.5 - 52.5	0.0	0.0	0.0
52.5 - 57.5	0.0	0.0	0.0
57.5 - 62.5	0.0	0.0	0.0
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0

Total	34683.1	41530.3	76213.4
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----- PSRC-EMS Module 2.0 Sept 96XTR -----
 Ada County Base Scenario 1995 (Hour 12)

Speed Processor: Off

SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles		
	FREEWAY	ARTERIAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	194.1	7.0	201.1
17.5 - 22.5	302.7	2199.8	2502.5
22.5 - 27.5	3054.7	10174.7	13229.5
27.5 - 32.5	616.6	74170.6	74787.2
32.5 - 37.5	0.0	89541.7	89541.7
37.5 - 42.5	0.0	20909.7	20909.7
42.5 - 47.5	9761.9	27120.1	36882.0
47.5 - 52.5	56543.7	0.0	56543.7
52.5 - 57.5	19257.4	0.0	19257.4
57.5 - 62.5	20526.0	0.0	20526.0
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0
Total Speed Range	110257.0	224123.7	334380.7

Speed Range	Vehicle Miles		
	COLLECTOR	LOCAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	0.0	35570.0	35570.0
17.5 - 22.5	8836.5	3417.3	12253.8
22.5 - 27.5	8085.1	581.7	8666.8
27.5 - 32.5	9543.6	650.2	10193.8
32.5 - 37.5	4236.0	1202.1	5438.1
37.5 - 42.5	4455.6	676.6	5132.2
42.5 - 47.5	0.0	0.0	0.0
47.5 - 52.5	0.0	0.0	0.0
52.5 - 57.5	0.0	0.0	0.0
57.5 - 62.5	0.0	0.0	0.0
62.5 - 67.5	0.0	0.0	0.0

67.5 - 72.5	0.0	0.0	0.0

Total	35156.9	42097.9	77254.8

----- PSRC-EMS Module 2.0 Sept 96XTR -----

Ada County Base Scenario 1995 (Hour 13)

Speed Processor: Off

SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles		
	FREEWAY	ARTERIAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	192.8	7.0	199.7
17.5 - 22.5	300.7	2185.0	2485.7
22.5 - 27.5	3034.2	10106.2	13140.3
27.5 - 32.5	612.4	73670.8	74283.2
32.5 - 37.5	0.0	88938.3	88938.3
37.5 - 42.5	0.0	20768.8	20768.8
42.5 - 47.5	9696.1	26937.4	36633.4
47.5 - 52.5	56162.6	0.0	56162.6
52.5 - 57.5	19127.6	0.0	19127.6
57.5 - 62.5	20387.6	0.0	20387.6
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0

Total	109513.9	222613.4	332127.3

Speed Range	Vehicle Miles		
	COLLECTOR	LOCAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	0.0	35330.4	35330.4
17.5 - 22.5	8777.0	3394.3	12171.3
22.5 - 27.5	8030.6	577.7	8608.4
27.5 - 32.5	9479.3	645.8	10125.1
32.5 - 37.5	4207.4	1194.0	5401.5
37.5 - 42.5	4425.6	672.0	5097.6
42.5 - 47.5	0.0	0.0	0.0
47.5 - 52.5	0.0	0.0	0.0
52.5 - 57.5	0.0	0.0	0.0
57.5 - 62.5	0.0	0.0	0.0
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0

Total	34920.0	41814.2	76734.2

----- PSRC-EMS Module 2.0 Sept 96XTR -----

Ada County Base Scenario 1995 (Hour 14)

Speed Processor: Off

SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles		
	FREEWAY	ARTERIAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	193.8	7.0	200.8
17.5 - 22.5	302.3	2196.8	2499.2
22.5 - 27.5	3050.6	10161.0	13211.6
27.5 - 32.5	615.7	74070.5	74686.3
32.5 - 37.5	0.0	89420.6	89420.6
37.5 - 42.5	0.0	20881.5	20881.5
42.5 - 47.5	9748.7	27083.6	36832.3
47.5 - 52.5	56467.5	0.0	56467.5
52.5 - 57.5	19231.4	0.0	19231.4
57.5 - 62.5	20498.3	0.0	20498.3
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0

Total	110108.4	223821.1	333929.6
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Speed Range	Vehicle Miles		
	COLLECTOR	LOCAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	0.0	35522.0	35522.0
17.5 - 22.5	8824.6	3412.7	12237.3
22.5 - 27.5	8074.2	580.9	8655.1
27.5 - 32.5	9530.8	649.3	10180.0
32.5 - 37.5	4230.3	1200.5	5430.8
37.5 - 42.5	4449.6	675.7	5125.3
42.5 - 47.5	0.0	0.0	0.0
47.5 - 52.5	0.0	0.0	0.0
52.5 - 57.5	0.0	0.0	0.0
57.5 - 62.5	0.0	0.0	0.0
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0

Total	35109.5	42041.1	77150.6
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----- PSRC-EMS Module 2.0 Sept 96XTR -----

Ada County Base Scenario 1995 (Hour 15)

Speed Processor: Off

SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles		
	FREEWAY	ARTERIAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	216.0	7.8	223.8
17.5 - 22.5	337.0	2448.8	2785.8
22.5 - 27.5	3400.6	11326.6	14727.2
27.5 - 32.5	686.4	82567.3	83253.6
32.5 - 37.5	0.0	99678.4	99678.4
37.5 - 42.5	0.0	23276.9	23276.9
42.5 - 47.5	10867.0	30190.3	41057.3
47.5 - 52.5	62944.8	0.0	62944.8
52.5 - 57.5	21437.5	0.0	21437.5
57.5 - 62.5	22849.6	0.0	22849.6
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0

Total	122738.9	249496.0	372234.9

Speed Range	Vehicle Miles		
	COLLECTOR	LOCAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	0.0	39596.7	39596.7
17.5 - 22.5	9836.9	3804.2	13641.1
22.5 - 27.5	9000.4	647.5	9647.9
27.5 - 32.5	10624.0	723.8	11347.8
32.5 - 37.5	4715.5	1338.2	6053.7
37.5 - 42.5	4960.1	753.2	5713.2
42.5 - 47.5	0.0	0.0	0.0
47.5 - 52.5	0.0	0.0	0.0
52.5 - 57.5	0.0	0.0	0.0
57.5 - 62.5	0.0	0.0	0.0
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0

Total	39136.9	46863.6	86000.5

----- PSRC-EMS Module 2.0 Sept 96XTR -----

Ada County Base Scenario 1995 (Hour 16)

Speed Processor: Off

SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles		
	FREEWAY	ARTERIAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	244.3	8.8	253.1
17.5 - 22.5	381.1	2769.0	3150.1
22.5 - 27.5	3845.2	12807.5	16652.7
27.5 - 32.5	776.1	93362.9	94139.0
32.5 - 37.5	0.0	112711.4	112711.4
37.5 - 42.5	0.0	26320.3	26320.3
42.5 - 47.5	12287.8	34137.7	46425.5
47.5 - 52.5	71175.0	0.0	71175.0
52.5 - 57.5	24240.4	0.0	24240.4
57.5 - 62.5	25837.2	0.0	25837.2
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0

Total	138787.1	282117.7	420904.8
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Speed Range	Vehicle Miles		
	COLLECTOR	LOCAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	0.0	44774.2	44774.2
17.5 - 22.5	11123.1	4301.6	15424.7
22.5 - 27.5	10177.2	732.2	10909.4
27.5 - 32.5	12013.1	818.4	12831.5
32.5 - 37.5	5332.1	1513.2	6845.3
37.5 - 42.5	5608.6	851.7	6460.2
42.5 - 47.5	0.0	0.0	0.0
47.5 - 52.5	0.0	0.0	0.0
52.5 - 57.5	0.0	0.0	0.0
57.5 - 62.5	0.0	0.0	0.0
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0

Total	44254.1	52991.2	97245.3
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----- PSRC-EMS Module 2.0 Sept 96XTR -----

Ada County Base Scenario 1995 (Hour 17)

Speed Processor: Off

SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles		
	FREEWAY	ARTERIAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	221.8	8.0	229.8
17.5 - 22.5	346.0	2514.1	2860.0
22.5 - 27.5	3491.1	11628.3	15119.4
27.5 - 32.5	704.6	84766.4	85471.0
32.5 - 37.5	0.0	102333.1	102333.1
37.5 - 42.5	0.0	23896.8	23896.8
42.5 - 47.5	11156.4	30994.4	42150.8
47.5 - 52.5	64621.3	0.0	64621.3
52.5 - 57.5	22008.5	0.0	22008.5
57.5 - 62.5	23458.2	0.0	23458.2
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0
Total	126008.0	256141.0	382149.0
Speed Range	Vehicle Miles		
	COLLECTOR	LOCAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	0.0	40651.4	40651.4
17.5 - 22.5	10098.9	3905.5	14004.4
22.5 - 27.5	9240.1	664.8	9904.9
27.5 - 32.5	10907.0	743.0	11650.0
32.5 - 37.5	4841.1	1373.9	6215.0
37.5 - 42.5	5092.2	773.2	5865.4
42.5 - 47.5	0.0	0.0	0.0
47.5 - 52.5	0.0	0.0	0.0
52.5 - 57.5	0.0	0.0	0.0
57.5 - 62.5	0.0	0.0	0.0
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0
Total	40179.3	48111.7	88291.1

----- PSRC-EMS Module 2.0 Sept 96XTR -----

Ada County Base Scenario 1995 (Hour 18)

Speed Processor: Off

SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles		
	FREEWAY	ARTERIAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	130.3	4.7	135.0
17.5 - 22.5	203.2	1476.4	1679.6
22.5 - 27.5	2050.2	6828.9	8879.1
27.5 - 32.5	413.8	49780.2	50194.0
32.5 - 37.5	0.0	60096.5	60096.5
37.5 - 42.5	0.0	14033.7	14033.7
42.5 - 47.5	6551.8	18201.9	24753.7
47.5 - 52.5	37949.8	0.0	37949.8
52.5 - 57.5	12924.8	0.0	12924.8
57.5 - 62.5	13776.2	0.0	13776.2
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0

Total	74000.0	150422.4	224422.3
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Speed Range	Vehicle Miles		
	COLLECTOR	LOCAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	0.0	23873.3	23873.3
17.5 - 22.5	5930.7	2293.6	8224.3
22.5 - 27.5	5426.4	390.4	5816.8
27.5 - 32.5	6405.3	436.4	6841.6
32.5 - 37.5	2843.0	806.8	3649.8
37.5 - 42.5	2990.4	454.1	3444.5
42.5 - 47.5	0.0	0.0	0.0
47.5 - 52.5	0.0	0.0	0.0
52.5 - 57.5	0.0	0.0	0.0
57.5 - 62.5	0.0	0.0	0.0
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0

Total	23595.9	28254.5	51850.4
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----- PSRC-EMS Module 2.0 Sept 96XTR -----

Ada County Base Scenario 1995 (Hour 19)

Speed Processor: Off

SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles		
	FREEWAY	ARTERIAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	74.5	2.7	77.2
17.5 - 22.5	116.3	844.9	961.2
22.5 - 27.5	1173.3	3908.1	5081.4
27.5 - 32.5	236.8	28488.6	28725.4
32.5 - 37.5	0.0	34392.7	34392.7
37.5 - 42.5	0.0	8031.4	8031.4
42.5 - 47.5	3749.5	10416.8	14166.3
47.5 - 52.5	21718.3	0.0	21718.3
52.5 - 57.5	7396.7	0.0	7396.7
57.5 - 62.5	7883.9	0.0	7883.9
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0
Total	42349.4	86085.1	128434.5
Speed Range	Vehicle Miles		
	COLLECTOR	LOCAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	0.0	13662.3	13662.3
17.5 - 22.5	3394.1	1312.6	4706.7
22.5 - 27.5	3105.5	223.4	3328.9
27.5 - 32.5	3665.7	249.7	3915.4
32.5 - 37.5	1627.0	461.7	2088.8
37.5 - 42.5	1711.4	259.9	1971.3
42.5 - 47.5	0.0	0.0	0.0
47.5 - 52.5	0.0	0.0	0.0
52.5 - 57.5	0.0	0.0	0.0
57.5 - 62.5	0.0	0.0	0.0
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0
Total	13503.7	16169.7	29673.3

----- PSRC-EMS Module 2.0 Sept 96XTR -----

Ada County Base Scenario 1995 (Hour 20)

Speed Processor: Off

SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles		
	FREEWAY	ARTERIAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	46.6	1.7	48.2
17.5 - 22.5	72.6	527.7	600.3
22.5 - 27.5	732.8	2440.8	3173.6
27.5 - 32.5	147.9	17792.9	17940.8
32.5 - 37.5	0.0	21480.3	21480.3
37.5 - 42.5	0.0	5016.1	5016.1
42.5 - 47.5	2341.8	6505.9	8847.7
47.5 - 52.5	13564.4	0.0	13564.4
52.5 - 57.5	4619.7	0.0	4619.7
57.5 - 62.5	4924.0	0.0	4924.0
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0

Total	26449.8	53765.4	80215.2
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Speed Range	Vehicle Miles		
	COLLECTOR	LOCAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	0.0	8533.0	8533.0
17.5 - 22.5	2119.8	819.8	2939.6
22.5 - 27.5	1939.6	139.5	2079.1
27.5 - 32.5	2289.4	156.0	2445.4
32.5 - 37.5	1016.2	288.4	1304.6
37.5 - 42.5	1068.9	162.3	1231.2
42.5 - 47.5	0.0	0.0	0.0
47.5 - 52.5	0.0	0.0	0.0
52.5 - 57.5	0.0	0.0	0.0
57.5 - 62.5	0.0	0.0	0.0
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0

Total	8433.9	10098.9	18532.8
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----- PSRC-EMS Module 2.0 Sept 96XTR -----

Ada County Base Scenario 1995 (Hour 21)

Speed Processor: Off

SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles		
	FREEWAY	ARTERIAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	46.3	1.7	48.0
17.5 - 22.5	72.2	524.8	597.0
22.5 - 27.5	728.7	2427.1	3155.8
27.5 - 32.5	147.1	17693.0	17840.0
32.5 - 37.5	0.0	21359.6	21359.6
37.5 - 42.5	0.0	4987.9	4987.9
42.5 - 47.5	2328.6	6469.3	8798.0
47.5 - 52.5	13488.2	0.0	13488.2
52.5 - 57.5	4593.7	0.0	4593.7
57.5 - 62.5	4896.3	0.0	4896.3
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0
Total	26301.2	53463.3	79764.5
Speed Range	Vehicle Miles		
	COLLECTOR	LOCAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	0.0	8485.0	8485.0
17.5 - 22.5	2107.9	815.2	2923.1
22.5 - 27.5	1928.7	138.8	2067.4
27.5 - 32.5	2276.6	155.1	2431.7
32.5 - 37.5	1010.5	286.8	1297.2
37.5 - 42.5	1062.9	161.4	1224.3
42.5 - 47.5	0.0	0.0	0.0
47.5 - 52.5	0.0	0.0	0.0
52.5 - 57.5	0.0	0.0	0.0
57.5 - 62.5	0.0	0.0	0.0
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0
Total	8386.5	10042.2	18428.7

----- PSRC-EMS Module 2.0 Sept 96XTR -----

Ada County Base Scenario 1995 (Hour 22)

Speed Processor: Off

SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles		
	FREEWAY	ARTERIAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	28.0	1.0	29.0
17.5 - 22.5	43.7	317.2	360.9
22.5 - 27.5	440.5	1467.2	1907.8
27.5 - 32.5	88.9	10695.7	10784.7
32.5 - 37.5	0.0	12912.4	12912.4
37.5 - 42.5	0.0	3015.3	3015.3
42.5 - 47.5	1407.7	3910.9	5318.6
47.5 - 52.5	8153.9	0.0	8153.9
52.5 - 57.5	2777.0	0.0	2777.0
57.5 - 62.5	2959.9	0.0	2959.9
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0
Total	15899.6	32319.7	48219.3

Speed Range	Vehicle Miles		
	COLLECTOR	LOCAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	0.0	5129.4	5129.4
17.5 - 22.5	1274.3	492.8	1767.1
22.5 - 27.5	1165.9	83.9	1249.8
27.5 - 32.5	1376.2	93.8	1470.0
32.5 - 37.5	610.8	173.4	784.2
37.5 - 42.5	642.5	97.6	740.1
42.5 - 47.5	0.0	0.0	0.0
47.5 - 52.5	0.0	0.0	0.0
52.5 - 57.5	0.0	0.0	0.0
57.5 - 62.5	0.0	0.0	0.0
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0
Total	5069.8	6070.7	11140.5

----- PSRC-EMS Module 2.0 Sept 96XTR -----

Ada County Base Scenario 1995 (Hour 23)

Speed Processor: Off

SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles		
	FREEWAY	ARTERIAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	13.1	0.5	13.5
17.5 - 22.5	20.4	148.2	168.6
22.5 - 27.5	205.8	685.6	891.5
27.5 - 32.5	41.5	4998.0	5039.6
32.5 - 37.5	0.0	6033.8	6033.8
37.5 - 42.5	0.0	1409.0	1409.0
42.5 - 47.5	657.8	1827.5	2485.3
47.5 - 52.5	3810.2	0.0	3810.2
52.5 - 57.5	1297.7	0.0	1297.7
57.5 - 62.5	1383.1	0.0	1383.1
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0
Total	7429.7	15102.6	22532.4

Speed Range	Vehicle Miles		
	COLLECTOR	LOCAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	0.0	2396.9	2396.9
17.5 - 22.5	595.5	230.3	825.7
22.5 - 27.5	544.8	39.2	584.0
27.5 - 32.5	643.1	43.8	686.9
32.5 - 37.5	285.4	81.0	366.4
37.5 - 42.5	300.2	45.6	345.8
42.5 - 47.5	0.0	0.0	0.0
47.5 - 52.5	0.0	0.0	0.0
52.5 - 57.5	0.0	0.0	0.0
57.5 - 62.5	0.0	0.0	0.0
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0
Total	2369.1	2836.8	5205.9

----- PSRC-EMS Module 2.0 Sept 96XTR -----

Ada County Base Scenario 1995 (Hour 24)

Speed Processor: Off

SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles		
	FREEWAY	ARTERIAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	4.7	0.2	4.9
17.5 - 22.5	7.3	53.4	60.7
22.5 - 27.5	74.1	246.8	320.9
27.5 - 32.5	15.0	1799.3	1814.2
32.5 - 37.5	0.0	2172.2	2172.2
37.5 - 42.5	0.0	507.2	507.2
42.5 - 47.5	236.8	657.9	894.7
47.5 - 52.5	1371.7	0.0	1371.7
52.5 - 57.5	467.2	0.0	467.2
57.5 - 62.5	497.9	0.0	497.9
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0
Total	2674.7	5437.0	8111.7

Speed Range	Vehicle Miles		
	COLLECTOR	LOCAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	0.0	862.9	862.9
17.5 - 22.5	214.4	82.9	297.3
22.5 - 27.5	196.1	14.1	210.2
27.5 - 32.5	231.5	15.8	247.3
32.5 - 37.5	102.8	29.2	131.9
37.5 - 42.5	108.1	16.4	124.5
42.5 - 47.5	0.0	0.0	0.0
47.5 - 52.5	0.0	0.0	0.0
52.5 - 57.5	0.0	0.0	0.0
57.5 - 62.5	0.0	0.0	0.0
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0
Total	852.9	1021.2	1874.1

APPENDIX 2C
HOURLY VMT MODEL OUTPUT BY FUNCTIONAL CLASS
AND SPEED FOR ADA COUNTY IN 2015

----- PSRC-EMS Module 2.0 Sept 96XTR -----

Ada County Base Scenario 2015 (Hour 1)

Speed Processor: Off

SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles		
	FREEWAY	ARTERIAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	3.4	0.0	3.4
17.5 - 22.5	4.7	37.5	42.2
22.5 - 27.5	55.1	191.1	246.2
27.5 - 32.5	19.8	1513.4	1533.1
32.5 - 37.5	0.0	1977.2	1977.2
37.5 - 42.5	0.0	469.0	469.0
42.5 - 47.5	173.6	629.3	802.9
47.5 - 52.5	1123.6	0.0	1123.6
52.5 - 57.5	328.2	0.0	328.2
57.5 - 62.5	364.4	0.0	364.4
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0
Total	2072.7	4817.6	6890.2

Speed Range	Vehicle Miles		
	COLLECTOR	LOCAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	0.0	721.0	721.0
17.5 - 22.5	198.3	72.8	271.1
22.5 - 27.5	151.7	10.1	161.8
27.5 - 32.5	302.6	17.4	320.0
32.5 - 37.5	146.8	31.0	177.8
37.5 - 42.5	100.6	13.0	113.6
42.5 - 47.5	0.0	0.0	0.0
47.5 - 52.5	0.0	0.0	0.0
52.5 - 57.5	0.0	0.0	0.0
57.5 - 62.5	0.0	0.0	0.0
62.5 - 67.5	0.0	0.0	0.0

67.5 - 72.5	0.0	0.0	0.0

Total	899.9	865.4	1765.4

----- PSRC-EMS Module 2.0 Sept 96XTR -----

Ada County Base Scenario 2015 (Hour 2)

Speed Processor: Off

SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles		
	FREEWAY	ARTERIAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	2.6	0.0	2.6
17.5 - 22.5	3.6	29.2	32.8
22.5 - 27.5	42.9	148.7	191.5
27.5 - 32.5	15.4	1177.1	1192.4
32.5 - 37.5	0.0	1537.8	1537.8
37.5 - 42.5	0.0	364.8	364.8
42.5 - 47.5	135.0	489.4	624.5
47.5 - 52.5	873.9	0.0	873.9
52.5 - 57.5	255.2	0.0	255.2
57.5 - 62.5	283.4	0.0	283.4
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0
Total	1612.1	3747.0	5359.1

Speed Range	Vehicle Miles		
	COLLECTOR	LOCAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	0.0	560.8	560.8
17.5 - 22.5	154.2	56.6	210.9
22.5 - 27.5	118.0	7.9	125.8
27.5 - 32.5	235.3	13.6	248.9
32.5 - 37.5	114.2	24.1	138.3
37.5 - 42.5	78.2	10.1	88.4
42.5 - 47.5	0.0	0.0	0.0
47.5 - 52.5	0.0	0.0	0.0
52.5 - 57.5	0.0	0.0	0.0
57.5 - 62.5	0.0	0.0	0.0
62.5 - 67.5	0.0	0.0	0.0

67.5 - 72.5	0.0	0.0	0.0

Total	699.9	673.1	1373.1

----- PSRC-EMS Module 2.0 Sept 96XTR -----

Ada County Base Scenario 2015 (Hour 3)

Speed Processor: Off

SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles		
	FREEWAY	ARTERIAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	1.1	0.0	1.1
17.5 - 22.5	1.6	12.5	14.1
22.5 - 27.5	18.4	63.7	82.1
27.5 - 32.5	6.6	504.5	511.0
32.5 - 37.5	0.0	659.1	659.1
37.5 - 42.5	0.0	156.3	156.3
42.5 - 47.5	57.9	209.8	267.6
47.5 - 52.5	374.5	0.0	374.5
52.5 - 57.5	109.4	0.0	109.4
57.5 - 62.5	121.5	0.0	121.5
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0
Total	690.9	1605.9	2296.7

Speed Range	Vehicle Miles		
	COLLECTOR	LOCAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	0.0	240.3	240.3
17.5 - 22.5	66.1	24.3	90.4
22.5 - 27.5	50.6	3.4	53.9
27.5 - 32.5	100.9	5.8	106.7
32.5 - 37.5	48.9	10.3	59.3
37.5 - 42.5	33.5	4.3	37.9
42.5 - 47.5	0.0	0.0	0.0
47.5 - 52.5	0.0	0.0	0.0
52.5 - 57.5	0.0	0.0	0.0
57.5 - 62.5	0.0	0.0	0.0
62.5 - 67.5	0.0	0.0	0.0

67.5 - 72.5	0.0	0.0	0.0

Total	300.0	288.5	588.5

----- PSRC-EMS Module 2.0 Sept 96XTR -----

Ada County Base Scenario 2015 (Hour 4)

Speed Processor: Off

SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles		
	FREEWAY	ARTERIAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	13.9	0.0	13.9
17.5 - 22.5	19.2	154.3	173.5
22.5 - 27.5	226.5	785.8	1012.4
27.5 - 32.5	81.2	6221.7	6302.9
32.5 - 37.5	0.0	8128.5	8128.5
37.5 - 42.5	0.0	1928.1	1928.1
42.5 - 47.5	713.7	2587.1	3300.8
47.5 - 52.5	4619.4	0.0	4619.4
52.5 - 57.5	1349.1	0.0	1349.1
57.5 - 62.5	1498.0	0.0	1498.0
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0

Total	8521.0	19805.5	28326.5
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Speed Range	Vehicle Miles		
	COLLECTOR	LOCAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	0.0	2964.3	2964.3
17.5 - 22.5	815.3	299.3	1114.6
22.5 - 27.5	623.5	41.5	665.1
27.5 - 32.5	1243.9	71.7	1315.6
32.5 - 37.5	603.4	127.6	731.0
37.5 - 42.5	413.5	53.6	467.1
42.5 - 47.5	0.0	0.0	0.0
47.5 - 52.5	0.0	0.0	0.0
52.5 - 57.5	0.0	0.0	0.0
57.5 - 62.5	0.0	0.0	0.0
62.5 - 67.5	0.0	0.0	0.0

67.5 - 72.5	0.0	0.0	0.0

Total	3699.7	3558.0	7257.6

----- PSRC-EMS Module 2.0 Sept 96XTR -----

Ada County Base Scenario 2015 (Hour 5)

Speed Processor: Off

SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles		
	FREEWAY	ARTERIAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	48.4	0.0	48.4
17.5 - 22.5	66.9	538.1	604.9
22.5 - 27.5	789.8	2739.8	3529.6
27.5 - 32.5	283.2	21691.9	21975.1
32.5 - 37.5	0.0	28340.0	28340.0
37.5 - 42.5	0.0	6722.1	6722.1
42.5 - 47.5	2488.5	9019.8	11508.3
47.5 - 52.5	16105.4	0.0	16105.4
52.5 - 57.5	4703.5	0.0	4703.5
57.5 - 62.5	5222.8	0.0	5222.8
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0
Total	29708.4	69051.7	98760.1

Speed Range	Vehicle Miles		
	COLLECTOR	LOCAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	0.0	10334.8	10334.8
17.5 - 22.5	2842.5	1043.6	3886.2
22.5 - 27.5	2174.0	144.8	2318.8
27.5 - 32.5	4336.9	250.0	4586.8
32.5 - 37.5	2103.8	444.8	2548.6
37.5 - 42.5	1441.7	186.7	1628.4
42.5 - 47.5	0.0	0.0	0.0
47.5 - 52.5	0.0	0.0	0.0
52.5 - 57.5	0.0	0.0	0.0
57.5 - 62.5	0.0	0.0	0.0
62.5 - 67.5	0.0	0.0	0.0

67.5 - 72.5	0.0	0.0	0.0

Total	12898.9	12404.8	25303.7

----- PSRC-EMS Module 2.0 Sept 96XTR -----

Ada County Base Scenario 2015 (Hour 6)

Speed Processor: Off

SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles		
	FREEWAY	ARTERIAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	145.3	0.0	145.3
17.5 - 22.5	200.6	1614.2	1814.8
22.5 - 27.5	2369.4	8219.3	10588.7
27.5 - 32.5	849.6	65075.6	65925.3
32.5 - 37.5	0.0	85019.8	85019.8
37.5 - 42.5	0.0	20166.4	20166.4
42.5 - 47.5	7465.4	27059.3	34524.7
47.5 - 52.5	48316.1	0.0	48316.1
52.5 - 57.5	14110.5	0.0	14110.5
57.5 - 62.5	15668.3	0.0	15668.3
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0
Total	89125.3	207154.6	296279.8

Speed Range	Vehicle Miles		
	COLLECTOR	LOCAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	0.0	31004.6	31004.6
17.5 - 22.5	8527.6	3130.9	11658.5
22.5 - 27.5	6522.0	434.5	6956.5
27.5 - 32.5	13010.6	749.9	13760.5
32.5 - 37.5	6311.5	1334.3	7645.7
37.5 - 42.5	4325.1	560.1	4885.3
42.5 - 47.5	0.0	0.0	0.0
47.5 - 52.5	0.0	0.0	0.0
52.5 - 57.5	0.0	0.0	0.0
57.5 - 62.5	0.0	0.0	0.0
62.5 - 67.5	0.0	0.0	0.0

67.5 - 72.5	0.0	0.0	0.0

Total	38696.8	37214.3	75911.1

----- PSRC-EMS Module 2.0 Sept 96XTR -----

Ada County Base Scenario 2015 (Hour 7)

Speed Processor: Off

SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles		
	FREEWAY	ARTERIAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	270.8	0.0	270.8
17.5 - 22.5	373.7	3007.3	3381.0
22.5 - 27.5	4414.3	15312.9	19727.2
27.5 - 32.5	1582.9	121239.2	122822.0
32.5 - 37.5	0.0	158396.7	158396.7
37.5 - 42.5	0.0	37570.9	37570.9
42.5 - 47.5	13908.5	50412.9	64321.3
47.5 - 52.5	90015.3	0.0	90015.3
52.5 - 57.5	26288.6	0.0	26288.6
57.5 - 62.5	29190.8	0.0	29190.8
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0
Total	166044.9	385939.9	551984.8

Speed Range	Vehicle Miles		
	COLLECTOR	LOCAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	0.0	57763.2	57763.2
17.5 - 22.5	15887.3	5833.0	21720.3
22.5 - 27.5	12150.8	809.5	12960.3
27.5 - 32.5	24239.3	1397.2	25636.5
32.5 - 37.5	11758.6	2485.8	14244.4
37.5 - 42.5	8058.0	1043.6	9101.5
42.5 - 47.5	0.0	0.0	0.0
47.5 - 52.5	0.0	0.0	0.0
52.5 - 57.5	0.0	0.0	0.0
57.5 - 62.5	0.0	0.0	0.0
62.5 - 67.5	0.0	0.0	0.0

67.5 - 72.5	0.0	0.0	0.0

Total	72094.0	69332.3	141426.2

----- PSRC-EMS Module 2.0 Sept 96XTR -----

Ada County Base Scenario 2015 (Hour 8)

Speed Processor: Off

SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles		
	FREEWAY	ARTERIAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	211.4	0.0	211.4
17.5 - 22.5	291.8	2348.3	2640.1
22.5 - 27.5	3447.0	11957.2	15404.2
27.5 - 32.5	1236.0	94670.7	95906.7
32.5 - 37.5	0.0	123685.4	123685.4
37.5 - 42.5	0.0	29337.6	29337.6
42.5 - 47.5	10860.6	39365.4	50225.9
47.5 - 52.5	70289.3	0.0	70289.3
52.5 - 57.5	20527.7	0.0	20527.7
57.5 - 62.5	22793.9	0.0	22793.9
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0

Total	129657.8	301364.6	431022.3
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Speed Range	Vehicle Miles		
	COLLECTOR	LOCAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	0.0	45104.8	45104.8
17.5 - 22.5	12405.8	4554.8	16960.5
22.5 - 27.5	9488.1	632.1	10120.1
27.5 - 32.5	18927.5	1091.0	20018.5
32.5 - 37.5	9181.8	1941.1	11122.9
37.5 - 42.5	6292.1	814.9	7107.0
42.5 - 47.5	0.0	0.0	0.0
47.5 - 52.5	0.0	0.0	0.0
52.5 - 57.5	0.0	0.0	0.0
57.5 - 62.5	0.0	0.0	0.0
62.5 - 67.5	0.0	0.0	0.0

67.5 - 72.5	0.0	0.0	0.0

Total	56295.3	54138.6	110433.9

----- PSRC-EMS Module 2.0 Sept 96XTR -----

Ada County Base Scenario 2015 (Hour 9)

Speed Processor: Off

SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles		
	FREEWAY	ARTERIAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	216.7	0.0	216.7
17.5 - 22.5	299.1	2406.7	2705.8
22.5 - 27.5	3532.7	12254.6	15787.3
27.5 - 32.5	1266.7	97024.9	98291.6
32.5 - 37.5	0.0	126760.7	126760.7
37.5 - 42.5	0.0	30067.2	30067.2
42.5 - 47.5	11130.6	40344.3	51474.9
47.5 - 52.5	72037.2	0.0	72037.2
52.5 - 57.5	21038.2	0.0	21038.2
57.5 - 62.5	23360.8	0.0	23360.8
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0
Total	132882.0	308858.4	441740.3

Speed Range	Vehicle Miles		
	COLLECTOR	LOCAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	0.0	46226.4	46226.4
17.5 - 22.5	12714.3	4668.0	17382.3
22.5 - 27.5	9724.0	647.8	10371.8
27.5 - 32.5	19398.2	1118.1	20516.4
32.5 - 37.5	9410.1	1989.3	11399.5
37.5 - 42.5	6448.6	835.1	7283.7
42.5 - 47.5	0.0	0.0	0.0
47.5 - 52.5	0.0	0.0	0.0
52.5 - 57.5	0.0	0.0	0.0
57.5 - 62.5	0.0	0.0	0.0
62.5 - 67.5	0.0	0.0	0.0

67.5 - 72.5	0.0	0.0	0.0

Total	57695.2	55484.8	113180.1

----- PSRC-EMS Module 2.0 Sept 96XTR -----

Ada County Base Scenario 2015 (Hour 10)

Speed Processor: Off

SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles		
	FREEWAY	ARTERIAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	261.4	0.0	261.4
17.5 - 22.5	360.7	2903.1	3263.8
22.5 - 27.5	4261.3	14781.9	19043.2
27.5 - 32.5	1528.0	117035.3	118563.3
32.5 - 37.5	0.0	152904.0	152904.0
37.5 - 42.5	0.0	36268.2	36268.2
42.5 - 47.5	13426.2	48664.8	62091.0
47.5 - 52.5	86894.1	0.0	86894.1
52.5 - 57.5	25377.1	0.0	25377.1
57.5 - 62.5	28178.7	0.0	28178.7
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0
Total	160287.5	372557.2	532844.7

Speed Range	Vehicle Miles		
	COLLECTOR	LOCAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	0.0	55760.2	55760.2
17.5 - 22.5	15336.4	5630.8	20967.2
22.5 - 27.5	11729.4	781.4	12510.9
27.5 - 32.5	23398.9	1348.7	24747.6
32.5 - 37.5	11350.9	2399.6	13750.5
37.5 - 42.5	7778.6	1007.4	8785.9
42.5 - 47.5	0.0	0.0	0.0
47.5 - 52.5	0.0	0.0	0.0
52.5 - 57.5	0.0	0.0	0.0
57.5 - 62.5	0.0	0.0	0.0
62.5 - 67.5	0.0	0.0	0.0

67.5 - 72.5	0.0	0.0	0.0

Total	69594.2	66928.1	136522.2

----- PSRC-EMS Module 2.0 Sept 96XTR -----

Ada County Base Scenario 2015 (Hour 11)

Speed Processor: Off

SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles		
	FREEWAY	ARTERIAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	274.9	0.0	274.9
17.5 - 22.5	379.4	3053.2	3432.6
22.5 - 27.5	4481.7	15546.5	20028.2
27.5 - 32.5	1607.0	123088.8	124695.8
32.5 - 37.5	0.0	160813.0	160813.0
37.5 - 42.5	0.0	38144.1	38144.1
42.5 - 47.5	14120.7	51182.0	65302.7
47.5 - 52.5	91388.6	0.0	91388.6
52.5 - 57.5	26689.7	0.0	26689.7
57.5 - 62.5	29636.2	0.0	29636.2
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0
Total	168578.2	391827.7	560405.9

Speed Range	Vehicle Miles		
	COLLECTOR	LOCAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	0.0	58644.4	58644.4
17.5 - 22.5	16129.7	5922.0	22051.7
22.5 - 27.5	12336.1	821.8	13158.0
27.5 - 32.5	24609.2	1418.5	26027.7
32.5 - 37.5	11938.0	2523.7	14461.7
37.5 - 42.5	8180.9	1059.5	9240.4
42.5 - 47.5	0.0	0.0	0.0
47.5 - 52.5	0.0	0.0	0.0
52.5 - 57.5	0.0	0.0	0.0
57.5 - 62.5	0.0	0.0	0.0
62.5 - 67.5	0.0	0.0	0.0

67.5 - 72.5	0.0	0.0	0.0

Total	73193.9	70390.0	143583.9

----- PSRC-EMS Module 2.0 Sept 96XTR -----

Ada County Base Scenario 2015 (Hour 12)

Speed Processor: Off

SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles		
	FREEWAY	ARTERIAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	278.7	0.0	278.7
17.5 - 22.5	384.6	3094.9	3479.5
22.5 - 27.5	4542.9	15758.9	20301.8
27.5 - 32.5	1629.0	124770.5	126399.5
32.5 - 37.5	0.0	163009.9	163009.9
37.5 - 42.5	0.0	38665.3	38665.3
42.5 - 47.5	14313.6	51881.1	66194.7
47.5 - 52.5	92637.1	0.0	92637.1
52.5 - 57.5	27054.3	0.0	27054.3
57.5 - 62.5	30041.0	0.0	30041.0
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0
Total	170881.1	397180.6	568061.8

Speed Range	Vehicle Miles		
	COLLECTOR	LOCAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	0.0	59445.4	59445.4
17.5 - 22.5	16350.1	6002.9	22353.0
22.5 - 27.5	12504.7	833.1	13337.7
27.5 - 32.5	24945.3	1437.9	26383.2
32.5 - 37.5	12101.1	2558.2	14659.3
37.5 - 42.5	8292.7	1074.0	9366.6
42.5 - 47.5	0.0	0.0	0.0
47.5 - 52.5	0.0	0.0	0.0
52.5 - 57.5	0.0	0.0	0.0
57.5 - 62.5	0.0	0.0	0.0
62.5 - 67.5	0.0	0.0	0.0

67.5 - 72.5	0.0	0.0	0.0

Total	74193.8	71351.4	145545.2

----- PSRC-EMS Module 2.0 Sept 96XTR -----

Ada County Base Scenario 2015 (Hour 13)

Speed Processor: Off

SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles		
	FREEWAY	ARTERIAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	276.8	0.0	276.8
17.5 - 22.5	382.0	3074.1	3456.1
22.5 - 27.5	4512.3	15652.7	20165.0
27.5 - 32.5	1618.0	123929.8	125547.8
32.5 - 37.5	0.0	161911.6	161911.6
37.5 - 42.5	0.0	38404.7	38404.7
42.5 - 47.5	14217.1	51531.6	65748.7
47.5 - 52.5	92012.9	0.0	92012.9
52.5 - 57.5	26872.0	0.0	26872.0
57.5 - 62.5	29838.6	0.0	29838.6
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0
Total	169729.7	394504.5	564234.2

Speed Range	Vehicle Miles		
	COLLECTOR	LOCAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	0.0	59044.8	59044.8
17.5 - 22.5	16239.9	5962.5	22202.4
22.5 - 27.5	12420.4	827.4	13247.9
27.5 - 32.5	24777.2	1428.2	26205.4
32.5 - 37.5	12019.5	2541.0	14560.5
37.5 - 42.5	8236.8	1066.7	9303.5
42.5 - 47.5	0.0	0.0	0.0
47.5 - 52.5	0.0	0.0	0.0
52.5 - 57.5	0.0	0.0	0.0
57.5 - 62.5	0.0	0.0	0.0
62.5 - 67.5	0.0	0.0	0.0

67.5 - 72.5	0.0	0.0	0.0

Total	73693.9	70870.6	144564.5

----- PSRC-EMS Module 2.0 Sept 96XTR -----

Ada County Base Scenario 2015 (Hour 14)

Speed Processor: Off

SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles		
	FREEWAY	ARTERIAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	278.3	0.0	278.3
17.5 - 22.5	384.1	3090.8	3474.8
22.5 - 27.5	4536.8	15737.7	20274.4
27.5 - 32.5	1626.8	124602.3	126229.1
32.5 - 37.5	0.0	162790.2	162790.2
37.5 - 42.5	0.0	38613.1	38613.1
42.5 - 47.5	14294.3	51811.2	66105.5
47.5 - 52.5	92512.2	0.0	92512.2
52.5 - 57.5	27017.8	0.0	27017.8
57.5 - 62.5	30000.6	0.0	30000.6
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0
Total	170650.9	396645.3	567296.2

Speed Range	Vehicle Miles		
	COLLECTOR	LOCAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	0.0	59365.3	59365.3
17.5 - 22.5	16328.0	5994.8	22322.9
22.5 - 27.5	12487.8	831.9	13319.8
27.5 - 32.5	24911.7	1435.9	26347.7
32.5 - 37.5	12084.8	2554.7	14639.5
37.5 - 42.5	8281.5	1072.5	9354.0
42.5 - 47.5	0.0	0.0	0.0
47.5 - 52.5	0.0	0.0	0.0
52.5 - 57.5	0.0	0.0	0.0
57.5 - 62.5	0.0	0.0	0.0
62.5 - 67.5	0.0	0.0	0.0

67.5 - 72.5	0.0	0.0	0.0

Total	74093.8	71255.3	145349.1

----- PSRC-EMS Module 2.0 Sept 96XTR -----

Ada County Base Scenario 2015 (Hour 15)

Speed Processor: Off

SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles		
	FREEWAY	ARTERIAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	310.2	0.0	310.2
17.5 - 22.5	428.1	3445.3	3873.4
22.5 - 27.5	5057.2	17542.9	22600.1
27.5 - 32.5	1813.4	138895.9	140709.3
32.5 - 37.5	0.0	181463.7	181463.7
37.5 - 42.5	0.0	43042.5	43042.5
42.5 - 47.5	15934.0	57754.5	73688.5
47.5 - 52.5	103124.3	0.0	103124.3
52.5 - 57.5	30117.1	0.0	30117.1
57.5 - 62.5	33441.9	0.0	33441.9
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0
Total	190226.2	442144.8	632371.0

Speed Range	Vehicle Miles		
	COLLECTOR	LOCAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	0.0	66175.2	66175.2
17.5 - 22.5	18201.0	6682.5	24883.5
22.5 - 27.5	13920.3	927.4	14847.7
27.5 - 32.5	27769.3	1600.7	29370.0
32.5 - 37.5	13471.0	2847.8	16318.8
37.5 - 42.5	9231.4	1195.5	10427.0
42.5 - 47.5	0.0	0.0	0.0
47.5 - 52.5	0.0	0.0	0.0
52.5 - 57.5	0.0	0.0	0.0
57.5 - 62.5	0.0	0.0	0.0
62.5 - 67.5	0.0	0.0	0.0

67.5 - 72.5	0.0	0.0	0.0

Total	82593.1	79429.0	162022.1

----- PSRC-EMS Module 2.0 Sept 96XTR -----

Ada County Base Scenario 2015 (Hour 16)

Speed Processor: Off

SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles		
	FREEWAY	ARTERIAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	350.8	0.0	350.8
17.5 - 22.5	484.1	3895.8	4379.9
22.5 - 27.5	5718.4	19836.7	25555.1
27.5 - 32.5	2050.5	157055.6	159106.1
32.5 - 37.5	0.0	205190.2	205190.2
37.5 - 42.5	0.0	48670.3	48670.3
42.5 - 47.5	18017.3	65305.9	83323.3
47.5 - 52.5	116607.9	0.0	116607.9
52.5 - 57.5	34054.9	0.0	34054.9
57.5 - 62.5	37814.5	0.0	37814.5
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0
Total	215098.4	499954.5	715052.9

Speed Range	Vehicle Miles		
	COLLECTOR	LOCAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	0.0	74828.0	74828.0
17.5 - 22.5	20580.8	7556.2	28137.1
22.5 - 27.5	15740.4	1048.6	16789.0
27.5 - 32.5	31400.2	1809.9	33210.1
32.5 - 37.5	15232.4	3220.2	18452.5
37.5 - 42.5	10438.5	1351.9	11790.3
42.5 - 47.5	0.0	0.0	0.0
47.5 - 52.5	0.0	0.0	0.0
52.5 - 57.5	0.0	0.0	0.0
57.5 - 62.5	0.0	0.0	0.0
62.5 - 67.5	0.0	0.0	0.0

67.5 - 72.5	0.0	0.0	0.0

Total	93392.3	89814.8	183207.1

----- PSRC-EMS Module 2.0 Sept 96XTR -----

Ada County Base Scenario 2015 (Hour 17)

Speed Processor: Off

SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles		
	FREEWAY	ARTERIAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	318.5	0.0	318.5
17.5 - 22.5	439.5	3537.1	3976.6
22.5 - 27.5	5191.9	18010.2	23202.1
27.5 - 32.5	1861.7	142595.0	144456.7
32.5 - 37.5	0.0	186297.0	186297.0
37.5 - 42.5	0.0	44188.9	44188.9
42.5 - 47.5	16358.4	59292.8	75651.1
47.5 - 52.5	105871.0	0.0	105871.0
52.5 - 57.5	30919.2	0.0	30919.2
57.5 - 62.5	34332.6	0.0	34332.6
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0
Total	195292.7	453921.0	649213.7

Speed Range	Vehicle Miles		
	COLLECTOR	LOCAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	0.0	67937.6	67937.6
17.5 - 22.5	18685.8	6860.5	25546.3
22.5 - 27.5	14291.0	952.1	15243.1
27.5 - 32.5	28509.0	1643.3	30152.3
32.5 - 37.5	13829.8	2923.7	16753.5
37.5 - 42.5	9477.3	1227.4	10704.7
42.5 - 47.5	0.0	0.0	0.0
47.5 - 52.5	0.0	0.0	0.0
52.5 - 57.5	0.0	0.0	0.0
57.5 - 62.5	0.0	0.0	0.0
62.5 - 67.5	0.0	0.0	0.0

67.5 - 72.5	0.0	0.0	0.0

Total	84793.0	81544.5	166337.5

----- PSRC-EMS Module 2.0 Sept 96XTR -----

Ada County Base Scenario 2015 (Hour 18)

Speed Processor: Off

SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles		
	FREEWAY	ARTERIAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	187.0	0.0	187.0
17.5 - 22.5	258.1	2077.2	2335.3
22.5 - 27.5	3049.0	10576.7	13625.7
27.5 - 32.5	1093.3	83740.6	84833.9
32.5 - 37.5	0.0	109405.4	109405.4
37.5 - 42.5	0.0	25950.5	25950.5
42.5 - 47.5	9606.7	34820.6	44427.2
47.5 - 52.5	62174.2	0.0	62174.2
52.5 - 57.5	18157.7	0.0	18157.7
57.5 - 62.5	20162.3	0.0	20162.3
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0
Total	114688.4	266571.0	381259.4

Speed Range	Vehicle Miles		
	COLLECTOR	LOCAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	0.0	39897.2	39897.2
17.5 - 22.5	10973.5	4028.9	15002.4
22.5 - 27.5	8392.6	559.1	8951.7
27.5 - 32.5	16742.3	965.0	17707.3
32.5 - 37.5	8121.7	1717.0	9838.7
37.5 - 42.5	5565.7	720.8	6286.5
42.5 - 47.5	0.0	0.0	0.0
47.5 - 52.5	0.0	0.0	0.0
52.5 - 57.5	0.0	0.0	0.0
57.5 - 62.5	0.0	0.0	0.0
62.5 - 67.5	0.0	0.0	0.0

67.5 - 72.5	0.0	0.0	0.0

Total	49795.8	47888.0	97683.9

----- PSRC-EMS Module 2.0 Sept 96XTR -----

Ada County Base Scenario 2015 (Hour 19)

Speed Processor: Off

SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles		
	FREEWAY	ARTERIAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	107.0	0.0	107.0
17.5 - 22.5	147.7	1188.8	1336.5
22.5 - 27.5	1744.9	6053.0	7797.9
27.5 - 32.5	625.7	47923.9	48549.6
32.5 - 37.5	0.0	62611.6	62611.6
37.5 - 42.5	0.0	14851.2	14851.2
42.5 - 47.5	5497.8	19927.4	25425.2
47.5 - 52.5	35581.6	0.0	35581.6
52.5 - 57.5	10391.5	0.0	10391.5
57.5 - 62.5	11538.7	0.0	11538.7
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0
Total	65634.9	152555.8	218190.7

Speed Range	Vehicle Miles		
	COLLECTOR	LOCAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	0.0	22832.8	22832.8
17.5 - 22.5	6280.0	2305.7	8585.7
22.5 - 27.5	4803.0	320.0	5123.0
27.5 - 32.5	9581.4	552.3	10133.7
32.5 - 37.5	4648.0	982.6	5630.6
37.5 - 42.5	3185.2	412.5	3597.7
42.5 - 47.5	0.0	0.0	0.0
47.5 - 52.5	0.0	0.0	0.0
52.5 - 57.5	0.0	0.0	0.0
57.5 - 62.5	0.0	0.0	0.0
62.5 - 67.5	0.0	0.0	0.0

67.5 - 72.5	0.0	0.0	0.0

Total	28497.6	27405.9	55903.5

----- PSRC-EMS Module 2.0 Sept 96XTR -----

Ada County Base Scenario 2015 (Hour 20)

Speed Processor: Off

SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles		
	FREEWAY	ARTERIAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	66.9	0.0	66.9
17.5 - 22.5	92.3	742.4	834.7
22.5 - 27.5	1089.8	3780.4	4870.2
27.5 - 32.5	390.8	29931.5	30322.3
32.5 - 37.5	0.0	39104.7	39104.7
37.5 - 42.5	0.0	9275.5	9275.5
42.5 - 47.5	3433.7	12445.9	15879.6
47.5 - 52.5	22222.9	0.0	22222.9
52.5 - 57.5	6490.1	0.0	6490.1
57.5 - 62.5	7206.6	0.0	7206.6
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0
Total	40993.0	95280.4	136273.5

Speed Range	Vehicle Miles		
	COLLECTOR	LOCAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	0.0	14260.5	14260.5
17.5 - 22.5	3922.2	1440.1	5362.3
22.5 - 27.5	2999.8	199.8	3199.6
27.5 - 32.5	5984.2	344.9	6329.1
32.5 - 37.5	2903.0	613.7	3516.6
37.5 - 42.5	1989.3	257.6	2247.0
42.5 - 47.5	0.0	0.0	0.0
47.5 - 52.5	0.0	0.0	0.0
52.5 - 57.5	0.0	0.0	0.0
57.5 - 62.5	0.0	0.0	0.0
62.5 - 67.5	0.0	0.0	0.0

67.5 - 72.5	0.0	0.0	0.0

Total	17798.5	17116.7	34915.2

----- PSRC-EMS Module 2.0 Sept 96XTR -----

Ada County Base Scenario 2015 (Hour 21)

Speed Processor: Off

SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles		
	FREEWAY	ARTERIAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	66.5	0.0	66.5
17.5 - 22.5	91.7	738.3	830.0
22.5 - 27.5	1083.7	3759.2	4842.9
27.5 - 32.5	388.6	29763.3	30151.9
32.5 - 37.5	0.0	38885.1	38885.1
37.5 - 42.5	0.0	9223.4	9223.4
42.5 - 47.5	3414.4	12376.0	15790.4
47.5 - 52.5	22098.1	0.0	22098.1
52.5 - 57.5	6453.7	0.0	6453.7
57.5 - 62.5	7166.1	0.0	7166.1
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0
Total	40762.8	94745.2	135508.0

Speed Range	Vehicle Miles		
	COLLECTOR	LOCAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	0.0	14180.4	14180.4
17.5 - 22.5	3900.2	1432.0	5332.2
22.5 - 27.5	2982.9	198.7	3181.6
27.5 - 32.5	5950.6	343.0	6293.6
32.5 - 37.5	2886.6	610.2	3496.9
37.5 - 42.5	1978.2	256.2	2234.4
42.5 - 47.5	0.0	0.0	0.0
47.5 - 52.5	0.0	0.0	0.0
52.5 - 57.5	0.0	0.0	0.0
57.5 - 62.5	0.0	0.0	0.0
62.5 - 67.5	0.0	0.0	0.0

67.5 - 72.5	0.0	0.0	0.0

Total	17698.5	17020.5	34719.0

----- PSRC-EMS Module 2.0 Sept 96XTR -----

Ada County Base Scenario 2015 (Hour 22)

Speed Processor: Off

SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles		
	FREEWAY	ARTERIAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	40.2	0.0	40.2
17.5 - 22.5	55.5	446.3	501.8
22.5 - 27.5	655.1	2272.5	2927.6
27.5 - 32.5	234.9	17992.5	18227.4
32.5 - 37.5	0.0	23506.7	23506.7
37.5 - 42.5	0.0	5575.7	5575.7
42.5 - 47.5	2064.1	7481.5	9545.6
47.5 - 52.5	13358.7	0.0	13358.7
52.5 - 57.5	3901.4	0.0	3901.4
57.5 - 62.5	4332.1	0.0	4332.1
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0
Total	24641.9	57275.3	81917.2

Speed Range	Vehicle Miles		
	COLLECTOR	LOCAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	0.0	8572.3	8572.3
17.5 - 22.5	2357.8	865.6	3223.4
22.5 - 27.5	1803.2	120.1	1923.4
27.5 - 32.5	3597.2	207.3	3804.6
32.5 - 37.5	1745.0	368.9	2113.9
37.5 - 42.5	1195.8	154.9	1350.7
42.5 - 47.5	0.0	0.0	0.0
47.5 - 52.5	0.0	0.0	0.0
52.5 - 57.5	0.0	0.0	0.0
57.5 - 62.5	0.0	0.0	0.0
62.5 - 67.5	0.0	0.0	0.0

67.5 - 72.5	0.0	0.0	0.0

Total	10699.1	10289.2	20988.3

----- PSRC-EMS Module 2.0 Sept 96XTR -----

Ada County Base Scenario 2015 (Hour 23)

Speed Processor: Off

SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles		
	FREEWAY	ARTERIAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	18.8	0.0	18.8
17.5 - 22.5	25.9	208.6	234.5
22.5 - 27.5	306.1	1061.9	1368.0
27.5 - 32.5	109.8	8407.7	8517.5
32.5 - 37.5	0.0	10984.5	10984.5
37.5 - 42.5	0.0	2605.5	2605.5
42.5 - 47.5	964.5	3496.0	4460.6
47.5 - 52.5	6242.4	0.0	6242.4
52.5 - 57.5	1823.1	0.0	1823.1
57.5 - 62.5	2024.3	0.0	2024.3
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0
Total	11514.9	26764.2	38279.1

Speed Range	Vehicle Miles		
	COLLECTOR	LOCAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	0.0	4005.8	4005.8
17.5 - 22.5	1101.8	404.5	1506.3
22.5 - 27.5	842.6	56.1	898.8
27.5 - 32.5	1681.0	96.9	1777.8
32.5 - 37.5	815.4	172.4	987.8
37.5 - 42.5	558.8	72.4	631.2
42.5 - 47.5	0.0	0.0	0.0
47.5 - 52.5	0.0	0.0	0.0
52.5 - 57.5	0.0	0.0	0.0
57.5 - 62.5	0.0	0.0	0.0
62.5 - 67.5	0.0	0.0	0.0

67.5 - 72.5	0.0	0.0	0.0

Total	4999.6	4808.0	9807.6

----- PSRC-EMS Module 2.0 Sept 96XTR -----

Ada County Base Scenario 2015 (Hour 24)

Speed Processor: Off

SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles		
	FREEWAY	ARTERIAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	6.8	0.0	6.8
17.5 - 22.5	9.3	75.1	84.4
22.5 - 27.5	110.2	382.3	492.5
27.5 - 32.5	39.5	3026.8	3066.3
32.5 - 37.5	0.0	3954.4	3954.4
37.5 - 42.5	0.0	938.0	938.0
42.5 - 47.5	347.2	1258.6	1605.8
47.5 - 52.5	2247.3	0.0	2247.3
52.5 - 57.5	656.3	0.0	656.3
57.5 - 62.5	728.8	0.0	728.8
62.5 - 67.5	0.0	0.0	0.0
67.5 - 72.5	0.0	0.0	0.0
Total	4145.4	9635.1	13780.5

Speed Range	Vehicle Miles		
	COLLECTOR	LOCAL	Total
0.0 - 2.5	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0
12.5 - 17.5	0.0	1442.1	1442.1
17.5 - 22.5	396.6	145.6	542.3
22.5 - 27.5	303.3	20.2	323.6
27.5 - 32.5	605.1	34.9	640.0
32.5 - 37.5	293.6	62.1	355.6
37.5 - 42.5	201.2	26.1	227.2
42.5 - 47.5	0.0	0.0	0.0
47.5 - 52.5	0.0	0.0	0.0
52.5 - 57.5	0.0	0.0	0.0
57.5 - 62.5	0.0	0.0	0.0
62.5 - 67.5	0.0	0.0	0.0

67.5 - 72.5	0.0	0.0	0.0

Total	1799.9	1730.9	3530.7

APPENDIX 2D

**HOURLY VMT MODEL OUTPUT BY FUNCTIONAL CLASS
AND SPEED FOR CHICAGO IN 1996
(LIGHT DUTY AND HEAVY DUTY VEHICLES)**

***** SAI Onroad Model, Version 3.0, July 96 *****
 Chicago 1996 Action (Enh.IM)
 SUM06 Speed Processor: On

Hour 1
 ALL FLEET

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	HIGHWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	211.7	0.0	0.0	0.0	0.0	211.7
7.5 - 12.5	0.0	0.0	0.0	0.0	0.0	0.0
12.5 - 17.5	0.0	0.0	0.0	0.0	0.0	0.0
17.5 - 22.5	0.0	63.2	1558.1	3011.2	224.6	4857.1
22.5 - 27.5	0.0	1075.0	12020.1	14485.2	4227.8	31808.1
27.5 - 32.5	76.0	12626.1	42601.1	20275.4	4316.1	79894.7
32.5 - 37.5	26.1	10432.8	31102.6	9924.5	1453.6	52939.6
37.5 - 42.5	40.9	21352.9	35520.8	10422.6	5520.8	72858.0
42.5 - 47.5	6325.0	16365.8	18847.5	7226.0	3548.3	52312.6
47.5 - 52.5	8984.4	5564.0	3554.0	2130.9	2132.9	22366.2
52.5 - 57.5	100835.4	2694.0	263.7	36.3	43.7	103873.1
57.5 - 62.5	0.0	0.0	0.0	0.0	0.0	0.0
62.5 - 67.5	20679.5	0.0	0.0	116.2	0.0	20795.7
67.5 - 72.5	0.0	0.0	0.0	0.0	0.0	0.0
Total	137179.0	70173.8	145467.9	67628.3	21467.8	441916.8

***** SAI Onroad Model, Version 3.0, July 96 *****
 Chicago 1996 Action (Enh.IM)
 SUM06 Speed Processor: On

Hour 2
 ALL FLEET

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	HIGHWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	195.7	0.0	0.0	0.0	0.0	195.7
7.5 - 12.5	0.0	0.0	0.0	0.0	0.0	0.0
12.5 - 17.5	0.0	0.0	0.0	0.0	0.0	0.0
17.5 - 22.5	0.0	40.2	954.5	1818.2	136.1	2949.0
22.5 - 27.5	0.0	711.2	7762.7	8969.7	2530.0	19973.6
27.5 - 32.5	56.5	8509.2	27632.6	12922.3	2658.1	51778.7
32.5 - 37.5	18.7	6929.5	20139.5	6207.7	892.9	34188.3
37.5 - 42.5	30.6	14549.3	22841.2	6453.1	3437.9	47312.1
42.5 - 47.5	5344.3	11092.6	12023.4	4529.5	2285.6	35275.4
47.5 - 52.5	7173.5	3796.9	2306.4	1330.7	1430.2	16037.7
52.5 - 57.5	88885.7	1757.6	185.1	21.5	23.0	90872.9
57.5 - 62.5	0.0	0.0	0.0	0.0	0.0	0.0
62.5 - 67.5	21034.7	0.0	0.0	119.6	0.0	21154.3
67.5 - 72.5	0.0	0.0	0.0	0.0	0.0	0.0
Total	122739.7	47386.5	93845.3	42372.4	13393.8	319737.7

***** SAI Onroad Model, Version 3.0, July 96 ***** Hour 3
 Chicago 1996 Action (Enh.IM) ALL FLEET
 SUM06 Speed Processor: On

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	HIGHWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	226.3	0.0	0.0	0.0	0.0	226.3
7.5 - 12.5	0.0	0.0	0.0	0.0	0.0	0.0
12.5 - 17.5	0.0	0.0	0.0	0.0	0.0	0.0
17.5 - 22.5	0.0	37.9	878.2	1654.5	124.2	2694.8
22.5 - 27.5	0.0	691.2	7421.8	8320.3	2285.9	18719.2
27.5 - 32.5	58.9	8371.3	26499.1	12240.9	2455.5	49625.7
32.5 - 37.5	19.2	6752.5	19290.4	5801.3	823.3	32686.7
37.5 - 42.5	32.0	14414.2	21772.8	5985.3	3202.1	45406.4
42.5 - 47.5	5945.4	10952.8	11396.9	4239.5	2181.3	34715.9
47.5 - 52.5	7768.5	3765.3	2212.4	1242.1	1402.4	16390.7
52.5 - 57.5	100752.0	1692.3	186.8	19.3	18.6	102669.0
57.5 - 62.5	0.0	0.0	0.0	0.0	0.0	0.0
62.5 - 67.5	25206.9	0.0	0.0	144.0	0.0	25350.9
67.5 - 72.5	0.0	0.0	0.0	0.0	0.0	0.0
Total	140009.1	46677.7	89658.4	39647.1	12493.2	328485.5

***** SAI Onroad Model, Version 3.0, July 96 ***** Hour 4
 Chicago 1996 Action (Enh.IM) ALL FLEET
 SUM06 Speed Processor: On

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	HIGHWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	257.2	0.0	0.0	0.0	0.0	257.2
7.5 - 12.5	0.0	0.0	0.0	0.0	0.0	0.0
12.5 - 17.5	0.0	0.0	0.0	0.0	0.0	0.0
17.5 - 22.5	0.0	38.2	867.9	1621.7	122.0	2649.8
22.5 - 27.5	0.0	709.9	7537.8	8271.8	2228.7	18748.2
27.5 - 32.5	63.2	8666.8	26968.8	12352.5	2433.9	50485.2
32.5 - 37.5	20.3	6947.0	19616.4	5798.5	815.0	33197.2
37.5 - 42.5	34.5	14991.5	22067.2	5950.0	3193.2	46236.4
42.5 - 47.5	6622.3	11366.7	11506.1	4242.2	2212.7	35950.0
47.5 - 52.5	8525.7	3918.6	2252.2	1240.4	1448.8	17385.7
52.5 - 57.5	113346.5	1727.0	196.5	18.7	16.5	115305.2
57.5 - 62.5	0.0	0.0	0.0	0.0	0.0	0.0
62.5 - 67.5	29162.0	0.0	0.0	166.9	0.0	29328.9
67.5 - 72.5	0.0	0.0	0.0	0.0	0.0	0.0
Total	158031.8	48365.6	91013.0	39662.8	12470.8	349544.0

***** SAI Onroad Model, Version 3.0, July 96 *****
 Chicago 1996 Action (Enh.IM)
 SUM06 Speed Processor: On

Hour 5
 ALL FLEET

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	HIGHWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	396.7	0.0	0.0	0.0	0.0	396.7
7.5 - 12.5	0.0	0.0	0.0	0.0	0.0	0.0
12.5 - 17.5	0.0	0.0	0.0	0.0	0.0	0.0
17.5 - 22.5	0.0	85.9	2054.5	3923.6	293.5	6357.5
22.5 - 27.5	0.0	1511.2	16560.3	19271.4	5468.2	42811.1
27.5 - 32.5	117.8	18027.1	58906.1	27628.0	5716.3	110395.3
32.5 - 37.5	39.3	14714.9	42944.8	13314.3	1921.2	72934.5
37.5 - 42.5	63.8	30769.3	48761.9	13864.9	7379.5	100839.4
42.5 - 47.5	10955.3	23478.7	25702.2	9711.5	4878.2	74725.9
47.5 - 52.5	14818.1	8028.0	4916.3	2855.0	3032.5	33649.9
52.5 - 57.5	181212.4	3743.2	389.6	46.6	51.0	185442.8
57.5 - 62.5	0.0	0.0	0.0	0.0	0.0	0.0
62.5 - 67.5	42156.5	0.0	0.0	239.4	0.0	42395.9
67.5 - 72.5	0.0	0.0	0.0	0.0	0.0	0.0
Total	249760.0	100358.2	200235.7	90854.8	28740.3	669949.0

***** SAI Onroad Model, Version 3.0, July 96 *****
 Chicago 1996 Action (Enh.IM)
 SUM06 Speed Processor: On

Hour 6
 ALL FLEET

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	HIGHWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	1186.5	0.0	0.0	0.0	0.0	1186.5
7.5 - 12.5	0.0	0.0	0.0	0.0	0.0	0.0
12.5 - 17.5	0.0	0.0	0.0	0.0	0.0	0.0
17.5 - 22.5	0.0	325.5	7964.9	15351.1	1145.7	24787.2
22.5 - 27.5	0.0	5606.1	62077.4	74325.8	21517.3	163526.6
27.5 - 32.5	404.2	65741.7	220204.3	104536.7	22085.7	412972.6
32.5 - 37.5	137.7	54183.9	160713.4	50713.6	7434.3	273182.9
37.5 - 42.5	218.1	111478.1	183291.6	53387.3	28308.4	376683.5
42.5 - 47.5	36480.2	85348.4	97103.3	37100.8	18314.5	274347.2
47.5 - 52.5	46744.7	29057.0	18372.0	10932.5	11097.9	116204.1
52.5 - 57.5	558337.2	13941.3	1385.1	184.5	217.3	574065.4
57.5 - 62.5	0.0	0.0	0.0	0.0	0.0	0.0
62.5 - 67.5	118940.1	0.0	0.0	670.4	0.0	119610.5
67.5 - 72.5	0.0	0.0	0.0	0.0	0.0	0.0
Total	762448.6	365681.9	751111.9	347202.8	110121.0	2336566.3

***** SAI Onroad Model, Version 3.0, July 96 ***** Hour 7
 Chicago 1996 Action (Enh.IM) ALL FLEET
 SUM06 Speed Processor: On

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	HIGHWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	2366.6	0.0	0.0	0.0	0.0	2366.6
7.5 - 12.5	0.0	0.0	221.7	682.2	137.7	1041.6
12.5 - 17.5	0.0	104.0	818.3	573.9	2016.5	3512.7
17.5 - 22.5	0.0	1573.4	25676.9	46283.4	5204.2	78737.9
22.5 - 27.5	0.0	67935.0	268563.8	291339.6	69728.0	697566.4
27.5 - 32.5	974.8	134816.4	520867.4	216589.7	47238.5	920486.8
32.5 - 37.5	3003.2	229177.9	552107.6	130665.7	25868.9	940823.3
37.5 - 42.5	56984.8	228251.5	382402.4	128063.7	71921.2	867623.6
42.5 - 47.5	197545.2	188499.3	206037.0	93491.0	49037.4	734609.9
47.5 - 52.5	299738.0	55641.4	33727.3	28923.6	26569.0	444599.3
52.5 - 57.5	796376.9	36747.9	3478.6	514.8	644.8	837763.0
57.5 - 62.5	0.0	0.0	0.0	0.0	0.0	0.0
62.5 - 67.5	213940.3	0.0	0.0	1188.4	0.0	215128.7
67.5 - 72.5	0.0	0.0	0.0	0.0	0.0	0.0
Total	1570929.8	942746.8	1993901.1	938315.9	298366.3	5744260.0

***** SAI Onroad Model, Version 3.0, July 96 ***** Hour 8
 Chicago 1996 Action (Enh.IM) ALL FLEET
 SUM06 Speed Processor: On

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	HIGHWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	4343.2	941.9	5373.2	8211.5	7003.5	25873.3
7.5 - 12.5	0.0	19683.5	31789.6	27961.7	3942.5	83377.3
12.5 - 17.5	129187.6	74537.0	150302.3	133219.8	11262.8	498509.5
17.5 - 22.5	219934.2	222792.3	582543.4	369589.4	55907.1	1450766.4
22.5 - 27.5	217332.0	363383.1	1015013.6	443029.9	123928.6	2162687.3
27.5 - 32.5	188300.4	384494.2	875552.7	242157.0	77387.0	1767891.3
32.5 - 37.5	302979.8	264854.0	585550.9	173694.1	47793.8	1374872.6
37.5 - 42.5	240912.1	177010.3	242758.8	164012.7	110978.9	935672.7
42.5 - 47.5	165013.6	130156.8	126225.8	111277.7	67107.8	599781.7
47.5 - 52.5	660835.9	64398.4	25407.2	39265.4	38301.3	828208.1
52.5 - 57.5	409172.6	20384.8	1278.2	939.6	1175.9	432951.1
57.5 - 62.5	142752.0	0.0	0.0	0.0	0.0	142752.0
62.5 - 67.5	200461.9	0.0	0.0	0.0	0.0	200461.9
67.5 - 72.5	0.0	0.0	0.0	0.0	0.0	0.0
Total	2881225.3	1722636.1	3641795.5	1713359.1	544789.3	10503805.0

***** SAI Onroad Model, Version 3.0, July 96 *****
 Chicago 1996 Action (Enh.IM)
 SUM06 Speed Processor: On

Hour 9
 ALL FLEET

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	HIGHWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	4289.5	172.5	2014.5	2685.1	4070.3	13231.9
7.5 - 12.5	0.0	3179.3	6770.4	5969.0	3044.4	18963.1
12.5 - 17.5	43516.1	24306.1	36216.4	36346.1	3205.5	143590.2
17.5 - 22.5	147291.1	90940.1	246449.1	237362.3	26232.6	748275.2
22.5 - 27.5	196341.3	253358.3	803411.4	460778.9	113968.3	1827858.1
27.5 - 32.5	201648.0	373533.1	857745.3	239003.2	67573.1	1739502.9
32.5 - 37.5	254094.9	309780.7	672850.1	171713.7	42945.3	1451384.8
37.5 - 42.5	277259.2	206264.3	346043.7	157969.6	98391.3	1085928.0
42.5 - 47.5	248475.8	155036.7	131364.7	117162.9	68345.1	720385.2
47.5 - 52.5	626939.8	68046.4	34398.3	35835.2	36748.7	801968.4
52.5 - 57.5	450342.7	20060.6	2563.0	792.6	966.5	474725.4
57.5 - 62.5	173429.1	0.0	0.0	0.0	0.0	173429.1
62.5 - 67.5	175776.8	0.0	0.0	0.0	0.0	175776.8
67.5 - 72.5	0.0	0.0	0.0	0.0	0.0	0.0
Total	2799404.3	1504678.1	3139827.3	1465618.9	465491.3	9375020.0

***** SAI Onroad Model, Version 3.0, July 96 *****
 Chicago 1996 Action (Enh.IM)
 SUM06 Speed Processor: On

Hour 10
 ALL FLEET

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	HIGHWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	3913.7	145.5	279.0	980.9	207.7	5526.8
7.5 - 12.5	0.0	0.0	1052.8	725.2	3105.7	4883.7
12.5 - 17.5	0.0	1467.1	3466.5	4172.1	979.9	10085.6
17.5 - 22.5	25983.4	24514.5	63767.2	94887.7	8584.9	217737.7
22.5 - 27.5	87387.9	132405.2	491320.7	404551.0	90691.1	1206355.9
27.5 - 32.5	134369.8	219594.2	648601.6	216390.3	54879.2	1273835.1
32.5 - 37.5	207332.0	339440.3	685037.3	147173.6	36646.4	1415629.6
37.5 - 42.5	290403.0	233074.1	394861.0	149249.0	77881.9	1145469.0
42.5 - 47.5	302577.0	178854.7	190170.1	111522.2	62355.8	845479.7
47.5 - 52.5	510077.7	50692.7	29485.4	32377.4	32733.6	655366.7
52.5 - 57.5	605412.1	41132.9	4619.3	618.8	731.6	652514.7
57.5 - 62.5	117519.7	0.0	0.0	0.0	0.0	117519.7
62.5 - 67.5	233570.7	0.0	0.0	0.0	0.0	233570.7
67.5 - 72.5	0.0	0.0	0.0	0.0	0.0	0.0
Total	2518547.3	1221321.0	2512660.5	1162648.3	368797.7	7783974.5

***** SAI Onroad Model, Version 3.0, July 96 ***** Hour 11
 Chicago 1996 Action (Enh.IM) ALL FLEET
 SUM06 Speed Processor: On

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	HIGHWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	3908.5	145.0	277.6	740.2	206.6	5277.9
7.5 - 12.5	0.0	0.0	1047.6	957.4	3092.3	5097.3
12.5 - 17.5	0.0	1116.6	3453.6	4150.3	973.7	9694.2
17.5 - 22.5	24976.7	24355.4	61770.7	92747.6	8190.8	212041.2
22.5 - 27.5	84379.0	130560.3	486952.6	402843.6	90364.0	1195099.5
27.5 - 32.5	134059.9	218489.9	642999.5	216510.9	54759.0	1266819.3
32.5 - 37.5	210578.1	337405.4	681129.3	145905.0	36452.7	1411470.5
37.5 - 42.5	286581.8	233561.7	396457.2	148910.8	77449.9	1142961.4
42.5 - 47.5	305001.8	178693.3	190884.8	110945.3	62044.3	847569.6
47.5 - 52.5	509287.9	50477.4	30543.3	32211.9	32585.0	655105.5
52.5 - 57.5	604467.6	40930.7	4599.9	615.3	726.7	651340.2
57.5 - 62.5	117441.3	0.0	0.0	0.0	0.0	117441.3
62.5 - 67.5	233584.1	0.0	0.0	0.0	0.0	233584.1
67.5 - 72.5	0.0	0.0	0.0	0.0	0.0	0.0
Total	2514266.0	1215735.4	2500116.0	1156538.5	366845.0	7753501.0

***** SAI Onroad Model, Version 3.0, July 96 ***** Hour 12
 Chicago 1996 Action (Enh.IM) ALL FLEET
 SUM06 Speed Processor: On

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	HIGHWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	4215.7	164.0	1274.4	1394.9	2086.4	9135.4
7.5 - 12.5	0.0	945.9	2446.3	3925.5	2818.5	10136.2
12.5 - 17.5	10944.1	15186.5	19825.6	17132.6	2425.3	65514.1
17.5 - 22.5	132750.4	48422.6	161216.3	184079.5	19636.2	546105.0
22.5 - 27.5	147997.5	217940.8	683136.1	450688.5	104967.0	1604730.0
27.5 - 32.5	194299.5	320408.0	811215.1	232144.1	67410.0	1625476.8
32.5 - 37.5	241538.7	319430.4	680053.6	161040.4	38062.4	1440125.5
37.5 - 42.5	293699.1	236172.9	378171.3	154512.5	89720.9	1152276.6
42.5 - 47.5	272901.2	155963.3	149985.3	120318.8	67202.5	766371.1
47.5 - 52.5	579890.1	67891.8	31369.9	33334.6	36296.5	748782.9
52.5 - 57.5	497354.2	25864.4	3541.2	730.5	880.1	528370.4
57.5 - 62.5	171045.7	0.0	0.0	0.0	0.0	171045.7
62.5 - 67.5	188047.6	0.0	0.0	0.0	0.0	188047.6
67.5 - 72.5	0.0	0.0	0.0	0.0	0.0	0.0
Total	2734684.0	1408390.6	2922235.5	1359302.1	431505.8	8856118.0

***** SAI Onroad Model, Version 3.0, July 96 *****
 Chicago 1996 Action (Enh.IM)
 SUM06 Speed Processor: On

Hour 13
 ALL FLEET

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	HIGHWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	4306.0	171.7	1622.3	2657.8	4024.4	12782.2
7.5 - 12.5	0.0	2677.9	6367.5	5336.1	3019.0	17400.5
12.5 - 17.5	43548.1	22617.9	31646.4	33234.9	3122.3	134169.6
17.5 - 22.5	152302.4	85035.7	234443.0	229335.1	24977.1	726093.4
22.5 - 27.5	180483.2	250621.5	789350.6	461611.8	112294.5	1794361.5
27.5 - 32.5	208368.2	371527.0	855721.9	233686.5	67699.4	1737002.9
32.5 - 37.5	258693.8	303465.5	669216.0	174323.1	42755.9	1448454.3
37.5 - 42.5	268669.8	214006.5	352880.0	155556.4	96816.8	1087929.5
42.5 - 47.5	259677.3	154207.5	131594.3	118230.4	67191.5	730901.0
47.5 - 52.5	644553.3	67794.2	34138.8	35484.5	37695.3	819666.1
52.5 - 57.5	433738.4	20099.9	2541.2	783.1	952.1	458114.7
57.5 - 62.5	173747.2	0.0	0.0	0.0	0.0	173747.2
62.5 - 67.5	177801.6	0.0	0.0	0.0	0.0	177801.6
67.5 - 72.5	0.0	0.0	0.0	0.0	0.0	0.0
Total	2805889.0	1492225.1	3109521.3	1450239.6	460548.3	9318423.0

***** SAI Onroad Model, Version 3.0, July 96 *****
 Chicago 1996 Action (Enh.IM)
 SUM06 Speed Processor: On

Hour 14
 ALL FLEET

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	HIGHWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	3854.6	147.4	731.9	1104.0	215.3	6053.2
7.5 - 12.5	0.0	0.0	934.6	1146.3	3886.6	5967.5
12.5 - 17.5	0.0	2249.2	4744.5	6138.8	1791.1	14923.6
17.5 - 22.5	25728.5	27934.6	75545.6	109907.4	9363.0	248479.1
22.5 - 27.5	85103.7	144930.9	526571.4	417638.4	94775.4	1269019.8
27.5 - 32.5	149060.9	229362.4	669476.7	220542.3	57785.1	1326227.4
32.5 - 37.5	188437.1	355690.0	703603.4	149991.4	36549.8	1434271.6
37.5 - 42.5	294759.5	235623.5	402478.4	150891.7	79619.2	1163372.4
42.5 - 47.5	306321.2	164734.1	176693.6	114738.0	64286.2	826773.1
47.5 - 52.5	486215.8	58407.5	30310.5	32386.6	33412.4	640732.8
52.5 - 57.5	612787.5	35918.0	4724.5	645.4	772.2	654847.6
57.5 - 62.5	94876.9	0.0	0.0	0.0	0.0	94876.9
62.5 - 67.5	245624.4	0.0	0.0	0.0	0.0	245624.4
67.5 - 72.5	0.0	0.0	0.0	0.0	0.0	0.0
Total	2492770.0	1254997.1	2595814.5	1205130.1	382456.3	7931168.0

***** SAI Onroad Model, Version 3.0, July 96 ***** Hour 15
 Chicago 1996 Action (Enh.IM) ALL FLEET
 SUM06 Speed Processor: On

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	HIGHWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	3789.5	149.8	764.5	1149.6	1119.7	6973.1
7.5 - 12.5	0.0	0.0	1009.8	1799.3	3211.5	6020.6
12.5 - 17.5	0.0	3463.6	8139.3	7909.8	1806.5	21319.2
17.5 - 22.5	13344.3	33245.6	95271.9	132356.0	11520.3	285738.1
22.5 - 27.5	108005.9	161919.0	571043.6	427802.1	99020.9	1367791.5
27.5 - 32.5	140413.5	240569.1	710416.0	228604.0	61283.5	1381286.1
32.5 - 37.5	198998.0	361257.8	708194.1	156383.8	37015.8	1461849.5
37.5 - 42.5	265151.4	238508.0	409333.8	148786.2	82189.6	1143969.1
42.5 - 47.5	329835.1	163227.5	160788.6	117569.3	66855.4	838275.9
47.5 - 52.5	425941.3	58357.8	30495.3	34669.2	34508.2	583971.8
52.5 - 57.5	634679.3	36415.0	3618.8	678.0	821.9	676213.0
57.5 - 62.5	99261.4	0.0	0.0	0.0	0.0	99261.4
62.5 - 67.5	246140.6	0.0	0.0	0.0	0.0	246140.6
67.5 - 72.5	0.0	0.0	0.0	0.0	0.0	0.0
Total	2465560.3	1297113.1	2699076.3	1257707.5	399353.2	8118810.5

***** SAI Onroad Model, Version 3.0, July 96 ***** Hour 16
 Chicago 1996 Action (Enh.IM) ALL FLEET
 SUM06 Speed Processor: On

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	HIGHWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	3775.9	165.6	1807.3	3133.6	3365.7	12248.1
7.5 - 12.5	0.0	3396.6	6365.1	5988.7	3847.2	19597.6
12.5 - 17.5	0.0	19160.7	38862.4	44242.2	3672.6	105937.9
17.5 - 22.5	41214.1	83728.0	244029.7	249797.5	30748.1	649517.4
22.5 - 27.5	166517.6	255580.4	828212.8	462003.4	114960.5	1827274.6
27.5 - 32.5	189587.3	362113.3	873989.4	241846.8	66068.0	1733604.8
32.5 - 37.5	211216.8	326082.3	670565.1	173643.4	49988.4	1431496.0
37.5 - 42.5	262122.6	210365.6	342963.0	156915.9	98317.9	1070685.0
42.5 - 47.5	291293.5	151977.0	130566.8	115848.3	66594.5	756280.1
47.5 - 52.5	396907.4	66774.4	32730.7	38140.9	35940.1	570493.5
52.5 - 57.5	610200.7	20734.6	1708.5	818.6	1024.7	634487.1
57.5 - 62.5	80528.3	0.0	0.0	0.0	0.0	80528.3
62.5 - 67.5	252093.5	0.0	0.0	0.0	0.0	252093.5
67.5 - 72.5	0.0	0.0	0.0	0.0	0.0	0.0
Total	2505457.8	1500078.5	3171800.3	1492379.5	474527.7	9144244.0

***** SAI Onroad Model, Version 3.0, July 96 *****
 Chicago 1996 Action (Enh.IM)
 SUM06 Speed Processor: On

Hour 17
 ALL FLEET

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	HIGHWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	3522.3	226.2	4249.1	6142.5	3951.4	18091.5
7.5 - 12.5	0.0	10605.0	22312.6	19278.1	4919.7	57115.4
12.5 - 17.5	1840.1	35463.5	99734.3	105308.2	10643.6	252989.7
17.5 - 22.5	17075.0	180591.0	430851.2	316689.1	44747.9	989954.1
22.5 - 27.5	175205.7	284729.7	977942.2	469781.7	121500.7	2029160.0
27.5 - 32.5	193478.6	407932.1	900223.8	244947.5	79924.3	1826506.3
32.5 - 37.5	243655.7	300898.9	613071.6	173962.9	52044.0	1383633.1
37.5 - 42.5	242509.1	176310.8	272649.0	162383.6	102988.3	956840.8
42.5 - 47.5	261420.7	137189.4	125821.4	107264.8	66759.4	698455.7
47.5 - 52.5	306869.5	67815.5	25606.9	39141.1	35766.8	475199.8
52.5 - 57.5	649063.5	19168.5	1200.3	2533.1	1175.5	673140.9
57.5 - 62.5	68637.3	0.0	0.0	0.0	0.0	68637.3
62.5 - 67.5	225994.9	0.0	0.0	0.0	0.0	225994.9
67.5 - 72.5	0.0	0.0	0.0	0.0	0.0	0.0
Total	2389272.5	1620930.5	3473663.0	1647432.3	524421.6	9655720.0

***** SAI Onroad Model, Version 3.0, July 96 *****
 Chicago 1996 Action (Enh.IM)
 SUM06 Speed Processor: On

Hour 18
 ALL FLEET

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	HIGHWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	3116.9	2205.4	5009.4	7578.4	6413.5	24323.6
7.5 - 12.5	0.0	12196.7	29828.5	29113.9	4040.1	75179.2
12.5 - 17.5	0.0	41433.3	126162.4	127255.0	12814.2	307664.9
17.5 - 22.5	15085.8	190474.5	504904.4	338321.3	50238.7	1099024.8
22.5 - 27.5	84772.7	290928.6	994129.9	467529.1	127010.9	1964371.3
27.5 - 32.5	185368.5	413037.4	890092.8	242375.4	78813.8	1809687.9
32.5 - 37.5	233658.7	305731.5	604621.2	174231.6	56638.2	1374881.3
37.5 - 42.5	186941.6	162762.5	253058.0	166300.5	102478.8	871541.4
42.5 - 47.5	300293.5	142723.8	126301.2	105230.2	65221.5	739770.2
47.5 - 52.5	271755.5	61607.8	22664.6	37683.3	36029.6	429740.8
52.5 - 57.5	644242.1	19624.7	1214.4	954.2	1246.7	667282.1
57.5 - 62.5	9862.3	0.0	0.0	1285.4	0.0	11147.7
62.5 - 67.5	228093.7	0.0	0.0	0.0	0.0	228093.7
67.5 - 72.5	0.0	0.0	0.0	0.0	0.0	0.0
Total	2163191.5	1642726.5	3557986.8	1697858.4	540945.8	9602709.0

***** SAI Onroad Model, Version 3.0, July 96 ***** Hour 19
 Chicago 1996 Action (Enh.IM) ALL FLEET
 SUM06 Speed Processor: On

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	HIGHWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	2247.1	0.0	781.7	1084.3	3062.4	7175.5
7.5 - 12.5	0.0	125.1	898.7	3259.1	38.0	4320.9
12.5 - 17.5	0.0	3233.8	11163.1	8559.3	1992.6	24948.8
17.5 - 22.5	0.0	16055.1	84083.0	146285.0	16400.2	262823.3
22.5 - 27.5	137.9	140040.8	540848.0	422898.5	99549.3	1203474.5
27.5 - 32.5	4832.3	217697.2	732350.6	238548.0	60329.4	1253757.5
32.5 - 37.5	8701.8	335033.8	719579.5	163038.9	44283.9	1270637.9
37.5 - 42.5	130932.8	264827.0	386213.3	147966.3	85829.2	1015768.6
42.5 - 47.5	281464.6	159570.8	168073.7	113059.7	63131.8	785300.6
47.5 - 52.5	306202.1	59896.8	26655.9	32274.2	31894.2	456923.2
52.5 - 57.5	669746.5	35162.5	4432.0	720.5	945.7	711007.2
57.5 - 62.5	0.0	0.0	0.0	0.0	0.0	0.0
62.5 - 67.5	166380.5	0.0	0.0	893.7	0.0	167274.2
67.5 - 72.5	0.0	0.0	0.0	0.0	0.0	0.0
Total	1570645.3	1231642.6	2675079.3	1278587.5	407456.8	7163411.5

***** SAI Onroad Model, Version 3.0, July 96 ***** Hour 20
 Chicago 1996 Action (Enh.IM) ALL FLEET
 SUM06 Speed Processor: On

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	HIGHWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	1633.2	0.0	0.0	0.0	0.0	1633.2
7.5 - 12.5	0.0	0.0	106.6	286.7	829.5	1222.8
12.5 - 17.5	0.0	0.0	744.0	929.1	1389.1	3062.2
17.5 - 22.5	0.0	1456.3	23182.0	43764.4	4336.7	72739.4
22.5 - 27.5	0.0	55746.6	227958.0	265031.7	67087.9	615824.1
27.5 - 32.5	848.9	127653.3	510468.7	221636.9	47542.1	908149.9
32.5 - 37.5	303.3	205113.7	516735.4	126615.7	23143.2	871911.2
37.5 - 42.5	8284.8	211334.3	369954.0	125780.1	71952.3	787305.6
42.5 - 47.5	125622.7	185563.5	208999.2	91954.8	45952.8	658093.0
47.5 - 52.5	136501.1	52008.7	32810.9	27242.5	25277.0	273840.2
52.5 - 57.5	740030.8	34704.1	3148.8	508.8	665.9	779058.4
57.5 - 62.5	0.0	0.0	0.0	0.0	0.0	0.0
62.5 - 67.5	123291.5	0.0	0.0	664.7	0.0	123956.2
67.5 - 72.5	0.0	0.0	0.0	0.0	0.0	0.0
Total	1136516.4	873580.3	1894107.5	904415.3	288176.6	5096796.0

***** SAI Onroad Model, Version 3.0, July 96 *****
 Chicago 1996 Action (Enh.IM)
 SUM06 Speed Processor: On

Hour 21
 ALL FLEET

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	HIGHWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	1049.4	0.0	0.0	0.0	0.0	1049.4
7.5 - 12.5	0.0	0.0	0.0	0.0	0.0	0.0
12.5 - 17.5	0.0	0.0	0.0	0.0	23.6	23.6
17.5 - 22.5	0.0	559.6	14459.6	27934.7	3063.6	46017.5
22.5 - 27.5	0.0	11108.5	108765.2	139212.0	39119.9	298205.6
27.5 - 32.5	562.7	103436.5	368362.5	175832.3	38678.7	686872.7
32.5 - 37.5	201.6	95278.9	277085.3	84921.5	13270.1	470757.4
37.5 - 42.5	300.5	171125.2	303826.5	94204.1	49777.0	619233.3
42.5 - 47.5	42378.4	134323.4	165193.3	64219.9	30969.5	437084.5
47.5 - 52.5	55545.9	44066.5	27906.7	19162.1	17859.1	164540.3
52.5 - 57.5	558489.1	23212.3	2096.4	341.9	449.5	584589.2
57.5 - 62.5	0.0	0.0	0.0	0.0	0.0	0.0
62.5 - 67.5	76835.0	0.0	0.0	411.8	0.0	77246.8
67.5 - 72.5	0.0	0.0	0.0	0.0	0.0	0.0
Total	735362.6	583110.8	1267695.1	606240.4	193211.0	3385620.0

***** SAI Onroad Model, Version 3.0, July 96 *****
 Chicago 1996 Action (Enh.IM)
 SUM06 Speed Processor: On

Hour 22
 ALL FLEET

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	HIGHWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	875.6	0.0	0.0	0.0	0.0	875.6
7.5 - 12.5	0.0	0.0	0.0	0.0	0.0	0.0
12.5 - 17.5	0.0	0.0	0.0	0.0	0.0	0.0
17.5 - 22.5	0.0	464.2	11826.3	23146.9	1720.9	37158.3
22.5 - 27.5	0.0	7854.5	88099.1	110346.8	32877.0	239177.4
27.5 - 32.5	467.5	87011.3	305250.7	148241.8	32479.6	573450.9
32.5 - 37.5	167.4	73975.4	225137.5	73070.8	11005.6	383356.7
37.5 - 42.5	249.7	145042.6	256686.8	77815.5	41286.4	521081.0
42.5 - 47.5	31747.6	112409.5	138179.5	53707.9	25693.1	361737.6
47.5 - 52.5	49718.3	37932.6	24805.6	15893.9	14821.2	143171.6
52.5 - 57.5	465367.3	19259.4	1740.5	283.5	372.5	487023.2
57.5 - 62.5	0.0	0.0	0.0	0.0	0.0	0.0
62.5 - 67.5	64398.7	0.0	0.0	345.5	0.0	64744.2
67.5 - 72.5	0.0	0.0	0.0	0.0	0.0	0.0
Total	612992.1	483949.5	1051726.0	502852.5	160256.3	2811776.3

***** SAI Onroad Model, Version 3.0, July 96 ***** Hour 23
 Chicago 1996 Action (Enh.IM) ALL FLEET
 SUM06 Speed Processor: On

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	HIGHWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	451.8	0.0	0.0	0.0	0.0	451.8
7.5 - 12.5	0.0	0.0	0.0	0.0	0.0	0.0
12.5 - 17.5	0.0	0.0	0.0	0.0	0.0	0.0
17.5 - 22.5	0.0	240.1	6116.7	11972.2	890.1	19219.1
22.5 - 27.5	0.0	3917.8	44894.7	56311.1	16941.0	122064.6
27.5 - 32.5	241.6	45119.6	158422.8	76713.2	16862.9	297360.1
32.5 - 37.5	86.5	37865.3	115862.0	38224.6	5692.2	197730.6
37.5 - 42.5	129.0	75395.4	133233.3	40522.8	21353.1	270633.6
42.5 - 47.5	16396.6	58122.2	71246.6	27776.7	13287.1	186829.2
47.5 - 52.5	25688.0	19612.9	13210.6	8220.1	7663.8	74395.4
52.5 - 57.5	240258.4	9959.4	899.8	146.6	192.7	251456.9
57.5 - 62.5	0.0	0.0	0.0	0.0	0.0	0.0
62.5 - 67.5	33173.8	0.0	0.0	177.9	0.0	33351.7
67.5 - 72.5	0.0	0.0	0.0	0.0	0.0	0.0
Total	316425.8	250232.5	543886.4	260065.5	82883.0	1453493.3

***** SAI Onroad Model, Version 3.0, July 96 ***** Hour 24
 Chicago 1996 Action (Enh.IM) ALL FLEET
 SUM06 Speed Processor: On

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	HIGHWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	246.6	0.0	0.0	0.0	0.0	246.6
7.5 - 12.5	0.0	0.0	0.0	0.0	0.0	0.0
12.5 - 17.5	0.0	0.0	0.0	0.0	0.0	0.0
17.5 - 22.5	0.0	115.9	2937.2	5737.2	426.8	9217.1
22.5 - 27.5	0.0	1905.0	21737.6	27083.5	8108.1	58834.2
27.5 - 32.5	120.5	22014.1	76763.6	37062.8	8103.8	144064.8
32.5 - 37.5	42.8	18424.6	56124.4	18412.8	2734.5	95739.1
37.5 - 42.5	64.4	36864.2	64463.9	19489.6	10278.8	131160.9
42.5 - 47.5	8533.6	28389.3	34426.9	13384.5	6430.7	91165.0
47.5 - 52.5	13085.1	9592.5	6401.7	3958.7	3735.6	36773.6
52.5 - 57.5	127547.7	4830.7	442.7	70.1	90.9	132982.1
57.5 - 62.5	0.0	0.0	0.0	0.0	0.0	0.0
62.5 - 67.5	19687.2	0.0	0.0	107.2	0.0	19794.4
67.5 - 72.5	0.0	0.0	0.0	0.0	0.0	0.0
Total	169327.9	122136.2	263297.9	125306.4	39909.2	719977.6

APPENDIX 2E

**HOURLY VMT MODEL OUTPUT BY FUNCTIONAL CLASS
AND SPEED FOR HOUSTON IN 2020
USING SPEED PROCESSOR**

----- PSRC-EMS Module 2.0 Sept 96XTR --- Hour 1

HGAC HARRIS

Speed Processor: On
SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	EXPRESSWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0	0.0	0.0	0.0
12.5 - 17.5	0.0	0.0	0.0	0.0	0.0	0.0
17.5 - 22.5	0.0	0.0	0.0	0.0	0.0	0.0
22.5 - 27.5	0.0	0.0	1012.9	0.0	293081.8	294094.7
27.5 - 32.5	0.0	0.0	0.0	0.0	0.0	0.0
32.5 - 37.5	1063.1	273.0	146013.4	11719.3	0.0	159068.8
37.5 - 42.5	1626.6	0.0	446211.2	370.6	52264.7	500473.1
42.5 - 47.5	0.0	0.0	117423.2	12.4	0.0	117435.6
47.5 - 52.5	674.0	2290.1	172792.4	25709.6	0.0	201466.1
52.5 - 57.5	19432.2	6144.7	53201.7	717.9	0.0	79496.5
57.5 - 62.5	1091633.4	0.0	106365.7	13375.5	0.0	1211374.6
62.5 - 67.5	2072.7	0.0	0.0	0.0	0.0	2072.7
67.5 - 72.5	11265.8	0.0	0.0	0.0	0.0	11265.8
Total	1127767.8	8707.8	1043020.6	51905.3	345346.4	2576747.8

----- PSRC-EMS Module 2.0 Sept 96XTR --- Hour 2

HGAC HARRIS

Speed Processor: On
SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	EXPRESSWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0	0.0	0.0	0.0
12.5 - 17.5	0.0	0.0	0.0	0.0	0.0	0.0
17.5 - 22.5	0.0	0.0	0.0	0.0	0.0	0.0
22.5 - 27.5	0.0	0.0	1012.9	0.0	293081.8	294094.7
27.5 - 32.5	0.0	0.0	0.0	0.0	0.0	0.0
32.5 - 37.5	1063.1	273.0	146013.4	11719.3	0.0	159068.8
37.5 - 42.5	1626.6	0.0	446211.2	370.6	52264.7	500473.1
42.5 - 47.5	0.0	0.0	117423.2	12.4	0.0	117435.6
47.5 - 52.5	674.0	2290.1	172792.4	25709.6	0.0	201466.1
52.5 - 57.5	19432.2	6144.7	53201.7	717.9	0.0	79496.5
57.5 - 62.5	1091633.4	0.0	106365.7	13375.5	0.0	1211374.6
62.5 - 67.5	2072.7	0.0	0.0	0.0	0.0	2072.7
67.5 - 72.5	11265.8	0.0	0.0	0.0	0.0	11265.8
Total	1127767.8	8707.8	1043020.6	51905.3	345346.4	2576747.8

----- PSRC-EMS Module 2.0 Sept 96XTR --- Hour 3

HGAC HARRIS

Speed Processor: On
SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	EXPRESSWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0	0.0	0.0	0.0
12.5 - 17.5	0.0	0.0	0.0	0.0	0.0	0.0
17.5 - 22.5	0.0	0.0	0.0	0.0	0.0	0.0
22.5 - 27.5	0.0	0.0	1012.9	0.0	293081.8	294094.7
27.5 - 32.5	0.0	0.0	0.0	0.0	0.0	0.0
32.5 - 37.5	1063.1	273.0	146013.4	11719.3	0.0	159068.8
37.5 - 42.5	1626.6	0.0	446211.2	370.6	52264.7	500473.1
42.5 - 47.5	0.0	0.0	117423.2	12.4	0.0	117435.6
47.5 - 52.5	674.0	2290.1	172792.4	25709.6	0.0	201466.1
52.5 - 57.5	19432.2	6144.7	53201.7	717.9	0.0	79496.5
57.5 - 62.5	1091633.4	0.0	106365.7	13375.5	0.0	1211374.6
62.5 - 67.5	2072.7	0.0	0.0	0.0	0.0	2072.7
67.5 - 72.5	11265.8	0.0	0.0	0.0	0.0	11265.8
Total	1127767.8	8707.8	1043020.6	51905.3	345346.4	2576747.8

----- PSRC-EMS Module 2.0 Sept 96XTR --- Hour 4

HGAC HARRIS

Speed Processor: On
SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	EXPRESSWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0	0.0	0.0	0.0
12.5 - 17.5	0.0	0.0	0.0	0.0	0.0	0.0
17.5 - 22.5	0.0	0.0	0.0	0.0	0.0	0.0
22.5 - 27.5	0.0	0.0	1012.9	0.0	293081.8	294094.7
27.5 - 32.5	0.0	0.0	0.0	0.0	0.0	0.0
32.5 - 37.5	1063.1	273.0	146013.4	11719.3	0.0	159068.8
37.5 - 42.5	1626.6	0.0	446211.2	370.6	52264.7	500473.1
42.5 - 47.5	0.0	0.0	117423.2	12.4	0.0	117435.6
47.5 - 52.5	674.0	2290.1	172792.4	25709.6	0.0	201466.1
52.5 - 57.5	19432.2	6144.7	53201.7	717.9	0.0	79496.5
57.5 - 62.5	1091633.4	0.0	106365.7	13375.5	0.0	1211374.6
62.5 - 67.5	2072.7	0.0	0.0	0.0	0.0	2072.7
67.5 - 72.5	11265.8	0.0	0.0	0.0	0.0	11265.8
Total	1127767.8	8707.8	1043020.6	51905.3	345346.4	2576747.8

----- PSRC-EMS Module 2.0 Sept 96XTR --- Hour 5

HGAC HARRIS

Speed Processor: On
SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	EXPRESSWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0	0.0	0.0	0.0
12.5 - 17.5	0.0	0.0	0.0	0.0	0.0	0.0
17.5 - 22.5	0.0	0.0	0.0	0.0	0.0	0.0
22.5 - 27.5	0.0	0.0	1012.9	0.0	293081.8	294094.7
27.5 - 32.5	0.0	0.0	0.0	0.0	0.0	0.0
32.5 - 37.5	1063.1	273.0	146013.4	11719.3	0.0	159068.8
37.5 - 42.5	1626.6	0.0	446211.2	370.6	52264.7	500473.1
42.5 - 47.5	0.0	0.0	117423.2	12.4	0.0	117435.6
47.5 - 52.5	674.0	2290.1	172792.4	25709.6	0.0	201466.1
52.5 - 57.5	19432.2	6144.7	53201.7	717.9	0.0	79496.5
57.5 - 62.5	1091633.4	0.0	106365.7	13375.5	0.0	1211374.6
62.5 - 67.5	2072.7	0.0	0.0	0.0	0.0	2072.7
67.5 - 72.5	11265.8	0.0	0.0	0.0	0.0	11265.8
Total	1127767.8	8707.8	1043020.6	51905.3	345346.4	2576747.8

----- PSRC-EMS Module 2.0 Sept 96XTR --- Hour 6

HGAC HARRIS

Speed Processor: On
SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	EXPRESSWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	435867.8	0.0	122206.4	10580.5	0.0	568654.7
7.5 - 12.5	330595.2	0.0	138657.7	2011.1	0.0	471264.0
12.5 - 17.5	301535.4	0.0	120571.8	6637.5	3113.8	431858.5
17.5 - 22.5	341502.3	0.0	142532.2	3336.1	0.0	487370.6
22.5 - 27.5	521670.2	1466.5	210127.5	3271.0	1186743.9	1923279.0
27.5 - 32.5	386381.6	0.0	360033.8	12992.1	0.0	759407.5
32.5 - 37.5	420418.5	2117.9	1117536.5	38412.4	0.0	1578485.3
37.5 - 42.5	457386.5	0.0	1185128.6	3885.2	214316.7	1860717.1
42.5 - 47.5	446098.6	1365.5	464920.8	13429.0	0.0	925813.9
47.5 - 52.5	434942.6	7323.9	506841.8	94404.3	0.0	1043512.6
52.5 - 57.5	623177.6	30213.1	247907.6	7341.7	0.0	908640.1
57.5 - 62.5	628709.0	0.0	201643.0	48246.1	0.0	878598.1
62.5 - 67.5	11008.5	0.0	0.0	0.0	0.0	11008.5
67.5 - 72.5	19737.0	0.0	0.0	0.0	0.0	19737.0
Total	5359030.5	42487.0	4818107.5	244547.0	1404174.3	11868346.0

----- PSRC-EMS Module 2.0 Sept 96XTR --- Hour 7

HGAC HARRIS

Speed Processor: On
SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	EXPRESSWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	15060.3	0.0	2232.9	5979.1	0.0	23272.3
7.5 - 12.5	45972.5	0.0	4958.2	0.0	0.0	50930.7
12.5 - 17.5	31427.0	0.0	10445.9	0.0	0.0	41872.9
17.5 - 22.5	26966.0	0.0	9296.1	883.9	0.0	37146.0
22.5 - 27.5	23501.5	0.0	18086.1	292.1	888859.2	930738.9
27.5 - 32.5	37770.8	0.0	88667.8	3221.6	0.0	129660.2
32.5 - 37.5	61282.5	1582.2	694525.6	35969.1	0.0	793359.4
37.5 - 42.5	104387.1	0.0	1318813.9	2988.5	160101.0	1586290.5
42.5 - 47.5	172218.1	1095.5	419284.2	4023.2	0.0	596620.9
47.5 - 52.5	395709.4	6491.3	545046.9	80779.3	0.0	1028026.9
52.5 - 57.5	1822985.4	22570.1	201016.8	6230.6	0.0	2052802.9
57.5 - 62.5	1226195.9	0.0	286897.8	42316.5	0.0	1555410.3
62.5 - 67.5	25136.3	0.0	0.0	0.0	0.0	25136.3
67.5 - 72.5	14744.2	0.0	0.0	0.0	0.0	14744.2
Total	4003357.0	31739.1	3599272.3	182684.0	1048960.3	8866012.0

----- PSRC-EMS Module 2.0 Sept 96XTR --- Hour 8

HGAC HARRIS

Speed Processor: On
SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	EXPRESSWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	405.1	3127.5	0.0	3532.6
7.5 - 12.5	0.0	0.0	93.7	1931.5	0.0	2025.2
12.5 - 17.5	0.0	0.0	0.0	0.0	0.0	0.0
17.5 - 22.5	0.0	0.0	2345.6	52.9	0.0	2398.5
22.5 - 27.5	20569.4	0.0	6925.5	98.6	815934.4	843527.9
27.5 - 32.5	5972.7	0.0	22745.1	985.5	0.0	29703.3
32.5 - 37.5	7719.5	253.9	435043.6	28352.9	0.0	471369.9
37.5 - 42.5	35000.0	0.0	1056669.6	962.2	139771.7	1232403.6
42.5 - 47.5	28671.6	1075.8	291357.0	134.4	0.0	321238.8
47.5 - 52.5	70314.1	4773.2	421307.9	51975.0	0.0	548370.2
52.5 - 57.5	681688.3	13244.1	123972.7	1720.6	0.0	820625.7
57.5 - 62.5	2066541.1	0.0	260061.5	31000.9	0.0	2357603.5
62.5 - 67.5	4831.9	0.0	0.0	0.0	0.0	4831.9
67.5 - 72.5	28334.4	0.0	0.0	0.0	0.0	28334.4
Total	2949643.0	19346.9	2620927.3	120342.1	955706.1	6665965.0

----- PSRC-EMS Module 2.0 Sept 96XTR --- Hour 9

HGAC HARRIS

Speed Processor: On
SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	EXPRESSWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	405.1	3127.5	0.0	3532.6
7.5 - 12.5	0.0	0.0	93.7	1931.5	0.0	2025.2
12.5 - 17.5	0.0	0.0	0.0	0.0	0.0	0.0
17.5 - 22.5	0.0	0.0	2345.6	52.9	0.0	2398.5
22.5 - 27.5	20569.4	0.0	6925.5	98.6	815934.4	843527.9
27.5 - 32.5	5972.7	0.0	22745.1	985.5	0.0	29703.3
32.5 - 37.5	7719.5	253.9	435043.6	28352.9	0.0	471369.9
37.5 - 42.5	35000.0	0.0	1056669.6	962.2	139771.7	1232403.6
42.5 - 47.5	28671.6	1075.8	291357.0	134.4	0.0	321238.8
47.5 - 52.5	70314.1	4773.2	421307.9	51975.0	0.0	548370.2
52.5 - 57.5	681688.3	13244.1	123972.7	1720.6	0.0	820625.7
57.5 - 62.5	2066541.1	0.0	260061.5	31000.9	0.0	2357603.5
62.5 - 67.5	4831.9	0.0	0.0	0.0	0.0	4831.9
67.5 - 72.5	28334.4	0.0	0.0	0.0	0.0	28334.4
Total	2949643.0	19346.9	2620927.3	120342.1	955706.1	6665965.0

----- PSRC-EMS Module 2.0 Sept 96XTR --- Hour 10

HGAC HARRIS

Speed Processor: On
SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	EXPRESSWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	405.1	3127.5	0.0	3532.6
7.5 - 12.5	0.0	0.0	93.7	1931.5	0.0	2025.2
12.5 - 17.5	0.0	0.0	0.0	0.0	0.0	0.0
17.5 - 22.5	0.0	0.0	2345.6	52.9	0.0	2398.5
22.5 - 27.5	20569.4	0.0	6925.5	98.6	815934.4	843527.9
27.5 - 32.5	5972.7	0.0	22745.1	985.5	0.0	29703.3
32.5 - 37.5	7719.5	253.9	435043.6	28352.9	0.0	471369.9
37.5 - 42.5	35000.0	0.0	1056669.6	962.2	139771.7	1232403.6
42.5 - 47.5	28671.6	1075.8	291357.0	134.4	0.0	321238.8
47.5 - 52.5	70314.1	4773.2	421307.9	51975.0	0.0	548370.2
52.5 - 57.5	681688.3	13244.1	123972.7	1720.6	0.0	820625.7
57.5 - 62.5	2066541.1	0.0	260061.5	31000.9	0.0	2357603.5
62.5 - 67.5	4831.9	0.0	0.0	0.0	0.0	4831.9
67.5 - 72.5	28334.4	0.0	0.0	0.0	0.0	28334.4
Total	2949643.0	19346.9	2620927.3	120342.1	955706.1	6665965.0

----- PSRC-EMS Module 2.0 Sept 96XTR --- Hour 11

HGAC HARRIS

Speed Processor: On
SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	EXPRESSWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	405.1	3127.5	0.0	3532.6
7.5 - 12.5	0.0	0.0	93.7	1931.5	0.0	2025.2
12.5 - 17.5	0.0	0.0	0.0	0.0	0.0	0.0
17.5 - 22.5	0.0	0.0	2345.6	52.9	0.0	2398.5
22.5 - 27.5	20569.4	0.0	6925.5	98.6	815934.4	843527.9
27.5 - 32.5	5972.7	0.0	22745.1	985.5	0.0	29703.3
32.5 - 37.5	7719.5	253.9	435043.6	28352.9	0.0	471369.9
37.5 - 42.5	35000.0	0.0	1056669.6	962.2	139771.7	1232403.6
42.5 - 47.5	28671.6	1075.8	291357.0	134.4	0.0	321238.8
47.5 - 52.5	70314.1	4773.2	421307.9	51975.0	0.0	548370.2
52.5 - 57.5	681688.3	13244.1	123972.7	1720.6	0.0	820625.7
57.5 - 62.5	2066541.1	0.0	260061.5	31000.9	0.0	2357603.5
62.5 - 67.5	4831.9	0.0	0.0	0.0	0.0	4831.9
67.5 - 72.5	28334.4	0.0	0.0	0.0	0.0	28334.4
Total	2949643.0	19346.9	2620927.3	120342.1	955706.1	6665965.0

----- PSRC-EMS Module 2.0 Sept 96XTR --- Hour 12

HGAC HARRIS

Speed Processor: On
SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	EXPRESSWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	405.1	3127.5	0.0	3532.6
7.5 - 12.5	0.0	0.0	93.7	1931.5	0.0	2025.2
12.5 - 17.5	0.0	0.0	0.0	0.0	0.0	0.0
17.5 - 22.5	0.0	0.0	2345.6	52.9	0.0	2398.5
22.5 - 27.5	20569.4	0.0	6925.5	98.6	815934.4	843527.9
27.5 - 32.5	5972.7	0.0	22745.1	985.5	0.0	29703.3
32.5 - 37.5	7719.5	253.9	435043.6	28352.9	0.0	471369.9
37.5 - 42.5	35000.0	0.0	1056669.6	962.2	139771.7	1232403.6
42.5 - 47.5	28671.6	1075.8	291357.0	134.4	0.0	321238.8
47.5 - 52.5	70314.1	4773.2	421307.9	51975.0	0.0	548370.2
52.5 - 57.5	681688.3	13244.1	123972.7	1720.6	0.0	820625.7
57.5 - 62.5	2066541.1	0.0	260061.5	31000.9	0.0	2357603.5
62.5 - 67.5	4831.9	0.0	0.0	0.0	0.0	4831.9
67.5 - 72.5	28334.4	0.0	0.0	0.0	0.0	28334.4
Total	2949643.0	19346.9	2620927.3	120342.1	955706.1	6665965.0

----- PSRC-EMS Module 2.0 Sept 96XTR ---

Hour 13

HGAC HARRIS

Speed Processor: On
SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	EXPRESSWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	405.1	3127.5	0.0	3532.6
7.5 - 12.5	0.0	0.0	93.7	1931.5	0.0	2025.2
12.5 - 17.5	0.0	0.0	0.0	0.0	0.0	0.0
17.5 - 22.5	0.0	0.0	2345.6	52.9	0.0	2398.5
22.5 - 27.5	20569.4	0.0	6925.5	98.6	815934.4	843527.9
27.5 - 32.5	5972.7	0.0	22745.1	985.5	0.0	29703.3
32.5 - 37.5	7719.5	253.9	435043.6	28352.9	0.0	471369.9
37.5 - 42.5	35000.0	0.0	1056669.6	962.2	139771.7	1232403.6
42.5 - 47.5	28671.6	1075.8	291357.0	134.4	0.0	321238.8
47.5 - 52.5	70314.1	4773.2	421307.9	51975.0	0.0	548370.2
52.5 - 57.5	681688.3	13244.1	123972.7	1720.6	0.0	820625.7
57.5 - 62.5	2066541.1	0.0	260061.5	31000.9	0.0	2357603.5
62.5 - 67.5	4831.9	0.0	0.0	0.0	0.0	4831.9
67.5 - 72.5	28334.4	0.0	0.0	0.0	0.0	28334.4
Total	2949643.0	19346.9	2620927.3	120342.1	955706.1	6665965.0

----- PSRC-EMS Module 2.0 Sept 96XTR ---

Hour 14

HGAC HARRIS

Speed Processor: On
SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	EXPRESSWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	405.1	3127.5	0.0	3532.6
7.5 - 12.5	0.0	0.0	93.7	1931.5	0.0	2025.2
12.5 - 17.5	0.0	0.0	0.0	0.0	0.0	0.0
17.5 - 22.5	0.0	0.0	2345.6	52.9	0.0	2398.5
22.5 - 27.5	20569.4	0.0	6925.5	98.6	815934.4	843527.9
27.5 - 32.5	5972.7	0.0	22745.1	985.5	0.0	29703.3
32.5 - 37.5	7719.5	253.9	435043.6	28352.9	0.0	471369.9
37.5 - 42.5	35000.0	0.0	1056669.6	962.2	139771.7	1232403.6
42.5 - 47.5	28671.6	1075.8	291357.0	134.4	0.0	321238.8
47.5 - 52.5	70314.1	4773.2	421307.9	51975.0	0.0	548370.2
52.5 - 57.5	681688.3	13244.1	123972.7	1720.6	0.0	820625.7
57.5 - 62.5	2066541.1	0.0	260061.5	31000.9	0.0	2357603.5
62.5 - 67.5	4831.9	0.0	0.0	0.0	0.0	4831.9
67.5 - 72.5	28334.4	0.0	0.0	0.0	0.0	28334.4
Total	2949643.0	19346.9	2620927.3	120342.1	955706.1	6665965.0

----- PSRC-EMS Module 2.0 Sept 96XTR ---

Hour 15

HGAC HARRIS

Speed Processor: On
SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	EXPRESSWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	1586.1	2482.4	0.0	4068.5
7.5 - 12.5	581.7	0.0	5983.3	34.8	0.0	6599.8
12.5 - 17.5	0.0	0.0	2943.1	0.0	0.0	2943.1
17.5 - 22.5	0.0	0.0	6021.5	0.0	0.0	6021.5
22.5 - 27.5	0.0	0.0	6458.5	318.7	591624.2	598401.4
27.5 - 32.5	0.0	0.0	11566.5	859.8	0.0	12426.3
32.5 - 37.5	2059.2	1446.8	271887.4	18004.1	0.0	293397.5
37.5 - 42.5	3029.4	0.0	756477.4	452.8	104691.2	864650.7
42.5 - 47.5	17730.9	0.0	212403.2	1641.6	0.0	231775.7
47.5 - 52.5	30197.8	3117.9	331355.7	43749.6	0.0	408421.0
52.5 - 57.5	192762.9	10051.7	97051.1	1456.1	0.0	301321.8
57.5 - 62.5	2084260.0	0.0	211140.8	28536.3	0.0	2323937.0
62.5 - 67.5	3485.6	0.0	0.0	0.0	0.0	3485.6
67.5 - 72.5	25305.0	0.0	0.0	0.0	0.0	25305.0
Total	2359412.3	14616.5	1914874.6	97536.2	696315.5	5082755.0

----- PSRC-EMS Module 2.0 Sept 96XTR ---

Hour 16

HGAC HARRIS

Speed Processor: On
SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	EXPRESSWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	487825.5	2603.1	259902.2	14977.6	0.0	765308.4
7.5 - 12.5	235376.6	0.0	71522.1	1484.0	0.0	308382.7
12.5 - 17.5	204947.9	0.0	92188.4	2316.5	0.0	299452.8
17.5 - 22.5	212198.4	0.0	76342.0	2547.6	0.0	291088.0
22.5 - 27.5	81986.3	0.0	99957.3	3060.6	1161126.4	1346130.5
27.5 - 32.5	206985.9	0.0	164053.7	10197.7	0.0	381237.3
32.5 - 37.5	206251.4	231.0	627840.1	35809.2	0.0	870131.7
37.5 - 42.5	250779.4	0.0	1098894.6	4411.7	202863.4	1556949.1
42.5 - 47.5	272960.1	2746.7	439248.5	9733.1	0.0	724688.4
47.5 - 52.5	364646.4	3361.0	417415.2	64625.7	0.0	850048.3
52.5 - 57.5	974315.7	19689.9	186422.2	2934.7	0.0	1183362.5
57.5 - 62.5	1095064.6	0.0	217201.6	38962.1	0.0	1351228.4
62.5 - 67.5	23110.2	0.0	0.0	0.0	0.0	23110.2
67.5 - 72.5	5329.5	0.0	0.0	0.0	0.0	5329.5
Total	4621778.0	28631.7	3750988.0	191060.6	1363989.8	9956449.0

----- PSRC-EMS Module 2.0 Sept 96XTR ---

Hour 17

HGAC HARRIS

Speed Processor: On
SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	EXPRESSWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	40328.3	1945.4	52579.0	6241.2	0.0	101093.9
7.5 - 12.5	19327.6	0.0	28472.7	590.2	0.0	48390.5
12.5 - 17.5	37612.3	0.0	21825.5	1251.7	0.0	60689.5
17.5 - 22.5	32532.2	0.0	18235.3	309.7	0.0	51077.2
22.5 - 27.5	28383.2	0.0	33471.3	0.0	866110.6	927965.1
27.5 - 32.5	111107.0	0.0	67263.0	1409.7	0.0	179779.7
32.5 - 37.5	31885.1	172.7	435579.5	25625.5	1653.8	494916.6
37.5 - 42.5	70848.7	0.0	992053.2	2060.6	151609.3	1216571.8
42.5 - 47.5	138443.7	0.0	319084.6	6094.5	0.0	463622.8
47.5 - 52.5	263918.6	4564.5	422124.7	58011.0	0.0	748618.7
52.5 - 57.5	893946.9	14715.2	156326.8	2390.9	0.0	1067379.8
57.5 - 62.5	1743590.3	0.0	256274.0	38803.6	0.0	2038667.9
62.5 - 67.5	25996.5	0.0	0.0	0.0	0.0	25996.5
67.5 - 72.5	16151.6	0.0	0.0	0.0	0.0	16151.6
Total	3454071.8	21397.8	2803289.8	142788.6	1019373.6	7440921.0

----- PSRC-EMS Module 2.0 Sept 96XTR ---

Hour 18

HGAC HARRIS

Speed Processor: On
SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	EXPRESSWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0	0.0	0.0	0.0
12.5 - 17.5	0.0	0.0	0.0	0.0	0.0	0.0
17.5 - 22.5	0.0	0.0	0.0	0.0	0.0	0.0
22.5 - 27.5	0.0	0.0	1012.9	0.0	293081.8	294094.7
27.5 - 32.5	0.0	0.0	0.0	0.0	0.0	0.0
32.5 - 37.5	1063.1	273.0	146013.4	11719.3	0.0	159068.8
37.5 - 42.5	1626.6	0.0	446211.2	370.6	52264.7	500473.1
42.5 - 47.5	0.0	0.0	117423.2	12.4	0.0	117435.6
47.5 - 52.5	674.0	2290.1	172792.4	25709.6	0.0	201466.1
52.5 - 57.5	19432.2	6144.7	53201.7	717.9	0.0	79496.5
57.5 - 62.5	1091633.4	0.0	106365.7	13375.5	0.0	1211374.6
62.5 - 67.5	2072.7	0.0	0.0	0.0	0.0	2072.7
67.5 - 72.5	11265.8	0.0	0.0	0.0	0.0	11265.8
Total	1127767.8	8707.8	1043020.6	51905.3	345346.4	2576747.8

----- PSRC-EMS Module 2.0 Sept 96XTR --- Hour 19

HGAC HARRIS

Speed Processor: On
SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	EXPRESSWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0	0.0	0.0	0.0
12.5 - 17.5	0.0	0.0	0.0	0.0	0.0	0.0
17.5 - 22.5	0.0	0.0	0.0	0.0	0.0	0.0
22.5 - 27.5	0.0	0.0	1012.9	0.0	293081.8	294094.7
27.5 - 32.5	0.0	0.0	0.0	0.0	0.0	0.0
32.5 - 37.5	1063.1	273.0	146013.4	11719.3	0.0	159068.8
37.5 - 42.5	1626.6	0.0	446211.2	370.6	52264.7	500473.1
42.5 - 47.5	0.0	0.0	117423.2	12.4	0.0	117435.6
47.5 - 52.5	674.0	2290.1	172792.4	25709.6	0.0	201466.1
52.5 - 57.5	19432.2	6144.7	53201.7	717.9	0.0	79496.5
57.5 - 62.5	1091633.4	0.0	106365.7	13375.5	0.0	1211374.6
62.5 - 67.5	2072.7	0.0	0.0	0.0	0.0	2072.7
67.5 - 72.5	11265.8	0.0	0.0	0.0	0.0	11265.8
Total	1127767.8	8707.8	1043020.6	51905.3	345346.4	2576747.8

----- PSRC-EMS Module 2.0 Sept 96XTR --- Hour 20

HGAC HARRIS

Speed Processor: On
SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	EXPRESSWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0	0.0	0.0	0.0
12.5 - 17.5	0.0	0.0	0.0	0.0	0.0	0.0
17.5 - 22.5	0.0	0.0	0.0	0.0	0.0	0.0
22.5 - 27.5	0.0	0.0	1012.9	0.0	293081.8	294094.7
27.5 - 32.5	0.0	0.0	0.0	0.0	0.0	0.0
32.5 - 37.5	1063.1	273.0	146013.4	11719.3	0.0	159068.8
37.5 - 42.5	1626.6	0.0	446211.2	370.6	52264.7	500473.1
42.5 - 47.5	0.0	0.0	117423.2	12.4	0.0	117435.6
47.5 - 52.5	674.0	2290.1	172792.4	25709.6	0.0	201466.1
52.5 - 57.5	19432.2	6144.7	53201.7	717.9	0.0	79496.5
57.5 - 62.5	1091633.4	0.0	106365.7	13375.5	0.0	1211374.6
62.5 - 67.5	2072.7	0.0	0.0	0.0	0.0	2072.7
67.5 - 72.5	11265.8	0.0	0.0	0.0	0.0	11265.8
Total	1127767.8	8707.8	1043020.6	51905.3	345346.4	2576747.8

----- PSRC-EMS Module 2.0 Sept 96XTR --- Hour 21

HGAC HARRIS

Speed Processor: On
SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	EXPRESSWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0	0.0	0.0	0.0
12.5 - 17.5	0.0	0.0	0.0	0.0	0.0	0.0
17.5 - 22.5	0.0	0.0	0.0	0.0	0.0	0.0
22.5 - 27.5	0.0	0.0	1012.9	0.0	293081.8	294094.7
27.5 - 32.5	0.0	0.0	0.0	0.0	0.0	0.0
32.5 - 37.5	1063.1	273.0	146013.4	11719.3	0.0	159068.8
37.5 - 42.5	1626.6	0.0	446211.2	370.6	52264.7	500473.1
42.5 - 47.5	0.0	0.0	117423.2	12.4	0.0	117435.6
47.5 - 52.5	674.0	2290.1	172792.4	25709.6	0.0	201466.1
52.5 - 57.5	19432.2	6144.7	53201.7	717.9	0.0	79496.5
57.5 - 62.5	1091633.4	0.0	106365.7	13375.5	0.0	1211374.6
62.5 - 67.5	2072.7	0.0	0.0	0.0	0.0	2072.7
67.5 - 72.5	11265.8	0.0	0.0	0.0	0.0	11265.8
Total	1127767.8	8707.8	1043020.6	51905.3	345346.4	2576747.8

----- PSRC-EMS Module 2.0 Sept 96XTR --- Hour 22

HGAC HARRIS

Speed Processor: On
SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	EXPRESSWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0	0.0	0.0	0.0
12.5 - 17.5	0.0	0.0	0.0	0.0	0.0	0.0
17.5 - 22.5	0.0	0.0	0.0	0.0	0.0	0.0
22.5 - 27.5	0.0	0.0	1012.9	0.0	293081.8	294094.7
27.5 - 32.5	0.0	0.0	0.0	0.0	0.0	0.0
32.5 - 37.5	1063.1	273.0	146013.4	11719.3	0.0	159068.8
37.5 - 42.5	1626.6	0.0	446211.2	370.6	52264.7	500473.1
42.5 - 47.5	0.0	0.0	117423.2	12.4	0.0	117435.6
47.5 - 52.5	674.0	2290.1	172792.4	25709.6	0.0	201466.1
52.5 - 57.5	19432.2	6144.7	53201.7	717.9	0.0	79496.5
57.5 - 62.5	1091633.4	0.0	106365.7	13375.5	0.0	1211374.6
62.5 - 67.5	2072.7	0.0	0.0	0.0	0.0	2072.7
67.5 - 72.5	11265.8	0.0	0.0	0.0	0.0	11265.8
Total	1127767.8	8707.8	1043020.6	51905.3	345346.4	2576747.8

----- PSRC-EMS Module 2.0 Sept 96XTR --- Hour 23

HGAC HARRIS

Speed Processor: On
SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	EXPRESSWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0	0.0	0.0	0.0
12.5 - 17.5	0.0	0.0	0.0	0.0	0.0	0.0
17.5 - 22.5	0.0	0.0	0.0	0.0	0.0	0.0
22.5 - 27.5	0.0	0.0	1012.9	0.0	293081.8	294094.7
27.5 - 32.5	0.0	0.0	0.0	0.0	0.0	0.0
32.5 - 37.5	1063.1	273.0	146013.4	11719.3	0.0	159068.8
37.5 - 42.5	1626.6	0.0	446211.2	370.6	52264.7	500473.1
42.5 - 47.5	0.0	0.0	117423.2	12.4	0.0	117435.6
47.5 - 52.5	674.0	2290.1	172792.4	25709.6	0.0	201466.1
52.5 - 57.5	19432.2	6144.7	53201.7	717.9	0.0	79496.5
57.5 - 62.5	1091633.4	0.0	106365.7	13375.5	0.0	1211374.6
62.5 - 67.5	2072.7	0.0	0.0	0.0	0.0	2072.7
67.5 - 72.5	11265.8	0.0	0.0	0.0	0.0	11265.8
Total	1127767.8	8707.8	1043020.6	51905.3	345346.4	2576747.8

----- PSRC-EMS Module 2.0 Sept 96XTR --- Hour 24

HGAC HARRIS

Speed Processor: On
SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	EXPRESSWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0	0.0	0.0	0.0
12.5 - 17.5	0.0	0.0	0.0	0.0	0.0	0.0
17.5 - 22.5	0.0	0.0	0.0	0.0	0.0	0.0
22.5 - 27.5	0.0	0.0	1012.9	0.0	293081.8	294094.7
27.5 - 32.5	0.0	0.0	0.0	0.0	0.0	0.0
32.5 - 37.5	1063.1	273.0	146013.4	11719.3	0.0	159068.8
37.5 - 42.5	1626.6	0.0	446211.2	370.6	52264.7	500473.1
42.5 - 47.5	0.0	0.0	117423.2	12.4	0.0	117435.6
47.5 - 52.5	674.0	2290.1	172792.4	25709.6	0.0	201466.1
52.5 - 57.5	19432.2	6144.7	53201.7	717.9	0.0	79496.5
57.5 - 62.5	1091633.4	0.0	106365.7	13375.5	0.0	1211374.6
62.5 - 67.5	2072.7	0.0	0.0	0.0	0.0	2072.7
67.5 - 72.5	11265.8	0.0	0.0	0.0	0.0	11265.8
Total	1127767.8	8707.8	1043020.6	51905.3	345346.4	2576747.8

APPENDIX 2F

**HOURLY VMT MODEL OUTPUT BY FUNCTIONAL CLASS
AND SPEED FOR HOUSTON IN 2020
USING HGAC TRANSPORTATION MODEL SPEEDS**

----- PSRC-EMS Module 2.0 Sept 96XTR --- Hour 1

HGAC HARRIS

Speed Processor: Off
SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	EXPRESSWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0	0.0	0.0	0.0
12.5 - 17.5	0.0	0.0	0.0	0.0	0.0	0.0
17.5 - 22.5	0.0	0.0	0.0	0.0	0.0	0.0
22.5 - 27.5	0.0	0.0	1012.9	0.0	293081.8	294094.7
27.5 - 32.5	0.0	0.0	0.0	0.0	0.0	0.0
32.5 - 37.5	1063.1	273.0	146013.4	11719.3	0.0	159068.8
37.5 - 42.5	1626.6	0.0	446211.2	370.6	52264.7	500473.1
42.5 - 47.5	0.0	0.0	117423.2	12.4	0.0	117435.6
47.5 - 52.5	674.0	2290.1	172792.4	25709.6	0.0	201466.1
52.5 - 57.5	19432.2	6144.7	53201.7	717.9	0.0	79496.5
57.5 - 62.5	1091633.4	0.0	106365.7	13375.5	0.0	1211374.6
62.5 - 67.5	2072.7	0.0	0.0	0.0	0.0	2072.7
67.5 - 72.5	11265.8	0.0	0.0	0.0	0.0	11265.8
Total	1127767.8	8707.8	1043020.6	51905.3	345346.4	2576747.8

----- PSRC-EMS Module 2.0 Sept 96XTR --- Hour 2

HGAC HARRIS

Speed Processor: Off
SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	EXPRESSWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0	0.0	0.0	0.0
12.5 - 17.5	0.0	0.0	0.0	0.0	0.0	0.0
17.5 - 22.5	0.0	0.0	0.0	0.0	0.0	0.0
22.5 - 27.5	0.0	0.0	1012.9	0.0	293081.8	294094.7
27.5 - 32.5	0.0	0.0	0.0	0.0	0.0	0.0
32.5 - 37.5	1063.1	273.0	146013.4	11719.3	0.0	159068.8
37.5 - 42.5	1626.6	0.0	446211.2	370.6	52264.7	500473.1
42.5 - 47.5	0.0	0.0	117423.2	12.4	0.0	117435.6
47.5 - 52.5	674.0	2290.1	172792.4	25709.6	0.0	201466.1
52.5 - 57.5	19432.2	6144.7	53201.7	717.9	0.0	79496.5
57.5 - 62.5	1091633.4	0.0	106365.7	13375.5	0.0	1211374.6
62.5 - 67.5	2072.7	0.0	0.0	0.0	0.0	2072.7
67.5 - 72.5	11265.8	0.0	0.0	0.0	0.0	11265.8
Total	1127767.8	8707.8	1043020.6	51905.3	345346.4	2576747.8

----- PSRC-EMS Module 2.0 Sept 96XTR --- Hour 3

HGAC HARRIS

Speed Processor: Off
SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	EXPRESSWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0	0.0	0.0	0.0
12.5 - 17.5	0.0	0.0	0.0	0.0	0.0	0.0
17.5 - 22.5	0.0	0.0	0.0	0.0	0.0	0.0
22.5 - 27.5	0.0	0.0	1012.9	0.0	293081.8	294094.7
27.5 - 32.5	0.0	0.0	0.0	0.0	0.0	0.0
32.5 - 37.5	1063.1	273.0	146013.4	11719.3	0.0	159068.8
37.5 - 42.5	1626.6	0.0	446211.2	370.6	52264.7	500473.1
42.5 - 47.5	0.0	0.0	117423.2	12.4	0.0	117435.6
47.5 - 52.5	674.0	2290.1	172792.4	25709.6	0.0	201466.1
52.5 - 57.5	19432.2	6144.7	53201.7	717.9	0.0	79496.5
57.5 - 62.5	1091633.4	0.0	106365.7	13375.5	0.0	1211374.6
62.5 - 67.5	2072.7	0.0	0.0	0.0	0.0	2072.7
67.5 - 72.5	11265.8	0.0	0.0	0.0	0.0	11265.8
Total	1127767.8	8707.8	1043020.6	51905.3	345346.4	2576747.8

----- PSRC-EMS Module 2.0 Sept 96XTR --- Hour 4

HGAC HARRIS

Speed Processor: Off
SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	EXPRESSWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0	0.0	0.0	0.0
12.5 - 17.5	0.0	0.0	0.0	0.0	0.0	0.0
17.5 - 22.5	0.0	0.0	0.0	0.0	0.0	0.0
22.5 - 27.5	0.0	0.0	1012.9	0.0	293081.8	294094.7
27.5 - 32.5	0.0	0.0	0.0	0.0	0.0	0.0
32.5 - 37.5	1063.1	273.0	146013.4	11719.3	0.0	159068.8
37.5 - 42.5	1626.6	0.0	446211.2	370.6	52264.7	500473.1
42.5 - 47.5	0.0	0.0	117423.2	12.4	0.0	117435.6
47.5 - 52.5	674.0	2290.1	172792.4	25709.6	0.0	201466.1
52.5 - 57.5	19432.2	6144.7	53201.7	717.9	0.0	79496.5
57.5 - 62.5	1091633.4	0.0	106365.7	13375.5	0.0	1211374.6
62.5 - 67.5	2072.7	0.0	0.0	0.0	0.0	2072.7
67.5 - 72.5	11265.8	0.0	0.0	0.0	0.0	11265.8
Total	1127767.8	8707.8	1043020.6	51905.3	345346.4	2576747.8

----- PSRC-EMS Module 2.0 Sept 96XTR --- Hour 5

HGAC HARRIS

Speed Processor: Off
SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	EXPRESSWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0	0.0	0.0	0.0
12.5 - 17.5	0.0	0.0	0.0	0.0	0.0	0.0
17.5 - 22.5	0.0	0.0	0.0	0.0	0.0	0.0
22.5 - 27.5	0.0	0.0	1012.9	0.0	293081.8	294094.7
27.5 - 32.5	0.0	0.0	0.0	0.0	0.0	0.0
32.5 - 37.5	1063.1	273.0	146013.4	11719.3	0.0	159068.8
37.5 - 42.5	1626.6	0.0	446211.2	370.6	52264.7	500473.1
42.5 - 47.5	0.0	0.0	117423.2	12.4	0.0	117435.6
47.5 - 52.5	674.0	2290.1	172792.4	25709.6	0.0	201466.1
52.5 - 57.5	19432.2	6144.7	53201.7	717.9	0.0	79496.5
57.5 - 62.5	1091633.4	0.0	106365.7	13375.5	0.0	1211374.6
62.5 - 67.5	2072.7	0.0	0.0	0.0	0.0	2072.7
67.5 - 72.5	11265.8	0.0	0.0	0.0	0.0	11265.8
Total	1127767.8	8707.8	1043020.6	51905.3	345346.4	2576747.8

----- PSRC-EMS Module 2.0 Sept 96XTR --- Hour 6

HGAC HARRIS

Speed Processor: Off
SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	EXPRESSWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0	0.0	0.0	0.0
12.5 - 17.5	0.0	0.0	0.0	0.0	0.0	0.0
17.5 - 22.5	0.0	0.0	0.0	0.0	0.0	0.0
22.5 - 27.5	0.0	0.0	4127.6	0.0	1189857.5	1193985.1
27.5 - 32.5	0.0	0.0	0.0	0.0	0.0	0.0
32.5 - 37.5	5043.4	2117.9	668755.2	53361.2	0.0	729277.7
37.5 - 42.5	7717.5	0.0	2048239.8	1916.1	214316.7	2272190.0
42.5 - 47.5	0.0	0.0	535233.9	40.6	0.0	535274.5
47.5 - 52.5	2847.0	10156.0	810455.4	123603.2	0.0	947061.6
52.5 - 57.5	92577.9	30213.1	255745.4	3690.5	0.0	382226.9
57.5 - 62.5	5190166.0	0.0	495551.2	61935.5	0.0	5747652.5
62.5 - 67.5	11008.5	0.0	0.0	0.0	0.0	11008.5
67.5 - 72.5	49666.8	0.0	0.0	0.0	0.0	49666.8
Total	5359027.5	42487.0	4818108.5	244547.1	1404174.1	11868344.0

----- PSRC-EMS Module 2.0 Sept 96XTR --- Hour 7

HGAC HARRIS

Speed Processor: Off
SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	EXPRESSWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0	0.0	0.0	0.0
12.5 - 17.5	0.0	0.0	0.0	0.0	0.0	0.0
17.5 - 22.5	0.0	0.0	0.0	0.0	0.0	0.0
22.5 - 27.5	0.0	0.0	3083.4	0.0	888859.2	891942.6
27.5 - 32.5	0.0	0.0	0.0	0.0	0.0	0.0
32.5 - 37.5	3767.6	1582.2	499580.0	39862.4	0.0	544792.2
37.5 - 42.5	5765.2	0.0	1530097.3	1431.4	160101.0	1697394.9
42.5 - 47.5	0.0	0.0	399836.1	30.3	0.0	399866.4
47.5 - 52.5	2126.8	7586.8	605434.1	92335.2	0.0	707482.9
52.5 - 57.5	69158.5	22570.1	191049.5	2756.9	0.0	285535.0
57.5 - 62.5	3877212.3	0.0	370191.7	46267.7	0.0	4293671.5
62.5 - 67.5	8223.7	0.0	0.0	0.0	0.0	8223.7
67.5 - 72.5	37102.6	0.0	0.0	0.0	0.0	37102.6
Total	4003356.5	31739.1	3599272.3	182684.0	1048960.3	8866012.0

----- PSRC-EMS Module 2.0 Sept 96XTR --- Hour 8

HGAC HARRIS

Speed Processor: Off
SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	EXPRESSWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0	0.0	0.0	0.0
12.5 - 17.5	0.0	0.0	0.0	0.0	0.0	0.0
17.5 - 22.5	0.0	0.0	0.0	0.0	0.0	0.0
22.5 - 27.5	0.0	0.0	3066.9	0.0	815934.4	819001.2
27.5 - 32.5	0.0	0.0	0.0	0.0	0.0	0.0
32.5 - 37.5	2505.2	253.9	383259.0	29543.7	0.0	415561.8
37.5 - 42.5	4017.5	0.0	1122718.1	721.1	139771.7	1267228.5
42.5 - 47.5	0.0	0.0	288231.8	28.0	0.0	288259.8
47.5 - 52.5	1535.0	5848.9	432742.9	57327.8	0.0	497454.6
52.5 - 57.5	51193.2	13244.1	126673.4	1326.2	0.0	192436.9
57.5 - 62.5	2857224.5	0.0	264233.7	31395.3	0.0	3152853.5
62.5 - 67.5	4831.9	0.0	0.0	0.0	0.0	4831.9
67.5 - 72.5	28334.4	0.0	0.0	0.0	0.0	28334.4
Total	2949641.8	19346.9	2620925.8	120342.1	955706.1	6665962.5

----- PSRC-EMS Module 2.0 Sept 96XTR --- Hour 9

HGAC HARRIS

Speed Processor: Off
SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	EXPRESSWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0	0.0	0.0	0.0
12.5 - 17.5	0.0	0.0	0.0	0.0	0.0	0.0
17.5 - 22.5	0.0	0.0	0.0	0.0	0.0	0.0
22.5 - 27.5	0.0	0.0	3066.9	0.0	815934.4	819001.2
27.5 - 32.5	0.0	0.0	0.0	0.0	0.0	0.0
32.5 - 37.5	2505.2	253.9	383259.0	29543.7	0.0	415561.8
37.5 - 42.5	4017.5	0.0	1122718.1	721.1	139771.7	1267228.5
42.5 - 47.5	0.0	0.0	288231.8	28.0	0.0	288259.8
47.5 - 52.5	1535.0	5848.9	432742.9	57327.8	0.0	497454.6
52.5 - 57.5	51193.2	13244.1	126673.4	1326.2	0.0	192436.9
57.5 - 62.5	2857224.5	0.0	264233.7	31395.3	0.0	3152853.5
62.5 - 67.5	4831.9	0.0	0.0	0.0	0.0	4831.9
67.5 - 72.5	28334.4	0.0	0.0	0.0	0.0	28334.4
Total	2949641.8	19346.9	2620925.8	120342.1	955706.1	6665962.5

----- PSRC-EMS Module 2.0 Sept 96XTR --- Hour 10

HGAC HARRIS

Speed Processor: Off
SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	EXPRESSWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0	0.0	0.0	0.0
12.5 - 17.5	0.0	0.0	0.0	0.0	0.0	0.0
17.5 - 22.5	0.0	0.0	0.0	0.0	0.0	0.0
22.5 - 27.5	0.0	0.0	3066.9	0.0	815934.4	819001.2
27.5 - 32.5	0.0	0.0	0.0	0.0	0.0	0.0
32.5 - 37.5	2505.2	253.9	383259.0	29543.7	0.0	415561.8
37.5 - 42.5	4017.5	0.0	1122718.1	721.1	139771.7	1267228.5
42.5 - 47.5	0.0	0.0	288231.8	28.0	0.0	288259.8
47.5 - 52.5	1535.0	5848.9	432742.9	57327.8	0.0	497454.6
52.5 - 57.5	51193.2	13244.1	126673.4	1326.2	0.0	192436.9
57.5 - 62.5	2857224.5	0.0	264233.7	31395.3	0.0	3152853.5
62.5 - 67.5	4831.9	0.0	0.0	0.0	0.0	4831.9
67.5 - 72.5	28334.4	0.0	0.0	0.0	0.0	28334.4
Total	2949641.8	19346.9	2620925.8	120342.1	955706.1	6665962.5

----- PSRC-EMS Module 2.0 Sept 96XTR ---

Hour 11

HGAC HARRIS

Speed Processor: Off

SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	EXPRESSWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0	0.0	0.0	0.0
12.5 - 17.5	0.0	0.0	0.0	0.0	0.0	0.0
17.5 - 22.5	0.0	0.0	0.0	0.0	0.0	0.0
22.5 - 27.5	0.0	0.0	3066.9	0.0	815934.4	819001.2
27.5 - 32.5	0.0	0.0	0.0	0.0	0.0	0.0
32.5 - 37.5	2505.2	253.9	383259.0	29543.7	0.0	415561.8
37.5 - 42.5	4017.5	0.0	1122718.1	721.1	139771.7	1267228.5
42.5 - 47.5	0.0	0.0	288231.8	28.0	0.0	288259.8
47.5 - 52.5	1535.0	5848.9	432742.9	57327.8	0.0	497454.6
52.5 - 57.5	51193.2	13244.1	126673.4	1326.2	0.0	192436.9
57.5 - 62.5	2857224.5	0.0	264233.7	31395.3	0.0	3152853.5
62.5 - 67.5	4831.9	0.0	0.0	0.0	0.0	4831.9
67.5 - 72.5	28334.4	0.0	0.0	0.0	0.0	28334.4
Total	2949641.8	19346.9	2620925.8	120342.1	955706.1	6665962.5

----- PSRC-EMS Module 2.0 Sept 96XTR ---

Hour 12

HGAC HARRIS

Speed Processor: Off

SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	EXPRESSWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0	0.0	0.0	0.0
12.5 - 17.5	0.0	0.0	0.0	0.0	0.0	0.0
17.5 - 22.5	0.0	0.0	0.0	0.0	0.0	0.0
22.5 - 27.5	0.0	0.0	3066.9	0.0	815934.4	819001.2
27.5 - 32.5	0.0	0.0	0.0	0.0	0.0	0.0
32.5 - 37.5	2505.2	253.9	383259.0	29543.7	0.0	415561.8
37.5 - 42.5	4017.5	0.0	1122718.1	721.1	139771.7	1267228.5
42.5 - 47.5	0.0	0.0	288231.8	28.0	0.0	288259.8
47.5 - 52.5	1535.0	5848.9	432742.9	57327.8	0.0	497454.6
52.5 - 57.5	51193.2	13244.1	126673.4	1326.2	0.0	192436.9
57.5 - 62.5	2857224.5	0.0	264233.7	31395.3	0.0	3152853.5
62.5 - 67.5	4831.9	0.0	0.0	0.0	0.0	4831.9
67.5 - 72.5	28334.4	0.0	0.0	0.0	0.0	28334.4
Total	2949641.8	19346.9	2620925.8	120342.1	955706.1	6665962.5

----- PSRC-EMS Module 2.0 Sept 96XTR --- Hour 13

HGAC HARRIS

Speed Processor: Off
SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	EXPRESSWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0	0.0	0.0	0.0
12.5 - 17.5	0.0	0.0	0.0	0.0	0.0	0.0
17.5 - 22.5	0.0	0.0	0.0	0.0	0.0	0.0
22.5 - 27.5	0.0	0.0	3066.9	0.0	815934.4	819001.2
27.5 - 32.5	0.0	0.0	0.0	0.0	0.0	0.0
32.5 - 37.5	2505.2	253.9	383259.0	29543.7	0.0	415561.8
37.5 - 42.5	4017.5	0.0	1122718.1	721.1	139771.7	1267228.5
42.5 - 47.5	0.0	0.0	288231.8	28.0	0.0	288259.8
47.5 - 52.5	1535.0	5848.9	432742.9	57327.8	0.0	497454.6
52.5 - 57.5	51193.2	13244.1	126673.4	1326.2	0.0	192436.9
57.5 - 62.5	2857224.5	0.0	264233.7	31395.3	0.0	3152853.5
62.5 - 67.5	4831.9	0.0	0.0	0.0	0.0	4831.9
67.5 - 72.5	28334.4	0.0	0.0	0.0	0.0	28334.4
Total	2949641.8	19346.9	2620925.8	120342.1	955706.1	6665962.5

----- PSRC-EMS Module 2.0 Sept 96XTR --- Hour 14

HGAC HARRIS

Speed Processor: Off
SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	EXPRESSWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0	0.0	0.0	0.0
12.5 - 17.5	0.0	0.0	0.0	0.0	0.0	0.0
17.5 - 22.5	0.0	0.0	0.0	0.0	0.0	0.0
22.5 - 27.5	0.0	0.0	3066.9	0.0	815934.4	819001.2
27.5 - 32.5	0.0	0.0	0.0	0.0	0.0	0.0
32.5 - 37.5	2505.2	253.9	383259.0	29543.7	0.0	415561.8
37.5 - 42.5	4017.5	0.0	1122718.1	721.1	139771.7	1267228.5
42.5 - 47.5	0.0	0.0	288231.8	28.0	0.0	288259.8
47.5 - 52.5	1535.0	5848.9	432742.9	57327.8	0.0	497454.6
52.5 - 57.5	51193.2	13244.1	126673.4	1326.2	0.0	192436.9
57.5 - 62.5	2857224.5	0.0	264233.7	31395.3	0.0	3152853.5
62.5 - 67.5	4831.9	0.0	0.0	0.0	0.0	4831.9
67.5 - 72.5	28334.4	0.0	0.0	0.0	0.0	28334.4
Total	2949641.8	19346.9	2620925.8	120342.1	955706.1	6665962.5

----- PSRC-EMS Module 2.0 Sept 96XTR --- Hour 15

HGAC HARRIS

Speed Processor: Off
SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	EXPRESSWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0	0.0	0.0	0.0
12.5 - 17.5	0.0	0.0	0.0	0.0	0.0	0.0
17.5 - 22.5	0.0	0.0	0.0	0.0	0.0	0.0
22.5 - 27.5	0.0	0.0	2043.8	0.0	591624.2	593668.0
27.5 - 32.5	0.0	0.0	0.0	0.0	0.0	0.0
32.5 - 37.5	2059.2	117.9	253244.8	19282.2	0.0	274704.1
37.5 - 42.5	3029.4	0.0	778208.4	452.8	104691.2	886381.7
42.5 - 47.5	0.0	0.0	220600.1	7.4	0.0	220607.5
47.5 - 52.5	1323.8	4446.8	350404.0	47801.3	0.0	403975.9
52.5 - 57.5	43599.7	10051.7	96153.6	1053.0	0.0	150858.0
57.5 - 62.5	2280609.5	0.0	214219.7	28939.5	0.0	2523768.8
62.5 - 67.5	3485.6	0.0	0.0	0.0	0.0	3485.6
67.5 - 72.5	25305.0	0.0	0.0	0.0	0.0	25305.0
Total	2359412.0	14616.5	1914874.5	97536.2	696315.5	5082754.5

----- PSRC-EMS Module 2.0 Sept 96XTR --- Hour 16

HGAC HARRIS

Speed Processor: Off
SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	EXPRESSWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0	0.0	0.0	0.0
12.5 - 17.5	0.0	0.0	0.0	0.0	0.0	0.0
17.5 - 22.5	0.0	0.0	0.0	0.0	0.0	0.0
22.5 - 27.5	0.0	0.0	4003.6	0.0	1158913.5	1162917.1
27.5 - 32.5	0.0	0.0	0.0	0.0	0.0	0.0
32.5 - 37.5	4033.7	231.0	496073.5	37771.3	0.0	538109.5
37.5 - 42.5	5934.2	0.0	1524408.3	886.9	205076.2	1736305.6
42.5 - 47.5	0.0	0.0	432126.3	14.6	0.0	432140.9
47.5 - 52.5	2593.1	8710.7	686395.4	93636.5	0.0	791335.7
52.5 - 57.5	85406.1	19689.9	188352.3	2062.6	0.0	295510.9
57.5 - 62.5	4467411.5	0.0	419628.4	56688.6	0.0	4943728.5
62.5 - 67.5	6827.8	0.0	0.0	0.0	0.0	6827.8
67.5 - 72.5	49569.2	0.0	0.0	0.0	0.0	49569.2
Total	4621775.5	28631.7	3750988.0	191060.6	1363989.8	9956446.0

----- PSRC-EMS Module 2.0 Sept 96XTR --- Hour 17

HGAC HARRIS

Speed Processor: Off
SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	EXPRESSWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0	0.0	0.0	0.0
12.5 - 17.5	0.0	0.0	0.0	0.0	0.0	0.0
17.5 - 22.5	0.0	0.0	0.0	0.0	0.0	0.0
22.5 - 27.5	0.0	0.0	2992.1	0.0	866110.6	869102.7
27.5 - 32.5	0.0	0.0	0.0	0.0	0.0	0.0
32.5 - 37.5	3014.5	172.7	370738.9	28228.3	0.0	402154.4
37.5 - 42.5	4434.9	0.0	1139260.3	662.8	153263.1	1297621.0
42.5 - 47.5	0.0	0.0	322948.5	10.9	0.0	322959.4
47.5 - 52.5	1937.9	6509.9	512975.7	69979.0	0.0	591402.5
52.5 - 57.5	63828.0	14715.2	140764.6	1541.5	0.0	220849.3
57.5 - 62.5	3338708.8	0.0	313607.7	42366.0	0.0	3694682.5
62.5 - 67.5	5102.7	0.0	0.0	0.0	0.0	5102.7
67.5 - 72.5	37045.4	0.0	0.0	0.0	0.0	37045.4
Total	3454072.3	21397.8	2803287.8	142788.6	1019373.7	7440920.0

----- PSRC-EMS Module 2.0 Sept 96XTR --- Hour 18

HGAC HARRIS

Speed Processor: Off
SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	EXPRESSWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0	0.0	0.0	0.0
12.5 - 17.5	0.0	0.0	0.0	0.0	0.0	0.0
17.5 - 22.5	0.0	0.0	0.0	0.0	0.0	0.0
22.5 - 27.5	0.0	0.0	1012.9	0.0	293081.8	294094.7
27.5 - 32.5	0.0	0.0	0.0	0.0	0.0	0.0
32.5 - 37.5	1063.1	273.0	146013.4	11719.3	0.0	159068.8
37.5 - 42.5	1626.6	0.0	446211.2	370.6	52264.7	500473.1
42.5 - 47.5	0.0	0.0	117423.2	12.4	0.0	117435.6
47.5 - 52.5	674.0	2290.1	172792.4	25709.6	0.0	201466.1
52.5 - 57.5	19432.2	6144.7	53201.7	717.9	0.0	79496.5
57.5 - 62.5	1091633.4	0.0	106365.7	13375.5	0.0	1211374.6
62.5 - 67.5	2072.7	0.0	0.0	0.0	0.0	2072.7
67.5 - 72.5	11265.8	0.0	0.0	0.0	0.0	11265.8
Total	1127767.8	8707.8	1043020.6	51905.3	345346.4	2576747.8

----- PSRC-EMS Module 2.0 Sept 96XTR --- Hour 19

HGAC HARRIS

Speed Processor: Off

SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	EXPRESSWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0	0.0	0.0	0.0
12.5 - 17.5	0.0	0.0	0.0	0.0	0.0	0.0
17.5 - 22.5	0.0	0.0	0.0	0.0	0.0	0.0
22.5 - 27.5	0.0	0.0	1012.9	0.0	293081.8	294094.7
27.5 - 32.5	0.0	0.0	0.0	0.0	0.0	0.0
32.5 - 37.5	1063.1	273.0	146013.4	11719.3	0.0	159068.8
37.5 - 42.5	1626.6	0.0	446211.2	370.6	52264.7	500473.1
42.5 - 47.5	0.0	0.0	117423.2	12.4	0.0	117435.6
47.5 - 52.5	674.0	2290.1	172792.4	25709.6	0.0	201466.1
52.5 - 57.5	19432.2	6144.7	53201.7	717.9	0.0	79496.5
57.5 - 62.5	1091633.4	0.0	106365.7	13375.5	0.0	1211374.6
62.5 - 67.5	2072.7	0.0	0.0	0.0	0.0	2072.7
67.5 - 72.5	11265.8	0.0	0.0	0.0	0.0	11265.8
Total	1127767.8	8707.8	1043020.6	51905.3	345346.4	2576747.8

----- PSRC-EMS Module 2.0 Sept 96XTR --- Hour 20

HGAC HARRIS

Speed Processor: Off

SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	EXPRESSWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0	0.0	0.0	0.0
12.5 - 17.5	0.0	0.0	0.0	0.0	0.0	0.0
17.5 - 22.5	0.0	0.0	0.0	0.0	0.0	0.0
22.5 - 27.5	0.0	0.0	1012.9	0.0	293081.8	294094.7
27.5 - 32.5	0.0	0.0	0.0	0.0	0.0	0.0
32.5 - 37.5	1063.1	273.0	146013.4	11719.3	0.0	159068.8
37.5 - 42.5	1626.6	0.0	446211.2	370.6	52264.7	500473.1
42.5 - 47.5	0.0	0.0	117423.2	12.4	0.0	117435.6
47.5 - 52.5	674.0	2290.1	172792.4	25709.6	0.0	201466.1
52.5 - 57.5	19432.2	6144.7	53201.7	717.9	0.0	79496.5
57.5 - 62.5	1091633.4	0.0	106365.7	13375.5	0.0	1211374.6
62.5 - 67.5	2072.7	0.0	0.0	0.0	0.0	2072.7
67.5 - 72.5	11265.8	0.0	0.0	0.0	0.0	11265.8
Total	1127767.8	8707.8	1043020.6	51905.3	345346.4	2576747.8

----- PSRC-EMS Module 2.0 Sept 96XTR --- Hour 21

HGAC HARRIS

Speed Processor: Off
SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	EXPRESSWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0	0.0	0.0	0.0
12.5 - 17.5	0.0	0.0	0.0	0.0	0.0	0.0
17.5 - 22.5	0.0	0.0	0.0	0.0	0.0	0.0
22.5 - 27.5	0.0	0.0	1012.9	0.0	293081.8	294094.7
27.5 - 32.5	0.0	0.0	0.0	0.0	0.0	0.0
32.5 - 37.5	1063.1	273.0	146013.4	11719.3	0.0	159068.8
37.5 - 42.5	1626.6	0.0	446211.2	370.6	52264.7	500473.1
42.5 - 47.5	0.0	0.0	117423.2	12.4	0.0	117435.6
47.5 - 52.5	674.0	2290.1	172792.4	25709.6	0.0	201466.1
52.5 - 57.5	19432.2	6144.7	53201.7	717.9	0.0	79496.5
57.5 - 62.5	1091633.4	0.0	106365.7	13375.5	0.0	1211374.6
62.5 - 67.5	2072.7	0.0	0.0	0.0	0.0	2072.7
67.5 - 72.5	11265.8	0.0	0.0	0.0	0.0	11265.8
Total	1127767.8	8707.8	1043020.6	51905.3	345346.4	2576747.8

----- PSRC-EMS Module 2.0 Sept 96XTR --- Hour 22

HGAC HARRIS

Speed Processor: Off
SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	EXPRESSWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0	0.0	0.0	0.0
12.5 - 17.5	0.0	0.0	0.0	0.0	0.0	0.0
17.5 - 22.5	0.0	0.0	0.0	0.0	0.0	0.0
22.5 - 27.5	0.0	0.0	1012.9	0.0	293081.8	294094.7
27.5 - 32.5	0.0	0.0	0.0	0.0	0.0	0.0
32.5 - 37.5	1063.1	273.0	146013.4	11719.3	0.0	159068.8
37.5 - 42.5	1626.6	0.0	446211.2	370.6	52264.7	500473.1
42.5 - 47.5	0.0	0.0	117423.2	12.4	0.0	117435.6
47.5 - 52.5	674.0	2290.1	172792.4	25709.6	0.0	201466.1
52.5 - 57.5	19432.2	6144.7	53201.7	717.9	0.0	79496.5
57.5 - 62.5	1091633.4	0.0	106365.7	13375.5	0.0	1211374.6
62.5 - 67.5	2072.7	0.0	0.0	0.0	0.0	2072.7
67.5 - 72.5	11265.8	0.0	0.0	0.0	0.0	11265.8
Total	1127767.8	8707.8	1043020.6	51905.3	345346.4	2576747.8

----- PSRC-EMS Module 2.0 Sept 96XTR --- Hour 23

HGAC HARRIS

Speed Processor: Off

SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	EXPRESSWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0	0.0	0.0	0.0
12.5 - 17.5	0.0	0.0	0.0	0.0	0.0	0.0
17.5 - 22.5	0.0	0.0	0.0	0.0	0.0	0.0
22.5 - 27.5	0.0	0.0	1012.9	0.0	293081.8	294094.7
27.5 - 32.5	0.0	0.0	0.0	0.0	0.0	0.0
32.5 - 37.5	1063.1	273.0	146013.4	11719.3	0.0	159068.8
37.5 - 42.5	1626.6	0.0	446211.2	370.6	52264.7	500473.1
42.5 - 47.5	0.0	0.0	117423.2	12.4	0.0	117435.6
47.5 - 52.5	674.0	2290.1	172792.4	25709.6	0.0	201466.1
52.5 - 57.5	19432.2	6144.7	53201.7	717.9	0.0	79496.5
57.5 - 62.5	1091633.4	0.0	106365.7	13375.5	0.0	1211374.6
62.5 - 67.5	2072.7	0.0	0.0	0.0	0.0	2072.7
67.5 - 72.5	11265.8	0.0	0.0	0.0	0.0	11265.8
Total	1127767.8	8707.8	1043020.6	51905.3	345346.4	2576747.8

----- PSRC-EMS Module 2.0 Sept 96XTR --- Hour 24

HGAC HARRIS

Speed Processor: Off

SUM06

Summary of Travel by Link Speed and Profile Table

Speed Range	Vehicle Miles					
	FREEWAY	EXPRESSWAY	ARTERIAL	COLLECTOR	LOCAL	TOTAL
0.0 - 2.5	0.0	0.0	0.0	0.0	0.0	0.0
2.5 - 7.5	0.0	0.0	0.0	0.0	0.0	0.0
7.5 - 12.5	0.0	0.0	0.0	0.0	0.0	0.0
12.5 - 17.5	0.0	0.0	0.0	0.0	0.0	0.0
17.5 - 22.5	0.0	0.0	0.0	0.0	0.0	0.0
22.5 - 27.5	0.0	0.0	1012.9	0.0	293081.8	294094.7
27.5 - 32.5	0.0	0.0	0.0	0.0	0.0	0.0
32.5 - 37.5	1063.1	273.0	146013.4	11719.3	0.0	159068.8
37.5 - 42.5	1626.6	0.0	446211.2	370.6	52264.7	500473.1
42.5 - 47.5	0.0	0.0	117423.2	12.4	0.0	117435.6
47.5 - 52.5	674.0	2290.1	172792.4	25709.6	0.0	201466.1
52.5 - 57.5	19432.2	6144.7	53201.7	717.9	0.0	79496.5
57.5 - 62.5	1091633.4	0.0	106365.7	13375.5	0.0	1211374.6
62.5 - 67.5	2072.7	0.0	0.0	0.0	0.0	2072.7
67.5 - 72.5	11265.8	0.0	0.0	0.0	0.0	11265.8
Total	1127767.8	8707.8	1043020.6	51905.3	345346.4	2576747.8

APPENDIX 2G

**HOURLY FRACTIONAL VMT DISTRIBUTIONS BY FUNCTIONAL
CLASS AND SPEED FOR CHARLOTTE, NC**

**** SAI VMT2a Output, March 98 ****

Hour 1

Charlotte, NC: Fraction of VMT by Hour

Speed Bin	FREEWAY	MAJOR ART	MINOR ART
0	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000
10	0.0000	0.0000	0.0000
15	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0000
25	0.0000	0.0000	0.0000
30	0.0000	0.2654	0.5745
35	0.0000	0.0000	0.0000
40	0.0000	0.2449	0.4255
45	0.0000	0.0000	0.0000
50	0.0000	0.4897	0.0000
55	0.0000	0.0000	0.0000
60	1.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000
70	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000

**** SAI VMT2a Output, March 98 ****

Hour 2

Charlotte, NC: Fraction of VMT by Hour

Speed Bin	FREEWAY	MAJOR ART	MINOR ART
0	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000
10	0.0000	0.0000	0.0000
15	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0000
25	0.0000	0.0000	0.0000
30	0.0000	0.2380	0.5957
35	0.0000	0.0000	0.0000
40	0.0000	0.2288	0.4043
45	0.0000	0.0000	0.0000
50	0.0000	0.5332	0.0000
55	0.0000	0.0000	0.0000
60	1.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000
70	0.0000	0.0000	0.0000

75 0.0000 0.0000 0.0000

**** SAI VMT2a Output, March 98 ****

Hour 3

Charlotte, NC: Fraction of VMT by Hour

Speed Bin	FREEWAY	MAJOR ART	MINOR ART
0	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000
10	0.0000	0.0000	0.0000
15	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0000
25	0.0000	0.0000	0.0000
30	0.0000	0.2357	0.5851
35	0.0000	0.0000	0.0000
40	0.0000	0.2357	0.4149
45	0.0000	0.0000	0.0000
50	0.0000	0.5286	0.0000
55	0.0000	0.0000	0.0000
60	1.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000
70	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000

**** SAI VMT2a Output, March 98 ****

Hour 4

Charlotte, NC: Fraction of VMT by Hour

Speed Bin	FREEWAY	MAJOR ART	MINOR ART
0	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000
10	0.0000	0.0000	0.0000
15	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0000
25	0.0000	0.0000	0.0000
30	0.0000	0.1968	0.5851
35	0.0000	0.0000	0.0000
40	0.0000	0.2677	0.4149
45	0.0000	0.0000	0.0000
50	0.0000	0.5355	0.0000
55	0.0000	0.0000	0.0000
60	1.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000
70	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000

**** SAI VMT2a Output, March 98 ****

Hour 5

Charlotte, NC: Fraction of VMT by Hour

Speed Bin	FREEWAY	MAJOR ART	MINOR ART
0	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000
10	0.0000	0.0000	0.0000
15	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0000
25	0.0000	0.0000	0.0000
30	0.0000	0.2105	0.6064
35	0.0000	0.0000	0.0000
40	0.0000	0.2586	0.3936
45	0.0000	0.0000	0.0000
50	0.0000	0.5309	0.0000
55	0.0000	0.0000	0.0000
60	1.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000
70	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000

**** SAI VMT2a Output, March 98 ****

Hour 6

Charlotte, NC: Fraction of VMT by Hour

Speed Bin	FREEWAY	MAJOR ART	MINOR ART
0	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000
10	0.0000	0.0000	0.0000
15	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0000
25	0.0000	0.0000	0.0000
30	0.0000	0.2037	0.5638
35	0.0000	0.0000	0.0000
40	0.0000	0.2723	0.4362
45	0.0000	0.0000	0.0000
50	0.0000	0.5240	0.0000
55	0.0000	0.0000	0.0000
60	1.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000
70	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000

**** SAI VMT2a Output, March 98 ****

Hour 7

Charlotte, NC: Fraction of VMT by Hour

Speed Bin	FREEWAY	MAJOR ART	MINOR ART
0	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000
10	0.0000	0.0000	0.0000
15	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0000
25	0.0000	0.0000	0.0106
30	0.0000	0.1922	0.5532
35	0.0000	0.0000	0.0106
40	0.0000	0.2494	0.4255
45	0.0000	0.0023	0.0000
50	0.0000	0.5561	0.0000
55	0.0000	0.0000	0.0000
60	1.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000
70	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000

**** SAI VMT2a Output, March 98 ****

Hour 8

Charlotte, NC: Fraction of VMT by Hour

Speed Bin	FREEWAY	MAJOR ART	MINOR ART
0	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0213
10	0.0000	0.0000	0.0000
15	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0213
25	0.0000	0.0000	0.0106
30	0.0000	0.1281	0.5319
35	0.0000	0.0000	0.0000
40	0.0000	0.2838	0.4149
45	0.0000	0.0023	0.0000
50	0.0000	0.5858	0.0000
55	0.0000	0.0000	0.0000
60	1.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000
70	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000

**** SAI VMT2a Output, March 98 ****

Hour 9

Charlotte, NC: Fraction of VMT by Hour

Speed Bin	FREEWAY	MAJOR ART	MINOR ART
0	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000
10	0.0000	0.0000	0.0106
15	0.0000	0.0000	0.0213
20	0.0000	0.0000	0.0106
25	0.0000	0.0000	0.0000
30	0.0000	0.1373	0.5426
35	0.0000	0.0000	0.0106
40	0.0000	0.2838	0.4043
45	0.0000	0.0023	0.0000
50	0.0000	0.5767	0.0000
55	0.0000	0.0000	0.0000
60	1.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000
70	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000

**** SAI VMT2a Output, March 98 ****

Hour 10

Charlotte, NC: Fraction of VMT by Hour

Speed Bin	FREEWAY	MAJOR ART	MINOR ART
0	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000
10	0.0000	0.0000	0.0000
15	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0000
25	0.0000	0.0000	0.0106
30	0.0000	0.0870	0.5532
35	0.0000	0.0000	0.0000
40	0.0000	0.3043	0.4362
45	0.0000	0.0000	0.0000
50	0.0000	0.6087	0.0000
55	0.0000	0.0000	0.0000
60	1.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000
70	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000

**** SAI VMT2a Output, March 98 ****

Hour 11

Charlotte, NC: Fraction of VMT by Hour

Speed Bin	FREEWAY	MAJOR ART	MINOR ART
0	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000
10	0.0000	0.0000	0.0000
15	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0000
25	0.0000	0.0000	0.0106
30	0.0000	0.0892	0.4894
35	0.0000	0.0000	0.0106
40	0.0000	0.2906	0.4894
45	0.0000	0.0000	0.0000
50	0.0000	0.6201	0.0000
55	0.0000	0.0000	0.0000
60	1.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000
70	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000

**** SAI VMT2a Output, March 98 ****

Hour 12

Charlotte, NC: Fraction of VMT by Hour

Speed Bin	FREEWAY	MAJOR ART	MINOR ART
0	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000
10	0.0000	0.0000	0.0000
15	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0106
25	0.0000	0.0000	0.0000
30	0.0000	0.0732	0.4894
35	0.0000	0.0000	0.0000
40	0.0000	0.3181	0.5000
45	0.0000	0.0023	0.0000
50	0.0000	0.6064	0.0000
55	0.0000	0.0000	0.0000
60	1.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000
70	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000

**** SAI VMT2a Output, March 98 ****

Hour 13

Charlotte, NC: Fraction of VMT by Hour

Speed Bin	FREEWAY	MAJOR ART	MINOR ART
0	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000
10	0.0000	0.0000	0.0000
15	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0106
25	0.0000	0.0000	0.0000
30	0.0000	0.0709	0.5000
35	0.0000	0.0000	0.0106
40	0.0000	0.3410	0.4787
45	0.0000	0.0023	0.0000
50	0.0000	0.5858	0.0000
55	0.0000	0.0000	0.0000
60	1.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000
70	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000

**** SAI VMT2a Output, March 98 ****

Hour 14

Charlotte, NC: Fraction of VMT by Hour

Speed Bin	FREEWAY	MAJOR ART	MINOR ART
0	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0106
10	0.0000	0.0000	0.0000
15	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0106
25	0.0000	0.0000	0.0106
30	0.0000	0.0595	0.5213
35	0.0000	0.0000	0.0000
40	0.0000	0.3410	0.4468
45	0.0000	0.0023	0.0000
50	0.0000	0.5973	0.0000
55	0.0000	0.0000	0.0000
60	1.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000
70	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000

**** SAI VMT2a Output, March 98 ****

Hour 15

Charlotte, NC: Fraction of VMT by Hour

Speed Bin	FREEWAY	MAJOR ART	MINOR ART
0	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000
10	0.0000	0.0000	0.0000
15	0.0000	0.0000	0.0106
20	0.0000	0.0000	0.0000
25	0.0000	0.0000	0.0106
30	0.0000	0.0618	0.5000
35	0.0000	0.0000	0.0000
40	0.0000	0.3112	0.4787
45	0.0000	0.0023	0.0000
50	0.0000	0.6247	0.0000
55	0.0000	0.0000	0.0000
60	1.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000
70	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000

**** SAI VMT2a Output, March 98 ****

Hour 16

Charlotte, NC: Fraction of VMT by Hour

Speed Bin	FREEWAY	MAJOR ART	MINOR ART
0	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000
10	0.0000	0.0000	0.0000
15	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0000
25	0.0000	0.0000	0.0000
30	0.0000	0.0366	0.5106
35	0.0000	0.0000	0.0000
40	0.0000	0.3272	0.4894
45	0.0000	0.0023	0.0000
50	0.0000	0.6339	0.0000
55	0.0000	0.0000	0.0000
60	1.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000
70	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000

**** SAI VMT2a Output, March 98 ****

Hour 17

Charlotte, NC: Fraction of VMT by Hour

Speed Bin	FREEWAY	MAJOR ART	MINOR ART
0	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000
10	0.0000	0.0000	0.0000
15	0.0000	0.0000	0.0106
20	0.0000	0.0000	0.0319
25	0.0000	0.0000	0.0000
30	0.0000	0.0092	0.5319
35	0.0000	0.0023	0.0000
40	0.0000	0.3364	0.4255
45	0.0000	0.0046	0.0000
50	0.0000	0.6476	0.0000
55	0.0000	0.0000	0.0000
60	1.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000
70	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000

**** SAI VMT2a Output, March 98 ****

Hour 18

Charlotte, NC: Fraction of VMT by Hour

Speed Bin	FREEWAY	MAJOR ART	MINOR ART
0	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0426
10	0.0000	0.0000	0.0106
15	0.0000	0.0000	0.0106
20	0.0000	0.0000	0.0213
25	0.0000	0.0000	0.0106
30	0.0000	0.0366	0.5106
35	0.0000	0.0023	0.0106
40	0.0000	0.3295	0.3830
45	0.0000	0.0069	0.0000
50	0.0000	0.6247	0.0000
55	0.0000	0.0000	0.0000
60	1.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000
70	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000

**** SAI VMT2a Output, March 98 ****

Hour 19

Charlotte, NC: Fraction of VMT by Hour

Speed Bin	FREEWAY	MAJOR ART	MINOR ART
0	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000
10	0.0000	0.0000	0.0106
15	0.0000	0.0000	0.0213
20	0.0000	0.0000	0.0106
25	0.0000	0.0000	0.0106
30	0.0000	0.0229	0.5106
35	0.0000	0.0023	0.0106
40	0.0000	0.3432	0.4255
45	0.0000	0.0069	0.0000
50	0.0000	0.6247	0.0000
55	0.0000	0.0000	0.0000
60	1.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000
70	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000

**** SAI VMT2a Output, March 98 ****

Hour 20

Charlotte, NC: Fraction of VMT by Hour

Speed Bin	FREEWAY	MAJOR ART	MINOR ART
0	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000
10	0.0000	0.0000	0.0000
15	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0106
25	0.0000	0.0000	0.0213
30	0.0000	0.0229	0.5426
35	0.0000	0.0023	0.0000
40	0.0000	0.3364	0.4255
45	0.0000	0.0023	0.0000
50	0.0000	0.6362	0.0000
55	0.0000	0.0000	0.0000
60	1.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000
70	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000

**** SAI VMT2a Output, March 98 ****

Hour 21

Charlotte, NC: Fraction of VMT by Hour

Speed Bin	FREEWAY	MAJOR ART	MINOR ART
0	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0213
10	0.0000	0.0000	0.0000
15	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0000
25	0.0000	0.0000	0.0106
30	0.0000	0.0114	0.5319
35	0.0000	0.0000	0.0000
40	0.0000	0.3204	0.4362
45	0.0000	0.0046	0.0000
50	0.0000	0.6636	0.0000
55	0.0000	0.0000	0.0000
60	1.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000
70	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000

**** SAI VMT2a Output, March 98 ****

Hour 22

Charlotte, NC: Fraction of VMT by Hour

Speed Bin	FREEWAY	MAJOR ART	MINOR ART
0	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000
10	0.0000	0.0000	0.0000
15	0.0000	0.0000	0.0106
20	0.0000	0.0000	0.0319
25	0.0000	0.0000	0.0000
30	0.0000	0.0000	0.5426
35	0.0000	0.0023	0.0000
40	0.0000	0.3295	0.4149
45	0.0000	0.0069	0.0000
50	0.0000	0.6613	0.0000
55	0.0000	0.0000	0.0000
60	1.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000
70	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000

**** SAI VMT2a Output, March 98 ****

Hour 23

Charlotte, NC: Fraction of VMT by Hour

Speed Bin	FREEWAY	MAJOR ART	MINOR ART
0	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000
10	0.0000	0.0000	0.0000
15	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0213
25	0.0000	0.0000	0.0000
30	0.0000	0.0000	0.5532
35	0.0000	0.0023	0.0000
40	0.0000	0.3295	0.4255
45	0.0000	0.0069	0.0000
50	0.0000	0.6613	0.0000
55	0.0000	0.0000	0.0000
60	1.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000
70	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000

**** SAI VMT2a Output, March 98 ****

Hour 24

Charlotte, NC: Fraction of VMT by Hour

Speed Bin	FREEWAY	MAJOR ART	MINOR ART
0	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0106
10	0.0000	0.0000	0.0106
15	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0000
25	0.0000	0.0000	0.0000
30	0.0000	0.0000	0.5426
35	0.0000	0.0000	0.0000
40	0.0000	0.3318	0.4362
45	0.0000	0.0046	0.0000
50	0.0000	0.6636	0.0000
55	0.0000	0.0000	0.0000
60	1.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000
70	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000

APPENDIX 2H

**HOURLY FRACTIONAL VMT DISTRIBUTIONS BY FUNCTIONAL
CLASS AND SPEED FOR NEW YORK, NY**

**** SAI VMT Output, March 98 ****

Hour 1

New York, NY: Fraction of VMT by Hour RURAL

Speed Bin	Inter- state	Major Art.	Minor Art.	Major Coll.	Minor Coll.	Local
0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
25	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
30	0.0000	0.0000	0.0000	0.0000	1.0000	1.0000
35	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
40	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000
45	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
50	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000
55	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
60	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
70	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

**** SAI VMT Output, March 98 ****

Hour 1

New York, NY: Fraction of VMT by Hour URBAN

Speed Bin	Inter- state	Express- way	Major Art.	Minor Art.	Collec- tor	Local
0	0.0000	0.0000	0.0010	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10	0.0000	0.0045	0.0000	0.0000	0.0000	0.0019
15	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20	0.0000	0.0045	0.0000	0.0011	0.0000	0.0000
25	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
30	0.0000	0.0000	0.0000	0.9989	1.0000	0.9981
35	0.0000	0.0000	0.0010	0.0000	0.0000	0.0000
40	0.0000	0.0000	0.9980	0.0000	0.0000	0.0000
45	0.0000	0.0223	0.0000	0.0000	0.0000	0.0000
50	0.0000	0.9688	0.0000	0.0000	0.0000	0.0000

55	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
60	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
70	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

**** SAI VMT Output, March 98 ****

Hour 2

New York, NY: Fraction of VMT by Hour RURAL

Speed Bin	Inter-state	Major Art.	Minor Art.	Major Coll.	Minor Coll.	Local
0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
25	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
30	0.0000	0.0000	0.0000	0.0000	1.0000	1.0000
35	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
40	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000
45	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
50	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000
55	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
60	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
70	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

**** SAI VMT Output, March 98 ****

Hour 2

New York, NY: Fraction of VMT by Hour URBAN

Speed Bin	Inter-state	Express-way	Major Art.	Minor Art.	Collector	Local
0	0.0000	0.0000	0.0010	0.0000	0.0000	0.0000
5	0.0000	0.0045	0.0000	0.0000	0.0000	0.0000
10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
25	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
30	0.0000	0.0000	0.0000	1.0000	1.0000	1.0000
35	0.0000	0.0000	0.0010	0.0000	0.0000	0.0000
40	0.0000	0.0000	0.9980	0.0000	0.0000	0.0000
45	0.0000	0.0089	0.0000	0.0000	0.0000	0.0000
50	0.0000	0.9866	0.0000	0.0000	0.0000	0.0000
55	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
60	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000

65	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
70	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

**** SAI VMT Output, March 98 ****

Hour 3

New York, NY: Fraction of VMT by Hour RURAL

Speed Bin	Inter- state	Major Art.	Minor Art.	Major Coll.	Minor Coll.	Local
0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
25	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
30	0.0000	0.0000	0.0000	0.0000	1.0000	1.0000
35	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
40	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000
45	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
50	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000
55	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
60	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
70	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

**** SAI VMT Output, March 98 ****

Hour 3

New York, NY: Fraction of VMT by Hour URBAN

Speed Bin	Inter- state	Express- way	Major Art.	Minor Art.	Collec- tor	Local
0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10	0.0000	0.0045	0.0000	0.0000	0.0000	0.0000
15	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0000	0.0011	0.0000	0.0000
25	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
30	0.0000	0.0000	0.0000	0.9989	1.0000	1.0000
35	0.0000	0.0000	0.0010	0.0000	0.0000	0.0000
40	0.0000	0.0000	0.9990	0.0000	0.0000	0.0000
45	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
50	0.0000	0.9955	0.0000	0.0000	0.0000	0.0000
55	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
60	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000

65	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
70	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

**** SAI VMT Output, March 98 **** Hour 4

New York, NY: Fraction of VMT by Hour RURAL

Speed Bin	Inter-state	Major Art.	Minor Art.	Major Coll.	Minor Coll.	Local
0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
25	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
30	0.0000	0.0000	0.0000	0.0000	1.0000	1.0000
35	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
40	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000
45	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
50	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000
55	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
60	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
70	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

**** SAI VMT Output, March 98 **** Hour 4

New York, NY: Fraction of VMT by Hour URBAN

Speed Bin	Inter-state	Express-way	Major Art.	Minor Art.	Collector	Local
0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0045	0.0000	0.0000	0.0000	0.0000
10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
25	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
30	0.0000	0.0045	0.0000	1.0000	1.0000	1.0000
35	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
40	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000
45	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
50	0.0000	0.9911	0.0000	0.0000	0.0000	0.0000
55	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
60	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000

65	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
70	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

**** SAI VMT Output, March 98 ****

Hour 5

New York, NY: Fraction of VMT by Hour RURAL

Speed Bin	Inter-state	Major Art.	Minor Art.	Major Coll.	Minor Coll.	Local
0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
25	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
30	0.0000	0.0000	0.0020	0.0000	1.0000	1.0000
35	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
40	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000
45	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
50	0.0000	0.0000	0.9980	0.0000	0.0000	0.0000
55	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
60	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
70	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

**** SAI VMT Output, March 98 ****

Hour 5

New York, NY: Fraction of VMT by Hour URBAN

Speed Bin	Inter-state	Express-way	Major Art.	Minor Art.	Collector	Local
0	0.0000	0.0089	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0019
15	0.0000	0.0045	0.0000	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
25	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
30	0.0000	0.0000	0.0000	1.0000	1.0000	0.9981
35	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
40	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000
45	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
50	0.0000	0.9866	0.0000	0.0000	0.0000	0.0000
55	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
60	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000

65	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
70	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

**** SAI VMT Output, March 98 ****

Hour 6

New York, NY: Fraction of VMT by Hour RURAL

Speed Bin	Inter-state	Major Art.	Minor Art.	Major Coll.	Minor Coll.	Local
0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0020	0.0000	0.0000	0.0000
25	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
30	0.0000	0.0000	0.0000	0.0000	1.0000	1.0000
35	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
40	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000
45	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
50	0.0000	0.0000	0.9980	0.0000	0.0000	0.0000
55	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
60	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
70	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

**** SAI VMT Output, March 98 ****

Hour 6

New York, NY: Fraction of VMT by Hour URBAN

Speed Bin	Inter-state	Express-way	Major Art.	Minor Art.	Collector	Local
0	0.0000	0.0134	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15	0.0000	0.0045	0.0000	0.0000	0.0000	0.0019
20	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
25	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
30	0.0000	0.0000	0.0000	1.0000	1.0000	0.9981
35	0.0000	0.0045	0.0010	0.0000	0.0000	0.0000
40	0.0000	0.0045	0.9990	0.0000	0.0000	0.0000
45	0.0000	0.0089	0.0000	0.0000	0.0000	0.0000
50	0.0000	0.9643	0.0000	0.0000	0.0000	0.0000
55	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
60	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000

65	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
70	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

**** SAI VMT Output, March 98 **** Hour 7

New York, NY: Fraction of VMT by Hour RURAL

Speed Bin	Inter-state	Major Art.	Minor Art.	Major Coll.	Minor Coll.	Local
0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0020	0.0000	0.0000	0.0000
10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
25	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
30	0.0000	0.0000	0.0020	0.0000	1.0000	1.0000
35	0.0000	0.0000	0.0020	0.0000	0.0000	0.0000
40	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000
45	0.0000	0.0000	0.0040	0.0000	0.0000	0.0000
50	0.0000	0.0000	0.9900	0.0000	0.0000	0.0000
55	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
60	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
70	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

**** SAI VMT Output, March 98 **** Hour 7

New York, NY: Fraction of VMT by Hour URBAN

Speed Bin	Inter-state	Express-way	Major Art.	Minor Art.	Collector	Local
0	0.0000	0.0357	0.0020	0.0011	0.0000	0.0058
5	0.0000	0.0089	0.0000	0.0011	0.0000	0.0019
10	0.0000	0.0089	0.0000	0.0043	0.0000	0.0038
15	0.0000	0.0223	0.0010	0.0011	0.0000	0.0038
20	0.0000	0.0089	0.0000	0.0032	0.0000	0.0038
25	0.0064	0.0045	0.0000	0.0021	0.0000	0.0000
30	0.0000	0.0000	0.0000	0.9872	1.0000	0.9808
35	0.0192	0.0223	0.0020	0.0000	0.0000	0.0000
40	0.0064	0.0357	0.9950	0.0000	0.0000	0.0000
45	0.0128	0.0312	0.0000	0.0000	0.0000	0.0000
50	0.0128	0.8214	0.0000	0.0000	0.0000	0.0000
55	0.0128	0.0000	0.0000	0.0000	0.0000	0.0000
60	0.9295	0.0000	0.0000	0.0000	0.0000	0.0000

65	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
70	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

**** SAI VMT Output, March 98 **** Hour 8

New York, NY: Fraction of VMT by Hour RURAL

Speed Bin	Inter- state	Major Art.	Minor Art.	Major Coll.	Minor Coll.	Local
0	0.0000	0.0000	0.0020	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0060	0.0000	0.0000	0.0000
10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15	0.0000	0.0000	0.0020	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0020	0.0000	0.0000	0.0000
25	0.0000	0.0000	0.0020	0.0000	0.0000	0.0000
30	0.0000	0.0000	0.0000	0.0021	1.0000	1.0000
35	0.0000	0.0000	0.0020	0.0000	0.0000	0.0000
40	0.0000	0.0000	0.0020	0.9979	0.0000	0.0000
45	0.0000	0.0000	0.0040	0.0000	0.0000	0.0000
50	0.0000	0.0032	0.9780	0.0000	0.0000	0.0000
55	0.0000	0.0032	0.0000	0.0000	0.0000	0.0000
60	0.0000	0.9936	0.0000	0.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
70	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

**** SAI VMT Output, March 98 **** Hour 8

New York, NY: Fraction of VMT by Hour URBAN

Speed Bin	Inter- state	Express- way	Major Art.	Minor Art.	Collec- tor	Local
0	0.0000	0.1116	0.0030	0.0213	0.0029	0.0250
5	0.0000	0.0223	0.0000	0.0085	0.0000	0.0058
10	0.0000	0.0134	0.0010	0.0075	0.0000	0.0038
15	0.0000	0.0134	0.0020	0.0085	0.0029	0.0000
20	0.0192	0.0045	0.0000	0.0085	0.0000	0.0019
25	0.0064	0.0045	0.0010	0.0043	0.0000	0.0019
30	0.0128	0.0045	0.0030	0.9414	0.9942	0.9616
35	0.0192	0.0000	0.0050	0.0000	0.0000	0.0000
40	0.0064	0.0268	0.9849	0.0000	0.0000	0.0000
45	0.0192	0.0536	0.0000	0.0000	0.0000	0.0000
50	0.0321	0.7455	0.0000	0.0000	0.0000	0.0000
55	0.0641	0.0000	0.0000	0.0000	0.0000	0.0000

60	0.8205	0.0000	0.0000	0.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
70	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

**** SAI VMT Output, March 98 **** Hour 9

New York, NY: Fraction of VMT by Hour RURAL

Speed Bin	Inter- state	Major Art.	Minor Art.	Major Coll.	Minor Coll.	Local
0	0.0000	0.0000	0.0020	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0020	0.0000	0.0000	0.0000
10	0.0000	0.0000	0.0020	0.0000	0.0000	0.0000
15	0.0000	0.0000	0.0020	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0020	0.0021	0.0000	0.0000
25	0.0000	0.0000	0.0040	0.0000	0.0000	0.0000
30	0.0000	0.0000	0.0000	0.0000	1.0000	1.0000
35	0.0000	0.0000	0.0020	0.0000	0.0000	0.0000
40	0.0000	0.0000	0.0020	0.9979	0.0000	0.0000
45	0.0000	0.0000	0.0080	0.0000	0.0000	0.0000
50	0.0000	0.0000	0.9739	0.0000	0.0000	0.0000
55	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
60	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
70	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

**** SAI VMT Output, March 98 **** Hour 9

New York, NY: Fraction of VMT by Hour URBAN

Speed Bin	Inter- state	Express- way	Major Art.	Minor Art.	Collec- tor	Local
0	0.0000	0.1116	0.0010	0.0224	0.0000	0.0269
5	0.0000	0.0134	0.0010	0.0075	0.0058	0.0058
10	0.0000	0.0268	0.0030	0.0096	0.0000	0.0019
15	0.0000	0.0089	0.0010	0.0106	0.0058	0.0019
20	0.0000	0.0000	0.0010	0.0064	0.0000	0.0019
25	0.0064	0.0045	0.0000	0.0128	0.0058	0.0077
30	0.0128	0.0045	0.0020	0.9308	0.9826	0.9539
35	0.0000	0.0179	0.0071	0.0000	0.0000	0.0000
40	0.0064	0.0446	0.9839	0.0000	0.0000	0.0000
45	0.0192	0.0402	0.0000	0.0000	0.0000	0.0000
50	0.0256	0.7277	0.0000	0.0000	0.0000	0.0000
55	0.0577	0.0000	0.0000	0.0000	0.0000	0.0000

60	0.8718	0.0000	0.0000	0.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
70	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

**** SAI VMT Output, March 98 **** Hour 10

New York, NY: Fraction of VMT by Hour RURAL

Speed Bin	Inter- state	Major Art.	Minor Art.	Major Coll.	Minor Coll.	Local
0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
25	0.0000	0.0000	0.0040	0.0000	0.0000	0.0012
30	0.0000	0.0000	0.0020	0.0000	1.0000	0.9988
35	0.0000	0.0000	0.0020	0.0021	0.0000	0.0000
40	0.0000	0.0000	0.0020	0.9979	0.0000	0.0000
45	0.0000	0.0000	0.0080	0.0000	0.0000	0.0000
50	0.0000	0.0000	0.9820	0.0000	0.0000	0.0000
55	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
60	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
70	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

**** SAI VMT Output, March 98 **** Hour 10

New York, NY: Fraction of VMT by Hour URBAN

Speed Bin	Inter- state	Express- way	Major Art.	Minor Art.	Collec- tor	Local
0	0.0000	0.0625	0.0000	0.0213	0.0000	0.0154
5	0.0000	0.0402	0.0010	0.0064	0.0029	0.0058
10	0.0000	0.0089	0.0010	0.0043	0.0000	0.0019
15	0.0000	0.0089	0.0000	0.0043	0.0000	0.0038
20	0.0000	0.0045	0.0000	0.0053	0.0000	0.0058
25	0.0000	0.0045	0.0000	0.0085	0.0029	0.0077
30	0.0000	0.0045	0.0030	0.9499	0.9942	0.9597
35	0.0000	0.0134	0.0061	0.0000	0.0000	0.0000
40	0.0064	0.0223	0.9889	0.0000	0.0000	0.0000
45	0.0064	0.0491	0.0000	0.0000	0.0000	0.0000
50	0.0064	0.7812	0.0000	0.0000	0.0000	0.0000
55	0.0449	0.0000	0.0000	0.0000	0.0000	0.0000

60	0.9359	0.0000	0.0000	0.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
70	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

**** SAI VMT Output, March 98 ****

Hour 11

New York, NY: Fraction of VMT by Hour RURAL

Speed Bin	Inter- state	Major Art.	Minor Art.	Major Coll.	Minor Coll.	Local
0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0040	0.0000	0.0000	0.0012
10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0020	0.0000	0.0000	0.0000
25	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
30	0.0000	0.0000	0.0000	0.0000	1.0000	0.9988
35	0.0000	0.0000	0.0020	0.0021	0.0000	0.0000
40	0.0000	0.0000	0.0000	0.9979	0.0000	0.0000
45	0.0000	0.0000	0.0060	0.0000	0.0000	0.0000
50	0.0000	0.0000	0.9860	0.0000	0.0000	0.0000
55	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
60	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
70	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

**** SAI VMT Output, March 98 ****

Hour 11

New York, NY: Fraction of VMT by Hour URBAN

Speed Bin	Inter- state	Express- way	Major Art.	Minor Art.	Collec- tor	Local
0	0.0000	0.0357	0.0010	0.0202	0.0000	0.0154
5	0.0000	0.0357	0.0010	0.0064	0.0000	0.0019
10	0.0000	0.0223	0.0000	0.0011	0.0000	0.0019
15	0.0000	0.0134	0.0000	0.0064	0.0000	0.0000
20	0.0000	0.0045	0.0000	0.0064	0.0000	0.0019
25	0.0000	0.0045	0.0010	0.0128	0.0058	0.0019
30	0.0064	0.0000	0.0030	0.9468	0.9942	0.9770
35	0.0000	0.0089	0.0061	0.0000	0.0000	0.0000
40	0.0000	0.0089	0.9879	0.0000	0.0000	0.0000
45	0.0000	0.0402	0.0000	0.0000	0.0000	0.0000

50	0.0064	0.8259	0.0000	0.0000	0.0000	0.0000
55	0.0321	0.0000	0.0000	0.0000	0.0000	0.0000
60	0.9551	0.0000	0.0000	0.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
70	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

**** SAI VMT Output, March 98 **** Hour 12

New York, NY: Fraction of VMT by Hour RURAL

Speed Bin	Inter-state	Major Art.	Minor Art.	Major Coll.	Minor Coll.	Local
0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0012
5	0.0000	0.0000	0.0020	0.0000	0.0000	0.0000
10	0.0000	0.0000	0.0020	0.0000	0.0000	0.0000
15	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
25	0.0000	0.0000	0.0040	0.0000	0.0000	0.0000
30	0.0000	0.0000	0.0020	0.0000	1.0000	0.9988
35	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
40	0.0000	0.0000	0.0020	1.0000	0.0000	0.0000
45	0.0000	0.0000	0.0040	0.0000	0.0000	0.0000
50	0.0000	0.0000	0.9840	0.0000	0.0000	0.0000
55	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
60	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
70	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

**** SAI VMT Output, March 98 **** Hour 12

New York, NY: Fraction of VMT by Hour URBAN

Speed Bin	Inter-state	Express-way	Major Art.	Minor Art.	Collector	Local
0	0.0000	0.0312	0.0000	0.0245	0.0000	0.0134
5	0.0000	0.0134	0.0000	0.0085	0.0000	0.0038
10	0.0000	0.0179	0.0030	0.0064	0.0000	0.0019
15	0.0000	0.0357	0.0000	0.0096	0.0029	0.0038
20	0.0000	0.0089	0.0000	0.0106	0.0029	0.0019
25	0.0000	0.0089	0.0000	0.0128	0.0058	0.0000
30	0.0000	0.0000	0.0030	0.9276	0.9884	0.9750
35	0.0000	0.0045	0.0061	0.0000	0.0000	0.0000
40	0.0064	0.0268	0.9879	0.0000	0.0000	0.0000
45	0.0000	0.0536	0.0000	0.0000	0.0000	0.0000

50	0.0000	0.7991	0.0000	0.0000	0.0000	0.0000
55	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
60	0.9936	0.0000	0.0000	0.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
70	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

**** SAI VMT Output, March 98 ****

Hour 13

New York, NY: Fraction of VMT by Hour RURAL

Speed Bin	Inter- state	Major Art.	Minor Art.	Major Coll.	Minor Coll.	Local
0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0012
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0020	0.0000	0.0000	0.0000
25	0.0000	0.0000	0.0020	0.0000	0.0000	0.0012
30	0.0000	0.0000	0.0000	0.0000	1.0000	0.9976
35	0.0000	0.0000	0.0040	0.0000	0.0000	0.0000
40	0.0000	0.0000	0.0020	1.0000	0.0000	0.0000
45	0.0000	0.0000	0.0120	0.0000	0.0000	0.0000
50	0.0000	0.0000	0.9780	0.0000	0.0000	0.0000
55	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
60	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
70	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

**** SAI VMT Output, March 98 ****

Hour 13

New York, NY: Fraction of VMT by Hour URBAN

Speed Bin	Inter- state	Express- way	Major Art.	Minor Art.	Collec- tor	Local
0	0.0000	0.0446	0.0000	0.0288	0.0000	0.0154
5	0.0000	0.0089	0.0000	0.0106	0.0000	0.0019
10	0.0000	0.0268	0.0020	0.0075	0.0029	0.0038
15	0.0000	0.0223	0.0010	0.0096	0.0116	0.0077
20	0.0000	0.0089	0.0010	0.0096	0.0000	0.0058
25	0.0000	0.0134	0.0010	0.0170	0.0000	0.0000
30	0.0000	0.0089	0.0020	0.9169	0.9855	0.9655
35	0.0000	0.0089	0.0081	0.0000	0.0000	0.0000
40	0.0000	0.0223	0.9849	0.0000	0.0000	0.0000
45	0.0000	0.0446	0.0000	0.0000	0.0000	0.0000

50	0.0000	0.7902	0.0000	0.0000	0.0000	0.0000
55	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
60	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
70	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

**** SAI VMT Output, March 98 **** Hour 14

New York, NY: Fraction of VMT by Hour RURAL

Speed Bin	Inter-state	Major Art.	Minor Art.	Major Coll.	Minor Coll.	Local
0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0012
5	0.0000	0.0000	0.0020	0.0000	0.0000	0.0012
10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
25	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
30	0.0000	0.0000	0.0020	0.0000	1.0000	0.9976
35	0.0000	0.0000	0.0020	0.0000	0.0000	0.0000
40	0.0000	0.0000	0.0040	1.0000	0.0000	0.0000
45	0.0000	0.0000	0.0080	0.0000	0.0000	0.0000
50	0.0000	0.0000	0.9820	0.0000	0.0000	0.0000
55	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
60	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
70	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

**** SAI VMT Output, March 98 **** Hour 14

New York, NY: Fraction of VMT by Hour URBAN

Speed Bin	Inter-state	Express-way	Major Art.	Minor Art.	Collector	Local
0	0.0000	0.0357	0.0020	0.0256	0.0000	0.0211
5	0.0000	0.0312	0.0000	0.0138	0.0000	0.0058
10	0.0000	0.0223	0.0020	0.0096	0.0000	0.0000
15	0.0000	0.0179	0.0010	0.0032	0.0087	0.0038
20	0.0000	0.0089	0.0000	0.0096	0.0058	0.0058
25	0.0000	0.0089	0.0000	0.0181	0.0058	0.0038
30	0.0000	0.0089	0.0010	0.9201	0.9797	0.9597
35	0.0000	0.0179	0.0091	0.0000	0.0000	0.0000
40	0.0000	0.0089	0.9849	0.0000	0.0000	0.0000
45	0.0000	0.0446	0.0000	0.0000	0.0000	0.0000

50	0.0000	0.7946	0.0000	0.0000	0.0000	0.0000
55	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
60	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
70	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

**** SAI VMT Output, March 98 ****

Hour 15

New York, NY: Fraction of VMT by Hour RURAL

Speed Bin	Inter- state	Major Art.	Minor Art.	Major Coll.	Minor Coll.	Local
0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0024
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0020	0.0000	0.0000	0.0000
25	0.0000	0.0000	0.0040	0.0000	0.0000	0.0000
30	0.0000	0.0000	0.0020	0.0000	1.0000	0.9976
35	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
40	0.0000	0.0000	0.0080	1.0000	0.0000	0.0000
45	0.0000	0.0000	0.0060	0.0000	0.0000	0.0000
50	0.0000	0.0000	0.9780	0.0000	0.0000	0.0000
55	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
60	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
70	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

**** SAI VMT Output, March 98 ****

Hour 15

New York, NY: Fraction of VMT by Hour URBAN

Speed Bin	Inter- state	Express- way	Major Art.	Minor Art.	Collec- tor	Local
0	0.0000	0.0491	0.0000	0.0298	0.0000	0.0230
5	0.0000	0.0268	0.0020	0.0117	0.0000	0.0077
10	0.0000	0.0223	0.0020	0.0085	0.0029	0.0058
15	0.0000	0.0089	0.0010	0.0085	0.0058	0.0019
20	0.0000	0.0045	0.0000	0.0106	0.0029	0.0019
25	0.0000	0.0089	0.0010	0.0170	0.0029	0.0058
30	0.0000	0.0179	0.0040	0.9137	0.9855	0.9539
35	0.0000	0.0045	0.0071	0.0000	0.0000	0.0000
40	0.0000	0.0179	0.9828	0.0000	0.0000	0.0000
45	0.0000	0.0804	0.0000	0.0000	0.0000	0.0000

50	0.0064	0.7589	0.0000	0.0000	0.0000	0.0000
55	0.0128	0.0000	0.0000	0.0000	0.0000	0.0000
60	0.9808	0.0000	0.0000	0.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
70	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

**** SAI VMT Output, March 98 ****

Hour 16

New York, NY: Fraction of VMT by Hour RURAL

Speed Bin	Inter- state	Major Art.	Minor Art.	Major Coll.	Minor Coll.	Local
0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0024
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10	0.0000	0.0000	0.0040	0.0000	0.0000	0.0000
15	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
25	0.0000	0.0000	0.0040	0.0000	0.0000	0.0000
30	0.0000	0.0000	0.0020	0.0021	1.0000	0.9976
35	0.0000	0.0000	0.0060	0.0000	0.0000	0.0000
40	0.0000	0.0000	0.0040	0.9979	0.0000	0.0000
45	0.0000	0.0000	0.0140	0.0000	0.0000	0.0000
50	0.0000	0.0000	0.9659	0.0000	0.0000	0.0000
55	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
60	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
70	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

**** SAI VMT Output, March 98 ****

Hour 16

New York, NY: Fraction of VMT by Hour URBAN

Speed Bin	Inter- state	Express- way	Major Art.	Minor Art.	Collec- tor	Local
0	0.0000	0.0670	0.0020	0.0341	0.0029	0.0230
5	0.0000	0.0312	0.0000	0.0138	0.0000	0.0096
10	0.0000	0.0134	0.0020	0.0085	0.0029	0.0038
15	0.0000	0.0134	0.0010	0.0064	0.0000	0.0096
20	0.0000	0.0045	0.0010	0.0106	0.0029	0.0077
25	0.0000	0.0134	0.0010	0.0181	0.0087	0.0115
30	0.0064	0.0000	0.0020	0.9084	0.9826	0.9347
35	0.0000	0.0223	0.0121	0.0000	0.0000	0.0000
40	0.0000	0.0179	0.9788	0.0000	0.0000	0.0000
45	0.0064	0.0446	0.0000	0.0000	0.0000	0.0000

50	0.0128	0.7723	0.0000	0.0000	0.0000	0.0000
55	0.0128	0.0000	0.0000	0.0000	0.0000	0.0000
60	0.9615	0.0000	0.0000	0.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
70	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

**** SAI VMT Output, March 98 ****

Hour 17

New York, NY: Fraction of VMT by Hour RURAL

Speed Bin	Inter- state	Major Art.	Minor Art.	Major Coll.	Minor Coll.	Local
0	0.0000	0.0000	0.0040	0.0000	0.0000	0.0012
5	0.0000	0.0000	0.0020	0.0000	0.0000	0.0000
10	0.0000	0.0000	0.0020	0.0000	0.0000	0.0000
15	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0020	0.0021	0.0000	0.0000
25	0.0000	0.0000	0.0040	0.0000	0.0000	0.0000
30	0.0000	0.0000	0.0000	0.0000	1.0000	0.9988
35	0.0000	0.0000	0.0040	0.0021	0.0000	0.0000
40	0.0000	0.0000	0.0060	0.9959	0.0000	0.0000
45	0.0000	0.0000	0.0160	0.0000	0.0000	0.0000
50	0.0000	0.0000	0.9599	0.0000	0.0000	0.0000
55	0.0000	0.0032	0.0000	0.0000	0.0000	0.0000
60	0.0000	0.9968	0.0000	0.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
70	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

**** SAI VMT Output, March 98 ****

Hour 17

New York, NY: Fraction of VMT by Hour URBAN

Speed Bin	Inter- state	Express- way	Major Art.	Minor Art.	Collec- tor	Local
0	0.0000	0.0670	0.0020	0.0319	0.0029	0.0307
5	0.0000	0.0357	0.0020	0.0117	0.0058	0.0058
10	0.0000	0.0268	0.0020	0.0106	0.0029	0.0058
15	0.0064	0.0134	0.0010	0.0085	0.0000	0.0077
20	0.0000	0.0134	0.0000	0.0106	0.0145	0.0058
25	0.0000	0.0000	0.0000	0.0224	0.0058	0.0038
30	0.0000	0.0089	0.0040	0.9042	0.9680	0.9405
35	0.0128	0.0089	0.0101	0.0000	0.0000	0.0000
40	0.0064	0.0134	0.9788	0.0000	0.0000	0.0000
45	0.0064	0.0580	0.0000	0.0000	0.0000	0.0000

50	0.0064	0.7545	0.0000	0.0000	0.0000	0.0000
55	0.0321	0.0000	0.0000	0.0000	0.0000	0.0000
60	0.9295	0.0000	0.0000	0.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
70	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

**** SAI VMT Output, March 98 ****

Hour 18

New York, NY: Fraction of VMT by Hour RURAL

Speed Bin	Inter- state	Major Art.	Minor Art.	Major Coll.	Minor Coll.	Local
0	0.0000	0.0000	0.0060	0.0000	0.0000	0.0012
5	0.0000	0.0000	0.0040	0.0000	0.0000	0.0000
10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0040	0.0000	0.0000	0.0000
25	0.0000	0.0000	0.0000	0.0000	0.0035	0.0000
30	0.0000	0.0000	0.0020	0.0000	0.9965	0.9988
35	0.0000	0.0000	0.0060	0.0041	0.0000	0.0000
40	0.0000	0.0000	0.0100	0.9959	0.0000	0.0000
45	0.0000	0.0000	0.0140	0.0000	0.0000	0.0000
50	0.0000	0.0032	0.9539	0.0000	0.0000	0.0000
55	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
60	0.0000	0.9968	0.0000	0.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
70	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

**** SAI VMT Output, March 98 ****

Hour 18

New York, NY: Fraction of VMT by Hour URBAN

Speed Bin	Inter- state	Express- way	Major Art.	Minor Art.	Collec- tor	Local
0	0.0000	0.0804	0.0020	0.0362	0.0029	0.0326
5	0.0000	0.0312	0.0040	0.0085	0.0000	0.0154
10	0.0000	0.0089	0.0010	0.0096	0.0029	0.0019
15	0.0000	0.0223	0.0000	0.0053	0.0029	0.0038
20	0.0128	0.0045	0.0010	0.0085	0.0029	0.0077
25	0.0000	0.0045	0.0000	0.0138	0.0145	0.0058
30	0.0000	0.0134	0.0040	0.9180	0.9738	0.9328
35	0.0000	0.0134	0.0101	0.0000	0.0000	0.0000
40	0.0064	0.0134	0.9778	0.0000	0.0000	0.0000
45	0.0064	0.0580	0.0000	0.0000	0.0000	0.0000

50	0.0321	0.7500	0.0000	0.0000	0.0000	0.0000
55	0.0192	0.0000	0.0000	0.0000	0.0000	0.0000
60	0.9231	0.0000	0.0000	0.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
70	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

**** SAI VMT Output, March 98 **** Hour 19

New York, NY: Fraction of VMT by Hour RURAL

Speed Bin	Inter-state	Major Art.	Minor Art.	Major Coll.	Minor Coll.	Local
0	0.0000	0.0000	0.0040	0.0000	0.0000	0.0012
5	0.0000	0.0000	0.0020	0.0000	0.0000	0.0000
10	0.0000	0.0000	0.0020	0.0000	0.0000	0.0000
15	0.0000	0.0000	0.0060	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0020	0.0000	0.0000	0.0000
25	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
30	0.0000	0.0000	0.0000	0.0000	1.0000	0.9988
35	0.0000	0.0000	0.0020	0.0021	0.0000	0.0000
40	0.0000	0.0000	0.0040	0.9979	0.0000	0.0000
45	0.0000	0.0000	0.0080	0.0000	0.0000	0.0000
50	0.0000	0.0000	0.9699	0.0000	0.0000	0.0000
55	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
60	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
70	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

**** SAI VMT Output, March 98 **** Hour 19

New York, NY: Fraction of VMT by Hour URBAN

Speed Bin	Inter-state	Express-way	Major Art.	Minor Art.	Collector	Local
0	0.0000	0.0759	0.0020	0.0277	0.0029	0.0307
5	0.0000	0.0268	0.0020	0.0138	0.0000	0.0058
10	0.0000	0.0045	0.0010	0.0064	0.0000	0.0019
15	0.0000	0.0089	0.0000	0.0106	0.0000	0.0077
20	0.0064	0.0045	0.0020	0.0106	0.0029	0.0154
25	0.0064	0.0134	0.0000	0.0149	0.0000	0.0000
30	0.0000	0.0045	0.0050	0.9159	0.9942	0.9386
35	0.0064	0.0089	0.0182	0.0000	0.0000	0.0000
40	0.0000	0.0134	0.9697	0.0000	0.0000	0.0000
45	0.0064	0.0625	0.0000	0.0000	0.0000	0.0000

50	0.0128	0.7768	0.0000	0.0000	0.0000	0.0000
55	0.0192	0.0000	0.0000	0.0000	0.0000	0.0000
60	0.9423	0.0000	0.0000	0.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
70	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

**** SAI VMT Output, March 98 ****

Hour 20

New York, NY: Fraction of VMT by Hour RURAL

Speed Bin	Inter- state	Major Art.	Minor Art.	Major Coll.	Minor Coll.	Local
0	0.0000	0.0000	0.0020	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15	0.0000	0.0000	0.0020	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0020	0.0000	0.0000	0.0000
25	0.0000	0.0000	0.0020	0.0000	0.0000	0.0000
30	0.0000	0.0000	0.0020	0.0000	1.0000	1.0000
35	0.0000	0.0000	0.0040	0.0000	0.0000	0.0000
40	0.0000	0.0000	0.0040	1.0000	0.0000	0.0000
45	0.0000	0.0000	0.0100	0.0000	0.0000	0.0000
50	0.0000	0.0032	0.9719	0.0000	0.0000	0.0000
55	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
60	0.0000	0.9968	0.0000	0.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
70	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

**** SAI VMT Output, March 98 ****

Hour 20

New York, NY: Fraction of VMT by Hour URBAN

Speed Bin	Inter- state	Express- way	Major Art.	Minor Art.	Collec- tor	Local
0	0.0000	0.0580	0.0020	0.0256	0.0000	0.0288
5	0.0000	0.0179	0.0000	0.0138	0.0029	0.0019
10	0.0000	0.0134	0.0020	0.0106	0.0000	0.0038
15	0.0000	0.0045	0.0010	0.0075	0.0000	0.0038
20	0.0000	0.0045	0.0030	0.0085	0.0029	0.0058
25	0.0000	0.0134	0.0010	0.0128	0.0029	0.0038
30	0.0064	0.0089	0.0050	0.9212	0.9913	0.9520
35	0.0000	0.0089	0.0101	0.0000	0.0000	0.0000
40	0.0000	0.0045	0.9758	0.0000	0.0000	0.0000
45	0.0128	0.0759	0.0000	0.0000	0.0000	0.0000

50	0.0000	0.7902	0.0000	0.0000	0.0000	0.0000
55	0.0192	0.0000	0.0000	0.0000	0.0000	0.0000
60	0.9615	0.0000	0.0000	0.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
70	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

**** SAI VMT Output, March 98 **** Hour 21

New York, NY: Fraction of VMT by Hour RURAL

Speed Bin	Inter-state	Major Art.	Minor Art.	Major Coll.	Minor Coll.	Local
0	0.0000	0.0000	0.0020	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0020	0.0000	0.0000	0.0000
10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
25	0.0000	0.0000	0.0000	0.0000	0.0000	0.0012
30	0.0000	0.0000	0.0020	0.0000	1.0000	0.9988
35	0.0000	0.0000	0.0020	0.0000	0.0000	0.0000
40	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000
45	0.0000	0.0000	0.0100	0.0000	0.0000	0.0000
50	0.0000	0.0000	0.9820	0.0000	0.0000	0.0000
55	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
60	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
70	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

**** SAI VMT Output, March 98 **** Hour 21

New York, NY: Fraction of VMT by Hour URBAN

Speed Bin	Inter-state	Express-way	Major Art.	Minor Art.	Collector	Local
0	0.0000	0.0402	0.0010	0.0256	0.0000	0.0211
5	0.0000	0.0357	0.0020	0.0085	0.0000	0.0077
10	0.0000	0.0089	0.0030	0.0043	0.0029	0.0019
15	0.0000	0.0000	0.0020	0.0106	0.0029	0.0000
20	0.0000	0.0045	0.0000	0.0085	0.0000	0.0096
25	0.0000	0.0045	0.0000	0.0160	0.0000	0.0000
30	0.0000	0.0045	0.0050	0.9265	0.9942	0.9597
35	0.0000	0.0179	0.0081	0.0000	0.0000	0.0000
40	0.0000	0.0045	0.9788	0.0000	0.0000	0.0000
45	0.0000	0.0491	0.0000	0.0000	0.0000	0.0000

50	0.0000	0.8304	0.0000	0.0000	0.0000	0.0000
55	0.0256	0.0000	0.0000	0.0000	0.0000	0.0000
60	0.9744	0.0000	0.0000	0.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
70	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

**** SAI VMT Output, March 98 ****

Hour 22

New York, NY: Fraction of VMT by Hour RURAL

Speed Bin	Inter- state	Major Art.	Minor Art.	Major Coll.	Minor Coll.	Local
0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0000	0.0000	0.0020	0.0000	0.0000	0.0012
10	0.0000	0.0000	0.0020	0.0000	0.0000	0.0000
15	0.0000	0.0000	0.0020	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
25	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
30	0.0000	0.0000	0.0020	0.0000	1.0000	0.9988
35	0.0000	0.0000	0.0000	0.0021	0.0000	0.0000
40	0.0000	0.0000	0.0000	0.9979	0.0000	0.0000
45	0.0000	0.0000	0.0020	0.0000	0.0000	0.0000
50	0.0000	0.0000	0.9900	0.0000	0.0000	0.0000
55	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
60	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
70	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

**** SAI VMT Output, March 98 ****

Hour 22

New York, NY: Fraction of VMT by Hour URBAN

Speed Bin	Inter- state	Express- way	Major Art.	Minor Art.	Collec- tor	Local
0	0.0000	0.0268	0.0020	0.0234	0.0000	0.0230
5	0.0000	0.0268	0.0020	0.0106	0.0000	0.0019
10	0.0000	0.0179	0.0020	0.0043	0.0000	0.0058
15	0.0000	0.0134	0.0020	0.0053	0.0000	0.0019
20	0.0000	0.0179	0.0010	0.0096	0.0000	0.0058
25	0.0064	0.0045	0.0010	0.0085	0.0029	0.0077
30	0.0000	0.0045	0.0040	0.9382	0.9971	0.9539
35	0.0000	0.0045	0.0091	0.0000	0.0000	0.0000
40	0.0000	0.0179	0.9768	0.0000	0.0000	0.0000
45	0.0064	0.0268	0.0000	0.0000	0.0000	0.0000

50	0.0064	0.8393	0.0000	0.0000	0.0000	0.0000
55	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
60	0.9808	0.0000	0.0000	0.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
70	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

**** SAI VMT Output, March 98 ****

Hour 23

New York, NY: Fraction of VMT by Hour RURAL

Speed Bin	Inter- state	Major Art.	Minor Art.	Major Coll.	Minor Coll.	Local
0	0.0000	0.0000	0.0020	0.0000	0.0000	0.0012
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
25	0.0000	0.0000	0.0020	0.0000	0.0000	0.0000
30	0.0000	0.0000	0.0000	0.0000	1.0000	0.9988
35	0.0000	0.0000	0.0000	0.0021	0.0000	0.0000
40	0.0000	0.0000	0.0000	0.9979	0.0000	0.0000
45	0.0000	0.0000	0.0120	0.0000	0.0000	0.0000
50	0.0000	0.0000	0.9840	0.0000	0.0000	0.0000
55	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
60	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
70	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

**** SAI VMT Output, March 98 ****

Hour 23

New York, NY: Fraction of VMT by Hour URBAN

Speed Bin	Inter- state	Express- way	Major Art.	Minor Art.	Collec- tor	Local
0	0.0000	0.0312	0.0030	0.0213	0.0000	0.0154
5	0.0000	0.0402	0.0020	0.0043	0.0000	0.0058
10	0.0000	0.0089	0.0020	0.0032	0.0000	0.0038
15	0.0000	0.0045	0.0010	0.0085	0.0029	0.0038
20	0.0000	0.0045	0.0020	0.0053	0.0000	0.0096
25	0.0000	0.0045	0.0000	0.0149	0.0029	0.0038
30	0.0064	0.0134	0.0040	0.9425	0.9942	0.9578
35	0.0000	0.0179	0.0091	0.0000	0.0000	0.0000
40	0.0000	0.0089	0.9768	0.0000	0.0000	0.0000
45	0.0064	0.0268	0.0000	0.0000	0.0000	0.0000

50	0.0064	0.8393	0.0000	0.0000	0.0000	0.0000
55	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
60	0.9808	0.0000	0.0000	0.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
70	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

**** SAI VMT Output, March 98 **** Hour 24

New York, NY: Fraction of VMT by Hour RURAL

Speed Bin	Inter-state	Major Art.	Minor Art.	Major Coll.	Minor Coll.	Local
0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0012
5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15	0.0000	0.0000	0.0020	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
25	0.0000	0.0000	0.0020	0.0000	0.0000	0.0000
30	0.0000	0.0000	0.0020	0.0000	1.0000	0.9988
35	0.0000	0.0000	0.0020	0.0000	0.0000	0.0000
40	0.0000	0.0000	0.0040	1.0000	0.0000	0.0000
45	0.0000	0.0000	0.0060	0.0000	0.0000	0.0000
50	0.0000	0.0032	0.9820	0.0000	0.0000	0.0000
55	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
60	0.0000	0.9968	0.0000	0.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
70	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

**** SAI VMT Output, March 98 **** Hour 24

New York, NY: Fraction of VMT by Hour URBAN

Speed Bin	Inter-state	Express-way	Major Art.	Minor Art.	Collector	Local
0	0.0000	0.0357	0.0030	0.0181	0.0000	0.0134
5	0.0000	0.0179	0.0030	0.0053	0.0000	0.0058
10	0.0000	0.0089	0.0010	0.0096	0.0000	0.0038
15	0.0000	0.0045	0.0000	0.0128	0.0000	0.0019
20	0.0000	0.0000	0.0020	0.0075	0.0000	0.0096
25	0.0000	0.0045	0.0000	0.0138	0.0029	0.0000
30	0.0064	0.0089	0.0061	0.9329	0.9971	0.9655
35	0.0000	0.0134	0.0081	0.0000	0.0000	0.0000
40	0.0000	0.0268	0.9768	0.0000	0.0000	0.0000
45	0.0064	0.0446	0.0000	0.0000	0.0000	0.0000

50	0.0064	0.8348	0.0000	0.0000	0.0000	0.0000
55	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
60	0.9808	0.0000	0.0000	0.0000	0.0000	0.0000
65	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
70	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
75	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

APPENDIX 3A

**FRACTIONAL VMT FOR HPMS URBAN AREAS
(BY URBANIZED AREA)**

DAILY VEHICLE-MILES OF TRAVEL - 1995 BY URBANIZED AREA

FRACTIONAL VMT

TABLE HM-71
SHEET 1 OF 6
OCTOBER 1996

COMPILED FROM REPORTS OF STATE AUTHORITIES

FEDERAL-AID URBANIZED AREA 1/	STATE LOCATION		DAILY VEHICLE-MILES OF TRAVEL (THOUSANDS)							FRACTION OF VMT				
	PRI- MARY	OTHER(S)	INTERSTATE	OTHER FREEWAYS AND EXPRESSWAYS	OTHER PRINCIPAL ARTERIAL	MINOR ARTERIAL	COLLECTOR	LOCAL	TOTAL	TOTAL VMT w/ RAMPS (THOUSANDS)	FREEWAYS	ARTERIALS & COLLECTORS		
												LOCAL	LOCAL	RAMPS
NEW YORK-NORTHEASTERN NJ	NY	NJ	42,298	49,116	52,896	41,209	21,458	31,648	238,625	246,578	0.3707	0.4687	0.1283	0.0323
LOS ANGELES	CA		73,068	41,995	75,958	45,623	11,233	14,932	262,809	272,819	0.4218	0.4868	0.0547	0.0367
CHICAGO-NORTHWESTERN IN 2/	IL	IN	41,884	2,604	37,593	32,183	17,239	17,156	148,659	152,529	0.2917	0.5705	0.1125	0.0254
PHILADELPHIA 2/	PA	NJ	14,063	7,217	20,435	15,149	7,287	9,971	74,122	75,973	0.2801	0.5643	0.1312	0.0244
SAN FRANCISCO-OAKLAND	CA		26,670	15,659	14,683	13,609	4,897	5,313	80,831	84,514	0.5009	0.3927	0.0629	0.0436
DETROIT	MI		22,574	5,744	27,939	15,730	3,316	9,900	85,203	87,667	0.3230	0.5360	0.1129	0.0281
WASHINGTON 3/	DC	MD, VA	25,161	7,476	18,610	15,343	5,573	7,023	79,186	82,025	0.3979	0.4819	0.0856	0.0346
DALLAS-FORT WORTH	TX		25,610	14,229	18,977	16,080	8,893	15,129	98,918	102,384	0.3891	0.4293	0.1478	0.0339
HOUSTON	TX		18,356	15,366	10,908	14,852	5,806	11,450	76,738	79,672	0.4233	0.3962	0.1437	0.0368
BOSTON	MA		16,555	4,572	15,332	9,387	3,436	6,213	55,495	57,333	0.3685	0.4911	0.1084	0.0321
SAN DIEGO	CA		21,089	7,303	7,112	12,100	3,866	3,543	55,013	57,483	0.4939	0.4015	0.0616	0.0430
ATLANTA	GA		30,595	4,146	13,392	14,711	7,893	14,645	85,382	88,404	0.3930	0.4072	0.1657	0.0342
PHOENIX	AZ		6,725	4,701	17,344	8,694	4,924	4,576	46,964	47,958	0.2382	0.6456	0.0954	0.0207
MINNEAPOLIS-ST. PAUL	MN		16,358	6,024	4,717	14,318	4,425	5,390	51,232	53,179	0.4209	0.4411	0.1014	0.0366
BALTIMORE	MD		14,141	5,631	8,968	7,415	3,225	2,834	42,214	43,934	0.4500	0.4463	0.0645	0.0392
SEATTLE	WA		15,627	5,889	8,391	7,966	3,363	5,220	47,456	49,328	0.4362	0.4200	0.1058	0.0379
MIAMI-HIALEAH	FL		3,556	8,380	7,659	7,083	3,278	6,663	36,619	37,657	0.3170	0.4785	0.1769	0.0276
ST. LOUIS	MO	IL	20,946	2,362	12,163	6,655	3,806	7,330	53,262	55,290	0.4216	0.4092	0.1326	0.0367
PITTSBURGH	PA		6,979	3,127	10,000	7,506	3,530	4,138	35,280	36,159	0.2795	0.5818	0.1144	0.0243
TAMPA-ST PETE-CLEARWATER	FL		6,772	841	11,234	4,970	5,715	8,764	38,296	38,958	0.1954	0.5626	0.2250	0.0170
CLEVELAND	OH		14,093	1,808	6,348	7,344	1,960	6,220	37,773	39,156	0.4061	0.3997	0.1589	0.0353
DENVER	CO		9,329	4,955	10,951	5,333	2,507	3,675	36,750	37,993	0.3760	0.4946	0.0967	0.0327
SAN JOSE	CA		5,905	8,965	10,640	5,608	1,690	2,420	35,228	36,522	0.4072	0.4912	0.0663	0.0354
NORFOLK-VA BEACH-NEWPORT NEWS	VA		7,223	2,531	6,461	5,718	1,918	6,766	30,617	31,466	0.3100	0.4480	0.2150	0.0270
KANSAS CITY	MO	KS	11,937	4,025	5,653	7,003	1,907	6,656	37,181	38,570	0.4138	0.3776	0.1726	0.0360
PORTLAND-VANCOUVER	OR	WA	8,320	2,785	5,067	4,997	3,097	3,506	27,772	28,738	0.3864	0.4580	0.1220	0.0336
RIVERSIDE-SAN BERNARDINO	CA		8,333	6,447	3,474	6,151	2,324	2,658	29,387	30,673	0.4819	0.3896	0.0867	0.0419
FORT LAUDERDALE-HOLLYWOOD-POMPANO BEACH	FL		8,108	2,335	7,018	4,761	4,181	4,755	31,158	32,067	0.3257	0.4977	0.1483	0.0283
MILWAUKEE	WI		6,547	872	7,943	6,818	846	7,646	30,672	31,317	0.2369	0.4983	0.2441	0.0206
SACRAMENTO	CA		5,254	5,295	7,694	3,217	2,028	2,201	25,689	26,607	0.3965	0.4863	0.0827	0.0345
CINCINNATI	OH	KY	12,711	801	4,194	5,661	2,257	4,724	30,348	31,524	0.4286	0.3842	0.1499	0.0373
SAN ANTONIO	TX		9,737	3,175	4,629	4,708	2,575	4,333	29,157	30,280	0.4264	0.3934	0.1431	0.0371
BUFFALO-NIAGARA FALLS	NY		3,856	1,864	5,089	3,822	2,989	2,075	19,695	20,193	0.2833	0.5893	0.1028	0.0246
NEW ORLEANS	LA		4,406	1,187	5,196	2,583	890	498	14,760	15,247	0.3668	0.5686	0.0327	0.0319
LAS VEGAS	NV		3,858	1,012	3,421	4,681	1,209	2,362	16,543	16,967	0.2870	0.5488	0.1392	0.0250
INDIANAPOLIS	IN		10,688	478	6,711	4,222	1,495	3,748	27,483	28,313	0.3944	0.4389	0.1324	0.0343
OKLAHOMA CITY	OK		7,333	911	4,766	4,593	1,297	5,409	24,309	25,026	0.3294	0.4258	0.2161	0.0287
ORLANDO 2/	FL		4,848	2,229	8,417	4,238	2,118	3,666	25,516	26,132	0.2708	0.5653	0.1403	0.0236
MEMPHIS	TN	AR, MS	5,285	346	5,928	5,532	1,374	1,932	20,397	20,887	0.2696	0.6145	0.0925	0.0235
PROVIDENCE-PAWTUCKET	RI	MA	5,546	1,386	4,470	2,276	1,155	2,262	17,095	17,698	0.3917	0.4464	0.1278	0.0341
COLUMBUS	OH		8,995	1,678	3,766	4,467	1,530	3,047	23,483	24,412	0.4372	0.3999	0.1248	0.0380
SALT LAKE CITY	UT		6,494	257	2,914	4,174	1,737	2,692	18,268	18,855	0.3580	0.4680	0.1428	0.0311
WEST PALM BEACH-BOCA RATON-DELAY BEACH	FL		5,738	1,344	3,897	2,577	2,493	2,712	18,761	19,377	0.3655	0.4628	0.1400	0.0318
LOUISVILLE	KY	IN	8,144	623	3,915	3,801	1,520	4,313	22,316	23,079	0.3799	0.4002	0.1869	0.0330
JACKSONVILLE	FL		5,566	1,432	5,130	3,721	1,149	4,076	21,074	21,683	0.3227	0.4612	0.1880	0.0281
TULSA	OK		2,073	3,442	2,064	4,474	569	4,285	16,907	17,387	0.3172	0.4088	0.2465	0.0276
HONOLULU	HI		4,235	1,375	2,002	1,167	1,005	1,599	11,383	11,871	0.4726	0.3516	0.1347	0.0411
BIRMINGHAM	AL		7,089	221	3,193	3,551	1,641	5,055	20,750	21,386	0.3418	0.3921	0.2364	0.0297
TUCSON	AZ		1,126	299	4,353	3,457	675	847	10,757	10,881	0.1310	0.7798	0.0778	0.0114
ROCHESTER	NY		3,372	1,854	1,110	5,063	1,414	1,519	14,332	14,787	0.3534	0.5131	0.1027	0.0307
NASHVILLE	TN		7,333	1,307	4,013	3,704	1,707	1,903	19,967	20,719	0.4170	0.4549	0.0918	0.0363
AUSTIN	TX		3,143	3,733	3,969	1,044	1,336	3,011	16,236	16,834	0.4085	0.3771	0.1789	0.0355
RICHMOND	VA		5,729	1,186	2,944	2,243	708	3,091	15,901	16,503	0.4190	0.3572	0.1873	0.0365
DAYTON	OH		4,957	719	3,492	2,992	1,408	2,943	16,511	17,005	0.3338	0.4641	0.1731	0.0290
EL PASO	TX	NM	2,663	766	2,988	1,499	990	1,962	10,868	11,166	0.3071	0.4905	0.1757	0.0267
HARTFORD-MIDDLETOWN 2/	CT		5,605	1,594	2,222	2,888	1,253	1,624	15,186	15,812	0.4553	0.4024	0.1027	0.0396
SPRINGFIELD	MA	CT	3,529	219	2,660	3,110	992	1,294	11,804	12,130	0.3090	0.5575	0.1067	0.0269
TACOMA	WA		2,989	1,785	2,729	2,963	809	1,394	12,669	13,084	0.3649	0.4969	0.1065	0.0317
CHARLOTTE	NC		3,368	1,117	3,215	1,717	539	3,608	13,564	13,954	0.3214	0.3921	0.2586	0.0280
OMAHA	NE	IA	2,333	407	3,939	2,054	958	1,165	10,856	11,094	0.2470	0.6265	0.1050	0.0215
AKRON	OH		3,484	1,165	2,437	1,750	887	2,921	12,644	13,048	0.3563	0.3889	0.2239	0.0310
FRESNO	CA		1,885	2,355	3,136	793	1,213	938	9,382	9,546	0.1975	0.6583	0.1271	0.0172
OXNARD-VENTURA	CA		5,852	2,958	1,202	602	602	947	11,561	12,070	0.4848	0.3945	0.0785	0.0422
TOTAL — 63 AREAS >500,000 PERSONS	—	—	700,309	300,049	590,646	476,603	200,695	326,571	2,594,873	2,681,904	0.3855	0.4728	0.1218	0.0325

**DAILY VEHICLE-MILES OF TRAVEL - 1995
BY URBANIZED AREA**

FRACTIONAL VMT

TABLE HM-71
SHEET 2 OF 6
OCTOBER 1996

COMPILED FROM REPORTS OF STATE AUTHORITIES

FEDERAL-AID URBANIZED AREA 1/	STATE LOCATION		DAILY VEHICLE-MILES OF TRAVEL (THOUSANDS)						
	PRI- MARY	OTHER(S)	INTERSTATE	OTHER FREEWAYS AND EXPRESSWAYS	OTHER PRINCIPAL ARTERIAL	MINOR ARTERIAL	COLLECTOR	LOCAL	TOTAL
TOLEDO	OH	MI	3,038	114	2,422	1,971	907	2,808	11,260
ALBANY-SCHENECTADY-TROY	NY		4,090	536	3,228	2,057	1,222	1,334	12,467
GRAND RAPIDS	MI		2,011	1,259	3,053	2,601	774	1,009	10,707
WILMINGTON 2/	DE	MD, NJ	3,658	249	3,314	1,477	981	2,107	11,786
SARASOTA-BRADENTON	FL		488		2,573	1,394	1,941	2,211	8,607
NEW HAVEN-MERIDEN	CT		3,532	1,301	1,548	1,962	463	1,023	9,829
ALLENTOWN-BETHLEHEM-EASTON	PA	NJ	1,059	1,725	2,254	1,316	1,375	984	8,713
ALBUQUERQUE	NM		3,252	4	4,925	1,502	1,072	1,111	11,866
CHARLESTON	SC		2,089	262	2,713	1,520	774	445	7,803
BRIDGEPORT-MILFORD	CT		2,158	2,005	969	1,757	558	600	8,047
SCRANTON-WILKES-BARRE	PA		1,618	519	1,722	1,546	576	749	6,730
YOUNGSTOWN-WARREN	OH		982	478	1,519	1,551	689	2,009	7,228
COLORADO SPRINGS	CO		1,277	908	1,860	1,704	483	692	6,924
RALEIGH	NC		3,078	533	2,942	2,325	710	3,253	12,841
BATON ROUGE	LA		2,558		2,761	2,066	541	1,437	9,363
SYRACUSE	NY		2,635	758	1,365	2,313	778	968	8,817
BAKERSFIELD	CA		1,572	1,572	2,203	1,242	428	610	6,055
WICHITA	KS		1,391	905	1,504	2,136	258	764	6,958
WORCESTER	MA	CT	3,265	180	1,992	1,627	412	669	8,145
COLUMBIA	SC		3,300	316	1,901	2,048	736	439	8,740
FLINT	MI		2,522	132	1,765	2,917	726	877	8,939
AUGUSTA	GA	SC	1,207	394	2,355	1,592	533	884	6,965
TRENTON	NJ	PA	2,141	567	2,047	1,687	444	730	7,616
KNOXVILLE	TN		3,535	113	2,908	1,354	790	1,192	9,892
CHATTANOOGA	TN	GA	2,533	1,022	1,841	2,496	567	1,319	9,778
MELBOURNE-PALM BAY	FL		405	39	3,795	930	891	1,313	7,373
MOBILE	AL		2,223		1,746	1,232	984	2,014	8,199
SPOKANE	WA		1,196	88	2,362	1,408	337	666	6,057
HARRISBURG	PA		2,738	1,196	1,937	1,491	899	939	9,200
JACKSON	MS		2,597		2,509	799	610	1,041	7,556
LITTLE ROCK-NORTH LITTLE ROCK	AR		3,352	743	1,455	1,602	492	441	8,085
MCALLEN-EDINBURG-MISSION	TX			1,587	1,432	1,012	1,110	844	5,985
LAWRENCE-HAVERHILL	MA	NH	3,495	201	1,270	1,397	487	795	7,645
DES MOINES	IA		2,174		1,465	1,750	444	931	6,764
STOCKTON	CA		1,239	995	1,415	515	472	564	5,200
CORPUS CHRISTI	TX		623	1,771	1,105	891	457	1,624	6,471
ODGEN	UT		2,019		1,107	1,339	504	902	5,871
PROVO-OREM	UT		1,931		1,209	756	415	845	5,156
LANSING-EAST LANSING	MI		1,328	262	1,745	1,445	623	449	5,852
FAYETTEVILLE	NC		37	401	1,858	1,327	222	2,046	5,891
RENO	NV		1,187	481	1,095	1,104	234	263	4,364
FORT WAYNE	IN		636	55	1,736	1,572	482	752	5,233
DAVENPORT-ROCK ISLAND-MOLINE	IL	IA	964	34	1,338	1,646	444	652	5,078
PENSACOLA	FL		830		2,035	2,105	671	1,942	7,583
SOUTH BEND-MISHAWAKA	IN	MI	366	429	1,868	1,171	370	552	4,756
SHREVEPORT	LA		1,762	310	1,548	1,512	407	951	6,490
GREENVILLE	SC		1,308	46	1,678	1,704	801	205	5,742
MADISON	WI		432	1,325	1,438	774	402	1,141	5,512
ANCHORAGE	AK		1,293		626	1,347	350	439	4,055
LANCASTER-PALMDALE	CA			719	1,439	1,682	291	338	4,469
MODESTO	CA			1,250	1,128	1,209	421	486	4,494
CANTON	OH		758	500	1,150	1,018	615	1,066	5,107
ANN ARBOR	MI		1,498	1,132	1,266	1,161	510	350	5,917
PEORIA	IL		926	88	1,673	1,296	507	534	5,024
LEXINGTON-FAYETTE	KY		1,484	708	1,598	1,422	546	806	6,564
FORT MYERS-CAPE CORAL	FL		149		1,413	2,054	1,214	1,368	6,198
LORAIN-ELYRIA	OH		1,316	658	943	1,104	460	810	5,291
DAYTONA BEACH	FL		662		2,644	667	552	1,201	5,726
DURHAM	NC		1,491	767	1,076	1,488	406	1,724	6,952
SAVANNAH	GA		1,219	61	1,887	1,151	364	680	5,362
COLUMBUS	GA	AL	541	562	1,207	1,059	464	1,039	4,872
WINSTON-SALEM	NC		932	1,742	232	1,023	918	1,889	6,736
LOWELL	MA	NH	1,405	983	712	1,023	289	817	5,229
MONTGOMERY	AL		1,008	340	1,260	1,276	436	1,117	5,437
SANTA ROSA	CA			1,687	540	876	310	465	3,878
ROCKFORD	IL		517		1,510	1,260	432	572	4,533
LANCASTER	PA			1,202	643	1,292	424	411	3,972
EUGENE-SPRINGFIELD	OR		488	614	570	974	322	413	3,381
GREENSBORO	NC		1,755	741	745	1,545	276	1,751	6,813
TOTAL — 132 AREAS >200,000 PERSONS	—	—	808,010	339,860	711,738	578,173	242,298	396,943	3,077,022

TOTAL VMT w/ RAMPS (THOUSANDS)	FRACTION OF VMT			
	FREEWAYS	ARTERIALS & COLLECTORS	LOCAL	RAMPS
11,534	0.2733	0.4595	0.2434	0.0238
12,869	0.3595	0.5056	0.1037	0.0313
10,991	0.2975	0.5848	0.0918	0.0259
12,126	0.3222	0.4760	0.1738	0.0280
8,649	0.0564	0.6830	0.2556	0.0049
10,249	0.4715	0.3876	0.0998	0.0410
8,955	0.3109	0.5522	0.1099	0.0270
12,149	0.2680	0.6172	0.0914	0.0233
8,008	0.2936	0.6253	0.0556	0.0255
8,409	0.4951	0.3905	0.0714	0.0431
6,916	0.3090	0.5558	0.1083	0.0269
7,355	0.1985	0.5111	0.2731	0.0173
7,114	0.3071	0.5689	0.0973	0.0267
13,155	0.2745	0.4543	0.2473	0.0239
9,586	0.2669	0.5600	0.1499	0.0232
9,112	0.3724	0.4890	0.1062	0.0324
6,192	0.2539	0.6255	0.0985	0.0221
7,158	0.3208	0.5446	0.1067	0.0279
8,445	0.4079	0.4773	0.0792	0.0355
9,055	0.3994	0.5174	0.0485	0.0347
9,170	0.2894	0.5898	0.0956	0.0252
7,104	0.2254	0.6306	0.1244	0.0196
7,852	0.3449	0.5321	0.0930	0.0300
10,209	0.3573	0.4948	0.1168	0.0311
10,087	0.3524	0.4862	0.1308	0.0307
7,412	0.0599	0.7577	0.1772	0.0052
8,392	0.2649	0.4721	0.2400	0.0230
6,169	0.2081	0.6658	0.1080	0.0181
9,542	0.4123	0.4535	0.0984	0.0359
7,782	0.3337	0.5035	0.1338	0.0290
8,441	0.4851	0.4204	0.0522	0.0422
6,123	0.2592	0.5804	0.1378	0.0225
7,967	0.4639	0.3959	0.0998	0.0404
6,953	0.3127	0.5262	0.1339	0.0272
5,394	0.4141	0.4453	0.1046	0.0360
6,679	0.3584	0.3673	0.2431	0.0312
6,047	0.3339	0.4879	0.1492	0.0290
5,324	0.3627	0.4470	0.1587	0.0316
5,990	0.2654	0.6365	0.0750	0.0231
5,929	0.0739	0.5746	0.3451	0.0064
4,509	0.3699	0.5396	0.0583	0.0322
5,293	0.1305	0.7160	0.1421	0.0114
5,165	0.1932	0.6637	0.1262	0.0168
7,655	0.1084	0.6285	0.2537	0.0094
4,825	0.1648	0.7065	0.1144	0.0143
6,670	0.3106	0.5198	0.1426	0.0270
5,860	0.2311	0.7138	0.0350	0.0201
5,665	0.3102	0.4614	0.2014	0.0270
4,167	0.3103	0.5574	0.1053	0.0270
4,532	0.1587	0.7529	0.0746	0.0138
4,603	0.2716	0.5992	0.1056	0.0236
5,216	0.2412	0.5335	0.2044	0.0210
6,146	0.4279	0.4779	0.0569	0.0372
5,112	0.1983	0.6799	0.1045	0.0173
6,755	0.3245	0.5279	0.1193	0.0282
6,211	0.0240	0.7537	0.2203	0.0021
5,463	0.3614	0.4589	0.1483	0.0314
5,784	0.1145	0.6679	0.2077	0.0100
7,148	0.3159	0.4155	0.2412	0.0275
5,473	0.2339	0.6216	0.1242	0.0203
4,968	0.2220	0.5495	0.2091	0.0193
6,969	0.3837	0.3118	0.2711	0.0334
5,437	0.4392	0.3723	0.1503	0.0382
5,554	0.2427	0.5351	0.2011	0.0211
4,025	0.4192	0.4288	0.1155	0.0365
4,599	0.1650	0.6962	0.1244	0.0144
4,077	0.2949	0.5787	0.1008	0.0257
3,477	0.3170	0.5367	0.1188	0.0276
7,030	0.3550	0.3650	0.2491	0.0309
3,176,887	0.3613	0.4823	0.1249	0.0314

**DAILY VEHICLE-MILES OF TRAVEL - 1995
BY URBANIZED AREA**

FRACTIONAL VMT

TABLE HM-71
SHEET 3 OF 6
OCTOBER 1996

COMPILED FROM REPORTS OF STATE AUTHORITIES

FEDERAL-AID URBANIZED AREA 1/	STATE LOCATION		DAILY VEHICLE-MILES OF TRAVEL (THOUSANDS)							
	PRI- MARY	OTHER(S)	INTERSTATE	OTHER FREEWAYS AND EXPRESSWAYS	OTHER PRINCIPAL ARTERIAL	MINOR ARTERIAL	COLLECTOR	LOCAL	TOTAL	
LUBBOCK	TX		251	576	1,784	404	360	1,186	4,561	
READING	PA		22	700	1,140	752	463	354	3,431	
HUNTSVILLE	AL		665	500	1,329	849	830	1,122	5,295	
SANTA BARBARA	CA			2,143	663	491	461	218	3,976	
STAMFORD	CT	NY	1,636	486	710	564	328	466	4,190	
LINCOLN	NE			65	1,356	1,167	276	408	3,483	
ROANOKE	VA		1,259	198	1,508	734	340	1,029	5,068	
HESPERIA-APPLE VALLEY-VICTORVILLE	CA		869		658	1,419	222	583	3,751	
BILOXI-GULFPORT	MS		669		1,721	564	477	861	4,292	
WACO	TX		1,107	319	850	883	202	790	4,151	
ERIE	PA			254	933	784	336	259	2,566	
BROCKTON	MA			59	1,115	961	826	274	499	3,734
WATERBURY 2/	CT			702	631	509	661	239	281	3,023
EVANSVILLE	IN	KY		214	135	1,631	1,087	471	469	4,007
KALAMAZOO	MI			618	383	1,326	1,054	378	286	4,045
ANTIOCH-PITTSBURG	CA			1,019	279	726	199	302	2,525	
SALEM	OR		749	262	1,219	245	217	228	2,920	
ATLANTIC CITY	NJ			1,452	1,227	912	330	703	4,624	
HUNTINGTON-ASHLAND	WV	KY, OH		613	484	1,057	711	331	411	3,607
GREEN BAY	WI			303	754	1,109	641	214	1,038	4,059
NEW LONDON-NORWICH	CT		2,019	181	700	992	331	396	4,619	
APPLETON-NEENAH	WI			1,153	657	672	246	828	3,556	
BOISE CITY	ID		872		1,303	1,042	466	625	4,308	
SPRINGFIELD	MO			277	1,094	1,420	490	355	997	4,633
CHARLESTON	WV			1,790		1,108	915	277	392	4,482
TALLAHASSEE	FL			447		1,283	986	523	913	4,152
AMARILLO	TX			987	122	928	477	468	1,163	4,145
UTICA-ROME	NY			527	597	1,036	859	455	405	3,879
SANTA CRUZ	CA				1,212	409	898	345	181	3,045
PALM SPRINGS	CA				4	810	766	349	468	2,397
LAKELAND	FL			685		1,002	760	534	1,212	4,193
FALL RIVER	MA	RI		802	693	164	926	252	724	3,561
MACON	GA			1,357		766	1,022	310	535	3,990
YORK	PA			588	275	862	690	435	349	3,199
CLARKSVILLE	TN	KY		374		892	740	169	316	2,491
KILLEEN	TX				614	726	315	255	316	2,226
LAREDO	TX			341		591	202	223	509	1,866
NEW BEDFORD	MA			488	11	598	741	173	374	2,385
DANBURY	CT	NY		1,136		693	856	304	535	3,695
POUGHKEEPSIE	NY			506		1,047	860	778	440	4,176
BREMERTON	WA			861		732	640	270	309	2,812
RICHLAND-KENNEWICK-PASCO	WA			296	449	732	595	445	311	2,828
TEXAS CITY	TX					2	88	204	361	655
PUEBLO	CO			346	278	400	316	121	162	1,623
NEW BRITAIN	CT			900	604	449	512	256	330	3,051
TOPEKA	KS			663	164	1,009	360	224	643	3,063
SAGINAW	MI			703		1,005	588	195	399	2,890
NASHUA	NH				611	554	581	157	162	2,065
FORT PIERCE	FL			636		1,510	440	667	895	4,433
SALINAS	CA				488	542	407	184	163	1,784
BEAUMONT	TX			612	695	581	496	282	669	3,335
CEDAR RAPIDS	IA			651		705	666	239	399	2,660
LAFAYETTE	LA			651		1,325	820	308	164	3,268
GAINESVILLE	FL			398		1,384	585	428	811	3,606
SIMI VALLEY	CA				1,000	472	582	91	268	2,413
BROWNSVILLE	TX			246		557	285	252	386	1,726
ODESSA	TX			194		707	364	155	493	2,097
MANCHESTER	NH			975		509	629	217	200	2,779
BINGHAMTON	NY			926		224	1,652	837	509	4,727
FORT SMITH	AR	OK		573		729	462	207	172	2,152
RACINE	WI					754	528	114	322	1,718
SPRINGFIELD	IL			583		952	804	226	258	2,823
FORT COLLINS	CO			195	69	516	846	186	201	2,013
OLYMPIA	WA			1128	200	537	627	318	347	3,157

TOTAL VMT w/ RAMPS (THOUSANDS)	FRACTION OF VMT			
	FREEWAYS	ARTERIALS & COLLECTORS	LOCAL	RAMPS
4,633	0.1785	0.5500	0.2560	0.0155
3,494	0.2067	0.6740	0.1013	0.0180
5,396	0.2159	0.5574	0.2079	0.0188
4,162	0.5148	0.3880	0.0524	0.0448
4,375	0.4851	0.3662	0.1065	0.0422
3,507	0.0787	0.7981	0.1163	0.0068
5,195	0.2805	0.4970	0.1981	0.0244
3,827	0.2271	0.6008	0.1524	0.0198
4,350	0.1538	0.6349	0.1979	0.0134
4,275	0.3336	0.4526	0.1848	0.0290
2,588	0.0981	0.7932	0.1001	0.0085
3,836	0.3060	0.5373	0.1301	0.0266
3,139	0.4247	0.4489	0.0895	0.0369
4,037	0.0864	0.7899	0.1162	0.0075
4,132	0.2423	0.6675	0.0692	0.0211
2,614	0.3899	0.4607	0.1155	0.0339
3,008	0.3361	0.5589	0.0758	0.0292
4,750	0.3057	0.5198	0.1480	0.0266
3,702	0.2963	0.5669	0.1110	0.0258
4,151	0.2546	0.4731	0.2501	0.0222
4,810	0.4573	0.4205	0.0823	0.0398
3,656	0.3153	0.4308	0.2265	0.0274
4,384	0.1989	0.6412	0.1426	0.0173
4,752	0.2885	0.4766	0.2098	0.0251
4,638	0.3860	0.4959	0.0845	0.0336
4,191	0.1067	0.6662	0.2179	0.0093
4,241	0.2615	0.4416	0.2742	0.0227
3,977	0.2826	0.5909	0.1018	0.0246
3,150	0.3847	0.5244	0.0575	0.0335
2,397	0.0017	0.8030	0.1952	0.0001
4,253	0.1611	0.5399	0.2850	0.0140
3,691	0.4050	0.3636	0.1961	0.0352
4,108	0.3303	0.5107	0.1302	0.0287
3,274	0.2636	0.6069	0.1066	0.0229
2,524	0.1482	0.7137	0.1252	0.0129
2,279	0.2694	0.5686	0.1386	0.0234
1,896	0.1799	0.5360	0.2685	0.0156
2,428	0.2055	0.6226	0.1540	0.0179
3,809	0.3432	0.4865	0.1405	0.0299
4,267	0.2463	0.6292	0.1031	0.0214
2,887	0.2982	0.5688	0.1070	0.0259
2,893	0.2575	0.6126	0.1075	0.0224
655		0.4489	0.5511	
1,677	0.3720	0.4990	0.0966	0.0324
3,182	0.4727	0.3825	0.1037	0.0411
3,135	0.2638	0.5081	0.2051	0.0230
2,951	0.2382	0.6059	0.1352	0.0207
2,118	0.2885	0.6100	0.0765	0.0251
4,513	0.2041	0.5799	0.1983	0.0178
1,826	0.2672	0.6203	0.0892	0.0232
3,449	0.3790	0.3941	0.1940	0.0330
2,717	0.2396	0.5926	0.1469	0.0208
3,325	0.1958	0.7378	0.0493	0.0170
3,641	0.1093	0.6584	0.2228	0.0095
2,500	0.4000	0.4580	0.1072	0.0348
1,747	0.1408	0.6261	0.2209	0.0122
2,130	0.1775	0.5756	0.2315	0.0154
2,885	0.4242	0.4696	0.0693	0.0369
4,858	0.3098	0.5585	0.1048	0.0270
2,203	0.2642	0.6347	0.0781	0.0230
1,718		0.8126	0.1874	
2,874	0.2029	0.6897	0.0898	0.0176
2,036	0.1297	0.7603	0.0987	0.0113
3,273	0.4058	0.4529	0.1060	0.0353

DAILY VEHICLE-MILES OF TRAVEL - 1995 BY URBANIZED AREA

FRACTIONAL VMT

TABLE HM-71
SHEET 4 OF 6
OCTOBER 1996

COMPILED FROM REPORTS OF STATE AUTHORITIES

FEDERAL-AID URBANIZED AREA 1/	STATE LOCATION		DAILY VEHICLE-MILES OF TRAVEL (THOUSANDS)						
	PRI- MARY	OTHER(S)	INTERSTATE	OTHER FREEWAYS AND EXPRESSWAYS	OTHER PRINCIPAL ARTERIAL	MINOR ARTERIAL	COLLECTOR	LOCAL	TOTAL
LAKE CHARLES	LA		868		442	562	319	52	2,243
FARGO-MOORHEAD	ND	MN	382		512	533	169	325	1,921
DULUTH-SUPERIOR	MN	WI	459	10	642	695	335	405	2,546
ASHEVILLE	NC		1,881	274	466	981	208	1,389	5,199
PORT ARTHUR	TX			543	731	324	132	361	2,091
HEMET-SAN JACINTO	CA				337	327	227	249	1,140
FORT WALTON BEACH	FL				1,721	564	150	846	3,281
BRYAN-COLLEGE STATION	TX			528	615	403	208	546	2,300
PORTLAND	ME		702	115	842	767	260	197	2,883
ABILENE	TX		254	321	250	821	213	735	2,594
KAILUA	HI		30	308	512	227	208	286	1,571
GASTONIA	NC		1,110	48	1,143	563	117	1,013	3,994
PORTSMOUTH-DOVER-ROCHESTER	NH	ME	296	605	459	976	271	211	2,818
MUSKEGON	MI		21	469	487	697	196	229	2,099
HAMILTON	OH				630	459	166	549	1,804
CHAMPAIGN-URBANA	IL		395		466	483	238	166	1,748
SEASIDE-MONTEREY	CA			756	587	275	353	231	2,202
LAWTON	OK		144	20	546	474	106	441	1,731
WILMINGTON	NC		25	214	1,256	408	209	720	2,832
ELKHART-GOSHEN	IN		142	159	993	512	207	403	2,416
MONROE	LA		574		599	629	195	50	2,047
HIGH POINT	NC		631	298	1,041	647	159	1,177	3,953
WICHITA FALLS	TX		211	376	659	248	176	687	2,357
PETERSBURG	VA		1,618	486	1,853	989	494	592	6,032
HYANNIS	MA			876	1,194	808	247	661	3,786
HARLINGEN	TX		402		543	270	245	219	1,679
FAIRFIELD	CA		1,736	294	342	211	104	185	2,872
TUSCALOOSA	AL		402		1,127	638	252	551	2,970
SIOUX FALLS	SD		511	54	424	473	298	233	1,993
NORWALK	CT		1,092	555	376	472	158	356	3,009
WATERLOO-CEDAR FALLS	IA		105		670	586	162	422	1,945
SPARTANBURG	SC		416	170	787	620	497	86	2,576
LAFAYETTE-WEST LAFAYETTE	IN		85		852	377	92	266	1,672
PANAMA CITY	FL				1,437	509	387	918	3,251
JACKSONVILLE	NC				604	415	22	409	1,450
NAPLES	FL		52		693	319	432	656	2,152
BURLINGTON	VT		692	112	674	497	321	789	3,085
TAUNTON	MA		1,089	388	492	486	275	140	2,870
LYNCHBURG	VA			520	817	539	258	397	2,531
BOULDER	CO			423	506	428	112	163	1,632
STEBENVILLE-WEIRTON	OH	PA, WV		579	402	380	151	194	1,706
SAN ANGELO	TX			302	107	390	120	575	1,494
HATTIESBURG	MS		129		489	230	135	291	1,274
VISALIA	CA			445	316	443	230	217	1,651
MIDDLETOWN	OH		984		375	462	249	703	2,773
MIDLAND	TX		112	200	517	267	273	566	1,935
KENOSHA	WI		126		675	431	117	366	1,715
MUNCIE	IN			166	717	629	83	236	1,831
SANTA MARIA	CA			475	231	403	100	144	1,353
YAKIMA	WA		223	77	585	482	144	187	1,698
REDDING	CA		769	402	211	618	207	346	2,553
DECATUR	IL		60	44	744	557	192	199	1,796
TYLER	TX				1,418	165	243	603	2,429
VINELAND-MILLVILLE	NJ			268	102	746	466	291	1,873
SIOUX CITY	IA	NE, SD	360		447	440	158	220	1,625
BLOOMINGTON-NORMAL	IL		375	11	522	503	193	183	1,787
ALBANY	GA			195	937	532	173	337	2,174
KANNAPOLIS	NC		748		608	457	303	653	2,769
LONGVIEW	TX		32		845	336	173	484	1,870
BILLINGS	MT		199		725	219	109	349	1,601
ALTON	IL				977	457	216	235	1,885
WINTER HAVEN	FL				899	363	831	994	3,087
ATHENS	GA			454	764	409	384	289	2,300
LEWISVILLE	TX		1105		77	605	388	117	2,292

TOTAL VMT w/ RAMPS (THOUSANDS)	FRACTION OF VMT			
	FREEWAYS	ARTERIALS & COLLECTORS	LOCAL	RAMPS
2,319	0.3744	0.5706	0.0224	0.0326
1,954	0.1955	0.6212	0.1663	0.0170
2,587	0.1813	0.6464	0.1566	0.0158
5,386	0.4001	0.3073	0.2579	0.0348
2,138	0.2539	0.5551	0.1688	0.0221
1,140		0.7816	0.2184	
3,281		0.7422	0.2578	
2,346	0.2251	0.5226	0.2327	0.0196
2,954	0.2766	0.6327	0.0687	0.0241
2,644	0.2175	0.4856	0.2780	0.0189
1,600	0.2112	0.5917	0.1787	0.0184
4,095	0.2828	0.4452	0.2474	0.0246
2,896	0.3111	0.5890	0.0728	0.0271
2,142	0.2288	0.6444	0.1069	0.0199
1,804		0.6957	0.3043	
1,782	0.2216	0.6660	0.0931	0.0193
2,268	0.3334	0.5358	0.1019	0.0290
1,745	0.0940	0.6452	0.2527	0.0082
2,853	0.0838	0.6565	0.2524	0.0073
2,442	0.1233	0.7010	0.1650	0.0107
2,097	0.2737	0.6786	0.0238	0.0238
4,034	0.2303	0.4579	0.2918	0.0200
2,408	0.2438	0.4497	0.2853	0.0212
6,215	0.3385	0.5368	0.0953	0.0295
3,862	0.2268	0.5823	0.1711	0.0197
1,714	0.2345	0.6173	0.1278	0.0204
3,049	0.6659	0.2155	0.0607	0.0579
3,005	0.1338	0.6712	0.1834	0.0116
2,042	0.2767	0.5852	0.1141	0.0241
3,152	0.5225	0.3191	0.1129	0.0455
1,954	0.0537	0.7256	0.2160	0.0047
2,627	0.2231	0.7248	0.0327	0.0194
1,679	0.0506	0.7866	0.1584	0.0044
3,251		0.7176	0.2824	
1,450		0.7179	0.2821	
2,157	0.0241	0.6696	0.3042	0.0021
3,155	0.2548	0.4729	0.2501	0.0222
2,998	0.4926	0.4179	0.0467	0.0429
2,576	0.2018	0.6265	0.1541	0.0176
1,669	0.2535	0.6268	0.0977	0.0221
1,756	0.3297	0.5312	0.1105	0.0287
1,520	0.1986	0.4058	0.3782	0.0173
1,285	0.1004	0.6645	0.2264	0.0087
1,690	0.2634	0.5853	0.1284	0.0229
2,859	0.3442	0.3799	0.2459	0.0299
1,962	0.1590	0.5387	0.2885	0.0138
1,726	0.0730	0.7086	0.2121	0.0064
1,845	0.0900	0.7743	0.1279	0.0078
1,394	0.3407	0.5264	0.1033	0.0296
1,724	0.1740	0.7024	0.1085	0.0151
2,655	0.4411	0.3902	0.1303	0.0384
1,805	0.0576	0.8271	0.1102	0.0050
2,429		0.7517	0.2483	
1,896	0.1413	0.6929	0.1535	0.0123
1,656	0.2173	0.6309	0.1328	0.0189
1,821	0.2120	0.6690	0.1005	0.0184
2,191	0.0890	0.7494	0.1538	0.0077
2,834	0.2639	0.4827	0.2304	0.0230
1,873	0.0171	0.7230	0.2584	0.0015
1,618	0.1230	0.6507	0.2157	0.0107
1,885		0.8753	0.1247	
3,087		0.6780	0.3220	
2,339	0.1941	0.6655	0.1235	0.0169
2,388	0.4627	0.4480	0.0490	0.0403

**DAILY VEHICLE-MILES OF TRAVEL - 1995
BY URBANIZED AREA**

FRACTIONAL VMT

TABLE HM-71
SHEET 5 OF 6
OCTOBER 1996

COMPILED FROM REPORTS OF STATE AUTHORITIES

FEDERAL-AID URBANIZED AREA 1/	STATE LOCATION		DAILY VEHICLE-MILES OF TRAVEL (THOUSANDS)							TOTAL
	PRI- MARY	OTHER(S)	INTERSTATE	OTHER FREEWAYS AND EXPRESSWAYS	OTHER PRINCIPAL ARTERIAL	MINOR ARTERIAL	COLLECTOR	LOCAL		
FREDERICK	MD		370	364	252	215	204	98	1,503	
JOHNSON CITY	TN		486	63	814	744	139	328	2,574	
TERRE HAUTE	IN		309		834	520	147	314	2,124	
JACKSON	MI		383	212	455	453	227	268	1,998	
YUBA CITY	CA			339	177	535	179	192	1,422	
KINGSFORT	TN	VA	416	186	910	637	170	315	2,634	
ALEXANDRIA	LA		76	170	733	430	193	77	1,679	
SPRINGFIELD	OH		91	68	332	481	229	390	1,591	
GRAND JUNCTION	CO		145	684	259	332	157	139	1,384	
STUART	FL			165	807	291	160	345	1,768	
VACAVILLE	CA		1,149		103	250	106	139	1,747	
BATTLE CREEK	MI		382	10	435	536	172	223	1,758	
FITCHBURG-LEOMINSTER	MA		55	140	672	297	129	134	1,427	
ANDERSON	IN		259		713	451	163	292	1,878	
BURLINGTON	NC		1,047		219	511	291	748	2,816	
CHICO	CA			279	421	230	68	166	1,164	
YUMA	AZ	CA	75		294	265	108	122	864	
EAU CLAIRE	WI		69	223	725	236	113	498	1,864	
ST. CLOUD	MN				517	446	98	179	1,240	
COLUMBIA	MO		306	402	205	336	135	432	1,816	
JOHNSTOWN	PA			185	414	337	216	135	1,287	
LA CROSSE	WI	MN	130	121	792	287	105	416	1,851	
MANSFIELD	OH			290	343	434	157	119	1,343	
HAGERSTOWN	MD	PA, WV	651		457	315	87	174	1,684	
GREELEY	CO			325	336	228	157	116	1,162	
ALTOONA	PA			245	516	258	180	148	1,347	
ROCHESTER	MN			320	414	352	97	195	1,378	
HICKORY	NC		687	89	679	651	137	981	3,224	
BRISTOL 2/	CT			80	327	245	80	201	933	
ANNAPOLIS	MD		432	213	354	388	234	165	1,786	
FAYETTEVILLE-SPRINGDALE	AR			478	947	250	214	138	2,027	
BAY CITY	MI		173	75	495	348	178	190	1,459	
BLOOMINGTON	IN			161	442	375	78	174	1,230	
LAWRENCE	KS			45	390	204	107	213	959	
PORT HURON	MI		306	14	334	643	201	180	1,678	
MEDFORD	OR		357		339	324	152	118	1,290	
GADSDEN	AL		254		978	292	167	536	2,227	
ST. JOSEPH	MO	KS	225	113	321	210	131	591	1,591	
HOLLAND	MI		164	22	603	389	127	130	1,435	
PUNTA GORDA	FL		136		503	198	262	453	1,552	
OCALA	FL		315		815	602	309	522	2,563	
NAPA	CA			338	195	279	65	148	1,025	
KOKOMO	IN				299	714	185	145	1,343	
FLORENCE	AL				813	549	97	697	2,156	
ANNISTON	AL		352		644	715	233	626	2,570	
TEXARKANA	AR	TX	479	83	221	143	64	251	1,241	
CHARLOTTESVILLE	VA		208		221	434	194	224	1,383	
LEWISTON-AUBURN	ME		107	24	624	304	106	115	1,280	
DENTON	TX		850		321	399	132	307	2,009	
DOVER	DE			122	232	559	228	222	1,363	
IOWA CITY	IA		278		309	289	94	132	1,102	
LIMA	OH		353		332	371	203	398	1,657	
MERCED	CA			280	328	311	78	114	1,111	
BELLINGHAM	WA		441		217	368	165	147	1,338	
TEMPLE	TX		617		425	258	191	452	1,943	
VERO BEACH	FL		172		574	231	413	409	1,799	
CUMBERLAND	MD	WV	222		470	232	46	165	1,135	
GREAT FALLS	MT		58		391	170	102	259	980	
GALVESTON	TX		1,305	408	1,360	559	166	365	4,163	
DECATUR	AL		262		1,089	345	267	456	2,419	
HOUMA	LA			35	176	751	77	24	1,063	
SHERMAN-DENISON	TX			718	210	428	137	267	1,760	
BISMARCK-MANDAN	ND		173		277	305	108	123	986	
GOLDSBORO	NC			203	380	543	117	467	1,710	

TOTAL VMT w/ RAMPS (THOUSANDS)	FRACTION OF VMT				
	FREEWAYS	ARTERIALS & COLLECTORS	LOCAL	RAMPS	
1,567	0.4685	0.4282	0.0625	0.0408	
2,622	0.2094	0.6473	0.1251	0.0182	
2,151	0.1437	0.6979	0.1460	0.0125	
2,050	0.2903	0.5537	0.1307	0.0253	
1,451	0.2336	0.6139	0.1323	0.0203	
2,686	0.2241	0.6392	0.1173	0.0195	
1,700	0.1447	0.7975	0.0453	0.0126	
1,605	0.0991	0.6493	0.2430	0.0086	
1,397	0.1038	0.7876	0.0995	0.0090	
1,782	0.0926	0.7058	0.1936	0.0081	
1,847	0.6221	0.2485	0.0753	0.0541	
1,792	0.2187	0.6378	0.1244	0.0190	
1,444	0.1350	0.7604	0.0928	0.0117	
1,901	0.1363	0.6982	0.1536	0.0119	
2,907	0.3602	0.3512	0.2573	0.0313	
1,188	0.2348	0.6051	0.1397	0.0204	
871	0.0862	0.7662	0.1401	0.0075	
1,889	0.1545	0.5684	0.2636	0.0134	
1,240		0.8556	0.1444		
1,878	0.3771	0.3600	0.2301	0.0328	
1,303	0.1420	0.7421	0.1036	0.0124	
1,873	0.1340	0.6322	0.2221	0.0117	
1,368	0.2120	0.6826	0.0870	0.0184	
1,741	0.3740	0.4935	0.1000	0.0325	
1,190	0.2730	0.6057	0.0975	0.0238	
1,368	0.1791	0.6972	0.1082	0.0156	
1,406	0.2276	0.6139	0.1387	0.0198	
3,292	0.2358	0.4457	0.2980	0.0205	
940	0.0851	0.6936	0.2138	0.0074	
1,842	0.3501	0.5298	0.0896	0.0305	
2,069	0.2311	0.6821	0.0667	0.0201	
1,481	0.1675	0.6896	0.1283	0.0146	
1,244	0.1294	0.7194	0.1399	0.0113	
963	0.0467	0.7280	0.2212	0.0041	
1,706	0.1876	0.6906	0.1055	0.0163	
1,321	0.2702	0.6169	0.0893	0.0235	
2,249	0.1129	0.6389	0.2383	0.0098	
1,620	0.2086	0.4085	0.3647	0.0181	
1,451	0.1282	0.7711	0.0896	0.0112	
1,564	0.0870	0.6158	0.2897	0.0076	
2,590	0.1216	0.6663	0.2015	0.0106	
1,054	0.3206	0.5112	0.1404	0.0279	
1,343		0.8920	0.1080		
2,156		0.6767	0.3233		
2,601	0.1354	0.6122	0.2407	0.0118	
1,290	0.4357	0.3318	0.1946	0.0379	
1,420	0.3020	0.5999	0.0718	0.0263	
1,291	0.1014	0.8007	0.0891	0.0088	
2,083	0.4081	0.4090	0.1474	0.0355	
1,374	0.0888	0.7418	0.1616	0.0077	
1,126	0.2469	0.6145	0.1172	0.0215	
1,688	0.2092	0.5368	0.2358	0.0182	
1,135	0.2466	0.6315	0.1004	0.0215	
1,376	0.3204	0.5449	0.1068	0.0279	
1,997	0.3090	0.4377	0.2264	0.0269	
1,814	0.0948	0.6715	0.2255	0.0082	
1,154	0.1923	0.6480	0.1429	0.0167	
985	0.0589	0.6731	0.2629	0.0051	
4,312	0.3973	0.4835	0.0846	0.0346	
2,442	0.1073	0.6966	0.1867	0.0093	
1,066	0.0328	0.9418	0.0225	0.0029	
1,822	0.3940	0.4252	0.1465	0.0343	
1,001	0.1728	0.6893	0.1229	0.0150	
1,728	0.1175	0.6020	0.2703	0.0102	

**DAILY VEHICLE-MILES OF TRAVEL - 1995
BY URBANIZED AREA**

FRACTIONAL VMT

TABLE HM-71
SHEET 6 OF 6
OCTOBER 1996

COMPILED FROM REPORTS OF STATE AUTHORITIES

FEDERAL-AID URBANIZED AREA 1/	STATE LOCATION		DAILY VEHICLE-MILES OF TRAVEL (THOUSANDS)							
	PRI- MARY	OTHER(S)	INTERSTATE	OTHER FREEWAYS AND EXPRESSWAYS	OTHER PRINCIPAL ARTERIAL	MINOR ARTERIAL	COLLECTOR	LOCAL	TOTAL	
VICTORIA	TX				328	276	74	318	996	
CHEYENNE	WY		250		414	132	198	106	1,100	
INDIO-COACHELLA	CA		158	30	294	307	128	141	1,058	
PASCAGOULA	MS		51		677	149	159	301	1,337	
WARNER ROBINS	GA				576	373	87	259	1,295	
MONESSEN	PA		281	57	191	314	183	154	1,180	
LAS CRUCES	NM		256		761	53	50	1,207	2,327	
DOTHAN	AL				927	293	177	516	1,913	
DUBUQUE	IA	IL			392	289	84	160	925	
OWENSBORO	KY			196	421	261	175	242	1,295	
JOPLIN	MO		245		536	432	104	596	1,913	
BENTON HARBOR	MI		640		406	385	116	158	1,705	
STATE COLLEGE	PA			153	367	127	201	100	948	
SHEBOYGAN	WI		140		206	275	106	187	914	
LONGMONT	CO			14	352	193	65	70	694	
ROCK HILL	SC		442	25	611	278	167	55	1,578	
BANGOR	ME		327		310	403	241	117	1,398	
LONGVIEW	WA	OR	352		211	222	158	136	1,275	
OSHKOSH	WI			196	242	244	94	234	1,027	
PINE BLUFF	AR			239	219	304	91	160	1,013	
NEWPORT	RI				503	83	124	143	853	
LOMPOC	CA				264	49	65	72	450	
MYRTLE BEACH	SC			643	821	583	44	64	2,155	
DELTONA	FL		377		199	49	104	416	1,145	
SUMTER	SC			60	501	255	146	90	1,052	
FREDERICKSBURG	VA		708	2	592	185	186	99	1,772	
WAUSAU	WI			490	357	242	73	143	1,305	
DAVIS	CA		307	39	60	185	131	124	846	
MISSOULA	MT		127		349	207	130	225	1,038	
WILLIAMSPORT	PA		332	112	237	375	140	145	1,341	
PARKERSBURG	WV	OH	22		574	216	152	150	1,114	
KANKAKEE	IL		256		383	216	108	106	1,069	
POCATELLO	ID		229		320	142	91	200	982	
RAPID CITY	SD		195		301	539	139	100	1,274	
LOGAN	UT				344	216	75	397	1,032	
LODI	CA			236	165	195	91	110	797	
WHEELING	WV	OH	533		585	313	159	239	2,011	
FLORENCE	SC		91		390	419	178	49	1,164	
JACKSON	TN		201		542	503	120	195	1,561	
DANVILLE	VA			65	535	228	87	152	1,067	
SPRING HILL	FL				304	258	134	127	823	
GRAND FORKS	ND	MN	31		326	138	83	139	717	
BRISTOL	TN	VA	601		570	348	155	199	1,873	
AUBURN-OPELIKA	AL		418		537	276	159	469	1,859	
BELOIT	WI	IL	279		372	180	100	281	1,212	
ROME	GA			161	664	394	233	306	1,758	
IDAHO FALLS	ID		42		267	332	103	171	915	
GREENVILLE	NC				506	438	24	300	1,268	
ROCKY MOUNT	NC			176	400	337	65	267	1,245	
GLEN FALLS	NY				495	442	50	165	1,495	
SANTA FE	NM		114		845	219	159	393	1,730	
WATSONVILLE	CA			150	192	123	242	80	787	
TITUSVILLE	FL		165	10	486	52	126	541	1,380	
SLIDELL	LA		624		210	263	61	31	1,189	
ANDERSON	SC				576	287	142	57	1,062	
PITTSFIELD	MA				436	171	142	193	942	
ELMIRA	NY			368	235	674	154	168	1,599	
NEWBURGH	NY		959		224	1,109	434	325	3,051	
NEWARK	OH			274	178	112	108	275	947	
JANESVILLE	WI		205		320	275	57	257	1,114	
CASPER	WY		103	23	293	188	170	115	892	
POTTSTOWN	PA			213	483	155	140	124	1,115	
BRUNSWICK	GA		172		57	420	362	111	1,358	
SHARON	PA	OH	38		280	187	133	92	828	
SAN LUIS OBISPO	CA				298	109	236	83	806	
ITHACA	NY				162	131	402	85	872	
ROUND LAKE BEACH-MCHENRY 2/	IL	WI			10			1	11	
TOTALS, ALL 391 URBANIZED AREAS	—	—	888,574		390,822	868,808	696,956	296,409	487,743	3,629,312

TOTAL VMT w/ RAMPS (THOUSANDS)	FRACTION OF VMT				
	FREEWAYS	ARTERIALS & COLLECTORS	LOCAL	RAMPS	
996		0.6807	0.3193		
1,122	0.2229	0.6632	0.0945	0.0194	
1,074	0.1750	0.6785	0.1312	0.0152	
1,341	0.0380	0.7343	0.2244	0.0033	
1,295		0.8000	0.2000		
1,209	0.2795	0.5689	0.1273	0.0243	
2,349	0.1090	0.3678	0.5138	0.0095	
1,913		0.7303	0.2697		
925		0.8270	0.1730		
1,312	0.1494	0.6532	0.1844	0.0130	
1,934	0.1267	0.5542	0.3081	0.0110	
1,761	0.3635	0.5151	0.0897	0.0316	
961	0.1592	0.7230	0.1040	0.0138	
926	0.1512	0.6338	0.2019	0.0132	
695	0.0201	0.8774	0.1007	0.0018	
1,619	0.2885	0.6524	0.0340	0.0251	
1,426	0.2292	0.6688	0.0820	0.0199	
1,323	0.4143	0.4468	0.1028	0.0360	
1,046	0.2037	0.5547	0.2238	0.0177	
1,034	0.2312	0.5939	0.1548	0.0201	
853		0.8324	0.1676		
450		0.8400	0.1600		
2,211	0.2908	0.6549	0.0289	0.0253	
1,178	0.3201	0.2989	0.3532	0.0278	
1,057	0.0568	0.8532	0.0851	0.0049	
1,834	0.3872	0.5251	0.0540	0.0337	
1,348	0.3636	0.4987	0.1061	0.0316	
876	0.3949	0.4292	0.1415	0.0344	
1,049	0.1211	0.6539	0.2145	0.0105	
1,380	0.3218	0.5451	0.1051	0.0280	
1,116	0.0197	0.8442	0.1344	0.0017	
1,091	0.2346	0.6479	0.0971	0.0204	
1,002	0.2286	0.5519	0.1996	0.0199	
1,291	0.1510	0.7583	0.0775	0.0131	
1,032		0.6153	0.3847		
818	0.2887	0.5517	0.1346	0.0251	
2,073	0.3449	0.5098	0.1153	0.0300	
1,175	0.1089	0.8399	0.0417	0.0095	
1,578	0.1273	0.7380	0.1235	0.0111	
1,073	0.0606	0.7924	0.1417	0.0053	
823		0.8457	0.1543		
720	0.0431	0.7600	0.1931	0.0037	
1,925	0.3122	0.5573	0.1034	0.0272	
1,895	0.2205	0.5128	0.2474	0.0192	
1,236	0.2257	0.5274	0.2273	0.0196	
1,772	0.0909	0.7286	0.1727	0.0079	
919	0.0457	0.7642	0.1861	0.0040	
1,268		0.7634	0.2366		
1,260	0.1396	0.6364	0.2119	0.0121	
1,525	0.2249	0.6473	0.1082	0.0196	
1,740	0.0655	0.7029	0.2259	0.0057	
800	0.1875	0.6962	0.1000	0.0163	
1,395	0.1254	0.4759	0.3878	0.0109	
1,243	0.5019	0.4295	0.0249	0.0437	
1,062		0.9463	0.0537		
942		0.7951	0.2049		
1,631	0.2256	0.6517	0.1030	0.0196	
3,134	0.3060	0.5637	0.1037	0.0266	
971	0.2822	0.4100	0.2833	0.0246	
1,132	0.1811	0.5761	0.2271	0.0158	
903	0.1395	0.7210	0.1274	0.0121	
1,134	0.1879	0.6864	0.1094	0.0163	
1,378	0.1662	0.6481	0.1713	0.0145	
840	0.1619	0.7144	0.1095	0.0141	
832	0.3582	0.5145	0.0962	0.0312	
886	0.1828	0.6974	0.1038	0.0159	
11		0.9091	0.0909		
3,740,619	0.3420	0.4978	0.1304	0.0298	

1/ A Federal-aid "Urbanized Area" is an area with 50,000 or more persons, that at a minimum, encompasses the land area delineated by the Bureau of the Census. Areas are in sort by population.

2/ Some urbanized area data are inconsistently reported; for example, the Pennsylvania portion of Wilmington, Delaware is reported with Philadelphia, portions of Bristol, Connecticut are reported with Hartford or Waterbury, Kissimmee, Florida

APPENDIX 3B

“DISTANCES” FROM PROTOTYPE CITIES TO HPMS AREAS

"DISTANCES" FROM PROTOTYPE CITIES TO HPMS AREAS

Federal Aid Urbanized Area	State Location		Total VMT	"Distance" to Prototype City					Matching Prototype City
	Primary	Other		Chicago	Houston	Charlotte	New York	Minimum Value	
ANCHORAGE	AK		4,167	0.0006	0.0403	0.0509	0.0121	0.0006	CHICAGO
ANNISTON	AL		2,601	0.0428	0.1396	0.0836	0.0890	0.0428	CHICAGO
AUBURN-OPELIKA	AL		1,895	0.0266	0.0658	0.0250	0.0389	0.0250	CHARLOTTE
BIRMINGHAM	AL		21,386	0.0497	0.0153	0.0009	0.0184	0.0009	CHARLOTTE
DECATUR	AL		2,442	0.0557	0.1927	0.1441	0.1253	0.0557	CHICAGO
DOTHAN	AL		1,913	0.1360	0.3080	0.2186	0.2269	0.1360	CHICAGO
FLORENCE	AL		2,156	0.1414	0.2915	0.1893	0.2198	0.1414	CHICAGO
GADSDEN	AL		2,249	0.0527	0.1649	0.1051	0.1080	0.0527	CHICAGO
HUNTSVILLE	AL		5,396	0.0151	0.0735	0.0411	0.0384	0.0151	CHICAGO
MOBILE	AL		8,392	0.0267	0.0403	0.0100	0.0238	0.0100	CHARLOTTE
MONTGOMERY	AL		5,554	0.0115	0.0554	0.0300	0.0262	0.0115	CHICAGO
TUSCALOOSA	AL		3,005	0.0403	0.1617	0.1190	0.1006	0.0403	CHICAGO
FAYETTEVILLE-SPRINGDALE	AR		2,069	0.0183	0.1249	0.1291	0.0690	0.0183	CHICAGO
FORT SMITH	AR	OK	2,203	0.0061	0.0867	0.0947	0.0415	0.0061	CHICAGO
LITTLE ROCK-NORTH LITTLE ROCK	AR		8,441	0.0638	0.0128	0.0704	0.0213	0.0128	HOUSTON
PINE BLUFF	AR		1,034	0.0060	0.0764	0.0597	0.0360	0.0060	CHICAGO
TEXARKANA	AR	TX	1,290	0.0846	0.0069	0.0209	0.0274	0.0069	HOUSTON
PHOENIX	AZ		47,958	0.0088	0.0990	0.0979	0.0501	0.0088	CHICAGO
TUCSON	AZ		10,881	0.0710	0.2376	0.2195	0.1572	0.0710	CHICAGO
YUMA	AZ	CA	871	0.0816	0.2514	0.2097	0.1702	0.0816	CHICAGO
ANTIOCH-PITTSBURG	CA		2,614	0.0218	0.0061	0.0299	0.0006	0.0006	NEW YORK
BAKERSFIELD	CA		6,192	0.0047	0.0835	0.0847	0.0392	0.0047	CHICAGO
CHICO	CA		1,188	0.0052	0.0794	0.0671	0.0373	0.0052	CHICAGO
DAVIS	CA		876	0.0316	0.0019	0.0205	0.0023	0.0019	HOUSTON
FAIRFIELD	CA		3,049	0.2698	0.0988	0.1899	0.1565	0.0988	HOUSTON
FRESNO	CA		9,546	0.0169	0.1204	0.1036	0.0662	0.0169	CHICAGO
HEMET-SAN JACINTO	CA		1,140	0.1415	0.3346	0.2574	0.2445	0.1415	CHICAGO
HESPERIA-APPLE VALLEY-VICTORVILLE	CA		3,827	0.0067	0.0807	0.0638	0.0388	0.0067	CHICAGO
INDIO-COACHELLA	CA		1,074	0.0258	0.1420	0.1199	0.0826	0.0258	CHICAGO
LANCASTER-PALMDALE	CA		4,532	0.0526	0.2026	0.1908	0.1290	0.0526	CHICAGO
LODI	CA		818	0.0009	0.0425	0.0419	0.0137	0.0009	CHICAGO

Federal Aid Urbanized Area	State Location		Total VMT	"Distance" to Prototype City				Minimum Value	Matching Prototype City
	Pri- mary	Other		Chicago	Houston	Charlotte	New York		
LOMPOC	CA		450	0.1606	0.3778	0.3144	0.2773	0.1606	CHICAGO
LOS ANGELES	CA		272,819	0.0274	0.0161	0.0607	0.0084	0.0084	NEW YORK
MERCED	CA		1,135	0.0059	0.0887	0.0880	0.0428	0.0059	CHICAGO
MODESTO	CA		4,603	0.0013	0.0659	0.0688	0.0274	0.0013	CHICAGO
NAPA	CA		1,054	0.0051	0.0239	0.0282	0.0045	0.0045	NEW YORK
OXNARD-VENTURA	CA		12,070	0.0697	0.0081	0.0594	0.0211	0.0081	HOUSTON
PALM SPRINGS	CA		2,397	0.1456	0.3472	0.2758	0.2534	0.1456	CHICAGO
REDDING	CA		2,655	0.0553	0.0005	0.0309	0.0112	0.0005	HOUSTON
RIVERSIDE-SAN BERNARDINO	CA		30,673	0.0698	0.0068	0.0555	0.0204	0.0068	HOUSTON
SACRAMENTO	CA		26,607	0.0190	0.0126	0.0455	0.0031	0.0031	NEW YORK
SALINAS	CA		1,826	0.0036	0.0778	0.0837	0.0353	0.0036	CHICAGO
SAN DIEGO	CA		57,483	0.0724	0.0118	0.0689	0.0243	0.0118	HOUSTON
SAN FRANCISCO-OAKLAND	CA		84,514	0.0782	0.0126	0.0708	0.0271	0.0126	HOUSTON
SAN JOSE	CA		36,522	0.0219	0.0153	0.0542	0.0057	0.0057	NEW YORK
SAN LUIS OBISPO	CA		832	0.0079	0.0205	0.0427	0.0033	0.0033	NEW YORK
SANTA BARBARA	CA		4,162	0.0871	0.0169	0.0802	0.0332	0.0169	HOUSTON
SANTA CRUZ	CA		3,150	0.0139	0.0254	0.0620	0.0083	0.0083	NEW YORK
SANTA MARIA	CA		1,394	0.0044	0.0255	0.0425	0.0049	0.0044	CHICAGO
SANTA ROSA	CA		4,025	0.0364	0.0019	0.0314	0.0041	0.0019	HOUSTON
SEASIDE-MONTEREY	CA		2,268	0.0031	0.0294	0.0454	0.0066	0.0031	CHICAGO
SIMI VALLEY	CA		2,500	0.0245	0.0057	0.0335	0.0014	0.0014	NEW YORK
STOCKTON	CA		5,394	0.0308	0.0040	0.0352	0.0030	0.0030	NEW YORK
VACAVILLE	CA		1,847	0.2151	0.0663	0.1453	0.1150	0.0663	HOUSTON
VISALIA	CA		1,690	0.0013	0.0618	0.0577	0.0252	0.0013	CHICAGO
WATSONVILLE	CA		800	0.0269	0.1479	0.1357	0.0864	0.0269	CHICAGO
YUBA CITY	CA		1,451	0.0057	0.0838	0.0729	0.0400	0.0057	CHICAGO
BOULDER	CO		1,669	0.0049	0.0844	0.0856	0.0398	0.0049	CHICAGO
COLORADO SPRINGS	CO		7,114	0.0005	0.0456	0.0575	0.0151	0.0005	CHICAGO
DENVER	CO		37,993	0.0132	0.0141	0.0397	0.0017	0.0017	NEW YORK
FORT COLLINS	CO		2,036	0.0627	0.2215	0.1982	0.1445	0.0627	CHICAGO
GRAND JUNCTION	CO		1,397	0.0829	0.2580	0.2294	0.1743	0.0829	CHICAGO
GREELEY	CO		1,190	0.0018	0.0688	0.0740	0.0293	0.0018	CHICAGO
LONGMONT	CO		695	0.1686	0.3972	0.3519	0.2916	0.1686	CHICAGO
PUEBLO	CO		1,677	0.0119	0.0154	0.0403	0.0019	0.0019	NEW YORK
BRIDGEPORT-MILFORD	CT		8,409	0.0757	0.0105	0.0654	0.0249	0.0105	HOUSTON
BRISTOL 2/	CT		940	0.0684	0.2086	0.1492	0.1401	0.0684	CHICAGO

Federal Aid Urbanized Area	State Location		Total VMT	"Distance" to Prototype City					Matching Prototype City
	Pri- mary	Other		Chicago	Houston	Charlotte	New York	Minimum Value	
DANBURY	CT	NY	3,809	0.0105	0.0146	0.0233	0.0012	0.0012	NEW YORK
HARTFORD-MIDDLETOWN 2/	CT		15,812	0.0553	0.0027	0.0425	0.0123	0.0027	HOUSTON
NEW BRITAIN	CT		3,182	0.0684	0.0042	0.0471	0.0185	0.0042	HOUSTON
NEW HAVEN-MERIDEN	CT		10,249	0.0662	0.0043	0.0479	0.0176	0.0043	HOUSTON
NEW LONDON-NORWICH	CT		4,810	0.0510	0.0055	0.0505	0.0120	0.0055	HOUSTON
NORWALK	CT		3,152	0.1168	0.0168	0.0673	0.0458	0.0168	HOUSTON
STAMFORD	CT	NY	4,375	0.0794	0.0061	0.0508	0.0242	0.0061	HOUSTON
WATERBURY 2/	CT		3,139	0.0331	0.0057	0.0426	0.0048	0.0048	NEW YORK
WASHINGTON 3/	DC	MD, VA	82,025	0.0199	0.0114	0.0439	0.0027	0.0027	NEW YORK
DOVER	DE		1,374	0.0732	0.2325	0.1862	0.1558	0.0732	CHICAGO
WILMINGTON 2/	DE	MD, NJ	12,126	0.0136	0.0176	0.0142	0.0045	0.0045	NEW YORK
DAYTONA BEACH	FL		5,784	0.0502	0.1740	0.1218	0.1121	0.0502	CHICAGO
DELTONA	FL		1,178	0.1325	0.0641	0.0176	0.0820	0.0176	CHARLOTTE
FORT LAUDERDALE- HOLLYWOOD-POMPANO BEACH	FL		32,067	0.0077	0.0199	0.0233	0.0033	0.0033	NEW YORK
FORT MYERS-CAPE CORAL	FL		6,211	0.1174	0.2943	0.2213	0.2108	0.1174	CHICAGO
FORT PIERCE	FL		4,513	0.0152	0.0851	0.0528	0.0452	0.0152	CHICAGO
FORT WALTON BEACH	FL		3,281	0.1363	0.3132	0.2266	0.2300	0.1363	CHICAGO
GAINESVILLE	FL		3,641	0.0534	0.1743	0.1175	0.1137	0.0534	CHICAGO
JACKSONVILLE	FL		21,683	0.0186	0.0164	0.0098	0.0059	0.0059	NEW YORK
LAKELAND	FL		4,253	0.0479	0.1099	0.0484	0.0739	0.0479	CHICAGO
MELBOURNE-PALM BAY	FL		7,412	0.0934	0.2649	0.2092	0.1833	0.0934	CHICAGO
MIAMI-HIALEAH	FL		37,657	0.0133	0.0193	0.0142	0.0054	0.0054	NEW YORK
NAPLES	FL		2,157	0.1187	0.2611	0.1681	0.1923	0.1187	CHICAGO
OCALA	FL		2,590	0.0463	0.1680	0.1187	0.1069	0.0463	CHICAGO
ORLANDO 2/	FL		26,132	0.0012	0.0520	0.0466	0.0195	0.0012	CHICAGO
PANAMA CITY	FL		3,251	0.1362	0.3031	0.2106	0.2242	0.1362	CHICAGO
PENSACOLA	FL		7,655	0.0571	0.1659	0.1016	0.1106	0.0571	CHICAGO
PUNTA GORDA	FL		1,564	0.0757	0.1835	0.1064	0.1288	0.0757	CHICAGO
SARASOTA-BRADENTON	FL		8,649	0.0889	0.2304	0.1554	0.1617	0.0889	CHICAGO
SPRING HILL	FL		823	0.1632	0.3827	0.3207	0.2813	0.1632	CHICAGO
STUART	FL		1,782	0.0648	0.2085	0.1554	0.1384	0.0648	CHICAGO
TALLAHASSEE	FL		4,191	0.0548	0.1794	0.1233	0.1173	0.0548	CHICAGO
TAMPA-ST PETE-CLEARWATER	FL		38,958	0.0221	0.0866	0.0462	0.0491	0.0221	CHICAGO
TITUSVILLE	FL		1,395	0.1126	0.1553	0.0624	0.1280	0.0624	CHARLOTTE
VERO BEACH	FL		1,814	0.0620	0.1912	0.1309	0.1272	0.0620	CHICAGO

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	Pri- mary	Other		Chicago	Houston	Charlotte	New York		
WEST PALM BEACH-BOCA RATON-DELAY BEACH	FL		19,377	0.0178	0.0078	0.0210	0.0002	0.0002	NEW YORK
WINTER HAVEN	FL		3,087	0.1412	0.2917	0.1898	0.2198	0.1412	CHICAGO
ALBANY	GA		2,191	0.0751	0.2375	0.1931	0.1594	0.0751	CHICAGO
ATHENS	GA		2,339	0.0188	0.1259	0.1093	0.0702	0.0188	CHICAGO
ATLANTA	GA		88,404	0.0398	0.0015	0.0140	0.0057	0.0015	HOUSTON
AUGUSTA	GA	SC	7,104	0.0082	0.0948	0.0842	0.0475	0.0082	CHICAGO
BRUNSWICK	GA		1,378	0.0253	0.1308	0.0974	0.0762	0.0253	CHICAGO
COLUMBUS	GA	AL	4,968	0.0147	0.0686	0.0372	0.0353	0.0147	CHICAGO
MACON	GA		4,108	0.0054	0.0220	0.0306	0.0034	0.0034	NEW YORK
ROME	GA		1,772	0.0692	0.2227	0.1741	0.1484	0.0692	CHICAGO
SAVANNAH	GA		5,473	0.0061	0.0873	0.0784	0.0422	0.0061	CHICAGO
WARNER ROBINS	GA		1,295	0.1461	0.3468	0.2739	0.2534	0.1461	CHICAGO
HONOLULU	HI		11,871	0.0814	0.0045	0.0400	0.0242	0.0045	HOUSTON
KAILUA	HI		1,600	0.0114	0.0848	0.0585	0.0433	0.0114	CHICAGO
CEDAR RAPIDS	IA		2,717	0.0044	0.0726	0.0594	0.0330	0.0044	CHICAGO
DES MOINES	IA		6,953	0.0029	0.0293	0.0336	0.0067	0.0029	CHICAGO
DUBUQUE	IA	IL	925	0.1552	0.3670	0.3006	0.2689	0.1552	CHICAGO
IOWA CITY	IA		1,126	0.0040	0.0797	0.0750	0.0368	0.0040	CHICAGO
SIOUX CITY	IA	NE, SD	1,656	0.0096	0.0979	0.0838	0.0500	0.0096	CHICAGO
WATERLOO-CEDAR FALLS	IA		1,954	0.0918	0.2514	0.1853	0.1749	0.0918	CHICAGO
BOISE CITY	ID		4,384	0.0146	0.1108	0.0906	0.0597	0.0146	CHICAGO
IDAHO FALLS	ID		919	0.1039	0.2808	0.2203	0.1971	0.1039	CHICAGO
POCATELLO	ID		1,002	0.0120	0.0656	0.0377	0.0324	0.0120	CHICAGO
ALTON	IL		1,885	0.1788	0.4105	0.3555	0.3038	0.1788	CHICAGO
BLOOMINGTON-NORMAL	IL		1,821	0.0162	0.1213	0.1137	0.0663	0.0162	CHICAGO
CHAMPAIGN-URBANA	IL		1,782	0.0144	0.1163	0.1124	0.0625	0.0144	CHICAGO
CHICAGO-NORTHWESTERN IN 2/	IL	IN	152,529	0.0000	0.0488	0.0541	0.0169	0.0000	CHICAGO
DAVENPORT-ROCK ISLAND-MOLINE	IL	IA	5,165	0.0186	0.1252	0.1078	0.0698	0.0186	CHICAGO
DECATUR	IL		1,805	0.1211	0.3216	0.2814	0.2276	0.1211	CHICAGO
KANKAKEE	IL		1,091	0.0095	0.1014	0.0991	0.0517	0.0095	CHICAGO
PEORIA	IL		5,112	0.0208	0.1330	0.1219	0.0751	0.0208	CHICAGO
ROCKFORD	IL		4,599	0.0321	0.1576	0.1351	0.0944	0.0321	CHICAGO
ROUND LAKE BEACH-MCHENRY 2/	IL	WI	11	0.2008	0.4464	0.3995	0.3338	0.2008	CHICAGO

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	Pri- mary	Other		Chicago	Houston	Charlotte	New York		
SPRINGFIELD	IL		2,874	0.0227	0.1380	0.1312	0.0787	0.0227	CHICAGO
ANDERSON	IN		1,901	0.0423	0.1743	0.1393	0.1087	0.0423	CHICAGO
BLOOMINGTON	IN		1,244	0.0495	0.1915	0.1584	0.1217	0.0495	CHICAGO
ELKHART-GOSHEN	IN		2,442	0.0484	0.1841	0.1437	0.1170	0.0484	CHICAGO
EVANSVILLE	IN	KY	4,037	0.0906	0.2701	0.2341	0.1847	0.0906	CHICAGO
FORT WAYNE	IN		5,293	0.0482	0.1886	0.1552	0.1195	0.0482	CHICAGO
INDIANAPOLIS	IN		28,313	0.0283	0.0028	0.0235	0.0015	0.0015	NEW YORK
KOKOMO	IN		1,343	0.1891	0.4277	0.3767	0.3181	0.1891	CHICAGO
LAFAYETTE-WEST LAFAYETTE	IN		1,679	0.1074	0.2926	0.2395	0.2052	0.1074	CHICAGO
MUNCIE	IN		1,845	0.0828	0.2552	0.2172	0.1728	0.0828	CHICAGO
SOUTH BEND-MISHAWAKA	IN	MI	4,825	0.0347	0.1645	0.1444	0.0995	0.0347	CHICAGO
TERRE HAUTE	IN		2,151	0.0394	0.1698	0.1380	0.1048	0.0394	CHICAGO
LAWRENCE	KS		963	0.0971	0.2590	0.1902	0.1816	0.0971	CHICAGO
TOPEKA	KS		3,135	0.0132	0.0419	0.0197	0.0190	0.0132	CHICAGO
WICHITA	KS		7,158	0.0016	0.0340	0.0463	0.0087	0.0016	CHICAGO
LEXINGTON-FAYETTE	KY		6,755	0.0029	0.0278	0.0379	0.0057	0.0029	CHICAGO
LOUISVILLE	KY	IN	23,079	0.0424	0.0038	0.0087	0.0082	0.0038	HOUSTON
OWENSBORO	KY		1,312	0.0324	0.1433	0.1035	0.0865	0.0324	CHICAGO
ALEXANDRIA	LA		1,700	0.0778	0.2489	0.2413	0.1665	0.0778	CHICAGO
BATON ROUGE	LA		9,586	0.0021	0.0515	0.0430	0.0197	0.0021	CHICAGO
HOUMA	LA		1,066	0.2135	0.4660	0.4418	0.3500	0.2135	CHICAGO
LAFAYETTE	LA		3,325	0.0413	0.1778	0.1792	0.1095	0.0413	CHICAGO
LAKE CHARLES	LA		2,319	0.0150	0.0475	0.0905	0.0216	0.0150	CHICAGO
MONROE	LA		2,097	0.0199	0.1167	0.1395	0.0644	0.0199	CHICAGO
NEW ORLEANS	LA		15,247	0.0121	0.0453	0.0843	0.0191	0.0121	CHICAGO
SHREVEPORT	LA		6,670	0.0038	0.0281	0.0299	0.0064	0.0038	CHICAGO
SLIDELL	LA		1,243	0.0721	0.0214	0.0888	0.0296	0.0214	HOUSTON
BOSTON	MA		57,333	0.0123	0.0133	0.0346	0.0009	0.0009	NEW YORK
BROCKTON	MA		3,836	0.0016	0.0339	0.0378	0.0089	0.0016	CHICAGO
FALL RIVER	MA	RI	3,691	0.0628	0.0042	0.0118	0.0168	0.0042	HOUSTON
FITCHBURG-LEOMINSTER	MA		1,444	0.0612	0.2190	0.1981	0.1423	0.0612	CHICAGO
HYANNIS	MA		3,862	0.0078	0.0743	0.0528	0.0356	0.0078	CHICAGO
LAWRENCE-HAVERHILL	MA	NH	7,967	0.0605	0.0036	0.0457	0.0149	0.0036	HOUSTON
LOWELL	MA	NH	5,437	0.0626	0.0009	0.0261	0.0145	0.0009	HOUSTON
NEW BEDFORD	MA		2,428	0.0119	0.0992	0.0776	0.0519	0.0119	CHICAGO
PITTSFIELD	MA		942	0.1447	0.3434	0.2694	0.2509	0.1447	CHICAGO

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SPRINGFIELD	MA	CT	12,130	0.0005	0.0405	0.0506	0.0122	0.0005	CHICAGO
TAUNTON	MA		2,998	0.0683	0.0147	0.0751	0.0242	0.0147	HOUSTON
WORCESTER	MA	CT	8,445	0.0234	0.0110	0.0470	0.0039	0.0039	NEW YORK
ANNAPOLIS	MD		1,842	0.0056	0.0262	0.0484	0.0057	0.0056	CHICAGO
BALTIMORE	MD		43,934	0.0430	0.0095	0.0573	0.0109	0.0095	HOUSTON
CUMBERLAND	MD	WV	1,154	0.0169	0.1172	0.0957	0.0644	0.0169	CHICAGO
FREDERICK	MD		1,567	0.0542	0.0097	0.0615	0.0156	0.0097	HOUSTON
HAGERSTOWN	MD	PA, WV	1,741	0.0129	0.0138	0.0382	0.0014	0.0014	NEW YORK
BANGOR	ME		1,426	0.0145	0.1161	0.1163	0.0623	0.0145	CHICAGO
LEWISTON-AUBURN	ME		1,291	0.0900	0.2710	0.2444	0.1848	0.0900	CHICAGO
PORTLAND	ME		2,954	0.0062	0.0835	0.0967	0.0396	0.0062	CHICAGO
ANN ARBOR	MI		6,146	0.0304	0.0142	0.0595	0.0085	0.0085	NEW YORK
BATTLE CREEK	MI		1,792	0.0100	0.1009	0.0890	0.0519	0.0100	CHICAGO
BAY CITY	MI		1,481	0.0300	0.1522	0.1293	0.0904	0.0300	CHICAGO
BENTON HARBOR	MI		1,761	0.0088	0.0207	0.0454	0.0037	0.0037	NEW YORK
DETROIT	MI		87,667	0.0022	0.0306	0.0419	0.0071	0.0022	CHICAGO
FLINT	MI		9,170	0.0007	0.0578	0.0667	0.0224	0.0007	CHICAGO
GRAND RAPIDS	MI		10,991	0.0007	0.0542	0.0655	0.0202	0.0007	CHICAGO
HOLLAND	MI		1,451	0.0677	0.2312	0.2098	0.1522	0.0677	CHICAGO
JACKSON	MI		2,050	0.0006	0.0428	0.0434	0.0138	0.0006	CHICAGO
KALAMAZOO	MI		4,132	0.0137	0.1122	0.1180	0.0596	0.0137	CHICAGO
LANSING-EAST LANSING	MI		5,990	0.0065	0.0876	0.0966	0.0422	0.0065	CHICAGO
MUSKEGON	MI		2,142	0.0095	0.1011	0.0953	0.0516	0.0095	CHICAGO
PORT HURON	MI		1,706	0.0254	0.1441	0.1306	0.0835	0.0254	CHICAGO
SAGINAW	MI		2,951	0.0046	0.0785	0.0679	0.0365	0.0046	CHICAGO
DULUTH-SUPERIOR	MN	WI	2,587	0.0200	0.1217	0.0948	0.0685	0.0200	CHICAGO
MINNEAPOLIS-ST. PAUL	MN		53,179	0.0337	0.0038	0.0371	0.0040	0.0038	HOUSTON
ROCHESTER	MN		1,406	0.0067	0.0860	0.0724	0.0418	0.0067	CHICAGO
ST. CLOUD	MN		1,240	0.1681	0.3916	0.3320	0.2884	0.1681	CHICAGO
COLUMBIA	MO		1,878	0.0655	0.0109	0.0050	0.0222	0.0050	CHARLOTTE
JOPLIN	MO		1,934	0.0660	0.1407	0.0669	0.0997	0.0660	CHICAGO
KANSAS CITY	MO	KS	38,570	0.0559	0.0013	0.0162	0.0121	0.0013	HOUSTON
SPRINGFIELD	MO		4,752	0.0183	0.0291	0.0106	0.0135	0.0106	CHARLOTTE
ST. JOSEPH	MO	KS	1,620	0.0968	0.0955	0.0244	0.0860	0.0244	CHARLOTTE
ST. LOUIS	MO	IL	55,290	0.0434	0.0003	0.0263	0.0062	0.0003	HOUSTON
BILOXI-GULFPORT	MS		4,350	0.0306	0.1331	0.0909	0.0799	0.0306	CHICAGO

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HATTIESBURG	MS		1,285	0.0587	0.1839	0.1244	0.1216	0.0587	CHICAGO
JACKSON	MS		7,782	0.0067	0.0197	0.0281	0.0026	0.0026	NEW YORK
PASCAGOULA	MS		1,341	0.1042	0.2704	0.1992	0.1913	0.1042	CHICAGO
BILLINGS	MT		1,618	0.0458	0.1608	0.1084	0.1026	0.0458	CHICAGO
GREAT FALLS	MT		985	0.0878	0.2247	0.1484	0.1579	0.0878	CHICAGO
MISSOULA	MT		1,049	0.0467	0.1635	0.1109	0.1045	0.0467	CHICAGO
ASHEVILLE	NC		5,386	0.1023	0.0215	0.0134	0.0437	0.0134	CHARLOTTE
BURLINGTON	NC		2,907	0.0738	0.0189	0.0032	0.0306	0.0032	CHARLOTTE
CHARLOTTE	NC		13,954	0.0541	0.0237	0.0000	0.0253	0.0000	CHARLOTTE
DURHAM	NC		7,148	0.0412	0.0215	0.0009	0.0186	0.0009	CHARLOTTE
FAYETTEVILLE	NC		5,929	0.1019	0.1954	0.1025	0.1470	0.1019	CHICAGO
GASTONIA	NC		4,095	0.0340	0.0330	0.0044	0.0225	0.0044	CHARLOTTE
GOLDSBORO	NC		1,728	0.0565	0.1526	0.0861	0.1025	0.0565	CHICAGO
GREENSBORO	NC		7,030	0.0649	0.0168	0.0020	0.0256	0.0020	CHARLOTTE
GREENVILLE	NC		1,268	0.1383	0.3240	0.2424	0.2370	0.1383	CHICAGO
HICKORY	NC		3,292	0.0532	0.0617	0.0118	0.0477	0.0118	CHARLOTTE
HIGH POINT	NC		4,034	0.0486	0.0633	0.0138	0.0467	0.0138	CHARLOTTE
JACKSONVILLE	NC		1,450	0.1362	0.3032	0.2108	0.2242	0.1362	CHICAGO
KANNAPOLIS	NC		2,834	0.0224	0.0406	0.0123	0.0221	0.0123	CHARLOTTE
RALEIGH	NC		13,155	0.0320	0.0364	0.0062	0.0237	0.0062	CHARLOTTE
ROCKY MOUNT	NC		1,260	0.0375	0.1434	0.0951	0.0889	0.0375	CHICAGO
WILMINGTON	NC		2,853	0.0705	0.1957	0.1269	0.1336	0.0705	CHICAGO
WINSTON-SALEM	NC		6,969	0.1006	0.0249	0.0105	0.0452	0.0105	CHARLOTTE
BISMARCK-MANDAN	ND		1,001	0.0285	0.1495	0.1290	0.0881	0.0285	CHICAGO
FARGO-MOORHEAD	ND	MN	1,954	0.0148	0.1034	0.0770	0.0556	0.0148	CHICAGO
GRAND FORKS	ND	MN	720	0.1047	0.2805	0.2177	0.1972	0.1047	CHICAGO
LINCOLN	NE		3,507	0.0975	0.2819	0.2444	0.1946	0.0975	CHICAGO
OMAHA	NE	IA	11,094	0.0052	0.0859	0.0841	0.0409	0.0052	CHICAGO
MANCHESTER	NH		2,885	0.0297	0.0109	0.0525	0.0064	0.0064	NEW YORK
NASHUA	NH		2,118	0.0029	0.0685	0.0817	0.0295	0.0029	CHICAGO
PORTSMOUTH-DOVER-ROCHESTER	NH	ME	2,896	0.0023	0.0549	0.0734	0.0211	0.0023	CHICAGO
ATLANTIC CITY	NJ		4,750	0.0040	0.0292	0.0288	0.0073	0.0040	CHICAGO
TRENTON	NJ	PA	7,852	0.0047	0.0272	0.0476	0.0059	0.0047	CHICAGO
VINELAND-MILLVILLE	NJ		1,896	0.0394	0.1682	0.1342	0.1039	0.0394	CHICAGO
ALBUQUERQUE	NM		12,149	0.0032	0.0759	0.0815	0.0341	0.0032	CHICAGO

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LAS CRUCES	NM		2,349	0.2358	0.2373	0.1112	0.2278	0.1112	CHARLOTTE
SANTA FE	NM		1,740	0.0819	0.2298	0.1636	0.1582	0.0819	CHICAGO
LAS VEGAS	NV		16,967	0.0012	0.0420	0.0400	0.0136	0.0012	CHICAGO
RENO	NV		4,509	0.0101	0.0307	0.0642	0.0099	0.0099	NEW YORK
ALBANY-SCHENECTADY-TROY	NY		12,869	0.0089	0.0177	0.0384	0.0021	0.0021	NEW YORK
BINGHAMTON	NY		4,858	0.0005	0.0408	0.0515	0.0123	0.0005	CHICAGO
BUFFALO-NIAGARA FALLS	NY		20,193	0.0005	0.0587	0.0646	0.0229	0.0005	CHICAGO
ELMIRA	NY		1,631	0.0111	0.1063	0.1009	0.0554	0.0111	CHICAGO
GLEN FALLS	NY		1,525	0.0104	0.1039	0.0971	0.0537	0.0104	CHICAGO
ITHACA	NY		886	0.0281	0.1506	0.1365	0.0885	0.0281	CHICAGO
NEW YORK-NORTHEASTERN NJ	NY	NJ	246,578	0.0169	0.0083	0.0253	0.0000	0.0000	NEW YORK
NEWBURGH	NY		3,134	0.0003	0.0435	0.0537	0.0139	0.0003	CHICAGO
POUGHKEEPSIE	NY		4,267	0.0056	0.0875	0.0861	0.0420	0.0056	CHICAGO
ROCHESTER	NY		14,787	0.0072	0.0203	0.0400	0.0029	0.0029	NEW YORK
SYRACUSE	NY		9,112	0.0132	0.0126	0.0352	0.0009	0.0009	NEW YORK
UTICA-ROME	NY		3,977	0.0006	0.0596	0.0656	0.0235	0.0006	CHICAGO
AKRON	OH		13,048	0.0496	0.0110	0.0024	0.0157	0.0024	CHARLOTTE
CANTON	OH		5,216	0.0124	0.0560	0.0294	0.0269	0.0124	CHICAGO
CINCINNATI	OH	KY	31,524	0.0550	0.0002	0.0235	0.0110	0.0002	HOUSTON
CLEVELAND	OH		39,156	0.0445	0.0005	0.0172	0.0070	0.0005	HOUSTON
COLUMBUS	OH		24,412	0.0506	0.0006	0.0315	0.0092	0.0006	HOUSTON
DAYTON	OH		17,005	0.0168	0.0135	0.0127	0.0034	0.0034	NEW YORK
HAMILTON	OH		1,804	0.1382	0.2960	0.1983	0.2210	0.1382	CHICAGO
LIMA	OH		1,688	0.0232	0.0745	0.0342	0.0425	0.0232	CHICAGO
LORAIN-ELYRIA	OH		5,463	0.0186	0.0078	0.0182	0.0006	0.0006	NEW YORK
MANSFIELD	OH		1,368	0.0196	0.1303	0.1259	0.0729	0.0196	CHICAGO
MIDDLETOWN	OH		2,859	0.0569	0.0170	0.0008	0.0224	0.0008	CHARLOTTE
NEWARK	OH		971	0.0550	0.0397	0.0025	0.0354	0.0025	CHARLOTTE
SPRINGFIELD	OH		1,605	0.0606	0.1798	0.1162	0.1201	0.0606	CHICAGO
STEBENVILLE-WEIRTON	OH	PA, WV	1,756	0.0030	0.0282	0.0414	0.0059	0.0030	CHICAGO
TOLEDO	OH	MI	11,534	0.0298	0.0366	0.0071	0.0229	0.0071	CHARLOTTE
YOUNGSTOWN-WARREN	OH		7,355	0.0381	0.0809	0.0296	0.0527	0.0296	CHARLOTTE
LAWTON	OK		1,745	0.0646	0.1831	0.1162	0.1238	0.0646	CHICAGO
OKLAHOMA CITY	OK		25,026	0.0331	0.0150	0.0030	0.0113	0.0030	CHARLOTTE
TULSA	OK		17,387	0.0448	0.0221	0.0004	0.0204	0.0004	CHARLOTTE
EUGENE-SPRINGFIELD	OR		3,477	0.0018	0.0318	0.0405	0.0076	0.0018	CHICAGO

Federal Aid Urbanized Area	State Location		Total VMT	"Distance" to Prototype City				Minimum Value	Matching Prototype City
	Pri- mary	Other		Chicago	Houston	Charlotte	New York		
MEDFORD	OR		1,321	0.0032	0.0753	0.0818	0.0337	0.0032	CHICAGO
PORTLAND-VANCOUVER	OR	WA	28,738	0.0218	0.0057	0.0273	0.0004	0.0004	NEW YORK
SALEM	OR		3,008	0.0035	0.0387	0.0614	0.0121	0.0035	CHICAGO
ALLENTOWN-BETHLEHEM-EASTON	PA	NJ	8,955	0.0007	0.0382	0.0479	0.0109	0.0007	CHICAGO
ALTOONA	PA		1,368	0.0289	0.1520	0.1361	0.0896	0.0289	CHICAGO
ERIE	PA		2,588	0.0875	0.2661	0.2363	0.1810	0.0875	CHICAGO
HARRISBURG	PA		9,542	0.0285	0.0055	0.0377	0.0029	0.0029	NEW YORK
JOHNSTOWN	PA		1,303	0.0521	0.2010	0.1790	0.1281	0.0521	CHICAGO
LANCASTER	PA		4,077	0.0002	0.0518	0.0604	0.0186	0.0002	CHICAGO
MONESSEN	PA		1,209	0.0004	0.0509	0.0503	0.0184	0.0004	CHICAGO
PHILADELPHIA 2/	PA	NJ	75,973	0.0005	0.0491	0.0476	0.0174	0.0005	CHICAGO
PITTSBURGH	PA		36,159	0.0003	0.0561	0.0585	0.0214	0.0003	CHICAGO
POTTSTOWN	PA		1,134	0.0243	0.1412	0.1268	0.0814	0.0243	CHICAGO
READING	PA		3,494	0.0181	0.1263	0.1175	0.0700	0.0181	CHICAGO
SCRANTON-WILKES-BARRE	PA		6,916	0.0005	0.0399	0.0495	0.0118	0.0005	CHICAGO
SHARON	PA	OH	840	0.0377	0.1713	0.1517	0.1046	0.0377	CHICAGO
STATE COLLEGE	PA		961	0.0410	0.1787	0.1599	0.1103	0.0410	CHICAGO
WILLIAMSPORT	PA		1,380	0.0016	0.0340	0.0470	0.0088	0.0016	CHICAGO
YORK	PA		3,274	0.0022	0.0715	0.0726	0.0311	0.0022	CHICAGO
NEWPORT	RI		853	0.1573	0.3713	0.3062	0.2723	0.1573	CHICAGO
PROVIDENCE-PAWTUCKET	RI	MA	17,698	0.0257	0.0038	0.0250	0.0009	0.0009	NEW YORK
ANDERSON	SC		1,062	0.2304	0.4913	0.4532	0.3722	0.2304	CHICAGO
CHARLESTON	SC		8,008	0.0062	0.0772	0.0964	0.0358	0.0062	CHICAGO
COLUMBIA	SC		9,055	0.0186	0.0243	0.0660	0.0096	0.0096	NEW YORK
FLORENCE	SC		1,175	0.1113	0.3069	0.2931	0.2143	0.1113	CHICAGO
GREENVILLE	SC		5,860	0.0303	0.1500	0.1617	0.0885	0.0303	CHICAGO
MYRTLE BEACH	SC		2,211	0.0141	0.0978	0.1228	0.0510	0.0141	CHICAGO
ROCK HILL	SC		1,619	0.0129	0.0960	0.1193	0.0494	0.0129	CHICAGO
SPARTANBURG	SC		2,627	0.0349	0.1607	0.1714	0.0967	0.0349	CHICAGO
SUMTER	SC		1,057	0.1363	0.3476	0.3133	0.2490	0.1363	CHICAGO
RAPID CITY	SD		1,291	0.0564	0.2102	0.1962	0.1351	0.0564	CHICAGO
SIOUX FALLS	SD		2,042	0.0004	0.0582	0.0602	0.0227	0.0004	CHICAGO
BRISTOL	TN	VA	1,925	0.0007	0.0400	0.0515	0.0119	0.0007	CHICAGO
CHATTANOOGA	TN	GA	10,087	0.0112	0.0133	0.0262	0.0006	0.0006	NEW YORK
CLARKSVILLE	TN	KY	2,524	0.0414	0.1774	0.1514	0.1099	0.0414	CHICAGO

Federal Aid Urbanized Area	State Location		Total VMT	"Distance" to Prototype City				Minimum Value	Matching Prototype City
	Pri- mary	Other		Chicago	Houston	Charlotte	New York		
JACKSON	TN		1,578	0.0554	0.2055	0.1759	0.1322	0.0554	CHICAGO
JOHNSON CITY	TN		2,622	0.0129	0.1095	0.0956	0.0581	0.0129	CHICAGO
KINGSPORT	TN	VA	2,686	0.0093	0.0997	0.0906	0.0508	0.0093	CHICAGO
KNOXVILLE	TN		10,209	0.0101	0.0148	0.0320	0.0010	0.0010	NEW YORK
MEMPHIS	TN	AR, MS	20,887	0.0028	0.0741	0.0797	0.0328	0.0028	CHICAGO
NASHVILLE	TN		20,719	0.0296	0.0062	0.0410	0.0037	0.0037	NEW YORK
ABILENE	TX		2,644	0.0401	0.0687	0.0200	0.0464	0.0200	CHARLOTTE
AMARILLO	TX		4,241	0.0437	0.0455	0.0063	0.0340	0.0063	CHARLOTTE
AUSTIN	TX		16,834	0.0555	0.0018	0.0142	0.0124	0.0018	HOUSTON
BEAUMONT	TX		3,449	0.0454	0.0045	0.0075	0.0100	0.0045	HOUSTON
BROWNSVILLE	TX		1,747	0.0378	0.1392	0.0890	0.0866	0.0378	CHICAGO
BRYAN-COLLEGE STATION	TX		2,346	0.0212	0.0635	0.0271	0.0352	0.0212	CHICAGO
CORPUS CHRISTI	TX		6,679	0.0629	0.0150	0.0022	0.0236	0.0022	CHARLOTTE
DALLAS-FORT WORTH	TX		102,384	0.0308	0.0023	0.0183	0.0023	0.0023	NEW YORK
DENTON	TX		2,083	0.0409	0.0004	0.0202	0.0053	0.0004	HOUSTON
EL PASO	TX	NM	11,166	0.0106	0.0235	0.0168	0.0068	0.0068	NEW YORK
GALVESTON	TX		4,312	0.0196	0.0118	0.0444	0.0028	0.0028	NEW YORK
HARLINGEN	TX		1,714	0.0057	0.0850	0.0754	0.0408	0.0057	CHICAGO
HOUSTON	TX		79,672	0.0488	0.0000	0.0237	0.0083	0.0000	HOUSTON
KILLEEN	TX		2,279	0.0012	0.0536	0.0483	0.0204	0.0012	CHICAGO
LAREDO	TX		1,896	0.0381	0.0948	0.0410	0.0609	0.0381	CHICAGO
LEWISVILLE	TX		2,388	0.0485	0.0132	0.0672	0.0152	0.0132	HOUSTON
LONGVIEW	TX		1,873	0.1205	0.2862	0.2028	0.2076	0.1205	CHICAGO
LUBBOCK	TX		4,633	0.0339	0.0966	0.0455	0.0601	0.0339	CHICAGO
MCALLEN-EDINBURG-MISSION	TX		6,123	0.0018	0.0611	0.0540	0.0251	0.0018	CHICAGO
MIDLAND	TX		1,962	0.0497	0.1116	0.0490	0.0757	0.0490	CHARLOTTE
ODESSA	TX		2,130	0.0273	0.1008	0.0553	0.0597	0.0273	CHICAGO
PORT ARTHUR	TX		2,138	0.0048	0.0548	0.0392	0.0228	0.0048	CHICAGO
SAN ANGELO	TX		1,520	0.1064	0.1059	0.0297	0.0962	0.0297	CHARLOTTE
SAN ANTONIO	TX		30,280	0.0506	0.0000	0.0245	0.0090	0.0000	HOUSTON
SHERMAN-DENISON	TX		1,822	0.0328	0.0017	0.0190	0.0028	0.0017	HOUSTON
TEMPLE	TX		1,997	0.0309	0.0217	0.0033	0.0144	0.0033	CHARLOTTE
TEXAS CITY	TX		655	0.2929	0.3493	0.1929	0.3177	0.1929	CHARLOTTE
TYLER	TX		2,429	0.1370	0.3179	0.2335	0.2330	0.1370	CHICAGO
VICTORIA	TX		996	0.1406	0.2923	0.1911	0.2199	0.1406	CHICAGO
WACO	TX		4,275	0.0209	0.0130	0.0093	0.0048	0.0048	NEW YORK

Federal Aid Urbanized Area	State Location		Total VMT	"Distance" to Prototype City				Minimum Value	Matching Prototype City
	Pri- mary	Other		Chicago	Houston	Charlotte	New York		
WICHITA FALLS	TX		2,408	0.0468	0.0554	0.0101	0.0412	0.0101	CHARLOTTE
LOGAN	UT		1,032	0.1618	0.2866	0.1698	0.2257	0.1618	CHICAGO
ODGEN	UT		6,047	0.0100	0.0165	0.0213	0.0022	0.0022	NEW YORK
PROVO-OREM	UT		5,324	0.0225	0.0065	0.0147	0.0015	0.0015	NEW YORK
SALT LAKE CITY	UT		18,855	0.0158	0.0095	0.0205	0.0004	0.0004	NEW YORK
CHARLOTTESVILLE	VA		1,420	0.0026	0.0615	0.0784	0.0251	0.0026	CHICAGO
DANVILLE	VA		1,073	0.1039	0.2895	0.2425	0.2019	0.1039	CHICAGO
FREDERICKSBURG	VA		1,834	0.0147	0.0260	0.0639	0.0090	0.0090	NEW YORK
LYNCHBURG	VA		2,576	0.0130	0.1026	0.0803	0.0543	0.0130	CHICAGO
NORFOLK-VA BEACH-NEWPORT NEWS	VA		31,466	0.0259	0.0207	0.0052	0.0117	0.0052	CHARLOTTE
PETERSBURG	VA		6,215	0.0036	0.0293	0.0479	0.0068	0.0036	CHICAGO
RICHMOND	VA		16,503	0.0674	0.0034	0.0159	0.0183	0.0034	HOUSTON
ROANOKE	VA		5,195	0.0128	0.0337	0.0164	0.0139	0.0128	CHICAGO
BURLINGTON	VT		3,155	0.0298	0.0458	0.0111	0.0284	0.0111	CHARLOTTE
BELLINGHAM	WA		1,376	0.0015	0.0341	0.0464	0.0088	0.0015	CHICAGO
BREMERTON	WA		2,887	0.0001	0.0469	0.0547	0.0158	0.0001	CHICAGO
LONGVIEW	WA	OR	1,323	0.0305	0.0043	0.0360	0.0030	0.0030	NEW YORK
OLYMPIA	WA		3,273	0.0270	0.0049	0.0341	0.0020	0.0020	NEW YORK
RICHLAND-KENNEWICK-PASCO	WA		2,893	0.0030	0.0758	0.0755	0.0340	0.0030	CHICAGO
SEATTLE	WA		49,328	0.0437	0.0022	0.0374	0.0072	0.0022	HOUSTON
SPOKANE	WA		6,169	0.0161	0.1206	0.1105	0.0659	0.0161	CHICAGO
TACOMA	WA		13,084	0.0109	0.0150	0.0360	0.0013	0.0013	NEW YORK
YAKIMA	WA		1,724	0.0314	0.1576	0.1407	0.0940	0.0314	CHICAGO
APPLETON-NEENAH	WI		3,656	0.0331	0.0198	0.0026	0.0142	0.0026	CHARLOTTE
BELOIT	WI	IL	1,236	0.0194	0.0635	0.0285	0.0344	0.0194	CHICAGO
EAU CLAIRE	WI		1,889	0.0418	0.1168	0.0592	0.0753	0.0418	CHICAGO
GREEN BAY	WI		4,151	0.0298	0.0459	0.0111	0.0284	0.0111	CHARLOTTE
JANESVILLE	WI		1,132	0.0255	0.0984	0.0547	0.0575	0.0255	CHICAGO
KENOSHA	WI		1,726	0.0772	0.2259	0.1645	0.1539	0.0772	CHICAGO
LA CROSSE	WI	MN	1,873	0.0409	0.1462	0.0944	0.0920	0.0409	CHICAGO
MADISON	WI		5,665	0.0201	0.0205	0.0082	0.0091	0.0082	CHARLOTTE
MILWAUKEE	WI		31,317	0.0256	0.0555	0.0187	0.0323	0.0187	CHARLOTTE
OSHKOSH	WI		1,046	0.0204	0.0801	0.0416	0.0446	0.0204	CHICAGO
RACINE	WI		1,718	0.1499	0.3558	0.2859	0.2602	0.1499	CHICAGO
SHEBOYGAN	WI		926	0.0319	0.1345	0.0908	0.0812	0.0319	CHICAGO

Federal Aid Urbanized Area	State Location		Total VMT	"Distance" to Prototype City					Matching Prototype City
	Pri- mary	Other		Chicago	Houston	Charlotte	New York	Minimum Value	
WAUSAU	WI		1,348	0.0104	0.0155	0.0364	0.0014	0.0014	NEW YORK
CHARLESTON	WV		4,638	0.0153	0.0149	0.0453	0.0029	0.0029	NEW YORK
HUNTINGTON-ASHLAND	WV	KY, OH	3,702	0.0000	0.0465	0.0530	0.0155	0.0000	CHICAGO
PARKERSBURG	WV	OH	1,116	0.1499	0.3649	0.3115	0.2651	0.1499	CHICAGO
WHEELING	WV	OH	2,073	0.0065	0.0199	0.0350	0.0025	0.0025	NEW YORK
CASPER	WY		903	0.0462	0.1869	0.1587	0.1175	0.0462	CHICAGO
CHEYENNE	WY		1,122	0.0137	0.1142	0.1102	0.0610	0.0137	CHICAGO

APPENDIX 4A

Peer Review Comments and EPA Response

UNIVERSITY OF CALIFORNIA, DAVIS

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COLLEGE OF ENGINEERING
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DAVIS, CALIFORNIA 95616

April 22, 1999

John Gilmore
Emission Inventory Group
Assessment and Modeling Division
U.S. EPA
2000 Traverwood Dr.
Ann Arbor, MI 48105

Dear Mr. Gilmore:

Please find enclosed my review of report M6.SPD.003. I have serious doubts about the long-term suitability of the methods described in the report. While they may suffice in the short-term, the report only superficially covers the most salient issues, and in fact, leaves out many important considerations. The question of estimating VMT has long been discussed in the transportation literature and many methods, some adopted by DOTs, have been proposed and peer-reviewed. This report not only does not draw from this literature, it does not even bother to review it.

Improving the VMT estimates requires more knowledge of how counts are taken and differences in established count programs, and how these established counts can be augmented with hourly and daily count samples to improve the VMT estimates. It requires a deep understanding of the travel demand modeling methods, and how counts are used to validate the models and what is needed in terms of statistical methods to disaggregate the predicted period-based link flows to hourly volumes. There are both metropolitan and national databases and estimates of VMT that could have been compared to the results given in this report. Without at least some comparison to other estimates, it is virtually impossible to know whether the estimates derived in the report are even in the ballpark.

Finally, statistical methods are sufficiently evolved to provide methods for estimating variability for most modeling scenarios, particularly the ones posed in this report. I find it distressing that there is virtually no estimate, or even discussion of the variability associated with the methods described in the report. Thus, there is no way to establish the accuracy (or precision) of results generated by these methods. Better knowledge of research in transportation would certainly have helped to bridge this gap.

If, after reading my review you have questions or wish to discuss it further, please feel free to contact me.

Best regards,

A handwritten signature in black ink, appearing to read "Deb Niemeier".

Deb Niemeier
Associate Professor
University of California
Davis, CA 95616

Attachment/

Comments on
DEVELOPMENT OF METHODOLOGY FOR ESTIMATING VMT WEIGHTING BY FACILITY TYPE
(Final Report prepared by ICF Kaiser)
April 19, 1999

General Comments

The document provides guidelines for preparing VMT data disaggregated by speed and facility type, as required for inputting into MOBILE6, using either traffic counts data or travel demand model outputs. The guidelines are followed by a presentation of sample data and resulting VMT figures for four metropolitan areas. In general, the guidelines provide "quick-and-dirty" means of meeting MOBILE6 input requirements, given that the most useful data available will probably be traffic counts and travel demand model outputs for a large number of MOBILE6 users.

I reviewed an earlier version of this document and it appears that many of the suggested editing changes were made. However, the substantive questions regarding the usefulness or even the veracity of the methodology remain untested. I have focused on the five major areas requested:

1. Report Clarity

The readability of the report is substantially improved and I find it to be generally acceptable. Some elements such as the comparison in Table 1-1 are not needed and are, in fact misleading.

2. Overall Methodology

In reading this report I am struck by the lack of a methodology. The authors have suggested a very superficial approach to computing the VMT using count data and/or model volume estimates. It is interesting that their approach is, for some states, less sophisticated than that used by many of the Departments of Transportation. There is no discussion of bias or variability or missing data or estimating additional sampling needs. I find the lack of reference to the current transportation literature particularly troublesome. For instance, Davis (1997) recently reviewed and extended the basic estimation theory for monitoring and updating daily traffic volumes. At the very least, this work should have guided the development of the VMT Report.

I also find it somewhat disturbing that there are virtually no statistical methods presented to guide users in estimating sample sizes and developing temporal factors for disaggregating period-based volumes. The extrapolation methods recommended for estimating the hourly flows seem ad-hoc and unrealistic. In a recent study we found as many as 8 *statistically significantly* different hourly patterns within the Sacramento Metropolitan Region based on only on those locations with automatic counters. Obviously the potential for an even greater number of patterns to exist within a single region is much greater than we uncovered. In another study just completed in San Diego 5 different temporal patterns were identified using the automatic count locations and this contrast to Los Angeles, where only 2 such patterns were identified. Clearly, the underlying regional distribution of land use activities plays a major role in determining the temporal distribution.

Additional methodological limitations

- No statistical assessment of the errors and biases is provided. These errors and biases may be important because of their additive effects on the resulting VMT estimates.
- There was no robust method provided for combining data from traffic counts with travel demand models. It may be desired in some cases to augment travel demand model outputs with traffic count data on minor arterial, major collector roads, which may not be coded in the travel demand network. If both data sources are available, an opportunity may exist to account for a significant portion of traffic that occurs within coded zones.

- In a previous version, the authors suggested that national default ramp and collector/local street factors be used to inflate VMT estimates, since they often exclude these facilities and only include highways and arterials. However, I noted that it was possible that the actual proportions of VMT that occur on ramps will vary depending on the metropolitan area. For example, Las Vegas utilizes unusually large cloverleaf ramps in many of their freeway-arterial intersections, while Dallas has frequent use of left-lane exit ramps, which may tend to be atypically short due to geometric constraints. Similarly, the proportion of traffic on local streets and collectors could vary by metropolitan area. For example, in many cases the density of development and the predominance of feeder-collector systems versus grid systems could vary depending on the region of the US and on local topography. It may be more appropriate to encourage planners to derive their own factors for these auxiliary facilities, specific to their own jurisdictions.

In this version, I did not find any guidance on the issues noted above. That is, it appears that the sections were just removed. These issues are obviously very important and should be addressed in future research (or updates). The one reference to ramp VMT is in the national VMT section in which it appears that VMT is estimated as a percentage of freeway VMT, which clearly brings up the issue noted above.

- In the Methodology section for developing the national defaults, there is no statistical basis to the performance measure "sum of squares difference" the way it is calculated - consequently, there is no way to assess the resulting "best fit" that the authors argue is acceptable.

3. Dataset Appropriateness

There is little backup as to why these case study locations were chosen. It is difficult to assess their usefulness or appropriateness. Hopefully, the authors compared a large number of sites to determine which to choose for the analysis - presumably such a comparison would have included land use, transportation network, and various other factors. It is possible that they did this analysis but choose not to include the justification in the report itself.

4. Analyses Conducted

- The authors conducted very little statistical assessment, in fact none. I believe that the work is limited because it lacks such a treatment. There is substantial literature available on count sampling programs, augmenting data, computing VMT using control and profile stations, and blending travel demand volumes with count data. None of this was included in the report.

5. Appropriateness

- I do not believe the techniques are sufficient or robust enough for computing national VMT.
- I do not believe the methods should be a "model" for developing locality specific inputs, simply because there really isn't a method presented. Many DOTs have developed methods that combine their profile and control counts for estimating VMT. At very least these methods should have been evaluated. There was also little understanding or recognition of the huge number of missing data (counts taken quarterly or semi-quarterly) and how to combine these - or what to do when there are an insufficient number of automatic counts available.

**Response to Peer Review Comments regarding
Draft EPA Report
Development of Methodology for Estimating
VMT Weighting by Facility Type (M6.SPD.003)
(EPA Document Number EPA420-P-99-006)**

MOBILE6 Project Comment Number: 100

Name of Comment Submitter/Affiliation: Deb Niemeier, University of California

Date of Comment: April 22, 1999

Comment:

[The complete text of the peer reviewer's comments is shown on the preceding pages.]

EPA Response:

EPA agrees that the methodology represented in this report is not as thoroughly researched, defined, and explained as it could be.

Given that emission rates are not expected to be highly sensitive to VMT by facility distribution information, however, EPA determined not to devote the additional time and resources that would have been necessary to address the peer reviewer's comments.

The MOBILE6 model allows for user input of VMT distribution by facility (roadway type) and by hour, and for input of average speed distributions for freeways and arterial/collector roads. EPA in fact strongly encourages anyone using MOBILE6 to model a local area to supply their own VMT distribution input information and not to rely on the national default information derived in this report.

It can also be noted that a knowledgeable stakeholder commented on this report, "We have evaluated the data and methods used to determine the speed distributions by roadway type and time of day, and they appear to be reasonable." (Stakeholder comments are presented in the next appendix.)

Different reviewers it seems apply different standards to judge the quality and adequacy of this type of study. While EPA would have liked to meet this peer reviewer's high standards, EPA determined, given the overall importance of this area of the model and the limited time and dollar resources available, that this was not a practical alternative for MOBILE6. EPA does hope to improve this aspect of future mobile source emission models.

APPENDIX 4B

Stakeholder Review Comments and EPA Response

**Response to Stakeholder Review Comments regarding
Draft EPA Report
Development of Methodology for Estimating
VMT Weighting by Facility Type (M6.SPD.003)
(EPA Document Number EPA420-P-99-006)**

MOBILE6 Project Comment Number: 78

Name of Comment Submitter/Affiliation: Tom Darlington,
Air Improvement Resources, Inc.

Date of Comment: June 23, 1999

Comment:

For MOBILE6, EPA developed 7-8 new test cycles for different types of roadways, and is testing vehicles on these cycles to determine (1) emission changes with speed and roadway type, and (2) aggressive driving effects. Where ARB used the LA92 inventory cycle to add off-cycle aggressive driving emissions, EPA is using these facility-specific cycles to accomplish the same thing, as well as update the emissions vs speed relationships.

The MOBILE5 model allows the user to input average speed, and there are a set of speed correction factors that correct FTP emissions to different average speed. In MOBILE6, instead of inputting speed, users will input roadway type, average speed on roadway type, and VMT fractions by roadway type. The model will then estimate either a weighted-average emission factor for the urban area, or emission factors for the roadway types for input into a travel demand model.

This report examines a number of data sources to estimate distributions of speed by roadway type by time of day for a number of urban areas such as Chicago, Charlotte, New York City, etc. The companion report, listed below, suggests methods states can use to obtain and analyze this data for input into MOBILE6. The last chapter of the report develops the national average speed distributions by time of day and roadway type. These will probably be used by the EPA in new emission inventory work using MOBILE6, for the Trends report, for regional air quality modeling, and for regulatory analyses. These estimates, coupled with the test data described above, could have a significant impact on nationwide emission inventories from mobile sources. EPA has not yet released a report describing its analysis of the emissions data on different cycles. We will only know the full impact of these changes once the emissions vs roadway type and speed, and the national average speed distributions by time of day are actually placed in the model. Very preliminary indications are that all of these changes will not

change the inventories very much. We have evaluated the data and methods used to determine the speed distributions by roadway type and time of day, and they appear to be reasonable.

We have estimated average speed by time of day and roadway type from data in the last section of the report, which is shown in Figure 1 below. On the horizontal axis, time is shown as 0,1,2, where 0 is 12 midnight. The hours after 24 hours start the next day. What is evident is the significant decrease in average speeds on freeways and arterial collectors during the rush hour and daytime.

Figure 1. National Average Speeds by Road Type

[Actual figure could not be copied here.]

The percent of VMT on various roadways is shown in Table 2.

Table 2. Percent of VMT by Roadway Type (all vehicles)

Road Type	Percent of VMT
Freeways	34%
Arterials and Collectors	50%
Locals	13%
Ramps	3%
Total	100%

Comments

We do have two overall concerns with the data and analysis that should be addressed, as follows:

1. The HPMS data on which all of the roadway and speed information is based is collected in primarily urban areas, with very little is gathered in rural areas. However, there is great deal of ozone modeling (i.e., OTAG) that has been done over the last few years and will continue that stresses the importance of non-urban emissions on urban attainment. In rural areas, the percent of VMT on these different roadway types, and also the distribution of speeds, is probably very different than for urban areas. For example, there is probably more VMT in non-urban areas on local roadways (at lower average speeds). Also, if a major turnpike or freeway passes through the non-urban area, the speeds are probably higher than they would be on freeways in urban areas, and certainly not decrease like Figure 1. Because of the potential differences in urban and non-urban travel, and EPA's own focus on the importance of emissions in non urban as well as urban areas, it is imperative that EPA focus on developing better estimates of non-urban travel for MOBILE6. At a minimum, the structure of MOBILE6 should be developed to accept different speed distributions for the roadway types for

non-urban as opposed to urban travel.

2. The Chicago VMT data seemed to indicate, in line with expectations, that the percent of VMT on highways is higher for heavy-duty vehicles than for light-duty vehicles. However, apparently due to a lack of information, EPA did not carry this distinction over to the national averages, that is, there is only one national average for all vehicles. The Chicago analysis indicated that the percent of VMT on expressways for heavy-duty vehicles was 59%, as opposed to 40% for light duty vehicles. And this is only for an urban area. If non-urban areas were properly included, the fraction of HD expressway VMT nationally could be significantly higher. We therefore recommend that EPA provide in MOBILE6 the capability to input VMT fractions by vehicle type, and also recommend that EPA use the Chicago HD highway VMT percentages to adjust the nationwide average for heavy duty. This is probably better than no adjustment at all.

EPA Response to Comments:

EPA appreciates the explanatory and background information accompanying these comments as well as this commentor's overall assessment of the report.

Regarding the specific comment number 1:

MOBILE6 was primarily developed to be an urban emissions model and its default VMT information is based on data collected in urban areas. One of its roadway types, local roads, is specifically intended to represent urban local roads.

MOBILE6 does allow the user to input their own average speed distributions for freeway and arterial collector roadway types. It also allows the user to input the distribution of VMT across its four roadway types. In combination these features would allow a reasonable approximation of rural vehicle activity, assuming the user could supply the necessary speed distribution information.

So hopefully MOBILE6 at least meets the "minimum" characteristics desired.

Regarding the specific comment number 2:

EPA has recently added the capability to MOBILE6 for the user to input VMT fractions by facility for each of its 28 vehicle classes. The default data in MOBILE6 is still the same for each vehicle class, however, since time was not available to develop, document, and defend more detailed information.