Research Report
KTC-90-11

ESTIMATION OF EQUIVALENT AXLELOADS USING DATA COLLECTED BY AUTOMATED VEHICLE CLASSIFICATION AND WEIGH-IN-MOTION EQUIPMENT

by

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in cooperation with

Kentucky Transportation Cabinet
Commonwealth of Kentucky

and

Federal Highway Administration
US Department of Transportation

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COMMONWEALTH OF KENTUCKY
TRANSPORTATION CABINET
FRANKFORT, KENTUCKY 40622

MILO D. BRYANT
SECRETARY
AND
COMMISSIONER OF HIGHWAYS

WALLACE G. WILKINSON
GOVERNOR

December 28, 1990

Mr. Paul E. Toussaint
Division Administrator
Federal Highway Administration
330 West Broadway
Frankfort, Kentucky 40601

Dear Mr. Toussaint:

Subject: Implementation Statement (KYHPR 88-123) Research Study "Equivalent Axleloads from Weigh-In-Motion Data"

Two reports have been written during the course of the subject study. An interim report was written presenting equations to be used to adjust from WIM data obtained using the Golden River System to static equivalents. The title of that report is "Relationship Between Weights Measured by Permanent Truck Scales and Golden River Weigh-In-Motion Scales," Research Report KTC 89-31, May, 1989.

All comments received from the FHWA have been addressed and the report is attached. These equations have been included in the modified EAL estimation process that is the subject of the final report for the study, "Estimation of Equivalent Axleloads Using Data Collected by Automated Vehicular Classification and Weigh-In-Motion Equipment," Research Report KTC 90-11, June, 1990.

The procedure presented in this final report is a modification of the method that has been in use for two years by the Division of Planning. The two basic changes are:

1. The incorporation of axleload data obtained by using the WIM scales (interim report), and

2. Modifying the EAL estimation system from one based on statewide axleload data to one based on functional class of highway.

In the previous procedure, collection of axleload data was limited primarily to permanent loadometer stations located only on interstate routes. The change in the new procedure is possible because axleload data is being collected now on highways other than interstates by using the portable Golden River WIM System. EAL forecasts should result in more realistic values for each functional class of highway.

Sincerely,

O. G. Newman
State Highway Engineer

Attachment
cc: C. S. Layson
David E. Smith
Donald L. Ecton

Technical Report Documentation Page

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16. Abstract

The primary objective of this research study was to modify the existing EAL estimation system to include data obtained using the Golden River Weigh-In-Motion system and automated vehicle classification equipment. Data are to be collected over a three-year cycle in accordance with the FHWA Traffic Monitoring Guide. Having the capability of moving the portable weigh-in-motion scales to locations other than interstate sites permits the collection and analyses of specific data at sites on other highway functional classifications. Such data permits estimating both accumulated and future EAL requirements for that site. Such data permits estimating EAL requirements for sites on the same highway functional classification for which AADT is the only available data.

An algorithm was developed to identify heavy/coal trucks weighed by WIM. The algorithm involves a minimum weight for straight-frame trucks and for semi-trailer coal trucks has the additional parameter of gross weight divided by the spacing between the last axle on the tractor and the first axle on the trailer. The algorithm works because the coal semi-trailer is shorter than a normal semi-trailer.

Historical data files have been sorted by highway functional classification to permit calculating EAL requirements on a three-year cycle corresponding to the requirements of the FHWA Traffic Monitoring Guide. The revised computer programs use the same data format contained in historical files. The basic equation for estimating EALs contains the following seven parameters as independent variables; 1) annual average daily traffic volume, 2) average fraction of trucks in the traffic stream, 3) average fraction of coal trucks in the total truck population, 4) average number of axles per coal truck, 5) average number of axles per non-coal truck, 6) average number of equivalent axleloads per coal-truck axle, and 7) average number of equivalent axleloads per non-coal-truck axle.

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EXECUTIVE SUMMARY

The current procedure for calculating EALs was developed under KYHPR-84-102 and documented in research reports UKTRP-84-30 and UKTRP-85-30. The procedure utilized historical files for loadometer and vehicle classification data. Loadometer stations, with the exception of one, are located on interstate routes. Due to availability of manpower and static loadometer equipment, the collected data were limited. In addition, most of the historical vehicle classification data were collected manually resulting in a limited number of sites to be sampled during any given year.

Historical loadometer files contained recorded axleloads for coal trucks that were near legal load limits because the scales were located on interstate routes. WIM data recorded in 1988 and 1989 on coal-haul routes (other than interstate) indicate the axleloads are much greater than corresponding data detected in the historical loadometer files. Thus, EAL forecasts for coal-haul routes should increase. It is suspected that rural arterial routes and other functional class highways are being used more by local delivery trucks carrying partial loads than by cross-country trucks hauling full loads. Thus, EAL forecasts for these non-coal-haul routes may decrease.

Two major changes have resulted in the need to modify the current EAL estimation procedure. The first major change is due to the FHWA 1985 Traffic Monitoring Guide that requires monitoring 343 sites in Kentucky over a three-year period for HPMS purposes. The Guide also specifies 13 categories of vehicle classification whereas the current Kentucky procedure uses 14. The second major change is due to the Traffic Monitoring Guide requiring the use of automated equipment to collect traffic data for 48 consecutive hours and the use of Weigh-In-Motion (WIM) equipment at 90 sites over a three-year period to record axleloads. Some manual vehicle classification counts will be required also.

Coal trucks have been identified visually during manual vehicle classification counts. With the advent of automatic vehicle classification equipment, the ability to identify coal trucks will be lost. Therefore, an estimate of the number and weight of coal trucks may be obtained from the analyses of WIM data by the incorporation of an algorithm developed in this study. The algorithm uses gross load for single-frame coal trucks. For semitrailer trucks, the algorithm is the ratio of gross load to the axle spacing between the last axle of the tractor and the first axle of the trailer. This method was verified by analyses of historical loadometer data and is unique because most semitrailers used to haul coal are shorter than normal semitrailers.

Equations have been developed to adjust axleloads weighed using WIM equipment to equivalent static axleloads. Thus, only the portion of the EAL estimating

procedure that uses "loadometer" data required minor alterations to incorporate the adjusted WIM data.

With the collection of traffic data (particularly WIM data) on routes other than interstates, EAL estimates for a particular route should be more accurate because the process involves using axleload data collected on that route (or routes within the same functional class) rather than statewide averages. Therefore, the procedure has been modified to make EAL estimates by functional class of highway. Statewide averages will have to be used for two functional classes because there is no historical weigh data for them. These averages will be replaced when weigh data has been collected and processed.

To illustrate the difference in the two procedures, EAL estimates have been made for all functional classes of highways using state-wide averages for axleload distributions and alternatively, estimates by functional class of highway based on adjusted WIM data appropriate for that class. Comparisons show that EAL estimates for coal-haul routes (other than interstates) are much higher than estimates based on state-wide averages.

In summary, the incorporation of traffic data collected by automated equipment coupled with analyses by functional class of highway should provide more accurate EAL estimates. The modified procedure should help to increase EALs that were under estimated on some routes and reduce excessive EAL estimates on other routes.

TABLE OF CONTENTS

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LIST OF TABLES

INTRODUCTION

The current procedure for calculating EALs was developed under KYHPR-84-102 and documented in research reports UKTRP-84-30 (1) and UKTRP-85-30 (2). The procedure utilized historical files for loadometer and vehicle classification data. Loadometer stations, with the exception of one, are located on interstate routes. Due to limitations of manpower and static loadometer equipment, the data were collected during one to three days per site for the year in which collections were made. Since the mid 1970's, data collection schedules were modified to every other year unless special studies were conducted using portable scales. The result has been varying sample sizes of data for the past several years.

Most of the historical vehicle classification data were collected by manual efforts that limited the number of sites to be sampled during any given year. Counts were made to cover all 24 clock hours. The hours were selected by blocks of time and assigned to various days of the week in order to limit the number of people required to collect data. Very minimal data are available for a continuous 24-hour period, weekends, and/or holidays. Special vehicle classification counts by research personnel (3) indicated a rather wide variability as a function of the day of the week and especially over weekends and/or holidays. Inspection of vehicle classification counts revealed large variations in traffic characteristics as a function of location within Kentucky. The lack of site specific data for either loadometer and/or vehicle classification data necessitated the use of statewide averages for many locations where similar sites were not available. Equivalent axleloads (EAL's) had to be calculated using statewide averages or choosing a non-similar site for which data were available.

The largest volume of data is contained in traffic volume files for specific sites located throughout Kentucky. Early collection efforts utilized portable traffic counters requiring rubber tubes as axle sensors. The tubes operated with internal air pressure and were subject to losing pressure through leaks or being torn loose by traffic. Installing permanent inductance loops in the pavement was a major improvement in vehicle detection. Those counters require frequent changes of the paper tapes and batteries.

Automatic traffic recorders (ATR) were installed at permanent sites. AC power replaced batteries. Telephone lines were linked to the recorders at permanent sites so that a central computer could automatically dial the site and retrieve data from the recorder without requiring an attendant. The volume of data became quite large as more of these sites were installed. The data provide information that permits analyses of traffic flow within Kentucky.

Historical loadometer files contained recorded axleloads for coal trucks that were near legal load limits because the scales were located on interstate routes. WIM data recorded in 1988 and 1989 on coal-haul routes (other than interstate) indicate

the axleloads are much greater than corresponding data detected in the historical loadometer files. EAL forecasts for coal-haul routes should increase.

The current procedure for estimating design EALs requires the use of axleload data typical of interstates. It is suspected that rural arterial routes and other functional class highways are being used more by local delivery trucks carrying partial loads than by cross-country trucks hauling full loads. Using data collected on those pavements, or on a pavement within the same functional class should result in an EAL forecast that will be less than one using statewide average data collected on interstate routes.

AUTOMATED DATA COLLECTION AND EAL CALCULATION PROCEDURE

FHWA developed new guidelines for collecting traffic data which were included in The 1985 Traffic Monitoring Guide (4). In order to adhere to the Traffic Monitoring Guide, Kentucky must now collect traffic characteristics data for approximately 343 sites during a three-year cycle at the rate of about 115 sites per year. Weigh-in-motion (WIM) data are to be collected annually at approximately 30 of those sites. The national Strategic Highway Research Program (SHRP) Long-Term Pavement Performance (LTPP) program has selected seven sites for study which require the collection of weight and vehicle classification data.

The justification for change from the approach of analyzing and summarizing loadometer and classification data on a statewide basis is generally associated with the need to incorporate into the EAL calculation procedure, a wide range of automatic data that will be available in the future. The decision is based on the objective to be as representative of site-specific conditions as possible. Weight data representing a much wider range of geographic and highway-type conditions will become available with the change from static to WIM data collection. Data will be collected at 90 sites on a three-year cycle with approximately 30 sites being sampled each year. Coal trucks will be identified only with a special algorithm based on axle spacings and/or weight with the use of WIM data collection.

The procedure for collecting vehicle classification data will be altered significantly with the inclusion of 185 automatic vehicle classification sites and 36 manual classification sites on coal-haul roads. There will continue to be 122 classification sites where data is collected manually. This represents a total of 343 sites, of which approximately one-third will be sampled annually. Coal trucks will not be identified by the automatic classifiers and therefore, an algorithm based on weight and length has been built in for identifying coal trucks on coal-haul roads. Parameters representing coal trucks will not be applicable for data collected with automatic classifiers.

The number of vehicle classifications has been reduced from 14 to 13 by the grouping of two classifications for buses into one classification. The current program required modification.

Sites selected for sophisticated and detailed data collection may be analyzed by functional class of highways so that the data could be applied to similar sites on other routes where detailed data are not available. Analyses by functional class of highways will require appropriate WIM and vehicle classification data that reflect the type of traffic using that facility. Such analyses should provide more accurate EAL estimates than those obtained using statewide averages. If appropriate data are not available, statewide averages should be used to obtain an estimated EAL.

In 1974, the U. S. Congress enacted legislation that raised the legal gross load from 73,280 pounds to 80,000 pounds. For a 5-axle semitrailer truck, the EAL per trip increased from approximately 1.2 to 1.8. To compound the problem, the number of trucks on some interstate routes has doubled and/or tripled since then. Another compounding factor is the use of radial tires and higher inflation pressures for both radial and bias-ply tires. Depending upon the individual tire, the load equivalency might increase as much as 40 percent due to increased inflation (and resulting contact) pressure. Additional data and more reliable data reflecting sophisticated collection procedures are becoming increasingly important in forensic studies of prematurely failing, or failed, pavements. Studies may provide answers illustrating the need for improved paving materials, designs using innovative materials and concepts, and/or construction techniques.

AUTOMATIC DATA COLLECTION

Automatic Traffic Recorders

The most predominant factor in calculating EAL is traffic volume, followed in importance by vehicle classification, and then by axleload. The logic is that for a given year, typical axleload distributions will not vary significantly, new truck configurations may be purchased by trucking firms at a slightly faster rate, but volume will have the greatest influence upon the calculated EAL. For example, the opening of parallel routes may result in a rapid decline in the use of the older route. The adoption of the 5-axle semitrailer truck in the mid 1960's accelerated from almost no use to approximately 90 percent of the truck traffic in less than five years with a corresponding decline in usage of the 3-axle and 4-axle semitrailer truck. Trends in traffic volumes are important. Detailed information on the percentages of each vehicle classification in the traffic stream and the distribution of axleloads may be estimated from other sites and typical locations.

Some ATR sites have been in continuous service for a number of years. The use of inductance loops in the pavement coupled with advanced counters and automatic

data retrieval systems has provided essential data files for those sites. ATR equipment provides continuous hourly volume count totals. The continuous collection of traffic volume data provides a source of data for every day of the week and permits analyses for determination of the variation as a function of day of the week, weekends, holidays, and seasons. It provides the opportunity of obtaining volume counts as a function of direction for multi-lane facilities having a median.

Vehicle Classification

Automatic vehicle classification (AVC) equipment has proved to be another major advancement permitting sampling of many more sites for a continuous number of hours. Analyses of continuous data permit comparison with the same group of hours from historical manual classification counts and estimation of data for the groups of hours missing in the manual counts. One of the major advantages is a reduction in manpower requirements. Use of this equipment will also be of aid in fulfilling traffic data requirements requested by FHWA.

Weigh-in-Motion

Historically, axleload data have been collected using portable platform scales or at permanent truck monitoring scales. Portable scales are heavy and awkward to handle. Sites must be carefully selected to provide sufficient space for safe storage of waiting trucks, terrain must be fairly level and include a safe working place. Another limitation of portable scale sites is that truckers use CB radios to inform other drivers of the portable scale site. Truckers have been observed to pick alternate routes, or to park the truck until weight enforcement is discontinued.

Trucks may be weighed at normal operating speeds without delays by weigh-in-motion equipment. WIM sites may be chosen on routes having a fairly level section that has sufficient sight distance for the safety of crews during installation. Data may be collected for any functional class of highways. Vast amounts of data suitable for analyses may be obtained in a relatively short time. Statutes specify that axleload limits be based upon static weights. WIM data cannot be used for issuing overload citations.

Computer programs have been written to process data obtained by WIM equipment and store individual axleloads, axle spacings, and vehicle classification codes. WIM data analysis, automated vehicle classification data, and manual classification counts provide means to compare the accuracy of the three methods of data collection. It is possible that WIM equipment could be used to obtain all required data for vehicle classification purposes and would permit the use of AVC equipment at other sites simultaneously; resulting in the expansion of the available data base. During analyses of WIM data, unusual axle arrangements

were noted and correlated to the transport of newly manufactured trucks where the steering axle is placed over the rear axle of the leading truck. Such configurations would not be distinguished using AVC equipment.

Data collected at WIM installations on various functional highway classes may show that the distribution of axleloads for each vehicle classification will vary with the functional class of highways. For example, a semitrailer truck used to make local deliveries to small towns probably have a gross load less than a truck making cross-country trips using interstate routes. Conversely, WIM data have shown that the gross loads for coal trucks traveling interstate routes are much lighter that those using primary arterial routes. EAL forecasts using WIM data should provide more accurate estimates for each functional class and type of highway usage.

WIM-TO-STATIC CONVERSION

Calibrations of WIM to static axleloads (5,6) were made using only 5-axle semitrailer trucks because that is the predominant axle configuration traveling interstate routes in Kentucky. Calibration settings were chosen to cover a range of +/- 20 to the value recommended by the manufacturer. The manufacturer's recommended value was based upon vehicle gross load and preliminary analyses indicated that the WIM value for the steering axleload was approximately 70 percent of the static axleload measured at the loadometer scale. The tandem axleload was chosen to be the parameter for setting the calibration factor value.

Correlations of static axleloads to WIM axleloads were performed at three loadometer stations where the WIM site was located within one mile ahead of that loadometer station. Axleload data were sorted according to location of the vehicle (steering, drive, trailer) and the number of axles within the group (single, tandem, tridem). Regression analyses were performed for each axle location and configuration. The polynomial equation format provided the best fit and was followed closely by a straight-line equation format. The straight-line equation was chosen because the convex polynomial equation would yield decreasing estimated static axleloads for increasing WIM axleloads beyond a certain WIM axleload value. Table 1 contains values for each of the constants used in the seven equations. A computer program was written to assign the appropriate six-digit FHWA vehicle classification code and record the calculated static axleload using the appropriate conversion equations included in Table 1.

Vehicle Identification Code

A computer program was written to adjust dynamic axleloads to equivalent static axleloads. A method is included in the program to assign the appropriate vehicle classification code as specified in the FHWA Traffic Monitoring Guide.

Identification of Multiple Steering-Axle Vehicles

European dump trucks have two steering axles and a drive tandem at the rear. Heavy cranes, transit-mix trucks, and special drilling equipment also have two steering axles. At least one style of heavy crane has three steering axles and a drive tridem. The WIM computer program to adjust WIM to equivalent static axleloads recognizes these axle configurations and assigns the appropriate vehicle classification code.

IDENTIFICATION OF HEAVY/COAL TRUCKS

Coal trucks were historically identified visually during manual vehicle classification counts. The ability to identify coal trucks would be lost using AVC counters and WIM equipment unless an alternative method was devised. By using axleloads, gross loads, and axle spacings, a procedure was developed to distinguish a coal truck provided there was at least one distinguishing characteristic of the coal truck. There are four vehicle classifications containing coal trucks, classes 6, 7, 9, and 10. Analyses indicated that gross load was the only indicator to distinguish coal from non-coal single-frame trucks (class 6 and 7).

Semitrailers used to haul coal have a shorter frame than most other trailers except for the frames used to haul ship freight containers and those are shorter than coal trailers and the gross load is less than 80,000 pounds. For semitrailer coal trucks, a combination of gross load and gross load divided by the third axle-spacing clearly separated coal from non-coal trucks. To verify this, historical loadometer data were sorted by commodity code for each of the four vehicle classifications. Data for each vehicle were inspected and sorted to determine if the given set of criteria identified, or failed to identify, a known coal truck. Table 2 contains results of the combination of gross load divided by third axle spacing coupled with three different values of gross load. In summary, less than 1.1 percent of the known coal trucks failed to meet the criteria because the gross load was less than 80,000 pounds. Empty coal trucks are to be treated as other empty non-coal trucks. Table 3 shows the number of non-coal trucks accepted as coal trucks according to the criteria. As a part of the computer program to adjust WIM axleloads to static axleloads, the above criteria was included to identify coal trucks and a routine was included to assign a coal commodity code.

ADVANTAGES OF USING WIM

Use of weigh-in-motion equipment for planning and enforcement purposes has become widespread. Some of the advantages of using WIM equipment are:

1. A minimum weight may be selected by the operator so that cars and pickup trucks can be eliminated from the file. The vehicle counter is still in operation so that a volume count for that lane can be estimated.

2. Each axleload of each vehicle is recorded. This provides a data bank to determine the magnitude of unequal load distributions between the axles of the same group. Such analyses are needed to evaluate their effect upon pavement fatigue for both overlay design and original pavement thickness design. Those data are important in life-cycle costing and pavement management functions. The data may be used to determine if the applied axleloads are exceeding the maximum allowable shear stress or strain that the pavement can tolerate before the pavement fails in shear -- rutting is one such symptom. To date, the allowable maximum shear for asphaltic concrete is not known, but it may be possible to estimate what that value might be by analyzing the data and attempting to correlate rutting measurements with time.

3. Each axle spacing is recorded.

4. Vehicle speed is recorded. Such a data bank would permit analyses of vehicle operating speed at that site. If the operating speed is less than desired, are there physical restrictions or pavement conditions that are causing the lower operating speed?

5. Equipment may be operated without an attendant. This provides the opportunity to record vehicle weights at any hour and day of the week.

6. Axleload data recorded at sites on designated coal-haul routes may be analyzed to estimate the tonnage of coal hauled in that lane. To make this estimate would require assuming an empty weight for each style vehicle or a value based on the length of the trailer. Such analyses might be used to verify the accuracy of the "reported tons hauled" on that route.

MODIFIED EAL CALCULATION PROCEDURE

The procedure for estimating equivalent axleloads was revised in 1985 and the results were documented in Report UKTRP-85-30 (2). With the increased coverage of geographic and highway-type conditions made possible by the change from static loadometer weigh stations to weigh-in-motion data collection, modifications to the 1985 procedure were considered necessary to ensure full use of available data. The process of collecting vehicle classification data has been altered with the incorporation of automatic classification equipment.

The basic concept developed and implemented was to separate the weight and classification files into the 12 highway functional classification categories (Table 4) and further subdivide the data according to whether coal trucks could or could not be identified. Using the criteria of coal roads being categorized as those with three percent or more of total trucks classified as coal trucks, the result was 12 sets of data subdivided into unclassified roads (those where automatic classifiers are used and coal trucks cannot be identified) and classified roads (those where heavy/coal trucks can be identified by manual counts). The result has been to abandon the previously used categories of geographic area, Federal-aid category, and volume group and replace them with functional class subdivided into unclassified and classified roads.

The representation of available data by functional class was assessed prior to converting the EAL estimating procedure to a process driven by functional classes of highways. The results for numbers of classification sites by functional class and year are presented in Table 5. Data are shown for the years 1979 through 1989, with adequate representation throughout the time period for all classes except rural local roads, urban interstates, and other urban freeways and expressways. The distribution of number of trucks weighed by year for each functional class is shown for non-coal and heavy/coal trucks in Table 6. A more detailed analysis of truck weight data by vehicle type number is also presented for non-coal (Table 7) and heavy/coal trucks (Table 8).

The need to revise the procedure for estimating equivalent axleloads is associated with the increased coverage and automation of data collection now in place. Appendix A is a listing of the traffic monitoring sites and the kinds of activities undertaken at each. A summary of the monitoring sites by functional classification is presented in Table 9 for rural categories and Table 10 for urban categories. These tables also show those sites with and without weigh-in-motion accompanying the classification monitoring.

Summary tables are produced showing average parameter values for each functional class after sorting the data by functional class. Traffic parameters for individual classification stations are listed. Weight data do not exist for functional

classes 8 and 19. Two years or less data were available for functional classes 9, 11, 14, and 17. Historical loadometer files have been used to produce statewide averages according to procedures documented in Reports UKTRP-84-30 and UKTRP-85-30. Default values are used in functional classes 9 and 19. The average values are representative of a single year for years prior to 1989. The average values for the current year are based on a weighted average of the current year and the two previous years for 1989 and subsequent years. The number of stations presented for 1989 and subsequent years is the sum of stations for the current year and two preceding years. A tabulation of data produced from the EALCALC program (reported in Research Report UKTRP-85-30 and subsequently modified as part of this research study) is presented in Appendix B, updated to include 1989 classification and weigh-in-motion data. Also included in Appendix B is documentation of available data and procedures used to produce EALCALC. In order to use the worksheet developed as part of Report UKTRP-85-30 (2) for estimating EAL's, increments of growth or annual changes are necessary input. A curve-fitting routine was applied to the data generated from the EALCALC program to produce estimated values showing a smooth trend of the available data. This estimated data, including percent annual change in the current parameters is presented in Appendix C (Average Values - Smoothed). The annual change is to be used when determining the increment as input into the EAL calculation worksheet. Appendix D contains an example of the worksheet (Figure D1) and an example calculation of design EAL's using the worksheet (Figure D2). Reference is made to the appropriate functional class summaries (functional class 1 in this example). Base year values on the worksheet are taken from Figure D3 (a copy of the table for functional class 1 in Appendix B) and annual change values are taken from Figure D4 (a copy of the table for functional class 1 in Appendix C).

Minimum modifications have been made to the original flow chart shown as Figure E-1, reference 2. The first basic change involves converting WIM data to equivalent static axleloads and storing the results on the loadometer file. The second basic change is to store the automatic vehicle classification data into a historical data file. The additional manual vehicle classification data will be stored in the current manner. The third minor change involves using computer cartridges with corresponding new identification numbers in lieu of tapes. The major change in the calculation procedure is the ability to sort and analyze the various data sets by functional class of highways. This change is possible because of the ability to collect axleload data by using portable WIM equipment and to record vehicle axleloads using these pavements instead of having to rely upon state-wide averages developed from data collected at permanent truck scales located on the interstate highway system.

SUMMARY

Significant results of efforts to modify the EAL estimating procedure to accommodate automatic weight and classification data are:

1. A change in the computer program has been made to adopt the 1985 FHWA Traffic Monitoring Guide that specifies 13 vehicle classifications. The primary difference is that the Kentucky system used 14 vehicle classifications because there were two classifications for buses and the FHWA TMG format has only one classification for buses.

2. Loadometer data will not be collected at permanent truck scales in the future. Weigh-in-motion data will be collected at 90 sites at the rate of 30 sites per year. A computer program has been written to adjust the WIM data to equivalent static axleloads using equations derived from correlation efforts reported earlier (5,6).

3. Automated vehicle classification equipment will be used to collect vehicle classification data. This is in addition to manual vehicle classification counts.

4. Data have been sorted by functional class of highways for both loadometer and vehicle classification files.

5. The ability to collect WIM and vehicle classification data on different highway functional classifications other than interstate pavements permits sorting and analyzing data for individual functional class of highways. Resulting EAL forecasts should be more accurate and directly reflect the classification of traffic and axleloads being carried by those pavements. The changes should be small, if any, for interstates. For other systems, EAL forecasts may increase as a direct result of weighing heavy/coal trucks using that pavement, or may decrease because local delivery trucks may be more lightly loaded than the average long-haul truck traveling an interstate.

6. Historical loadometer and vehicle classification data files have been sorted and analyzed by functional class of highways.

7. WIM data for 1988 and 1989 have been adjusted to static equivalent axleloads and stored by WIM site.

8. EAL forecasts have been made using statewide average axleload data and by individual functional class of highways using data sorted by those functional classes of highways. Using functional class 2 as an example, analyses of the calculated EAL forecasts show that some routes that are not subjected to coal trucks may have values less than forecasts using state-wide averages.

Conversely, routes known to be traveled by coal trucks may have forecasts based on axleloads appropriate to that functional class of highways that are nearly twice the value using state-wide axleload data. The EAL forecasts for functional class of highways for which axleload data are not available have been prepared using state-wide average axleload data.

9. EAL forecasts have been made for all functional classes of highways using state-wide averages for axleload distributions, axles per truck, and EALs per axle. Direct comparisons for individual sites may be made between forecasts using state-wide averages and averages appropriate to the functional class of highways for that site.

RECOMMENDATIONS

1. The EAL forecasting program and methodology presented herein should be adopted and used by the Division of Planning using averages appropriate to the particular functional class of highways for the highway under consideration.

2. WIM data for 1988 and 1989 should be analyzed to determine if the default values for the number of axles per vehicle class should be revised.

3. Future research should involve analyses of lane distribution data collected by the automated vehicle classification equipment by individual lane.

4. Storing vehicle classification data by clock hour that have been collected using automatic vehicle classification equipment should permit development of distributions for each hour of the entire week, provided data are available for 24 continuous hours and for seven consecutive days. Seasonal changes could be assessed provided data have been collected continuously over seven consecutive days in each season.

5. Analyses may be made to develop 24-hourly factors or distributions from data obtained hourly under item 4. Results would be applied to extend AVC or manual traffic counts to a 24-hour basis from data collected for less than, or more than, 24 hours and for missing days in the week.

6. From data collected under item 4, distributions could be developed for the same block of hours used each day for manually collecting traffic classification data. Development of these distributions would permit filling in the missing hours during manual counts to provide an estimate of traffic around the clock. It also might permit investigating

peculiarities in data collected by AVC equipment during hours not covered by manual counts.

7. Additional data for other traffic parameters should be developed from the collected data for each WIM site. The first should be the development of percentages for each vehicle classification. A second would be to develop the percentages by axleload weight ranges for each style of axle grouping.

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2. J. A. Deacon, J. G. Pigman, and J. G. Mayes, "Estimation of Equivalent Axleloads", Research Report UKTRP-85-30, University of Kentucky, Kentucky Transportation Program, Lexington, December 1985.

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5. H. F. Southgate, "Dynamic Forces Versus Static Weights -- Highway Design", Proceedings, Third National Conference on Weigh-In-Motion, St. Paul, MN, October 17-21, 1988.

6. H. F. Southgate, "Relationship Between Weights Measured by Permanent Truck Scales and Golden River Weigh-In-Motion Scales", Research Report KTC-89-31, University of Kentucky, Kentucky Transportation Center, May 1989.

TABLE 1. REGRESSION EQUATION CONSTANTS FOR SEVEN BASIC AXLE GROUPS

AXLE GROUP	a	b
Steering	3,557.2423	0.8932135
Drive Single	3,076.3085	0.7358360
Trailer Single	2,939.1856	0.7203070
Drive Tandem	4,890.9914	0.7463315
Trailer Tandem	2,926.9924	0.8693042
Drive Tridem	38,041.8808	0.2044157
Trailer Tridem	4,947.4293	0.8634991

$Y = a + bX$

Where Y = Static Axleload
X = WIM Axleload, and
a,b = Constants

TABLE 2. NUMBER OF COAL TRUCKS MISCLASSIFIED AS NON-COAL TRUCKS FOR A COMBINATION OF GROSS LOAD AND GROSS LOAD/THIRD AXLE SPACING

			COAL TRUCKS MISCLASSIFIED AS NON-COAL			
YEAR	CLASS*	TRUCKS	80,000	≥80,000	≥85,000	≥90,000
1986	9	328	3	7	3	3
	10	57	0	5	0	0
1985	9	279	3	1	1	0
	10	34	0	0	0	0
1984	9	32	1	2	1	1
	10	2	2	0	0	0
1982	9	10	0	0	0	0
	10	6	0	0	0	0
1980	9	8	0	0	0	0
	10	4	1	1	1	0
1978	9	298	4	2	1	0
	10	4	1	0	2	0
1977	9	282	1	0	0	0
	10	11	1	7	6	1
TOTAL	9	1,237	12	12	6	4
	10	118	5	13	9	1

* Class 9 - Combination Five-Axle Tractor and Semi-Trailer
Class 10 - Combination Six-Axle Tractor and Semi-Trailer

TABLE 3. NUMBER OF NON-COAL TRUCKS CLASSIFIED AS COAL TRUCKS USING THE CRITERION OF GROSS LOAD AND GROSS LOAD DIVIDED BY THIRD AXLE SPACING

			MISCLASSIFIED AS COAL TRUCKS GROSS LOAD (POUNDS)		
YEAR	CLASS	# TRUCKS	≥80,000	≥85,000	≥90,000
1986	6	267	0	0	0
	7	102	0	0	0
	9	4,935	20	9	4
	10	63	1	0	0
	TOTAL	5,367	21	9	4

TABLE 4. FUNCTIONAL CLASSIFICATION DESCRIPTIONS			
RURAL		URBAN	
01	Interstate	11	Interstate
02	Principal Arterial	12	Other Freeways & Expressways
06	Minor Arterial	14	Other Principal Arterial
07	Major Collector	16	Minor Arterial
08	Minor Collector	17	Collector
09	Local	19	Local

TABLE 5. NUMBER OF CLASSIFICATIONS SITES BY FUNCTIONAL CLASS AND YEAR

	YEAR											
FUNCTIONAL CLASS	79	80	81	82	83	84	85	86	87	88	89	TOTAL
1	18	12	17	16	9	10	16	13	15	10	11	147
2	22	22	36	42	35	22	59	31	33	34	22	358
6	44	36	46	35	41	33	49	39	28	46	25	422
7	84	60	70	51	40	52	60	41	52	81	76	667
8	25	5	78	60	43	34	69	41	59	49	43	506
9	2	2	3	1	2	24	53	7	3	1	0	98
11	0	1	3	3	3	5	4	7	1	5	4	36
12	1	1	3	2	1	2	4	3	4	4	1	26
14	16	1	50	31	50	22	40	42	35	20	16	323
16	34	14	55	40	63	30	75	45	63	40	16	475
17	24	14	63	36	116	31	77	73	56	26	10	526
TOTAL	270	168	424	317	403	265	506	342	349	316	224	3584

TABLE 6. NUMBER OF VEHICLES IN EACH VEHICLE CLASSIFICATION BY FUNCTIONAL CLASS OF HIGHWAY												
NON-COAL TRUCKS												
		VEHICLE CLASSIFICATION NUMBER										
FUNCTIONAL CLASS	NO. OF YEARS	4	5	6	7	8	9	10	11	12	13	TOTAL
1	7	109	3224	956	217	3442	34501	404	1440	159	1	44453
2	4	122	1933	747	134	514	2772	127	45	3	0	6397
6	6	0	873	203	20	96	814	17	1	0	0	2024
7	4	58	892	271	51	133	589	39	5	3	0	2041
9	1	0	9	36	2	1	9	1	0	0	0	58
11	1	123	838	381	73	971	6538	165	598	93	0	9780
12	5	0	614	174	24	100	742	6	0	0	0	1660
14	2	534	2702	1065	249	773	1858	77	45	4	0	7307
16	5	0	673	207	117	233	350	1	4	0	0	1585
17	1	35	99	17	2	15	8	0	0	0	0	176
TOTAL		981	11857	4057	889	6278	48181	837	2138	262	1	75481

TABLE 6. NUMBER OF VEHICLES IN EACH VEHICLE CLASSIFICATION BY FUNCTIONAL CLASS OF HIGHWAY (cont)

COAL TRUCKS												
		VEHICLE CLASSIFICATION NUMBER										
FUNCTIONAL CLASS	NO. OF YEARS	4	5	6	7	8	9	10	11	12	13	TOTAL
2	4	0	8	283	10	0	510	84	0	0	0	895
6	6	0	0	33	3	0	47	0	0	0	0	83
7	4	0	7	89	1	0	270	37	0	0	0	404
9	1	0	0	2	0	0	0	0	0	0	0	2
11	1	0	0	0	0	0	6	4	0	0	0	10
12	5	0	1	2	9	0	160	0	0	0	0	172
14	2	0	0	27	0	0	110	25	0	0	0	162
16	5	0	0	0	0	0	0	0	0	0	0	0
17	1	0	0	0	0	0	0	0	0	0	0	0
TOTAL		0	17	442	23	0	1267	216	0	0	0	1965

TABLE 6. NUMBER OF VEHICLES IN EACH VEHICLE CLASSIFICATION BY FUNCTIONAL CLASS OF HIGHWAY (cont)

COAL TRUCKS AS A PERCENT OF TOTAL TRUCKS

		VEHICLE CLASSIFICATION NUMBER										
FUNCTIONAL CLASS	NO. OF YEARS	4	5	6	7	8	9	10	11	12	13	TOTAL
1	7	0.00	0.01	0.15	0.00	0.00	0.34	7.89	0.00	0.00	0.00	0.31
2	4	0.00	0.07	6.98	1.12	0.00	1.06	10.04	0.00	0.00	0.00	1.19
6	6	0.00	0.00	0.81	0.34	0.00	0.10	0.00	0.00	0.00	0.00	0.11
7	4	0.00	0.06	2.19	0.11	0.00	0.56	4.42	0.00	0.00	0.00	0.54
9	1	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	1	0.00	0.00	0.00	0.00	0.00	0.01	0.48	0.00	0.00	0.00	0.01
12	5	0.00	0.01	0.05	1.01	0.00	0.33	0.00	0.00	0.00	0.00	0.23
14	2	0.00	0.00	0.67	0.00	0.00	0.23	2.99	0.00	0.00	0.00	0.21
16	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL		0.00	0.14	10.89	2.59	0.00	2.63	25.81	0.00	0.00	0.00	2.60

Class 4 - Bus
Class 5 - 2 axle, single-unit truck
Class 6 - 3 axle, single-unit truck
Class 7 - 4 axle, single-unit truck
Class 8 - 3 or 4 axle, single trailer truck
Class 9 - 5 axle single trailer truck
Class 10 - 6 or more axle single trailer truck
Class 11 - 5 or less axle multi-trailer truck
Class 12 - 6 axle multi-trailer truck
Class 13 - 7 or more axle multi-trailer truck

TABLE 7. NUMBER OF NON-COAL TRUCKS WEIGHED IN EACH VEHICLE CLASSIFICATION

	VEHICLE CLASSIFICATION NUMBER										
YEAR	4	5	6	7	8	9	10	11	12	13	TOTAL
1978	35	1623	527	52	941	5289	64	26	0	0	8557
1979	0	0	0	0	0	0	0	0	0	0	0
1980	0	737	207	55	513	3606	31	18	1	0	5168
1981	0	0	0	0	0	0	0	0	0	0	0
1982	0	526	99	59	270	1730	51	5	1	0	2741
1983	0	0	0	0	0	0	0	0	0	0	0
1984	0	425	94	54	347	4234	39	126	11	0	5330
1985	0	0	0	0	0	0	0	0	0	0	0
1986	0	899	267	102	404	5103	68	189	38	0	7070
1987	0	0	0	0	0	0	0	0	0	0	0
1988	596	1911	583	104	607	2216	103	54	9	0	6183
1989	385	4454	1854	345	3009	24605	395	1713	201	1	36962
TOTAL	1016	10575	3631	771	6091	46783	751	2131	261	1	72011

Class 4 - Bus
Class 5 - 2 axle, single-unit truck
Class 6 - 3 axle, single-unit truck
Class 7 - 4 axle, single-unit truck
Class 8 - 3 or 4 axle, single trailer truck
Class 9 - 5 axle single trailer truck
Class 10 - 6 or more axle single trailer truck
Class 11 - 5 or less axle multi-trailer truck
Class 12 - 6 axle multi-trailer truck
Class 13 - 7 or more axle multi-trailer truck

TABLE 8. NUMBER OF COAL TRUCKS WEIGHED IN EACH VEHICLE CLASSIFICATION

	VEHICLE CLASSIFICATION NUMBER										
YEAR	4	5	6	7	8	9	10	11	12	13	TOTAL
1978	0	14	203	1	0	302	8	0	0	0	528
1979	0	0	0	0	0	0	0	0	0	0	0
1980	0	1	1	0	0	3	4	0	0	0	9
1981	0	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	9	0	10	6	0	0	0	25
1983	0	0	0	0	0	0	0	0	0	0	0
1984	0	0	7	1	0	32	2	0	0	0	42
1985	0	2	156	9	0	279	34	0	0	0	480
1986	0	0	37	3	0	328	57	0	0	0	425
1987	0	0	0	0	0	0	0	0	0	0	0
1988	0	0	14	0	0	136	62	0	0	0	212
1989	0	0	24	0	0	178	47	0	0	0	249
TOTAL	0	17	442	23	0	1268	220	0	0	0	1970

Class 4 - Bus
Class 5 - 2 axle, single-unit truck
Class 6 - 3 axle, single-unit truck
Class 7 - 4 axle, single-unit truck
Class 8 - 3 or 4 axle, single trailer truck
Class 9 - 5 axle single trailer truck
Class 10 - 6 or more axle single trailer truck
Class 11 - 5 or less axle multi-trailer truck
Class 12 - 6 axle multi-trailer truck
Class 13 - 7 or more axle multi-trailer truck

TABLE 9. DIVISION OF PLANNING TRAFFIC MONITORING STATIONS (RURAL)								
CODE		ATR	AVC	COAL	MAN	SHRP	WEIGH	TOTAL
1	WIM	4	14	0	3	2	6	29
	NO WIM	3	25	0	3	0	0	31
2	WIM	0	6	7	0	4	0	17
	NO WIM	2	21	9	2	0	0	34
6	WIM	3	4	2	0	0	3	12
	NO WIM	0	16	3	2	0	0	21
7	WIM	6	10	1	0	1	0	18
	NO WIM	2	33	10	4	0	0	49
8	WIM	1	2	1	0	0	0	4
	NO WIM	0	16	3	1	0	0	20
TOTAL		21	147	36	15	7	9	235

CODES:

01 - Interstate
02 - Principal Arterial
06 - Minor Arterial
07 - Major Collector
08 - Minor Collector

TABLE 10. DIVISION OF PLANNING TRAFFIC MONITORING STATIONS (URBAN)								
CODE		ATR	AVC	COAL	MAN	SHRP	WEIGH	TOTAL
11	WIM	0	2	0	7	0	0	9
	NO WIM	1	6	0	14	0	0	21
12	WIM	0	2	0	0	1	1	4
	NO WIM	0	4	0	0	0	0	4
14	WIM	0	0	0	9	0	0	9
	NO WIM	1	0	0	21	0	0	22
11 SU	WIM	0	1	0	0	0	0	1
	NO WIM	0	2	0	1	0	0	3
12 SU	WIM	0	0	0	0	0	0	0
	NO WIM	0	2	0	0	0	0	2
14 SU	WIM	0	5	0	0	0	0	5
	NO WIM	0	3	0	6	0	0	9
16	WIM	1	2	0	3	0	1	7
	NO WIM	0	0	0	23	0	0	23
16 SU	WIM	0	0	0	5	0	0	5
	NO WIM	1	0	0	10	0	0	11
17	WIM	1	1	0	0	0	0	2
	NO WIM	0	6	0	5	0	0	11
17 SU	WIM	0	0	0	0	0	0	0
	NO WIM	0	2	0	3	0	0	5
TOTAL		5	38	0	107	1	2	153

CODES:

11 - Interstate
12 - Expressway
14 - Principal Arterial
11 SU - Small Urban Interstate
12 SU - Small Urban Freeway
16 - Minor Arterial
16 SU - Small Urban Principal Arterial
17 - Collector
17 SU - Small Urban Collector

APPENDIX A

LISTING OF TRAFFIC MONITORING SITES

Sta	County	Route	MP	R/U	Functional Class	Type of Monitoring[a] Planning	Enforcement
D11	McCracken	I 24	2.500	R	Interstate	AVC	
D71	McCracken	I 24	8.900	Sm U	Interstate	AVC,WIM	
850	Marshall	I 24	21.700	R	Interstate	AVC	
P51	Lyon	I 24	37.400	R	Interstate	ATR,AVC,WIM	Weigh
054	Lyon	I 24	46.500	R	Interstate	AVC	
043	Trigg	I 24	66.700	R	Interstate	AVC	
319	Christian	I 24	86.800	R	Interstate	AVC,WIM	
N13	Jefferson	I 264	3.400	U	Interstate	MAN	
805	Jefferson	I 264	8.800	U	Interstate	MAN,WIM	
795	Jefferson	I 264	10.600	U	Interstate	AVC	
779	Jefferson	I 264	12.600	U	Interstate	MAN	
764	Jefferson	I 264	15.000	U	Interstate	MAN,WIM	
211	Jefferson	I 264	21.100	U	Interstate	MAN	
G74	Jefferson	I 265	10.900	U	Interstate	AVC	
D35	Jefferson	I 265	21.200	U	Interstate	AVC,WIM	
D01	Jefferson	I 265	23.900	U	Interstate	AVC	
767	Boone	I 275	12.800	R	Interstate	MAN,WIM	
811	Campbell	I 275	73.500	U	Interstate	MAN,WIM	
078	Kenton	I 275	77.700	U	Interstate	MAN	
814	Campbell	I 471	3.100	U	Interstate	MAN,WIM	
806	Campbell	I 471	5.700	U	Interstate	MAN	
753	Jefferson	I 64	0.600	U	Interstate	MAN	
N11	Jefferson	I 64	1.200	U	Interstate	MAN,WIM	
M86	Jefferson	I 64	6.100	U	Interstate	AVC	
N09	Jefferson	I 64	7.500	U	Interstate	AVC	
A28	Jefferson	I 64	9.600	U	Interstate	MAN	
220	Jefferson	I 64	14.100	U	Interstate	MAN	
019	Jefferson	I 64	19.800	R	Interstate	AVC	
L55	Shelby	I 64	38.200	R	Interstate	ATR,AVC,S,WIM	Weigh
507	Franklin	I 64	50.300	R	Interstate	AVC	
539	Scott	I 64	68.200	R	Interstate	AVC	
541	Fayette	I 64	73.800	R	Interstate	AVC,SHRP,WIM	
049	Fayette	I 64	78.400	U	Interstate	MAN,WIM	
273	Fayette	I 64	84.000	R	Interstate	AVC	
751	Clark	I 64	95.300	R	Interstate	AVC,WIM	
504	Montgomery	I 64	108.400	R	Interstate	AVC	
L58	Rowan	I 64	146.650	R	Interstate	AVC,S,WIM	Weigh
P47	Carter	I 64	170.857	R	Interstate	ATR,AVC	
031	Carter	I 64	178.800	R	Interstate	AVC	
017	Boyd	I 64	191.500	R	Interstate	AVC	
285	Simpson	I 65	0.100	R	Interstate	AVC,WIM	
	Simpson	I 65	3.000	R	Interstate		Pending
267	Warren	I 65	24.100	Sm U	Interstate	AVC	
065	Warren	I 65	34.900	R	Interstate	AVC	
831	Barren	I 65	49.900	R	Interstate	AVC,WIM	
535	Hart	I 65	61.000	R	Interstate	AVC	
038	Hart	I 65	71.600	R	Interstate	AVC	
L54	Hardin	I 65	89.400	R	Interstate	ATR,AVC,S,WIM	Weigh
136	Hardin	I 65	92.300	Sm U	Interstate	MAN	
503	Bullitt	I 65	106.500	R	Interstate	MAN	
507	Bullitt	I 65	108.700	R	Interstate	MAN,SHRP,WIM	

[a]Key at end of table.

Sta	County	Route	MP	R/U	Functional Class	Type of Monitoring	
						Planning	Enforcement
752	Bullitt	I 65	120.000	R	Interstate	MAN	
G23	Jefferson	I 65	129.000	U	Interstate	AVC	
P99	Jefferson	I 65	133.172	U	Interstate	ATR,AVC,WIM	
M36	Jefferson	I 65	135.900	U	Interstate	MAN	
M38	Jefferson	I 65	136.900	U	Interstate	MAN	
A03	Jefferson	I 71	4.200	U	Interstate	MAN	
A05	Jefferson	I 71	11.315	R	Interstate	MAN	
315	Oldham	I 71	23.800	R	Interstate	AVC	
L59	Henry	I 71	36.350	R	Interstate	ATR,AVC,S,WIM	Weigh
257	Gallatin	I 71	62.300	R	Interstate	AVC	
	Boone	I 71	77.000	R	Interstate		Pending
257	Whitley	I 75	0.100	R	Interstate	AVC,WIM	
547	Laurel	I 75	32.800	R	Interstate	AVC	
L57	Laurel	I 75	42.900	R	Interstate	AVC,S,WIM	Weigh
P46	Rockcastle	I 75	50.800	R	Interstate	ATR,AVC	
070	Rockcastle	I 75	70.400	R	Interstate	AVC	
610	Madison	I 75	86.600	Sm U	Interstate	AVC	
753	Madison	I 75	90.800	R	Interstate	AVC	
365	Fayette	I 75	102.200	R	Interstate	AVC,WIM	
336	Fayette	I 75	104.900	R	Interstate	AVC	
291	Scott	I 75	124.100	R	Interstate	AVC	
L56	Scott	I 75	130.400	R	Interstate	AVC,S,WIM	Weigh
P23	Grant	I 75	164.193	R	Interstate	ATR,AVC	
	Kenton	I 75	167.000	R	Interstate		Pending
333	Boone	I 75	171.700	R	Interstate	AVC	
252	Boone	I 75	178.700	R	Interstate	MAN,WIM	
010	Boone	I 75	182.900	U	Interstate	MAN	
799	Kenton	I 75	185.500	U	Interstate	MAN	
070	Kenton	I 75	189.700	U	Interstate	MAN,WIM	
014	Kenton	I 75	191.500	U	Interstate	MAN	
034	Carter	KY 1	13.200	R	Major Col.	AVC	
A07	Bracken	KY 10	14.100	R	Major Col.	AVC	
A60	Mason	KY 10	10.320	Sm U	Prin. Art.	MAN	
005	Warren	KY 101	7.200	R	Major Col.	AVC	
513	Webster	KY 109	10.100	R	Minor Art.	AVC	
A13	Owsley	KY 11	13.300	R	Major Col.	AVC,SHRP,WIM	
A41	Fleming	KY 11X	1.300	R	Major Col.	AVC	
280	Magoffin	KY 114	1.900	R	Prin. Art.	COAL,WIM	
773	Carlisle	KY 123	6.100	R	Major Col.	AVC	
541	Graves	KY 129	0.450	R	Major Col.	AVC	
293	McCracken	KY 131	0.500	R	Major Col.	AVC	
008	Daviess	KY 144	8.500	R	Major Col.	AVC	
A16	Oldham	KY 146	11.000	R	Major Col.	MAN	
784	Letcher	KY 15	3.300	R	Prin. Art.	COAL,WIM	
780	Perry	KY 15	20.800	R	Prin. Art.	COAL	
918	Jefferson	KY 155	17.360	U	Prin. Art.	MAN	
A82	Madison	KY 169	0.140	Sm U	Minor Art.	MAN	
002	Kenton	KY 17	24.100	U	Prin. Art.	MAN	
802	Pendleton	KY 177	5.900	R	Major Col.	AVC	
K94	Boone	KY 18	12.200	U	Minor Art.	MAN	
C49	Boyd	KY 180	2.400	R	Prin. Art.	COAL	

Sta	County	Route	MP	R/U	Functional Class	Type of Monitoring	
						Planning	Enforcement
758	Muhlenberg	KY 181	19.250	R	Minor Col.	AVC,WIM	
299	Pike	KY 194	41.600	R	Major Col.	COAL	
545	Wayne	KY 200	8.400	R	Major Col.	AVC	
014	Estill	KY 213	3.300	R	Major Col.	AVC	
500	Green	KY 218	0.400	R	Major Col.	AVC	
A34	Hart	KY 218	7.300	R	Major Col.	MAN	
196	Jefferson	KY 22	0.200	U	Minor Art.	MAN	
099	Jefferson	KY 22	2.800	U	Minor Art.	AVC,WIM	
762	Owen	KY 227	24.500	R	Major Col.	AVC	
G53	Kenton	KY 236	0.500	U	Minor Art.	MAN,WIM	
G63	Kenton	KY 236	1.700	U	Minor Art.	MAN	
581	Warren	KY 242	0.100	R	Minor Col.	AVC	
583	Barren	KY 249	12.700	R	Major Col.	AVC	
002	Grayson	KY 259	21.000	R	Minor Art.	AVC	
A01	Christian	KY 272	9.270	R	Minor Col.	AVC,WIM	
548	Caldwell	KY 293	9.100	R	Major Col.	AVC	
051	Lyon	KY 293	0.100	R	Major Col.	AVC	
799	Breathitt	KY 30	14.200	R	Major Col.	COAL	
008	Letcher	KY 317	1.000	R	Major Col.	COAL	
122	Pulaski	KY 328	5.900	R	Minor Col.	AVC	
259	Oldham	KY 329	8.500	R	Major Col.	AVC	
B67	Daviess	KY 331	0.200	U	Collector	AVC	
A83	Boyle	KY 34	13.250	Sm U	Prin. Art.	MAN	
A02	Henderson	KY 351	0.200	U	Minor Art.	MAN	
251	Harlan	KY 38	19.600	R	Major Col.	COAL	
D93	Fayette	KY 4	1.000	U	Expressway	AVC	
E48	Fayette	KY 4	3.700	U	Expressway	AVC,SHRP,WIM	
E58	Fayette	KY 4	8.000	U	Expressway	AVC	
D88	Fayette	KY 4	17.000	U	Expressway	AVC	
085	Daviess	KY 405	4.200	R	Minor Col.	AVC	
283	Henderson	KY 416	15.900	R	Minor Col.	AVC	
753	Washington	KY 438	0.500	R	Minor Col.	AVC	
A11	Meade	KY 448	6.000	R	Major Col.	MAN	
A52	Perry	KY 451	2.840	Sm U	Minor Art.	MAN,WIM	
512	Lawrence	KY 469	1.500	R	Major Col.	COAL	
766	Whitley	KY 511	0.200	R	Minor Col.	COAL	
P30	Estill	KY 52	19.081	R	Major Col.	ATR,AVC	
P36	Ohio	KY 54	9.558	R	Major Col.	ATR,AVC,WIM	
825	Lewis	KY 546	0.100	R	Minor Art.	AVC,WIM	
A33	Marion	KY 55X	0.200	Sm U	Minor Art.	MAN	
P44	Knott	KY 550	17.250	R	Major Col.	ATR,COAL	
750	Adair	KY 61	16.300	R	Minor Art.	AVC	
257	Cumberland	KY 61	0.100	R	Minor Art.	AVC	
P84	Jefferson	KY 61	0.100	U	Minor Art.	ATR,AVC,WIM	
S40	Jefferson	KY 61	12.730	U	Minor Art.	MAN	
540	Clark	KY 627	1.800	R	Prin. Art.	AVC,WIM	
A97	Clark	KY 627	9.030	R	Minor Art.	MAN	
761	Grayson	KY 631	3.000	R	Minor Col.	AVC	
032	Spencer	KY 636	0.500	R	Minor Col.	AVC	
270	Hart	KY 677	0.200	R	Minor Col.	AVC	
B23	Montgomery	KY 686	1.820	Sm U	Prin. Art.	AVC,WIM	

Sta	County	Route	MP	R/U	Functional Class	Type of Monitoring	
						Planning	Enforcement
252	Perry	KY 7	0.200	R	Major Col.	COAL,WIM	
796	Muhlenberg	KY 70	10.760	R	Major Col.	AVC	
001	Knox	KY 718	9.100	R	Minor Col.	AVC	
E05	Greenup	KY 750	0.300	U	Minor Art.	MAN	
516	Hickman	KY 781	1.900	R	Minor Col.	AVC	
325	Pulaski	KY 790	5.000	R	Major Col.	AVC	
E47	Campbell	KY 8	1.030	U	Minor Art.	MAN	
833	Laurel	KY 80	10.000	R	Prin. Art.	COAL	
502	Pulaski	KY 80	16.000	R	Major Col.	AVC,WIM	
508	McLean	KY 85	1.000	R	Major Col.	AVC	
505	Boyd	KY 854	7.500	R	Major Col.	AVC	
013	Jackson	KY 89	19.140	R	Major Col.	AVC	
A54	Wayne	KY 90X	10.340	Sm U	Minor Art.	MAN	
A07	Wayne	KY 90X	11.300	Sm U	Minor Art.	MAN	
047	Fayette	KY 922	5.100	R	Major Col.	AVC,WIM	
515	Harlan	KY 987	0.700	R	Major Col.	COAL	
A79	Christian	KY1007	0.590	Sm U	Collector	AVC	
556	Jefferson	KY1065	2.400	U	Minor Art.	MAN	
013	Perry	KY1088	0.600	R	Major Col.	COAL	
012	Calloway	KY1346	1.000	R	Minor Col.	AVC	
306	Warren	KY1402	3.200	R	Minor Col.	AVC	
P43	Floyd	KY1428	4.185	R	Minor Col.	ATR,COAL,WIM	
540	Pike	KY1441	2.500	R	Minor Col.	COAL	
040	Marshall	KY1523	7.200	R	Major Col.	AVC	
281	Hickman	KY1529	5.200	R	Minor Col.	AVC	
A67	Pulaski	KY1577	2.000	Sm U	Collector	AVC	
G18	Jefferson	KY1631	0.000	U	Minor Art.	MAN,S,WIM	
793	Jefferson	KY1631	4.800	U	Minor Art.	MAN	
E53	Fayette	KY1681	4.900	R	Major Col.	AVC	
P02	Jefferson	KY1699	1.300	U	Collector	ATR,AVC,WIM	
A53	Jefferson	KY1747	1.000	U	Minor Art.	MAN	
449	Jefferson	KY1932	1.200	U	Minor Art.	MAN	
A15	Jefferson	KY1932	2.800	U	Minor Art.	MAN	
759	Laurel	KY1956	7.600	R	Minor Col.	COAL	
A27	Fayette	KY1974	11.400	U	Minor Art.	MAN,WIM	
015	Lee	KY2016	3.500	R	Minor Col.	AVC	
519	Wolfe	KY2016	4.000	R	Minor Col.	AVC	
B65	Bell	KY2079	2.900	Sm U	Minor Art.	MAN	
B81	Pulaski	KY2302	0.400	Sm U	Minor Art.	MAN,WIM	
H45	Kenton	KY2373	1.000	U	Collector	MAN	
A52	Mason	KY2513	0.170	Sm U	Minor Art.	MAN	
301	Caldwell	KY9001	15.500	R	Prin. Art.	AVC	
544	Hardin	KY9001	119.650	R	Prin. Art.	AVC	
558	Anderson	KY9002	44.900	R	Prin. Art.	AVC,WIM	
287	Nelson	KY9002	23.000	R	Prin. Art.	AVC	
A16	Fulton	KY9003	1.800	Sm U	Freeway	AVC	
112	Graves	KY9003	25.400	R	Prin. Art.	AVC	
758	Marshall	KY9003	51.860	R	Major Col.	AVC	
B75	Henderson	KY9004	78.000	U	Expressway	AVC	
105	Hopkins	KY9004	28.000	R	Prin. Art.	AVC	
330	Webster	KY9004	59.500	R	Prin. Art.	AVC	

Sta	County	Route	MP	R/U	Functional Class	Type of Monitoring	
						Planning	Enforcement
822	Daviess	KY9005	19.000	R	Prin. Art.	AVC	
003	Clay	KY9006	15.900	R	Prin. Art.	COAL,SHRP,WIM	
288	Adair	KY9008	57.700	R	Prin. Art.	AVC	
599	Barren	KY9008	9.200	R	Prin. Art.	AVC,SHRP,WIM	
565	Caldwell	KY9010	5.710	R	Prin. Art.	AVC	
827	Hancock	N00001	1.300	R	Minor Col.	AVC	
294	Jefferson	N00002	0.000	U	Collector	AVC	
D49	McCracken	N00004	0.000	Sm U	Collector	MAN	
A43	Jessamine	N00006	0.000	Sm U	Collector	MAN	
C95	Kenton	N00007	0.000	U	Collector	MAN	
B34	Warren	N00011	0.000	Sm U	Collector	MAN	
P45	Warren	N00012	0.000	Sm U	Minor Art.	ATR,MAN	
311	Jefferson	N00016	0.000	U	Collector	AVC	
D65	Daviess	N00018	0.000	U	Minor Art.	MAN	
665	Jefferson	N00019	0.000	U	Collector	AVC	
446	Jefferson	N00020	0.000	U	Collector	AVC	
E24	Campbell	N00027	0.000	U	Minor Art.	MAN	
A15	Fayette	N00029	0.000	U	Minor Art.	MAN	
A40	Fayette	N00030	0.000	U	Minor Art.	MAN	
M44	Jefferson	N00035	0.000	U	Prin. Art.	MAN	
L46	Jefferson	N00036	0.000	U	Prin. Art.	MAN	
C04	Fayette	N00040	0.000	U	Minor Art.	MAN	
420	Jefferson	N00040	0.000	U	Collector	AVC	
P78	Jefferson	N00050	0.000	U	Minor Art.	MAN	
E93	Fayette	N00051	0.000	U	Collector	MAN	
C34	Fayette	N00057	0.000	U	Collector	MAN	
620	Jefferson	N00058	0.000	U	Collector	MAN	
859	Jefferson	N00073	0.000	U	Minor Art.	MAN	
R63	Jefferson	N00077	0.000	U	Minor Art.	MAN	
M34	Jefferson	N00078	0.000	U	Minor Art.	MAN	
003	Bell	US 119	13.900	R	Prin. Art.	COAL	
285	Letcher	US 119	18.000	R	Prin. Art.	COAL	
804	Pike	US 119	2.300	R	Prin. Art.	COAL,SHRP,WIM	
043	Anderson	US 127	9.900	R	Prin. Art.	AVC,SHRP,WIM	
037	Boyle	US 127	7.600	R	Prin. Art.	AVC	
A34	Campbell	US 127	18.840	U	Prin. Art.	MAN	
A48	Casey	US 127	14.100	R	Prin. Art.	AVC	
759	Clinton	US 127	12.600	R	Minor Art.	AVC	
792	Owen	US 127	18.400	R	Major Col.	ATR,AVC,WIM	
A27	Russell	US 127	18.100	R	Minor Art.	AVC	
046	Anderson	US 127B	6.100	R	Prin. Art.	AVC	
B34	Boyle	US 127B	1.700	Sm U	Prin. Art.	AVC,WIM	
B34	Boyle	US 127B	1.700	Sm U	Prin. Art.	AVC	
S20	Jefferson	US 150	3.000	U	Prin. Art.	MAN	
P42	Boyd	US 23	0.100	R	Prin. Art.	COAL,WIM	
015	Boyd	US 23	10.300	R	Prin. Art.	COAL,WIM	
778	Floyd	US 23	16.100	R	Prin. Art.	COAL	
E38	Greenup	US 23	1.700	U	Prin. Art.	MAN	
E44	Greenup	US 23	5.300	U	Prin. Art.	MAN	
002	Greenup	US 23	17.700	R	Prin. Art.	AVC	
001	Johnson	US 23	18.300	R	Prin. Art.	COAL,WIM	

Sta	County	Route	MP	R/U	Functional Class	Type of Monitoring	
						Planning	Enforcement
A18	Johnson	US 23X	0.150	R	Major Col.	MAN	
253	Daviess	US 231	10.000	R	Major Col.	AVC	
G32	Fayette	US 25	8.300	U	Prin. Art.	MAN	
C07	Fayette	US 25	11.170	U	Prin. Art.	MAN,WIM	
250	Grant	US 25	13.800	R	Major Col.	AVC	
A28	Madison	US 25	16.600	Sm U	Minor Art.	MAN	
A62	Madison	US 25	19.100	Sm U	Minor Art.	MAN,WIM	
002	Rockcastle	US 25	12.300	R	Minor Art.	AVC	
761	Bell	US 25E	11.800	R	Prin. Art.	COAL	
795	Knox	US 25E	20.600	R	Prin. Art.	COAL	
E58	Campbell	US 27	21.610	U	Prin. Art.	MAN,WIM	
E46	Fayette	US 27	3.400	U	Prin. Art.	MAN	
A69	Fayette	US 27	6.300	U	Minor Art.	MAN	
505	Jessamine	US 27	0.500	R	Prin. Art.	AVC,WIM	
315	Lincoln	US 27	5.150	R	Prin. Art.	AVC	
L53	McCreary	US 27	14.600	R	Minor Art.	COAL,S,WIM	
L50	Pendleton	US 27	6.000	R	Minor Art.	ATR,AVC,S,WIM	
A05	Pulaski	US 27	15.700	Sm U	Prin. Art.	MAN	
B31	Pulaski	US 27	17.000	Sm U	Prin. Art.	MAN	
A73	Allen	US 31E	8.100	R	Major Col.	AVC,WIM	
033	Bullitt	US 31E	4.900	R	Minor Art.	AVC	
256	Jefferson	US 31E	4.800	U	Prin. Art.	MAN,WIM	
475	Jefferson	US 31E	6.630	U	Prin. Art.	MAN,WIM	
424	Jefferson	US 31E	9.500	U	Prin. Art.	MAN,WIM	
460	Jefferson	US 31E	11.700	U	Prin. Art.	MAN	
463	Jefferson	US 31E	11.880	U	Prin. Art.	MAN	
P21	Jefferson	US 31E	14.635	U	Prin. Art.	ATR,MAN	
A13	Larue	US 31E	10.000	R	Minor Art.	MAN	
B74	Hardin	US 31H	0.550	Sm U	Freeway	AVC	
A07	Allen	US 31K	2.300	R	Minor Col.	MAN	
A81	Barren	US 31V	0.900	Sm U	Minor Art.	MAN,WIM	
A51	Hardin	US 31W	17.000	Sm U	Minor Art.	MAN	
508	Jefferson	US 31W	0.100	R	Prin. Art.	AVC,WIM	
680	Jefferson	US 31W	8.500	U	Prin. Art.	MAN	
651	Jefferson	US 31W	11.660	U	Prin. Art.	MAN	
827	Jefferson	US 31W	15.300	U	Prin. Art.	MAN	
L40	Jefferson	US 31W	20.300	U	Prin. Art.	MAN	
A99	Warren	US 31W	17.800	Sm U	Prin. Art.	AVC	
012	Christian	US 41	24.412	R	Major Col.	AVC	
C58	Henderson	US 41	18.960	U	Prin. Art.	MAN,WIM	Weigh (SB)
F05	Christian	US 41A	0.850	U	Prin. Art.	MAN	
286	Christian	US 41A	4.800	R	Prin. Art.	AVC	
A15	Hopkins	US 41A	14.500	Sm U	Minor Art.	MAN,WIM	
750	Gallatin	US 42	8.400	R	Major Col.	AVC	
P28	Trimble	US 42	10.049	R	Major Col.	ATR,AVC,WIM	
A03	Franklin	US 421	6.750	Sm U	Minor Art.	MAN	
521	Harlan	US 421	11.900	R	Minor Art.	COAL	
254	Henry	US 421	7.600	R	Minor Art.	AVC	
767	Leslie	US 421	19.500	R	Minor Art.	COAL	
758	Leslie	US 421	27.500	R	Major Col.	COAL	
254	Madison	US 421	7.900	R	Minor Art.	AVC	

Sta	County	Route	MP	R/U	Functional Class	Type of Monitoring	
						Planning	Enforcement
C09	Daviess	US 431	11.000	U	Prin. Art.	MAN,WIM	
B21	Logan	US 431	15.900	R	Minor Art.	AVC	
P10	Graves	US 45	6.200	R	Major Col.	ATR,AVC,WIM	
A70	Franklin	US 460	0.950	Sm U	Prin. Art.	AVC	
251	Franklin	US 460	5.000	R	Minor Art.	AVC	
P29	Menifee	US 460	4.955	R	Minor Art.	ATR,COAL,WIM	
250	Morgan	US 460	15.300	R	Minor Art.	COAL	
506	Pike	US 460	0.300	R	Prin. Art.	COAL	
	Ballard	US 51	5.000	R	Minor Art.		Observe (SB)
	Fulton	US 51	0.000	Sm U	Minor Art.		Observe (NB)
L46	Fulton	US 51	3.000	R	Minor Art.	AVC,S,WIM	
751	Hickman	US 51	8.000	R	Minor Art.	AVC	
757	Boyd	US 60	2.200	R	Major Col.	COAL	
C47	Boyd	US 60	4.200	U	Prin. Art.	MAN,WIM	
C11	Breckinridge	US 60	2.560	R	Prin. Art.	MAN	
A10	Breckinridge	US 60	15.100	R	Prin. Art.	MAN	
A41	Daviess	US 60	11.800	U	Prin. Art.	MAN	
G51	Fayette	US 60	3.700	U	Prin. Art.	MAN	
A62	Fayette	US 60	7.500	U	Prin. Art.	MAN	
P01	Franklin	US 60	0.001	R	Major Col.	ATR,AVC,WIM	
242	Jefferson	US 60	7.800	U	Prin. Art.	MAN,WIM	
A45	McCracken	US 60	11.770	Sm U	Prin. Art.	AVC,WIM	
A03	McCracken	US 60	18.670	Sm U	Prin. Art.	MAN	
335	Meade	US 60	15.700	Sm U	Prin. Art.	AVC,WIM	
023	Woodford	US 60	11.900	R	Prin. Art.	AVC	
899	Jefferson	US 60A	7.800	U	Minor Art.	MAN	
OU8	Daviess	US 60B	6.083	U	Expressway	AVC,S,WIM	
A11	Woodford	US 60B	0.300	Sm U	Prin. Art.	AVC,WIM	
P08	Grayson	US 62	12.096	R	Major Col.	ATR,AVC,WIM	
313	Grayson	US 62	22.300	R	Major Col.	AVC	
258	Harrison	US 62	8.700	R	Major Col.	AVC	
762	Lyon	US 62	6.000	R	Minor Art.	AVC	
018	Marshall	US 62	11.250	R	Minor Art.	AVC	
505	Mason	US 62	0.800	R	Major Col.	AVC	
A21	Scott	US 62	7.470	Sm U	Prin. Art.	MAN	
P39	Marshall	US 641	18.236	R	Minor Art.	ATR,AVC,WIM	
P26	Bourbon	US 68	4.183	R	Prin. Art.	ATR,AVC	
782	Fleming	US 68	0.500	R	Prin. Art.	AVC	
P38	Logan	US 68	2.574	R	Prin. Art.	ATR,AVC	
259	Marshall	US 68	26.400	R	Prin. Art.	AVC	
007	Taylor	US 68	10.500	R	Minor Art.	AVC	
575	Warren	US 68	7.200	R	Prin. Art.	AVC	

ATR	ATR station; continuous operation
AVC	Automatic vehicle classifier; 24-hour; 3-year cycle (continuous at ATR stations)
COAL	Manual (MAN) classification on coal-haul road
MAN	Manual classification; 8-, 16-, or 24-hour; 3-year cycle
Observe	KYU and unit numbers; continuous
S	Slow-speed, weigh-in-motion; 48-hour; 4 times every year
SHRP	Strategic Highway Research Program; WIM
Weigh	Static weights, KYU and unit numbers; continuous
WIM	High-speed, weigh-in-motion; 48-hour; 3-year cycle

APPENDIX B

OUTPUT FROM EALCALC COMPUTER PROGRAM

Weight Data

If no weight data for a functional class is available statewide weight data is used.

If no weight data for a functional class is available prior to the current year and weight data for a functional class is available for the current year. Statewide weight data is used for prior years and functional class weight data is used from the current year forward.

If weight data for a functional class was available for 1978 functional class weight data was used for all years.

Printout

Station Listing

The station listing list only the stations recorded for a functional class for the current year.

If no classification data is available for the current year there will be no station listing. Currently only functional classes 9 and 19 have this problem.

Summary Table

For years prior to 1989 the average values presented are based a single year. For years from 1989 forward the average values presented for the current year are based on a average of the current year and the prior 2 years. The number of stations presented is the sum of stations for the current year and the prior 2 years. The historic averages presented are based on a single year.

If no classification data is available the current year values will be 0 and the table will revert to the old style summary table. Values for years that have no classification data will be 0.

TABLE B1. AVAILABLE VEHICLE CLASSIFICATION DATA BY YEAR AND FUNCTIONAL CLASS

FUNCTIONAL CLASS	YEAR											
	78	79	80	81	82	83	84	85	86	87	88	89
1		X	X	X	X	X	X	X	X	X	X	X
2		X	X	X	X	X	X	X	X	X	X	X
6		X	X	X	X	X	X	X	X	X	X	X
7		X	X	X	X	X	X	X	X	X	X	X
8		X	X	X	X	X	X	X	X	X	X	X
9		X	X	X	X	X	X	X	X	X	X	
11		X	X	X	X	X	X	X	X	X	X	X
12		X	X	X	X	X	X	X	X	X	X	X
14		X	X	X	X	X	X	X	X	X	X	X
16		X	X	X	X	X	X	X	X	X	X	X
17		X	X	X	X	X	X	X	X	X	X	X
19					X		X	X	X	X		

TABLE B2. AVAILABLE WEIGHT DATA BY YEAR AND FUNCTIONAL CLASS

FUNCTIONAL CLASS	YEAR											
	78	79	80	81	82	83	84	85	86	87	88	89
1	T		T		T		T		T		W	W
2	T							T	T			W
6	T		T		T		T	T				
7	T							T			W	W
8	A		A		A		A	A	A		A	A
9	T											
11	A		A		A		A	A	A		A	W
12	T		T		T		T	T	T			
14	A		A		A		A	A	A		W	W
16	T		T		T		T	T	T			
17	A		A		A		A	A	A		W	
19	A		A		A		A	A	A		A	A

NOTE: A = STATE-WIDE AVERAGE DATA (NO RECORDED DATA)
T = TRUCK LOADOMETER OR PORTABLE SCALES
W = WEIGH-IN-MOTION SCALES

EAL TRAFFIC PARAMETERS FOR INDIVIDUAL CLASSIFICATION STATIONS
1989
FUNCTIONAL CLASS 01 -- RURAL INTERSTATE

COU	STA	ROUTE	MILE POINT	FED AID	AADT	TRUCK FRACT	FRACT OF TRK WITH COAL	AXLES PER NON COAL TRUCK	AXLES PER COAL TRUCK	EAL'S/ NON COAL AXLE	EAL'S/ COAL TRUCK AXLE	2-DIRECTION EAL'S IN 1000'S 4-TIRE VEHICLES	NON-COAL TRUCKS	COAL TRUCKS	TOTAL
22	031	I 64	178.8	1	12213	0.288	0.064	4.414	5.260	0.139	0.531	16.	739.	232.	987.
34	336	I 75	104.4	1	28858	0.209	0.001	4.401	5.285	0.145	0.571	42.	1400.	9.	1450.
39	257	I 71	62.3	1	16392	0.355	0.005	4.542	5.264	0.141	0.521	19.	1358.	27.	1404.
47	L54	I 65	89.4	1	25410	0.388	0.000	4.636	0.000	0.142	0.000	28.	2377.	0.	2405.
50	038	I 65	71.6	1	21134	0.453	0.000	4.673	0.000	0.142	0.000	21.	2321.	0.	2342.
52	L59	I 71	36.3	1	16538	0.470	0.000	4.686	0.000	0.141	0.000	16.	1877.	0.	1893.
56	A05	I 71	11.3	1	27100	0.256	0.000	4.495	0.000	0.142	0.000	37.	1613.	0.	1650.
56	019	I 64	19.8	1	20100	0.204	0.000	4.362	0.000	0.143	0.000	29.	934.	0.	963.
76	753	I 75	90.8	1	36000	0.171	0.000	4.259	0.000	0.144	0.000	54.	1379.	0.	1434.
93	315	I 71	23.8	1	20100	0.377	0.000	4.576	0.000	0.142	0.000	23.	1795.	0.	1818.
105	541	I 64	73.8	1	14800	0.213	0.000	4.372	0.000	0.141	0.000	21.	707.	0.	728.

SUMMARY OF AVERAGE VALUES FOR
FUNCTIONAL CLASS 01 -- RURAL INTERSTATE

UNCLASSIFIED ROADS

NO OF STAS.	89	88	87	86	85	84	83	82	81	80	79
						AADT					
33.	20023.	20785.	17662.	16636.	20838.	19586.	19132.	18507.	14016.	15609.	21312.
						PERCENT TRUCKS					
33.	29.116	27.468	28.858	30.465	29.759	26.786	26.513	25.158	25.589	28.439	25.778
						2-DIRECTION EAL'S DUE TO 4-TIRED VEHICLES IN 1000'S					
33.	26.	28.	23.	21.	27.	26.	26.	25.	19.	20.	30.
						AXLES PER TRUCK (UNCLASSIFIED)					
33.	4.486	4.467	4.488	4.504	4.489	4.418	4.423	4.348	4.404	4.387	4.374
						EAL'S PER TRUCK AXLE (UNCLASSIFIED)					
33.	0.157	0.159	0.166	0.167	0.157	0.154	0.136	0.135	0.149	0.149	0.138
						2-DIRECTION EAL'S DUE TO UNCLASSIFIED VEHICLES IN1000'S					
33.	1435.	1437.	1333.	1329.	1540.	1265.	1106.	978.	868.	1055.	1086.

CLASSIFIED (HEAVY/COAL) ROADS

NO OF STAS.	89	88	87	86	85	84	83	82	81	80	79
						AADT					
3.	19167.	18903.	26386.	20497.	22128.	23310.	22627.	21574.	15604.	17798.	0.
						PERCENT TRUCKS					
3.	25.596	24.018	23.962	24.408	22.534	23.085	24.955	24.270	21.865	23.991	0.000
						2-DIRECTION EAL'S DUE TO 4-TIRED VEHICLES IN 1000'S					
3.	26.	26.	37.	28.	31.	33.	31.	30.	22.	25.	0.
						PERCENT OF TRUCKS (HEAVY/COAL)					
3.	4.745	3.583	4.209	11.007	4.467	3.220	3.722	5.228	7.986	3.185	0.000
						AXLES PER TRUCK (NORMAL)					
3.	4.376	4.311	4.404	4.247	4.249	4.313	4.376	4.365	4.205	4.359	0.000
						AXLES PER TRUCK (HEAVY/COAL)					
3.	5.283	5.288	5.301	5.076	5.133	5.246	5.254	5.074	4.839	4.943	0.000
						EAL'S PER TRUCK AXLE (NORMAL)					
3.	0.155	0.157	0.169	0.162	0.153	0.155	0.136	0.137	0.148	0.149	0.000
						EAL'S PER TRUCK AXLE (HEAVY/COAL)					
3.	0.449	0.559	0.257	0.271	0.240	0.222	0.221	0.242	0.250	0.237	0.000
						2-DIRECTION EAL'S DUE TO NORMAL VEHICLES IN 1000 'S					
3.	1154.	1081.	1641.	1231.	1172.	1268.	1182.	1078.	687.	982.	0.
						2-DIRECTION EAL'S DUE TO (HEAVY/COAL) VEHICLES IN 1000'S					
3.	180.	176.	132.	226.	118.	74.	89.	127.	122.	58.	0.

AVERAGE VALUES AND NUMBER OF STATIONS FOR 1989
REFLECT THE STATIONS COLLECTED IN 1989, 1988, AND 1987
FOR FUNCTIONAL CLASS 1

EAL TRAFFIC PARAMETERS FOR INDIVIDUAL CLASSIFICATION STATIONS
1989
FUNCTIONAL CLASS 02 -- RURAL PRINCIPAL ARTERIAL

COU	STA	ROUTE	MILE POINT	FED AID	AADT	TRUCK FRACT	FRACT OF TRK WITH COAL	AXLES PER NON COAL	AXLES PER COAL TRUCK	EAL'S/ NON COAL AXLE	EAL'S/ COAL TRUCK AXLE	2-DIRECTION EAL'S IN 1000'S 4-TIRE VEHICLES	NON-COAL TRUCKS	COAL TRUCKS	TOTAL
1	288	KY9008	57.7	1	2740	0.320	0.000	4.193	0.000	0.169	0.000	3.	227.	0.	231.
3	043	US 127	9.9	1	6410	0.052	0.000	3.851	0.000	0.177	0.000	11.	82.	0.	93.
3	046	US 127	6.1	1	9880	0.095	0.003	3.528	4.333	0.156	3.528	16.	189.	17.	222.
5	003	US 31	22.5	1	2469	0.053	0.000	3.165	0.000	0.152	0.000	4.	23.	0.	27.
5	599	KY9008	9.2	1	4260	0.140	0.000	3.819	0.000	0.159	0.000	7.	132.	0.	138.
7	P31	US 25	19.0	1	7030	0.160	0.105	3.735	4.546	0.152	3.453	11.	209.	676.	896.
10	005	US 60	14.6	1	9590	0.039	0.108	2.769	4.673	0.145	3.538	17.	49.	247.	313.
11	037	US 127	7.9	1	9450	0.108	0.010	3.557	4.712	0.161	3.533	15.	210.	61.	286.
14	C11	US 60	2.6	1	3650	0.081	0.000	3.424	0.000	0.160	0.000	6.	59.	0.	66.
30	517	US 431	2.8	1	5160	0.090	0.269	3.832	4.546	0.149	3.475	9.	71.	721.	800.
45	002	US 23	17.7	1	6612	0.194	0.096	3.984	4.681	0.158	3.551	10.	267.	746.	1023.
48	P18	US 119	10.0	1	8240	0.078	0.294	2.606	4.474	0.156	3.506	14.	67.	1088.	1169.
49	046	US 27	9.1	1	3280	0.097	0.000	4.023	0.000	0.160	0.000	5.	75.	0.	80.
56	508	US 31	0.1	1	16300	0.061	0.000	3.100	0.000	0.158	0.000	28.	176.	0.	204.
58	001	US 23	18.3	1	6307	0.280	0.000	4.688	0.000	0.171	0.000	8.	517.	0.	525.
67	253	KY 15	0.1	1	4385	0.107	0.315	3.190	4.494	0.166	4.091	7.	63.	993.	1063.
67	285	US 119	18.0	1	7427	0.095	0.126	2.689	4.543	0.174	3.540	12.	106.	523.	641.
69	315	US 27	5.1	1	5080	0.122	0.000	3.866	0.000	0.159	0.000	8.	139.	0.	148.
82	335	US 60	15.7	1	5480	0.066	0.000	4.180	0.000	0.170	0.000	9.	94.	0.	104.
90	287	KY9002	23.0	1	4078	0.291	0.000	4.465	0.000	0.161	0.000	5.	311.	0.	317.
98	E03	US 119	0.1	1	12935	0.043	0.016	2.474	4.556	0.164	3.424	23.	81.	51.	155.
98	506	US 460	0.3	1	7170	0.162	0.460	2.552	3.930	0.204	4.594	11.	119.	3512.	3642.

SUMMARY OF AVERAGE VALUES FOR
FUNCTIONAL CLASS 02 -- RURAL PRINCIPAL ARTERIAL

UNCLASSIFIED ROADS

NO OF STAS.	89	88	87	86	85	84	83	82	81	80	79
						AADT					
35.	5822.	5756.	5031.	5253.	5817.	4905.	6223.	5266.	4638.	6661.	7912.
						PERCENT TRUCKS					
35.	12.898	15.604	11.214	8.849	11.579	10.460	10.040	10.398	11.008	13.381	15.409
						2-DIRECTION EAL'S DUE TO 4-TIRED VEHICLES IN 1000'S					
35.	9.	9.	8.	9.	9.	8.	10.	9.	8.	11.	13.
						AXLES PER TRUCK (UNCLASSIFIED)					
35.	3.716	3.852	3.608	3.253	3.492	3.492	3.312	3.213	3.483	3.337	3.541
						EAL'S PER TRUCK AXLE (UNCLASSIFIED)					
35.	0.165	0.159	0.170	0.180	0.237	0.258	0.275	0.286	0.268	0.278	0.262
						2-DIRECTION EAL'S DUE TO UNCLASSIFIED VEHICLES IN1000'S					
35.	147.	178.	109.	94.	186.	152.	156.	160.	142.	244.	338.

CLASSIFIED (HEAVY/COAL) ROADS

NO OF STAS.	89	88	87	86	85	84	83	82	81	80	79
						AADT					
54.	7475.	8267.	6656.	9031.	8299.	8473.	7065.	8100.	5392.	6105.	0.
						PERCENT TRUCKS					
54.	14.940	14.548	16.794	16.983	16.490	15.931	15.788	16.340	14.878	16.687	0.000
						2-DIRECTION EAL'S DUE TO 4-TIRED VEHICLES IN 1000'S					
54.	12.	13.	10.	14.	13.	13.	11.	12.	8.	9.	0.
						PERCENT OF TRUCKS (HEAVY/COAL)					
54.	26.783	25.971	29.679	26.327	34.222	34.996	30.081	30.705	28.398	24.447	0.000
						AXLES PER TRUCK (NORMAL)					
54.	3.556	3.679	3.551	3.648	3.464	3.511	3.570	3.429	3.421	3.362	0.000
						AXLES PER TRUCK (HEAVY/COAL)					
54.	4.463	4.429	4.497	4.497	4.161	3.914	3.928	3.719	3.826	3.750	0.000
						EAL'S PER TRUCK AXLE (NORMAL)					
54.	0.176	0.186	0.169	0.174	0.243	0.268	0.265	0.276	0.276	0.272	0.000
						EAL'S PER TRUCK AXLE (HEAVY/COAL)					
54.	4.470	4.731	4.431	4.469	4.823	6.194	6.143	6.083	6.157	6.170	0.000
						2-DIRECTION EAL'S DUE TO NORMAL VEHICLES IN 1000 'S					
54.	161.	178.	157.	198.	242.	247.	229.	305.	186.	236.	0.
						2-DIRECTION EAL'S DUE TO (HEAVY/COAL) VEHICLES IN 1000'S					
54.	2515.	2460.	3165.	2870.	3227.	4229.	3171.	2844.	1994.	2284.	0.

AVERAGE VALUES AND NUMBER OF STATIONS FOR 1989
REFLECT THE STATIONS COLLECTED IN 1989, 1988, AND 1987
FOR FUNCTIONAL CLASS 2

EAL TRAFFIC PARAMETERS FOR INDIVIDUAL CLASSIFICATION STATIONS
1989
FUNCTIONAL CLASS 06 -- RURAL MINOR ARTERIAL

COU	STA	ROUTE	MILE POINT	FED AID	AADT	TRUCK FRACT	FRACT OF TRK WITH COAL	AXLES PER NON COAL	AXLES PER COAL TRUCK	EAL'S/ NON COAL AXLE	EAL'S/ COAL TRUCK AXLE	2-DIRECTION EAL'S IN 1000'S 4-TIRE VEHICLES	NON-COAL TRUCKS	COAL TRUCKS	TOTAL
14	254	KY 79	10.9	1	1955	0.074	0.000	2.545	0.000	0.309	0.000	3.	42.	0.	45.
15	033	US 31	4.9	1	10100	0.038	0.000	2.712	0.000	0.308	0.000	18.	116.	0.	133.
29	257	KY 61	0.1	1	1010	0.073	0.000	3.159	0.000	0.265	0.000	2.	22.	0.	24.
31	278	US 31	0.1	1	1243	0.088	0.000	2.819	0.000	0.299	0.000	2.	34.	0.	36.
32	P41	KY 7	11.4	1	2060	0.066	0.118	2.699	4.438	0.280	0.583	4.	33.	15.	52.
37	251	US 460	5.0	1	2270	0.057	0.000	2.729	0.000	0.295	0.000	4.	38.	0.	42.
43	002	KY 259	21.0	1	938	0.069	0.000	3.106	0.000	0.276	0.000	2.	20.	0.	22.
43	262	KY 259	6.1	1	2289	0.071	0.000	2.596	0.000	0.290	0.000	4.	45.	0.	49.
48	521	US 421	11.0	1	5220	0.119	0.592	2.685	3.735	0.249	0.542	8.	62.	271.	341.
52	254	US 421	7.6	1	1160	0.065	0.000	2.840	0.000	0.292	0.000	2.	23.	0.	25.
62	A13	US 31	10.0	1	7610	0.032	0.000	2.802	0.000	0.259	0.000	13.	65.	0.	78.
66	767	US 421	17.7	1	4067	0.097	0.210	3.147	4.159	0.288	0.576	7.	102.	72.	181.
68	P40	KY 10	17.1	1	2590	0.071	0.000	2.973	0.000	0.306	0.000	4.	61.	0.	65.
68	765	KY 10	2.0	1	2597	0.075	0.000	3.472	0.000	0.269	0.000	4.	66.	0.	71.
78	P24	US 68	9.7	1	9850	0.054	0.000	2.990	0.000	0.286	0.000	17.	166.	0.	183.
80	003	KY 40	20.3	1	5823	0.079	0.378	3.298	4.288	0.238	0.584	10.	82.	159.	251.
83	A05	US 460	8.8	1	2890	0.045	0.010	2.844	5.000	0.296	0.599	5.	40.	1.	46.
87	752	US 460	6.8	1	1676	0.102	0.056	2.787	4.200	0.278	0.590	3.	46.	9.	57.
88	A47	US 460	15.4	1	4830	0.049	0.012	3.034	4.333	0.291	0.591	8.	76.	3.	87.
88	501	US 460	10.8	1	1800	0.053	0.018	2.760	4.000	0.253	0.587	3.	23.	2.	28.
88	506	US 460	0.0	1	722	0.089	0.144	4.021	4.643	0.172	0.576	1.	14.	9.	24.
88	527	KY 203	0.1	1	533	0.078	0.000	2.117	0.000	0.355	0.000	1.	12.	0.	12.
96	L50	US 27	6.0	1	3395	0.146	0.084	3.482	4.143	0.256	0.572	5.	147.	36.	189.
109	007	US 68	10.5	1	4619	0.090	0.000	3.275	0.000	0.266	0.000	8.	133.	0.	141.
109	061	US 68	8.8	1	6600	0.074	0.000	3.172	0.000	0.258	0.000	11.	145.	0.	156.

SUMMARY OF AVERAGE VALUES FOR
FUNCTIONAL CLASS 06 -- RURAL MINOR ARTERIAL

UNCLASSIFIED ROADS

NO OF STAS.	89	88	87	86	85	84	83	82	81	80	79
						AADT					
65.	3754.	3910.	3577.	3810.	4817.	3086.	4180.	3639.	3336.	3519.	4049.
						PERCENT TRUCKS					
65.	8.370	9.322	8.630	6.943	8.674	11.812	9.452	8.594	10.638	13.753	11.421
					2-DIRECTION EAL'S DUE TO 4-TIRED VEHICLES IN 1000'S						
65.	6.	7.	6.	7.	8.	5.	7.	6.	5.	5.	7.
						AXLES PER TRUCK (UNCLASSIFIED)					
65.	3.147	3.313	3.090	2.955	3.027	3.021	3.202	2.912	3.037	3.262	3.113
						EAL'S PER TRUCK AXLE (UNCLASSIFIED)					
65.	0.278	0.273	0.278	0.282	0.216	0.191	0.170	0.176	0.134	0.138	0.109
					2-DIRECTION EAL'S DUE TO UNCLASSIFIED VEHICLES IN1000'S						
65.	92.	107.	93.	71.	84.	83.	69.	50.	49.	91.	54.

CLASSIFIED (HEAVY/COAL) ROADS

NO OF STAS.	89	88	87	86	85	84	83	82	81	80	79
						AADT					
34.	3253.	2969.	3503.	2738.	3616.	2856.	2626.	3373.	3318.	2858.	0.
						PERCENT TRUCKS					
34.	13.257	10.215	17.733	16.449	14.325	15.368	12.943	13.937	14.678	15.742	0.000
					2-DIRECTION EAL'S DUE TO 4-TIRED VEHICLES IN 1000'S						
34.	5.	5.	5.	4.	6.	4.	4.	5.	5.	4.	0.
						PERCENT OF TRUCKS (HEAVY/COAL)					
34.	24.347	16.679	32.329	33.980	24.286	20.576	21.519	24.150	30.118	22.950	0.000
						AXLES PER TRUCK (NORMAL)					
34.	3.292	3.201	3.442	3.641	3.292	3.164	3.248	3.204	3.163	3.218	0.000
						AXLES PER TRUCK (HEAVY/COAL)					
34.	4.259	4.291	4.243	4.464	4.383	4.340	4.470	4.319	4.422	4.400	0.000
						EAL'S PER TRUCK AXLE (NORMAL)					
34.	0.245	0.247	0.239	0.238	0.198	0.174	0.157	0.156	0.128	0.132	0.000
						EAL'S PER TRUCK AXLE (HEAVY/COAL)					
34.	0.568	0.571	0.562	0.564	0.577	0.573	0.571	0.582	0.585	0.587	0.000
					2-DIRECTION EAL'S DUE TO NORMAL VEHICLES IN 1000 'S						
34.	76.	51.	103.	84.	75.	63.	50.	63.	44.	55.	0.
					2-DIRECTION EAL'S DUE TO (HEAVY/COAL) VEHICLES IN 1000'S						
34.	145.	76.	242.	187.	163.	116.	72.	149.	166.	124.	0.

AVERAGE VALUES AND NUMBER OF STATIONS FOR 1989
REFLECT THE STATIONS COLLECTED IN 1989, 1988, AND 1987
FOR FUNCTIONAL CLASS 6

EAL TRAFFIC PARAMETERS FOR INDIVIDUAL CLASSIFICATION STATIONS
1989
FUNCTIONAL CLASS 07 -- RURAL MAJOR COLLECTOR

COU	STA	ROUTE	MILE POINT	FED AID	AADT	TRUCK FRACT	FRACT OF TRK WITH COAL	AXLES PER NON COAL TRUCK	AXLES PER COAL TRUCK	EAL'S/ NON COAL AXLE	EAL'S/ COAL TRUCK AXLE	2-DIRECTION EAL'S IN 1000'S 4-TIRE VEHICLES	NON-COAL TRUCKS	COAL TRUCKS	TOTAL
4	006	KY 473	8.0	1	1132	0.043	0.000	2.451	0.000	0.211	0.000	2.	9.	0.	11.
5	505	KY 252	2.9	1	661	0.066	0.000	2.000	0.000	0.235	0.000	1.	8.	0.	9.
5	758	US 31	2.6	1	2054	0.094	0.000	2.618	0.000	0.213	0.000	3.	39.	0.	43.
6	250	US 60	17.3	1	3561	0.047	0.000	2.501	0.000	0.206	0.000	6.	32.	0.	38.
6	253	US 60	9.3	1	2181	0.036	0.000	2.203	0.000	0.219	0.000	4.	14.	0.	18.
12	A07	KY 10	14.1	1	3348	0.053	0.000	2.154	0.000	0.219	0.000	6.	30.	0.	36.
13	A01	KY1812	3.7	1	9344	0.019	0.000	2.375	0.000	0.224	0.000	17.	35.	0.	52.
13	A22	KY1812	2.9	1	2120	0.044	0.000	2.591	0.000	0.220	0.000	4.	19.	0.	23.
13	015	KY 30	26.1	1	815	0.076	0.023	2.466	5.000	0.221	1.485	1.	12.	3.	16.
13	799	KY 30	14.1	1	4810	0.079	0.007	2.809	4.333	0.206	1.324	8.	80.	6.	94.
17	511	KY 91	14.0	1	2184	0.102	0.012	2.778	4.333	0.214	1.324	4.	48.	6.	58.
18	612	KY 299	3.2	1	1410	0.081	0.000	2.528	0.000	0.203	0.000	2.	21.	0.	23.
19	276	KY 154	0.5	1	1515	0.084	0.000	3.057	0.000	0.153	0.000	3.	22.	0.	24.
21	002	US 42	13.4	1	2699	0.064	0.000	2.933	0.000	0.203	0.000	5.	38.	0.	42.
21	501	KY 55	5.7	1	524	0.091	0.000	3.331	0.000	0.196	0.000	1.	12.	0.	13.
22	A07	US 60	24.2	1	10300	0.036	0.000	2.831	0.000	0.154	0.000	18.	59.	0.	77.
22	A59	KY 7	10.8	1	7700	0.022	0.000	2.885	0.000	0.191	0.000	14.	35.	0.	49.
22	A66	US 60	23.9	1	7370	0.021	0.097	2.137	4.667	0.230	1.317	13.	25.	34.	71.
22	C21	US 60	9.0	1	7700	0.026	0.000	2.910	0.000	0.222	0.000	14.	47.	0.	61.
22	P13	US 60	20.0	1	1920	0.045	0.284	2.299	4.583	0.227	1.390	3.	12.	56.	71.
24	508	KY 164	0.1	1	611	0.033	0.000	2.872	0.000	0.209	0.000	1.	5.	0.	6.
28	A63	KY 120	0.7	1	1386	0.085	0.000	2.880	0.000	0.214	0.000	2.	27.	0.	29.
30	505	KY 81	5.0	1	4271	0.105	0.276	3.363	4.516	0.212	1.395	7.	85.	285.	377.
31	004	KY 728	7.1	1	296	0.098	0.000	2.207	0.000	0.228	0.000	0.	5.	0.	6.
32	250	KY 504	13.9	1	900	0.045	0.000	2.769	0.000	0.177	0.000	2.	7.	0.	9.
32	504	KY 32	11.3	1	1960	0.055	0.000	3.191	0.000	0.156	0.000	3.	19.	0.	23.
33	P30	KY 52	19.1	1	1220	0.069	0.000	2.211	0.000	0.225	0.000	2.	15.	0.	17.
33	018	KY1571	0.2	1	1310	0.041	0.000	2.116	0.000	0.228	0.000	2.	10.	0.	12.
35	A41	KY 11	1.3	1	8549	0.044	0.014	2.296	4.600	0.196	1.394	15.	61.	12.	88.
36	506	KY 122	8.7	1	7753	0.150	0.561	2.513	3.812	0.208	1.138	12.	97.	1029.	1138.
37	P01	US 60	0.0	1	4010	0.080	0.000	3.482	0.000	0.199	0.000	7.	81.	0.	88.
38	C10	KY 125	5.0	1	2774	0.137	0.000	3.212	0.000	0.203	0.000	4.	90.	0.	95.
38	004	KY 239	3.1	1	1220	0.113	0.000	3.374	0.000	0.200	0.000	2.	34.	0.	36.
39	750	US 42	8.4	1	3067	0.047	0.000	2.411	0.000	0.217	0.000	5.	28.	0.	33.
39	752	KY 35	0.5	1	1228	0.070	0.000	2.792	0.000	0.182	0.000	2.	16.	0.	18.

EAL TRAFFIC PARAMETERS FOR INDIVIDUAL CLASSIFICATION STATIONS
1989
FUNCTIONAL CLASS 07 -- RURAL MAJOR COLLECTOR

COU	STA	ROUTE	MILE POINT	FED AID	AADT	TRUCK FRACT	FRACT OF TRK WITH COAL	AXLES PER NON COAL TRUCK	AXLES PER COAL TRUCK	EAL'S/ NON COAL AXLE	EAL'S/ COAL TRUCK AXLE	2-DIRECTION EAL'S IN 1000'S 4-TIRE VEHICLES	NON-COAL TRUCKS	COAL TRUCKS	TOTAL
41	A07	US 25	9.5	1	4531	0.055	0.000	2.682	0.000	0.209	0.000	8.	51.	0.	59.
41	P16	US 25	17.5	1	3984	0.048	0.006	2.608	5.000	0.209	1.485	7.	38.	3.	47.
41	287	US 25	5.1	1	1034	0.041	0.000	2.761	0.000	0.199	0.000	2.	9.	0.	10.
41	501	KY 36	6.3	1	645	0.023	0.000	2.159	0.000	0.213	0.000	1.	3.	0.	4.
43	251	KY 224	0.9	1	1650	0.083	0.000	2.292	0.000	0.214	0.000	3.	25.	0.	27.
43	313	US 62	22.3	1	5200	0.059	0.000	2.527	0.000	0.201	0.000	9.	57.	0.	65.
43	502	KY 185	8.3	1	1480	0.093	0.000	2.704	0.000	0.216	0.000	2.	29.	0.	32.
44	500	KY 218	0.4	1	814	0.125	0.000	2.535	0.000	0.211	0.000	1.	20.	0.	21.
45	265	KY 503	0.1	1	990	0.069	0.000	2.540	0.000	0.197	0.000	2.	12.	0.	14.
45	523	KY 7	6.0	1	1310	0.056	0.000	2.961	0.000	0.197	0.000	2.	16.	0.	18.
47	254	US 31	10.5	1	3231	0.153	0.012	3.822	4.833	0.201	1.223	5.	136.	13.	154.
47	518	KY 84	12.5	1	855	0.044	0.000	2.766	0.000	0.204	0.000	1.	8.	0.	10.
50	A34	KY 218	7.3	1	2200	0.111	0.000	3.316	0.000	0.207	0.000	4.	61.	0.	65.
53	A58	KY 123	8.6	1	498	0.081	0.000	2.225	0.000	0.207	0.000	1.	7.	0.	8.
53	788	KY 58	8.5	1	869	0.060	0.000	2.947	0.000	0.181	0.000	1.	10.	0.	11.
54	587	US 41	12.0	1	8948	0.056	0.369	2.609	3.993	0.171	1.287	15.	51.	343.	410.
62	531	KY 84	0.1	1	1396	0.081	0.085	2.604	4.600	0.215	1.394	2.	21.	23.	47.
64	012	KY 3	12.5	1	1190	0.066	0.000	2.663	0.000	0.221	0.000	2.	17.	0.	19.
65	A16	KY 52	12.9	1	2287	0.107	0.242	3.273	4.593	0.169	1.283	4.	37.	127.	168.
65	256	KY 587	12.3	1	1453	0.103	0.227	3.064	4.588	0.173	1.285	2.	23.	73.	98.
67	A36	KY 805	8.8	1	2600	0.361	0.380	3.327	3.724	0.118	1.089	3.	83.	528.	614.
67	511	KY 931	4.8	1	1074	0.428	0.443	3.148	3.999	0.138	1.058	1.	41.	315.	357.
67	766	KY 7	14.2	1	2703	0.391	0.446	3.361	4.017	0.115	0.972	3.	83.	673.	758.
70	271	KY 453	8.2	1	1574	0.059	0.000	2.679	0.000	0.211	0.000	3.	19.	0.	22.
71	750	KY 106	7.8	1	1254	0.062	0.000	2.679	0.000	0.227	0.000	2.	17.	0.	19.
75	A21	KY 81	11.6	1	4622	0.058	0.000	2.638	0.000	0.213	0.000	8.	55.	0.	63.
75	762	KY 56	2.8	1	1111	0.078	0.000	2.153	0.000	0.228	0.000	2.	16.	0.	17.
77	513	KY 30	6.6	1	1586	0.161	0.396	3.514	4.851	0.162	1.331	2.	32.	238.	273.
79	821	KY 95	0.1	1	1178	0.023	0.000	3.088	0.000	0.188	0.000	2.	6.	0.	8.
81	505	US 62	0.8	1	852	0.064	0.000	2.438	0.000	0.201	0.000	1.	10.	0.	11.
82	256	KY1638	8.9	1	6204	0.051	0.000	3.224	0.000	0.176	0.000	11.	65.	0.	76.
85	030	US 68	14.8	1	912	0.083	0.000	2.766	0.000	0.223	0.000	2.	17.	0.	19.
87	261	KY 11	0.2	1	1600	0.092	0.163	2.949	4.667	0.167	1.293	3.	22.	53.	78.
88	003	KY 172	8.0	1	1027	0.077	0.000	2.346	0.000	0.208	0.000	2.	14.	0.	16.
89	005	KY 81	1.0	1	2571	0.024	0.000	3.025	0.000	0.204	0.000	5.	14.	0.	19.

EAL TRAFFIC PARAMETERS FOR INDIVIDUAL CLASSIFICATION STATIONS
1989
FUNCTIONAL CLASS 07 -- RURAL MAJOR COLLECTOR

COU	STA	ROUTE	MILE POINT	FED AID	AADT	TRUCK FRACT	FRACT OF TRK WITH COAL	AXLES PER NON COAL TRUCK	AXLES PER COAL TRUCK	EAL'S/ NON COAL AXLE	EAL'S/ COAL TRUCK AXLE	2-DIRECTION EAL'S IN 1000'S 4-TIRE VEHICLES	NON-COAL TRUCKS	COAL TRUCKS	TOTAL
91	001	KY 32	15.7	1	886	0.061	0.000	2.532	0.000	0.208	0.000	2.	10.	0.	12.
92	501	KY 136	9.5	1	1590	0.094	0.000	3.315	0.000	0.168	0.000	3.	30.	0.	33.
94	503	KY 355	6.9	1	539	0.263	0.000	3.113	0.000	0.134	0.000	1.	22.	0.	22.
95	001	KY 28	2.8	1	1160	0.113	0.083	2.874	4.727	0.146	1.299	2.	18.	25.	45.
98	596	KY 122	10.2	1	6459	0.189	0.694	2.746	3.035	0.208	0.899	10.	78.	845.	932.
112	P28	US 42	10.0	1	1210	0.072	0.000	3.472	0.000	0.210	0.000	2.	24.	0.	26.

SUMMARY OF AVERAGE VALUES FOR
FUNCTIONAL CLASS 07 -- RURAL MAJOR COLLECTOR

UNCLASSIFIED ROADS

NO OF STAS.	89	88	87	86	85	84	83	82	81	80	79
						AADT					
150.	2126.	1931.	1890.	2537.	1973.	2617.	2023.	1950.	2146.	1511.	2215.
						PERCENT TRUCKS					
150.	7.105	7.454	6.967	6.463	6.679	7.795	7.233	6.412	7.093	9.108	9.439
						2-DIRECTION EAL'S DUE TO 4-TIRED VEHICLES IN 1000'S					
150.	4.	3.	3.	4.	3.	4.	3.	3.	4.	2.	4.
						AXLES PER TRUCK (UNCLASSIFIED)					
150.	2.778	2.851	2.768	2.726	2.764	2.549	2.715	2.607	2.615	2.872	2.792
						EAL'S PER TRUCK AXLE (UNCLASSIFIED)					
150.	0.165	0.145	0.129	0.129	0.131	0.161	0.157	0.163	0.162	0.150	0.149
						2-DIRECTION EAL'S DUE TO UNCLASSIFIED VEHICLES IN1000'S					
150.	23.	21.	16.	21.	19.	23.	24.	15.	21.	22.	32.

CLASSIFIED (HEAVY/COAL) ROADS

NO OF STAS.	89	88	87	86	85	84	83	82	81	80	79
						AADT					
59.	3056.	2918.	2866.	4059.	2556.	2567.	2122.	2094.	4014.	1811.	0.
						PERCENT TRUCKS					
59.	11.656	9.956	10.677	11.292	14.470	10.716	12.714	15.095	12.101	15.465	0.000
						2-DIRECTION EAL'S DUE TO 4-TIRED VEHICLES IN 1000'S					
59.	5.	5.	5.	7.	4.	4.	3.	3.	6.	3.	0.
						PERCENT OF TRUCKS (HEAVY/COAL)					
59.	29.665	28.778	29.497	35.130	36.595	32.659	38.850	33.715	33.833	29.198	0.000
						AXLES PER TRUCK (NORMAL)					
59.	2.979	3.070	2.830	3.197	2.904	2.702	2.945	2.965	2.948	3.040	0.000
						AXLES PER TRUCK (HEAVY/COAL)					
59.	4.202	4.065	4.425	4.574	4.340	4.100	4.180	4.056	4.139	4.400	0.000
						EAL'S PER TRUCK AXLE (NORMAL)					
59.	0.139	0.128	0.120	0.120	0.119	0.149	0.131	0.136	0.139	0.133	0.000
						EAL'S PER TRUCK AXLE (HEAVY/COAL)					
59.	1.215	1.172	1.302	1.241	1.267	0.503	0.496	0.515	0.498	0.432	0.000
						2-DIRECTION EAL'S DUE TO NORMAL VEHICLES IN 1000 'S					
59.	30.	26.	21.	37.	26.	22.	20.	21.	39.	25.	0.
						2-DIRECTION EAL'S DUE TO (HEAVY/COAL) VEHICLES IN 1000'S					
59.	209.	147.	242.	267.	319.	67.	90.	122.	215.	72.	0.

AVERAGE VALUES AND NUMBER OF STATIONS FOR 1989
REFLECT THE STATIONS COLLECTED IN 1989, 1988, AND 1987
FOR FUNCTIONAL CLASS 7

EAL TRAFFIC PARAMETERS FOR INDIVIDUAL CLASSIFICATION STATIONS
1989
FUNCTIONAL CLASS 08 -- RURAL MINOR COLLECTOR

COU	STA	ROUTE	MILE POINT	FED AID	AADT	TRUCK FRACT	FRACT OF TRK WITH COAL	AXLES PER NON COAL TRUCK	AXLES PER COAL TRUCK	EAL'S/ NON COAL AXLE	EAL'S/ COAL TRUCK AXLE	2-DIRECTION EAL'S IN 1000'S 4-TIRE VEHICLES	NON-COAL TRUCKS	COAL TRUCKS	TOTAL
2	550	KY1147	0.1	1	170	0.013	0.000	2.000	0.000	0.149	0.000	0.	0.	0.	1.
5	022	KY 740	0.5	1	1136	0.020	0.000	2.522	0.000	0.140	0.000	2.	3.	0.	5.
5	576	KY1297	2.5	1	742	0.056	0.000	2.254	0.000	0.162	0.000	1.	5.	0.	7.
5	594	KY 87	12.2	1	1316	0.084	0.000	2.524	0.000	0.153	0.000	2.	16.	0.	18.
17	510	KY 139	12.8	1	1209	0.044	0.000	2.513	0.000	0.148	0.000	2.	7.	0.	9.
18	012	KY1346	1.0	1	535	0.039	0.000	2.165	0.000	0.150	0.000	1.	2.	0.	3.
18	254	KY 280	0.5	1	2602	0.045	0.000	2.991	0.000	0.157	0.000	5.	20.	0.	25.
22	314	KY1661	1.0	1	290	0.014	0.000	2.000	0.000	0.149	0.000	1.	0.	0.	1.
24	F02	KY 911	0.3	1	4050	0.011	0.000	2.335	0.000	0.158	0.000	7.	6.	0.	13.
24	010	KY 507	3.6	1	1160	0.029	0.000	2.179	0.000	0.148	0.000	2.	4.	0.	6.
24	117	KY 407	2.7	1	526	0.168	0.327	3.313	4.759	0.132	1.252	1.	10.	63.	73.
24	280	KY 115	9.6	1	947	0.035	0.000	2.523	0.000	0.168	0.000	2.	5.	0.	7.
30	004	KY 405	0.1	1	2627	0.023	0.000	2.579	0.000	0.170	0.000	5.	9.	0.	14.
32	512	KY 719	0.1	1	112	0.080	0.000	2.189	0.000	0.144	0.000	0.	1.	0.	1.
36	P43	KY1428	4.2	1	2576	0.068	0.429	3.250	4.880	0.141	1.610	4.	17.	215.	236.
38	C47	KY 309	4.2	1	2464	0.149	0.000	4.316	0.000	0.135	0.000	4.	79.	0.	82.
42	281	KY 564	5.6	1	433	0.045	0.000	2.731	0.000	0.144	0.000	1.	3.	0.	3.
42	821	KY 440	0.1	1	948	0.049	0.000	3.054	0.000	0.151	0.000	2.	8.	0.	10.
43	761	KY 631	3.0	1	320	0.102	0.000	2.163	0.000	0.222	0.000	1.	6.	0.	6.
46	A01	KY3101	0.5	1	2124	0.117	0.009	4.182	5.000	0.132	0.821	3.	50.	3.	56.
53	281	KY1529	5.2	1	211	0.108	0.000	2.666	0.000	0.154	0.000	0.	3.	0.	4.
59	266	KY2042	0.1	1	1137	0.049	0.000	2.386	0.000	0.207	0.000	2.	10.	0.	12.
60	752	KY 721	6.5	1	1140	0.021	0.360	2.250	4.375	0.191	1.668	2.	3.	21.	26.
66	004	KY2057	0.1	1	863	0.180	0.594	3.010	4.055	0.208	4.512	1.	14.	614.	630.
66	008	KY1807	0.1	1	878	0.143	0.699	4.108	4.818	0.127	1.855	1.	7.	287.	295.
66	502	KY1780	13.9	1	914	0.031	0.000	2.254	0.000	0.210	0.000	2.	5.	0.	6.
67	770	KY 160	21.7	1	1525	0.366	0.424	2.974	3.597	0.252	4.343	2.	88.	1351.	1441.
71	582	KY 591	6.6	1	814	0.059	0.000	2.501	0.000	0.166	0.000	1.	7.	0.	9.
73	522	KY 348	0.7	1	980	0.037	0.000	2.308	0.000	0.165	0.000	2.	5.	0.	7.
73	804	KY 726	1.7	1	578	0.032	0.000	2.536	0.000	0.137	0.000	1.	2.	0.	3.
78	508	KY 84	11.2	1	887	0.013	0.000	2.091	0.000	0.157	0.000	2.	1.	0.	3.
79	802	KY1523	0.5	1	1192	0.113	0.000	3.837	0.000	0.139	0.000	2.	26.	0.	28.
82	006	KY1844	3.9	1	340	0.086	0.000	2.485	0.000	0.171	0.000	1.	5.	0.	5.
82	263	KY 333	6.5	1	657	0.072	0.000	2.019	0.000	0.182	0.000	1.	6.	0.	7.
82	278	KY 868	0.4	1	1790	0.027	0.000	2.271	0.000	0.159	0.000	3.	6.	0.	9.

EAL TRAFFIC PARAMETERS FOR INDIVIDUAL CLASSIFICATION STATIONS
1989
FUNCTIONAL CLASS 08 -- RURAL MINOR COLLECTOR

COU	STA	ROUTE	MILE POINT	FED AID	AADT	TRUCK FRACT	FRACT OF TRK WITH COAL	AXLES PER NON COAL TRUCK	AXLES PER COAL TRUCK	EAL'S/ NON COAL AXLE	EAL'S/ COAL TRUCK AXLE	2-DIRECTION EAL'S IN 1000'S 4-TIRE VEHICLES	NON-COAL TRUCKS	COAL TRUCKS	TOTAL
82	501	KY 710	3.6	1	702	0.081	0.000	2.569	0.000	0.193	0.000	1.	10.	0.	12.
86	254	KY 216	9.6	1	202	0.000	0.000	0.000	0.000	0.000	0.000	0.	0.	0.	0.
86	535	KY 87	8.1	1	463	0.054	0.000	2.080	0.000	0.156	0.000	1.	3.	0.	4.
87	267	KY 599	6.0	1	801	0.030	0.000	2.166	0.000	0.227	0.000	1.	4.	0.	6.
92	042	KY 878	0.5	1	668	0.111	0.000	2.971	0.000	0.234	0.000	1.	19.	0.	20.
93	259	KY 329	8.5	1	4300	0.042	0.000	2.400	0.000	0.192	0.000	8.	30.	0.	38.
94	754	KY 978	0.1	1	607	0.044	0.000	2.124	0.000	0.194	0.000	1.	4.	0.	5.
95	756	KU 847	7.1	1	307	0.008	0.500	5.000	5.000	0.124	0.821	1.	0.	1.	2.

SUMMARY OF AVERAGE VALUES FOR
FUNCTIONAL CLASS 08 -- RURAL MINOR COLLECTOR

UNCLASSIFIED ROADS

NO OF STAS.	89	88	87	86	85	84	83	82	81	80	79
						AADT					
125.	1003.	1196.	768.	981.	848.	483.	1216.	1271.	1875.	1112.	1186.
						PERCENT TRUCKS					
125.	5.816	5.052	6.714	4.654	5.252	6.400	5.539	5.197	7.466	8.422	7.610
						2-DIRECTION EAL'S DUE TO 4-TIRED VEHICLES IN 1000'S					
125.	2.	2.	1.	2.	1.	1.	2.	2.	3.	2.	2.
						AXLES PER TRUCK (UNCLASSIFIED)					
125.	2.479	2.505	2.465	2.359	2.357	2.215	2.338	2.439	2.332	2.444	2.415
						EAL'S PER TRUCK AXLE (UNCLASSIFIED)					
125.	0.177	0.190	0.178	0.172	0.247	0.161	0.160	0.151	0.158	0.166	0.133
						2-DIRECTION EAL'S DUE TO UNCLASSIFIED VEHICLES IN1000'S					
125.	10.	10.	9.	6.	15.	4.	7.	9.	12.	10.	10.

CLASSIFIED (HEAVY/COAL) ROADS

NO OF STAS.	89	88	87	86	85	84	83	82	81	80	79
						AADT					
26.	1542.	2061.	1296.	1735.	3018.	1472.	1263.	1743.	1283.	2377.	0.
						PERCENT TRUCKS					
26.	10.690	9.572	9.655	11.634	6.856	13.761	8.123	11.372	8.409	7.621	0.000
						2-DIRECTION EAL'S DUE TO 4-TIRED VEHICLES IN 1000'S					
26.	3.	3.	2.	3.	5.	2.	2.	3.	2.	4.	0.
						PERCENT OF TRUCKS (HEAVY/COAL)					
26.	34.420	31.329	27.597	26.536	27.072	35.564	31.090	23.589	28.174	33.333	0.000
						AXLES PER TRUCK (NORMAL)					
26.	2.802	2.609	2.539	2.789	2.333	2.485	2.606	2.585	2.491	2.359	0.000
						AXLES PER TRUCK (HEAVY/COAL)					
26.	4.222	4.291	3.931	4.098	3.601	3.739	4.199	3.858	3.781	3.633	0.000
						EAL'S PER TRUCK AXLE (NORMAL)					
26.	0.199	0.207	0.213	0.207	0.294	0.189	0.158	0.171	0.183	0.177	0.000
						EAL'S PER TRUCK AXLE (HEAVY/COAL)					
26.	3.944	4.019	5.144	4.086	5.282	2.868	0.833	1.076	1.223	1.177	0.000
						2-DIRECTION EAL'S DUE TO NORMAL VEHICLES IN 1000 'S					
26.	18.	20.	13.	29.	29.	9.	7.	20.	12.	18.	0.
						2-DIRECTION EAL'S DUE TO (HEAVY/COAL) VEHICLES IN 1000'S					
26.	517.	690.	445.	606.	456.	193.	79.	188.	74.	94.	0.

AVERAGE VALUES AND NUMBER OF STATIONS FOR 1989
REFLECT THE STATIONS COLLECTED IN 1989, 1988, AND 1987
FOR FUNCTIONAL CLASS 8

SUMMARY OF AVERAGE VALUES FOR
FUNCTIONAL CLASS 09 -- RURAL LOCAL

UNCLASSIFIED ROADS

NO OF STAS.	89	88	87	86	85	84	83	82	81	80	79
						AADT					
4.	617.	717.	583.	541.	360.	551.	709.	634.	393.	514.	514.
						PERCENT TRUCKS					
4.	3.735	2.853	4.029	7.080	5.194	5.473	5.015	7.015	8.969	8.843	6.292
						2-DIRECTION EAL'S DUE TO 4-TIRED VEHICLES IN 1000'S					
4.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
						AXLES PER TRUCK (UNCLASSIFIED)					
4.	2.341	2.187	2.393	2.358	2.293	2.178	2.199	2.325	2.064	2.378	2.247
						EAL'S PER TRUCK AXLE (UNCLASSIFIED)					
4.	0.218	0.205	0.222	0.217	0.207	0.201	0.206	0.206	0.190	0.227	0.211
						2-DIRECTION EAL'S DUE TO UNCLASSIFIED VEHICLES IN1000'S					
4.	4.	3.	4.	7.	3.	5.	6.	8.	4.	9.	6.

CLASSIFIED (HEAVY/COAL) ROADS

NO OF STAS.	89	88	87	86	85	84	83	82	81	80	79
						AADT					
0.	0.	0.	0.	0.	670.	643.	0.	0.	0.	0.	0.
						PERCENT TRUCKS					
0.	0.000	0.000	0.000	0.000	4.640	20.213	0.000	0.000	0.000	0.000	0.000
						2-DIRECTION EAL'S DUE TO 4-TIRED VEHICLES IN 1000'S					
0.	0.	0.	0.	0.	1.	1.	0.	0.	0.	0.	0.
						PERCENT OF TRUCKS (HEAVY/COAL)					
0.	0.000	0.000	0.000	0.000	15.040	41.724	0.000	0.000	0.000	0.000	0.000
						AXLES PER TRUCK (NORMAL)					
0.	0.000	0.000	0.000	0.000	2.627	2.452	0.000	0.000	0.000	0.000	0.000
						AXLES PER TRUCK (HEAVY/COAL)					
0.	0.000	0.000	0.000	0.000	3.694	3.000	0.000	0.000	0.000	0.000	0.000
						EAL'S PER TRUCK AXLE (NORMAL)					
0.	0.000	0.000	0.000	0.000	0.226	0.224	0.000	0.000	0.000	0.000	0.000
						EAL'S PER TRUCK AXLE (HEAVY/COAL)					
0.	0.000	0.000	0.000	0.000	0.060	0.069	0.000	0.000	0.000	0.000	0.000
						2-DIRECTION EAL'S DUE TO NORMAL VEHICLES IN 1000 'S					
0.	0.	0.	0.	0.	5.	4.	0.	0.	0.	0.	0.
						2-DIRECTION EAL'S DUE TO (HEAVY/COAL) VEHICLES IN 1000'S					
0.	0.	0.	0.	0.	0.	3.	0.	0.	0.	0.	0.

AVERAGE VALUES AND NUMBER OF STATIONS FOR 1989
REFLECT THE STATIONS COLLECTED IN 1989, 1988, AND 1987
FOR FUNCTIONAL CLASS 9

EAL TRAFFIC PARAMETERS FOR INDIVIDUAL CLASSIFICATION STATIONS
1989
FUNCTIONAL CLASS 11 -- URBAN INTERSTATE

COU	STA	ROUTE	MILE POINT	FED AID	AADT	TRUCK FRACT	FRACT OF TRK WITH COAL	AXLES PER NON COAL TRUCK	AXLES PER COAL TRUCK	EAL'S/ NON COAL AXLE	EAL'S/ COAL TRUCK AXLE	2-DIRECTION EAL'S IN 1000'S 4-TIRE VEHICLES	NON-COAL TRUCKS	COAL TRUCKS	TOTAL
15	752	I 65	120.0	1	40000	0.256	0.000	4.489	0.000	0.086	0.000	54.	1441.	0.	1495.
56	A03	I 71	4.2	1	46900	0.105	0.000	4.133	0.000	0.098	0.000	77.	729.	0.	806.
56	D01	I 265	23.9	1	28200	0.114	0.000	4.029	0.000	0.099	0.000	46.	468.	0.	514.
76	610	I 75	86.6	1	24058	0.226	0.005	4.419	4.700	0.086	2.434	34.	753.	121.	908.

SUMMARY OF AVERAGE VALUES FOR
FUNCTIONAL CLASS 11 -- URBAN INTERSTATE

UNCLASSIFIED ROADS

AADT

NO OF STAS.	89	88	87	86	85	84	83	82	81	80	0
10.	67315.	86274.	102618.	49131.	69359.	45789.	73436.	50320.	31533.	77610.	0.

PERCENT TRUCKS

10.	13.502	10.360	13.106	13.597	7.971	6.670	10.417	12.183	18.003	7.152	0.000

2-DIRECTION EAL'S DUE TO 4-TIRED VEHICLES IN 1000'S

10.	108.	141.	162.	77.	116.	78.	118.	82.	48.	131.	0.

AXLES PER TRUCK (UNCLASSIFIED)

10.	4.031	3.857	3.954	4.223	3.736	3.613	3.912	3.891	4.140	3.722	0.000

EAL'S PER TRUCK AXLE (UNCLASSIFIED)

10.	0.146	0.184	0.167	0.170	0.211	0.160	0.144	0.143	0.154	0.154	0.000

2-DIRECTION EAL'S DUE TO UNCLASSIFIED VEHICLES IN1000'S

10.	1827.	2329.	3234.	1764.	1546.	718.	1877.	1072.	1219.	1162.	0.

CLASSIFIED (HEAVY/COAL) ROADS

AADT

NO OF STAS.	89	88	87	86	85	84	83	82	81	80	0
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

PERCENT TRUCKS

0.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

2-DIRECTION EAL'S DUE TO 4-TIRED VEHICLES IN 1000'S

0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

PERCENT OF TRUCKS (HEAVY/COAL)

0.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

AXLES PER TRUCK (NORMAL)

0.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

AXLES PER TRUCK (HEAVY/COAL)

0.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

EAL'S PER TRUCK AXLE (NORMAL)

0.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

EAL'S PER TRUCK AXLE (HEAVY/COAL)

0.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

2-DIRECTION EAL'S DUE TO NORMAL VEHICLES IN 1000 'S

0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

2-DIRECTION EAL'S DUE TO (HEAVY/COAL) VEHICLES IN 1000'S

0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

AVERAGE VALUES AND NUMBER OF STATIONS FOR 1989
REFLECT THE STATIONS COLLECTED IN 1989, 1988, AND 1987
FOR FUNCTIONAL CLASS 11

EAL TRAFFIC PARAMETERS FOR INDIVIDUAL CLASSIFICATION STATIONS
1989
FUNCTIONAL CLASS 12 -- URBAN OTHER FREEWAYS & EXPRESSWAYS

COU	STA	ROUTE	MILE POINT	FED AID	AADT	TRUCK FRACT	FRACT OF TRK WITH COAL	AXLES PER NON COAL TRUCK	AXLES PER COAL TRUCK	EAL'S/ NON COAL AXLE	EAL'S/ COAL TRUCK AXLE	2-DIRECTION EAL'S IN 1000'S 4-TIRE VEHICLES	NON-COAL TRUCKS	COAL TRUCKS	TOTAL
30	OU8	US 60	6.1	1	20649	0.082	0.097	3.757	4.915	0.134	0.311	35.	280.	92.	406.

SUMMARY OF AVERAGE VALUES FOR
FUNCTIONAL CLASS 12 -- URBAN OTHER FREEWAYS & EXPRESSWAYS

UNCLASSIFIED ROADS

NO OF STAS.	89	88	87	86	85	84	83	82	81	80	79
						AADT					
5.	11345.	14571.	6505.	6172.	15637.	11397.	0.	3405.	19174.	0.	13638.
						PERCENT TRUCKS					
5.	7.835	9.758	4.950	24.075	5.984	7.912	0.000	7.914	5.042	0.000	11.688
						2-DIRECTION EAL'S DUE TO 4-TIRED VEHICLES IN 1000'S					
5.	19.	24.	11.	9.	27.	19.	0.	6.	33.	0.	22.
						AXLES PER TRUCK (UNCLASSIFIED)					
5.	3.350	3.682	2.852	4.431	3.097	3.580	0.000	2.538	2.833	0.000	3.779
						EAL'S PER TRUCK AXLE (UNCLASSIFIED)					
5.	0.136	0.138	0.132	0.123	0.130	0.125	0.000	0.138	0.160	0.000	0.125
						2-DIRECTION EAL'S DUE TO UNCLASSIFIED VEHICLES IN1000'S					
5.	184.	278.	44.	281.	128.	148.	0.	34.	146.	0.	275.

CLASSIFIED (HEAVY/COAL) ROADS

NO OF STAS.	89	88	87	86	85	84	83	82	81	80	79
						AADT					
4.	18465.	20812.	16200.	18504.	20269.	16700.	16700.	16185.	13853.	13253.	0.
						PERCENT TRUCKS					
4.	8.942	7.791	9.898	9.738	11.814	9.780	10.228	10.766	11.694	10.345	0.000
						2-DIRECTION EAL'S DUE TO 4-TIRED VEHICLES IN 1000'S					
4.	31.	35.	27.	30.	32.	27.	27.	26.	22.	22.	0.
						PERCENT OF TRUCKS (HEAVY/COAL)					
4.	19.933	10.953	29.531	21.236	10.447	15.906	23.832	19.801	24.877	17.797	0.000
						AXLES PER TRUCK (NORMAL)					
4.	3.513	3.617	3.340	3.610	3.832	3.478	3.479	3.468	3.485	3.437	0.000
						AXLES PER TRUCK (HEAVY/COAL)					
4.	4.922	4.910	4.931	4.911	4.860	4.854	4.816	4.814	4.908	4.906	0.000
						EAL'S PER TRUCK AXLE (NORMAL)					
4.	0.129	0.132	0.125	0.134	0.121	0.125	0.124	0.124	0.136	0.137	0.000
						EAL'S PER TRUCK AXLE (HEAVY/COAL)					
4.	0.313	0.310	0.316	0.311	0.319	0.317	0.338	0.337	0.396	0.396	0.000
						2-DIRECTION EAL'S DUE TO NORMAL VEHICLES IN 1000 'S					
4.	219.	252.	172.	250.	379.	218.	206.	219.	211.	194.	0.
						2-DIRECTION EAL'S DUE TO (HEAVY/COAL) VEHICLES IN 1000'S					
4.	177.	99.	259.	213.	119.	146.	242.	204.	286.	173.	0.

AVERAGE VALUES AND NUMBER OF STATIONS FOR 1989
REFLECT THE STATIONS COLLECTED IN 1989, 1988, AND 1987
FOR FUNCTIONAL CLASS 12

EAL TRAFFIC PARAMETERS FOR INDIVIDUAL CLASSIFICATION STATIONS
1989
FUNCTIONAL CLASS 14 -- URBAN OTHER PRINCIPAL ARTERIAL

COU	STA	ROUTE	MILE POINT	FED AID	AADT	TRUCK FRACT	FRACT OF TRK WITH COAL	AXLES PER NON COAL	AXLES PER COAL TRUCK	EAL'S/ NON COAL AXLE	EAL'S/ COAL TRUCK AXLE	2-DIRECTION EAL'S IN 1000'S 4-TIRE VEHICLES	NON-COAL TRUCKS	COAL TRUCKS	TOTAL
10	002	US 23	0.3	1	20577	0.123	0.240	3.962	4.669	0.168	2.172	33.	469.	2258.	2759.
11	A83	KY 34	13.3	1	11628	0.041	0.000	2.528	0.000	0.186	0.000	20.	83.	0.	103.
11	B34	US 127	1.7	1	14500	0.067	0.000	3.788	0.000	0.179	0.000	25.	239.	0.	264.
30	A41	US 60	11.8	1	10598	0.081	0.000	3.419	0.000	0.177	0.000	18.	190.	0.	208.
30	A63	US 60	11.8	1	11139	0.074	0.000	3.141	0.000	0.178	0.000	19.	168.	0.	186.
34	A62	US 60	7.5	1	19000	0.040	0.000	2.288	0.000	0.203	0.000	33.	129.	0.	163.
34	D88	KY 4	17.0	1	49839	0.030	0.000	3.134	0.000	0.171	0.000	88.	295.	0.	383.
34	D93	KY 4	1.0	1	48101	0.043	0.000	3.221	0.000	0.183	0.000	84.	446.	0.	530.
34	G51	US 60	3.7	1	37400	0.074	0.000	3.537	0.000	0.168	0.000	63.	597.	0.	660.
45	E44	US 23	5.3	1	13029	0.107	0.137	4.041	4.668	0.156	2.162	21.	278.	704.	1003.
47	P07	US 31	29.6	1	24000	0.031	0.000	3.188	0.000	0.177	0.000	42.	154.	0.	196.
56	L40	US 31	20.3	1	9150	0.073	0.000	2.286	0.000	0.229	0.000	15.	128.	0.	143.
56	L46		0.0	1	15000	0.050	0.000	2.398	0.000	0.212	0.000	26.	138.	0.	164.
56	M44		0.0	1	19300	0.063	0.000	3.232	0.000	0.181	0.000	33.	261.	0.	294.
56	242	US 60	7.8	1	34220	0.054	0.000	2.836	0.000	0.206	0.000	59.	394.	0.	453.
78	A31	KY 55	1.1	1	9270	0.050	0.000	3.205	0.000	0.185	0.000	16.	101.	0.	117.

SUMMARY OF AVERAGE VALUES FOR
FUNCTIONAL CLASS 14 -- URBAN OTHER PRINCIPAL ARTERIAL

UNCLASSIFIED ROADS

NO OF STAS.	89	88	87	86	85	84	83	82	81	80	79
						AADT					
63.	16095.	16315.	13029.	10760.	14958.	11992.	9383.	10802.	10260.	4565.	12148.
						PERCENT TRUCKS					
63.	4.523	4.859	3.852	6.981	5.293	5.115	5.499	5.863	6.643	6.967	8.283
						2-DIRECTION EAL'S DUE TO 4-TIRED VEHICLES IN 1000'S					
63.	28.	28.	23.	18.	26.	21.	16.	19.	17.	8.	20.
						AXLES PER TRUCK (UNCLASSIFIED)					
63.	2.888	3.043	2.730	3.028	2.951	2.793	2.850	2.823	2.899	3.085	3.132
						EAL'S PER TRUCK AXLE (UNCLASSIFIED)					
63.	0.184	0.196	0.174	0.177	0.229	0.166	0.150	0.150	0.158	0.153	0.139
						2-DIRECTION EAL'S DUE TO UNCLASSIFIED VEHICLES IN1000'S					
63.	139.	155.	83.	132.	188.	93.	75.	92.	110.	53.	180.

CLASSIFIED (HEAVY/COAL) ROADS

NO OF STAS.	89	88	87	86	85	84	83	82	81	80	79
						AADT					
8.	13637.	21573.	10783.	13312.	14645.	20488.	8859.	12676.	13049.	0.	0.
						PERCENT TRUCKS					
8.	10.722	6.316	11.273	12.751	8.318	5.156	10.050	7.729	9.993	0.000	0.000
						2-DIRECTION EAL'S DUE TO 4-TIRED VEHICLES IN 1000'S					
8.	22.	37.	17.	21.	25.	35.	14.	21.	22.	0.	0.
						PERCENT OF TRUCKS (HEAVY/COAL)					
8.	20.326	8.916	23.205	19.433	21.468	21.178	24.680	16.050	23.876	0.000	0.000
						AXLES PER TRUCK (NORMAL)					
8.	3.678	3.954	3.493	3.358	3.349	3.853	3.251	3.262	2.972	0.000	0.000
						AXLES PER TRUCK (HEAVY/COAL)					
8.	4.562	4.670	4.497	4.309	4.344	4.278	4.181	4.272	3.941	0.000	0.000
						EAL'S PER TRUCK AXLE (NORMAL)					
8.	0.167	0.172	0.168	0.188	0.211	0.153	0.148	0.147	0.166	0.000	0.000
						EAL'S PER TRUCK AXLE (HEAVY/COAL)					
8.	3.226	3.331	3.628	4.058	3.195	1.702	0.843	0.772	1.007	0.000	0.000
						2-DIRECTION EAL'S DUE TO NORMAL VEHICLES IN 1000 'S					
8.	286.	308.	247.	297.	221.	178.	129.	141.	156.	0.	0.
						2-DIRECTION EAL'S DUE TO (HEAVY/COAL) VEHICLES IN 1000'S					
8.	1404.	687.	1516.	2058.	1219.	595.	288.	202.	524.	0.	0.

AVERAGE VALUES AND NUMBER OF STATIONS FOR 1989
REFLECT THE STATIONS COLLECTED IN 1989, 1988, AND 1987
FOR FUNCTIONAL CLASS 14

EAL TRAFFIC PARAMETERS FOR INDIVIDUAL CLASSIFICATION STATIONS
1989
FUNCTIONAL CLASS 16 -- URBAN MINOR ARTERIAL

COU	STA	ROUTE	MILE POINT	FED AID	AADT	TRUCK FRACT	FRACT OF TRK WITH COAL	AXLES PER NON COAL	AXLES PER COAL TRUCK	EAL'S/ NON COAL AXLE	EAL'S/ COAL TRUCK AXLE	2-DIRECTION EAL'S IN 1000'S 4-TIRE VEHICLES	NON-COAL TRUCKS	COAL TRUCKS	TOTAL
8	K99	KY 237	7.9	1	6257	0.067	0.000	2.956	0.000	0.109	0.000	11.	49.	0.	60.
19	S09	KY 10	1.8	1	1958	0.043	0.000	2.370	0.000	0.092	0.000	3.	7.	0.	10.
34	A15		0.0	1	18752	0.019	0.000	2.218	0.000	0.103	0.000	34.	29.	0.	63.
45	E15	KY 207	16.7	1	9400	0.024	0.000	2.361	0.000	0.089	0.000	17.	18.	0.	34.
47	B80	KY3005	1.5	1	3619	0.057	0.000	3.191	0.000	0.113	0.000	6.	27.	0.	33.
51	A02	KY 351	0.2	1	10500	0.031	0.000	2.876	0.000	0.115	0.000	19.	39.	0.	58.
56	A15	KY1932	2.8	1	29200	0.024	0.000	2.620	0.000	0.111	0.000	52.	75.	0.	127.
56	OU2	KY1631	0.0	1	18500	0.093	0.000	3.360	0.000	0.111	0.000	31.	233.	0.	264.
56	335	KY1819	10.5	1	11900	0.036	0.000	2.473	0.000	0.102	0.000	21.	40.	0.	61.
56	419	KY1819	9.4	1	8460	0.035	0.000	2.321	0.000	0.101	0.000	15.	26.	0.	40.
56	556	KY1065	2.4	1	13500	0.035	0.000	2.702	0.000	0.105	0.000	24.	48.	0.	72.
56	793	KY1631	4.8	1	20500	0.099	0.000	3.122	0.000	0.110	0.000	34.	253.	0.	286.
76	A62	US 25	19.1	1	18200	0.037	0.000	2.790	0.000	0.124	0.000	32.	85.	0.	117.
76	A82	KY 169	0.1	1	2637	0.025	0.000	2.245	0.000	0.087	0.000	5.	5.	0.	9.
78	A33	KY 55	0.2	1	5680	0.034	0.000	2.348	0.000	0.109	0.000	10.	18.	0.	28.
109	A01	KY3183	4.1	1	5150	0.061	0.000	2.965	0.000	0.116	0.000	9.	40.	0.	49.

SUMMARY OF AVERAGE VALUES FOR
FUNCTIONAL CLASS 16 -- URBAN MINOR ARTERIAL

UNCLASSIFIED ROADS

NO OF STAS.	89	88	87	86	85	84	83	82	81	80	79
						AADT					
114.	9824.	8984.	9906.	8714.	9175.	12046.	7397.	9270.	7914.	7664.	14442.
						PERCENT TRUCKS					
114.	4.277	4.133	4.309	4.647	4.238	6.730	4.291	5.093	4.730	5.035	6.194
						2-DIRECTION EAL'S DUE TO 4-TIRED VEHICLES IN 1000'S					
114.	17.	16.	17.	15.	16.	21.	13.	16.	14.	13.	24.
						AXLES PER TRUCK (UNCLASSIFIED)					
114.	2.620	2.589	2.623	2.669	2.617	2.682	2.523	2.579	2.615	2.543	2.795
						EAL'S PER TRUCK AXLE (UNCLASSIFIED)					
114.	0.103	0.103	0.103	0.099	0.088	0.089	0.198	0.198	0.173	0.175	0.117
						2-DIRECTION EAL'S DUE TO UNCLASSIFIED VEHICLES IN1000'S					
114.	45.	40.	43.	43.	38.	91.	58.	71.	59.	64.	122.

CLASSIFIED (HEAVY/COAL) ROADS

NO OF STAS.	89	88	87	86	85	84	83	82	81	80	79
						AADT					
5.	8610.	5738.	10524.	7849.	8041.	2800.	3329.	11902.	5008.	0.	0.
						PERCENT TRUCKS					
5.	10.007	5.743	12.849	8.979	5.935	2.488	13.718	8.757	8.728	0.000	0.000
						2-DIRECTION EAL'S DUE TO 4-TIRED VEHICLES IN 1000'S					
5.	15.	10.	18.	13.	14.	5.	5.	20.	8.	0.	0.
						PERCENT OF TRUCKS (HEAVY/COAL)					
5.	19.079	13.157	23.027	32.091	17.409	3.077	25.595	26.052	26.085	0.000	0.000
						AXLES PER TRUCK (NORMAL)					
5.	3.238	2.932	3.442	3.296	3.130	2.407	2.966	3.252	2.972	0.000	0.000
						AXLES PER TRUCK (HEAVY/COAL)					
5.	3.713	3.633	3.766	3.468	3.282	3.500	3.306	3.390	3.136	0.000	0.000
						EAL'S PER TRUCK AXLE (NORMAL)					
5.	0.096	0.087	0.102	0.105	0.093	0.075	0.161	0.132	0.150	0.000	0.000
						EAL'S PER TRUCK AXLE (HEAVY/COAL)					
5.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
						2-DIRECTION EAL'S DUE TO NORMAL VEHICLES IN 1000 'S					
5.	50.	29.	63.	70.	40.	4.	37.	122.	51.	0.	0.
						2-DIRECTION EAL'S DUE TO (HEAVY/COAL) VEHICLES IN 1000'S					
5.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

AVERAGE VALUES AND NUMBER OF STATIONS FOR 1989
REFLECT THE STATIONS COLLECTED IN 1989, 1988, AND 1987
FOR FUNCTIONAL CLASS 16

EAL TRAFFIC PARAMETERS FOR INDIVIDUAL CLASSIFICATION STATIONS
1989
FUNCTIONAL CLASS 17 -- URBAN COLLECTOR

COU	STA	ROUTE	MILE POINT	FED AID	AADT	TRUCK FRACT	FRACT OF TRK WITH COAL	AXLES PER NON COAL	AXLES PER COAL TRUCK	EAL'S/ NON COAL AXLE	EAL'S/ COAL TRUCK AXLE	2-DIRECTION EAL'S IN 1000'S 4-TIRE VEHICLES	NON-COAL TRUCKS	COAL TRUCKS	TOTAL
34	C34		0.0	1	12276	0.017	0.000	2.095	0.000	0.178	0.000	22.	28.	0.	50.
56	P14	KY1142	1.4	1	11722	0.021	0.000	2.183	0.000	0.161	0.000	21.	31.	0.	52.
56	294		0.0	1	2002	0.059	0.000	2.103	0.000	0.243	0.000	3.	22.	0.	25.
56	620		0.0	1	11600	0.059	0.000	2.710	0.000	0.187	0.000	20.	126.	0.	146.
56	665		0.0	1	6540	0.021	0.000	2.330	0.000	0.206	0.000	12.	24.	0.	36.
59	P49	KY 371	3.2	1	27600	0.039	0.000	2.571	0.000	0.173	0.000	48.	177.	0.	225.
87	A08	KY 713	3.8	1	1230	0.082	0.000	2.020	0.000	0.145	0.000	2.	11.	0.	13.
87	A45	KY1991	0.0	1	890	0.032	0.000	2.110	0.000	0.174	0.000	2.	4.	0.	5.
109	A94	KY 658	0.3	1	2640	0.039	0.000	3.087	0.000	0.191	0.000	5.	22.	0.	27.
109	B21	KY2223	0.0	1	3070	0.047	0.000	2.896	0.000	0.200	0.000	5.	31.	0.	36.

SUMMARY OF AVERAGE VALUES FOR
FUNCTIONAL CLASS 17 -- URBAN COLLECTOR

UNCLASSIFIED ROADS

AADT

NO OF STAS.	89	88	87	86	85	84	83	82	81	80	79
90.	4658.	4799.	3994.	3118.	4305.	5380.	3112.	3596.	3659.	3058.	3828.
						PERCENT TRUCKS					
90.	2.998	3.288	2.657	2.476	2.938	3.065	3.289	3.146	3.259	5.536	7.249
						2-DIRECTION EAL'S DUE TO 4-TIRED VEHICLES IN 1000'S					
90.	8.	8.	7.	6.	8.	9.	5.	6.	6.	5.	7.
						AXLES PER TRUCK (UNCLASSIFIED)					
90.	2.359	2.301	2.376	2.337	2.400	2.392	2.369	2.364	2.412	2.523	2.572
						EAL'S PER TRUCK AXLE (UNCLASSIFIED)					
90.	0.181	0.189	0.177	0.167	0.237	0.170	0.153	0.152	0.165	0.171	0.143
						2-DIRECTION EAL'S DUE TO UNCLASSIFIED VEHICLES IN1000'S					
90.	21.	23.	16.	15.	25.	30.	16.	18.	21.	29.	34.

CLASSIFIED (HEAVY/COAL) ROADS

AADT

NO OF STAS.	89	88	87	86	85	84	83	82	81	80	79
2.	6110.	2740.	9480.	3819.	11780.	0.	2205.	0.	3419.	0.	0.
						PERCENT TRUCKS					
2.	8.064	1.326	14.803	3.961	10.148	0.000	5.696	0.000	3.728	0.000	0.000
						2-DIRECTION EAL'S DUE TO 4-TIRED VEHICLES IN 1000'S					
2.	10.	5.	15.	7.	19.	0.	4.	0.	6.	0.	0.
						PERCENT OF TRUCKS (HEAVY/COAL)					
2.	17.039	28.000	6.078	5.212	40.017	0.000	10.160	0.000	6.897	0.000	0.000
						AXLES PER TRUCK (NORMAL)					
2.	3.618	3.192	4.043	2.374	3.110	0.000	2.611	0.000	2.526	0.000	0.000
						AXLES PER TRUCK (HEAVY/COAL)					
2.	4.729	5.000	4.459	4.146	4.416	0.000	4.095	0.000	4.333	0.000	0.000
						EAL'S PER TRUCK AXLE (NORMAL)					
2.	0.197	0.227	0.166	0.178	0.208	0.000	0.154	0.000	0.159	0.000	0.000
						EAL'S PER TRUCK AXLE (HEAVY/COAL)					
2.	3.245	2.712	3.779	4.242	2.719	0.000	0.924	0.000	0.756	0.000	0.000
						2-DIRECTION EAL'S DUE TO NORMAL VEHICLES IN 1000 'S					
2.	164.	7.	322.	31.	170.	0.	20.	0.	17.	0.	0.
						2-DIRECTION EAL'S DUE TO (HEAVY/COAL) VEHICLES IN 1000'S					
2.	286.	49.	523.	49.	2095.	0.	18.	0.	11.	0.	0.

AVERAGE VALUES AND NUMBER OF STATIONS FOR 1989
REFLECT THE STATIONS COLLECTED IN 1989, 1988, AND 1987
FOR FUNCTIONAL CLASS 17

SUMMARY OF AVERAGE VALUES FOR
FUNCTIONAL CLASS 19 -- URBAN LOCAL

UNCLASSIFIED ROADS

NO OF STAS.	89	88	87	86	85	84	83	82	81	80	79
						AADT					
2.	4808.	0.	4808.	1003.	1954.	2210.	0.	1285.	0.	0.	0.
						PERCENT TRUCKS					
2.	3.816	0.000	3.816	4.038	2.847	2.832	0.000	1.900	0.000	0.000	0.000
						2-DIRECTION EAL'S DUE TO 4-TIRED VEHICLES IN 1000'S					
2.	8.	0.	8.	2.	3.	4.	0.	2.	0.	0.	0.
						AXLES PER TRUCK (UNCLASSIFIED)					
2.	2.633	0.000	2.633	2.557	2.293	2.284	0.000	2.400	0.000	0.000	0.000
						EAL'S PER TRUCK AXLE (UNCLASSIFIED)					
2.	0.172	0.000	0.172	0.183	0.231	0.173	0.000	0.143	0.000	0.000	0.000
						2-DIRECTION EAL'S DUE TO UNCLASSIFIED VEHICLES IN1000'S					
2.	29.	0.	29.	5.	11.	10.	0.	3.	0.	0.	0.

CLASSIFIED (HEAVY/COAL) ROADS

NO OF STAS.	89	88	87	86	85	84	83	82	81	80	79
						AADT					
0.	0.	0.	0.	0.	1528.	0.	0.	0.	0.	0.	0.
						PERCENT TRUCKS					
0.	0.000	0.000	0.000	0.000	1.660	0.000	0.000	0.000	0.000	0.000	0.000
						2-DIRECTION EAL'S DUE TO 4-TIRED VEHICLES IN 1000'S					
0.	0.	0.	0.	0.	3.	0.	0.	0.	0.	0.	0.
						PERCENT OF TRUCKS (HEAVY/COAL)					
0.	0.000	0.000	0.000	0.000	8.333	0.000	0.000	0.000	0.000	0.000	0.000
						AXLES PER TRUCK (NORMAL)					
0.	0.000	0.000	0.000	0.000	2.103	0.000	0.000	0.000	0.000	0.000	0.000
						AXLES PER TRUCK (HEAVY/COAL)					
0.	0.000	0.000	0.000	0.000	4.000	0.000	0.000	0.000	0.000	0.000	0.000
						EAL'S PER TRUCK AXLE (NORMAL)					
0.	0.000	0.000	0.000	0.000	0.253	0.000	0.000	0.000	0.000	0.000	0.000
						EAL'S PER TRUCK AXLE (HEAVY/COAL)					
0.	0.000	0.000	0.000	0.000	4.454	0.000	0.000	0.000	0.000	0.000	0.000
						2-DIRECTION EAL'S DUE TO NORMAL VEHICLES IN 1000 'S					
0.	0.	0.	0.	0.	4.	0.	0.	0.	0.	0.	0.
						2-DIRECTION EAL'S DUE TO (HEAVY/COAL) VEHICLES IN 1000'S					
0.	0.	0.	0.	0.	13.	0.	0.	0.	0.	0.	0.

AVERAGE VALUES AND NUMBER OF STATIONS FOR 1989
REFLECT THE STATIONS COLLECTED IN 1989, 1988, AND 1987
FOR FUNCTIONAL CLASS 19

APPENDIX C

AVERAGE VALUES (SMOOTHED)

FUNCTIONAL CLASS 01 -- RURAL INTERSTATE
AVERAGE VALUES (SMOOTHED)

UNCLASSIFIED ROADS

ANNUAL CHANGE (%)	89	88	87	86	85	84	83	82	81	80	79
	ANNUAL AVERAGE DAILY TRAFFIC										
2.678	21055.	20491.	19927.	19364.	18800.	18236.	17672.	17108.	16545.	15981.	15417.
	PERCENT TRUCKS										
1.615	30.167	29.680	29.192	28.705	28.218	27.731	27.243	26.756	26.269	25.782	25.294
	2-DIRECTION EAL'S DUE TO 4-TIRED VEHICLES IN 1000'S										
2.297	27.	27.	26.	25.	25.	24.	24.	23.	22.	22.	21.
	AXLES PER TRUCK (UNCLASSIFIED)										
0.329	4.511	4.496	4.481	4.467	4.452	4.437	4.422	4.407	4.392	4.378	4.363
	EAL'S PER TRUCK AXLE (UNCLASSIFIED)										
0.824	0.158	0.157	0.156	0.154	0.153	0.152	0.150	0.149	0.148	0.146	0.145
	2-DIRECTION EAL'S DUE TO UNCLASSIFIED VEHICLES IN 1000'S										
4.340	1558.	1490.	1422.	1355.	1287.	1220.	1152.	1084.	1017.	949.	882.

CLASSIFIED (HEAVY/COAL) ROADS

ANNUAL CHANGE (%)	89	88	87	86	85	84	83	82	81	80	79
	ANNUAL AVERAGE DAILY TRAFFIC										
-0.764	19346.	19494.	19642.	19789.	19937.	20085.	20233.	20380.	20528.	20676.	20824.
	PERCENT TRUCKS										
1.802	25.964	25.496	25.028	24.561	24.093	23.625	23.157	22.689	22.222	21.754	21.286
	2-DIRECTION EAL'S DUE TO 4-TIRED VEHICLES IN 1000'S										
-1.271	26.	27.	27.	27.	28.	28.	28.	29.	29.	29.	29.
	PERCENT OF TRUCKS (HEAVY/COAL)										
0.398	6.568	6.541	6.515	6.489	6.463	6.437	6.411	6.385	6.359	6.333	6.306
	AXLES PER TRUCK (NORMAL)										
0.259	4.346	4.334	4.323	4.312	4.301	4.289	4.278	4.267	4.256	4.244	4.233
	AXLES PER TRUCK (HEAVY/COAL)										
0.782	5.291	5.250	5.208	5.167	5.126	5.084	5.043	5.001	4.960	4.919	4.877
	EAL'S PER TRUCK AXLE (NORMAL)										
0.799	0.158	0.156	0.155	0.154	0.153	0.151	0.150	0.149	0.148	0.146	0.145
	EAL'S PER TRUCK AXLE (HEAVY/COAL)										
7.558	0.438	0.405	0.372	0.339	0.306	0.272	0.239	0.206	0.173	0.140	0.107
	2-DIRECTION EAL'S DUE TO NORMAL VEHICLES IN 1000 'S										
2.008	1201.	1177.	1153.	1129.	1105.	1081.	1056.	1032.	1008.	984.	960.
	2-DIRECTION EAL'S DUE TO (HEAVY/COAL) VEHICLES IN 1000'S										
6.760	214.	200.	185.	171.	156.	142.	127.	113.	98.	84.	69.

FUNCTIONAL CLASS 02 -- RURAL PRINCIPAL ARTERIAL
AVERAGE VALUES (SMOOTHED)

UNCLASSIFIED ROADS

ANNUAL CHANGE (%)	89	88	87	86	85	84	83	82	81	80	79
	ANNUAL AVERAGE DAILY TRAFFIC										
1.472	5973.	5885.	5797.	5709.	5621.	5533.	5445.	5357.	5269.	5181.	5093.
	PERCENT TRUCKS										
2.304	12.522	12.234	11.945	11.657	11.368	11.080	10.791	10.503	10.214	9.926	9.637
	2-DIRECTION EAL'S DUE TO 4-TIRED VEHICLES IN 1000'S										
1.229	10.	10.	9.	9.	9.	9.	9.	9.	9.	9.	8.
	AXLES PER TRUCK (UNCLASSIFIED)										
1.471	3.700	3.646	3.591	3.537	3.482	3.428	3.373	3.319	3.265	3.210	3.156
	EAL'S PER TRUCK AXLE (UNCLASSIFIED)										
-11.320	0.153	0.170	0.187	0.205	0.222	0.239	0.257	0.274	0.291	0.308	0.326
	2-DIRECTION EAL'S DUE TO UNCLASSIFIED VEHICLES IN 1000'S										
-1.747	145.	147.	150.	152.	155.	157.	160.	162.	165.	168.	170.

CLASSIFIED (HEAVY/COAL) ROADS

ANNUAL CHANGE (%)	89	88	87	86	85	84	83	82	81	80	79
	ANNUAL AVERAGE DAILY TRAFFIC										
0.747	7981.	7921.	7861.	7802.	7742.	7683.	7623.	7563.	7504.	7444.	7385.
	PERCENT TRUCKS										
-2.063	14.654	14.956	15.258	15.561	15.863	16.165	16.468	16.770	17.072	17.375	17.677
	2-DIRECTION EAL'S DUE TO 4-TIRED VEHICLES IN 1000'S										
0.996	13.	12.	12.	12.	12.	12.	12.	12.	12.	11.	11.
	PERCENT OF TRUCKS (HEAVY/COAL)										
-3.474	26.138	27.047	27.955	28.863	29.771	30.679	31.587	32.495	33.403	34.311	35.219
	AXLES PER TRUCK (NORMAL)										
0.279	3.562	3.552	3.542	3.532	3.522	3.512	3.502	3.492	3.482	3.472	3.462
	AXLES PER TRUCK (HEAVY/COAL)										
2.342	4.602	4.494	4.387	4.279	4.171	4.063	3.956	3.848	3.740	3.632	3.524
	EAL'S PER TRUCK AXLE (NORMAL)										
-10.611	0.158	0.175	0.192	0.208	0.225	0.242	0.259	0.276	0.292	0.309	0.326
	EAL'S PER TRUCK AXLE (HEAVY/COAL)										
-7.023	4.039	4.323	4.606	4.890	5.174	5.457	5.741	6.025	6.308	6.592	6.876
	2-DIRECTION EAL'S DUE TO NORMAL VEHICLES IN 1000 'S										
-10.608	150.	166.	182.	198.	214.	230.	246.	262.	278.	294.	310.
	2-DIRECTION EAL'S DUE TO (HEAVY/COAL) VEHICLES IN 1000'S										
-5.187	2415.	2541.	2666.	2791.	2917.	3042.	3167.	3292.	3418.	3543.	3668.

FUNCTIONAL CLASS 06 -- RURAL MINOR ARTERIAL
AVERAGE VALUES (SMOOTHED)

ANNUAL CHANGE (%)	89	88	87	86	85	84	83	82	81	80	79
					UNCLASSIFIED ROADS						
					ANNUAL AVERAGE DAILY TRAFFIC						
0.265	3913.	3903.	3893.	3882.	3872.	3861.	3851.	3841.	3830.	3820.	3810.
					PERCENT TRUCKS						
-5.574	7.496	7.914	8.332	8.750	9.168	9.585	10.003	10.421	10.839	11.257	11.675
					2-DIRECTION EAL'S DUE TO 4-TIRED VEHICLES IN 1000'S						
0.715	7.	7.	7.	7.	6.	6.	6.	6.	6.	6.	6.
					AXLES PER TRUCK (UNCLASSIFIED)						
0.106	3.094	3.091	3.088	3.084	3.081	3.078	3.074	3.071	3.068	3.065	3.061
					EAL'S PER TRUCK AXLE (UNCLASSIFIED)						
6.388	0.299	0.280	0.261	0.242	0.223	0.203	0.184	0.165	0.146	0.127	0.108
					2-DIRECTION EAL'S DUE TO UNCLASSIFIED VEHICLES IN 1000'S						
3.438	91.	88.	85.	82.	78.	75.	72.	69.	66.	63.	60.
					CLASSIFIED (HEAVY/COAL) ROADS						
ANNUAL CHANGE (%)	89	88	87	86	85	84	83	82	81	80	79
					ANNUAL AVERAGE DAILY TRAFFIC						
0.461	3170.	3155.	3140.	3126.	3111.	3096.	3082.	3067.	3053.	3038.	3023.
					PERCENT TRUCKS						
-2.878	12.853	13.222	13.592	13.962	14.332	14.702	15.072	15.442	15.812	16.182	16.552
					2-DIRECTION EAL'S DUE TO 4-TIRED VEHICLES IN 1000'S						
0.882	5.	5.	5.	5.	5.	5.	5.	5.	5.	5.	5.
					PERCENT OF TRUCKS (HEAVY/COAL)						
-0.788	24.720	24.914	25.109	25.304	25.498	25.693	25.888	26.082	26.277	26.472	26.666
					AXLES PER TRUCK (NORMAL)						
0.348	3.353	3.342	3.330	3.319	3.307	3.295	3.284	3.272	3.260	3.249	3.237
					AXLES PER TRUCK (HEAVY/COAL)						
-0.479	4.275	4.295	4.316	4.336	4.357	4.377	4.398	4.418	4.439	4.459	4.480
					EAL'S PER TRUCK AXLE (NORMAL)						
6.145	0.267	0.250	0.234	0.217	0.201	0.185	0.168	0.152	0.136	0.119	0.103
					EAL'S PER TRUCK AXLE (HEAVY/COAL)						
-0.294	0.566	0.567	0.569	0.571	0.572	0.574	0.576	0.577	0.579	0.581	0.582
					2-DIRECTION EAL'S DUE TO NORMAL VEHICLES IN 1000 'S						
3.323	79.	77.	74.	71.	69.	66.	64.	61.	58.	56.	53.
					2-DIRECTION EAL'S DUE TO (HEAVY/COAL) VEHICLES IN 1000'S						
-1.046	139.	140.	142.	143.	144.	146.	147.	149.	150.	152.	153.

FUNCTIONAL CLASS 07 -- RURAL MAJOR COLLECTOR
AVERAGE VALUES (SMOOTHED)

ANNUAL CHANGE (%)	89	88	87	86	85	84	83	82	81	80	79
					UNCLASSIFIED ROADS						
					ANNUAL AVERAGE DAILY TRAFFIC						
1.393	2257.	2226.	2194.	2163.	2131.	2100.	2068.	2037.	2006.	1974.	1943.
					PERCENT TRUCKS						
-0.952	6.921	6.987	7.053	7.119	7.185	7.250	7.316	7.382	7.448	7.514	7.580
					2-DIRECTION EAL'S DUE TO 4-TIRED VEHICLES IN 1000'S						
1.533	4.	4.	4.	4.	4.	4.	4.	3.	3.	3.	3.
					AXLES PER TRUCK (UNCLASSIFIED)						
0.452	2.773	2.760	2.748	2.735	2.723	2.710	2.698	2.685	2.673	2.660	2.648
					EAL'S PER TRUCK AXLE (UNCLASSIFIED)						
2.248	0.169	0.165	0.161	0.157	0.153	0.150	0.146	0.142	0.138	0.134	0.131
					2-DIRECTION EAL'S DUE TO UNCLASSIFIED VEHICLES IN 1000'S						
3.044	24.	24.	23.	22.	21.	21.	20.	19.	18.	18.	17.
					CLASSIFIED (HEAVY/COAL) ROADS						
ANNUAL CHANGE (%)	89	88	87	86	85	84	83	82	81	80	79
					ANNUAL AVERAGE DAILY TRAFFIC						
3.202	3196.	3094.	2992.	2889.	2787.	2685.	2582.	2480.	2378.	2275.	2173.
					PERCENT TRUCKS						
-1.422	11.902	12.071	12.240	12.409	12.579	12.748	12.917	13.086	13.256	13.425	13.594
					2-DIRECTION EAL'S DUE TO 4-TIRED VEHICLES IN 1000'S						
3.565	5.	5.	5.	5.	4.	4.	4.	4.	4.	4.	3.
					PERCENT OF TRUCKS (HEAVY/COAL)						
-2.585	29.877	30.649	31.422	32.194	32.966	33.739	34.511	35.284	36.056	36.828	37.601
					AXLES PER TRUCK (NORMAL)						
0.391	2.990	2.978	2.966	2.955	2.943	2.931	2.920	2.908	2.896	2.884	2.873
					AXLES PER TRUCK (HEAVY/COAL)						
0.166	4.233	4.226	4.219	4.212	4.205	4.198	4.191	4.184	4.177	4.170	4.163
					EAL'S PER TRUCK AXLE (NORMAL)						
1.323	0.142	0.140	0.138	0.136	0.134	0.133	0.131	0.129	0.127	0.125	0.123
					EAL'S PER TRUCK AXLE (HEAVY/COAL)						
8.108	1.337	1.228	1.120	1.011	0.903	0.795	0.686	0.578	0.470	0.361	0.253
					2-DIRECTION EAL'S DUE TO NORMAL VEHICLES IN 1000 'S						
4.564	33.	32.	30.	29.	27.	26.	24.	23.	21.	19.	18.
					2-DIRECTION EAL'S DUE TO (HEAVY/COAL) VEHICLES IN 1000'S						
5.762	238.	224.	210.	197.	183.	169.	156.	142.	128.	115.	101.

FUNCTIONAL CLASS 08 -- RURAL MINOR COLLECTOR
AVERAGE VALUES (SMOOTHED)

UNCLASSIFIED ROADS

ANNUAL CHANGE (%)	89	88	87	86	85	84	83	82	81	80	79
	ANNUAL AVERAGE DAILY TRAFFIC										
-5.476	896.	945.	994.	1043.	1093.	1142.	1191.	1240.	1289.	1338.	1387.
	PERCENT TRUCKS										
-2.298	5.301	5.423	5.545	5.667	5.789	5.910	6.032	6.154	6.276	6.398	6.520
	2-DIRECTION EAL'S DUE TO 4-TIRED VEHICLES IN 1000'S										
-5.593	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.
	AXLES PER TRUCK (UNCLASSIFIED)										
0.840	2.476	2.456	2.435	2.414	2.393	2.372	2.352	2.331	2.310	2.289	2.268
	EAL'S PER TRUCK AXLE (UNCLASSIFIED)										
0.652	0.186	0.185	0.184	0.183	0.181	0.180	0.179	0.178	0.177	0.175	0.174
	2-DIRECTION EAL'S DUE TO UNCLASSIFIED VEHICLES IN 1000'S										
-0.539	10.	10.	10.	10.	10.	10.	10.	10.	10.	10.	10.

CLASSIFIED (HEAVY/COAL) ROADS

ANNUAL CHANGE (%)	89	88	87	86	85	84	83	82	81	80	79
	ANNUAL AVERAGE DAILY TRAFFIC										
-1.079	1620.	1637.	1655.	1672.	1690.	1707.	1725.	1742.	1760.	1777.	1795.
	PERCENT TRUCKS										
1.767	11.222	11.024	10.825	10.627	10.429	10.231	10.033	9.834	9.636	9.438	9.240
	2-DIRECTION EAL'S DUE TO 4-TIRED VEHICLES IN 1000'S										
-1.289	3.	3.	3.	3.	3.	3.	3.	3.	3.	3.	3.
	PERCENT OF TRUCKS (HEAVY/COAL)										
4.326	36.921	35.324	33.726	32.129	30.532	28.934	27.337	25.740	24.142	22.545	20.948
	AXLES PER TRUCK (NORMAL)										
2.526	2.921	2.848	2.774	2.700	2.626	2.553	2.479	2.405	2.331	2.257	2.184
	AXLES PER TRUCK (HEAVY/COAL)										
1.793	4.303	4.225	4.148	4.071	3.994	3.917	3.840	3.762	3.685	3.608	3.531
	EAL'S PER TRUCK AXLE (NORMAL)										
0.861	0.205	0.203	0.202	0.200	0.198	0.196	0.195	0.193	0.191	0.189	0.187
	EAL'S PER TRUCK AXLE (HEAVY/COAL)										
7.519	4.303	3.980	3.656	3.333	3.009	2.685	2.362	2.038	1.715	1.391	1.068
	2-DIRECTION EAL'S DUE TO NORMAL VEHICLES IN 1000 'S										
4.023	21.	20.	19.	18.	17.	16.	16.	15.	14.	13.	12.
	2-DIRECTION EAL'S DUE TO (HEAVY/COAL) VEHICLES IN 1000'S										
10.367	595.	533.	472.	410.	348.	287.	225.	163.	102.	40.	0.

FUNCTIONAL CLASS 09 -- RURAL LOCAL
AVERAGE VALUES (SMOOTHED)

UNCLASSIFIED ROADS

ANNUAL CHANGE (%)	89	88	87	86	85	84	83	82	81	80	79
					ANNUAL AVERAGE DAILY TRAFFIC						
0.123	445.	445.	444.	443.	443.	442.	442.	441.	441.	440.	440.
					PERCENT TRUCKS						
-10.373	3.802	4.197	4.591	4.985	5.380	5.774	6.169	6.563	6.957	7.352	7.746
					2-DIRECTION EAL'S DUE TO 4-TIRED VEHICLES IN 1000'S						
0.694	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
					AXLES PER TRUCK (UNCLASSIFIED)						
1.602	2.434	2.395	2.356	2.317	2.278	2.239	2.200	2.161	2.122	2.083	2.044
					EAL'S PER TRUCK AXLE (UNCLASSIFIED)						
1.521	0.221	0.218	0.214	0.211	0.208	0.204	0.201	0.198	0.194	0.191	0.187
					2-DIRECTION EAL'S DUE TO UNCLASSIFIED VEHICLES IN 1000'S						
-7.911	3.	3.	3.	4.	4.	4.	4.	5.	5.	5.	5.

CLASSIFIED (HEAVY/COAL) ROADS

ANNUAL CHANGE (%)	89	88	87	86	85	84	83	82	81	80	79
					ANNUAL AVERAGE DAILY TRAFFIC						
0.000	**********				670.	643.	**********				
					PERCENT TRUCKS						
0.000	**********				4.640	20.213	**********				
					2-DIRECTION EAL'S DUE TO 4-TIRED VEHICLES IN 1000'S						
0.000	**********				1.	1.	**********				
					PERCENT OF TRUCKS (HEAVY/COAL)						
0.000	**********				15.040	41.724	**********				
					AXLES PER TRUCK (NORMAL)						
0.000	**********				2.627	2.452	**********				
					AXLES PER TRUCK (HEAVY/COAL)						
0.000	**********				3.694	3.000	**********				
					EAL'S PER TRUCK AXLE (NORMAL)						
0.000	**********				0.226	0.224	**********				
					EAL'S PER TRUCK AXLE (HEAVY/COAL)						
0.000	**********				0.060	0.069	**********				
					2-DIRECTION EAL'S DUE TO NORMAL VEHICLES IN 1000 'S						
0.000	**********				5.	4.	**********				
					2-DIRECTION EAL'S DUE TO (HEAVY/COAL) VEHICLES IN 1000'S						
0.000	**********				0.	3.	**********				

FUNCTIONAL CLASS 11 -- URBAN INTERSTATE
AVERAGE VALUES (SMOOTHED)

UNCLASSIFIED ROADS

ANNUAL CHANGE (%)	89	88	87	86	85	84	83	82	81	80	0
	ANNUAL AVERAGE DAILY TRAFFIC										
1.429	61363.	60486.	59609.	58733.	57856.	56979.	56102.	55225.	54349.	53472.	52595.
	PERCENT TRUCKS										
4.485	13.906	13.282	12.658	12.035	11.411	10.787	10.164	9.540	8.916	8.293	7.669
	2-DIRECTION EAL'S DUE TO 4-TIRED VEHICLES IN 1000'S										
0.995	98.	97.	96.	95.	94.	93.	92.	91.	90.	89.	88.
	AXLES PER TRUCK (UNCLASSIFIED)										
1.015	4.108	4.066	4.025	3.983	3.941	3.899	3.858	3.816	3.774	3.733	3.691
	EAL'S PER TRUCK AXLE (UNCLASSIFIED)										
-3.017	0.146	0.150	0.155	0.159	0.163	0.168	0.172	0.177	0.181	0.185	0.190
	2-DIRECTION EAL'S DUE TO UNCLASSIFIED VEHICLES IN 1000'S										
3.256	1741.	1684.	1628.	1571.	1514.	1458.	1401.	1344.	1288.	1231.	1174.

ANNUAL CHANGE (%)	89	88	87	86	85	84	83	82	81	80	0
	CLASSIFIED (HEAVY/COAL) ROADS										
	ANNUAL AVERAGE DAILY TRAFFIC										
0.000	**********										
	PERCENT TRUCKS										
0.000	**********										
	2-DIRECTION EAL'S DUE TO 4-TIRED VEHICLES IN 1000'S										
0.000	**********										
	PERCENT OF TRUCKS (HEAVY/COAL)										
0.000	**********										
	AXLES PER TRUCK (NORMAL)										
0.000	**********										
	AXLES PER TRUCK (HEAVY/COAL)										
0.000	**********										
	EAL'S PER TRUCK AXLE (NORMAL)										
0.000	**********										
	EAL'S PER TRUCK AXLE (HEAVY/COAL)										
0.000	**********										
	2-DIRECTION EAL'S DUE TO NORMAL VEHICLES IN 1000 'S										
0.000	**********										
	2-DIRECTION EAL'S DUE TO (HEAVY/COAL) VEHICLES IN 1000'S										
0.000	**********										

FUNCTIONAL CLASS 12 -- URBAN OTHER FREEWAYS & EXPRESSWAYS
AVERAGE VALUES (SMOOTHED)

UNCLASSIFIED ROADS

ANNUAL CHANGE (%)	89	88	87	86	85	84	83	82	81	80	79
	ANNUAL AVERAGE DAILY TRAFFIC										
-1.465	10903.	11062.	11222.	11382.	11541.	11701.	11861.	12021.	12180.	12340.	12500.
	PERCENT TRUCKS										
3.529	11.396	10.993	10.591	10.189	9.787	9.385	8.983	8.581	8.178	7.776	7.374
	2-DIRECTION EAL'S DUE TO 4-TIRED VEHICLES IN 1000'S										
-2.540	18.	18.	18.	19.	19.	20.	20.	21.	21.	22.	22.
	AXLES PER TRUCK (UNCLASSIFIED)										
2.710	3.753	3.651	3.549	3.448	3.346	3.244	3.143	3.041	2.939	2.837	2.736
	EAL'S PER TRUCK AXLE (UNCLASSIFIED)										
-0.935	0.130	0.131	0.133	0.134	0.135	0.136	0.137	0.139	0.140	0.141	0.142
	2-DIRECTION EAL'S DUE TO UNCLASSIFIED VEHICLES IN 1000'S										
8.295	243.	223.	203.	183.	163.	142.	122.	102.	82.	62.	41.

CLASSIFIED (HEAVY/COAL) ROADS

ANNUAL CHANGE (%)	89	88	87	86	85	84	83	82	81	80	79
	ANNUAL AVERAGE DAILY TRAFFIC										
2.946	20081.	19490.	18898.	18307.	17715.	17124.	16532.	15940.	15349.	14757.	14166.
	PERCENT TRUCKS										
-4.550	8.613	9.005	9.397	9.789	10.181	10.573	10.965	11.357	11.749	12.141	12.533
	2-DIRECTION EAL'S DUE TO 4-TIRED VEHICLES IN 1000'S										
3.357	33.	32.	31.	30.	29.	28.	27.	26.	24.	23.	22.
	PERCENT OF TRUCKS (HEAVY/COAL)										
-4.037	16.074	16.723	17.372	18.021	18.670	19.319	19.968	20.616	21.265	21.914	22.563
	AXLES PER TRUCK (NORMAL)										
0.390	3.620	3.606	3.592	3.578	3.564	3.549	3.535	3.521	3.507	3.493	3.479
	AXLES PER TRUCK (HEAVY/COAL)										
0.213	4.925	4.915	4.904	4.894	4.883	4.873	4.862	4.852	4.841	4.831	4.820
	EAL'S PER TRUCK AXLE (NORMAL)										
0.434	0.130	0.129	0.129	0.128	0.127	0.127	0.126	0.126	0.125	0.125	0.124
	EAL'S PER TRUCK AXLE (HEAVY/COAL)										
-2.290	0.300	0.307	0.314	0.321	0.328	0.335	0.342	0.348	0.355	0.362	0.369
	2-DIRECTION EAL'S DUE TO NORMAL VEHICLES IN 1000 'S										
0.546	254.	253.	251.	250.	249.	247.	246.	245.	243.	242.	240.
	2-DIRECTION EAL'S DUE TO (HEAVY/COAL) VEHICLES IN 1000'S										
-7.525	141.	152.	162.	173.	183.	194.	205.	215.	226.	237.	247.

FUNCTIONAL CLASS 14 -- URBAN OTHER PRINCIPAL ARTERIAL
AVERAGE VALUES (SMOOTHED)
UNCLASSIFIED ROADS

ANNUAL CHANGE (%)	89	88	87	86	85	84	83	82	81	80	79
	ANNUAL AVERAGE DAILY TRAFFIC										
6.671	17426.	16264.	15101.	13939.	12776.	11614.	10452.	9289.	8127.	6964.	5802.
	PERCENT TRUCKS										
-3.158	4.905	5.060	5.215	5.370	5.525	5.680	5.835	5.989	6.144	6.299	6.454
	2-DIRECTION EAL'S DUE TO 4-TIRED VEHICLES IN 1000'S										
6.770	30.	28.	26.	24.	22.	20.	18.	16.	14.	12.	10.
	AXLES PER TRUCK (UNCLASSIFIED)										
0.547	2.967	2.951	2.935	2.919	2.903	2.886	2.870	2.854	2.838	2.821	2.805
	EAL'S PER TRUCK AXLE (UNCLASSIFIED)										
2.525	0.197	0.192	0.187	0.182	0.177	0.172	0.167	0.162	0.157	0.152	0.147
	2-DIRECTION EAL'S DUE TO UNCLASSIFIED VEHICLES IN 1000'S										
6.789	171.	160.	148.	136.	125.	113.	102.	90.	78.	67.	55.

CLASSIFIED (HEAVY/COAL) ROADS

ANNUAL CHANGE (%)	89	88	87	86	85	84	83	82	81	80	79
	ANNUAL AVERAGE DAILY TRAFFIC										
2.668	15002.	14602.	14202.	13801.	13401.	13001.	12600.	12200.	11800.	11399.	10999.
	PERCENT TRUCKS										
2.690	11.261	10.958	10.655	10.352	10.049	9.746	9.443	9.140	8.837	8.534	8.231
	2-DIRECTION EAL'S DUE TO 4-TIRED VEHICLES IN 1000'S										
2.333	24.	24.	23.	23.	22.	21.	21.	20.	20.	19.	19.
	PERCENT OF TRUCKS (HEAVY/COAL)										
-2.415	19.050	19.510	19.970	20.430	20.890	21.351	21.811	22.271	22.731	23.191	23.651
	AXLES PER TRUCK (NORMAL)										
2.578	3.789	3.691	3.594	3.496	3.398	3.300	3.203	3.105	3.007	2.910	2.812
	AXLES PER TRUCK (HEAVY/COAL)										
1.681	4.641	4.563	4.485	4.407	4.329	4.251	4.173	4.095	4.017	3.939	3.861
	EAL'S PER TRUCK AXLE (NORMAL)										
1.123	0.185	0.182	0.180	0.178	0.176	0.174	0.172	0.170	0.168	0.166	0.164
	EAL'S PER TRUCK AXLE (HEAVY/COAL)										
9.110	4.128	3.752	3.376	3.000	2.624	2.248	1.872	1.496	1.120	0.744	0.368
	2-DIRECTION EAL'S DUE TO NORMAL VEHICLES IN 1000 'S										
8.053	340.	312.	285.	258.	230.	203.	176.	148.	121.	93.	66.
	2-DIRECTION EAL'S DUE TO (HEAVY/COAL) VEHICLES IN 1000'S										
9.885	1903.	1715.	1527.	1339.	1151.	962.	774.	586.	398.	210.	22.

FUNCTIONAL CLASS 16 -- URBAN MINOR ARTERIAL
AVERAGE VALUES (SMOOTHED)
UNCLASSIFIED ROADS

ANNUAL CHANGE (%)	89	88	87	86	85	84	83	82	81	80	79
					ANNUAL AVERAGE DAILY TRAFFIC						
2.352	10160.	9921.	9682.	9443.	9204.	8965.	8726.	8487.	8248.	8009.	7770.
					PERCENT TRUCKS						
-2.451	4.200	4.303	4.406	4.509	4.612	4.715	4.818	4.921	5.024	5.127	5.230
					2-DIRECTION EAL'S DUE TO 4-TIRED VEHICLES IN 1000'S						
2.458	18.	17.	17.	16.	16.	16.	15.	15.	14.	14.	13.
					AXLES PER TRUCK (UNCLASSIFIED)						
0.289	2.643	2.635	2.628	2.620	2.613	2.605	2.597	2.590	2.582	2.574	2.567
					EAL'S PER TRUCK AXLE (UNCLASSIFIED)						
-15.335	0.077	0.089	0.101	0.113	0.125	0.137	0.149	0.160	0.172	0.184	0.196
					2-DIRECTION EAL'S DUE TO UNCLASSIFIED VEHICLES IN 1000'S						
-7.459	40.	43.	46.	49.	52.	55.	58.	61.	64.	67.	70.

ANNUAL CHANGE (%)	89	88	87	86	85	84	83	82	81	80	79
					CLASSIFIED (HEAVY/COAL) ROADS						
					ANNUAL AVERAGE DAILY TRAFFIC						
3.788	8694.	8364.	8035.	7706.	7376.	7047.	6718.	6388.	6059.	5730.	5400.
					PERCENT TRUCKS						
-4.612	7.509	7.856	8.202	8.548	8.895	9.241	9.587	9.934	10.280	10.626	10.973
					2-DIRECTION EAL'S DUE TO 4-TIRED VEHICLES IN 1000'S						
3.964	15.	14.	14.	13.	12.	12.	11.	11.	10.	9.	9.
					PERCENT OF TRUCKS (HEAVY/COAL)						
-3.289	20.135	20.798	21.460	22.122	22.784	23.447	24.109	24.771	25.434	26.096	26.758
					AXLES PER TRUCK (NORMAL)						
1.083	3.286	3.250	3.215	3.179	3.144	3.108	3.072	3.037	3.001	2.966	2.930
					AXLES PER TRUCK (HEAVY/COAL)						
1.798	3.691	3.624	3.558	3.492	3.425	3.359	3.293	3.226	3.160	3.093	3.027
					EAL'S PER TRUCK AXLE (NORMAL)						
-14.847	0.070	0.081	0.091	0.101	0.112	0.122	0.133	0.143	0.153	0.164	0.174
					EAL'S PER TRUCK AXLE (HEAVY/COAL)						
0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
					2-DIRECTION EAL'S DUE TO NORMAL VEHICLES IN 1000 'S						
-6.939	42.	45.	48.	51.	54.	57.	59.	62.	65.	68.	71.
					2-DIRECTION EAL'S DUE TO (HEAVY/COAL) VEHICLES IN 1000'S						
0.000	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

FUNCTIONAL CLASS 17 -- URBAN COLLECTOR
AVERAGE VALUES (SMOOTHED)

UNCLASSIFIED ROADS

ANNUAL CHANGE (%)	89	88	87	86	85	84	83	82	81	80	79
					ANNUAL AVERAGE DAILY TRAFFIC						
4.628	4863.	4638.	4413.	4188.	3963.	3738.	3513.	3288.	3063.	2838.	2612.
					PERCENT TRUCKS						
-2.226	2.762	2.823	2.885	2.946	3.007	3.069	3.130	3.192	3.253	3.315	3.376
					2-DIRECTION EAL'S DUE TO 4-TIRED VEHICLES IN 1000'S						
4.714	9.	8.	8.	7.	7.	7.	6.	6.	5.	5.	5.
					AXLES PER TRUCK (UNCLASSIFIED)						
-0.306	2.342	2.350	2.357	2.364	2.371	2.378	2.385	2.393	2.400	2.407	2.414
					EAL'S PER TRUCK AXLE (UNCLASSIFIED)						
2.033	0.196	0.192	0.188	0.184	0.180	0.176	0.172	0.168	0.164	0.160	0.156
					2-DIRECTION EAL'S DUE TO UNCLASSIFIED VEHICLES IN 1000'S						
2.672	23.	22.	22.	21.	20.	20.	19.	19.	18.	17.	17.

CLASSIFIED (HEAVY/COAL) ROADS

ANNUAL CHANGE (%)	89	88	87	86	85	84	83	82	81	80	79
					ANNUAL AVERAGE DAILY TRAFFIC						
7.739	6448.	5949.	5450.	4951.	4452.	3953.	3454.	2955.	2456.	1957.	1458.
					PERCENT TRUCKS						
0.659	6.133	6.093	6.052	6.012	5.971	5.931	5.890	5.850	5.810	5.769	5.729
					2-DIRECTION EAL'S DUE TO 4-TIRED VEHICLES IN 1000'S						
7.471	11.	10.	9.	8.	7.	7.	6.	5.	4.	3.	3.
					PERCENT OF TRUCKS (HEAVY/COAL)						
6.763	17.622	16.431	15.239	14.047	12.855	11.663	10.471	9.279	8.087	6.895	5.704
					AXLES PER TRUCK (NORMAL)						
3.729	3.295	3.172	3.049	2.926	2.804	2.681	2.558	2.435	2.312	2.189	2.066
					AXLES PER TRUCK (HEAVY/COAL)						
2.149	4.698	4.597	4.496	4.395	4.294	4.193	4.092	3.991	3.890	3.789	3.688
					EAL'S PER TRUCK AXLE (NORMAL)						
4.271	0.212	0.203	0.194	0.185	0.176	0.167	0.158	0.149	0.140	0.131	0.122
					EAL'S PER TRUCK AXLE (HEAVY/COAL)						
11.724	4.868	4.297	3.726	3.156	2.585	2.014	1.444	0.873	0.302	0.000	0.000
					2-DIRECTION EAL'S DUE TO NORMAL VEHICLES IN 1000 'S						
12.224	133.	117.	100.	84.	68.	52.	35.	19.	3.	0.	0.
					2-DIRECTION EAL'S DUE TO (HEAVY/COAL) VEHICLES IN 1000'S						
7.261	384.	356.	328.	300.	272.	245.	217.	189.	161.	133.	105.

FUNCTIONAL CLASS 19 -- URBAN LOCAL
AVERAGE VALUES (SMOOTHED)
UNCLASSIFIED ROADS

ANNUAL CHANGE (%)	89	88	87	86	85	84	83	82	81	80	79
					ANNUAL AVERAGE DAILY TRAFFIC						
6.231	2641.	2477.	2312.	2148.	1983.	1818.	1654.	1489.	1325.	1160.*******	
					PERCENT TRUCKS						
9.677	4.931	4.454	3.977	3.500	3.022	2.545	2.068	1.591	1.114	0.637*******	
					2-DIRECTION EAL'S DUE TO 4-TIRED VEHICLES IN 1000'S						
5.814	5.	4.	4.	4.	4.	3.	3.	3.	2.	2.*******	
					AXLES PER TRUCK (UNCLASSIFIED)						
3.965	2.780	2.670	2.560	2.449	2.339	2.229	2.119	2.008	1.898	1.788*******	
					EAL'S PER TRUCK AXLE (UNCLASSIFIED)						
1.099	0.221	0.219	0.217	0.214	0.212	0.209	0.207	0.204	0.202	0.200*******	
					2-DIRECTION EAL'S DUE TO UNCLASSIFIED VEHICLES IN 1000'S						
11.156	20.	18.	15.	13.	11.	9.	7.	4.	2.	0.*******	

ANNUAL CHANGE (%)	89	88	87	86	85	84	83	82	81	80	79
					CLASSIFIED (HEAVY/COAL) ROADS						
					ANNUAL AVERAGE DAILY TRAFFIC						
0.000	**********				1528.**********						
					PERCENT TRUCKS						
0.000	**********				1.660**********						
					2-DIRECTION EAL'S DUE TO 4-TIRED VEHICLES IN 1000'S						
0.000	**********				3.**********						
					PERCENT OF TRUCKS (HEAVY/COAL)						
0.000	**********				8.333**********						
					AXLES PER TRUCK (NORMAL)						
0.000	**********				2.103**********						
					AXLES PER TRUCK (HEAVY/COAL)						
0.000	**********				4.000**********						
					EAL'S PER TRUCK AXLE (NORMAL)						
0.000	**********				0.253**********						
					EAL'S PER TRUCK AXLE (HEAVY/COAL)						
0.000	**********				4.454**********						
					2-DIRECTION EAL'S DUE TO NORMAL VEHICLES IN 1000 'S						
0.000	**********				4.**********						
					2-DIRECTION EAL'S DUE TO (HEAVY/COAL) VEHICLES IN 1000'S						
0.000	**********				13.**********						

APPENDIX D

EXAMPLE EAL CALCULATION

ESTIMATION OF EQUIVALENT AXLELOAD ACCUMULATIONS

COUNTY _____ DATE _____

NAME _____

ROUTE ID:

Road Name _____ Route No. _____

Project No. _____

Project Limits _____

_____

Reference Stations _____

Functional Class

_____01 Rural Interstate
_____02 Principal Arterial
_____06 Minor Arterial
_____07 Major Collector
_____08 Minor Collector
_____09 Local

_____11 Rural Interstate
_____12 Other Freeways & Expressways
_____14 Other Principal Arterial
_____16 Minor Arterial
_____17 Collector
_____19 Local

DATES: Base Year _____ Design Period (Years) _____ Project Midyear _____

TRAFFIC PARAMETERS:

	Base Year Estimate		Annual Change (Fractions)		No. Years to Midyear		Increment		Adjusted Base Year Estimate		Project Midyear Estimate
Volume (AADT)	_____	x	_____	x	_____	=	_____	+	_____	=	_____
Percent Trucks (%T)	_____	x	_____	x	_____	=	_____	+	_____	=	_____
% Trucks Hauling Coal (%CT)	_____	x	_____	x	_____	=	_____	+	_____	=	_____
Non-Coal Trucks											
Axles/Truck (A/NCT)	_____	x	_____	x	_____	=	_____	+	_____	=	_____
EAL's/Axle (EAL/NCA)	_____	x	_____	x	_____	=	_____	+	_____	=	_____
Coal Trucks											
Axles/Truck (A/CT)	_____	x	_____	x	_____	=	_____	+	_____	=	_____
EAL's/Axle (EAL/CA)	_____	x	_____	x	_____	=	_____	+	_____	=	_____

DAILY EAL'S AT MIDYEAR:

4-Tired Vehicles: $\frac{\text{\_\_\_\_\_}}{\text{AADT}} \times \frac{\text{\_\_\_\_\_}}{1-(\%T/100)} \times 0.005 =$ _____

Non-Coal Trucks: $\frac{\text{\_\_\_\_\_}}{\text{AADT}} \times \frac{\text{\_\_\_\_\_}}{(\%T/100)(1-\%CT/100)} \times \frac{\text{\_\_\_\_\_}}{\text{A/NCT}} \times \frac{\text{\_\_\_\_\_}}{\text{EAL/NCA}} =$ _____

Coal Trucks: $\frac{\text{\_\_\_\_\_}}{\text{AADT}} \times \frac{\text{\_\_\_\_\_}}{(\%T/100)(\%CT/100)} \times \frac{\text{\_\_\_\_\_}}{\text{A/CT}} \times \frac{\text{\_\_\_\_\_}}{\text{EAL/CA}} =$ _____

Total Midyear Daily EAL's = _____

DESIGN EAL'S:

$\frac{\text{\_\_\_\_\_}}{\text{Midyear Daily EAL's (No. of Lanes \_\_\_\_\_)}} \times 365 \times \frac{\text{\_\_\_\_\_}}{\text{Design Period}} \times \frac{\text{\_\_\_\_\_}}{\text{Lane Adjustment (1 or 2 Way \_\_\_\_\_)}} =$ _____

Lane Distribution Adjustments

$L = 0.497 - (1.84 + 1.42\ FT)(AADT)(10^{-6})$ for 4-lane roadways

$L = 0.427 - (2.308 + 1.75\ FT)(AADT)(10^{-6})$ for 6-lane roadways

Figure D1. EAL Calculation Worksheet.

ESTIMATION OF EQUIVALENT AXLELOAD ACCUMULATIONS

COUNTY CARTER DATE 8-15-90

NAME J. PIGMAN

ROUTE ID:

Road Name _____ Route No. I-64

Project No. STATION NO. 031

Project Limits M.P. 178.8

Reference Stations _____

Functional Class

✓ 01 Rural Interstate
02 Principal Arterial
06 Minor Arterial
07 Major Collector
08 Minor Collector
09 Local
11 Rural Interstate
12 Other Freeways & Expressways
14 Other Principal Arterial
16 Minor Arterial
17 Collector
19 Local

DATES: Base Year 1989 Design Period (Years) 8 Project Midyear 1994

TRAFFIC PARAMETERS:

	Base Year Estimate		Annual Change (Fractions)		No. Years to Midyear		Increment		Adjusted Base Year Estimate		Project Midyear Estimate
Volume (AADT)	12,213	x	-.764	x	5	=	-	+	12,213	=	12,213
Percent Trucks (%T)	28.8	x	.01802	x	5	=	2.59	+	28.8	=	31.39
% Trucks Hauling Coal (%CT)	6.4	x	.00398	x	5	=	.12736	+	6.4	=	6.5
Non-Coal Trucks											
Axles/Truck (A/NCT)	4.414	x	.00259	x	5	=	.0574	+	4.414	=	4.471
EAL's/Axle (EAL/NCA)	.139	x	.00799	x	5	=	-	+	.139	=	.139
Coal Trucks											
Axles/Truck (A/CT)	5.260	x	.00782	x	5	=	.1958	+	5.260	=	5.456
EAL's/Axle (EAL/CA)	.531	x	.07558	x	5	=	.2007	+	.531	=	.732

DAILY EAL'S AT MIDYEAR:

4-Tired Vehicles: $\frac{12,213}{\text{AADT}} \times \frac{(.712)}{1-(\%T/100)} \times 0.005 = 43$

Non-Coal Trucks: $\frac{12,213}{\text{AADT}} \times \frac{(.314)\ (.935)}{(\%T/100)\ (1-\%CT/100)} \times \frac{4.471}{\text{A/NCT}} \times \frac{.139}{\text{EAL/NCA}} = 2,228$

Coal Trucks: $\frac{12,213}{\text{AADT}} \times \frac{(.314)\ (.065)}{(\%T/100)\ (\%CT/100)} \times \frac{5.456}{\text{A/CT}} \times \frac{.732}{\text{EAL/CA}} = 996$

Total Midyear Daily EAL's = 3,267

DESIGN EAL'S:

$\frac{3,267}{\text{Midyear Daily EAL's (No. of Lanes 4)}} \times 365 \times \frac{8}{\text{Design Period}} \times \frac{.469}{\text{Lane Adjustment (1 or 2 Way 2)}} = 4,474,091$

Lane Distribution Adjustments

$L = 0.497 - (1.84 + 1.42\ FT)(AADT)(10^{-6})$ for 4-lane roadways

$L - 0.427 - (2.308 + 1.75\ FT)(AADT)(10^{-6})$ for 6-lane roadways

Figure D2. Example Calculation of Design EAL's.

EAL TRAFFIC PARAMETERS FOR INDIVIDUAL CLASSIFICATION STATIONS
1989 FUNCTIONAL CLASS 1

COU	STA	ROUTE	MILE POINT	FED AID	AADT	TRUCK FRACT	FRACT OF TRK WITH COAL	AXLES PER NON COAL TRUCK	AXLES PER COAL TRUCK	EAL'S/ NON COAL AXLE	EAL'S/ COAL TRUCK AXLE	2-DIRECTION EAL'S IN 1000'S 4-TIRE VEHICLES	NON-COAL TRUCKS	COAL TRUCKS	TOTAL
22	031	I 64	178.8	1	12213	0.288	0.064	4.432	5.008	0.138	0.258	16.	737.	107.	860.
34	336	I 75	104.4	1	28858	0.209	0.001	4.402	4.683	0.145	0.229	42.	1398.	3.	1443.
39	257	I 71	62.3	1	16392	0.355	0.005	4.545	4.553	0.141	0.227	19.	1357.	10.	1386.
47	L54	I 65	89.4	1	25410	0.388	0.000	4.636	0.000	0.142	0.000	28.	2376.	0.	2404.
50	038	I 65	71.6	1	21134	0.453	0.000	4.673	0.000	0.142	0.000	21.	2318.	0.	2339.
52	L59	I 71	36.3	1	16538	0.470	0.000	4.686	0.000	0.141	0.000	16.	1875.	0.	1891.
56	A05	I 71	11.3	1	27100	0.256	0.000	4.495	0.000	0.142	0.000	37.	1611.	0.	1648.
56	019	I 64	19.8	1	20100	0.204	0.000	4.362	0.000	0.143	0.000	29.	933.	0.	962.
76	753	I 75	90.8	1	36000	0.171	0.000	4.259	0.000	0.144	0.000	54.	1377.	0.	1432.
93	315	I 71	23.8	1	20100	0.377	0.000	4.576	0.000	0.142	0.000	23.	1792.	0.	1815.
105	541	I 64	73.8	1	14800	0.213	0.000	4.372	0.000	0.141	0.000	21.	705.	0.	726.

FIGURE D3. TABLE FOR FUNCTIONAL CLASS 1 FROM APPENDIX B.

FUNCTIONAL CLASS 01 -- RURAL INTERSTATE
AVERAGE VALUES (SMOOTHED)

UNCLASSIFIED ROADS

ANNUAL CHANGE (%)	89	88	87	86	85	84	83	82	81	80	79
	ANNUAL AVERAGE DAILY TRAFFIC										
2.678	21055.	20491.	19927.	19364.	18800.	18236.	17672.	17108.	16545.	15981.	15417.
	PERCENT TRUCKS										
1.615	30.167	29.680	29.192	28.705	28.218	27.731	27.243	26.756	26.269	25.782	25.294
	2-DIRECTION EAL'S DUE TO 4-TIRED VEHICLES IN 1000'S										
2.297	27.	27.	26.	25.	25.	24.	24.	23.	22.	22.	21.
	AXLES PER TRUCK (UNCLASSIFIED)										
0.329	4.511	4.496	4.481	4.467	4.452	4.437	4.422	4.407	4.392	4.378	4.363
	EAL'S PER TRUCK AXLE (UNCLASSIFIED)										
0.824	0.158	0.157	0.156	0.154	0.153	0.152	0.150	0.149	0.148	0.146	0.145
	2-DIRECTION EAL'S DUE TO UNCLASSIFIED VEHICLES IN 1000'S										
4.340	1558.	1490.	1422.	1355.	1287.	1220.	1152.	1084.	1017.	949.	882.

CLASSIFIED (HEAVY/COAL) ROADS

ANNUAL CHANGE (%)	89	88	87	86	85	84	83	82	81	80	79
	ANNUAL AVERAGE DAILY TRAFFIC										
-0.764	19346.	19494.	19642.	19789.	19937.	20085.	20233.	20380.	20528.	20676.	20824.
	PERCENT TRUCKS										
1.802	25.964	25.496	25.028	24.561	24.093	23.625	23.157	22.689	22.222	21.754	21.286
	2-DIRECTION EAL'S DUE TO 4-TIRED VEHICLES IN 1000'S										
-1.271	26.	27.	27.	27.	28.	28.	28.	29.	29.	29.	29.
	PERCENT OF TRUCKS (HEAVY/COAL)										
0.398	6.568	6.541	6.515	6.489	6.463	6.437	6.411	6.385	6.359	6.333	6.306
	AXLES PER TRUCK (NORMAL)										
0.259	4.346	4.334	4.323	4.312	4.301	4.289	4.278	4.267	4.256	4.244	4.233
	AXLES PER TRUCK (HEAVY/COAL)										
0.782	5.291	5.250	5.208	5.167	5.126	5.084	5.043	5.001	4.960	4.919	4.877
	EAL'S PER TRUCK AXLE (NORMAL)										
0.799	0.158	0.156	0.155	0.154	0.153	0.151	0.150	0.149	0.148	0.146	0.145
	EAL'S PER TRUCK AXLE (HEAVY/COAL)										
7.558	0.438	0.405	0.372	0.339	0.306	0.272	0.239	0.206	0.173	0.140	0.107
	2-DIRECTION EAL'S DUE TO NORMAL VEHICLES IN 1000 'S										
2.008	1201.	1177.	1153.	1129.	1105.	1081.	1056.	1032.	1008.	984.	960.
	2-DIRECTION EAL'S DUE TO (HEAVY/COAL) VEHICLES IN 1000'S										
6.760	214.	200.	185.	171.	156.	142.	127.	113.	98.	84.	69.

FIGURE D4. TABLE FOR FUNCTIONAL CLASS 1 FROM APPENDIX C.

ESTIMATION OF EQUIVALENT AXLELOAD ACCUMULATIONS

COUNTY _____ DATE _____

NAME _____

ROUTE ID:

Road Name _____ Route No. _____ Classified _____

Project No. _____ Unclassified _____

Project Limits _____

_____

Reference Stations _____

Functional Class

Rural	Urban
_____01 Interstate	_____11 Interstate
_____02 Principal Arterial	_____12 Other Freeways & Expressways
_____06 Minor Arterial	_____14 Other Principal Arterial
_____07 Major Collector	_____16 Minor Arterial
_____08 Minor Collector	_____17 Collector
_____09 Local	_____19 Local

Percent Trucks Hauling Coal

_____ Less Than 3.0

_____ 3.0 or Greater

DATES: Base Year _____ Design Period (Years) _____ Project Midyear _____

TRAFFIC PARAMETERS:

	Base Year Estimate		Annual Change (Fractions)		No. Years to Midyear		Increment		Base Year Estimate		Project Midyear Estimate
Volume (AADT)	_____	x	_____	x	_____	=	_____	+	_____	=	_____
Percent Trucks (%T)	_____	x	_____	x	_____	=	_____	+	_____	=	_____
% Trucks Hauling Coal (%CT)	_____	x	_____	x	_____	=	_____	+	_____	=	_____
Non-Coal Trucks											
Axles/Truck (A/NCT)	_____	x	_____	x	_____	=	_____	+	_____	=	_____
EAL's/Axle (EAL/NCA)	_____	x	_____	x	_____	=	_____	+	_____	=	_____
Coal Trucks											
Axles/Truck (A/CT)	_____	x	_____	x	_____	=	_____	+	_____	=	_____
EAL's/Axle (EAL/CA)	_____	x	_____	x	_____	=	_____	+	_____	=	_____

DAILY EAL'S AT MIDYEAR:

4-Tired Vehicles: $\frac{\text{\_\_\_\_\_}}{\text{AADT}} \times \frac{\text{\_\_\_\_\_}}{1-(\%T/100)} \times 0.005 =$ _____

Non-Coal Trucks: $\frac{\text{\_\_\_\_\_}}{\text{AADT}} \times \frac{\text{\_\_\_\_\_}}{(\%T/100)(1-\%CT/100)} \times \frac{\text{\_\_\_\_\_}}{\text{A/NCT}} \times \frac{\text{\_\_\_\_\_}}{\text{EAL/NCA}} =$ _____

Coal Trucks: $\frac{\text{\_\_\_\_\_}}{\text{AADT}} \times \frac{\text{\_\_\_\_\_}}{(\%T/100)(\%CT/100)} \times \frac{\text{\_\_\_\_\_}}{\text{A/CT}} \times \frac{\text{\_\_\_\_\_}}{\text{EAL/CA}} =$ _____

Total Midyear Daily EAL's = _____

DESIGN EAL'S:

$\frac{\text{\_\_\_\_\_}}{\text{Midyear Daily EAL's (No. of Lanes \_\_\_\_\_)}} \times 365 \times \frac{\text{\_\_\_\_\_}}{\text{Design Period}} \times \frac{\text{\_\_\_\_\_}}{\text{Lane Adjustment (1 or 2 Way \_\_\_\_\_)}} =$ _____

Lane Distribution Adjustments

$L = 0.497 - (1.84 + 1.42\ FT)(AADT)(10^{-6})$ for 4-lane roadways (Minimum value = 0.375)

$L = 0.427 - (2.308 + 1.75\ FT)(AADT)(10^{-6})$ for 6-lane roadways (Minimum value = 0.25)

$L = 0.50$ for 2-lane roadways

Figure D2. Example Calculation of Design EAL's.

ESTIMATION OF EQUIVALENT AXLELOAD ACCUMULATIONS

COUNTY _____ DATE _____

NAME _____

ROUTE ID:

Road Name _____ Route No. _____ Classified _____

Project No. _____ Unclassified_____

Project Limits _____

_____

Reference Stations _____

Functional Class

Rural	Urban
_____01 Interstate	_____11 Interstate
_____02 Principal Arterial	_____12 Other Freeways & Expressways
_____06 Minor Arterial	_____14 Other Principal Arterial
_____07 Major Collector	_____16 Minor Arterial
_____08 Minor Collector	_____17 Collector
_____09 Local	_____19 Local

Percent Trucks Hauling Coal
_____ Less Than 3.0
_____ 3.0 or Greater

DATES: Base Year _____ Design Period (Years) _____ Project Midyear _____

TRAFFIC PARAMETERS:

	Base Year Estimate		Annual Change (Fractions)		No. Years to Midyear		Increment		Base Year Estimate		Project Midyear Estimate
Volume (AADT)	_____	x	_____	x	_____	=	_____	+	_____	=	_____
Percent Trucks (%T)	_____	x	_____	x	_____	=	_____	+	_____	=	_____
% Trucks Hauling Coal (%CT)	_____	x	_____	x	_____	=	_____	+	_____	=	_____
Non-Coal Trucks											
Axles/Truck (A/NCT)	_____	x	_____	x	_____	=	_____	+	_____	=	_____
EAL's/Axle (EAL/NCA)	_____	x	_____	x	_____	=	_____	+	_____	=	_____
Coal Trucks											
Axles/Truck (A/CT)	_____	x	_____	x	_____	=	_____	+	_____	=	_____
EAL's/Axle (EAL/CA)	_____	x	_____	x	_____	=	_____	+	_____	=	_____

DAILY EAL'S AT MIDYEAR:

4-Tired Vehicles: $\frac{\text{_____}}{\text{AADT}} \times \frac{\text{_____}}{1-(\%T/100)} \times 0.005 =$ _____

Non-Coal Trucks: $\frac{\text{_____}}{\text{AADT}} \times \frac{\text{_____}}{(\%T/100)(1-\%CT/100)} \times \frac{\text{_____}}{A/NCT} \times \frac{\text{_____}}{EAL/NCA} =$ _____

Coal Trucks: $\frac{\text{_____}}{\text{AADT}} \times \frac{\text{_____}}{(\%T/100)(\%CT/100)} \times \frac{\text{_____}}{A/CT} \times \frac{\text{_____}}{EAL/CA} =$ _____

Total Midyear Daily EAL's = _____

DESIGN EAL'S:

$\frac{\text{_____}}{\text{Midyear Daily EAL's (No. of Lanes _____)}} \times 365 \times \frac{\text{_____}}{\text{Design Period}} \times \frac{\text{_____}}{\text{Lane Adjustment (1 or 2 Way _____)}} =$ _____

Lane Distribution Adjustments

$L = 0.497 - (1.84 + 1.42\ FT)(AADT)(10^{-6})$ for 4-lane roadways (Minimum value = 0.375)

$L = 0.427 - (2.308 + 1.75\ FT)(AADT)(10^{-6})$ for 6-lane roadways (Minimum value = 0.25)

$L = 0.50$ for 2-lane roadways

Figure D1. EAL Calculation Worksheet.