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16. Abstract

In 1989, the Texas Department of Transportation, through the Texas Transportation Institute, began an overall effort to evaluate and update the practice of transportation planning in the state to equal or exceed current state-of-the-art practice in transportation planning. A new trip generation program, TRIPCAL5, was subsequently developed to replace the trip generation programs TRIPCAL3 and TRIPCAL4 developed in the early seventies.

TRIPCAL5 is a multi-functional, flexible trip generation program which allows a user to estimate trip productions and attractions for multiple trip purposes using different user-specified models.

This manual provides the information necessary to set up and operate the TRIPCAL5 program. Example setups are included with copies of actual program setups with test data sets and a cross reference of the control/input records necessary for accomplishing specified objectives. One of the features of the program is the ability to use available data for disaggregating zonal data or utilize built-in default models for disaggregating households at the zonal level by household size, household income, and/or auto ownership.

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TRIPCAL5
USER'S MANUAL

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METRIC (SI*) CONVERSION FACTORS

APPROXIMATE CONVERSIONS TO SI UNITS

Symbol	When You Know	Multiply By	To Find	Symbol
LENGTH				
in	inches	2.54	centimetres	cm
ft	feet	0.3048	metres	m
yd	yards	0.914	metres	m
mi	miles	1.61	kilometres	km
AREA				
in²	square inches	645.2	centimetres squared	cm²
ft²	square feet	0.0929	metres squared	m²
yd²	square yards	0.836	metres squared	m²
mi²	square miles	2.59	kilometres squared	km²
ac	acres	0.395	hectares	ha
MASS (weight)				
oz	ounces	28.35	grams	g
lb	pounds	0.454	kilograms	kg
T	short tons (2000 lb)	0.907	megagrams	Mg
VOLUME				
fl oz	fluid ounces	29.57	millilitres	mL
gal	gallons	3.785	litres	L
ft³	cubic feet	0.0328	metres cubed	m³
yd³	cubic yards	0.0765	metres cubed	m³

NOTE: Volumes greater than 1000 L shall be shown in m³.

TEMPERATURE (exact)				
°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C

APPROXIMATE CONVERSIONS TO SI UNITS

Symbol	When You Know	Multiply By	To Find	Symbol
LENGTH				
mm	millimetres	0.039	inches	in
m	metres	3.28	feet	ft
m	metres	1.09	yards	yd
km	kilometres	0.621	miles	mi
AREA				
mm²	millimetres squared	0.0016	square inches	in²
m²	metres squared	10.764	square feet	ft²
km²	kilometres squared	0.39	square miles	mi²
ha	hectares (10 000 m²)	2.53	acres	ac
MASS (weight)				
g	grams	0.0353	ounces	oz
kg	kilograms	2.205	pounds	lb
Mg	megagrams (1 000 kg)	1.103	short tons	T
VOLUME				
mL	millilitres	0.034	fluid ounces	fl oz
L	litres	0.264	gallons	gal
m³	metres cubed	35.315	cubic feet	ft³
m³	metres cubed	1.308	cubic yards	yd³

TEMPERATURE (exact)				
°C	Celsius temperature	9/5 (then add 32)	Fahrenheit temperature	°F

```
°F     32        98.6              °F
-40   0   40    80  120  160  200 212
 -40  -20  0   20   40   60   80  100
°C                  37             °C
```
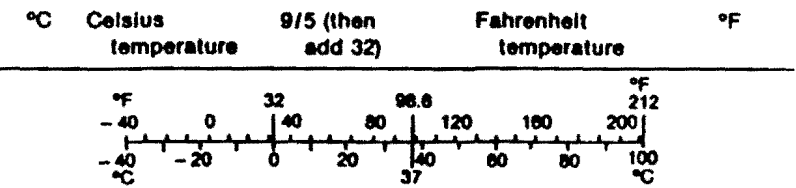
These factors conform to the requirement of FHWA Order 5190.1A.

* SI is the symbol for the International System of Measurements

ABSTRACT

In 1989, the Texas Department of Transportation, through the Texas Transportation Institute, began an overall effort to evaluate and update the practice of transportation planning in the state to equal or exceed current state-of-the-art practice in transportation planning. A new trip generation program, TRIPCAL5, was subsequently developed to replace the trip generation programs TRIPCAL3 and TRIPCAL4 developed in the early seventies.

TRIPCAL5 is a multi-functional, flexible trip generation program which allows a user to estimate trip productions and attractions for multiple trip purposes using different user-specified models.

This manual provides the information necessary to set up and operate the TRIPCAL5 program. Example setups are included with copies of actual program setups with test data sets and a cross-reference of the control/input records necessary for accomplishing specified objectives. One of the features of the program is the ability to use available data for disaggregating zonal data or utilize built-in default models for disaggregating households at the zonal level by household size, household income, and/or auto ownership.

DISCLAIMER

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INTRODUCTION

Transportation planning typically involves a four-step process consisting of trip generation, trip distribution, mode split, and traffic assignment. These steps systematically produce estimates of travel demand for both existing and proposed transportation facilities. The first step in this process is that of trip generation. Trip generation is the means by which estimates of the amount of travel are developed. These estimates typically are computed for different trip purposes for sub-areas called zones. Estimates of the number of trips either produced or attracted are based on different socioeconomic characteristics of the households or activities within the zones.

This manual presents instructions for the setup and operation of a new trip generation program called TRIPCAL5. TRIPCAL5 was developed for the Texas Department of Transportation to replace the previous trip generation programs TRIPCAL3 and TRIPCAL4. TRIPCAL5 is a multi-functional, flexible program which allows a user to estimate trip productions and attractions for multiple trip purposes using different user-specified models. Trip productions and attractions for as many as ten trip purposes may be estimated for up to 9,999 zones. A number of features are included in the program which allow the program to utilize available data or default models for the disaggregation of data at the zone level. The program allows trips to be estimated for each trip purpose using specific models for each trip purpose and provides the use of disaggregate data at the zone level for estimating the trips. The flexibility of the program allows the trip generation process to be designed to maximize the use of local data and significantly improve the resulting estimates of travel demand.

This manual is designed to provide the information necessary to set up and operate the TRIPCAL5 program. A separate documentation manual has been prepared which contains the detailed information on the subroutines and models in the program. The preparation of two separate manuals was felt to offer the advantage of providing only the information desired by the user in a clearer and more understandable format. Following this section, a brief discussion of the options available within the program is presented. The third section presents the setup requirements for the operation of each production model,

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each attraction model, and the options for disaggregating data at the zone level, and how to use them or not use them. The fourth section contains example setups for some of the models most likely to be used. The fifth section presents the output options with examples. The appendix contains the record formats and descriptions of the record input data. It should be noted that the descriptions of program setups, etc., do not include the record format or data contents. This is contained in the appendix. This simplifies the information presented and reduces the amount of repetition.

PROGRAM OPTIONS

TRIPCAL5 is designed to be flexible and allow different options for the user in the development of estimates of travel demand. This allows the trip generation process to be designed to use available data and improve the overall travel demand estimates. The different options available include trip production models, trip attraction models, disaggregation models, multiple trip purposes, and user-selected data inputs.

Up to ten trip purposes may be used with specific trip rates or models for each. The only limitation is that the same type of cross-classification model must be used for each run where those trip purposes are being estimated using a cross-classification model. For example, if home based work trip productions are being estimated using a three-way cross-classification model, then the trip productions for the other trip purposes must also be estimated using a three-way cross-classification model. If a different model (e.g., two-way cross-classification) is to be used for the other trip purposes, a separate run and setup will be required.

Three trip production models are included in TRIPCAL5 for estimating trip productions. A two-way cross classification model may be selected and trip rates stratified for up to six categories for each independent variable. A three way cross-classification model may be selected and trip rates stratified for up to six categories for two of the independent variables and up to four categories for the third independent variable. A linear regression may also be used with up to six independent variables. Other trip production models may also be developed and used by the selection of different variables and cross classification schemes. An example of this is the cross classification regression production model. This can be set up as a special two-way cross classification model. This setup is discussed following this section. If the production model option is left blank, the program will set the zonal productions equal to the zonal attractions.

Five trip attraction models may be used to estimate trip attractions. A two-way cross-classification model may be selected and attraction trip rates stratified for up to six categories for each independent variable. A three-way cross-classification model may be selected and attraction trip rates stratified for up to six categories for two of the

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independent variables and up to four categories for the third independent variable. A cross-classification "regression" model may also be specified with trip rates stratified for up to 24 generation areas by households and employment type. A linear regression model may also be used with up to six independent variables. The fifth option available for attractions is the use of a two-tier regression model. Each regression model may use up to six independent variables.

The disaggregation models provided in TRIPCAL5 are for three production model variables, households by household size, households by household income, and households by auto ownership. For any one of these three variables, the user may choose to input the marginal distribution for each zone, input a disaggregation curve for the urban area which is used to develop a marginal distribution for each zone, let the default model in the program compute the marginal distribution for each zone, or use a combination of those three methods. While TRIPCAL5 is oriented to those three variables, the user may select and use any other variable desired as long as the marginal distribution is input for each zone.

TRIPCAL5 is designed to use socioeconomic data normally used in trip generation. Provisions are included to allow the user to input and use non-typical variables and/or combinations of typical variables. User-selected data may be input and used in either cross-classification models and/or regression models.

TRIPCAL5 also provides the user the option of selecting the information to be output from the program. Depending upon the model selected and size of the area, the output can exceed 1 million lines of print. Options are provided for the user to select the output and, in certain reports, select the zones for which the information is desired.

The following sections describe in detail the actual program setups for running TRIPCAL5 using most of the options described in this section.

PROGRAM SETUPS

GENERAL

TRIPCAL5 has been written in FORTRAN and ASSEMBLY languages. A steplib or joblib statement is necessary to access the load module. A region size of 4500K has been found to work with the setup described in Tables 1, 2, and 3. The region size may need to be larger if a different sort package is used. If the user wishes to suppress the debugging output, the unit FT08F001 should be set to DUMMY. Table 1 outlines the data set files, data set names, purpose, number of records, and logical record length (LRECL) requirements. Table 2 presents the sort data sets, data set names, purpose, and space requirements. Table 3 presents the recommended data control block (DCB) specifications and space requirements for each of the data sets and sort data sets. An example JCL setup to run TRIPCAL5 is provided in Appendix B, Table B-1.

Before proceeding with the setup requirements for the different options in TRIPCAL5, it is necessary to specify the general program setups which must be done prior to the subsequent setups for the program to execute properly. The general setups are as follows:

Program Control/Specification Record - The format for this record is contained in Appendix A. It is referred to as the "PS" record. It inputs basic information which sets up the dimensions for the program (e.g., number of zones, etc.) which tells the program the type of trips being estimated; indicates whether individual models will be used for each trip purpose and, if not, how the percentage of trips by trip purpose will be input; indicates whether add-on trip records and/or trips for special generators will be input, indicates regional median income for area under study, and indicates the 1967 based consumer price index for the year corresponding to the median income. If individual models are not being used for each trip purpose, the user may specify that the percentage of trips for each trip purpose will be input by row, column, or depth in the model being used.

Trip Purpose Record - The trip purpose record is referred to as the "TP" record. It allows the user to input a code number, the trip purpose name associated with the

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Table 1
TRIPCAL5 DATA SETS

DDNAME	Purpose	No. of Records	LRECL
FT01F001	Zonal data in sort format	No. of zonal data records	128
FT02F001	Unscaled productions and attractions	3 records per zone	128
FT04F001	Comment records in sort format	No. comment records	128
FT05F001	Control data and zonal data		80
FT06F001	Printed output	Up to 5 pages/zone if Table 18 is printed	133
FT08F001	Debugging output		133
FT09F001 - SORTIN	Input to sort	Up to 11 per zone	128
SORTOUT - FT10F001	Output from sort	Up to 11 per zone	128
FT11F001	Zonal allocations for district regression model	1 record per zone plus 1 record per district	52
FT12F001	District attractions	1 record per district	156
FT13F001	Two tier regression model unscaled zonal attractions	1 record per zone	128
FT14F001	Scratch unit for ordering output	150 records per zone	133
FT15F001	Scratch unit for ordering output	2 records per zone	133
FT16F001	Scratch unit for ordering output	2 records per zone	133
FT17F001	Scratch unit for ordering output	150 records per zone	133
FT18F001	Scratch unit for ordering output	2 records per zone	133
FT20F001	Generation data card images for purposes 1-4 and external local	No. of zones	80
FT21F001	Generation data card images for purposes 5-8	No. of zones	80
FT22F001	Generation data card images for purposes 9-10	No. of zones	80

Table 2
TRIPCAL5 SORT DATA SETS

DDNAME	Purpose	Space
SORTLIB	Contains sort load modules	
SORTMSG	Prints messages about sorts	
SORTWK01	Sort work unit	40 tracks/1000 zones on 3380 disks
SORTWK02	Sort work unit	40 tracks/1000 zones on 3380 disks
SORTWK03	Sort work unit	40 tracks/1000 zones on 3380 disks

Table 3
RECOMMENDED DATA CONTROL BLOCK (DCB) AND
MAXIMUM SPACE PARAMETERS FOR DATA SETS

DDNAME	DCB	Space in 3380 Tracks		
		1,000 zones	3,000 zones	9,999 zones
FT01F001	RECFM=FB,LRECL=128,BLKSIZE=6272	38	114	380
FT02F001	RECFM=FB,LRECL=128,BLKSIZE=6272	10	30	100
FT04F001	RECFM=FB,LRECL=128,BLKSIZE=6272	32	96	320
FT09F001 - SORTIN	RECFM=FB,LRECL=128,BLKSIZE=6272	38	114	380
FT10F001 - SORTOUT	RECFM=FB,LRECL=128,BLKSIZE=6272	38	114	380
FT11F001	RECFM=VBS,LRECL=6228,BLKSIZE=6232	2	6	20
FT12F001	RECFM=VBS,LRECL=6228,BLKSIZE=6232	4	12	40
FT13F001	RECFM=FB,LRECL=128,BLKSIZE=6272	38	114	380
FT14F001	RECFM=FB,LRECL=133,BLKSIZE=1330	480	1440	4800
FT15F001	RECFM=FB,LRECL=133,BLKSIZE=1330	10	30	100
FT16F001	RECFM=FB,LRECL=133,BLKSIZE=1330	10	30	100
FT17F001	RECFM=FB,LRECL=133,BLKSIZE=1330	480	1440	4800
FT18F001	RECFM=FB,LRECL=133,BLKSIZE=1330	4	12	40
FT20F001	RECFM=FB,LRECL=80,BLKSIZE=6320	2	6	20
FT21F001	RECFM=FB,LRECL=80,BLKSIZE=6320	2	6	20
FT22F001	RECFM=FB,LRECL=80,BLKSIZE=6320	2	6	20
SORTWK01		40	120	400
SORTWK02		40	120	400
SORTWK03		40	120	400

Note: FT14F001 and FT17F001 will require much less space if Table 6 is not printed or if Table 6 is printed for only a few zones.

code number, the production model option to be used to compute the productions for that trip purpose, the attraction model option to be used to compute the attractions for that trip purpose, a code indicating whether the trips for that trip purpose should be balanced on the computed productions or attractions, and a flag indicating whether the trip purpose is non-home based or truck-taxi. The option is also provided for the user to input a control total of trips to be used for the area.

These two records will be input for all options and will contain the information that defines most of the remaining input for the program. There are, however, some typical inputs which are optional depending upon the user. In some urban areas, it is desirable to have socioeconomic information and resulting trip estimates printed for aggregations of zones. These aggregations of zones are typically referred to as sectors and/or districts. Zones may also be grouped together by area type in cases where area type may be one of the independent variables used in one or more models. TRIPCAL5 accepts table of equals information which equates zone numbers with sectors, districts, and/or area type. Up to 100 sectors and/or districts may be used. Up to 24 area types may be used. The table of equals information for sectors is input using the sector table of equals (ES) records. The information for districts is input using the district table of equals (EA) record. Area type is input using the area type table of equals (AT) records. The formats for these records are found in Appendix A.

As previously mentioned, TRIPCAL5 uses socioeconomic data normally used in trip generation modeling. In addition, however, provision is made for the input and use of other variables which may be unique (or just available) to a particular area. These variables may also be given names for use in the program outputs. Table 4 presents a listing of the variables input on both the Input Data Record One (DA1) and the Input Data Record Two (DA2). It is important to note the variable number assigned to each variable in column one. This is the number used in other input records to identify the variable being used in the selected trip generation model (except where otherwise noted). It will also be noted that none of the variables on the DA2 record have a name. These can be user-specified through the use of the Independent Variable Name (NAM) records. These records input the variable number (i.e., column one in Table 1) and the name of that variable. The user

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has the ability to input and use different variables and/or combinations of variables for trip generation.

Table 4
TRIPCAL5 INDEPENDENT VARIABLES

Independent Variable Number	Data Card Type	Data Card Field Number	Data Card Field Name
1	DA1	2	Zone size in acres
2	DA1	3	Total zone population
3	DA1	4	Total households in zone
4	DA1	5	Average household size for zone
5	DA1	6	Median household income in zone
6	DA1	7	Zone total employment
7	DA1	8	Zone total basic employment
8	DA1	9	Zone total retail employment
9	DA1	10	Zone total service employment
10	DA2	2	Value of selected independent variable
11	DA2	3	Value of selected independent variable
12	DA2	4	Value of selected independent variable
13	DA2	5	Value of selected independent variable
14	DA2	6	Value of selected independent variable
15	DA2	7	Value of selected independent variable
16	DA2	8	Value of selected independent variable
17	DA2	9	Value of selected independent variable

TRIPCAL5 also allows the trip productions and attractions for special generators to be directly input via the use of the Special Generator Productions (SGP) records and the

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Special Generator Attractions (SGA) records. In addition, add-on trip productions and attractions may be input for selected zones. The Add-On Trip Production (AOP) and Add-On Trip Attraction (AOA) records may be used for this purpose. The special generator data to be added to each zone's data for table tabulation is input using the SGZ records. Additional comment information on the special generators may be input using the CMT records and printed in TRIPCAL5, Table 21. These records are basically the same as the C-2 and C-3 cards used in TRIPCAL4. It should be noted that special generator productions and attractions, add-on productions and attractions, special generator data, and comment information on the special generators should be input after the zonal data have been input. These records, as well as the zonal data records (i.e., DA1, DA2, DA3, DA4, and DA5 records) must follow the program control and setup records in terms of input sequence. Reference may be made to Appendix A for the format for these records.

PRODUCTION MODELS

As discussed previously, there are four typical production models used in trip generation. This section will discuss the required setup for each. The assumption is made in the first two options that the trip rates being used are trips per household. This does not have to be the case, and it will be discussed later in this section.

Two-Way Cross-Classification

A two-way cross-classification production model simply uses trip rates (normally trips per household) stratified by two independent variables, e.g., household size and household income. The user specifies the independent variables and the number of categories (up to a maximum of six). The following inputs are required to run a two-way cross-classification model:

> **Production Column Information (PCI) Record** - This record inputs the independent variable name for the column stratification, identifies the default marginal model to be used, inputs the number of stratifications (i.e., number of columns up to a maximum of six), and inputs a data description (name or range of values) for each

stratification (i.e., column).

Production Row Information (PRI) Record - This record inputs the independent variable name for the row stratification, identifies the default marginal model to be used, inputs the number of stratifications (i.e., the number of rows up to a maximum of six), and inputs a data description (name or range of values) for each stratification (i.e., row).

Production Trip (PT) Rate Records - These records input the production trip rates for each trip purpose being used to estimate the trip productions for that trip purpose. One record is required for each trip purpose and each row stratification. It inputs the trip rate for each column stratification for that trip purpose and row stratification.

Regional Distribution for Production Cross-Classification (PCR) Record - This record inputs the distribution of households (assuming trip rates are trips per household) for the urban area and are stratified by the same independent variables as the trip rates input on the PT records and defined by the PCI and PRI records. This is the "seed" distribution used in combination with the zonal marginal distributions to develop estimates of the number of households within each category at the zone level.

If household income and/or household size are being used as independent variables, income ranges (IR) and household size ranges (HS) records must also be input to define the income ranges and household size ranges being used in the model. The format for these records is in Appendix A.

Three-Way Cross-Classification

The setup for running a three-way cross-classification model is the same as that for a two way cross-classification model with one additional record being required as described below:

Production Depth Information (PDI) Record - This record inputs the independent variable name for the depth stratification, identifies the default marginal model to be used, inputs the number of stratifications (i.e., number of depth categories up to a maximum of four), and inputs a data description (name or range of values) for

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each stratification (i.e.,,depth).

The PT and PCR records provide for the input of the depth information along with the two-way cross classification information. Reference may be made to the format for these records in Appendix A.

Linear Regression

The linear regression setup requires only one record other than the general program setup. That record is as follows:

Production Regression Model (PMR) Record - This record inputs the trip purpose code (i.e., the trip purpose for which this model is to be used), the value of the constant in the linear regression equation, the independent variable numbers, and respective coefficients. Up to six independent variables may be input.

This model as well as the previous two may use non-typical independent variables. These variables would be input via the data two (DA2) record. To provide a name for these type variables, the user may use the following:

Independent Variable Name (NAM) Record - This record inputs the variable number on the DA2 record and the name of the variable. It gives the program a name to associate with the variables input via the DA2 record.

Cross-Classification Regression

This model, when used for productions, requires a different setup than the other models. In effect, the user has to set up the program as if a two-way cross-classification model was being run. This description is for the case where the user is using trip rates that are stratified by area type (up to six) and households/employment type (combined categories cannot exceed six). The user would set the program up as if a two-way cross-classification model were being run. The input records would be the same with the appropriate descriptions being input. The key difference in this setup would be the use of the DA2 record to input a variable which would be the sum of the zone's households and employment. The DA3 and DA4 records (see Appendix A) would be used to input the marginal distributions for each zone. If area type were the independent variable for the

columns, the DA3 record would set up the marginal distribution for that variable as 100 percent for the zone with that area type. In other words, the marginal distribution for that independent variable would be 100 percent for each zone depending on what area type the zone was. The marginal distribution for the row independent variable would be the respective percentages for each of the variables added to make up the variable input on the DA2 record. For example, Table 5 shows a typical cross-classification where there are five area types as the column independent variables and four row independent variables, those being households and three types of employment. Assume, for purposes of this example, that a zone has 20 households, 100 basic employees, 30 retail employees, 50 service employees, and is an area type one zone. The new variable input on the DA2 card would have a value of 200. The marginal distribution for that zone input on the DA3 record (the record used to input the zonal marginal distribution for the column independent variable) would be 100 percent for the first column and zero for the other columns (see format in

Table 5
CROSS-CLASSIFICATION REGRESSION EXAMPLE

	Area Type 1	Area Type 2	Area Type 3	Area Type 4	Area Type 5
Households					
Basic Employment					
Retail Employment					
Service Employment					

Appendix A). The marginal distribution input for the row independent variables on the DA4 record would be 10 percent for the first row (households), 50 percent for the second row (basic employment), 15 percent for the third row (retail employment), and 25 percent for the fourth row (service employment). In setting up the production model in this option,

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the user will know, in most cases, the exact marginal distribution for each zone; and the regional distribution (input via the PCR record) will be found by summing all the zonal marginal distributions.

This particular example illustrates how the flexibility of TRIPCAL5 may be used to implement trip production models other than those most typically used.

ATTRACTIONMODELS

There are five types of attraction trip models which have been used in trip generation modeling. This section will discuss the required setup for each in terms of the necessary input records for TRIPCAL5 to be able to execute the type of attraction model desired.

Two-Way Cross-Classification

A two-way cross-classification attraction model simply uses trip rates stratified by two independent variables, e.g., income and employment type. The user specifies the independent variables and the number of categories for each (up to a maximum of six). The following inputs are required to run a two-way cross-classification attraction model:

> **Attraction Column Information (ACI) Record** - This record inputs the independent variable name for the column stratification, inputs the number of stratifications (number of columns up to a maximum of six), and inputs a data description (name or range of values) for each stratification (column).

> **Attraction Row Information (ARI) Record** - This record inputs the independent variable name for the row stratification, inputs the number of stratifications (number of rows up to a maximum of six), and inputs a data description (name or range of values) for each stratification (row).

> **Attraction Trip Rate (AT) Records** - These records input the production trip rates (for each trip purpose) being used to estimate the trip attractions. One record is required for each trip purpose and each row stratification. It inputs the trip rate for each column stratification for that trip purpose and row stratification.

> **Cross-Classification Variable Number (CCV) Record** - This record inputs the variable number of the variable that will be distributed by the production cross-

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classification model and the variable number of the variable that will be distributed by the attraction cross-classification model. The input is required for the attraction cross-classification model but is only used for the production cross-classification model if households are not the base unit for the trip rates.

Regional Distribution for Attraction Cross-Classification (ACR) Records - These records input the distribution of the variable which is the base unit for the trip rates being used in the attraction model. For example, if the trip rates were in units of trips per employee, the ACR records would contain the distribution of employees for the urban area stratified by the same independent variables as input on the ACI and ARI records. This is the "seed" distribution used in combination with the zonal marginal distributions to estimate the number of units (base variable) within each category at the zone level.

Data Card Three (DA3) Records - These records input, for each zone, the column marginal distribution of the variables which serve as the base unit for the trip rates being used in the model. The record provides for the input of the column marginal distribution for both the production and attraction model. The production marginal distribution is optional (depending on the production model and its independent variables), but the column marginal distribution for the attraction model is <u>required</u> in this setup. For example, if the column independent variable in the attraction model were income with five stratifications and the trip rates being used were trips per employee, the input on these cards would specify, for each zone, the percentage of employees in each of the five income categories.

Data Card Four (DA4) Records - These records input, for each zone, the row marginal distribution for the variable being used as the base unit for the trip rates being used in the attraction model. Provision is made for the input of the row marginal distribution for the variable being used in the production model as well as the attraction model, but it may not be used depending on the independent variables in the production model. The row marginal distribution is <u>required</u> for the attraction model in this setup.

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Three-Way Cross-Classification

The setup for running a three-way cross-classification attraction model is the same as that for a two-way cross-classification attraction model with two additional records being required as described below:

Attraction Depth Information (ADI) Record - This record inputs the independent variable name for the depth stratification, inputs the number of stratifications (number of depth categories up to a maximum of four), and inputs a data description (name or range of values) for each stratification (depth).

Data Card Five (DA5) Records - These records input, for each zone, the depth marginal distribution of the variables which serve as the base unit for the trip rates being used in the model. The record provides for the input of the depth marginal distribution for both the production and attraction models. The production marginal distribution may not be used (depending on the production model and its independent variables), but the depth marginal distribution for the attraction model is required in this setup.

Cross-Classification Regression

The cross-classification regression attraction model option in TRIPCAL5 is specifically designed for estimating attractions using trip rates that are stratified by area type and for up to six other independent variables. The six independent variables are not disaggregated at the zone level, and the variables used must be input for each zone on either the DA1 and/or the DA2 records. Up to 24 different area types may be used. The required records for this model setup are as follows:

Attraction Cross-Classification Regression (AMC) Records - These records input the trip purpose code for which attractions are being estimated (using values on this record), the area type (up to 24), the number of independent variables (for this trip purpose and area type), the variable number (up to six variables may be specified), and the value of the coefficient associated with that variable.

The only other input for this model is dependent on the variables used in the model. If a non-typical variable (i.e., one which is not being input on the DA1 record) is being used,

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it will have to be input via a DA2 record.

Linear Regression

The linear regression attraction model requires only one type of input record other than the general program setup. Those records will be the following type:

Attraction Simple Regression (AMR) Records - These records input, for each trip purpose, the number of independent variables in the regression equation, the value of the constant in the equation, the variable number for each independent variable, and the value of the associated coefficient with each independent variable.

Two-Tier Regression

The two-tier regression attraction model requires the following input records:

Attraction District Regression (DR) Records - These records input, for each trip purpose, the number of independent variables in the regression equation, the value of the constant in the equation, the variable number for each independent variable, and the value of the coefficient associated with each independent variable. The regression equation input via these records is for estimating the number of attractions to each district in the urban area under study.

District to Zone Regression Allocation (DZR) Records - These records input, for each trip purpose, the regression equation used to estimate the attractions for each zone. The zonal attractions for the zones in each district are forced to total the estimated attractions for each district. The data input via these records includes the number of independent variables (up to six), the value of the constant in the equation, the variable number for each independent variable, and the value of the coefficient associated with each independent variable.

District Table of Equals (ED) Records - These records input the table of equals information which tells the program the zones which are a part of each district.

Disaggregation Setups

There are several options available for disaggregating data at the zone level for estimating

trip productions. As mentioned in the setups for the attraction cross-classification models, the DA3, DA4, and DA5 input records allow marginal distributions to be input for any base unit variable being used for the production trip rates. It should be noted that when the column, row, and depth information were being input for the production cross-classification models, one of the inputs was to identify whether the independent variable was household income, household size, auto ownership, or none. "None" stipulates that a variable other than income, household size, or auto ownership is being used. The program then expects to read the following record:

> **Cross-Classification Variable Number (CCV) Record** - This record inputs the variable number of the variable that will be distributed by the production cross-classification model and the variable number of the variable that will be distributed by the attraction cross-classification model. The input is required for the attraction cross-classification model but is only used for the production cross-classification model if households are not the base unit for the trip rates.

With respect to the use of household size, household income, and auto ownership, the user has three other options available to estimate the marginal distributions at the zone level. The first is the use of disaggregation curves. These curves may be input using the following records:

> **Household Size Disaggregation Curves (HH) Records** - These records input, for each value of the ratio of zonal average household size to the regional average household size (values range from 1.1 to 3.5 in increments of 0.1), the percentage of households in household size category 1, the percentage of households in household size category 2, etc., to the percentage of households in household size category 6.
>
> **Household Income Disaggregation Curves (IC) Records** - These records input, for each value of the ratio of zonal median income to the regional median income (values range from 0.1 to 2.5 in increments of 0.1), the percentage of households in income category 1, the percentage of households in income category 2, etc., up to the percentage of households in income category 6.
>
> **Auto Ownership Disaggregation Curves (AU) Records** - These records input median household income ranges (i.e., beginning and ending values); and, for each range, the

percentage of households with 0 autos, with 1 auto, with 2 autos, and with 3 or more autos is input.

The second option available to the user with respect to these three variables is the use of the default models which are incorporated into TRIPCAL5. These models do not have to be specified except in the PCI, PRI, and PDI records which identify which variable is the column, row, or depth independent variable. If the user does not input zonal marginal distributions (via the DA3, DA4, and/or DA5) records and does not input the disaggregation curves (see above), TRIPCAL5 assumes (provided the specification is on the PCI, PRI, and/or PDI records) that the default models are to be used.

The third option available to the user is to use a combination of options. Two combinations may be used. The user may input marginal distributions for selected zones and use either disaggregation curves or the default models for the other zones. This allows the user to use available information to improve the travel demand estimates.

The disaggregation of zonal data requires both the regional distribution (input via the PCR and/or ACR records) and an estimate of the marginal distribution for each zone. The user may input the marginal distributions for each zone and use any variable as specified on the CCV record. If households are the base unit for the production trip rates and household size, household income, and/or auto ownership are independent variables in the cross-classification production model, the user may input marginal distributions, input disaggregation curves, use default models, or use a combination.

TRIPCAL5
EXAMPLE SETUPS

With the ability to specify three (or more) trip production models, five (or more) trip attraction models, different disaggregation options, etc., it is not possible to provide an example setup of every different combination. Two different types of examples are, however, included in this section. The first set of examples is the records necessary to run specific models and options in TRIPCAL5. The second set of examples is actual data inputs for several trip generation runs for selected urban areas in Texas.

The example setups shown in Table 6 simply illustrate the specific record inputs required for the models and options identified. The formats for the records are contained in Appendix A and describe the specific information for each record as well as the format for coding the information. Not shown in the examples in Table 6 are the inputs for the sector, area type, and district tables of equals except where required. These inputs are primarily for summary reporting, and the user should input them if these types of reports are desired.

The first example in Table 6 is a two-way cross-classification production model with trip rates (trips per household) stratified by household size and household income. The attraction model is a cross-classification regression with trip rates stratified by area type, households, and employment type. The zonal marginal distributions are computed using disaggregation curves for both household size and household income. The second example is the same as the first example except the zonal marginal distributions are computed using the default models.

The third example in Table 6 is a two-way cross-classification model for both productions and attractions. The production trip rates (trips per household) are stratified by household size and auto ownership. The attraction trip rates are stratified by employment type and income. Note that in this case, the income disaggregation for the attraction model is done by the input of the marginal distributions for each zone. The marginal distributions for the zones for the production model are computed using the default model for the household size and disaggregation curves for auto ownership.

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Table 6
TRIPCAL5 PROGRAM SETUPS

	2-Way Cross-Class.	2-Way Cross-Class.	2-Way Cross-Class.	Linear Regression	3-Way Cross-Class.	3-Way Cross-Class.	2-Way Cross-Class.	Cross-Class Regression
Production Model Type	2-Way Cross-Class.	2-Way Cross-Class.	2-Way Cross-Class.	Linear Regression	3-Way Cross-Class.	3-Way Cross-Class.	2-Way Cross-Class.	Cross-Class Regression
Production Column Variable	Household Size	Household Size	Household Size		Household Size	Household Size	Household Size	Area Type
Production Row Variable	Household Income	Household Income	Auto Ownership		Household Income	Household Income	Household Income	Household & Employment
Production Depth Variable					Age of Head Household	Auto Ownership		
Attraction Model Type	Cross-Class. Regression	Cross-Class. Regression	2-Way Cross-Class.	Two-Tier Regression	Linear Regression	3-Way Cross-Class.	Two-Tier Regression	Cross-Class. Regression
Attraction Column Variable	Area Type	Area Type	Employment Type			Area Type		Area Type
Attraction Row Variable	Households & Employment	Households & Employment	Income			Income		Household & Employment
Attraction Depth Variable						Employment Type		
Income Disaggregation	Disaggregation Curves	Default	Zone Marginals		Disaggregation Curves	Default / Zone Marg.	Default / Zone Marg.	
Household Size Disaggregation	Disaggregation Curves	Default	Default		Default	Default	Disaggregation Curves	
Auto Ownership Disaggregation			Disaggregation Curves			Disaggregation Curves		
Other Disaggregation					Zone Marginals	Zone Marginals		Zone Marginals
Input Records	PS	PS	PS	PS	PS	PS	PS	PS
	TP	TP	TP	TP	TP	TP	TP	TP
	TBL	TBL	TBL	TBL	TBL	TBL	TBL	TBL
	PCI	PCI	PCI	PMR	PCI	PCI	PCI	PCI
	PRI	PRI	PRI	DR	PRI	PRI	PRI	PRI
	AMC	AMC	ACI	DZR	PDI	PDI	DR	AMC
	ACI	ACI	ARI	ED	AMR	ACI	DZR	ACI
	ARI	ARI	PT	NAM *	PCR	ARI	PCR	ARI
	PT	PT	AT	DA1	IC	ADI	NAM *	PT
	AT	AT	PCR	DA2 *	IR	CCV	PT	AT
	PCR	PCR	ACR		HS	PCR	IR	PCR
	IC	IR	HS		DA1	ACR	HH	EA
	IR	HS	AU		DA2	PT	HS	DA1
	HH	EA	CCV		DA5	AT & DA1	DA1	DA3
	HS	DA1	DA1			EA & DA2	DA2 *	DA4
	EA		DA2			IR & DA3	DA4	
	DA1		DA3			HS & DA4		
			DA4			AU & DA5		

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The fourth example illustrates the input for a linear regression production model and a two-tier linear regression attraction model. The input records with an "*" are optional depending on the variables specified in the models. For example, if school employment were being used as an independent variable, it would be input on the DA2 record and named with the NAM record.

The fifth example is a three-way cross-classification production model and a linear regression attraction model. The production trip rates (trips per household) are stratified by household size, household income, and age of head of household. The zonal marginal distributions are computed using disaggregation curves for household income, the default model for household size, and are input for age of head of household for each zone on the DA5 records. The DA2 record is shown here assuming additional variables for the attraction regression model (i.e., other than those already on the DA1 record).

The sixth example is the most complex in that it is a three-way cross-classification model for both productions and attractions. The production trip rates (trips per household) are stratified by household size, household income, and auto ownership. The attraction trip rates are stratified by area type, income, and employment type. The disaggregation for the production model uses the default model for household income and household size and the disaggregation curves for auto ownership. The disaggregation for each of the attraction independent variables is input on the DA3, DA4, and DA5 records. The input records are shown double at the end simply to avoid continuing the table on the next page.

The seventh example is a two-way cross-classification production model with a two-tier regression attraction model. The production trip rates (trips per household) are stratified by household size and household income. The disaggregation of households by household income is done using the default model and marginal distributions input directly for selected zones. The household size disaggregation is done using disaggregation curves. Note that the only distinction between this example and the first two examples is the DA4 record which would be input only for those zones where the marginal distribution of households by household income was being input. The NAM and DA2 records are shown as optional (indicated by "*") since their requirement would be dependent on the independent variables being used in the two regression models.

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The eighth example in Table 6 is a cross-classification regression model for both productions and attractions. The trip rates for both are stratified by area type, households, and employment type. The marginal distributions for the production model are input for each zone on the DA3 and DA4 records.

As an aid in further understanding the input to run TRIPCAL5, three examples of the actual data input for two urban areas are shown in Appendix B, Tables B-2, B-3, and B-4. The first is a test run using data from the Dallas-Fort Worth area. The model being tested was a two-way cross-classification trip production model and a three-way cross-classification trip attraction model. This setup was run for only one trip purpose, home based work trips, because this was the type model used in the Dallas-Fort Worth area in their trip generation program. Production trip rates are stratified by six categories of household size and four categories of household income. The attraction trip rates (trips per employee) are stratified by five area types, four income categories, and three employment types. Only two examples are shown of the DA1, DA2, DA3, DA4, and DA5 records. This was done to keep the length of the example to a manageable level since there were 605 zones (five data records per zone would yield over 3,000 records). It will be noted that the disaggregation of the households by income group and household size was done using disaggregation curves for the production model. The disaggregation of employees in the attraction model was done by inputting the marginal distribution for each zone (i.e., by inputting the DA3, DA4, and DA5 records).

The second example shown in Appendix B is also for the Dallas-Fort Worth area. In this example, TRIPCAL5 was set up to run a two-way cross-classification trip production model for home based non-work and non-home based trips. The trip attraction model was a cross-classification regression model using trip rates stratified by five area types versus households and by three employment types. The trip production rates were stratified by four income groups (i.e., income quartiles) and six groups of household size. Once again, only two examples are shown for the DA1 records. It will be noted that the disaggregation curves were used for disaggregating households by income group and household size for the production model.

The third example in Appendix B is for the Austin urban area. It differs from the

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previous two examples in that the trip production model used is a three-way cross-classification model with trip rates (trips per household) stratified by household size (three categories), household income (five categories), and auto ownership (four categories). The trip attraction model is a cross-classification regression model with trip rates stratified by area type versus households and by three types of employment. The disaggregation of households at the zonal level for the production model is done using the default models in TRIPCAL5. One of the main differences in this example is that the trip productions are estimated for each zone and then percentages are applied to estimate the home based work, home based non-work, and non-home based productions. The total truck-taxi productions are read in directly on the TP record. The trip purpose percentages are input by income category on the PCT records. Productions and attractions for special generators are input via the SGP and SGA records and add-on trips are input via the AOP and AOA records.

Appendix C also contains input cross-reference tables which list the required and optional input records for each model in TRIPCAL5.

In keeping with the overall concept of flexibility, the program output from TRIPCAL5 has been designed to allow, as much as possible, the user to specify the output desired. In addition to the information output for direct input to the trip distribution process, 21 different reports may be printed. The user specifies the report(s) to be printed by inputting the TBL record. A listing of the reports and their respective numbers is shown in Table 7.

TRIPCAL5, Table 1 prints out the production and attraction models specified by the user for each trip purpose. Included are the trip rates if a cross-classification type model is being used and/or the constant and coefficients input if a regression model is being used.

TRIPCAL5, Tables 2, 3, and 4 are basically equivalency tables which print out, respectively, the zone to sector equivalencies, zone to district equivalencies, and zone to area type equivalencies.

TRIPCAL5, Table 5 prints out the regional distribution input for the production model and/or the attraction model. For example, if the production model is a two-way cross-classification with trip rates (trips per household) stratified by household size and household income, the regional distribution (for the production model) would be the percentage of households for each category of household size by each category of household income.

TRIPCAL5, Tables 6, 7, and 8 output the disaggregate results of the trip generation process. Respectively, the results are printed by zone, sector, and/or area type. Depending upon the number of zones and the type model used, the output for Table 6 (i.e., for each zone) can be extensive. For example, if a two-way cross-classification model is used for productions, the trip production output for Table 6 would be the trips produced for each individual stratification of independent variables for each trip purpose. If the user wants the Table 6 output only for certain zones, these zone numbers must be input using the SEL record. This allows the user to analyze the detailed information for only selected zones. If no zones are specified on the SEL record(s), Table 6 is not printed. If Table 6 is desired, the SEL record(s) must be input.

Table 7
TRIPCAL5 OUTPUT TABLES

Table Number	Title of Table
1	TRIP MODEL INPUT
2	ZONE TO SECTOR TABLE OF EQUALS
3	ZONE TO DISTRICT TABLE OF EQUALS
4	ZONE TO AREA TYPE TABLE OF EQUALS
5	REGIONAL DISTRIBUTION
6	DISAGGREGATE ZONAL RESULTS
7	DISAGGREGATE SECTOR RESULTS
8	DISAGGREGATE AREA TYPE RESULTS
9	UNSCALED RESULTS
10	SCALING FACTOR COMPUTATIONS
11	AGGREGATE PRODUCTIONS AND ATTRACTIONS BY SECTOR
12	AGGREGATE PRODUCTIONS AND ATTRACTIONS BY ZONE WITHIN SECTOR
13	AGGREGATE PRODUCTIONS AND ATTRACTIONS BY AREA TYPE
14	AGGREGATE PRODUCTIONS AND ATTRACTIONS BY ZONE WITHIN AREA TYPE
15	STUDY AREA CHARACTERISTICS SUMMARY BY SECTOR
16	STUDY AREA CHARACTERISTICS SUMMARY BY ZONE WITHIN SECTOR
17	STUDY AREA CHARACTERISTICS SUMMARY BY AREA TYPE
18	STUDY AREA CHARACTERISTICS SUMMARY BY ZONE WITHIN AREA TYPE
19	STUDY AREA CHARACTERISTICS SUMMARY BY ZONE
20	FINAL PRODUCTIONS AND ATTRACTIONS
21	SPECIAL GENERATOR DATA COMMENTS

TRIPCAL5, Table 9 presents the unscaled productions and attractions by trip purpose and zone, and Table 10 presents the scaling factor computations.

TRIPCAL5, Tables 11, 12, 13, and 14 contain the aggregate productions and attractions which have been estimated for each trip purpose. Table 11 presents the estimates by sector, Table 12 presents the estimates by zone within each sector, Table 13 presents the estimates by area type, and Table 14 presents the estimates by zone within each area type.

TRIPCAL5, Tables 15, 16, 17, 18, and 19 present basic data for the study area in different formats. The data presented include population, households, average household size, employment, employment by type, autos per household, autos per person, household income; and trips per person and trips per household by trip purpose. This information can be printed by sector, by zone within each sector, by area type, by zone within each area type, and/or just by zone.

TRIPCAL5, Table 20 presents the final productions and attractions by trip purpose for each zone. These values have been scaled according to the specifications of the user and are the base information output in the correct format for input to the trip distribution process.

TRIPCAL5, Table 21 prints out the comment information on the special generators which were input via the CMT records. This information is printed out by zone.

If no zones are specified on the SEL record(s), Table 6 is not printed. If Table 6 is desired, the SEL record(s) must be input.

Appendix D contains example printouts of each table. The printouts reflect the information for one or two zones only and are included simply to illustrate the format and content for each table.

Generation Card Output

The format of the generation cards is the same as is used in TRIPCAL4. There are some differences, however, since there are 10 possible trip purposes; and these purposes may be in any order. The first four trip purposes are output in the generation card format as shown in Table 8. If non-home based trips are present, these are also output as external local attractions. The non-home based trip purpose is recognized from the "N" flag on the TP

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record. Trip purposes 5 through 8 are output in the second format as shown in Table 9 to Unit 21. If trip purpose 9 or 10 is used, these are output to Unit 22 in the format shown in Table 10. These three formats are identical in fields except that Tables 9 and 10 have fewer fields. The formats all specify productions and attractions. If one of the purposes is NHB, then productions for that purpose will be origins; and attractions will be destinations.

For the generation card format to be identical to TRIPCAL4, a four-purpose model with purpose 1 being non-home based, purpose 2 being home based work, purpose 3 being home based non-work, and purpose 4 being truck-taxi must be run in TRIPCAL5.

Table 8
GENERATION OUTPUT FORMAT FOR UNIT 20

Format - ("GENERATION,"I5,10I5,A10,I1,I4)

Columns	FMT	Contents
1-10	A10	"GENERATION"
11-15	I5	Serial Zone Number
16-20	I5	Productions for Trip Purpose 1
21-25	I5	Attractions for Trip Purpose 1
26-30	I5	Productions for Trip Purpose 2
31-35	I5	Attractions for Trip Purpose 2
36-40	I5	Productions for Trip Purpose 3
41-45	I5	Attractions for Trip Purpose 3
46-50	I5	External Local Productions[1]
51-55	I5	External Local Attractions[2]
56-60	I5	Productions for Trip Purpose 4
61-65	I5	Attractions for Trip Purpose 4
66-75	A10	Study ID
76	I1	Mode (0 = Person Trips, 1 = Auto Driver Trips)
77-80	I4	Year

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[1] This field is output as zero from TRIPCAL5 since it is assumed that TRIPCAL5 only processes internal zones.

[2] The present TRIPCAL5 takes the NHB attractions for this field. The NHB trip purpose is detected by the Non Home based Flag on the TP card (an "N" in column 34 of the TP card).

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Table 9
GENERATION OUTPUT FORMAT FOR UNIT 21

Format - ("GENERATION,"I5,6I5,10X,2I5,A10,I1,I4)

Columns	FMT	Contents
1-10	A10	"GENERATION"
11-15	I5	Serial Zone Number
16-20	I5	Productions for Trip Purpose 5
21-25	I5	Attractions for Trip Purpose 5
26-30	I5	Productions for Trip Purpose 6
31-35	I5	Attractions for Trip Purpose 6
36-40	I5	Productions for Trip Purpose 7
41-45	I5	Attractions for Trip Purpose 7
56-60	I5	Productions for Trip Purpose 8
61-65	I5	Attractions for Trip Purpose 8
66-75	A10	Study ID
76	I1	Mode (0 = Person Trips, 1 = Auto Driver Trips)
77-80	I4	Year

Table 10
GENERATION OUTPUT FORMAT FOR UNIT 22

Format - ("GENERATION,"I5,4I5,30X,A10,I1,I4)

Columns	FMT	Contents
1-10	A10	"GENERATION"
11-15	I5	Serial Zone Number
16-20	I5	Productions for Trip Purpose 9
21-25	I5	Attractions for Trip Purpose 9
26-30	I5	Productions for Trip Purpose 10
31-35	I5	Attractions for Trip Purpose 10
66-75	A10	Study ID
76	I1	Mode (0 = Person Trips, 1 = Auto Driver Trips)
77-80	I4	Year

APPENDIX A
RECORD FORMATS AND DESCRIPTIONS

PS Program Control/Specification Record

Format - (A2,1X,A15,I7,2I4,I5,4I2,F10.0,F8.3,I2)

Columns	FMT	Contents
1-2	A2	"PS"
4-18	A15	Name of urban area
19-25	I7	Number of zones (up to 9,999)
26-29	I4	Number of sectors (up to 100)
30-33	I4	Number of generation areas (up to 24)
34-38	I5	Study year
39-40	I2	Trip type code (0 = person trips, 1 = auto driver trips)
41-42	I2	Purpose code (0 = distinct trip model for each trip purpose [no PCT records], 1 = PCT records input by row category, 2 = PCT records input by column category, 3 = PCT records input by depth category)
43-44	I2	Add-on records code (0 = no add-on records, 1 = special generator or add-on records)
47-56	F10.0	Regional median income
57-64	F8.3	1967 based consumer price index
65-66	I2	Default truck-taxi model code (0 = use truck-taxi default model to compute control total for truck-taxi trips; 1 = do not use truck-taxi default model)

TP   Trip Purpose Record

Format - (A3,T3,I3,1X,A20,1X,A1,1X,A1,1X,A1,1X,A1,T41,F10.0)

Columns	FMT	Contents
1-3	A3	"TP"
4-5	I2	Trip purpose code (1-10)
7-26	A20	Trip purpose name
28	A1	Production model option
30	A1	Attraction model option
32	A1	Balance code ("P" = balance to productions, "A" = balance to attractions)
34	A1	Flag for non-home based = "N" or Truck-Taxi = "T"
41-50	F10.0	Trip control total

Production Model Option Codes:

    A = two-way cross-classification table ("PCI","PRI",and "PCR" records)
    B = three-way cross-classification table ("PCI","PRI","PDI",and "PCR" records)
    C = simple regression model ("PMR" record)

Attraction Model Option Codes:

    A = two-way cross-classification table ("ACI","ARI",and "ACR" records)
    B = three-way cross-classification table ("ACI","ARI","ADI",and "ACR" records)
    C = simple regression model ("AMR" record)
    D = regression type cross-classification ("AMC" records)
    E = two-tier regression model ("DR" and "DZR" records)

TBL   Reports to Be Printed

Format - (A3,2X,15I5)

Columns	FMT	Contents
1-2	A3	"TBL"
6-10	I5	Report number[3]
11-15	I5	Report number
16-20	I5	Report number
21-25	I5	Report number
26-30	I5	Report number
31-35	I5	Report number
36-40	I5	Report number
41-45	I5	Report number
46-50	I5	Report number
51-55	I5	Report number
56-60	I5	Report number
61-65	I5	Report number
66-70	I5	Report number
71-75	I5	Report number
76-80	I5	Report number

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[3]Two consecutive report numbers on one TBL record can form a range by using a dash before the second report number. Ranges cannot be split over records.

SEL   Zones to Be Printed in Table 6

Format - (A3,2X,15I5)

Columns	FMT	Contents
1-2	A3	"SEL"
6-10	I5	Zone number[4]
11-15	I5	Zone number
16-20	I5	Zone number
21-25	I5	Zone number
26-30	I5	Zone number
31-35	I5	Zone number
36-40	I5	Zone number
41-45	I5	Zone number
46-50	I5	Zone number
51-55	I5	Zone number
56-60	I5	Zone number
61-65	I5	Zone number
66-70	I5	Zone number
71-75	I5	Zone number
76-80	I5	Zone number

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[4]Two consecutive zone numbers on one SEL record can form a range by using a dash before the second zone number. Ranges cannot be split over records.

CCV   Cross-Classification Variable Number Record

Format - (A3,T5,I2,I3)

Columns	FMT	Contents
1-3	A3	"CCV"
5-6	I2	Production cross-classification variable number. This is the variable which will be distributed by the production cross-classification model. The variable number may be between 1 and 17. Variables 1 through 9 are taken from the DA1 record, and variables 10 through 17 are taken from the DA2 record. If there is no CCV card image, then the default is 3.
7-9	I3	Attraction cross-classification variable number. This is the variable which will be distributed by the attraction cross-classification model. The variable number may be between 1 and 17. Variables 1 through 9 are taken from the DA1 record, and variables 10 through 17 are taken from the DA2 record. There is no default value.

PCI   Production Column Information
Two-Way Cross-Classification Model

Format - (A3,1X,A10,1X,A1,1X,I1,1X,6A10)

Columns	FMT	Contents
1-3	A3	"PCI"
5-14	A10	Column variable name
16	A1	Default marginal model code ("N" = none, "I" = Income, "H" = Household size, "A" = Auto Ownership)
18	I1	Number of columns
20-29	A10	Column one data description
30-39	A10	Column two data description
40-49	A10	Column three data description
50-59	A10	Column four data description
60-69	A10	Column five data description
70-79	A10	Column six data and Control Records description

PRI Production Row Information
Two-Way Cross-Classification Model

Format - (A3,1X,A10,1X,A1,1X,I1,1X,6A10)

Columns	FMT	Contents
1-3	A3	"PRI"
5-14	A10	Row variable name
16	A1	Default marginal model code ("N" = none, "I" = Income, "H" = Household size, "A" = Auto Ownership)
18	I1	Number of rows
20-29	A10	Row one data description
30-39	A10	Row two data description
40-49	A10	Row three data description
50-59	A10	Row four data description
60-69	A10	Row five data description
70-79	A10	Row six data description

PDI   Production Depth Information
Two-Way Cross-Classification Model

Format - (A3,1X,A10,1X,A1,1X,I1,1X,4A10)

Columns	FMT	Contents
1-3	A3	"PDI"
5-14	A10	Depth variable name
16	A1	Default marginal model code ("N" = none, "I" = Income, "H" = Household size, "A" = Auto Ownership)
18	I1	Number of depths
20-29	A10	Depth one data description
30-39	A10	Depth two data description
40-49	A10	Depth three data description
50-59	A10	Depth four data description

PMR Production Simple Regression Model

Format - (A3,I2,I3,2X,F8.0,6(I2,F8.0))

Columns	FMT	Contents
1-3	A3	"PMR"
4-5	I2	Trip purpose code (1-10)
6-8	I3	Number of independent variables (1-6)
11-18	F8.0	Constant coefficient
19-20	I2	Variable number for first independent variable
21-28	F8.0	Coefficient for first independent variable
29-30	I2	Variable number for second independent variable
31-38	F8.0	Coefficient for second independent variable
39-40	I2	Variable number for third independent variable
41-48	F8.0	Coefficient for third independent variable
49-50	I2	Variable number for fourth independent variable
51-58	F8.0	Coefficient for fourth independent variable
59-60	I2	Variable number for fifth independent variable
61-68	F8.0	Coefficient for fifth independent variable
69-70	I2	Variable number for sixth independent variable
71-78	F8.0	Coefficient for sixth independent variable

NAM Independent Variable Name

Format - (A3,I3,1X,A10)

Columns	FMT	Contents
1-3	A3	"NAM"
4-6	I3	Independent variable number on DA1 (1-9) and/or DA2 (10-17) (see Table 4)
10-29	A20	Independent variable name

AMR Attraction Linear Regression Model

Format - (A3,I2,I3,2X,F8.0,6(I2,F8.0))

Columns	FMT	Contents
1-3	A3	"AMR"
4-5	I2	Trip purpose code (1-10)
6-8	I3	Number of independent variables (1-6)
11-18	F8.0	Constant coefficient
19-20	I2	Variable number for first independent variable
21-28	F8.0	Coefficient for first independent variable
29-30	I2	Variable number for second independent variable
31-38	F8.0	Coefficient for second independent variable
39-40	I2	Variable number for third independent variable
41-48	F8.0	Coefficient for third independent variable
49-50	I2	Variable number for fourth independent variable
51-58	F8.0	Coefficient for fourth independent variable
59-60	I2	Variable number for fifth independent variable
61-68	F8.0	Coefficient for fifth independent variable
69-70	I2	Variable number for sixth independent variable
71-78	F8.0	Coefficient for sixth independent variable

AMC Attraction Cross-Classification Regression Model

Format - (A3,I2,2I3,T19,6(I2,F8.0))

Columns	FMT	Contents
1-3	A3	"AMC"
4-5	I2	Trip purpose code (1-10)
6-8	I3	Area type
9-11	I3	Number of independent variables (1-6)
19-20	I2	Variable number for first independent variable
21-28	F8.0	Coefficient for first independent variable
29-30	I2	Variable number for second independent variable
31-38	F8.0	Coefficient for second independent variable
39-40	I2	Variable number for third independent variable
41-48	F8.0	Coefficient for third independent variable
49-50	I2	Variable number for fourth independent variable
51-58	F8.0	Coefficient for fourth independent variable
59-60	I2	Variable number for fifth independent variable
61-68	F8.0	Coefficient for fifth independent variable
69-70	I2	Variable number for sixth independent variable
71-78	F8.0	Coefficient for sixth independent variable

ACI   Attraction Column Information
      Two-Way Cross-Classification Model

Format - (A3,1X,A10,3X,I1,1X,6A10)

Columns	FMT	Contents
1-3	A3	"ACI"
5-14	A10	Column variable name
18	I1	Number of columns
20-29	A10	Column one data description
30-39	A10	Column two data description
40-49	A10	Column three data description
50-59	A10	Column four data description
60-69	A10	Column five data description
70-79	A10	Column six data description

ARI   Attraction Row Information
Two-Way Cross-Classification Model

Format - (A3,1X,A10,3X,I1,1X,6A10)

Columns	FMT	Contents
1-3	A3	"ARI"
5-14	A10	Row variable name
18	I1	Number of rows
20-29	A10	Row one data description
30-39	A10	Row two data description
40-49	A10	Row three data description
50-59	A10	Row four data description
60-69	A10	Row five data description
70-79	A10	Row six data description

ADI   Attraction Depth Information
Two-Way Cross-Classification Model

Format - (A3,1X,A10,3X,I1,1X,4A10)

Columns	FMT	Contents
1-3	A3	"ADI"
5-14	A10	Depth variable name
18	I1	Number of depths
20-29	A10	Depth one data description
30-39	A10	Depth two data description
40-49	A10	Depth three data description
50-59	A10	Depth four data description

DR   Attraction District Regression Model

Format - (A3,I2,I3,2X,F8.0,6(I2,F8.0))

Columns	FMT	Contents
1-3	A3	"DR "
4-5	I2	Trip purpose code (1-10)
6-8	I3	Number of independent variables (1-6)
11-18	F8.0	Constant coefficient
19-20	I2	Variable number for first independent variable
21-28	F8.0	Coefficient for first independent variable
29-30	I2	Variable number for second independent variable
31-38	F8.0	Coefficient for second independent variable
39-40	I2	Variable number for third independent variable
41-48	F8.0	Coefficient for third independent variable
49-50	I2	Variable number for fourth independent variable
51-58	F8.0	Coefficient for fourth independent variable
59-60	I2	Variable number for fifth independent variable
61-68	F8.0	Coefficient for fifth independent variable
69-70	I2	Variable number for sixth independent variable
71-78	F8.0	Coefficient for sixth independent variable

DZR   District to Zone Regression Allocation

Format - (A3,I2,I3,2X,F8.0,6(I2,F8.0))

Columns	FMT	Contents
1-3	A3	"DZR"
4-5	I2	Trip purpose code (1-10)
6-8	I3	Number of independent variables (1-6)
11-18	F8.0	Constant coefficient
19-20	I2	Variable number for first independent variable
21-28	F8.0	Coefficient for first independent variable
29-30	I2	Variable number for second independent variable
31-38	F8.0	Coefficient for second independent variable
39-40	I2	Variable number for third independent variable
41-48	F8.0	Coefficient for third independent variable
49-50	I2	Variable number for fourth independent variable
51-58	F8.0	Coefficient for fourth independent variable
59-60	I2	Variable number for fifth independent variable
61-68	F8.0	Coefficient for fifth independent variable
69-70	I2	Variable number for sixth independent variable
71-78	F8.0	Coefficient for sixth independent variable

PCR   Regional Distribution for Production Cross-Classification Model

Format - (A3,2I2,6F5.0)

Columns	FMT	Contents
1-3	A3	"PCR"
4-5	I2	Depth "i" category number (three-way cross-classification only)
6-7	I2	Row "j" category
8-12	F5.0	Regional percentage of unit variable[5] for production trip rate within depth "i," row "j," and column 1
13-17	F5.0	Regional percentage of unit variable for production trip rate within depth "i," row "j," and column 2
18-22	F5.0	Regional percentage of unit variable for production trip rate within depth "i," row "j," and column 3
23-27	F5.0	Regional percentage of unit variable for production trip rate within depth "i," row "j," and column 4
28-32	F5.0	Regional percentage of unit variable for production trip rate within depth "i," row "j," and column 5
33-37	F5.0	Regional percentage of unit variable for production trip rate within depth "i," row "j," and column 6

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[5]Unit variable is the variable on which the trip rate is based; e.g.,if trip rate is trips per household, the unit variable is households.

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PCT   Percent of Trips by Category Index and Trip Purpose[6]

Format - (A3,I2,10F4.0)

Columns	FMT	Contents
1-3	A3	"PCT"
4-5	I2	Category index (1-6)[7]
6-9	F4.0	Percent of trips by selected category for trip purpose 1
10-13	F4.0	Percent of trips by selected category for trip purpose 2
14-17	F4.0	Percent of trips by selected category for trip purpose 3
18-21	F4.0	Percent of trips by selected category for trip purpose 4
22-25	F4.0	Percent of trips by selected category for trip purpose 5
26-29	F4.0	Percent of trips by selected category for trip purpose 6
30-33	F4.0	Percent of trips by selected category for trip purpose 7
34-37	F4.0	Percent of trips by selected category for trip purpose 8
38-41	F4.0	Percent of trips by selected category for trip purpose 9
42-45	F4.0	Percent of trips by selected category for trip purpose 10

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[6] Only present if not discreet trip purposes

[7] The type of index is specified by the Purpose code on the "PS" control record. If "3" is specified by depth index, then the limit is 1-4.

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PT   Production Trip Rate

Format - (A2,3I3,1X,6F10.0)

Columns	FMT	Contents
1-2	A2	"PT"
3-5	I3	Trip purpose code (1-10)
6-8	I3	Depth "i"category number (three-way cross-classification only)
9-11	I3	Row "j"category
13-22	F10.0	Trip rate for depth "i,"row "j,"and column 1
23-32	F10.0	Trip rate for depth "i,"row "j,"and column 2
33-42	F10.0	Trip rate for depth "i,"row "j,"and column 3
43-52	F10.0	Trip rate for depth "i,"row "j,"and column 4
53-62	F10.0	Trip rate for depth "i,"row "j,"and column 5
63-72	F10.0	Trip rate for depth "i,"row "j,"and column 6

ACR   Regional Distribution for Attraction Cross-Classification Model

Format - (A3,2I2,6F5.0)

Columns	FMT	Contents
1-3	A3	"ACR"
4-5	I2	Depth "i" category number (three-way cross-classification only)
6-7	I2	Row "j" category
8-12	F5.0	Regional percentage of unit variable[8] for attraction trip rate within depth "i," row "j," and column 1
13-17	F5.0	Regional percentage of unit variable for attraction trip rate within depth "i," row "j," and column 2
18-22	F5.0	Regional percentage of unit variable for attraction trip rate within depth "i," row "j," and column 3
23-27	F5.0	Regional percentage of unit variable for attraction trip rate within depth "i," row "j," and column 4
28-32	F5.0	Regional percentage of unit variable for attraction trip rate within depth "i," row "j," and column 5
33-37	F5.0	Regional percentage of unit variable for attraction trip rate within depth "i," row "j," and column 6

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[8]Unit variable is the variable on which the trip rate is based; e.g.,if trip rate is trips per employee, the unit variable is employees.

AT   Attraction Trip Rate

Format - (A2,3I3,1X,6F10.0)

Columns	FMT	Contents
1-2	A2	"AT"
3-5	I3	Trip purpose code (1-10)
6-8	I3	Depth "i" category number (three-way cross-classification only)
9-11	I3	Row "j" category
13-22	F10.0	Trip rate for depth "i," row "j," and column 1
23-32	F10.0	Trip rate for depth "i," row "j," and column 2
33-42	F10.0	Trip rate for depth "i," row "j," and column 3
43-52	F10.0	Trip rate for depth "i," row "j," and column 4
53-62	F10.0	Trip rate for depth "i," row "j," and column 5
63-72	F10.0	Trip rate for depth "i," row "j," and column 6

ES   Sector Table of Equals

Format - (A2,I3,15I5)

Columns	FMT	Contents
1-2	A2	"ES"
3-5	I3	Sector number
6-10	I5	Zone number within sector[9]
11-15	I5	Zone number within sector
16-20	I5	Zone number within sector
21-25	I5	Zone number within sector
26-30	I5	Zone number within sector
31-35	I5	Zone number within sector
36-40	I5	Zone number within sector
41-45	I5	Zone number within sector
46-50	I5	Zone number within sector
51-55	I5	Zone number within sector
56-60	I5	Zone number within sector
61-65	I5	Zone number within sector
66-70	I5	Zone number within sector
71-75	I5	Zone number within sector
76-80	I5	Zone number within sector

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[9]Two consecutive zone numbers on one ES record can form a range by using a dash before the second zone. Ranges cannot be split over records.

EA   Area Type Table of Equals

Format - (A2,I3,15I5)

Columns	FMT	Contents
1-2	A2	"EA"
3-5	I3	Area type number
6-10	I5	Zone number within area type[10]
11-15	I5	Zone number within area type
16-20	I5	Zone number within area type
21-25	I5	Zone number within area type
26-30	I5	Zone number within area type
31-35	I5	Zone number within area type
36-40	I5	Zone number within area type
41-45	I5	Zone number within area type
46-50	I5	Zone number within area type
51-55	I5	Zone number within area type
56-60	I5	Zone number within area type
61-65	I5	Zone number within area type
66-70	I5	Zone number within area type
71-75	I5	Zone number within area type
76-80	I5	Zone number within area type

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[10]Two consecutive zone numbers on one EA record can form a range by using a dash before the second zone. Ranges cannot be split over records.

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ED   District Table of Equals

Format - (A2,I3,15I5)

Columns	FMT	Contents
1-2	A2	"ED"
3-5	I3	District number
6-10	I5	Zone number within district[11]
11-15	I5	Zone number within district
16-20	I5	Zone number within district
21-25	I5	Zone number within district
26-30	I5	Zone number within district
31-35	I5	Zone number within district
36-40	I5	Zone number within district
41-45	I5	Zone number within district
46-50	I5	Zone number within district
51-55	I5	Zone number within district
56-60	I5	Zone number within district
61-65	I5	Zone number within district
66-70	I5	Zone number within district
71-75	I5	Zone number within district
76-80	I5	Zone number within district

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[11]Two consecutive zone numbers on one ED record can form a range by using a dash before the second zone. Ranges cannot be split over records.

IC   Income Disaggregation Curves

Format - (A2,F5.1,6F6.2)

Columns	FMT	Contents
1-2	A2	"IC"
3-7	F5.1	Ratio of zonal median income to regional median income (0.1 to 2.5 in increments of 0.1)
8-13	F6.2	Percentage of households in income category one
14-19	F6.2	Percentage of households in income category two
20-25	F6.2	Percentage of households in income category three
26-31	F6.2	Percentage of households in income category four
32-37	F6.2	Percentage of households in income category five
38-43	F6.2	Percentage of households in income category six

IR   Income Ranges

Format - (A3,1X,6F10.0)

Columns	FMT	Contents
1-3	A3	"IR"
5-14	F10.0	Ending value of income range in income category one
15-24	F10.0	Ending value of income range in income category two
25-34	F10.0	Ending value of income range in income category three
35-44	F10.0	Ending value of income range in income category four
45-54	F10.0	Ending value of income range in income category five
55-64	F10.0	Ending value of income range in income category six

HH   Household Size Disaggregation Curves

Format - (A2,F5.1,6F6.2)

Columns	FMT	Contents
1-2	A2	"HH"
3-7	F5.1	Ratio of zonal average household size to regional average household size (1.1 to 3.5 in increments of 0.1)
8-13	F6.2	Percentage of households in household size category one
14-19	F6.2	Percentage of households in household size category two
20-25	F6.2	Percentage of households in household size category three
26-31	F6.2	Percentage of households in household size category four
32-37	F6.2	Percentage of households in household size category five
38-43	F6.2	Percentage of households in household size category six

AU   Auto Ownership Disaggregation Curve

Format - (A2,1X,2F6.0,4F6.2)

Columns	FMT	Contents
1-2	A2	"AU"
4-9	F6.0	Beginning median household income
10-15	F6.0	Ending median household income
16-21	F6.2	Percentage of households with zero autos owned or available in that range of median household income
22-27	F6.2	Percentage of households with one auto owned or available in that range of median household income
28-33	F6.2	Percentage of households with two autos owned or available in that range of median household income
34-40	F6.2	Percentage of households with three or more autos owned or available in that range of median household income

HS   Household Size Ranges

Format - (A3,6F5.0)

Columns	FMT	Contents
1-3	A3	"HS"
4-8	F5.0	Ending value of household size range in household size category one
9-13	F5.0	Ending value of household size range in household size category two
14-18	F5.0	Ending value of household size range in household size category three
19-23	F5.0	Ending value of household size range in household size category four
24-28	F5.0	Ending value of household size range in household size category five
29-33	F5.0	Ending value of household size range in household size category six

DA1   Input Data Card One

Format - (A3,I5,9F7.0)

Columns	FMT	Contents
1-3	A3	"DA1"
4-8	I5	Zone number
9-15	F7.0	Zone size in acres
16-22	F7.0	Total zone population
23-29	F7.0	Total households in zone
30-36	F7.0	Average household size for zone[12]
37-43	F7.0	Median household income in zone
44-50	F7.0	Zone total employment[13]
51-57	F7.0	Zone total basic employment
58-64	F7.0	Zone total retail employment
65-71	F7.0	Zone total service employment

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[12]If left blank, program will compute.

[13]If this is zero, the program will compute this value by adding the value from the next three zones.

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DA2   Input Data Card Two

Format - (A3,I5,8F9.0)

Columns	FMT	Contents
1-3	A3	"DA2"
4-8	I5	Zone number
9-17	F9.0	Value of selected independent variable
18-26	F9.0	Value of selected independent variable
27-35	F9.0	Value of selected independent variable
36-44	F9.0	Value of selected independent variable
45-53	F9.0	Value of selected independent variable
54-62	F9.0	Value of selected independent variable
63-71	F9.0	Value of selected independent variable
72-80	F9.0	Value of selected independent variable

DA3   Input Data Card Three

Format - (A3,I5,6F5.0,6F5.0)

Columns	FMT	Contents
1-3	A3	"DA3"
4-8	I5	Zone number
9-13	F5.0	Percentage of production unit variable in column category 1
14-18	F5.0	Percentage of production unit variable in column category 2
19-23	F5.0	Percentage of production unit variable in column category 3
24-28	F5.0	Percentage of production unit variable in column category 4
29-33	F5.0	Percentage of production unit variable in column category 5
34-38	F5.0	Percentage of production unit variable in column category 6
39-43	F5.0	Percentage of attraction unit variable in attraction column 1
44-48	F5.0	Percentage of attraction unit variable in attraction column 2
49-53	F5.0	Percentage of attraction unit variable in attraction column 3
54-58	F5.0	Percentage of attraction unit variable in attraction column 4
59-63	F5.0	Percentage of attraction unit variable in attraction column 5
64-68	F5.0	Percentage of attraction unit variable in attraction column 6

DA4   Input Data Card Four

Format - (A3,I5,6F5.0,6F5.0)

Columns	FMT	Contents
1-3	A3	"DA4"
4-8	I5	Zone number
9-13	F5.0	Percentage of production unit variable in row category 1
14-18	F5.0	Percentage of production unit variable in row category 2
19-23	F5.0	Percentage of production unit variable in row category 3
24-28	F5.0	Percentage of production unit variable in row category 4
29-33	F5.0	Percentage of production unit variable in row category 5
34-38	F5.0	Percentage of production unit variable in row category 6
39-43	F5.0	Percentage of attraction unit variable in attraction row 1
44-48	F5.0	Percentage of attraction unit variable in attraction row 2
49-53	F5.0	Percentage of attraction unit variable in attraction row 3
54-58	F5.0	Percentage of attraction unit variable in attraction row 4
59-63	F5.0	Percentage of attraction unit variable in attraction row 5
64-68	F5.0	Percentage of attraction unit variable in attraction row 6

DA5   Input Data Card Five

Format - (A3,I5,4F5.0,T39,4F5.0)

Columns	FMT	Contents
1-3	A3	"DA5"
4-8	I5	Zone number
9-13	F5.0	Percentage of production unit variable in depth category 1
14-18	F5.0	Percentage of production unit variable in depth category 2
19-23	F5.0	Percentage of production unit variable in depth category 3
24-28	F5.0	Percentage of production unit variable in depth category 4
39-43	F5.0	Percentage of attraction unit variable in attraction depth 1
44-48	F5.0	Percentage of attraction unit variable in attraction depth 2
49-53	F5.0	Percentage of attraction unit variable in attraction depth 3
54-58	F5.0	Percentage of attraction unit variable in attraction depth 4

SGP   Special Generator Productions

Format - (A3,I5,10(I2,I5))

Columns	FMT	Contents
1-3	A3	"SGP"
4-8	I5	Zone number
9-10	I2	Trip purpose of trips being added
11-15	I5	Number of trips added for that trip purpose
16-17	I2	Trip purpose of trips being added
18-22	I5	Number of trips added for that trip purpose
23-24	I2	Trip purpose of trips being added
25-29	I5	Number of trips added for that trip purpose
30-31	I2	Trip purpose of trips being added
32-36	I5	Number of trips added for that trip purpose
37-38	I2	Trip purpose of trips being added
39-43	I5	Number of trips added for that trip purpose
44-45	I2	Trip purpose of trips being added
46-50	I5	Number of trips added for that trip purpose
41-52	I2	Trip purpose of trips being added
53-57	I5	Number of trips added for that trip purpose
58-59	I2	Trip purpose of trips being added
60-64	I5	Number of trips added for that trip purpose
65-66	I2	Trip purpose of trips being added
67-71	I5	Number of trips added for that trip purpose
72-73	I2	Trip purpose of trips being added
74-78	I5	Number of trips added for that trip purpose

SGA   Special Generator Attractions

Format - (A3,I5,10(I2,I5))

Columns	FMT	Contents
1-3	A3	"SGA"
4-8	I5	Zone number
9-10	I2	Trip purpose of trips being added
11-15	I5	Number of trips added for that trip purpose
16-17	I2	Trip purpose of trips being added
18-22	I5	Number of trips added for that trip purpose
23-24	I2	Trip purpose of trips being added
25-29	I5	Number of trips added for that trip purpose
30-31	I2	Trip purpose of trips being added
32-36	I5	Number of trips added for that trip purpose
37-38	I2	Trip purpose of trips being added
39-43	I5	Number of trips added for that trip purpose
44-45	I2	Trip purpose of trips being added
46-50	I5	Number of trips added for that trip purpose
41-52	I2	Trip purpose of trips being added
53-57	I5	Number of trips added for that trip purpose
58-59	I2	Trip purpose of trips being added
60-64	I5	Number of trips added for that trip purpose
65-66	I2	Trip purpose of trips being added
67-71	I5	Number of trips added for that trip purpose
72-73	I2	Trip purpose of trips being added
74-78	I5	Number of trips added for that trip purpose

AOP   Add-on Trip Production Input

Format - (A3,I5,10(I2,I5))

Columns	FMT	Contents
1-3	A3	"AOP"
4-8	I5	Zone number
9-10	I2	Trip purpose of trips being added
11-15	I5	Number of trips added for that trip purpose
16-17	I2	Trip purpose of trips being added
18-22	I5	Number of trips added for that trip purpose
23-24	I2	Trip purpose of trips being added
25-29	I5	Number of trips added for that trip purpose
30-31	I2	Trip purpose of trips being added
32-36	I5	Number of trips added for that trip purpose
37-38	I2	Trip purpose of trips being added
39-43	I5	Number of trips added for that trip purpose
44-45	I2	Trip purpose of trips being added
46-50	I5	Number of trips added for that trip purpose
41-52	I2	Trip purpose of trips being added
53-57	I5	Number of trips added for that trip purpose
58-59	I2	Trip purpose of trips being added
60-64	I5	Number of trips added for that trip purpose
65-66	I2	Trip purpose of trips being added
67-71	I5	Number of trips added for that trip purpose
72-73	I2	Trip purpose of trips being added
74-78	I5	Number of trips added for that trip purpose

AOA   Add-on Trip Attraction Input

Format - (A3,I5,10(I2,I5))

Columns	FMT	Contents
1-3	A3	"AOA"
4-8	I5	Zone number
9-10	I2	Trip purpose of trips being added
11-15	I5	Number of trips added for that trip purpose
16-17	I2	Trip purpose of trips being added
18-22	I5	Number of trips added for that trip purpose
23-24	I2	Trip purpose of trips being added
25-29	I5	Number of trips added for that trip purpose
30-31	I2	Trip purpose of trips being added
32-36	I5	Number of trips added for that trip purpose
37-38	I2	Trip purpose of trips being added
39-43	I5	Number of trips added for that trip purpose
44-45	I2	Trip purpose of trips being added
46-50	I5	Number of trips added for that trip purpose
41-52	I2	Trip purpose of trips being added
53-57	I5	Number of trips added for that trip purpose
58-59	I2	Trip purpose of trips being added
60-64	I5	Number of trips added for that trip purpose
65-66	I2	Trip purpose of trips being added
67-71	I5	Number of trips added for that trip purpose
72-73	I2	Trip purpose of trips being added
74-78	I5	Number of trips added for that trip purpose

SGZ   Special Generator Data

Format - (A3,I5,9F7.0)

Columns	FMT	Contents
1-3	A3	"SGZ"
4-8	I5	Zone number.
9-15	F7.0	Special generator size in acres.
16-22	F7.0	Population of special generators.
23-29	F7.0	Total households in special generators.
30-36	F7.0	Average household size for special generators[14].
37-43	F7.0	Median household income for special generators.
44-50	F7.0	Total employment in special generators[15].
51-57	F7.0	Total basic employment in special generators.
58-64	F7.0	Total retail employment in special generators.
65-71	F7.0	Total service employment in special generators.

---

[14] If left blank, program will compute and assume it read in as a variable

[15] If this is zero, the program will compute this value by adding the value from the next three zones.

CMT Zone Comment card

Format - (A3,I5,1X,A71)

Columns	FMT	Contents
1-3	A3	"CMT"
4-8	I5	Zone number.
10-80	A71	Comments describing special conditions for this zone

APPENDIX B

TRIPCAL5
EXAMPLE PROGRAM SETUPS

Table B-1
EXAMPLE JCL TO RUN TRIPCAL5
AT TEXAS A&M UNIVERSITY

```
//TCAL5   JOB   ( ,60A,S59,20,MS),'SALAMI DFW TEST RUN'
//TR5     EXEC  PGM=TRIPCAL5,REGION=4500K
//STEPLIB  DD   DISP=SHR,DSN=USR.W208.CB.TR5LIB2
//SORTLIB  DD   DSN=SYS1.SORTLIB,DISP=SHR
//SORTMSG  DD   SYSOUT=A
//FT09F001 DD   UNIT=SYSDA,DSN=&INSORT,SPACE=(TRK,(30,10)),
//  DCB=(RECFM=FB,LRECL=128,BLKSIZE=6272)
//SORTIN   DD   DSN=&INSORT,VOL=REF=*.FT09F001,DISP=(OLD,PASS),
//  DCB=(RECFM=FB,LRECL=128,BLKSIZE=6272),SPACE=(TRK,(30,10))
//SORTWK01 DD   UNIT=SYSDA,SPACE=(TRK,(30),,CONTIG),SEP=SORTIN
//SORTWK02 DD   UNIT=SYSDA,SPACE=(TRK,(30),,CONTIG),SEP=SORTWK01
//SORTWK03 DD   UNIT=SYSDA,SPACE=(TRK,(30),,CONTIG),SEP=SORTWK02
//SORTOUT  DD   DSN=&OUTSORT,UNIT=SYSDA,SEP=SORTWK03,
//  DCB=(RECFM=FB,LRECL=128,BLKSIZE=6272),SPACE=(TRK,(30,10))
//FT10F001 DD   DSN=&OUTSORT,VOL=REF=*.SORTOUT,DISP=(OLD,PASS),
//  DCB=RECFM=FB
//FT01F001 DD   UNIT=SYSDA,
//  DCB=(RECFM=FB,LRECL=128,BLKSIZE=6272),SPACE=(TRK,(30,10))
//FT02F001 DD   UNIT=SYSDA,
//  DCB=(RECFM=FB,LRECL=128,BLKSIZE=6272),SPACE=(TRK,(30,10))
//FT04F001 DD   UNIT=SYSDA,
//  DCB=(RECFM=FB,LRECL=128,BLKSIZE=6272),SPACE=(TRK,(30,10))
//FT06F001 DD   SYSOUT=A
//FT08F001 DD   DUMMY
//FT11F001 DD   UNIT=SYSDA,
//  DCB=(RECFM=VBS,LRECL=6228,BLKSIZE=6232),SPACE=(TRK,(30,10))
//FT12F001 DD   UNIT=SYSDA,
//  DCB=(RECFM=VBS,LRECL=6228,BLKSIZE=6232),SPACE=(TRK,(30,10))
//FT13F001 DD   UNIT=SYSDA,SPACE=(TRK,(30,10)),
//  DCB=(RECFM=VBS,LRECL=6228,BLKSIZE=6232),SPACE=(TRK,(30,10))
//FT14F001 DD   UNIT=SYSDA,DCB=(RECFM=FB,LRECL=133,BLKSIZE=1330),
//  SPACE=(TRK,(20,20))
//FT15F001 DD   UNIT=SYSDA,DCB=(RECFM=FB,LRECL=133,BLKSIZE=1330),
//  SPACE=(TRK,(20,20))
//FT16F001 DD   UNIT=SYSDA,DCB=(RECFM=FB,LRECL=133,BLKSIZE=1330),
//  SPACE=(TRK,(20,20))
//FT17F001 DD   UNIT=SYSDA,DCB=(RECFM=FB,LRECL=133,BLKSIZE=1330),
//  SPACE=(TRK,(20,20))
//FT18F001 DD   UNIT=SYSDA,DCB=(RECFM=FBA,LRECL=133,BLKSIZE=1330),
//  SPACE=(TRK,(20,20))
//FT20F001 DD   SYSOUT=A,DCB=(RECFM=FB,LRECL=80,BLKSIZE=800)
//FT21F001 DD   SYSOUT=A,DCB=(RECFM=FB,LRECL=80,BLKSIZE=800)
//FT05F001 DD   DISP=OLD,DSN=USR.W208.MS.DFW.S19867
```

```
PS Dallas Ft Worth     605  10   5 1984 0 30
0 0 0     26940   3.111
TP  1 HOME BASED WORK       A B A
PCI HH SIZE      H 6 HH SIZE 1 HH SIZE 2 HH SIZE 3 HH SIZE 4 HH SIZE 5 HH SIZE 6
PRI INCOME QRT I 4 0 - 14.8K 14.9-27.0K27.1-42.5K42.5K PLUS
ACI AREA TYPE    5 CBD        OUT BUS DT URBAN RES SUBURBAN  RURAL
ARI INC QUART    4 QUARTILE 1QUARTILE 2QUARTILE 3QUARTILE 4
ADI EMPLOYMENT   3 BASIC       RETAIL      SERVICE
PCR    112.00 6.88 2.70 1.70 0.92 0.80
PCR   2 6.67 8.28 4.25 3.16 1.53 1.11
PCR   3 2.69 8.23 5.36 5.09 2.26 1.36
PCR   4 1.26 7.79 5.79 5.92 2.69 1.56
PT  1    1       1.000       1.700       1.800    1.846    2.500    2.875
PT  1    2       1.204       1.970       2.423    2.864    2.667    3.300
PT  1    3       1.552       2.267       2.812    2.824    3.696    3.846
PT  1    4       1.600       2.800       2.848    3.198    3.439    5.286
ES  1    1-  50
ES  2    51- 100
ES  3   101- 150
ES  4   151- 200
ES  5   201- 250
ES  6   251- 300
ES  7   301- 350
ES  8   351- 400
ES  9   401- 450
ES 10   451- 605
TBL      1  -30
IC  .1   91.0  06.0  02.0  01.0
IC  .2   82.7  11.5  03.8  02.0
IC  .3   73.1  17.2  06.3  03.4
IC  .4   63.5  22.8  08.8  04.9
IC  .5   57.3  27.3  12.1  06.9
IC  .6   45.8  30.0  15.0  09.2
IC  .7   38.4  31.2  18.5  11.9
IC  .8   32.0  31.2  21.8  15.0
IC  .9   26.9  30.1  25.0  18.0
IC 1.0   22.5  27.0  28.5  22.0
IC 1.1   19.2  24.1  30.5  26.2
IC 1.2   16.5  21.6  31.4  30.5
IC 1.3   14.6  19.1  31.1  35.2
IC 1.4   12.7  17.3  29.4  40.6
IC 1.5   11.3  16.1  26.5  46.1
IC 1.6   10.4  14.3  24.3  51.0
IC 1.7   09.5  13.6  22.1  54.8
IC 1.8   08.7  13.0  19.9  58.4
IC 1.9   07.9  12.4  18.5  61.2
IC 2.0   07.1  11.9  17.0  64.0
IC 2.1   06.5  11.4  15.9  66.2
IC 2.2   05.9  11.0  14.8  68.3
IC 2.3   05.5  10.5  14.0  70.0
IC 2.4   05.0  10.1  13.3  71.6
IC 2.5   04.5  09.8  12.5  73.2
IR 14870.      27050.       42950.
HH  1.1 93.30 04.90 00.92 00.52 00.20 00.16
HH  1.2 86.60 09.80 01.84 01.04 00.40 00.32
HH  1.3 79.90 14.70 02.76 01.56 00.60 00.48
HH  1.4 73.20 19.60 03.68 02.08 00.80 00.64
HH  1.5 66.50 24.50 04.60 02.60 01.00 00.80
HH  1.6 60.50 28.30 05.80 03.20 01.20 01.00
HH  1.7 54.40 32.20 07.00 03.80 01.40 01.20
HH  1.8 49.40 34.70 08.00 04.80 01.60 01.50
HH  1.9 45.00 36.30 09.10 05.80 02.10 01.70
HH  2.0 40.50 37.90 10.30 06.80 02.60 01.90
HH  2.1 36.70 38.50 11.80 07.80 03.00 02.20
HH  2.2 33.20 38.90 13.00 08.80 03.50 02.60
HH  2.3 30.00 39.00 14.00 10.00 04.00 03.00
HH  2.4 27.40 38.30 15.00 11.10 04.80 03.40
HH  2.5 24.90 37.40 16.10 12.20 05.70 03.70
HH  2.6 22.90 35.80 17.20 13.50 06.50 04.10
HH  2.7 20.80 34.20 18.40 14.90 07.20 04.50
HH  2.8 18.70 32.70 19.60 16.10 08.00 04.90
HH  2.9 16.80 30.90 20.80 17.40 08.80 05.30
HH  3.0 15.20 29.20 21.40 18.70 09.60 05.90
HH  3.1 13.70 27.70 21.80 19.70 10.40 06.70
```

```
HH   3.2 12.10 26.20 22.30 20.80 11.20 07.40
HH   3.3 11.00 24.60 22.50 21.40 12.00 08.50
HH   3.4 10.10 23.40 22.10 21.80 12.70 09.90
HH   3.5 09.20 22.20 21.70 22.30 13.20 11.40
HS      1     2     3     4     5     6
ACR 1 1 0.48 4.01 2.13 1.05 0.38
ACR 1 2 0.55 4.58 2.43 1.20 0.43
ACR 1 3 0.38 3.17 1.69 0.83 0.30
ACR 1 4 0.87 7.20 3.83 1.88 0.68
ACR 2 1 0.14 1.45 1.47 0.50 0.10
ACR 2 2 0.16 1.66 1.68 0.57 0.12
ACR 2 3 0.11 1.15 1.16 0.40 0.08
ACR 2 4 0.26 2.60 2.63 0.90 0.19
ACR 3 1 1.47 4.11 2.52 1.10 0.23
ACR 3 2 1.68 4.69 2.88 1.26 0.27
ACR 3 3 1.16 3.25 2.00 0.87 0.19
ACR 3 4 2.64 7.37 4.52 1.97 0.42
CCV     6
AT 1 1 1      1.677        1.384     1.413     1.312     1.389
AT 1 1 2      1.695        1.454     1.300     1.277     1.464
AT 1 1 3      1.545        1.421     1.300     1.260     1.530
AT 1 1 4      1.378        1.296     1.300     1.388     1.521
AT 1 2 1      1.500        1.486     1.643     1.400     1.455
AT 1 2 2      1.500        1.363     1.400     1.400     1.400
AT 1 2 3      1.467        1.435     1.736     1.634     1.400
AT 1 2 4      1.500        1.300     1.344     1.358     1.286
AT 1 3 1      1.732        1.296     1.424     1.402     1.422
AT 1 3 2      1.700        1.322     1.430     1.295     1.338
AT 1 3 3      1.700        1.341     1.365     1.456     1.566
AT 1 3 4      1.704        1.258     1.265     1.323     1.244
EA 1    1  -15   22   26  -28   40   44   45   47   51  292 -297  299 -301
EA 1  310  311  316
EA 2   16   17   20   23   25   30   32   38   41   42   50   53   54   55
EA 2   64   66   72   77   78   79   80   81   90  164  227  228  248  249
EA 2  275  286  298  302  304  305  309  312  313  315  318  319  321  324
EA 2  326  328  371  430  431  477  488
EA 3   18   24   31   33   35   39   43   46   48   52   56   58   59   60
EA 3   62   63   65   67  -71   73  -76   82  -89
EA 3   91   94   95   96   97   99  100  101  102  103  104  105  106
EA 3  107  108  109  110  111  112  113  115  117  118  120  125  126  127
EA 3  130  131  132  133  134  137  140  150  151  152  153  163  166  168
EA 3  169  170  171  173  174  175  176  187  188  189  190  191  195  202
EA 3  203  204  205  206  207  208  215  216  218  220  221  222  226  229
EA 3  230  231  232  233  234  235  236  237  242  250  252  253  257  259
EA 3  260  261  262  263  264  265  272  273  274  276  277  280  281  282
EA 3  283  287  288  289  290  291  306  307  308  317  320  322  323  327
EA 3  329  330  334  335  336  348  359  362  365  367  368  372  374  375
EA 3  382  383  384  385  386  389  402  403  404  406  408  409  410  412
EA 3  413  416  432  433  434  435  436  437  438  439  444  445  446  449
EA 3  450  451  452  460  461  462  463  467  468  469  476  489  499  504
EA 3  505  506  524  525  527  528  529  530  543
EA 4   19   21   36   37   49   57   61   92   93   98  114  116  119  121
EA 4  124  128  129  135  136  138  139  141  142  143  145  149  154  156
EA 4  165  167  172  177  178  179  180  181  183  192  193  194  196  200
EA 4  211  212  213  214  217  223  224  240  241  243  245  247  251  254
EA 4  255  256  258  267  270  271  278  279  284  285  303  314  325  331
EA 4  332  333  337  338  339  341  346  347  349  350  351  352  360  361
EA 4  363  366  377  378  379  380  381  387  388  390  391  392  393  394
EA 4  395  396  399  400  401  405  407  411  414  415  417  418  419  420
EA 4  421  422  440  447  448  453  454  455  456  464  465  466  470  471
EA 4  472  475  478  479  483  498  500 -503  507 -510  521
EA 4  522  526  531  532  539  544  545  546
EA 5   29   34  122  123  144  146  147  148  155  157  158  159  160  161
EA 5  162  182  184  185  186  197  198  199  201  209  210  219  225  238
EA 5  239  244  246  266  268  269  340  342  343  344  345  353  354  355
EA 5  356  357  358  364  369  370  373  376  397  398  423 -429
EA 5  441  442  443  457  458  459  473  474  480  481  482
EA 5  484  485  486  487  490  491  492  493  494  495  496  497  511  512
EA 5  513  514  515  516  517  518  519  520  523  533  534  535  536  537
EA 5  538  540  541  542  547 -605                        1
DA1  50   280    309    171          15621  5294  2144   719  2431
DA1 100  1818  11381   4392          31393  6709  1097  2555  3057
DA3  50                                    100
DA3 100                                          100
DA4  50                                20    23    17    40
DA4 100                                28    27    16    29
DA5  50                                40    14    46
DA5 100                                16    38    46
```

Table B-3
EXAMPLE TWO
DALLAS-FORTWORTH

```
PS DALLAS FT WORTH     605  10   5 1984 0 0 0 0      26940   3.111
TBL     1   -3     5  -11
TBL    14  -30
SEL    10  120   400
TP   1 HOME BASED NON-WORK   A D P
TP   2 NON-HOME BASED        A D P N
PCI HH SIZE       H 6 HH SIZE 1 HH SIZE 2 HH SIZE 3 HH SIZE 4 HH SIZE 5 HH SIZE 6
PRI INCOME QRT I 4 0 - 14.8K 14.9-27.0K27.1-42.5K42.5K PLUS
AMC 1  1  4          4   0.442 9   1.574 8   0.811 7   0.453
AMC 1  2  4          4   0.500 9   1.005 8   1.144 7   0.442
AMC 1  3  4          4   0.551 9   1.000 8   8.796 7   0.300
AMC 1  4  4          4   0.627 9   1.059 8   8.060 7   0.200
AMC 1  5  4          4   0.682 9   1.812 8   6.614 7   0.139
AMC 2  1  4          4   0.100 9   0.600 8   1.100 7   0.500
AMC 2  2  4          4   0.104 9   0.877 8   1.462 7   0.655
AMC 2  3  4          4   0.216 9   1.167 8   4.272 7   0.858
AMC 2  4  4          4   0.261 9   1.243 8   3.717 7   0.589
AMC 2  5  4          4   0.235 9   1.095 8   2.978 7   0.500
PCR  0112.00 6.88 2.70 1.70 0.92 0.80
PCR  02 6.67 8.28 4.25 3.16 1.53 1.11
PCR  03 2.69 8.23 5.36 5.09 2.26 1.36
PCR  04 1.26 7.79 5.79 5.92 2.69 1.56
PT   1     1     2.185       3.167       3.524       4.500       4.833       6.875
PT   1     2     1.620       2.791       4.028       5.682       5.682       7.700
PT   1     3     1.724       2.740       4.205       6.500       6.500       8.385
PT   1     4     2.455       3.145       4.527       6.840       6.840      14.143
PT   2     1     0.739       1.600       1.714       2.000       1.500       0.750
PT   2     2     1.611       1.657       2.014       2.500       2.208       1.800
PT   2     3     1.690       2.093       2.188       2.989       3.522       2.077
PT   2     4     3.364       3.275       2.866       2.821       3.463       3.357
ES   1     1-  50
ES   2    51- 100
ES   3   101- 150
ES   4   151- 200
ES   5   201- 250
ES   6   251- 300
ES   7   301- 350
ES   8   351- 400
ES   9   401- 450
ES  10   451- 605
EA   1     1  -15    22    26   -28    40    44    45    47    51   292  -297   299  -301
EA   1   310   311   316
EA   2    16    17    20    23    25    30    32    38    41    42    50    53    54    55
EA   2    64    66    72    77    78    79    80    81    90   164   227   228   248   249
EA   2   275   286   298   302   304   305   309   312   313   315   318   319   321   324
EA   2   326   328   371   430   431   477   488
EA   3    18    24    31    33    35    39    43    46    48    52    56    58    59    60
EA   3    62    63    65    67   -71    73   -76    82   -89
EA   3    91    94    95    96    97    99   100   101   102   103   104   105   106
EA   3   107   108   109   110   111   112   113   115   117   118   120   125   126   127
EA   3   130   131   132   133   134   137   140   150   151   152   153   163   166   168
EA   3   169   170   171   173   174   175   176   187   188   189   190   191   195   202
EA   3   203   204   205   206   207   208   215   216   218   220   221   222   226   229
EA   3   230   231   232   233   234   235   236   237   242   250   252   253   257   259
EA   3   260   261   262   263   264   265   272   273   274   276   277   280   281   282
EA   3   283   287   288   289   290   291   306   307   308   317   320   322   323   327
EA   3   329   330   334   335   336   348   359   362   365   367   368   372   374   375
EA   3   382   383   384   385   386   389   402   403   404   406   408   409   410   412
EA   3   413   416   432   433   434   435   436   437   438   439   444   445   446   449
EA   3   450   451   452   460   461   462   463   467   468   469   476   489   499   504
EA   3   505   506   524   525   527   528   529   530   543
EA   4    19    21    36    37    49    57    61    92    93    98   114   116   119   121
EA   4   124   128   129   135   136   138   139   141   142   143   145   149   154   156
EA   4   165   167   172   177   178   179   180   181   183   192   193   194   196   200
EA   4   211   212   213   214   217   223   224   240   241   243   245   247   251   254
EA   4   255   256   258   267   270   271   278   279   284   285   303   314   325   331
EA   4   332   333   337   338   339   341   346   347   349   350   351   352   360   361
EA   4   363   366   377   378   379   380   381   387   388   390   391   392   393   394
EA   4   395   396   399   400   401   405   407   411   414   415   417   418   419   420
EA   4   421   422   440   447   448   453   454   455   456   464   465   466   470   471
EA   4   472   475   478   479   483   498   500  -503   507  -510   521
EA   4   522   526   531   532   539   544   545   546
EA   5    29    34   122   123   144   146   147   148   155   157   158   159   160   161
```

```
EA  5   162  182   184   185   186  197   198  199  201  209  210  219  225  238
EA  5   239  244   246   266   268  269   340  342  343  344  345  353  354  355
EA  5   356  357   358   364   369  370   373  376  397  398  423 -429
EA  5   441  442   443   457   458  459   473  474  480  481  482
EA  5   484  485   486   487   490  491   492  493  494  495  496  497  511  512
EA  5   513  514   515   516   517  518   519  520  523  533  534  535  536  537
EA  5   538  540   541   542   547 -605
IC  .1   91.0  06.0  02.0  01.0
IC  .2   82.7  11.5  03.8  02.0
IC  .3   73.1  17.2  06.3  03.4
IC  .4   63.5  22.8  08.8  04.9
IC  .5   57.3  27.3  12.1  06.9
IC  .6   45.8  30.0  15.0  09.2
IC  .7   38.4  31.2  18.5  11.9
IC  .8   32.0  31.2  21.8  15.0
IC  .9   26.9  30.1  25.0  18.0
IC  1.0  22.5  27.0  28.5  22.0
IC  1.1  19.2  24.1  30.5  26.2
IC  1.2  16.5  21.6  31.4  30.5
IC  1.3  14.6  19.1  31.1  35.2
IC  1.4  12.7  17.3  29.4  40.6
IC  1.5  11.3  16.1  26.5  46.1
IC  1.6  10.4  14.3  24.3  51.0
IC  1.7  09.5  13.6  22.1  54.8
IC  1.8  08.7  13.0  19.9  58.4
IC  1.9  07.9  12.4  18.5  61.2
IC  2.0  07.1  11.9  17.0  64.0
IC  2.1  06.5  11.4  15.9  66.2
IC  2.2  05.9  11.0  14.8  68.3
IC  2.3  05.5  10.5  14.0  70.0
IC  2.4  05.0  10.1  13.3  71.6
IC  2.5  04.5  09.8  12.5  73.2
IR  14870.    27050.    42950.
HH  1.1  93.30  04.90  00.92  00.52  00.20  00.16
HH  1.2  86.60  09.80  01.84  01.04  00.40  00.32
HH  1.3  79.90  14.70  02.76  01.56  00.60  00.48
HH  1.4  73.20  19.60  03.68  02.08  00.80  00.64
HH  1.5  66.50  24.50  04.60  02.60  01.00  00.80
HH  1.6  60.50  28.30  05.80  03.20  01.20  01.00
HH  1.7  54.40  32.20  07.00  03.80  01.40  01.20
HH  1.8  49.40  34.70  08.00  04.80  01.60  01.50
HH  1.9  45.00  36.30  09.10  05.80  02.10  01.70
HH  2.0  40.50  37.90  10.30  06.80  02.60  01.90
HH  2.1  36.70  38.50  11.80  07.80  03.00  02.20
HH  2.2  33.20  38.90  13.00  08.80  03.50  02.60
HH  2.3  30.00  39.00  14.00  10.00  04.00  03.00
HH  2.4  27.40  38.30  15.00  11.10  04.80  03.40
HH  2.5  24.90  37.40  16.10  12.20  05.70  03.70
HH  2.6  22.90  35.80  17.20  13.50  06.50  04.10
HH  2.7  20.80  34.20  18.40  14.90  07.20  04.50
HH  2.8  18.70  32.70  19.60  16.10  08.00  04.90
HH  2.9  16.80  30.90  20.80  17.40  08.80  05.30
HH  3.0  15.20  29.20  21.40  18.70  09.60  05.90
HH  3.1  13.70  27.70  21.80  19.70  10.40  06.70
HH  3.2  12.10  26.20  22.30  20.80  11.20  07.40
HH  3.3  11.00  24.60  22.50  21.40  12.00  08.50
HH  3.4  10.10  23.40  22.10  21.80  12.70  09.90
HH  3.5  09.20  22.20  21.70  22.30  13.20  11.40
HS    1     2      3      4     5      6
DA1   50   280    309    171         15621  5294  2144   719  2431
DA1  100  1818  11381   4392         31393  6709  1097  2555  3057
```

Table B-4
EXAMPLE THREE
AUSTIN

```
PS    AUSTIN           635         5 2020 0 1 1   15983.0      2.174
TBL    1  -20
SEL    3   10   13   14   18   29   34   44  -46   52   58   65   66
SEL   70   75   89   96   97  101  104  151  158 -160  175  188  191
SEL  195  201  209  213  215  217  221  223  235  237  243  246
SEL  251 -253  262  264  265  272  277  280  281  294  295  308
SEL  312  315  323  337  343  344  347  356  360  365  371  385
SEL  387  396  400  404  406  408  409  435  447  452  473  480
SEL  490  494  498  501  506  507  509  511  522  525  530  534
SEL  544  558  574  580  607  611
TP  1 HOME BASED WORK       B D P
TP  2 HOME BASED NON-WORK   B D P
TP  3 NON-HOME BASED        B D P N
TP  4 TRUCK TAXI              D P T      452000.0
PCI HH SIZE      H 3   0 - 2.5  2.5 - 3.0   3.0 +
PRI MEDIAN INC I 5  LOW       LOW-MED   MEDIUM   MED-HIGH   HIGH
PDI AUTOS        A 4  ZERO      ONE      TWO     THREE +
EA  1  373  376 -384  404 -408  439  440
EA  2  201  216  318  344  358  359  361  362  481
EA  2  107  113  118  123  124  128  129  131  132  134 -138
EA  2  141  143  153  162  173  193  199  202  203  205  214
EA  2  215  217 -219
EA  2  233 -238  244 -246  247  249 -254  256  259  263 -265
EA  2  267  278 -280  287 -292  299  303  319  321  322
EA  2  326 -332  341  345 -348  356  360  372  374  375
EA  2  390  397  398  403  409 -414
EA  2  416  418  419  423  437
EA  2  452  453  456  457  462  464  466  467  471  473 -475
EA  2  478  480  482  484  492  509  511 -513  515  516
EA  2  538  592
EA  3   48   62   79  114  133  142  149
EA  3  151  152  161  163  168  169  181
EA  3  183  190  224  226  227  230 -232  239 -241
EA  3  248  255  260 -262  266  268  273  276  277  293  294
EA  3  298  300  317  320  323  343  350  351  353
EA  3  368  370  371  388  389  391 -393  399  402  417
EA  3  421  425 -428  441  443  444  448  454  455  458  459
EA  3  465  468 -470  472  476  477  479  488 -491  493 -495
EA  3  503  505 -507  517  518  525 -529  543  549
EA  3  573
EA  4    1   -3    7   10   14   15   18   19   22   23   25  -28
EA  4   32   34   35   37   39   41   42   45   49  -51   53   54
EA  4   57   58   60   61   63  -66   68  -70   73  -78
EA  4   80 -106  108 -112  115 -117  119  120 -122
EA  4  125 -127  130  139  140  144 -148
EA  4  150  154 -160  164 -167  170 -172  174 -178  180
EA  4  182  184 -189  191  192
EA  4  194 -198  200  204  206  207 -213  220 -223
EA  4  225  228  229  242  243  257  258  269 -272
EA  4  274  275  281 -285  295 -297  301  302  309  314 -316
EA  4  324  325  333  334  340  342  349  352  354  355  357
EA  4  363  365  366  369  387
EA  4  394 -396  400  401  415  420  422  424  431 -436
EA  4  442  445 -447  449 -451  460  461  463  483
EA  4  485 -487  496 -502  504  508  510  514  520 -522  524
EA  4  530 -537  539  540  542  544 -548  550 -554  556 -563
EA  4  567 -572  574 -576  578  583  586  587  589
EA  4  593 -595  598 -602  604 -606  608 -613  617 -623
EA  4  625 -632  634
EA  5    4   -6    8    9   11  -13   16   17   20   21   24   29
EA  5   30   31   33   36   38   40   43   44   46   47
EA  5   52   55   56
EA  5   59   67   71   72  179  286  304 -308
EA  5  310 -313  335 -339  364  367  385  386  429  430  438
EA  5  519  523  541  555  564 -566
EA  5  577  579 -582  584  585  588  590  591  596  597
EA  5  603  607  614 -616  624  633  635
AMC 1 1  4       3    0.91 8    1.95 7    1.95 9    1.95
AMC 1 2  4       3    0.81 8    1.95 7    1.95 9    1.95
AMC 1 3  4       3    0.41 8    1.95 7    1.95 9    1.95
AMC 1 4  4       3    0.26 8    1.95 7    1.95 9    1.95
```

```
AMC 1 5 4        3   0.11 8    1.95 7    1.95 9    1.95
AMC 2 1 4        3   0.84 8    1.5  7    0.84 9    2.95
AMC 2 2 4        3   0.69 8    1.58 7    0.62 9    1.39
AMC 2 3 4        3   0.70 8   12.09 7    0.40 9    1.39
AMC 2 4 4        3   0.85 8   11.08 7    0.28 9    1.44
AMC 2 5 4        3   1.02 8    9.34 7    0.22 9    2.75
AMC 3 1 4        3   0.13 8    1.45 7    0.65 9    0.79
AMC 3 2 4        3   0.10 8    1.39 7    0.63 9    0.83
AMC 3 3 4        3   0.21 8    4.09 7    0.82 9    1.11
AMC 3 4 4        3   0.25 8    3.53 7    0.56 9    1.18
AMC 3 5 4        3   0.25 8    3.17 7    0.53 9    1.18
AMC 4 1 4        3   0.46 8    0.46 7    0.32 9    0.32
AMC 4 2 4        3   0.34 8    0.55 7    0.26 9    0.25
AMC 4 3 4        3   0.34 8    0.69 7    0.34 9    0.34
AMC 4 4 4        3   0.34 8    0.85 7    0.43 9    0.46
AMC 4 5 4        3   0.37 8    1.28 7    0.97 9    0.77
ACI   AREA TYPE  5   CBD     OUTER CBD   URBAN     SUBURBAN  RURAL
ARI   ATT UNIT   4   HOUSEHOL COM EMP    IND EMP   OTH EMP
PT 1 1 1            2.3       3.0        3.8
PT 1 1 2            3.4       4.2        5.0
PT 1 1 3            4.1       5.1        6.1
PT 1 1 4            4.5       5.8        7.0
PT 1 1 5            4.8       6.1        7.3
PT 1 2 1            5.4       6.5        7.4
PT 1 2 2            6.6       7.9        8.8
PT 1 2 3            7.7       8.9       10.1
PT 1 2 4            8.2       9.5       10.7
PT 1 2 5            8.5       9.9       11.0
PT 1 3 1            9.4      10.2       11.0
PT 1 3 2           10.4      11.3       12.2
PT 1 3 3           11.3      12.2       13.2
PT 1 3 4           11.6      12.6       13.7
PT 1 3 5           11.9      12.9       13.9
PT 1 4 1           12.4      13.0       13.6
PT 1 4 2           13.2      14.0       14.7
PT 1 4 3           14.1      14.8       15.5
PT 1 4 4           14.8      15.5       16.2
PT 1 4 5           15.0      15.7       16.4
PCT 1  21  62  17
PCT 2  29  53  18
PCT 3  28  49  23
PCT 4  25  47  28
PCT 5  23  44  33
IR       9999      14999      19999      29999
HS   2.5  3.0
PCR 1 1  5.79 0.25 0.54
PCR 1 2  0.86 0.07 0.23
PCR 1 3  0.40 0.03 0.08
PCR 1 4  0.31 0.04 0.17
PCR 1 5  0.15 0.02 0.06
PCR 2 115.79 0.82 1.97
PCR 2 2  7.52 0.62 1.50
PCR 2 3  4.80 0.50 1.34
PCR 2 4  4.58 0.67 2.10
PCR 2 5  2.84 0.40 1.32
PCR 3 1  3.89 0.39 0.82
PCR 3 2  2.90 0.43 1.05
PCR 3 3  3.19 0.59 1.62
PCR 3 4  5.32 1.17 3.67
PCR 3 5  4.85 1.05 3.56
PCR 4 1  0.51 0.17 0.26
PCR 4 2  0.32 0.14 0.28
PCR 4 3  0.38 0.17 0.36
PCR 4 4  0.81 0.38 1.43
PCR 4 5  1.17 0.61 2.74
AOP 107 1    0 2    0 3  625 4     0
AOP 348 1    0 2    0 3  103 4     0
SGP 107 1  279 2 1395 3 3387 4   624
SGP 348 1   46 2  229 3 2102 4   446
SGA 107 1 2262 2 9111 3 3387 4   624
SGA 348 1 2634 2 4396 3 2102 4   446
DA1 107      13644  6549      17500  6622  3517  3105    0
DA1 348       1839  1383       8000  1712   564  1148    0
```

APPENDIX C

TRIPCAL5
INPUT RECORD CROSS-REFERENCE TABLES

Table C-1
Input Control/Zone Data Records for Production Models

Model Type	Required	Optional
2-Way Cross-Classification	PCI	CCV
	PRI	NAM
	PCR	IC
	PT	IR
	DA1	HH
	DA3[16]	AU
	DA4[16]	HS
	DA5[16]	DA2
3-Way Cross-Classification	PCI	CCV
	PRI	NAM
	PDI	IC
	PCR	IR
	PT	HH
	DA1	AU
	DA3[16]	HS
	DA4[16]	DA2
	DA5[16]	
2-Way Cross-Classification "Single Trip Rate"	PCI	CCV
	PRI	NAM
	PCT	IR
	PCR	IC
	PT	HH
	DA1	AU
	DA3[16]	HS
	DA4[16]	DA2
	DA5[16]	

---

[16]Only if marginal distributions are input.

86

Cross-Classification Regression	PCI	NAM
	PRI	
	PDI	
	PCR	
	PT	
	CCV	
	DA1	
	DA2	
	DA3	
	DA4	
	DA5	
Linear Regression	PMR	NAM
	DA1	DA2

Table C-2
Input Control/Zone Data Records for Attraction Models

Model Type	Required	Optional
2-Way Cross-Classification	ACI ARI ACR AT CCV DA1 DA3 DA4	NAM DA2
3-Way Cross-Classification	ACI ARI ADI ACR AT CCV DA1 DA3 DA4 DA5	NAM DA2
Cross-Classification Regression	AMC EA DA1	NAM DA2
Linear Regression	AMR DA1	NAM DA2
2-Tier Regression	DR DZR ED DA1	NAM DA2

APPENDIX D

OUTPUT EXAMPLES

.

TRIPCAL 5 CAPACITIES:

```
              ZONES =  9999
          DISTRICTS =   100
            SECTORS =   100
         AREA TYPES =    24
```

```
....+....1....+....2....+....3....+....4....+....5....+....6....+....7....+....
PS   AUSTIN              635      5 2020 0 1 1   15983.0     2.174
TBL      1  -21
SEL      3   10   13   14   18   29   34   44  -46   52   58   65   66
TP  1 HOME BASED WORK        B D P
TP  2 HOME BASED NON-WORK    B D P
TP  3 NON-HOME BASED         B D P N
TP  4 TRUCK TAXI             D P T       452000.0
PCI HH SIZE     H 3   0 - 2.5  2.5 - 3.0   3.0 +
PRI MEDIAN INC I 5  LOW        LOW-MED    MEDIUM     MED-HIGH    HIGH
PDI AUTOS        A 4  ZERO       ONE        TWO       THREE +
EA  1   373  376 -384  404 -408  439  440
EA  2   201  216  318  344  358  359  361  362  481
EA  2   107  113  118  123  124  128  129  131  132  134 -138
EA  2   141  143  153  162  173  193  199  202  203  205  214
EA  2   215  217 -219
EA  2   233 -238  244 -246  247  249 -254  256  259  263 -265
EA  2   267  278 -280  287 -292  299  303  319  321  322
EA  2   326 -332  341  345 -348  356  360  372  374  375
EA  2   390  397  398  403  409 -414
EA  2   416  418  419  423  437
EA  2   452  453  456  457  462  464  466  467  471  473 -475
EA  2   478  480  482  484  492  509  511 -513  515  516
EA  2   538  592
EA  3    48   62   79  114  133  142  149
EA  3   151  152  161  163  168  169  181
EA  3   183  190  224  226  227  230 -232  239 -241
EA  3   248  255  260 -262  266  268  273  276  277  293  294
EA  3   298  300  317  320  323  343  350  351  353
EA  3   368  370  371  388  389  391 -393  399  402  417
EA  3   421  425 -428  441  443  444  448  454  455  458  459
EA  3   465  468 -470  472  476  477  479  488 -491  493 -495
EA  3   503  505 -507  517  518  525 -529  543  549
EA  3   573
EA  4     1   -3    7   10   14   15   18   19   22   23   25  -28
EA  4    32   34   35   37   39   41   42   45   49  -51   53   54
EA  4    57   58   60   61   63  -66   68  -70   73  -78
EA  4    80 -106  108 -112  115 -117  119  120 -122
EA  4   125 -127  130  139  140  144 -148
EA  4   150  154 -160  164 -167  170 -172  174 -178  180
EA  4   182  184 -189  191  192
EA  4   194 -198  200  204  206  207 -213  220 -223
```

ZONAL INPUT DATA RANGE SUMMARY

DATA TYPE DA1 ZONE RANGES
1-635

DATA TYPE DA2 ZONE RANGES

DATA TYPE DA3 PRODUCTION ZONE RANGES

DATA TYPE DA3 ATTRACTION ZONE RANGES

DATA TYPE DA4 PRODUCTION ZONE RANGES

DATA TYPE DA4 ATTRACTION ZONE RANGES

DATA TYPE DA5 PRODUCTION ZONE RANGES

DATA TYPE DA5 ATTRACTION ZONE RANGES

DATA TYPE AOA ZONE RANGES

DATA TYPE AOP ZONE RANGES
107, 348, 361-362, 479, 499

DATA TYPE SGA ZONE RANGES
1, 6-7, 9-10, 12-13, 16, 18, 24, 28, 36-37, 39, 44, 63, 69, 78, 85-86
101, 103, 107, 113, 120, 122, 125, 127, 129-130, 136-137, 140, 142, 144
146, 151-153, 155, 161-162, 165, 172-173, 176, 178, 180, 182, 186, 188
193, 198, 202, 204, 206, 209, 214, 217, 219, 229, 231, 233-235, 237
240-242, 246, 248-250, 252-254, 258-260, 264, 266, 272-276, 278-280
285, 287, 289, 292, 294-300, 304-305, 315, 317-320, 326-327, 329-333
340-341, 343-346, 348, 359, 361-363, 369-371, 373-374, 376-386, 390-391
396-397, 399, 402, 405, 409, 411-413, 415-416, 419-421, 423, 426, 428
431-433, 436-438, 440, 442-444, 450, 452-455, 457, 460, 462, 465-467
470, 472, 475-479, 481-482, 488-490, 493, 497, 499-500, 502, 505-506
508-509, 512, 515, 518, 520-521, 526-528, 530, 535, 537, 541, 600, 611

DATA TYPE SGP ZONE RANGES
1, 6-7, 9-10, 12-13, 16, 18, 24, 28, 36-37, 39, 44, 63, 69, 78, 85-86
101, 103, 107, 113, 120, 122, 125, 127, 129-130, 136-137, 140, 142, 144
146, 151-153, 155, 161-162, 165, 172-173, 176, 178, 180, 182, 186, 188
193, 198, 202, 204, 206, 209, 214, 217, 219, 229, 231, 233-235, 237
240-242, 246, 248-250, 252-254, 258-260, 264, 266, 272-276, 278-280
285, 287, 289, 292, 294-300, 304-305, 315, 317-320, 326-327, 329-333
340-341, 343-346, 348, 359, 361-363, 369-371, 373-374, 376-386, 390-391
396-397, 399, 402, 405, 409, 411-413, 415-416, 419-421, 423, 426, 428
431-433, 436-438, 440, 442-444, 450, 452-455, 457, 460, 462, 465-467
470, 472, 475-479, 481-482, 488-490, 493, 497, 499-500, 502, 505-506
508-509, 512, 515, 518, 520-521, 526-528, 530, 535, 537, 541, 600, 611

DATA TYPE SGZ ZONE RANGES

DATA TYPE CMT ZONE RANGES
1, 6-7, 9-10, 12-13, 16, 18, 24, 28, 36-37, 39, 44, 63, 69, 78, 85-86
101, 103, 107, 113, 120, 122, 125, 127, 129-130, 136-137, 140, 142, 144
146, 151, 153, 155, 161-162, 165, 172-173, 176, 178, 180, 182, 186-188
193, 198, 202, 204, 206, 209, 214, 217, 219, 229, 231, 233-235, 237
240-242, 246, 248-250, 252-254, 258-260, 264, 266, 272-276, 278-280
285, 287, 289, 292, 294-300, 304-305, 315, 317-320, 323, 326-327, 329-333
340-341, 343-346, 348, 359, 361-363, 369-371, 373-374, 376-380, 382-386
390-391, 396-397, 399, 402, 405, 407, 409, 411-413, 415, 419-421, 423

TABLE 1:

B) PRODUCTION MODEL: THREE-WAY CROSS CLASSIFICATION

```
            --- AUTOS    : ZERO    ----

                    HH SIZE
            ----------------------------
MEDIAN INC   0 - 2.5  2.5 - 3.0   3.0 +
----------   --------- ---------- ---------
   LOW          2.30      3.00      3.80
   LOW-MED       3.40      4.20      5.00
   MEDIUM       4.10      5.10      6.10
   MED-HIGH     4.50      5.80      7.00
   HIGH         4.80      6.10      7.30

            --- AUTOS    : ONE     ----

                    HH SIZE
            ----------------------------
MEDIAN INC   0 - 2.5  2.5 - 3.0   3.0 +
----------   --------- ---------- ---------
   LOW          5.40      6.50      7.40
   LOW-MED       6.60      7.90      8.80
   MEDIUM       7.70      8.90     10.10
   MED-HIGH     8.20      9.50     10.70
   HIGH         8.50      9.90     11.00

            --- AUTOS    : TWO     ----

                    HH SIZE
            ----------------------------
MEDIAN INC   0 - 2.5  2.5 - 3.0   3.0 +
----------   --------- ---------- ---------
   LOW          9.40     10.20     11.00
   LOW-MED      10.40     11.30     12.20
   MEDIUM      11.30     12.20     13.20
   MED-HIGH    11.60     12.60     13.70
   HIGH        11.90     12.90     13.90

            --- AUTOS    : THREE + ----

                    HH SIZE
            ----------------------------
MEDIAN INC   0 - 2.5  2.5 - 3.0   3.0 +
----------   --------- ---------- ---------
   LOW         12.40     13.00     13.60
   LOW-MED      13.20     14.00     14.70
   MEDIUM      14.10     14.80     15.50
   MED-HIGH    14.80     15.50     16.20
   HIGH        15.00     15.70     16.40
```

SECTOR	ZONES																								
1	48	62	79	107	113	114	118	123	124	128	129	131	132	133	134	135	136	137	138	141	142	143	149	151	152
	153	161	162	163	168	169	173	181	183	190	193	199	201	202	203	205	214	215	216	217	218	219	224	226	227
	230	231	232	233	234	235	236	237	238	239	240	241	244	245	246	247	248	249	250	251	252	253	254	255	256
	259	260	261	262	263	264	265	266	267	268	273	276	277	278	279	280	287	288	289	290	291	292	293	294	298
	299	300	303	317	318	319	320	321	322	323	326	327	328	329	330	331	332	341	343	344	345	346	347	348	350
	351	353	356	358	359	360	361	362	368	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	388
	389	390	391	392	393	397	398	399	402	403	404	405	406	407	408	409	410	411	412	413	414	416	417	418	419
	421	423	425	426	427	428	437	439	440	441	443	444	448	452	453	454	455	456	457	458	459	462	464	465	466
	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	484	488	489	490	491	492	493	494	495
	503	505	506	507	509	511	512	513	515	516	517	518	525	526	527	528	529	538	543	549	573	592			
2	1	2	3	7	10	14	15	18	19	22	23	25	26	27	28	32	34	35	37	39	41	42	45	49	50
	51	53	54	57	58	60	61	63	64	65	66	68	69	70	73	74	75	76	77	78	80	81	82	83	84
	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	108	109	110
	111	112	115	116	117	119	120	121	122	125	126	127	130	139	140	144	145	146	147	148	150	154	155	156	157
	158	159	160	164	165	166	167	170	171	172	174	175	176	177	178	180	182	184	185	186	187	188	189	191	192
	194	195	196	197	198	200	204	206	207	208	209	210	211	212	213	220	221	222	223	225	228	229	242	243	257
	258	269	270	271	272	274	275	281	282	283	284	285	295	296	297	301	302	309	314	315	316	324	325	333	334
	340	342	349	352	354	355	357	363	365	366	369	387	394	395	396	400	401	415	420	422	424	431	432	433	434
	435	436	442	445	446	447	449	450	451	460	461	463	483	485	486	487	496	497	498	499	500	501	502	504	508
	510	514	520	521	522	524	530	531	532	533	534	535	536	537	539	540	542	544	545	546	547	548	550	551	552
	553	554	556	557	558	559	560	561	562	563	567	568	569	570	571	572	574	575	576	578	583	586	587	589	593
	594	595	598	599	600	601	602	604	605	606	608	609	610	611	612	613	617	618	619	620	621	622	623	625	626
	627	628	629	630	631	632	634																		
3	4	5	6	8	9	11	12	13	16	17	20	21	24	29	30	31	33	36	38	40	43	44	46	47	52
	55	56	59	67	71	72	179	286	304	305	306	307	308	310	311	312	313	335	336	337	338	339	364	367	385
	386	429	430	438	519	523	541	555	564	565	566	577	579	580	581	582	584	585	588	590	591	596	597	603	607
	614	615	616	624	633	635																			

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AUSTIN   PERSON TRIPS 2020
ZONE TO DISTRICT TABLE OF EQUALS

OCT 29, 1990

DIST	ZONES
1	107 113 118 123 124 128 129 131 132 134 135 136 137 138 141 143 153 162 173 193 199 201 202 203 205
	214 215 216 217 218 219 233 234 235 236 237 238 244 245 246 247 249 250 251 252 253 254 256 259 263
	264 265 267 278 279 280 287 288 289 290 291 292 299 303 318 319 321 322 326 327 328 329 330 331 332
	341 344 345 346 347 348 356 358 359 360 361 362 372 373 374 375 376 377 378 379 380 381 382 383 384
	390 397 398 403 404 405 406 407 408 409 410 411 412 413 414 416 418 419 423 437 439 440 452 453 456
	457 462 464 466 467 471 473 474 475 478 480 481 482 484 492 509 511 512 513 515 516 538 592
2	48 62 79 114 133 142 149 151 152 161 163 168 169 181 183 190 224 226 227 230 231 232 239 240 241
	248 255 260 261 262 266 268 273 276 277 293 294 298 300 317 320 323 343 350 351 353 368 370 371 388
	389 391 392 393 399 402 417 421 425 426 427 428 441 443 444 448 454 455 458 459 465 468 469 470 472
	476 477 479 488 489 490 491 493 494 495 503 505 506 507 517 518 525 526 527 528 529 543 549 573
3	1 2 3 7 10 14 15 18 19 22 23 25 26 27 28 32 34 35 37 39 41 42 45 49 50
	51 53 54 57 58 60 61 63 64 65 66 68 69 70 73 74 75 76 77 78 80 81 82 83 84
	85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 108 109 110
	111 112 115 116 117 119 120 121 122 125 126 127 130 139 140 144 145 146 147 148 150 154 155 156 157
	158 159 160 164 165 166 167 170 171 172 174 175 176 177 178 180 182 184 185 186 187 188 189 191 192
	194 195 196 197 198 200 204 206 207 208 209 210 211 212 213 220 221 222 223 225 228 229 242 243 257
	258 269 270 271 272 274 275 281 282 283 284 285 295 296 297 301 302 309 314 315 316 324 325 333 334
	340 342 349 352 354 355 357 363 365 366 369 387 394 395 396 400 401 415 420 422 424 431 432 433 434
	435 436 442 445 446 447 449 450 451 460 461 463 483 485 486 487 496 497 498 499 500 501 502 504 508
	510 514 520 521 522 524 530 531 532 533 534 535 536 537 539 540 542 544 545 546 547 548 550 551 552
	553 554 556 557 558 559 560 561 562 563 567 568 569 570 571 572 574 575 576 578 583 586 587 589 593
	594 595 598 599 600 601 602 604 605 606 608 609 610 611 612 613 617 618 619 620 621 622 623 625 626
	627 628 629 630 631 632 634
4	4 5 6 8 9 11 12 13 16 17 20 21 24 29 30 31 33 36 38 40 43 44 46 47 52
	55 56 59 67 71 72 179 286 304 305 306 307 308 310 311 312 313 335 336 337 338 339 364 367 385
	386 429 430 438 519 523 541 555 564 565 566 577 579 580 581 582 584 585 588 590 591 596 597 603 607
	614 615 616 624 633 635

AUSTIN   PERSON TRIPS 2020
ZONE TO AREA TYPE TABLE OF EQUALS

AREA
TYPE   ZONES
----   ------

1	373	376	377	378	379	380	381	382	383	384	404	405	406	407	408	439	440								
2	107	113	118	123	124	128	129	131	132	134	135	136	137	138	141	143	153	162	173	193	199	201	202	203	205
	214	215	216	217	218	219	233	234	235	236	237	238	244	245	246	247	249	250	251	252	253	254	256	259	263
	264	265	267	278	279	280	287	288	289	290	291	292	299	303	318	319	321	322	326	327	328	329	330	331	332
	341	344	345	346	347	348	356	358	359	360	361	362	372	374	375	390	397	398	403	409	410	411	412	413	414
	416	418	419	423	437	452	453	456	457	462	464	466	467	471	473	474	475	478	480	481	482	484	492	509	511
	512	513	515	516	538	592																			
3	48	62	79	114	133	142	149	151	152	161	163	168	169	181	183	190	224	226	227	230	231	232	239	240	241
	248	255	260	261	262	266	268	273	276	277	293	294	298	300	317	320	323	343	350	351	353	368	370	371	388
	389	391	392	393	399	402	417	421	425	426	427	428	441	443	444	448	454	455	458	459	465	468	469	470	472
	476	477	479	488	489	490	491	493	494	495	503	505	506	507	517	518	525	526	527	528	529	543	549	573	
4	1	2	3	7	10	14	15	18	19	22	23	25	26	27	28	32	34	35	37	39	41	42	45	49	50
	51	53	54	57	58	60	61	63	64	65	66	68	69	70	73	74	75	76	77	78	80	81	82	83	84
	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	108	109	110
	111	112	115	116	117	119	120	121	122	125	126	127	130	139	140	144	145	146	147	148	150	154	155	156	157
	158	159	160	164	165	166	167	170	171	172	174	175	176	177	178	180	182	184	185	186	187	188	189	191	192
	194	195	196	197	198	200	204	206	207	208	209	210	211	212	213	220	221	222	223	225	228	229	242	243	257
	258	269	270	271	272	274	275	281	282	283	284	285	295	296	297	301	302	309	314	315	316	324	325	333	334
	340	342	349	352	354	355	357	363	365	366	369	387	394	395	396	400	401	415	420	422	424	431	432	433	434
	435	436	442	445	446	447	449	450	451	460	461	463	483	485	486	487	496	497	498	499	500	501	502	504	508
	510	514	520	521	522	524	530	531	532	533	534	535	536	537	539	540	542	544	545	546	547	548	550	551	552
	553	554	556	557	558	559	560	561	562	563	567	568	569	570	571	572	574	575	576	578	583	586	587	589	593
	594	595	598	599	600	601	602	604	605	606	608	609	610	611	612	613	617	618	619	620	621	622	623	625	626
	627	628	629	630	631	632	634																		
5	4	5	6	8	9	11	12	13	16	17	20	21	24	29	30	31	33	36	38	40	43	44	46	47	52
	55	56	59	67	71	72	179	286	304	305	306	307	308	310	311	312	313	335	336	337	338	339	364	367	385
	386	429	430	438	519	523	541	555	564	565	566	577	579	580	581	582	584	585	588	590	591	596	597	603	607
	614	615	616	624	633	635																			

B) PRODUCTION MODEL: THREE-WAY CROSS CLASSIFICATION

---AUTOS   : ZERO   ------

HH SIZE

MEDIAN INC	0 - 2.5	2.5 - 3.0	3.0 +	TOTALS
LOW	5.79	0.25	0.54	6.58
LOW-MED	0.86	0.07	0.23	1.16
MEDIUM	0.40	0.03	0.08	0.51
MED-HIGH	0.31	0.04	0.17	0.52
HIGH	0.15	0.02	0.06	0.23
TOTALS:	7.51	0.41	1.08	9.00

---AUTOS   : ONE   ------

HH SIZE

MEDIAN INC	0 - 2.5	2.5 - 3.0	3.0 +	TOTALS
LOW	15.79	0.82	1.97	18.58
LOW-MED	7.52	0.62	1.50	9.64
MEDIUM	4.80	0.50	1.34	6.64
MED-HIGH	4.58	0.67	2.10	7.35
HIGH	2.84	0.40	1.32	4.56
TOTALS:	35.53	3.01	8.23	46.77

---AUTOS   : TWO   ------

HH SIZE

MEDIAN INC	0 - 2.5	2.5 - 3.0	3.0 +	TOTALS
LOW	3.89	0.39	0.82	5.10
LOW-MED	2.90	0.43	1.05	4.38
MEDIUM	3.19	0.59	1.62	5.40
MED-HIGH	5.32	1.17	3.67	10.16
HIGH	4.85	1.05	3.56	9.46
TOTALS:	20.15	3.63	10.72	34.50

-- ZONE   3 ----- AUTOS   : ZERO   --

HH SIZE	MEDIAN INC	NUMBER OF HOUSEHOLD	HOME BASED WORK	HOME BASED NON-WORK	NON-HOME BASED
0 - 2.5	LOW	14.0	6	20	5
	LOW-MED	5.4	6	9	3
	MEDIUM	3.6	4	8	4
	MED-HIGH	3.5	4	7	4
	HIGH	3.1	3	7	5
	SUBTOTALS:	29.6	23	51	21
2.5 - 3.0	LOW	0.7	1	1	1
	LOW-MED	0.5	0	1	0
	MEDIUM	0.3	1	1	0
	MED-HIGH	0.5	1	1	1
	HIGH	0.5	0	2	1
	SUBTOTALS:	2.6	3	6	3
3.0 +	LOW	1.3	1	3	1
	LOW-MED	1.4	2	3	1
	MEDIUM	0.7	2	2	1
	MED-HIGH	1.9	3	7	4
	HIGH	1.2	2	3	3
	SUBTOTALS:	6.4	10	18	10

-- ZONE   3 ----- AUTOS   : ONE   --

HH SIZE	MEDIAN INC	NUMBER OF HOUSEHOLD	HOME BASED WORK	HOME BASED NON-WORK	NON-HOME BASED
0 - 2.5	LOW	37.2	42	125	34
	LOW-MED	46.3	89	162	55
	MEDIUM	42.1	90	159	75
	MED-HIGH	50.9	105	196	116
	HIGH	57.1	111	213	160
	SUBTOTALS:	233.6	437	855	440
2.5 - 3.0	LOW	2.3	3	9	3
	LOW-MED	4.5	11	19	6
	MEDIUM	5.1	12	23	11
	MED-HIGH	8.7	21	38	23
	HIGH	9.4	22	41	31
	SUBTOTALS:	30.0	69	130	74

-- SECTOR 1 ----- AUTOS   : ZERO   ---

HH SIZE	MEDIAN INC	NUMBER OF HOUSEHOLD	HOME BASED WORK	HOME BASED NON-WORK	NON-HOME BASED
0 - 2.5	LOW	16841.8	8134	24016	6585
	LOW-MED	3109.9	3067	5604	1903
	MEDIUM	1617.9	1857	3251	1526
	MED-HIGH	1364.3	1535	2885	1719
	HIGH	965.0	1065	2038	1528
	SUBTOTALS:	23898.9	15658	37794	13261
2.5 - 3.0	LOW	538.9	340	1002	275
	LOW-MED	183.5	223	409	139
	MEDIUM	87.2	125	218	102
	MED-HIGH	124.2	180	338	202
	HIGH	91.8	129	247	185
	SUBTOTALS:	1025.6	997	2214	903
3.0 +	LOW	744.1	593	1753	480
	LOW-MED	354.8	515	940	320
	MEDIUM	132.3	226	395	185
	MED-HIGH	288.9	505	951	567
	HIGH	148.9	250	478	358
	SUBTOTALS:	1669.0	2089	4517	1910

-- SECTOR 1 ----- AUTOS   : ONE   ---

HH SIZE	MEDIAN INC	NUMBER OF HOUSEHOLD	HOME BASED WORK	HOME BASED NON-WORK	NON-HOME BASED
0 - 2.5	LOW	36447.5	41332	122026	33459
	LOW-MED	22701.2	43450	79409	26969
	MEDIUM	16558.3	35700	62475	29325
	MED-HIGH	17565.4	36009	67697	40330
	HIGH	16509.1	32275	61744	46308
	SUBTOTALS:	109781.5	188766	393351	176391
2.5 - 3.0	LOW	1396.2	1906	5626	1543
	LOW-MED	1359.8	3115	5694	1933
	MEDIUM	1244.3	3101	5426	2547
	MED-HIGH	1824.6	4333	8147	4854
	HIGH	1666.9	3796	7261	5446
	SUBTOTALS:	7491.8	16251	32154	16323

-- AREA TYPE 1 ----- AUTOS   : ZERO   --

HH SIZE	MEDIAN INC	NUMBER OF HOUSEHOLD	HOME BASED WORK	HOME BASED NON- WORK	NON- HOME BASED
0 - 2.5	LOW	426.8	206	608	167
	LOW-MED	67.1	66	121	41
	MEDIUM	31.6	36	64	29
	MED-HIGH	24.1	27	51	31
	HIGH	13.1	15	27	21
	SUBTOTALS:	562.8	350	871	289
2.5 - 3.0	LOW	6.0	4	12	3
	LOW-MED	1.6	2	3	1
	MEDIUM	0.7	1	2	1
	MED-HIGH	0.8	1	2	1
	HIGH	0.4	0	1	1
	SUBTOTALS:	9.6	8	20	7
3.0 +	LOW	6.1	5	15	4
	LOW-MED	2.3	4	6	2
	MEDIUM	0.8	1	2	1
	MED-HIGH	1.5	3	5	3
	HIGH	0.6	1	2	1
	SUBTOTALS:	11.2	14	30	11

-- AREA TYPE 1 ----- AUTOS   : ONE   --

HH SIZE	MEDIAN INC	NUMBER OF HOUSEHOLD	HOME BASED WORK	HOME BASED NON- WORK	NON- HOME BASED
0 - 2.5	LOW	902.4	1023	3021	829
	LOW-MED	466.3	892	1631	554
	MEDIUM	304.3	657	1149	539
	MED-HIGH	289.9	594	1117	665
	HIGH	206.9	404	773	580
	SUBTOTALS:	2169.8	3570	7691	3167
2.5 - 3.0	LOW	14.6	20	59	17
	LOW-MED	10.9	25	46	15
	MEDIUM	8.7	22	38	18
	MED-HIGH	11.0	26	49	29
	HIGH	7.2	16	31	24
	SUBTOTALS:	52.4	109	223	103

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AUSTIN   PERSON TRIPS 2020
UNSCALED PRODUCTION AND ATTRACTION
RESULTS BY ZONE AND TRIP PURPOSE

ZONE	HOME BASED WORK		HOME BASED NON-WORK		NON-HOME BASED		TRUCK TAXI	
	PRODUCTION	ATTRACTION	PRODUCTION	ATTRACTION	PRODUCTION	ATTRACTION	PRODUCTION	ATTRACTION
1	10176.09	7846.99	20206.11	32099.34	11203.52	10667.62	4036.28	4036.28
2	2545.66	3540.68	5056.69	13249.48	2626.31	4470.87	1535.60	1535.60
3	2175.72	2634.97	4163.73	9398.83	2511.85	3197.52	1139.47	1139.47
4	5556.94	1938.77	10635.09	7883.30	6416.16	2590.55	1833.94	1833.94
5	1498.22	710.68	2867.62	2556.40	1729.39	867.52	604.34	604.34
6	4019.27	1013.40	7692.83	4974.00	4650.49	1573.60	1116.45	1116.45
7	11695.87	9149.62	23222.73	40056.79	12268.27	13063.27	4776.01	4776.01
8	3777.93	2640.18	7507.41	10356.68	3898.57	3508.90	2128.21	2128.21
9	1116.32	1634.47	2217.02	6261.14	1177.30	2163.10	1122.04	1122.04
10	14892.74	3769.63	28507.63	15839.41	17293.68	5038.39	2920.09	2920.09
11	3743.20	2950.09	7437.71	10901.46	3863.64	3742.07	2294.36	2294.36
12	2228.88	1296.45	4428.70	5620.33	2313.62	1871.59	1109.31	1109.31
13	2445.15	1067.27	4858.52	2886.46	2605.73	1046.93	930.76	930.76
14	1417.15	1482.00	2815.91	6945.57	1462.70	2246.78	746.80	746.80
15	1664.11	3476.72	3160.44	18412.91	2156.44	5895.44	1615.70	1615.70
16	10666.61	4511.74	20416.32	18301.20	12347.84	6067.90	3997.73	3997.73
17	1351.34	569.21	2685.18	2557.62	1394.71	833.47	536.80	536.80
18	6407.27	3142.92	12168.96	8369.80	8309.93	2957.62	1616.74	1616.74
19	1765.37	2115.88	3506.29	9420.80	1823.65	3077.59	1015.20	1015.20
20	1236.57	776.04	2456.98	3322.00	1276.42	1107.92	650.26	650.26
21	2608.08	1272.22	5180.00	5589.71	2694.18	1840.58	1138.91	1138.91
22	2109.08	2973.88	4190.85	13274.50	2176.78	4341.93	1390.90	1390.90
23	3711.26	1597.18	7373.15	6132.95	3831.67	2003.06	994.28	994.28
24	10.35	0.44	19.66	143.08	82.41	70.00	6.48	6.48
25	2848.68	3363.10	5452.45	12503.62	3288.00	4217.10	1492.78	1492.78
26	1827.13	2524.34	3497.18	11329.64	2108.98	3706.05	1164.92	1164.92
27	786.23	826.28	1561.45	1660.99	812.28	644.92	328.30	328.30
28	3795.67	3314.48	7538.79	14764.38	3989.90	4831.87	1703.66	1703.66
29	1586.22	1008.22	3150.24	4422.52	1638.77	1471.78	842.46	842.46
30	1949.62	93.50	3871.91	867.00	2014.25	212.50	314.50	314.50
31	1460.22	193.14	2900.16	875.40	1508.45	253.86	304.67	304.67
32	375.45	459.94	745.66	858.12	387.88	342.01	173.40	173.40
33	338.06	306.58	642.06	592.20	438.02	235.58	207.43	207.43
34	1450.67	1226.03	2755.16	4578.25	1879.37	1536.07	580.39	580.39
35	402.15	677.04	769.71	2267.63	464.21	783.64	273.62	273.62
36	692.62	861.74	1325.68	2895.08	981.50	1031.62	560.16	560.16
37	2879.25	3950.56	6039.65	17079.02	2804.90	5593.89	1847.66	1847.66
38	418.22	393.51	794.30	1779.34	541.96	598.01	298.56	298.56
39	2361.21	250.44	4484.45	832.90	3085.32	249.50	308.96	308.96
40	336.24	13.86	638.58	128.52	435.69	31.50	46.62	46.62
41	823.58	787.15	1564.14	2952.89	1067.27	992.33	360.59	360.59
42	1059.16	1070.29	2027.24	3712.59	1222.60	1265.89	479.61	479.61
43	4512.17	703.35	8636.25	3519.50	5208.41	1059.25	968.45	968.45
44	583.93	354.21	1117.64	1231.62	738.03	425.11	263.81	263.81
45	770.18	1818.44	1474.11	6458.95	889.08	2211.99	718.34	718.34
46	245.27	11.77	487.11	109.14	253.40	26.75	39.59	39.59
47	550.12	26.40	1092.55	244.80	568.35	60.00	88.80	88.80
48	1365.59	308.30	2712.01	686.88	1410.88	223.95	221.22	221.22
49	712.44	68.64	1353.07	224.40	923.24	66.00	89.76	89.76
50	1466.26	141.18	2784.72	461.55	1900.11	135.75	184.62	184.62

AUSTIN   PERSON TRIPS 2020   OCT 29, 1990
SCALING FACTOR COMPUTATIONS

TRIP PURPOSE	TYPE	CONTROL TOTAL	UNSCALED MODELED	SPECIAL GENERATOR	ADD ON	SCALE FACTOR
1 HOME BASED WORK	PROD	1605343.	1601128.	4215.	0.	1.0000
	ATTR		1685617.	194876.	0.	0.8368
2 HOME BASED NON-WORK	PROD	3177113.	3153822.	23292.	0.	1.0000
	ATTR		3374327.	485721.	0.	0.7976
3 NON-HOME BASED	PROD	2017626.	1757289.	249893.	10444.	1.0000
	ATTR		1385256.	249893.	0.	1.2761
4 TRUCK TAXI	PROD	452000.	631854.	45287.	0.	0.6437
	ATTR		631854.	45287.	0.	0.6437

CONTROL TOTAL = VALUE INPUT FROM TP RECORD
      OR = MODELED PRODUCTIONS + SPECIAL GENERATORS PRODUCTIONS + ADD ON PRODUCTIONS
      OR = MODELED ATTRACTIONS + SPECIAL GENERATORS ATTRACTIONS + ADD ON ATTRACTIONS

SCALE FACTOR = (CONTROL TOTAL - SPECIAL GENERATOR)/(UNSCALED MODELLED + ADD ON)

TABLE 11:   AGGREGATE PRODUCTIONS AND ATTRACTIONS BY SECTOR

SECTOR	HOME BASED WORK		HOME BASED NON-WORK		NON-HOME BASED		TRUCK TAXI	
	P	A	P	A	P	A	P	A
1	987893		1408429		1040056		218560	
		633028		1272181		1040056		218560
2	565885		1605000		888315		200940	
		854238		1673768		888315		200940
3	51564		163683		89254		32500	
		118077		231165		89254		32500
STUDY TOTAL	1605342		3177112		2017625		452000	
		1605343		3177114		2017625		452000

TABLE 12:   AGGREGATE PRODUCTIONS AND ATTRACTIONS BY ZONE WITHIN SECTOR

SECTOR	ZONE	HOME BASED WORK		HOME BASED NON-WORK		NON-HOME BASED		TRUCK TAXI	
		P	A	P	A	P	A	P	A
1	48	1366	258	2712	548	286	286	142	142
	62	2882	6178	5723	23112	13549	13549	1560	1560
	79	1833	4838	3847	19480	11238	11238	1245	1245
	107	15133	17506	30903	18367	12558	12558	3745	3745
	113	4223	4797	8083	3665	3587	3587	1035	1035
	114	514	649	1020	2419	1404	1404	179	179
	118	4368	10191	8359	7484	9495	9495	2228	2228
	123	5606	5427	10729	3977	4246	4246	1265	1265
	124	826	2561	1638	1752	2267	2267	525	525
	128	782	2149	1497	1389	1797	1797	420	420
	129	3376	3867	6461	2568	2774	2774	812	812
	131	505	2593	967	1599	2182	2182	477	477
	132	628	1135	1202	709	865	865	221	221
	133	191	454	378	1453	888	888	107	107
	134	1339	1674	2659	1025	1103	1103	336	336
	135	102	2044	196	1148	1653	1653	341	341
	136	232	2613	460	2812	2409	2409	495	495
	137	1150	2253	2285	1420	1557	1557	409	409
	138	748	690	1484	492	495	495	161	161
	141	282	1332	590	789	1054	1054	240	240
	142	4084	3232	8568	11646	6575	6575	1019	1019
	143	452	2429	865	1557	2125	2125	460	460
	149	3464	2843	6630	9605	5643	5643	815	815
	151	4727	1165	9047	4022	1913	1913	571	571
	152	2357	2911	4511	11261	6299	6299	814	814
	153	3800	4560	7273	3467	3492	3492	990	990
	161	2386	4754	4565	20744	11078	11078	1394	1394
	162	1245	6980	2385	4201	5732	5732	1251	1251
	163	3122	993	5974	2644	1522	1522	391	391
	168	2647	2077	5067	6679	3957	3957	600	600
	169	2309	2764	4419	8827	5323	5323	720	720
	173	3446	7063	6595	5251	5938	5938	1455	1455
	181	3044	664	5781	1576	880	880	304	304
	183	2966	7120	5632	23633	14333	14333	1667	1667
	190	3479	1638	6606	6125	3424	3424	570	570
	193	15509	17840	29686	12366	12961	12961	3797	3797
	199	6519	4260	12476	2972	2601	2601	1011	1011
	201	0	12160	0	6880	10038	10038	2026	2026
	202	5885	7340	11692	5339	5319	5319	1570	1570
	203	6923	5818	13252	4001	3917	3917	1323	1323
	205	5309	11307	10549	7198	8833	8833	2233	2233
	214	1240	4019	2463	14011	8272	8272	1317	1317
	215	4815	6445	9144	4285	4957	4957	1349	1349
	216	5332	12766	10589	8331	10445	10445	2549	2549
	217	899	9085	1787	5562	6139	6139	1322	1322
	218	686	5032	1362	2999	4154	4154	895	895
	219	5422	6182	10377	4507	4348	4348	1284	1284
	224	3478	5054	6657	4832	4723	4723	995	995
	226	3886	8193	7438	7028	7416	7416	1480	1480
	227	5787	6306	11077	16459	10460	10460	1586	1586
	230	5140	2282	9762	7311	4202	4202	784	784

TABLE 13:   AGGREGATE PRODUCTIONS AND ATTRACTIONS BY AREA TYPE

AREA TYPE	HOME BASED WORK		HOME BASED NON-WORK		NON-HOME BASED		TRUCK TAXI	
	P	A	P	A	P	A	P	A
1	178030	9912	159799	20443	158097	158097	30669	30669
2	596322	356663	572228	724242	489875	489875	124346	124346
3	213541	266453	676402	527496	392084	392084	63545	63545
4	565885	854238	1605000	1673768	888315	888315	200940	200940
5	51564	118077	163683	231165	89254	89254	32500	32500
STUDY TOTAL	1605342	1605343	3177112	3177114	2017625	2017625	452000	452000

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AREA TYPE	ZONE	HOME BASED WORK		HOME BASED NON-WORK		NON-HOME BASED		TRUCK TAXI	
		P	A	P	A	P	A	P	A
1	373	2107	7956	4435	9123	7956	7956	1786	1786
	376	1024	16430	1961	10629	9630	9630	1934	1934
	377	566	13778	1191	12904	8433	8433	1799	1799
	378	665	17650	1401	24283	19712	19712	3920	3920
	379	32	17272	68	23354	17202	17202	3419	3419
	380	242	16747	507	10612	14670	14670	2625	2625
	381	133	11868	280	7499	11023	11023	1950	1950
	382	197	9385	445	12375	10376	10376	2031	2031
	383	93	3365	210	2176	2808	2808	515	515
	384	274	5478	545	7831	3734	3734	827	827
	404	67	3062	133	1952	2878	2878	509	509
	405	499	19911	992	14120	19087	19087	3429	3429
	406	1593	17572	3350	11314	16134	16134	3034	3034
	407	92	10724	176	6827	10119	10119	1773	1773
	408	1292	1046	2569	732	589	589	265	265
	439	0	2059	0	1251	1832	1832	329	329
	440	1036	3727	2180	2817	1914	1914	524	524

SUBTOTAL   178030   159799   158097   30669
                 9912   20443   158097   30669

AREA TYPE	ZONE	P	A	P	A	P	A	P	A
2	107	15133	17506	30903	18367	12558	12558	3745	3745
	113	4223	4797	8083	3665	3587	3587	1035	1035
	118	4368	10191	8359	7484	9495	9495	2228	2228
	123	5606	5427	10729	3977	4246	4246	1265	1265
	124	826	2561	1638	1752	2267	2267	525	525
	128	782	2149	1497	1389	1797	1797	420	420
	129	3376	3867	6461	2568	2774	2774	812	812
	131	505	2593	967	1599	2182	2182	477	477
	132	628	1135	1202	709	865	865	221	221
	134	1339	1674	2659	1025	1103	1103	336	336
	135	102	2044	196	1148	1653	1653	341	341
	136	232	2613	460	2812	2409	2409	495	495
	137	1150	2253	2285	1420	1557	1557	409	409
	138	748	690	1484	492	495	495	161	161
	141	282	1332	590	789	1054	1054	240	240
	143	452	2429	865	1557	2125	2125	460	460
	153	3800	4560	7273	3467	3492	3492	990	990
	162	1245	6980	2385	4201	5732	5732	1251	1251
	173	3446	7063	6595	5251	5938	5938	1455	1455
	193	15509	17840	29686	12366	12961	12961	3797	3797
	199	6519	4260	12476	2972	2601	2601	1011	1011
	201	0	12160	0	6880	10038	10038	2026	2026
	202	5885	7340	11692	5339	5319	5319	1570	1570
	203	6923	5818	13252	4001	3917	3917	1323	1323
	205	5309	11307	10549	7198	8833	8833	2233	2233
	214	1240	4019	2463	14011	8272	8272	1317	1317
	215	4815	6445	9144	4285	4957	4957	1349	1349
	216	5332	12766	10589	8331	10445	10445	2549	2549
	217	899	9085	1787	5562	6139	6139	1322	1322
	218	686	5032	1362	2999	4154	4154	895	895

SECTOR	SECTOR SIZE	POP	HOUSE-HOLDS	AVERAGE HH SIZE	MEDIAN INCOME	TOTAL EMPLOYMENT	BASIC	RETAIL	SERVICE	AUTOS PER HOUSEHOLD	AUTOS PER PERSON
							---- EMPLOYMENT TYPE ----				
1	0.0	589162	278943	2.1	18513	409212	150618	247048	11546	1.5	0.7
2	0.0	826105	349987	2.4	23010	286245	144624	141621	0	1.6	0.7
3	0.0	114558	49353	2.3	20504	26818	11802	14991	25	1.5	0.7
TOTALS:	0.0	1529825	678283	2.3	20978	722275	307044	403660	11571	1.5	0.7

-------------------------------- PERSON TRIPS PER PERSON BY TRIP PURPOSE --------------------------------

SECTOR	HOME BASED WORK	HOME BASED NON-WORK	NON-HOME BASED	TRUCK TAXI
1	1.07	2.16	1.77	0.37
2	1.03	2.03	1.08	0.24
3	1.03	2.02	0.78	0.28
	P A	P A	P A	P A
TOTALS:	1.05	2.08	1.32	0.30

-------------------------------- PERSON TRIPS PER HOUSEHOLD BY TRIP PURPOSE --------------------------------

SECTOR	HOME BASED WORK	HOME BASED NON-WORK	NON-HOME BASED	TRUCK TAXI
1	2.27	4.56	3.73	0.78
2	2.44	4.78	2.54	0.57
3	2.39	4.68	1.81	0.66
	P A	P A	P A	P A
TOTALS:	2.37	4.68	2.97	0.67

AUSTIN   PERSON TRIPS 2020
STUDY AREA CHARACTERISTICS SUMMARY
BY ZONE WITHIN SECTOR

SECTOR	ZONE	SECTOR SIZE	POP	HOUSE-HOLDS	AVERAGE HH SIZE	MEDIAN INCOME	TOTAL EMPLOYMENT	BASIC	RETAIL	SERVICE	AUTOS PER HOUSEHOLD	AUTOS PER PERSON
1	48	0.0	1357	595	2.3	17500	33	11	22	0	1.5	0.6
	62	0.0	2841	1257	2.3	17500	3522	1239	2283	0	1.5	0.6
	79	0.0	1858	925	2.0	12500	2770	831	1939	0	1.3	0.6
	107	0.0	13644	6549	2.1	17500	6622	3517	3105	0	1.5	0.7
	113	0.0	4118	1647	2.5	25002	2186	727	1459	0	1.6	0.7
	114	0.0	508	224	2.3	17500	351	117	234	0	1.5	0.6
	118	0.0	4299	1700	2.5	25002	5539	564	4975	0	1.6	0.6
	123	0.0	5928	2149	2.8	25002	2433	355	2078	0	1.7	0.6
	124	0.0	814	360	2.3	17500	1420	307	1113	0	1.5	0.6
	128	0.0	776	304	2.6	25002	1191	365	826	0	1.6	0.6

-------- PERSON TRIPS PER PERSON BY TRIP PURPOSE --------

SECTOR	ZONE	HOME BASED WORK	HOME BASED NON-WORK	NON-HOME BASED	TRUCK TAXI
1	48	1.01	2.00	0.21	0.10
	62	1.01	2.01	4.77	0.55
	79	0.99	2.07	6.05	0.67
	107	1.11	2.26	0.92	0.27
	113	1.03	1.96	0.87	0.25
	114	1.01	2.01	2.76	0.35
	118	1.02	1.94	2.21	0.52
	123	0.95	1.81	0.72	0.21
	124	1.01	2.01	2.79	0.64
	128	1.01	1.93	2.32	0.54

-------- PERSON TRIPS PER HOUSEHOLD BY TRIP PURPOSE --------

SECTOR	ZONE	HOME BASED WORK	HOME BASED NON-WORK	NON-HOME BASED	TRUCK TAXI
1	48	2.30	4.56	0.48	0.24
	62	2.29	4.55	10.78	1.24
	79	1.98	4.16	12.15	1.35
	107	2.31	4.72	1.92	0.57
	113	2.56	4.91	2.18	0.63
	114	2.29	4.55	6.27	0.80
	118	2.57	4.92	5.59	1.31
	123	2.61	4.99	1.98	0.59
	124	2.29	4.55	6.30	1.46
	128	2.57	4.92	5.91	1.38

TABLE 17:

AREA TYPE	AREA TYPE SIZE	POP	HOUSE-HOLDS	AVERAGE HH SIZE	MEDIAN INCOME	TOTAL EMPLOYMENT	EMPLOYMENT TYPE BASIC	RETAIL	SERVICE	AUTOS PER HOUSEHOLD	AUTOS PER PERSON
1	0.0	7010	4806	1.5	14478	78709	24378	52811	1520	1.38	0.95
2	0.0	326546	159967	2.0	17283	232134	84129	138498	9507	1.44	0.70
3	0.0	255606	114170	2.2	20406	98369	42111	55739	519	1.51	0.67
4	0.0	826105	349987	2.4	23010	286245	144624	141621	0	1.57	0.67
5	0.0	114558	49353	2.3	20504	26818	11802	14991	25	1.53	0.66
TOTALS:	0.0	1529825	678283	2.3	20978	722275	307044	403660	11571	1.52	0.68

---------------------------------- PERSON TRIPS PER PERSON BY TRIP PURPOSE ----------------------------------

AREA TYPE	HOME BASED WORK	HOME BASED NON-WORK	NON-HOME BASED	TRUCK TAXI
1	1.41	2.92	22.55	4.38
2	1.09	2.22	1.50	0.38
3	1.04	2.06	1.53	0.25
4	1.03	2.03	1.08	0.24
5	1.03	2.02	0.78	0.28
AREA TOTALS:	1.05	2.08	1.32	0.30

---------------------------------- PERSON TRIPS PER HOUSEHOLD BY TRIP PURPOSE ----------------------------------

AREA TYPE	HOME BASED WORK	HOME BASED NON-WORK	NON-HOME BASED	TRUCK TAXI
1	2.06	4.25	32.90	6.38
2	2.23	4.53	3.06	0.78
3	2.33	4.62	3.43	0.56
4	2.44	4.78	2.54	0.57
5	2.39	4.68	1.81	0.66
AREA TOTALS:	2.37	4.68	2.97	0.67

AREA TYPE	ZONE	AREA TYPE SIZE	POP	HOUSE- HOLDS	AVERAGE HH SIZE	MEDIAN INCOME	TOTAL EMPLOYMENT	BASIC	RETAIL	SERVICE	AUTOS PER HOUSEHOLD	AUTOS PER PERSON
1	373	0.0	1267	1073	1.2	12500	3519	1144	2375	0	1.34	1.14
	376	0.0	430	410	1.0	25000	4263	1380	2883	0	1.71	1.63
	377	0.0	321	287	1.1	12500	1841	588	1253	0	1.35	1.21
	378	0.0	372	337	1.1	12500	7314	2361	4953	0	1.35	1.23
	379	0.0	48	15	3.2	12504	5196	1631	3565	0	1.34	0.42
	380	0.0	304	117	2.6	12502	9271	2959	6312	0	1.30	0.50
	381	0.0	172	64	2.7	12502	7202	2290	4912	0	1.30	0.48
	382	0.0	263	118	2.2	8000	4012	1243	2769	0	1.06	0.47
	383	0.0	118	56	2.1	8000	1722	532	1170	20	1.05	0.50
	384	0.0	281	119	2.4	17500	1555	55	0	1500	1.47	0.62

-------------------------------- PERSON TRIPS PER PERSON BY TRIP PURPOSE --------------------------------

AREA TYPE	ZONE	HOME BASED WORK	HOME BASED NON-WORK	NON-HOME BASED	TRUCK TAXI
1	373	1.66	3.50	6.28	1.41
	376	2.38	4.56	22.40	4.50
	377	1.76	3.71	26.27	5.60
	378	1.79	3.77	52.99	10.54
	379	0.67	1.42	358.37	71.23
	380	0.80	1.67	48.26	8.63
	381	0.77	1.63	64.09	11.34
	382	0.75	1.69	39.45	7.72
	383	0.79	1.78	23.80	4.36
	384	0.98	1.94	13.29	2.94

-------------------------------- PERSON TRIPS PER HOUSEHOLD BY TRIP PURPOSE --------------------------------

AREA TYPE	ZONE	HOME BASED WORK	HOME BASED NON-WORK	NON-HOME BASED	TRUCK TAXI
1	373	1.96	4.13	7.41	1.66
	376	2.50	4.78	23.49	4.72
	377	1.97	4.15	29.38	6.27
	378	1.97	4.16	58.49	11.63
	379	2.13	4.53	1146.80	227.93
	380	2.07	4.33	125.38	22.44
	381	2.08	4.38	172.23	30.47
	382	1.67	3.77	87.93	17.21
	383	1.66	3.75	50.14	9.20
	384	2.30	4.58	31.38	6.95

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STUDY AREA CHARACTERISTICS SUMMARY
BY ZONE

ZONE	ZONE SIZE	POP	HOUSE-HOLDS	AVERAGE HH SIZE	MEDIAN INCOME	TOTAL EMPLOYMENT	---- EMPLOYMENT TYPE ----			AUTOS PER HOUSEHOLD	AUTOS PER PERSON
							BASIC	RETAIL	SERVICE		
1	0.0	10833	4375	2.5	17500	3330	966	2364	0	1.47	0.59
2	0.0	3336	1033	3.2	17504	1678	576	1102	0	1.52	0.47
3	0.0	2385	827	2.9	25002	1241	468	773	0	1.66	0.58
4	0.0	5418	2167	2.5	25002	872	271	601	0	1.64	0.66
5	0.0	1337	593	2.3	25000	331	125	206	0	1.63	0.72
6	0.0	3594	1590	2.3	25000	430	75	355	0	1.63	0.72
7	0.0	12754	5003	2.5	17502	3983	818	3165	0	1.47	0.58
8	0.0	3135	1683	1.9	17500	1259	342	917	0	1.46	0.79
9	0.0	1101	487	2.3	17500	782	156	601	25	1.46	0.65
10	0.0	12157	5958	2.0	25000	1129	184	945	0	1.63	0.80
11	0.0	3170	1664	1.9	17500	1419	444	975	0	1.46	0.77

-------------------------------- PERSON TRIPS PER PERSON BY TRIP PURPOSE --------------------------------

ZONE	HOME BASED WORK	HOME BASED NON-WORK	NON-HOME BASED	TRUCK TAXI
1	0.94	1.87	1.24	0.24
2	0.76	1.52	1.71	0.30
3	0.91	1.75	1.71	0.31
4	1.03	1.96	0.61	0.22
5	1.12	2.15	0.83	0.29
6	1.12	2.14	0.56	0.20
7	0.92	1.82	1.30	0.24
8	1.21	2.39	1.43	0.44
9	1.01	2.01	2.50	0.66
10	1.22	2.34	0.53	0.15
11	1.18	2.35	1.51	0.47

-------------------------------- PERSON TRIPS PER HOUSEHOLD BY TRIP PURPOSE --------------------------------

ZONE	HOME BASED WORK	HOME BASED NON-WORK	NON-HOME BASED	TRUCK TAXI
1	2.33	4.62	3.07	0.60
2	2.46	4.89	5.52	0.96
3	2.63	5.04	4.93	0.89
4	2.56	4.91	1.53	0.54
5	2.53	4.84	1.87	0.66
6	2.53	4.84	1.26	0.45
7	2.34	4.64	3.32	0.62
8	2.24	4.46	2.66	0.81
9	2.29	4.55	5.66	1.48
10	2.50	4.78	1.07	0.32
11	2.25	4.47	2.87	0.89

ZONE	HOME BASED WORK P	HOME BASED WORK A	HOME BASED NON-WORK P	HOME BASED NON-WORK A	NON-HOME BASED P	NON-HOME BASED A	TRUCK TAXI P	TRUCK TAXI A
1	10176	6601	20206	25990	13423	13423	2642	2642
2	2545	2963	5056	10568	5705	5705	988	988
3	2176	2205	4164	7497	4080	4080	734	734
4	5557	1622	10635	6288	3306	3306	1180	1180
5	1498	595	2868	2039	1107	1107	389	389
6	4020	848	7693	3971	2005	2005	719	719
7	11695	7669	23222	32052	16620	16620	3086	3086
8	3778	2209	7508	8261	4478	4478	1370	1370
9	1117	1377	2217	5003	2754	2754	723	723
10	14892	3157	28508	12685	6399	6399	1884	1884
11	3744	2469	7437	8695	4775	4775	1477	1477
12	2229	1085	4429	4489	2385	2385	714	714
13	2445	893	4858	2335	1313	1313	602	602
14	1417	1240	2816	5540	2867	2867	480	480
15	1664	2909	3161	14687	7524	7524	1040	1040
16	10667	3790	20416	14611	7733	7733	2576	2576
17	1351	476	2685	2040	1063	1063	346	346
18	6407	2637	12169	6681	3771	3771	1041	1041
19	1766	1770	3507	7514	3927	3927	654	654
20	1236	649	2457	2650	1414	1414	418	418
21	2608	1065	5180	4458	2349	2349	733	733
22	2109	2488	4190	10588	5541	5541	896	896
23	3712	1337	7374	4892	2556	2556	640	640
24	10	0	19	142	70	70	6	6
25	2849	2814	5453	9973	5382	5382	960	960
26	1827	2113	3497	9036	4729	4729	750	750
27	786	691	1561	1325	823	823	212	212
28	3796	2773	7539	11805	6147	6147	1098	1098
29	1586	844	3150	3527	1878	1878	542	542
30	1949	78	3872	692	271	271	203	203
31	1461	162	2900	698	324	324	196	196
32	375	385	746	684	437	437	111	111
33	338	256	642	473	300	300	134	134
34	1451	1026	2755	3651	1960	1960	374	374
35	402	567	770	1809	1000	1000	176	176
36	693	739	1326	2412	1267	1267	372	372
37	2879	3329	6039	13641	7125	7125	1193	1193
38	418	329	795	1419	763	763	192	192
39	2361	213	4484	679	311	311	201	201
40	337	11	639	103	41	41	30	30
41	823	659	1564	2355	1266	1266	232	232
42	1059	896	2027	2961	1615	1615	309	309
43	4512	588	8636	2808	1352	1352	623	623
44	584	304	1118	1018	525	525	174	174
45	771	1522	1474	5152	2823	2823	462	462
46	245	10	487	87	34	34	26	26
47	550	22	1093	195	76	76	57	57
48	1366	258	2712	548	286	286	142	142
49	712	57	1353	179	84	84	58	58
50	1466	118	2785	368	174	174	119	119

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ZONE          COMMENTS
-----  ----------------------------------------------------------------
    1  LEANDER HS      108 EMP 1213 STUDENTS                      00002143
       LEANDER (ACC)     6 EMP  100 STUDENTS                      00002143
    6  CITY PARK          20 ACRES                                00002145
    7  FAUBION HS       43 EMP  479 STUDENTS                       00002143
    9  RESORT AREA       25 EMP                                    00002146
       PACE BEND PARK     4 EMP                                    00002146
   10  LAGO VISTA HS    10 EMP   80 STUDENTS                       00002147
       CITY PARK        219 ACRES                                  00002148
   12  CITY PARK         25 ACRES                                  00002150
   13  METRO PARK       152 ACRES                                  00002151
       CYPRESS CREEK PARK                                          00002151
   16  TRAVIS COUNTY     41 EMP                                    00002151
       HAMILTON POOL PARK  6 EMP                                   00002151
   18  LAKEWAY AIRPORT    20 EMP                                   00002152
   24  EMMA LONG PARK   1148 ACRES                                 00002155
   28  COMMON FORD PARK  215 ACRES                                 00002156
   36  WEST RIDGE SCH   60 EMP  498 STUDENTS                       00002143
   37  TRAVIS COUNTY     74 EMP                                    00002151
   39  ST THERESA SCH    9 EMP   72 STUDENTS                       00002143
   44  ST MICHAELS SCH  25 EMP  180 STUDENTS                       00002143
   63  OAK HILL SCHOOL  70 EMP  844 STUDENTS                       00002143
   69  DOMINICAN ACDMY   2 EMP   26 STUDENTS                       00002143
   78  PATTON SCHOOL    66 EMP  916 STUDENTS                       00002143
   85  COVINGTON        95 EMP  873 STUDENTS                       00002143
   86  BOONE SCHOOL     55 EMP  644 STUDENTS                       00002143
  101  MANCHACA SCH     47 EMP  637 STUDENTS                       00002143
  103  LEANDER JHS      90 EMP  931 STUDENTS                       00002143
       GIDDENS SCH      48 EMP  540 STUDENTS                       00002143
       BLOCK HOUSE SCH  61 EMP  764 STUDENTS                       00002143
  107  GEORGETOWN HS   146 EMP 1257 STUDENTS                       00002159
       HIGH SCHOOL     122 EMP 1514 STUDENTS                       00002159
       GEORGETOWN JHS   55 EMP  727 STUDENTS                       00002159
       EASTSIDE,WESTSIDE,NORTHSIDE,FROST,WILLIAMS 195 EMP 2652 STU 00002159
       GEORGETOWN HOSPITAL 60 BEDS         (180 EMP)               00002160
       SOUTHWESTERN U 275 EMP 1130 STUDENTS (1000 ON CAMPUS)       00002161
       GEORGETOWN AIRPORT  35 EMP                                  00002162
       GEORGETOWN CITY OF 216 EMP                                  00002162
  113  OLD TOWN SCH     40 EMP  500 STUDENTS                       00002163
       ROUND ROCK CITY OF  20 EMP                                  00002162
  120  BRUSHY CREEK     59 EMP  705 STUDENTS                       00002163
  122  ROUND ROCK HOSPITAL  75 BEDS  (275 EMP)                     00002166
  125  ROUND ROCK CITY OF  16 EMP                                  00002169
  127  DBL FILE TRAIL   61 EMP  707 STUDENTS                       00002170
  129  TEXAS BABTIST CHILDRENS HOME  49 EMP                        00002172
  130  ROBERTSON        49 EMP  489 STUDENTS                       00002170
  136  BERKMAN SCHOOL   52 EMP  499 STUDENTS                       00002170
       C.D. FULKES      92 EMP  917 STUDENTS                       00002170
  137  ROUND ROCK CITY OF 154 EMP                                 00002170
  140  ROUND ROCK HS   187 EMP 3286 STUDENTS                       00002173
       ROUND ROCK ACC   29 EMP  862 STUDENTS                       00002173
       CHISHOLM TRAIL   96 EMP  990 STUDENTS                       00002173
       DEEPWOOD SCH     59 EMP  592 STUDENTS                       00002173
       ACC ADMIN       271 EMP                                     00002173
  142  BLUEBONNET       49 EMP  440 STUDENTS                       00002173
  144  VOIGHT SCHOOL    54 EMP  540 STUDENTS                       00002173
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GENERATION    110176 6601202062599013423113423  013423 2642 2642 AUSTIN 02020
GENERATION    2 2545 2963 505610568 5705 5705   0 5705  988  988 AUSTIN 02020
GENERATION    3 2176 2205 4164 7497 4080 4080    0 4080  734  734 AUSTIN 02020
GENERATION    4 5557 162210635 6288 3306 3306    0 3306 1180 1180 AUSTIN 02020
GENERATION    5 1498  595 2868 2039 1107 1107    0 1107  389  389 AUSTIN 02020
GENERATION    6 4020  848 7693 3971 2005 2005    0 2005  719  719 AUSTIN 02020
GENERATION    711695 7669232223205216620116620  016620 3086 3086 AUSTIN 02020
GENERATION    8 3778 2209 7508 8261 4478 4478    0 4478 1370 1370 AUSTIN 02020
GENERATION    9 1117 1377 2217 5003 2754 2754    0 2754  723  723 AUSTIN 02020
GENERATION    1014892 31572850812685 6399 6399   0 6399 1884 1884 AUSTIN 02020
GENERATION    11 3744 2469 7437 8695 4775 4775   0 4775 1477 1477 AUSTIN 02020
GENERATION    12 2229 1085 4429 4489 2385 2385   0 2385  714  714 AUSTIN 02020
GENERATION    13 2445  893 4858 2335 1313 1313    0 1313  602  602 AUSTIN 02020
GENERATION    14 1417 1240 2816 5540 2867 2867   0 2867  480  480 AUSTIN 02020
GENERATION    15 1664 2909 316114687 7524 7524   0 7524 1040 1040 AUSTIN 02020
GENERATION    1610667 37902041614611 7733 7733   0 7733 2576 2576 AUSTIN 02020
GENERATION    17 1351  476 2685 2040 1063 1063    0 1063  346  346 AUSTIN 02020
GENERATION    18 6407 263712169 6681 3771 3771    0 3771 1041 1041 AUSTIN 02020
GENERATION    19 1766 1770 3507 7514 3927 3927   0 3927  654  654 AUSTIN 02020
GENERATION    20 1236  649 2457 2650 1414 1414    0 1414  418  418 AUSTIN 02020
GENERATION    21 2608 1065 5180 4458 2349 2349   0 2349  733  733 AUSTIN 02020
GENERATION    22 2109 2488 419010588 5541 5541   0 5541  896  896 AUSTIN 02020
GENERATION    23 3712 1337 7374 4892 2556 2556   0 2556  640  640 AUSTIN 02020
GENERATION    24   10    0   19  142   70   70    0   70    6    6 AUSTIN 02020
GENERATION    25 2849 2814 5453 9973 5382 5382   0 5382  960  960 AUSTIN 02020
GENERATION    26 1827 2113 3497 9036 4729 4729   0 4729  750  750 AUSTIN 02020
GENERATION    27  786  691 1561 1325  823  823    0  823  212  212 AUSTIN 02020
GENERATION    28 3796 2773 753911805 6147 6147   0 6147 1098 1098 AUSTIN 02020
GENERATION    29 1586  844 3150 3527 1878 1878   0 1878  542  542 AUSTIN 02020
GENERATION    30 1949   78 3872  692  271  271    0  271  203  203 AUSTIN 02020
GENERATION    31 1461  162 2900  698  324  324    0  324  196  196 AUSTIN 02020
GENERATION    32  375  385  746  684  437  437    0  437  111  111 AUSTIN 02020
GENERATION    33  338  256  642  473  300  300    0  300  134  134 AUSTIN 02020
GENERATION    34 1451 1026 2755 3651 1960 1960   0 1960  374  374 AUSTIN 02020
GENERATION    35  402  567  770 1809 1000 1000    0 1000  176  176 AUSTIN 02020
GENERATION    36  693  739 1326 2412 1267 1267   0 1267  372  372 AUSTIN 02020
GENERATION    37 2879 3329 603913641 7125 7125   0 7125 1193 1193 AUSTIN 02020
GENERATION    38  418  329  795 1419  763  763    0  763  192  192 AUSTIN 02020
GENERATION    39 2361  213 4484  679  311  311    0  311  201  201 AUSTIN 02020
GENERATION    40  337   11  639  103   41   41    0   41   30   30 AUSTIN 02020
GENERATION    41  823  659 1564 2355 1266 1266   0 1266  232  232 AUSTIN 02020
GENERATION    42 1059  896 2027 2961 1615 1615   0 1615  309  309 AUSTIN 02020
GENERATION    43 4512  588 8636 2808 1352 1352   0 1352  623  623 AUSTIN 02020
GENERATION    44  584  304 1118 1018  525  525    0  525  174  174 AUSTIN 02020
GENERATION    45  771 1522 1474 5152 2823 2823   0 2823  462  462 AUSTIN 02020
GENERATION    46  245   10  487   87   34   34    0   34   26   26 AUSTIN 02020
GENERATION    47  550   22 1093  195   76   76    0   76   57   57 AUSTIN 02020
GENERATION    48 1366  258 2712  548  286  286    0  286  142  142 AUSTIN 02020
GENERATION    49  712   57 1353  179   84   84    0   84   58   58 AUSTIN 02020
GENERATION    50 1466  118 2785  368  174  174    0  174  119  119 AUSTIN 02020
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