INSTITUTO MUNICIPAL DE INVESTIGACION Y PLANEACION

Benjamín Franklin 4185 y Estocolmo. Circuito Pronaf. Cd. Juárez, Chih. Tels. 13-65-20 13-65-30 13-65-46 13-64-96

Tech Memo

DATE:	September 30, 1999.	**PROJECT:**	**Estudio Integral de Transporte (III)/**
			Multimodal Transportation Study:
TO:	Carl Snow, Project Director / TNRCC		Development of Travel Demand and
	Jim Yarbrough / EPA		Mobile Source Emissions Models for
	Jack Jones / TxDOT		base year 1996, Juarez.
	Zack Graham / TTI		(Contract No. 9880055000)
	Luis Raul Cordova/SEMARNAP		
FROM:	Salvador Gonzalez-Ayala	**SERIAL:**	EITIII-03
SUBJ:	Progress under Task 2:		
	Trip Distribution Model Application.		

Overview

Under the current project five specific tasks have been outlined for development:

1. Trip generation model application
2. Trip distribution model application
3. Mode split model application
4. Traffic assignment application
5. On-road mobile source emissions modeling

As previously stated, IMIP is exploring an alternative modeling technique that is currently gaining more attention, in which mode split is developed before the trip distribution step in order to improve the distribution/mode-share characterization. Thus, having completed the trip generation and mode split parts of the model (tasks 1 and 3), the present Tech Memo summarizes the work performed to accomplish the pending task 2: Trip Distribution.

Background

At the trip generation step, the total number of trips produced from, and attracted to each zone were estimated and presented in a tabular format as depicted in Figure 1(a). This provides an order of magnitude of the trip-making potential for each zone, yet at that stage nothing could be inferred about the actual exchange with other zones.

The trip distribution step focuses on this trip exchange, identifying from where to where do these trips take place. Figure 1(b) exemplifies it by showing schematically how the productions and attractions for zone 93 (totals of row i=93 and column j=93 respectively) end up "distributed" to the other zones in the study area. As seen here, this resulting trip exchange between zones is conventionally presented as a two-dimensional matrix array, where each of its cells represent the number of trips produced at zone i (row i) and attracted to zone j (column j). Prior to moving on to other steps in the modeling process, this Production-Attraction matrix (also referred to as the "P-A matrix") is transformed to Origin-Destination (O-D), simply by reconfiguring the cell values to produce a matrix symmetric around the main diagonal, as will be explained later on. In this regard it is important to remember that only in the case of NHB trips, Production is considered synonymous to Origin and Attraction to Destination.

Some additional conditions apply specifically to the present modeling effort, which originated from the Juarez project premises:

- Unless otherwise specified, these matrices depict person-trips per day.

- Consistent with the trip generation step, P-A matrices were developed for HBW, HBNW, NHB, and TT trip purposes, as well as for external-local (EXLO) based on NHB proportions.
- Consistent with the mode split step, the final O-D-by-purpose matrices, were additionally disaggregated by the three generic modes (AUTO, BUS, and WALK).

(a) Trip generation table

ZONE	Productions	Attractions
1	3,643	4,670
2	1,237	1,854
3	5,049	2,983
:	:	:
93	**9,351**	**5,360**
:	:	:
425	942	661

(b) Trip distribution matrix

j=93

P \ A	1	2	3	.	.	.	93	.	.	.	425
1	215	306	421	.	.	.	128	.	.	.	13
2	259	198	235	.	.	.	560	.	.	.	22
3	362	268	210	.	.	.	376	.	.	.	69
:											
:											
93	163	754	196	.	.	.	412	.	.	.	63
:											
425	16	39	53	.	.	.	12	.	.	.	321

i=93 $\Sigma\, T_{93j}=$ **9,351**

$\Sigma\, T_{i93}=$ **5,360**
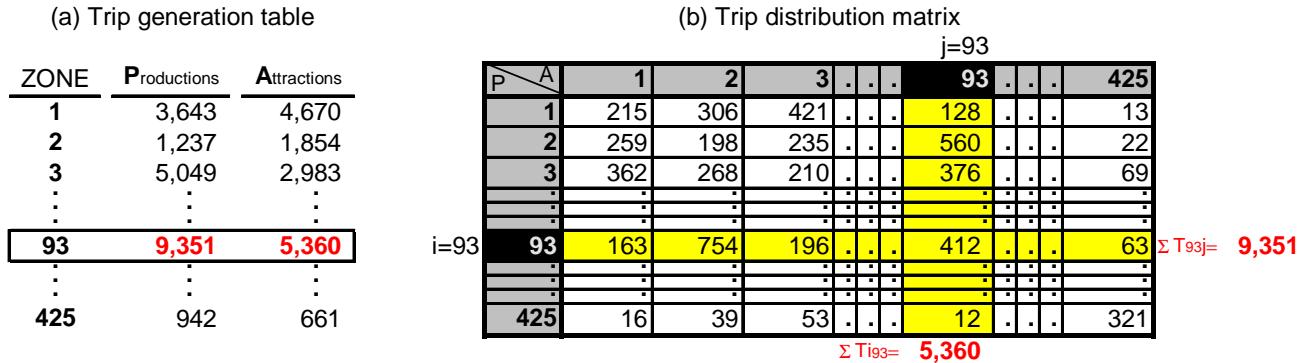
Figure 1. Schematic relationship between trip generation and trip distribution results.

Trip distribution matrices were developed through the use of a modified version of the traditional gravity model known as the atomistic model. A brief description of each follows.

The traditional gravity model

The traditional gravity model was originally developed from analogies with the physical world (Newton's gravity formulations), but its real strength comes from later improvements and derivation through entropy-maximizing considerations, which makes the model closely related to information theory, to error measures, and to maximum likelihood in statistics.

The doubly constrained version of the traditional gravity model has the following form:

$$T_{ij} = \beta_i {}^* P_i {}^* \alpha_j {}^* A_j {}^* f(t_{ij}) \qquad\qquad (\textbf{Eq. 1})$$

Where:

T_{ij}:	Trips produced in zone i and attracted to zone j.
P_i:	Total trips produced in zone i.
β_i:	Balancing factor for row i (production constraint).
A_j:	Total trips attracted to zone j.
α_j:	Balancing factor for column j (attraction constraint)
$f(t_{ij})$:	Impedance (decreasing) function, based on the travel time between zone i and zone j.

The two constraints that the model is required to meet are 1) that the sum of trips in any specific row of the matrix should equal the total number of trips produced in that zone, and 2) that the sum of trips in any specific column should correspond to the number of trips attracted to that zone (refer back to Figure 1). The two conditions can be written as:

$$\sum_j T_{ij} = P_i \qquad\qquad (\textbf{Eq. 2})$$

$$\sum_i T_{ij} = A_j \qquad\qquad (\textbf{Eq. 3})$$

The expression of both balancing factors β_i and α_j can thus be derived through simple algebraic manipulations of Equations 1 to 3. These have the following forms:

$$\beta_i = \frac{1}{\sum_j \alpha_j * A_j * f(t_{ij})} \qquad \textbf{(Eq. 4)}$$

$$\alpha_j = \frac{1}{\sum_i \beta_i * P_i * f(t_{ij})} \qquad \textbf{(Eq. 5)}$$

As shown here, the balancing factors are interdependent, meaning that the calculation of one set requires the values of the other set, furthermore suggesting an iterative process until convergence is achieved. Thus, the practical approach to solving this formulation is to specify separate singly constrained models to both productions (Eq. 6) and to attractions (Eq. 7). The first one is obtained by making $\alpha_j = 1$ since in this case the columns are not being balanced. Similarly, the second one is obtained by making $\beta_i = 1$ since in this other case the rows are the ones not being balanced.

$$T_{ij} = P_i * \frac{A_j * f(t_{ij})}{\sum_j A_j * f(t_{ij})} \qquad \textbf{(Eq. 6)}$$

$$T_{ij} = A_j * \frac{P_i * f(t_{ij})}{\sum_i P_i * f(t_{ij})} \qquad \textbf{(Eq. 7)}$$

The solution for the doubly constrained model can then be converged upon by iteratively applying Eq. 6 to balance the productions (rows), and Eq. 7 to balance attractions (columns).

The atomistic model

Originally developed by TTI, the atomistic model is an analogy to the traditional gravity model, with a major improvement being the spatial disaggregation of TAZs for trip-end allocation. Under this approach, the conventional zones are viewed as being composed of a large number of very small zones (atomistic units); thus trip-ends within a zone are spatially distributed rather than concentrated at the zone centroid. Another departure from the traditional gravity model is the fact that the atomistic model has been formulated as triply constrained: constrained to productions and constrained to attractions as the common version of the traditional gravity model, but in addition the atomistic model is constrained to trip length frequency, which makes it self-calibrating. IMIP has only recently started exploring the premises and capabilities of this model, but intuitively it seems this approach should improve the model's ability to reproduce the existing travel time distribution of the entire study area, as well as intrazonal trip patterns.

The atomistic model is mathematically stated as follows:

$$T_{ij} = P_i * \frac{\sum_{v=1}^{Mi} \sum_{q=1}^{Mj} p_{i_v} * a_{j_q} * F_{d_{vq}} * K_{s_{ij}}}{\sum_{x=1}^{N} \sum_{n=1}^{Mj} \sum_{m=1}^{Mx} p_{i_n} * a_{x_m} * F_{d_{nm}} * K_{s_{ix}}} \qquad \textbf{(Eq. 8)}$$

Where:

T_{ij}:   Trips produced in zone i and attracted to zone j.

P_i: Total trips produced in zone i such that:

$$P_i = \sum_{m=1}^{Mi} p_{i_m}$$

A_j: Relative attraction factor for zone j such that:

$$A_j = \sum_{m=1}^{Mj} a_{j_m}$$

p_{i_v}:   Trips produced by atom v of zone i.

a_{j_q}:   Relative attraction factor for atom q of zone j.

$F_{d_{vq}}$:   Relative trip length factor for the estimated separation between atom pair vq.

$K_{s_{ij}}$:   Bias factor for sector pair containing zones i and j (while normally 1, these factors can be used to account for socio-economic linkages or topographical barriers which are not otherwise accounted for by the model).

M_y: Number of atoms in zone y (numbered 1 to M_y).

N: Number of zones (numbered 1 to N).

Trip distribution with the atomistic model is accomplished through ATOM2, a specialized software developed by TTI and adopted by TxDOT for operational use in its travel demand models. As a recommendation by TxDOT, IMIP is now using this software as well, in order to maintain consistency with the procedures and output of the El Paso modeling effort.

Development of composite impedances

For the calibration of the base year trip distribution model, ATOM2 requires in general the following four pieces of information as minimum input:

1) Separation matrix: Travel time skims.
2) Radii file: Table depicting the average travel time of centroid connectors for each TAZ.
3) Trip generation table: Productions and attractions by TAZ (GEN card from TripCAL5 output).
4) Travel length frequency distribution (TLFD) in time units.

As a result from this input structure the following three pieces of information come as output from ATOM2:

1) Trip distribution matrix.
2) Impedance function (friction factors).
3) Adjusted TLFD.

Under the single-mode/dominant-mode approach to modeling (i.e. low occupancy motorized vehicles), the preparation of the input data is usually a fairly simple and direct process. Yet, in an involved multimode approach this process starts to get more complex, requiring greater care in the treatment of survey and network data that will feed the trip distribution model. More specifically, when trip generation results have been developed to end up aggregated for all modes of travel such as in the Juarez case, a recommended procedure for a mode-sensitive trip distribution is to develop a weighted measure of the impedance of travel, also referred to as "composite impedance".

In the case of Juarez and El Paso, the selected measure of impedance of travel is travel time, so the composite impedance would take into account the travel times of all modes and the proportion of use of each of the modes. This is the main reason for the requirement to develop the mode-split step prior to trip distribution.

This composite impedance means that for the purpose of trip distribution modeling, travel times for the three generic modes (AUTO, BUS, WALK) will be converted to a composite travel time. Furthermore, this will result in composite separation matrices, composite radii, and composite TLFDs, and as such data configurations will serve as input to ATOM2.

For the process of developing this composite impedance and preparing the required composite travel time data configurations, a set of computer programs were designed and organized in an MS-Access file (Distrib.mdb) as depicted in Figure 2. The actual VB codes are presented in appendixes A1 to A5. The following is a description of the steps for this data preparation.
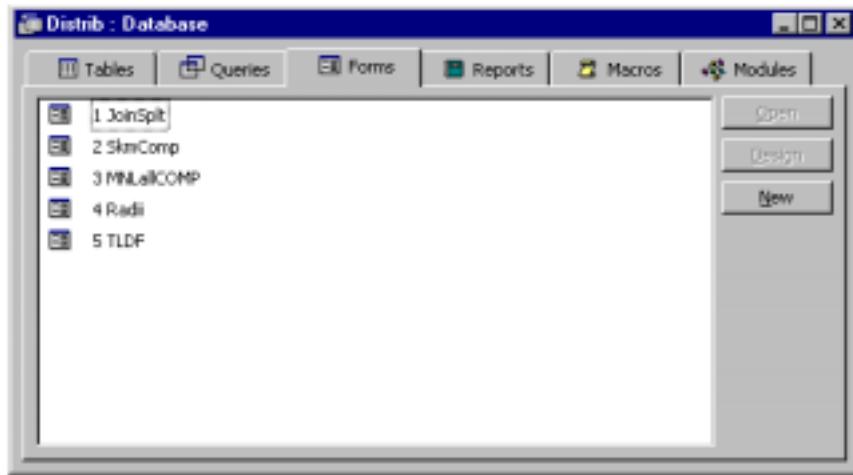
Figure 2. Arrangement of codes for data preparation (Distrib.mdb).

Joining O-D mode split matrices

From the mode split step, shares were developed for HBW and HBNW trip purposes between O-D pairs based among other things on characteristics of the trip makers (i.e. household income). Thus two matrices resulted for each of these trip purposes, one assuming productions from the origin (home-end on the origin), and on the second one assuming productions from the destination (home-end on the destination); this was necessary in order to explore the possibilities of the trip-maker's income and its impact on the mode share values. Figures 3 and 4 depict an example of these two possibilities for one O-D pair. The task then was to develop one final mode split matrix from the initial two, by providing more information about the potential interaction between the specific O-D pairs.
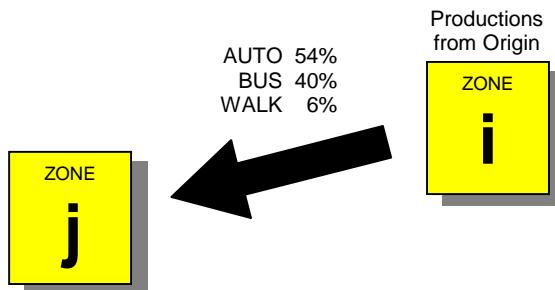
Figure 3. Mode share between origin **i** and destination **j**, assuming home-end is zone **i**.
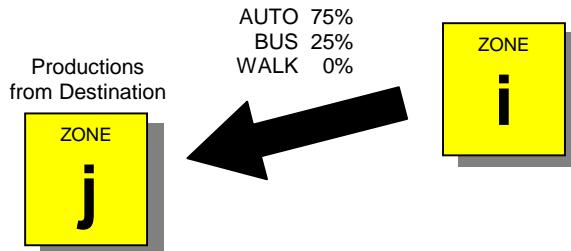
Figure 4. Mode share between origin **i** and destination **j**, assuming home-end is zone **j**.

A simplistic approach to this would have been to use the income distribution of the two zones together at the aggregation process of the mode-split step. But the mode share resulting from this approach would have given equal influence to both zones, regardless of the amount of travel generated and importance of specific modes at the two zones.

Instead this can be more realistically evaluated through the estimation of a weighted average of the mode shares for each O-D pair, using as a weight factor the relation of productions and attractions of the paired zones such as the following:

$$WF_i = \frac{Min\{P_i,A_j\}}{Min\{P_i,A_j\} + Min\{P_j,A_i\}} \qquad (\textbf{Eq. 9})$$

$$WF_j = \frac{Min\{P_j,A_i\}}{Min\{P_i,A_j\} + Min\{P_j,A_i\}} \qquad (\textbf{Eq. 10})$$

Where:

WF_i:	Weight factor to be applied to mode share with productions at zone **i** (home-end at zone **i**).
WF_j:	Weight factor to be applied to mode share with productions at zone **j** (home-end at zone **j**).
P_i:	Trips produced from zone **i**.
A_i:	Trips attracted to zone **i**.
P_j:	Trips produced from zone **j**.
A_j:	Trips attracted to zone **j**.

The goal is to give proportionally more influence to the mode share of the zone with the higher productions, but constrained to the number of attractions of the other zone (i.e. if the other zone doesn't have attractions, the productions of the first one will surely end up somewhere else). Thus the convenience of defining a zone's "usable" production value as the minimum of the zone's productions and the attractions of the other zone. Ideally, these weights should be computed from the actual number of trips produced in a zone being attracted to the other zone, which is the final result of the whole trip distribution step. Yet since this is only to adjust the mode share between zones, this procedure is an excellent approximation and usually there is no need for an iterative process.

As an example of this procedure, Figure 5 exemplifies the final mode share of O-D pair **i,j** according to the information provided in Figures 3 and 4.
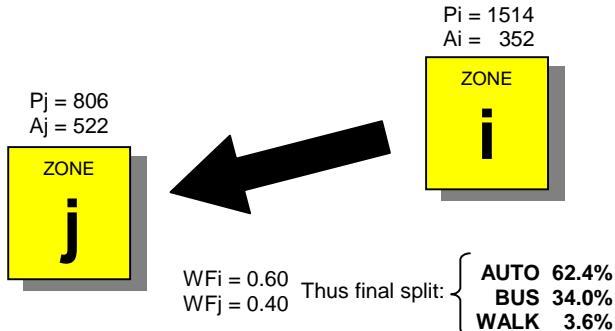
Figure 5. Joined (weighted) mode share between origin **i** and destination **j**.

The computations to join the entire O-D matrices were done activating form "1 JoinSplt" in the MS-Access (Distrib.mdb) file. The actual VB code is shown in Appendix A1. This joining process was only required for HBW and HBNW trip purposes, since for the NHB trip purpose Production is equivalent to Origin, and thus only one O-D mode share matrix was developed from the start. The final mode split matrices were stored as MS-Access tables MtrxP1 (for HBW) and MtrxP2 (for HBNW) in Distrib.mdb. As previously stated, the final mode split for NHB (equivalent to MtrxP3) is stored as P3_nr in the mode split database.

Building a composite separation matrix

The next step in this data preparation process was to build a composite separation matrix from the individual by-mode separation matrices. This was done for each of the three trip purposes, simply by multiplying the travel time skim matrix of each generic mode by the respective mode share proportion, and then adding the results of the three modes. This can be mathematically stated as follows:

$$CTT_{ij_p} = \sum_{m=1}^{M} TT_{ij_{pm}} * S_{ij_{pm}} \qquad (\textbf{Eq. 11})$$

Where:

CTT_{ij} : Composite travel time from zone i to zone j, for trip purpose p.

$\text{TT}_{ij_{pm}}$: Travel time from zone i to zone j, for trip purpose p and using mode m.

$\text{S}_{ij_{pm}}$: Share of mode m from zone i to zone j, for trip purpose p.

The computations to build the composite separation matrices were done activating form "2 SkmComp" in the MS-Access (Distrib.mdb) file. The actual VB code is shown in Appendix A2. As a result three composite skim matrices were developed (one for each of the three trip purposes), and stored in a single MS-Access table labeled SkmComp.

Assigning composite travel times to travel survey

The next step in this data preparation process was to assign the composite travel times to the coded trips of the household travel survey, using the values of the composite separation matrices. Corresponding to the coded zones of origin and destination in the survey, composite travel times for the three trip purposes were added to each record. This was done activating form "3 MNLallCOMP" in the MS-Access (Distrib.mdb) file. The actual VB code is shown in Appendix A3. The modified household survey records were stored in a table labeled MNLallCOMP, within the Distrib.mdb file.

Development of composite Radii

Composite radii for each trip purpose were developed simply by extracting the values on the main diagonal of the corresponding composite separation matrix. This was done activating form "4 Radii" in the MS-Access (Distrib.mdb) file. The actual VB code is shown in Appendix A4. The results of this process were stored in a table labeled SRadii, within the Distrib.mdb file.

Development of composite TLFDs

The final step of data preparation was the development of composite travel length frequency distributions (composite TLFDs) for each of the three trip purposes. First, a table was created through a query process in which the modified travel survey (table MNLallCOMP) was synthesized to show only a selected number of relevant fields, as shown in Figure 6, filtering only one specific trip purpose at a time.
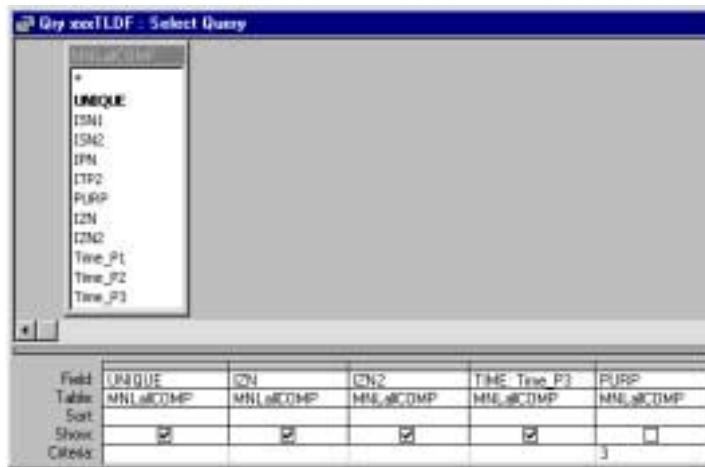
Figure 6. Query design to synthesize the modified travel survey (example for NHB).

Then, this table (xxxTLDF) was processed to develop a frequency distribution table (zzzTLDF) for the specific trip purpose. This was done activating form "5 TLDF" in the MS-Access (Distrib.mdb) file. The actual VB code is shown in Appendix A5.

The frequency distribution tables for each trip purpose were then used to develop TLFD plots. Figures 6 to 9 show the composite TLFD plots for HBW, HBNW and NHB trip purposes respectively. These differentiate between intrazonal and interzonal trips.
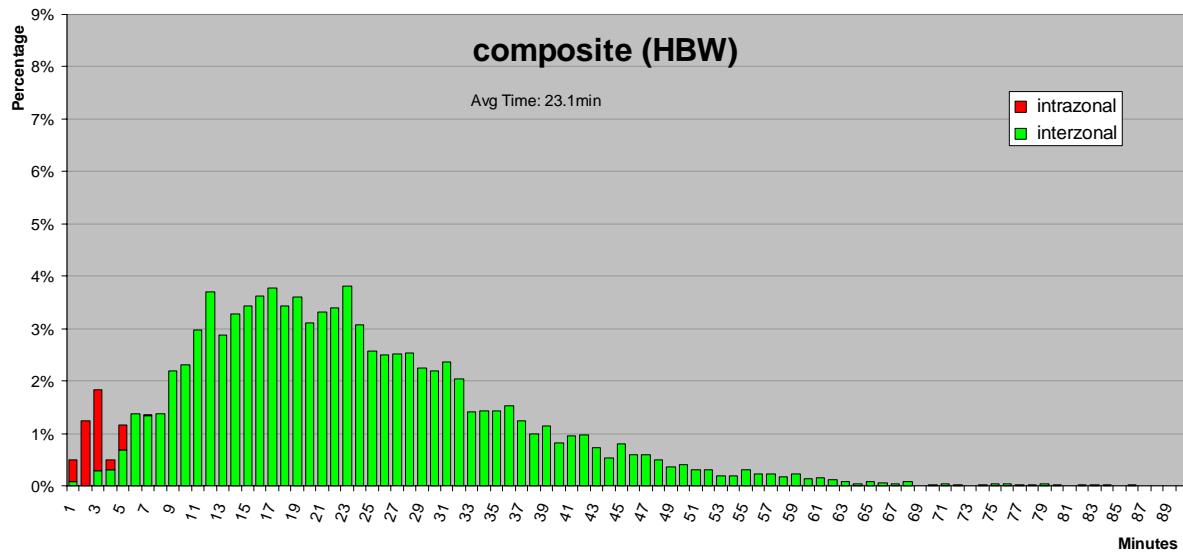
Figure 7. Composite TLFD for HBW trips.
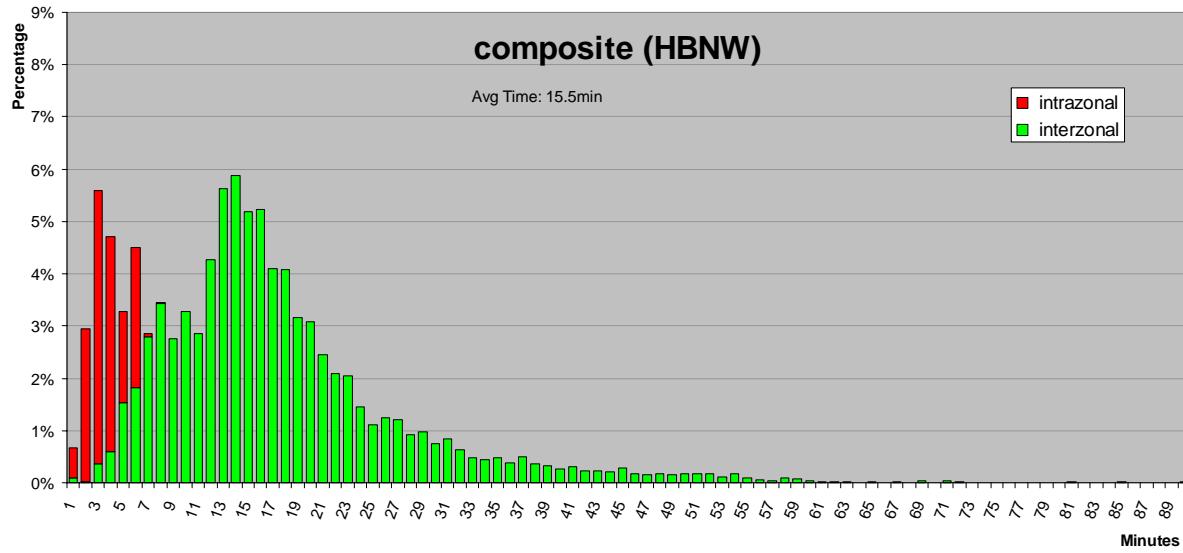
Figure 8. Composite TLFD for HBNW trips.
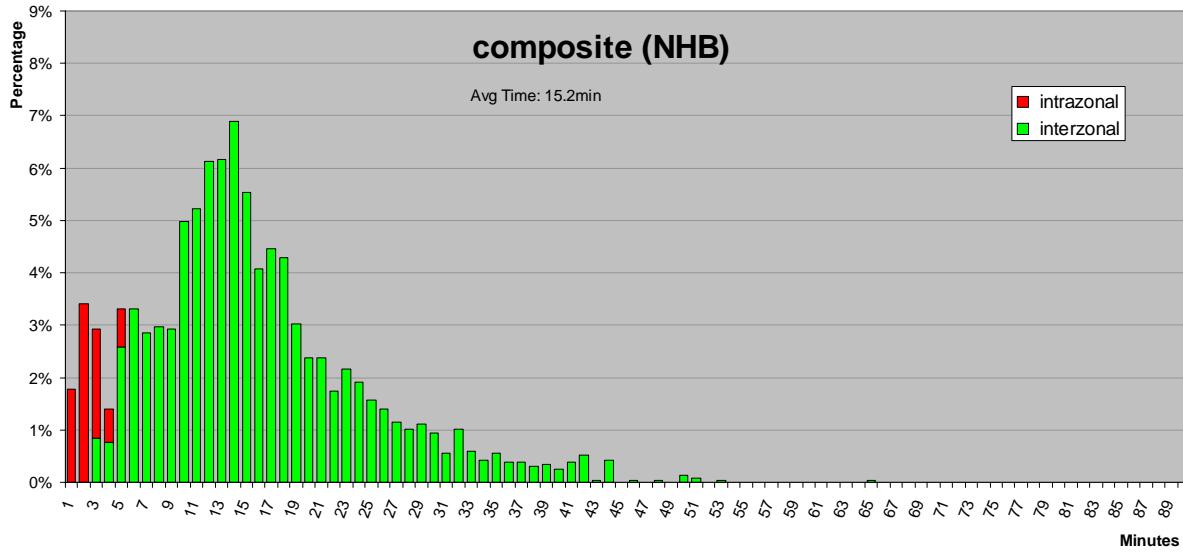
Figure 9. Composite TLFD for NHB trips.

<u>Additional auto-based trip purposes</u>

In addition to the three main trip purposes handled up to this point, two additional ones were considered for the complete trip distribution modeling task: Truck-Taxi (TRTX) and External-Local (EXLO) trip purposes. Due to their dominantly low-occupancy motorized-vehicle nature these are also regarded herein as auto-based trip purposes, and since the trip generation step specifically considered these as separate trip purposes, TRTX and EXLO were not required to go through the mode split process, and thus did not require composite impedances.

In the case of TRTX the available survey data for this trip purpose was not enough to develop a robust TLFD, since no commercial-vehicle travel survey was conducted for Juarez, and the household and workplace surveys only captured a minimum amount of these trips. Therefore in order to run ATOM2 for TRTX, the TLFD developed from the household survey for NHB person-trips by auto mode[1] was used as a proxy. Figure 10 shows this plot. The separation matrix and radii file for NHB by auto mode were also used as TRTX.
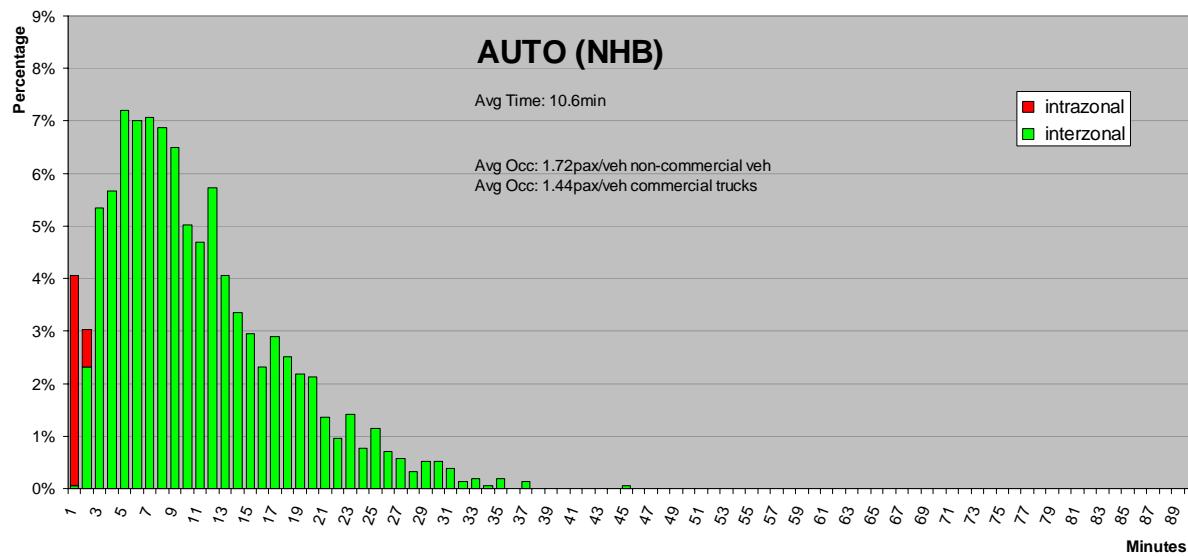
Figure 10. TLFD for NHB trips by auto mode, used as proxy for TRTX trips.

In the case of EXLO, a set of macros and tables were developed to configure external-local information, using again MS-Access (External.mdb). In it a skim matrix was developed to include external zones, and a modified version of the household survey was also created to include only external-local trip records. The final result was the development of the separation matrix, the radii file, and the TLFD (shown in Figure 11) for the EXLO trip purpose.
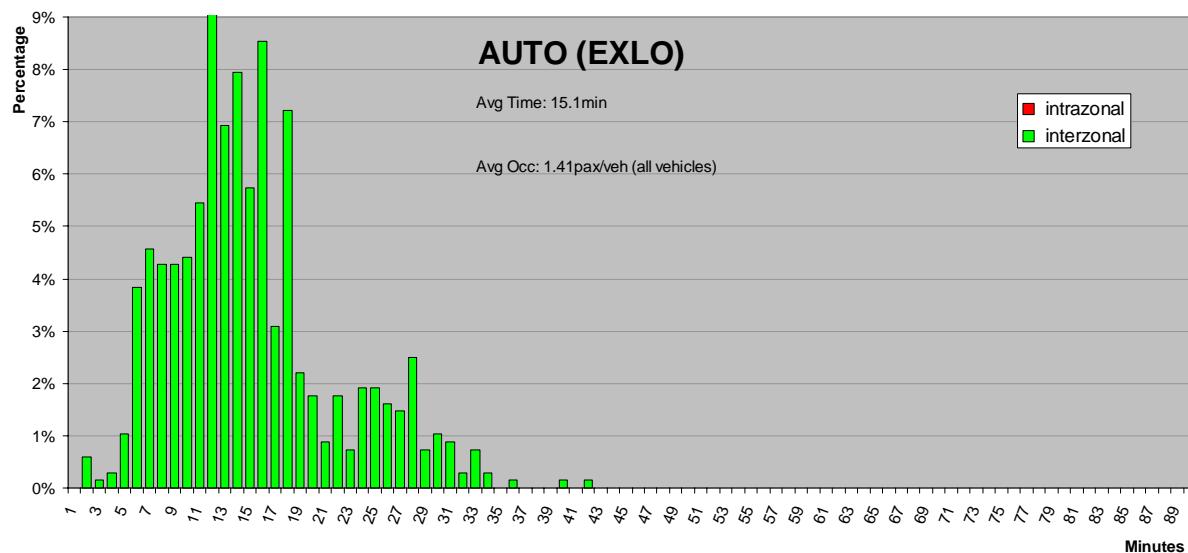
Figure 11. TLFD for EXLO trips by auto mode.

---

[1] Tech Memo EITII-06 (Rev 01), "Network processing", IMIP (September 1999).

Calibration of Trip Distribution Model

Having arranged the data required by ATOM2, in order to run the software a control file (text file) needs to be prepared providing instructions and general information. Conventionally, this file is given the extension *.FIL* to differentiate it from other files. The function controls are coded free format, and for the Juarez exercise had the following specifications:

ID and File sections

The first record in any ATOM2 control file should always be the identification record "$ATOM2 MODEL". Afterwards, the file section ($FILE) defines the input and output files and their location paths.

Here three of the four input pieces of information prepared for the Juarez model were given as external files to be located and accessed: 1) separation matrix (in 3I8 format), 2) radii file (in ASC text format), and 3) trip generation table (also in ASC text format).

As output two files were identified: 1) final trip distribution matrix (in DAT/TranPlan format), and 2) a report file (text file), with the specific reports being specified at the parameters section.

Figure 12 depicts an example ATOM2 file section for the composite HBW trip purpose.

```
$ATOM2 MODEL
$FILE
        INPUT FILE = SEP3I8, USERID = $SEP_P1.3I8$
        INPUT FILE = RADII, USER ID = $SRAD_P1.ASC$
        INPUT FILE = GENE, USER ID = $JRZ4GEN.ASC$
        OUTPUT FILE = TRIP-TAB, USER ID = $HBW96.DAT$
        OUTPUT FILE = LISTING, USER ID = $HBW96.OUT$
```

Figure 12. Example of ID and File sections of ATOM2.

Headers and Parameters Specification sections

The headers section ($HEADERS) is only to provide a label or header identification for the ATOM2 run. The parameters specification section ($PARAMETERS) provides the &VALUES parameters and the REPORT parameters. For the Juarez example depicted in Figure 13, the &VALUES parameters included M, N, and TABLE which indicate the largest internal and external zone numbers, and the table number of the TranPlan matrix dataset. The REPORT parameter in the example specifies the list of tables to be provided as output (on the HBW96.OUT file): A1 for attraction volume balance, A2 for attraction volume balance summary, L1 for trip length balance, X1 for a summary of estimated vs. modeled trip length frequency, and G2 for trip length frequency table. A parenthesis indicates the iteration number to be reported

```
$HEADERS
        Distribucion de viajes 1996 (HBW)
$PARAMETERS
 &VALUES M=425 &END
 &VALUES N=425 &END
 &VALUES TABLE=4 &END
  REPORT = A1(5),A2(5),L1(5),X1,G2
```

Figure 13. Example of the Headers and Parameters Specification sections of ATOM2.

Data specification section: TLFD input, bias factors, F-factors

Under the data specification section ($DATA) for the Juarez exercise, the FORTRAN data format of the trip generation file was provided, as well as the data format and actual values of the fourth input: the TLFD.

The calibration of the trip distribution model is in practical terms the estimation of the "best" parameters for the impedance function (curve fitting F-factors), such that the resulting modeled distribution of trips can closely reproduce the observed TLFDs. As previously stated ATOM2 considerably simplifies this very involved process, but it requires that each TLFD be adjusted to portray smooth curves. Thus, since all composite TLFDs presented some level of "spiking", the plots where hand smoothed, carefully maintaining the average travel time of the original distributions and making the cumulative time proportions add up to 100%. Figures 14 to 18 show the smoothed composite TLFDs for HBW, HBNW, NHB, TRTX, and EXLO trip purposes respectively. The black dots indicate the actual raw distribution adding intrazonal and interzonal trips; the continuous line depicts the smoothed distribution.
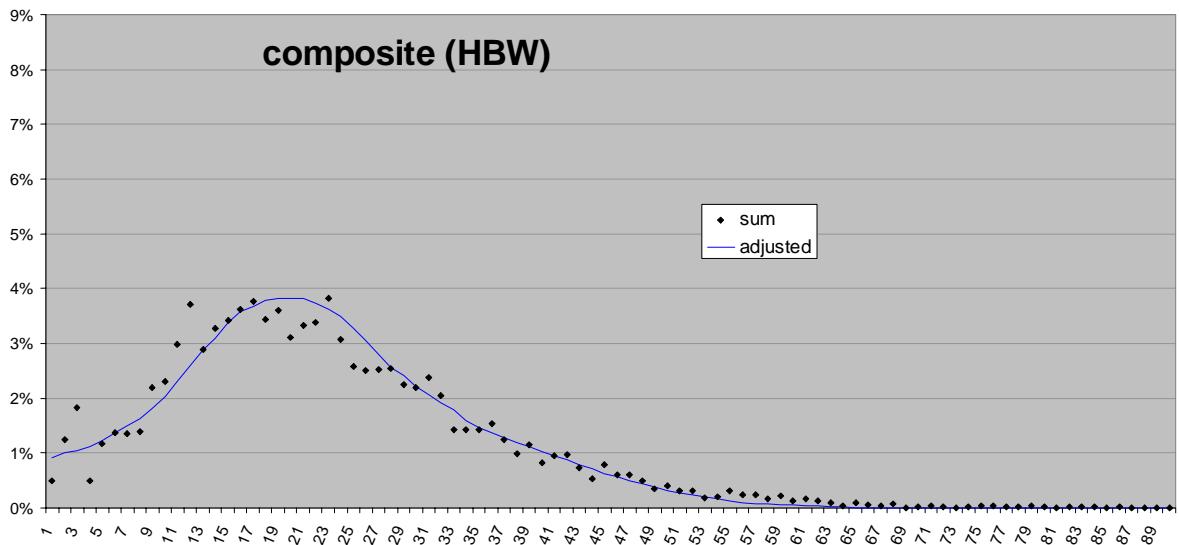
Figure 14. Smoothed composite TLFD for HBW trips.
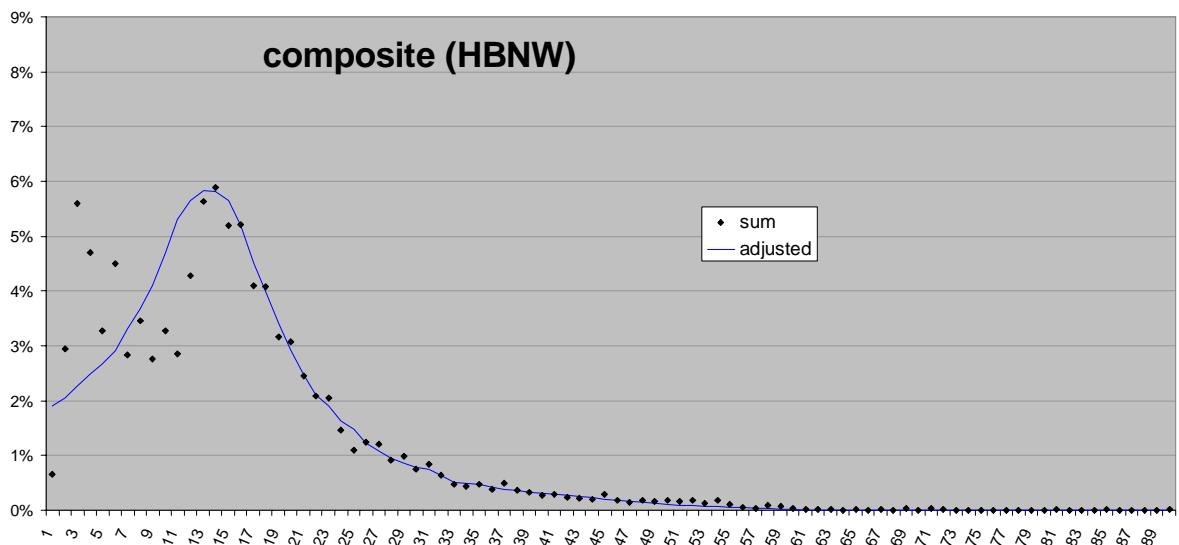
Figure 15. Smoothed composite TLFD for HBNW trips.
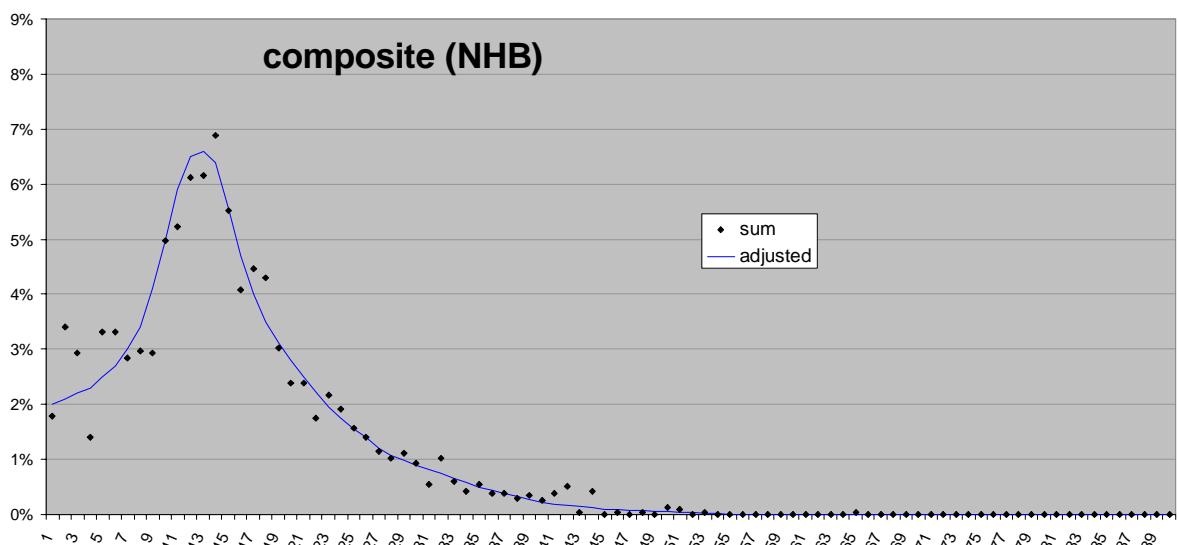
Figure 16. Smoothed composite TLFD for NHB trips.
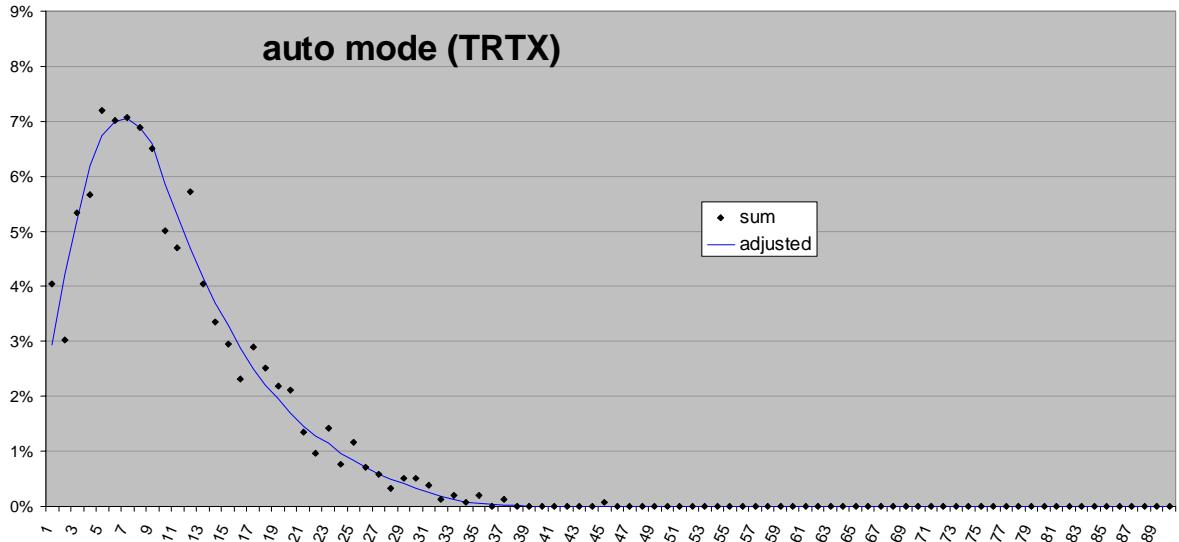
Figure 17. Smoothed TLFD for TRTX trips.
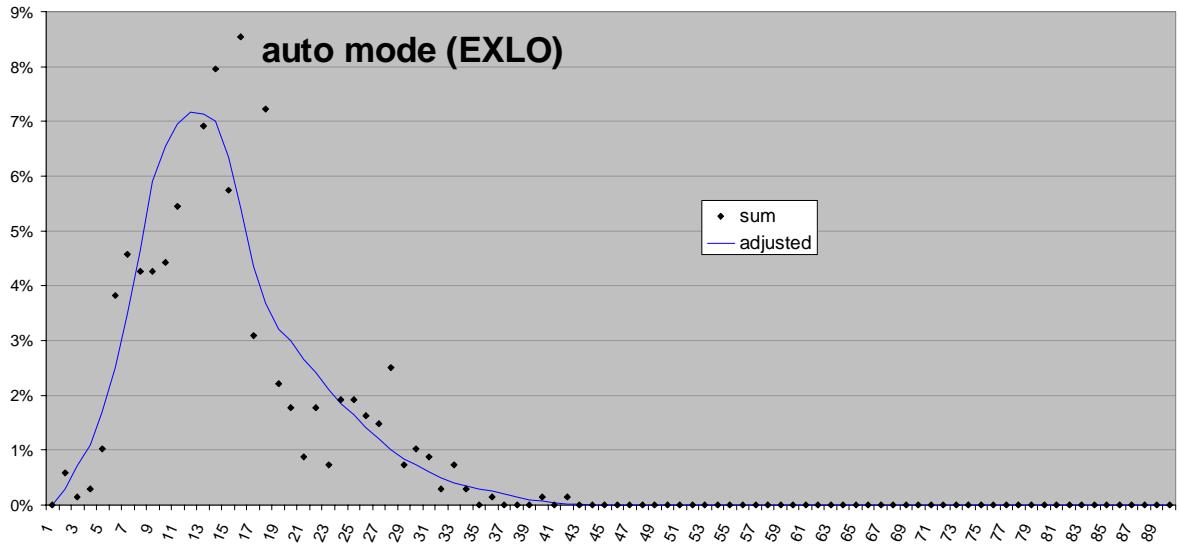
Figure 18. Smoothed TLFD for EXLO trips.

Under this same section ATOM2 allows the input of bias values (K-factors) for directional flow control, although these were not used in this exercise since at this stage there was no evidence found to suggest their need for the Juarez case. Friction factors (F-factors) could also be specified as input in this section if estimating future scenarios, but since these were calibration runs, F-factors are instead an output. Figure 19 shows part of the data specification section coded for the Juarez HBW example. Only specifies the TLFD.

```
$DATA
FORMAT(A4, T11, I5, T26, F5.0, F5.0)          GENERATION
FORMAT(A4, T11, I5, F15.4, A4)                LENGTH
LENGTH         1            0.9200
LENGTH         2            1.0000
LENGTH         3            1.0500
LENGTH         4            1.1200
     .
     .
     .
LENGTH        61            0.0400
END
```

Figure 19. Example of the Data Specification section of ATOM2.

As shown in Figure 19, the last record of the control file must always be an "END" statement.

The complete ATOM2 input files for the five trip purposes are presented in appendices B1 to B5.

<u>ATOM2 output</u>

The most important output from these runs are the P-A matrices for each of the trip purposes. As previously stated these came out of ATOM2 as TranPlan matrices (.*DAT*), and thus needed to be converted to TransCAD matrices (.*mtx*). Version 3.5 of TransCAD has an option for this conversion.

The other output is the set of reports placed on the .*OUT* files. These present summaries from the iteration/calibration process.

In general terms and as a preliminary conclusion, it can be stated that the calibration of the trip distribution process was successful, achieving good fits of TLFDs for all trip purposes explored. The complete ATOM2 output report files are shown in appendices C1 to C5.

Converting matrices from P-A composite to O-D disaggregate

Having developed the P-A matrices, the next steps in the modeling process require that these be turned into O-D matrices, since it is in this last format that flow exchange between zones can be quantified and added for the traffic assignment task. A complete conversion is actually a two step process under the Juarez case premises:

1. The simple conversion process from P-A to O-D is a quite simple matrix operation, where all pairs of cells symmetric to the main diagonal are added, and the sum then divided by two. This "average" is then placed back as the value of each of the two cells.
2. Now, with the exception of the TRTX and the EXLO trip purposes, these O-D matrices are still aggregated for all generic modes, so in order to perform any mode-specific network assignments, the HBW, HBNW, and NHB O-D matrices need to get disaggregated by mode. This is again a simple matrix operation that can be performed through the tools of TransCAD. Simply multiply each of these three matrices by their respective weighted mode split matrix (the one that resulted from joining the productions-from-origin and productions-from-destination matrices).

As a result the following 11 matrices were obtained:

    ✓ HBW trip purpose by AUTO mode   (P1aut_OD.mtx)
    ✓ HBW trip purpose by BUS mode   (P1bus_OD.mtx)
    ✓ HBW trip purpose by WALK mode   (P1wlk_OD.mtx)
    ✓ HBNW trip purpose by AUTO mode   (P2aut_OD.mtx)
    ✓ HBNW trip purpose by BUS mode   (P2bus_OD.mtx)
    ✓ HBNW trip purpose by WALK mode   (P2wlk_OD.mtx)
    ✓ NHB trip purpose by AUTO mode   (P3aut_OD.mtx)
    ✓ NHB trip purpose by BUS mode   (P3bus_OD.mtx)
    ✓ NHB trip purpose by WALK mode   (P3wlk_OD.mtx)
    ✓ TRTX trip purpose   (P4_OD.mtx)
    ✓ EXLO trip purpose by AUTO mode   (P5aut_OD.mtx)

The values in these matrices are expressed as daily person-trips (regardless of the mode).

The actual matrices are not presented as part of this document due to the amount of information, but will be made available to the project members as electronic data.

External-Through trip distribution

As the final step in this trip distribution task for base year 1996, external-trough trips and their distribution to other external stations were obtained from the 1996 external station survey. This information was summarized as an all-purpose, auto-mode O-D matrix.

VisualBasic code (MS-Access) to run form 1JoinSplt

C:\Eit-DIST\Distrib.mdb

```vb
Option Compare Database
Option Explicit

Private Sub Command0_Click()
Dim TAB1, TAB2, TAB3, TAB4 As Recordset
Dim MyBASE, MyBASE1 As Database
Dim TAZ, i, j As Integer
Dim n, Pi, Pj, Ai, Aj, MINi, MINj As Long
Dim AUTO, BUS, WALK, iAUTO, iBUS, iWALK, jAUTO, jBUS, jWALK, WFi, WFj As Double
Dim base As String

Set MyBASE = DBEngine.Workspaces(0).OpenDatabase("C:\EIT-TCW\ModSpli2\MNL_Eva2\MtrxAggr.mdb")
Set MyBASE1 = CurrentDb()


base = "purp 1"
'base = "purp 2"

If base = "purp 1" Then
    Set TAB1 = MyBASE.OpenRecordset("MtrxP1_O", DB_OPEN_TABLE)
    Set TAB2 = MyBASE.OpenRecordset("MtrxP1_D", DB_OPEN_TABLE)
    Set TAB3 = MyBASE1.OpenRecordset("PAs", DB_OPEN_TABLE)
    Set TAB4 = MyBASE1.OpenRecordset("MtrxP1", DB_OPEN_TABLE)
End If
If base = "purp 2" Then
    Set TAB1 = MyBASE.OpenRecordset("MtrxP2_O", DB_OPEN_TABLE)
    Set TAB2 = MyBASE.OpenRecordset("MtrxP2_D", DB_OPEN_TABLE)
    Set TAB3 = MyBASE1.OpenRecordset("PAs", DB_OPEN_TABLE)
    Set TAB4 = MyBASE1.OpenRecordset("MtrxP2", DB_OPEN_TABLE)
End If

DoCmd.Hourglass False
DoCmd.Hourglass True
TAB1.Index = "mtx_idx"
TAB2.Index = "mtx_idx"
TAB3.Index = "PAs_idx"


n = 0

TAB1.MoveFirst
TAB2.MoveFirst
Do While Not TAB1.EOF
    i = TAB1!rcindex
    j = TAB1!rcindex1
    iAUTO = TAB1!AUTO
    iBUS = TAB1!BUS
    iWALK = TAB1!WALK
    jAUTO = TAB2!AUTO
    jBUS = TAB2!BUS
    jWALK = TAB2!WALK

    TAZ = i
    TAB3.Seek "=", TAZ
    If base = "purp 1" Then
        Pi = TAB3!HBWp
        Ai = TAB3!HBWa
    End If
    If base = "purp 2" Then
        Pi = TAB3!HBNp
        Ai = TAB3!HBNa
    End If

    TAZ = j
    TAB3.Seek "=", TAZ
    If base = "purp 1" Then
        Pj = TAB3!HBWp
        Aj = TAB3!HBWa
    End If
    If base = "purp 2" Then
        Pj = TAB3!HBNp
        Aj = TAB3!HBNa
    End If
```

```vb
    'MINi = min(Pi, Aj)   no pude encontrar una funcion VB que haga esto
    If Pi < Aj Then MINi = Pi Else MINi = Aj
    'MINj = min(Pj, Ai)   no pude encontrar una funcion VB que haga esto
    If Pj < Ai Then MINj = Pj Else MINj = Ai
    If MINi = 0 And MINj = 0 Then
        'MsgBox "WFi=WFj=0 para fmTAZ(" & i & "), toTAZ(" & j & ")"
        'MsgBox "Pi=" & Pi & "  Aj=" & Aj
        'MsgBox "Pj=" & Pj & "  Ai=" & Ai
        If i <> j Then
            WFi = 0
            WFj = 0
        Else
            WFi = 0.5
            WFj = 0.5
        End If
    Else
        WFi = MINi / (MINi + MINj)
        WFj = MINj / (MINi + MINj)
    End If
    AUTO = iAUTO * WFi + jAUTO * WFj
    BUS = iBUS * WFi + jBUS * WFj
    WALK = iWALK * WFi + jWALK * WFj

    With TAB4
        .AddNew
        !rcindex = i
        !rcindex1 = j
        !AUTO = AUTO
        !BUS = BUS
        !WALK = WALK
        .Update
    End With
    n = n + 1
    TAB1.MoveNext
    TAB2.MoveNext

    If n = 1000 Then MsgBox "van 1,000"
    If n = 10000 Then MsgBox "van 10,000"
    If n = 150000 Then MsgBox "van 150,000"
Loop
TAB1.Close
TAB2.Close
TAB3.Close
TAB4.Close
DoCmd.Hourglass False
MsgBox "Terminó!...Viajes Totales:" & n

End Sub
```

VisualBasic code (MS-Access) to run form 2 SkmComp

C:\Eit-DIST\Distrib.mdb

```vb
Option Compare Database
Option Explicit

Private Sub Command0_Click()
Dim TAB1, TAB2, TAB3, TAB4, TAB5, TAB6, TAB7 As Recordset
Dim MyBASE1, MyBASE2, MyBASE3 As Database
Dim i, j As Integer
Dim n As Long
Dim A1, A2, A3, B1, B2, B3, W1, W2, W3, tA, tB, tW As Double
Dim Time_P1, Time_P2, Time_P3 As Double

Set MyBASE1 = CurrentDb()
Set MyBASE2 = DBEngine.Workspaces(0).OpenDatabase("C:\EIT-TCW\ModSpli2\MNL_Eva2\MtrxAggr.mdb")
Set MyBASE3 = DBEngine.Workspaces(0).OpenDatabase("C:\EIT-TCW\TravelHH.mdb")

Set TAB1 = MyBASE1.OpenRecordset("MtrxP1", DB_OPEN_TABLE)
Set TAB2 = MyBASE1.OpenRecordset("MtrxP2", DB_OPEN_TABLE)
Set TAB3 = MyBASE2.OpenRecordset("P3_nr", DB_OPEN_TABLE)
Set TAB4 = MyBASE3.OpenRecordset("SkmAuto96", DB_OPEN_TABLE)
Set TAB5 = MyBASE3.OpenRecordset("SkmBus96b", DB_OPEN_TABLE)
Set TAB6 = MyBASE3.OpenRecordset("SkmWalk96", DB_OPEN_TABLE)
Set TAB7 = MyBASE1.OpenRecordset("SkmComp", DB_OPEN_TABLE)

DoCmd.Hourglass False
DoCmd.Hourglass True
TAB1.Index = "mtx_idx"
TAB2.Index = "mtx_idx"
TAB3.Index = "nr_idx"
TAB4.Index = "skmauto_idx1"
TAB5.Index = "skmbus_idx1"
TAB6.Index = "skmwalk_idx1"

n = 0

TAB1.MoveFirst
TAB2.MoveFirst
TAB3.MoveFirst
TAB4.MoveFirst
TAB5.MoveFirst
TAB6.MoveFirst

Do While Not TAB1.EOF
    i = TAB1!rcindex
    j = TAB1!rcindex1
    A1 = TAB1!AUTO
    B1 = TAB1!BUS
    W1 = TAB1!WALK
    A2 = TAB2!AUTO
    B2 = TAB2!BUS
    W2 = TAB2!WALK
    A3 = TAB3!AUTO
    B3 = TAB3!BUS
    W3 = TAB3!WALK
    tA = TAB4!Time
    tB = TAB5!Time
    tW = TAB6!Time
    Time_P1 = (tA * A1) + (tB * B1) + (tW * W1)
    Time_P2 = (tA * A2) + (tB * B2) + (tW * W2)
    Time_P3 = (tA * A3) + (tB * B3) + (tW * W3)

    With TAB7
        .AddNew
        !rcindex = i
        !rcindex1 = j
        !Time_P1 = Time_P1
        !Time_P2 = Time_P2
        !Time_P3 = Time_P3
        .Update
    End With
    n = n + 1
    TAB1.MoveNext
    TAB2.MoveNext
```

```
        TAB3.MoveNext
        TAB4.MoveNext
        TAB5.MoveNext
        TAB6.MoveNext
        If n = 1000 Then MsgBox "van 1,000"
        If n = 10000 Then MsgBox "van 10,000"
        If n = 150000 Then MsgBox "van 150,000"
Loop
TAB1.Close
TAB2.Close
TAB3.Close
TAB4.Close
TAB5.Close
TAB6.Close
DoCmd.Hourglass False
MsgBox "Terminó!...Viajes Totales:" & n

End Sub
```

VisualBasic code (MS-Access) to run form 3 MNLallCOMP

C:\Eit-DIST\Distrib.mdb

```vb
Option Compare Database
Option Explicit

Private Sub Command0_Click()
Dim TAB1, TAB2, TAB3 As Recordset
Dim MyBASE1, MyBASE2 As Database
Dim n, rcindex, rcindex1, ipn, itp2, purp As Integer
Dim unique, isn2 As Long
Dim Time_P1, Time_P2, Time_P3 As Double
Dim isn1 As String

Set MyBASE1 = CurrentDb()
Set MyBASE2 = DBEngine.Workspaces(0).OpenDatabase("C:\Eit-TCW\ModSpli2\Loglike.mdb")
Set TAB1 = MyBASE1.OpenRecordset("SkmComp", DB_OPEN_TABLE)
Set TAB2 = MyBASE2.OpenRecordset("MNLall", DB_OPEN_TABLE)
Set TAB3 = MyBASE1.OpenRecordset("MNLallCOMP", DB_OPEN_TABLE)
DoCmd.Hourglass False
DoCmd.Hourglass True
TAB1.Index = "mtx_idx"
TAB2.Index = "srv_idx"
TAB2.MoveFirst
n = 0
Do While Not TAB2.EOF
    unique = TAB2!unique
    isn1 = TAB2!isn1
    isn2 = TAB2!isn2
    ipn = TAB2!ipn
    itp2 = TAB2!itp2
    purp = TAB2!purp
    rcindex = TAB2!izn
    rcindex1 = TAB2!izn2

    TAB1.Seek "=", rcindex, rcindex1
    Time_P1 = TAB1!Time_P1
    Time_P2 = TAB1!Time_P2
    Time_P3 = TAB1!Time_P3

    With TAB3
        .AddNew
        !unique = unique
        !isn1 = isn1
        !isn2 = isn2
        !ipn = ipn
        !itp2 = itp2
        !purp = purp
        !izn = rcindex
        !izn2 = rcindex1
        !Time_P1 = Time_P1
        !Time_P2 = Time_P2
        !Time_P3 = Time_P3
        .Update
    End With
    n = n + 1
    TAB2.MoveNext
    If n = 1000 Then MsgBox "van 1,000"
    If n = 10000 Then MsgBox "van 10,000"
Loop
TAB1.Close
TAB2.Close
TAB3.Close
DoCmd.Hourglass False
MsgBox "Terminó!...Viajes Totales:" & n

End Sub
```

VisualBasic code (MS-Access) to run form 4 Radii

C:\Eit-DIST\Distrib.mdb

```vba
Option Compare Database
Option Explicit

Private Sub Command0_Click()
Dim TAB1, TAB2 As Recordset
Dim MyBASE As Database
Dim n, rcindex, rcindex1 As Integer
Dim Time_P1, Time_P2, Time_P3 As Double

Set MyBASE = CurrentDb()
Set TAB1 = MyBASE.OpenRecordset("SkmComp", DB_OPEN_TABLE)
Set TAB2 = MyBASE.OpenRecordset("SRadii", DB_OPEN_TABLE)
DoCmd.Hourglass False
DoCmd.Hourglass True
TAB1.Index = "mtx_idx"
TAB1.MoveFirst
n = 0
For n = 1 To 425
    rcindex = n
    rcindex1 = n
    TAB1.Seek "=", rcindex, rcindex1
    Time_P1 = TAB1!Time_P1
    Time_P2 = TAB1!Time_P2
    Time_P3 = TAB1!Time_P3
    With TAB2
        .AddNew
        !Type = "R-VALUE"
        !TAZ = n
        !Min_P1 = Time_P1
        !Min_P2 = Time_P2
        !Min_P3 = Time_P3
        .Update
    End With

Next n
TAB1.Close
TAB2.Close
DoCmd.Hourglass False
MsgBox "Terminó!...Records totales:" & n - 1

End Sub
```

VisualBasic code (MS-Access) to run form 5 TLDF

C:\Eit-DIST\Distrib.mdb

```vb
Option Compare Database
Option Explicit

Private Sub Command0_Click()
Dim TAB1, TAB2 As Recordset
Dim MyBASE As Database
Dim i, j, izn, izn2 As Integer
Dim n, Vintra(240), Vinter(240) As Long
Dim a, b, Time As Double

Set MyBASE = CurrentDb()
Set TAB1 = MyBASE.OpenRecordset("xxxTLDF", DB_OPEN_TABLE)
Set TAB2 = MyBASE.OpenRecordset("zzzTLDF", DB_OPEN_TABLE)

DoCmd.Hourglass False
DoCmd.Hourglass True
'TAB1.Index = "srv_idx"

j = 0

For i = 0 To 240
    Vintra(i) = 0
    Vinter(i) = 0
Next i
TAB1.MoveFirst
Do While Not TAB1.EOF
    izn = TAB1!izn
    izn2 = TAB1!izn2
    Time = TAB1!Time

    For i = 1 To 240
        a = i - 0.5
        b = a + 1
        If i = 1 Then a = 0
        If Time >= a And Time < b Then
            If izn = izn2 Then
                Vintra(i) = Vintra(i) + 1
            Else
                Vinter(i) = Vinter(i) + 1
            End If
        End If
    Next i
    j = j + 1
    TAB1.MoveNext
    If j = 1000 Then MsgBox "van 1,000"
    If j = 10000 Then MsgBox "van 10,000"
    If j = 150000 Then MsgBox "van 150,000"
Loop

For i = 1 To 240
    With TAB2
        .AddNew
        !minuto = i
        !interZONE = Vinter(i)
        !intraZONE = Vintra(i)
        .Update
    End With
Next i

TAB1.Close
TAB2.Close
DoCmd.Hourglass False
MsgBox "Terminó!...Viajes totales evaluados:" & j

End Sub
```

Appendix B1

**ATOM2 input file for calibration of 96 model.
HBW trip purpose by composite mode.**

C:\Eit-DIST\Run_Atom\Run_P1\atom_P1.FIL

```
$ATOM2 MODEL
$FILE
        INPUT FILE = SEP3I8, USERID = $SEP_P1.3I8$
        INPUT FILE = RADII, USER ID = $SRAD_P1.ASC$
        INPUT FILE = GENE, USER ID = $JRZ4GEN.ASC$
        OUTPUT FILE = TRIP-TAB, USER ID = $HBW96.DAT$
        OUTPUT FILE = LISTING, USER ID = $HBW96.OUT$
$HEADERS
        Distribucion de viajes 1996 (HBW)
$PARAMETERS
 &VALUES M=425 &END
 &VALUES N=425 &END
 &VALUES TABLE=4 &END
  REPORT = A1(5),A2(5),L1(5),X1,G2
$DATA
FORMAT(A4,T11,I5,T26,F5.0,F5.0)                                    GENERATION
FORMAT(A4,T11,I5,F15.4,A4)                                         LENGTH
LENGTH          1           0.9200
LENGTH          2           1.0000
LENGTH          3           1.0500
LENGTH          4           1.1200
LENGTH          5           1.2200
LENGTH          6           1.3700
LENGTH          7           1.5000
LENGTH          8           1.6200
LENGTH          9           1.8200
LENGTH         10           2.0300
LENGTH         11           2.3100
LENGTH         12           2.6000
LENGTH         13           2.8900
LENGTH         14           3.1000
LENGTH         15           3.3900
LENGTH         16           3.5900
LENGTH         17           3.6800
LENGTH         18           3.7800
LENGTH         19           3.8200
LENGTH         20           3.8300
LENGTH         21           3.8200
LENGTH         22           3.7300
LENGTH         23           3.6200
LENGTH         24           3.4900
LENGTH         25           3.2700
LENGTH         26           3.0500
LENGTH         27           2.8000
LENGTH         28           2.5700
LENGTH         29           2.4200
LENGTH         30           2.2200
LENGTH         31           2.0700
LENGTH         32           1.9200
LENGTH         33           1.7900
LENGTH         34           1.6000
LENGTH         35           1.4700
LENGTH         36           1.3800
LENGTH         37           1.2800
LENGTH         38           1.1900
LENGTH         39           1.1100
LENGTH         40           1.0300
LENGTH         41           0.9500
LENGTH         42           0.8700
LENGTH         43           0.7900
LENGTH         44           0.7100
LENGTH         45           0.6300
LENGTH         46           0.5600
LENGTH         47           0.4900
LENGTH         48           0.4300
LENGTH         49           0.3800
LENGTH         50           0.3200
LENGTH         51           0.2800
LENGTH         52           0.2400
LENGTH         53           0.2000
LENGTH         54           0.1600
LENGTH         55           0.1200
```

```
LENGTH          56          0. 1000
LENGTH          57          0. 0800
LENGTH          58          0. 0700
LENGTH          59          0. 0600
LENGTH          60          0. 0500
LENGTH          61          0. 0400
END
```

ATOM2 input file for calibration of 96 model.
HBNW trip purpose by composite mode.

C:\Eit-DIST\Run_Atom\Run_P2\atom_P2.FIL

```
$ATOM2 MODEL
$FILE
        INPUT FILE = SEP3I8, USERID = $SEP_P2.3I8$
        INPUT FILE = RADII, USER ID = $SRAD_P2.ASC$
        INPUT FILE = GENE, USER ID = $JRZ4GEN.ASC$
        OUTPUT FILE = TRIP-TAB, USER ID = $HBNW96.DAT$
        OUTPUT FILE = LISTING, USER ID = $HBNW96.OUT$
$HEADERS
        Distribucion de viajes 1996 (HBNW)
$PARAMETERS
 &VALUES M=425 &END
 &VALUES N=425 &END
 &VALUES TABLE=4 &END
  REPORT = A1(5),A2(5),L1(5),X1,G2
$DATA
FORMAT(A4,T11,I5,T36,F5.0,F5.0)                              GENERATION
FORMAT(A4,T11,I5,F15.4,A4)                                   LENGTH
LENGTH          1           1.9000
LENGTH          2           2.0500
LENGTH          3           2.2600
LENGTH          4           2.4800
LENGTH          5           2.6700
LENGTH          6           2.9000
LENGTH          7           3.3100
LENGTH          8           3.6700
LENGTH          9           4.1000
LENGTH         10           4.7000
LENGTH         11           5.3000
LENGTH         12           5.6500
LENGTH         13           5.8300
LENGTH         14           5.8100
LENGTH         15           5.6500
LENGTH         16           5.2000
LENGTH         17           4.5100
LENGTH         18           3.9800
LENGTH         19           3.4000
LENGTH         20           2.9200
LENGTH         21           2.4700
LENGTH         22           2.1000
LENGTH         23           1.9000
LENGTH         24           1.6200
LENGTH         25           1.4800
LENGTH         26           1.2300
LENGTH         27           1.0800
LENGTH         28           0.9500
LENGTH         29           0.8600
LENGTH         30           0.7800
LENGTH         31           0.7500
LENGTH         32           0.6400
LENGTH         33           0.5200
LENGTH         34           0.5000
LENGTH         35           0.4700
LENGTH         36           0.4200
LENGTH         37           0.3900
LENGTH         38           0.3600
LENGTH         39           0.3300
LENGTH         40           0.3100
LENGTH         41           0.2900
LENGTH         42           0.2700
LENGTH         43           0.2500
LENGTH         44           0.2300
LENGTH         45           0.2100
LENGTH         46           0.1900
LENGTH         47           0.1700
LENGTH         48           0.1500
LENGTH         49           0.1300
LENGTH         50           0.1100
LENGTH         51           0.1000
LENGTH         52           0.0900
LENGTH         53           0.0800
LENGTH         54           0.0700
LENGTH         55           0.0600
```

```
LENGTH        56          0. 0500
LENGTH        57          0. 0400
LENGTH        58          0. 0300
LENGTH        59          0. 0200
LENGTH        60          0. 0100
END
```

**ATOM2 input file for calibration of 96 model.
NHB trip purpose by composite mode.**

C:\Eit-DIST\Run_Atom\Run_P3\atom_P3.FIL

```
$ATOM2 MODEL
$FILE
        INPUT FILE = SEP3I8, USERID = $SEP_P3.3I8$
        INPUT FILE = RADII, USER ID = $SRAD_P3.ASC$
        INPUT FILE = GENE, USER ID = $JRZ4GEN.ASC$
        OUTPUT FILE = TRIP-TAB, USER ID = $NHB96.DAT$
        OUTPUT FILE = LISTING, USER ID = $NHB96.OUT$
$HEADERS
        Distribucion de viajes 1996 (NHB)
$PARAMETERS
 &VALUES M=425 &END
 &VALUES N=425 &END
 &VALUES TABLE=4 &END
  REPORT = A1(5),A2(5),L1(5),X1,G2
$DATA
FORMAT(A4,T11,I5,T16,F5.0,F5.0)                              GENERATION
FORMAT(A4,T11,I5,F15.4,A4)                                   LENGTH
LENGTH          1         2.0000
LENGTH          2         2.1000
LENGTH          3         2.2000
LENGTH          4         2.3000
LENGTH          5         2.5000
LENGTH          6         2.7000
LENGTH          7         3.0000
LENGTH          8         3.4000
LENGTH          9         4.1000
LENGTH         10         5.0000
LENGTH         11         5.9100
LENGTH         12         6.5000
LENGTH         13         6.6000
LENGTH         14         6.4000
LENGTH         15         5.5500
LENGTH         16         4.7000
LENGTH         17         4.0000
LENGTH         18         3.5000
LENGTH         19         3.1200
LENGTH         20         2.8000
LENGTH         21         2.5000
LENGTH         22         2.2200
LENGTH         23         1.9500
LENGTH         24         1.7500
LENGTH         25         1.5500
LENGTH         26         1.4000
LENGTH         27         1.2000
LENGTH         28         1.0800
LENGTH         29         0.9800
LENGTH         30         0.9000
LENGTH         31         0.8200
LENGTH         32         0.7400
LENGTH         33         0.6600
LENGTH         34         0.5800
LENGTH         35         0.5000
LENGTH         36         0.4400
LENGTH         37         0.3800
LENGTH         38         0.3200
LENGTH         39         0.2800
LENGTH         40         0.2200
LENGTH         41         0.1800
LENGTH         42         0.1600
LENGTH         43         0.1400
LENGTH         44         0.1200
LENGTH         45         0.1000
LENGTH         46         0.0900
LENGTH         47         0.0800
LENGTH         48         0.0700
LENGTH         49         0.0600
LENGTH         50         0.0500
LENGTH         51         0.0400
LENGTH         52         0.0300
LENGTH         53         0.0200
LENGTH         54         0.0100
END
```

**ATOM2 input file for calibration of 96 model.
TRTX trip purpose.**

C:\Eit-DIST\Run_Atom\Run_P4\atom_P4.FIL

```
$ATOM2 MODEL
$FILE
        INPUT FILE = SEP3I8, USERID = $SEP_P4.3I8$
        INPUT FILE = RADII, USER ID = $SRAD_P4.ASC$
        INPUT FILE = GENE, USER ID = $JRZ4GEN.ASC$
        OUTPUT FILE = TRIP-TAB, USER ID = $TRTX96.DAT$
        OUTPUT FILE = LISTING, USER ID = $TRTX96.OUT$
$HEADERS
        Distribucion de viajes 1996 (TRTX)
$PARAMETERS
 &VALUES M=425 &END
 &VALUES N=425 &END
 &VALUES TABLE=4 &END
  REPORT = A1(5),A2(5),L1(5),X1,G2
$DATA
FORMAT(A4,T11,I5,T56,F5.0,F5.0)                          GENERATION
FORMAT(A4,T11,I5,F15.4,A4)                               LENGTH
LENGTH          1           2.9300
LENGTH          2           4.2000
LENGTH          3           5.2000
LENGTH          4           6.2000
LENGTH          5           6.7500
LENGTH          6           7.0000
LENGTH          7           7.0500
LENGTH          8           6.8800
LENGTH          9           6.6000
LENGTH         10           5.8500
LENGTH         11           5.3000
LENGTH         12           4.7000
LENGTH         13           4.1500
LENGTH         14           3.7000
LENGTH         15           3.3000
LENGTH         16           2.8800
LENGTH         17           2.5000
LENGTH         18           2.2000
LENGTH         19           1.9500
LENGTH         20           1.7000
LENGTH         21           1.4500
LENGTH         22           1.2800
LENGTH         23           1.1500
LENGTH         24           0.9700
LENGTH         25           0.8300
LENGTH         26           0.7100
LENGTH         27           0.5900
LENGTH         28           0.4900
LENGTH         29           0.4100
LENGTH         30           0.3300
LENGTH         31           0.2500
LENGTH         32           0.1800
LENGTH         33           0.1300
LENGTH         34           0.0800
LENGTH         35           0.0500
LENGTH         36           0.0300
LENGTH         37           0.0200
LENGTH         38           0.0100
END
```

ATOM2 input file for calibration of 96 model.
EXLO trip purpose by auto mode.

C:\Eit-DIST\Run_Atom\Run_P5\atom_P5.FIL

```
$ATOM2 MODEL
$FILE
        INPUT FILE = SEP3I8, USERID = $SEP_P5.3I8$
        INPUT FILE = RADII, USER ID = $SRAD_P5.ASC$
        INPUT FILE = GENE, USER ID = $JRZ4GEN.ASC$
        OUTPUT FILE = TRIP-TAB, USER ID = $EXLO96.DAT$
        OUTPUT FILE = LISTING, USER ID = $EXLO96.OUT$
$HEADERS
        Distribucion de viajes 1996 (EXLO)
$PARAMETERS
 &VALUES M=425 &END
 &VALUES N=438 &END
 &VALUES TABLE=4 &END
  REPORT = A1(5),A2(5),L1(5),X1,G2
$DATA
FORMAT(A4,T11,I5,T46,F5.0,F5.0)                                    GENERATION
FORMAT(A4,T11,I5,F15.4,A4)                                         LENGTH
LENGTH          1        0.0000
LENGTH          2        0.3000
LENGTH          3        0.7200
LENGTH          4        1.1000
LENGTH          5        1.7000
LENGTH          6        2.5000
LENGTH          7        3.5000
LENGTH          8        4.6500
LENGTH          9        5.9000
LENGTH         10        6.5500
LENGTH         11        6.9500
LENGTH         12        7.1700
LENGTH         13        7.1300
LENGTH         14        7.0000
LENGTH         15        6.3500
LENGTH         16        5.4200
LENGTH         17        4.3500
LENGTH         18        3.6800
LENGTH         19        3.2000
LENGTH         20        3.0000
LENGTH         21        2.6500
LENGTH         22        2.4100
LENGTH         23        2.1000
LENGTH         24        1.8500
LENGTH         25        1.6500
LENGTH         26        1.4000
LENGTH         27        1.2000
LENGTH         28        1.0000
LENGTH         29        0.8500
LENGTH         30        0.7300
LENGTH         31        0.6000
LENGTH         32        0.5000
LENGTH         33        0.4000
LENGTH         34        0.3500
LENGTH         35        0.3000
LENGTH         36        0.2500
LENGTH         37        0.2000
LENGTH         38        0.1500
LENGTH         39        0.1000
LENGTH         40        0.0700
LENGTH         41        0.0400
LENGTH         42        0.0200
LENGTH         43        0.0100
LENGTH         44        0.0000
END
```

Appendix C1

ATOM2 output file for calibration of 96 model.
HBW trip purpose by composite mode.

C:\Eit-DIST\Run_Atom\Run_P1\HBW96.OUT

```
=============================================
=============================================
=                                           =
=       ATOM2 TRIP DISTRIBUTION PROGRAM      =
=                                           =
=============================================
=============================================
=                prepared by                =
=        Texas Transportation Institute     =
=============================================
=        Version Date:  June 17, 1998       =
=============================================


1                       Distribucion de viajes 1996 (HBW)


                                                                                      11/16/1999
              EFFECTIVE CAPACITIES
              --------------------
0              3000 CENTROIDS
0               269 SEPARATIONS
0                60 SECTORS  (3600 COMBINATIONS)
1
       REPORT = A1(5),A2(5),L1(5),X1,G2

  &VALUES ALTTRP=22,  AN=1.,  ASSIGN=13,  ATERM=.0,  ATOP=T,  DUMP=T,  BINTRA=.0,  EXEMPT=F,  EXTEND=0,  FCTRSD=1,  FUTURE=T,
   GEN=52,  HOVTRP=34,  HWYTRP=33,  IMPSEP=15,  INTRIP=21,  LIMIT=5,  M=425,  MILE=F,  MILSEP=27,  MF=28,  MODTRP=3,  MR=0,  MS=4,
   MT=3,  N=425,  NEGSEP=1,  NEWSEP=16,  NF=1,  NOWSEP=4,  NOWTRP=2,  NR=0,  OMIT=F,  ONE=1.0,  PLOT=F,  PN=1.,  PTERM=.0,
   RADII=51,  RADIIM=1.0,  RAWHOV=32,  RAWPEK=31,  RAWSEP=8,  RECORD=14,  REPORT=12,  RND=.1,  RS=26,  SAMPLE=.125,  SIZE=0,
   SKMTYP=F,  SUMTRP=20,  SV=25,  SWTTRP=24,  TABLE=4,  TV=0.,  TYPE=,  UT=.0,  XP=-.68000E-03  &END
0*********************************************************************************************************************************
0EXECUTE EDIT2                                                                         11/16/1999
0TOTAL ZONE AREA =    10007.1 SQUARE MINUTES
0  ALL INTRAZONAL TIMES NOT LISTED ABOVE HAVE BEEN SET TO     1
0
0MAXIMUM SEPARATION =  152  (TIME ONLY)
 MAXIMUM SEPERATION =  163  (TIME PLUS RADII)
0*********************************************************************************************************************************
0EXECUTE ACCEPT2                                                                       11/16/1999
 ITERATION OPTION =    1
0*********************************************************************************************************************************
0EXECUTE ATOM2                                                                         11/16/1999
0TOTAL ZONE AREA =    12741.4 SQUARE MINUTES
1                       Distribucion de viajes 1996 (HBW)


                                                                                      11/16/1999
0
0TABLE A1( 1)                              ATTRACTION VOLUME BALANCE (ITERATION 1)
0                                                                    PREVIOUS                         CORRECTED
       ZONE    DESIRED    RESULTING    DIFFERENCE    PCT ERR   CHI-SQUARE CORRECTION RELATIVE    CORRECTION   RELATIVE
                                                            ------------
 R SQUARE =    .95201                                          20933.7
1                       Distribucion de viajes 1996 (HBW)


                                                                                      11/16/1999
0TABLE L1( 1)                                 TRIP LENGTH BALANCE (ITERATION 1)
0            PERCENT  PERCENT                                                                               CORRECTED
 SEPARATION  DESIRED  RESULTING      DESIRED    RESULTING DIFFERENCE   PCT ERR    CHI-SQUARE  RELATIVE CORRECTION   RELATIVE
                                                            ------------
0                                                                        29150.8
0                                                   DESIRED      RESULTING   PERCENT DIFFENCE
0                 AVERAGE INTERNAL TRIP LENGTH      22.51560     25.27104       12.23792
                  TOTAL INTERNAL TRAVEL          10441540.    11719370.        12.23792
1                       Distribucion de viajes 1996 (HBW)


                                                                                      11/16/1999
0
0TABLE A1( 2)                              ATTRACTION VOLUME BALANCE (ITERATION 2)
0                                                                    PREVIOUS                         CORRECTED
       ZONE    DESIRED    RESULTING    DIFFERENCE    PCT ERR   CHI-SQUARE CORRECTION RELATIVE    CORRECTION   RELATIVE
                                                            ------------
 R SQUARE =    .99324                                           5573.2
1                       Distribucion de viajes 1996 (HBW)


                                                                                      11/16/1999
0TABLE L1( 2)                                 TRIP LENGTH BALANCE (ITERATION 2)
0            PERCENT  PERCENT                                                                               CORRECTED
 SEPARATION  DESIRED  RESULTING      DESIRED    RESULTING DIFFERENCE   PCT ERR    CHI-SQUARE  RELATIVE CORRECTION   RELATIVE
                                                            ------------
0                                                                         5110.2
0                                                   DESIRED      RESULTING   PERCENT DIFFENCE
0                 AVERAGE INTERNAL TRIP LENGTH      22.51560     23.63420        4.96812
                  TOTAL INTERNAL TRAVEL          10441540.    10960290.         4.96813
1                       Distribucion de viajes 1996 (HBW)


                                                                                      11/16/1999
0
0TABLE A1( 3)                              ATTRACTION VOLUME BALANCE (ITERATION 3)
0                                                                    PREVIOUS                         CORRECTED
       ZONE    DESIRED    RESULTING    DIFFERENCE    PCT ERR   CHI-SQUARE CORRECTION RELATIVE    CORRECTION   RELATIVE
                                                            ------------
 R SQUARE =    .99816                                           1451.5
```

OTABLE L1(3)   TRIP LENGTH BALANCE (ITERATION 3)
0   PERCENT   PERCENT   CORRECTED
 SEPARATION DESIRED RESULTING   DESIRED   RESULTING DIFFERENCE PCT ERR   CHI-SQUARE   RELATIVE CORRECTION   RELATIVE

                                                                                 2032.7
0   DESIRED   RESULTING   PERCENT DIFFENCE
0   AVERAGE INTERNAL TRIP LENGTH   22.51560   23.24471   3.23824
                    TOTAL INTERNAL TRAVEL   10441540.   10779670.   3.23824
1   Distribucion de viajes 1996 (HBW)

0
OTABLE A1(4)   ATTRACTION VOLUME BALANCE (ITERATION 4)
0   PREVIOUS   CORRECTED
     ZONE   DESIRED   RESULTING   DIFFERENCE   PCT ERR   CHI-SQUARE CORRECTION RELATIVE   CORRECTION   RELATIVE

 R SQUARE =   .99925   733.9
1   Distribucion de viajes 1996 (HBW)

OTABLE L1(4)   TRIP LENGTH BALANCE (ITERATION 4)
0   PERCENT   PERCENT   CORRECTED
 SEPARATION DESIRED RESULTING   DESIRED   RESULTING DIFFERENCE PCT ERR   CHI-SQUARE   RELATIVE CORRECTION   RELATIVE

                                                                                 678.1
0   DESIRED   RESULTING   PERCENT DIFFENCE
0   AVERAGE INTERNAL TRIP LENGTH   22.51560   22.93466   1.86119
                    TOTAL INTERNAL TRAVEL   10441540.   10635880.   1.86119
1   Distribucion de viajes 1996 (HBW)

0
OTABLE A1(5)   ATTRACTION VOLUME BALANCE (ITERATION 5)
0   PREVIOUS   CORRECTED

ZONE	DESIRED	RESULTING	DIFFERENCE	PCT ERR	CHI-SQUARE	PREVIOUS CORRECTION	RELATIVE	CORRECTION	CORRECTED RELATIVE
1	155.0	171.0	16.0	10.323	1.7	.84544	.14457	.9064	.13104
2	87.0	88.0	1.0	1.149	.0	1.15611	.10174	.9886	.10058
3	23.0	23.0	.0	.000	.0	1.59171	.03661	1.0000	.03661
4	97.0	103.0	6.0	6.186	.4	1.05193	.10835	.9417	.10204
5	112.0	115.0	3.0	2.679	.1	.89839	.10331	.9739	.10062
6	146.0	168.0	22.0	15.068	3.3	1.02085	.17150	.8690	.14904
7	57.0	52.0	-5.0	-8.772	.4	2.07332	.10781	1.0962	.11818
8	261.0	263.0	2.0	.766	.0	.95605	.25144	.9924	.24953
9	121.0	126.0	5.0	4.132	.2	.87479	.11022	.9603	.10585
10	156.0	148.0	-8.0	-5.128	.4	.88567	.13108	1.0541	.13816
11	143.0	156.0	13.0	9.091	1.2	1.09510	.17084	.9167	.15660
12	132.0	140.0	8.0	6.061	.5	.68659	.09612	.9429	.09063
13	191.0	197.0	6.0	3.141	.2	.83947	.16537	.9695	.16034
14	175.0	199.0	24.0	13.714	3.3	.67950	.13522	.8794	.11891
15	230.0	215.0	-15.0	-6.522	1.0	.79560	.17105	1.0698	.18299
16	368.0	381.0	13.0	3.533	.5	.73576	.28032	.9659	.27076
17	584.0	604.0	20.0	3.425	.7	.74224	.44831	.9669	.43347
18	330.0	330.0	.0	.000	.0	.81260	.26816	1.0000	.26816
19	428.0	457.0	29.0	6.776	2.0	.70956	.32427	.9365	.30369
20	199.0	207.0	8.0	4.020	.3	.66706	.13808	.9614	.13274
21	351.0	360.0	9.0	2.564	.2	.65051	.23418	.9750	.22833
22	281.0	281.0	.0	.000	.0	.87119	.24480	1.0000	.24480
23	2205.0	2251.0	46.0	2.086	1.0	.68460	1.54103	.9796	1.50954
24	104.0	106.0	2.0	1.923	.0	.63619	.06744	.9811	.06616
25	206.0	234.0	28.0	13.592	3.8	.68204	.15960	.8803	.14050
26	191.0	184.0	-7.0	-3.665	.3	.62004	.11409	1.0380	.11843
27	375.0	389.0	14.0	3.733	.5	.67080	.26094	.9640	.25155
28	442.0	463.0	21.0	4.751	1.0	.61333	.28397	.9546	.27109
29	674.0	674.0	.0	.000	.0	.71106	.47925	1.0000	.47925
30	2330.0	2367.0	37.0	1.588	.6	.70133	1.66005	.9844	1.63411
31	1029.0	1049.0	20.0	1.944	.4	.64999	.68184	.9809	.66884
32	2134.0	2182.0	48.0	2.249	1.1	.64024	1.39701	.9780	1.36628
33	115.0	115.0	.0	.000	.0	1.12034	.12884	1.0000	.12884
34	148.0	165.0	17.0	11.486	2.0	.92049	.15188	.8970	.13623
35	147.0	152.0	5.0	3.401	.2	.70298	.10685	.9671	.10334
36	184.0	194.0	10.0	5.435	.5	.69078	.13401	.9485	.12710
37	106.0	110.0	4.0	3.774	.2	.66388	.07303	.9636	.07037
38	149.0	158.0	9.0	6.040	.5	.82862	.13092	.9430	.12346
39	352.0	365.0	13.0	3.693	.5	.70565	.25756	.9644	.24839
40	160.0	162.0	2.0	1.250	.0	.82405	.13350	.9877	.13185
41	187.0	201.0	14.0	7.487	1.0	.79405	.15960	.9303	.14849
42	249.0	261.0	12.0	4.819	.6	.77516	.20232	.9540	.19301
43	344.0	350.0	6.0	1.744	.1	.66990	.23446	.9829	.23044
44	288.0	284.0	-4.0	-1.389	.1	.76576	.21748	1.0141	.22054
45	192.0	202.0	10.0	5.208	.5	.89592	.18098	.9505	.17202
46	537.0	551.0	14.0	2.607	.4	.68341	.37656	.9746	.36699
47	128.0	140.0	12.0	9.375	1.1	.72903	.10206	.9143	.09332
48	458.0	467.0	9.0	1.965	.2	.60055	.28046	.9807	.27505
49	432.0	454.0	22.0	5.093	1.1	.57042	.25897	.9515	.24642
50	965.0	974.0	9.0	.933	.1	.61456	.59858	.9908	.59305
51	2523.0	2596.0	73.0	2.893	2.1	.60033	1.55845	.9719	1.51462
52	151.0	156.0	5.0	3.311	.2	.56997	.08892	.9679	.08607
53	872.0	892.0	20.0	2.294	.5	.59899	.53430	.9776	.52232
54	570.0	584.0	14.0	2.456	.3	.62954	.36765	.9760	.35884
55	264.0	273.0	9.0	3.409	.3	.64049	.17485	.9670	.16909
56	238.0	242.0	4.0	1.681	.1	.56866	.13761	.9835	.13534
57	164.0	170.0	6.0	3.659	.2	.70523	.11989	.9647	.11566
58	101.0	96.0	-5.0	-4.950	.2	.66914	.06424	1.0521	.06758

59	245.0	257.0	12.0	4.898	.6	.66194	.17012	.9533	.16218
60	196.0	202.0	6.0	3.061	.2	.71197	.14382	.9703	.13955
61	230.0	242.0	12.0	5.217	.6	.88677	.21460	.9504	.20396
62	447.0	479.0	32.0	7.159	2.3	.71902	.34441	.9332	.32140
63	361.0	398.0	37.0	10.249	3.8	.95465	.37995	.9070	.34463
64	299.0	298.0	-1.0	-.334	.0	.81135	.24178	1.0034	.24259
65	201.0	212.0	11.0	5.473	.6	1.08472	.22996	.9481	.21803
66	309.0	313.0	4.0	1.294	.1	.92319	.28896	.9872	.28526
67	173.0	182.0	9.0	5.202	.5	.79970	.14555	.9505	.13835
68	246.0	255.0	9.0	3.659	.3	.87084	.22206	.9647	.21423
69	225.0	238.0	13.0	5.778	.8	.62900	.14970	.9454	.14152
70	438.0	460.0	22.0	5.023	1.1	.60538	.27847	.9522	.26516
71	245.0	267.0	22.0	8.980	2.0	.62024	.16560	.9176	.15196
72	153.0	144.0	-9.0	-5.882	.5	.68609	.09880	1.0625	.10497
73	499.0	501.0	2.0	.401	.0	.68145	.34141	.9960	.34004
74	299.0	311.0	12.0	4.013	.5	.57602	.17914	.9614	.17223
75	446.0	460.0	14.0	3.139	.4	.60031	.27614	.9696	.26774
76	323.0	329.0	6.0	1.858	.1	.57767	.19005	.9818	.18659
77	173.0	178.0	5.0	2.890	.1	.67400	.11997	.9719	.11660
78	367.0	383.0	16.0	4.360	.7	.71590	.27419	.9582	.26274
79	402.0	419.0	17.0	4.229	.7	.61510	.25773	.9594	.24727
80	302.0	299.0	-3.0	-.993	.0	.72439	.21659	1.0100	.21877
81	251.0	259.0	8.0	3.187	.3	.93317	.24169	.9691	.23423
82	130.0	138.0	8.0	6.154	.5	.95709	.13208	.9420	.12442
83	2101.0	2117.0	16.0	.762	.1	.78028	1.65185	.9924	1.63937
84	3321.0	3372.0	51.0	1.536	.8	.72274	2.43707	.9849	2.40021
85	1310.0	1339.0	29.0	2.214	.6	.79460	1.06397	.9783	1.04093
86	38.0	29.0	-9.0	-23.684	2.1	1.03142	.02991	1.3103	.03919
87	102.0	103.0	1.0	.980	.0	1.09596	.11288	.9903	.11179
88	1693.0	1717.0	24.0	1.418	.3	.69892	1.20004	.9860	1.18327
89	2092.0	2093.0	1.0	.048	.0	.84551	1.76964	.9995	1.76880
90	819.0	831.0	12.0	1.465	.2	.90500	.75205	.9856	.74119
91	1345.0	1363.0	18.0	1.338	.2	.91181	1.24279	.9868	1.22638
92	1702.0	1691.0	-11.0	-.646	.1	.99675	1.68551	1.0065	1.69647
93	452.0	455.0	3.0	.664	.0	1.03254	.46981	.9934	.46671
94	1860.0	1859.0	-1.0	-.054	.0	.93414	1.73656	1.0005	1.73750
95	1351.0	1331.0	-20.0	-1.480	.3	1.08124	1.43913	1.0150	1.46075
96	2218.0	2201.0	-17.0	-.766	.1	1.49997	3.30143	1.0077	3.32693
97	3738.0	3737.0	-1.0	-.027	.0	1.06023	3.96208	1.0003	3.96314
98	2666.0	2650.0	-16.0	-.600	.1	.87099	2.30814	1.0060	2.32207
99	2097.0	2088.0	-9.0	-.429	.0	.96947	2.02426	1.0043	2.03298
100	1547.0	1527.0	-20.0	-1.293	.3	1.13577	1.73433	1.0131	1.75704
101	1455.0	1461.0	6.0	.412	.0	1.18599	1.73273	.9959	1.72561
102	1541.0	1498.0	-43.0	-2.790	1.2	1.28683	1.92767	1.0287	1.98300
103	3117.0	3095.0	-22.0	-.706	.2	1.02750	3.18012	1.0071	3.20273
104	1159.0	1137.0	-22.0	-1.898	.4	1.15599	1.31436	1.0193	1.33980
105	366.0	366.0	.0	.000	.0	1.23123	.45063	1.0000	.45063
106	1299.0	1266.0	-33.0	-2.540	.8	1.36462	1.72761	1.0261	1.77264
107	916.0	916.0	.0	.000	.0	1.01891	.93332	1.0000	.93332
108	2659.0	2638.0	-21.0	-.790	.2	1.33256	3.51528	1.0080	3.54327
109	2495.0	2433.0	-62.0	-2.485	1.5	1.44676	3.51997	1.0255	3.60967
110	4909.0	4818.0	-91.0	-1.854	1.7	1.48363	7.14814	1.0189	7.28315
111	4991.0	4892.0	-99.0	-1.984	2.0	1.36844	6.69440	1.0202	6.82987
112	3100.0	3043.0	-57.0	-1.839	1.0	1.20307	3.66093	1.0187	3.72950
113	1579.0	1554.0	-25.0	-1.583	.4	1.16175	1.80536	1.0161	1.83441
114	4626.0	4538.0	-88.0	-1.902	1.7	1.17551	5.33448	1.0194	5.43792
115	4388.0	4308.0	-80.0	-1.823	1.5	1.19934	5.16678	1.0186	5.26272
116	4623.0	4514.0	-109.0	-2.358	2.6	1.41173	6.37254	1.0241	6.52642
117	8220.0	8069.0	-151.0	-1.837	2.8	1.41353	11.40581	1.0187	11.61925
118	2978.0	2888.0	-90.0	-3.022	2.7	1.61368	4.66031	1.0312	4.80554
119	4385.0	4290.0	-95.0	-2.166	2.1	1.46272	6.27508	1.0221	6.41404
120	1997.0	1924.0	-73.0	-3.655	2.7	2.10479	4.04961	1.0379	4.20326
121	824.0	792.0	-32.0	-3.883	1.2	2.18645	1.73167	1.0404	1.80163
122	6103.0	5981.0	-122.0	-1.999	2.4	1.19126	7.12493	1.0204	7.27026
123	1190.0	1169.0	-21.0	-1.765	.4	1.43167	1.67363	1.0180	1.70369
124	1168.0	1127.0	-41.0	-3.510	1.4	1.41161	1.59089	1.0364	1.64876
125	1023.0	996.0	-27.0	-2.639	.7	1.95794	1.95011	1.0271	2.00297
126	208.0	189.0	-19.0	-9.135	1.7	1.84749	.34918	1.1005	.38428
127	390.0	388.0	-2.0	-.513	.0	1.81658	.70483	1.0052	.70847
128	120.0	120.0	.0	.000	.0	2.87133	.34456	1.0000	.34456
129	559.0	530.0	-29.0	-5.188	1.5	1.99855	1.05923	1.0547	1.11719
130	117.0	130.0	13.0	11.111	1.4	5.86783	.76282	.9000	.68654
131	2267.0	2154.0	-113.0	-4.985	5.6	2.03611	4.38577	1.0525	4.61585
132	236.0	241.0	5.0	2.119	.1	2.17417	.52397	.9793	.51310
133	1361.0	1302.0	-59.0	-4.335	2.6	2.09362	2.72589	1.0453	2.84942
134	791.0	781.0	-10.0	-1.264	.1	1.68763	1.31804	1.0128	1.33491
135	853.0	832.0	-21.0	-2.462	.5	1.27049	1.05705	1.0252	1.08373
136	2323.0	2272.0	-51.0	-2.195	1.1	1.19432	2.71351	1.0224	2.77442
137	918.0	909.0	-9.0	-.980	.1	1.03699	.94263	1.0099	.95196
138	1075.0	1057.0	-18.0	-1.674	.3	1.06819	1.12908	1.0170	1.14831
139	1797.0	1800.0	3.0	.167	.0	1.01740	1.83132	.9983	1.82827
140	1583.0	1534.0	-49.0	-3.095	1.5	1.15545	1.77246	1.0319	1.82907
141	341.0	328.0	-13.0	-3.812	.5	1.03534	.33959	1.0396	.35305
142	300.0	302.0	2.0	.667	.0	.82335	.24865	.9934	.24700
143	531.0	526.0	-5.0	-.942	.0	.90872	.47799	1.0095	.48253
144	962.0	956.0	-6.0	-.624	.0	.98435	.94103	1.0063	.94694
145	567.0	557.0	-10.0	-1.764	.2	1.11333	.62013	1.0180	.63126
146	1325.0	1336.0	11.0	.830	.1	.84075	1.12325	.9918	1.11400
147	787.0	777.0	-10.0	-1.271	.1	1.11950	.86985	1.0129	.88105
148	1311.0	1320.0	9.0	.686	.1	.71514	.94399	.9932	.93755
149	1210.0	1205.0	-5.0	-.413	.0	.92570	1.11547	1.0041	1.12009
150	549.0	563.0	14.0	2.550	.4	.89047	.50133	.9751	.48887
151	346.0	330.0	-16.0	-4.624	.7	.86824	.28652	1.0485	.30041
152	538.0	539.0	1.0	.186	.0	.87037	.46913	.9981	.46826
153	1231.0	1228.0	-3.0	-.244	.0	.78190	.96017	1.0024	.96252
154	1272.0	1253.0	-19.0	-1.494	.3	1.12652	1.41153	1.0152	1.43294

155	1098.0	1067.0	-31.0	-2.823	.9	1.27775	1.36336	1.0291	1.40297
156	1207.0	1190.0	-17.0	-1.408	.2	1.15976	1.38012	1.0143	1.39983
157	1118.0	1103.0	-15.0	-1.342	.2	1.09270	1.20524	1.0136	1.22164
158	546.0	534.0	-12.0	-2.198	.3	1.15250	.61543	1.0225	.62926
159	2791.0	2751.0	-40.0	-1.433	.6	1.16466	3.20397	1.0145	3.25056
160	405.0	396.0	-9.0	-2.222	.2	1.20267	.47626	1.0227	.48708
161	8711.0	8446.0	-265.0	-3.042	8.1	1.69928	14.35208	1.0314	14.80239
162	6546.0	6334.0	-212.0	-3.239	6.9	1.73382	10.98204	1.0335	11.34961
163	7200.0	6893.0	-307.0	-4.264	13.1	2.58178	17.79618	1.0445	18.58879
164	362.0	341.0	-21.0	-5.801	1.2	1.68622	.57500	1.0616	.61041
165	9981.0	9730.0	-251.0	-2.515	6.3	1.47397	14.34176	1.0258	14.71173
166	8995.0	8789.0	-206.0	-2.290	4.7	1.37562	12.09029	1.0234	12.37366
167	88.0	88.0	.0	.000	.0	2.22806	.19607	1.0000	.19607
168	569.0	555.0	-14.0	-2.460	.3	1.41763	.78678	1.0252	.80663
169	483.0	494.0	11.0	2.277	.3	1.36089	.67228	.9777	.65731
170	254.0	253.0	-1.0	-.394	.0	1.68977	.42751	1.0040	.42920
171	3383.0	3293.0	-90.0	-2.660	2.4	1.97630	6.50796	1.0273	6.68583
172	104.0	111.0	7.0	6.731	.5	1.96696	.21833	.9369	.20456
173	40.0	41.0	1.0	2.500	.0	2.10215	.08619	.9756	.08409
174	136.0	134.0	-2.0	-1.471	.0	1.14735	.15375	1.0149	.15604
175	135.0	137.0	2.0	1.481	.0	1.11867	.15326	.9854	.15102
176	412.0	397.0	-15.0	-3.641	.5	1.35409	.53757	1.0378	.55788
177	317.0	305.0	-12.0	-3.785	.5	1.49277	.45530	1.0393	.47321
178	588.0	589.0	1.0	.170	.0	1.13137	.66638	.9983	.66525
179	6383.0	6295.0	-88.0	-1.379	1.2	1.04955	6.60692	1.0140	6.69928
180	629.0	630.0	1.0	.159	.0	1.15916	.73027	.9984	.72911
181	566.0	553.0	-13.0	-2.297	.3	1.12951	.62462	1.0235	.63930
182	447.0	441.0	-6.0	-1.342	.1	.90800	.40043	1.0136	.40588
183	216.0	221.0	5.0	2.315	.1	.87027	.19233	.9774	.18798
184	2753.0	2810.0	57.0	2.070	1.2	.55979	1.57301	.9797	1.54110
185	522.0	534.0	12.0	2.299	.3	.60868	.32504	.9775	.31773
186	1967.0	2019.0	52.0	2.644	1.4	.56991	1.15064	.9742	1.12101
187	773.0	770.0	-3.0	-.388	.0	.68688	.52890	1.0039	.53096
188	1291.0	1296.0	5.0	.387	.0	.92528	1.19916	.9961	1.19453
189	1345.0	1356.0	11.0	.818	.1	.95370	1.29322	.9919	1.28273
190	852.0	843.0	-9.0	-1.056	.1	.88217	.74367	1.0107	.75161
191	929.0	931.0	2.0	.215	.0	.73689	.68604	.9979	.68457
192	852.0	860.0	8.0	.939	.1	.79251	.68156	.9907	.67522
193	1397.0	1412.0	15.0	1.074	.2	.86068	1.21529	.9894	1.20238
194	745.0	736.0	-9.0	-1.208	.1	.83602	.61531	1.0122	.62284
195	609.0	634.0	25.0	4.105	1.0	.61808	.39186	.9606	.37641
196	265.0	261.0	-4.0	-1.509	.1	.73298	.19131	1.0153	.19424
197	2978.0	3007.0	29.0	.974	.3	.79695	2.39642	.9904	2.37331
198	755.0	775.0	20.0	2.649	.5	.69230	.53653	.9742	.52268
199	973.0	965.0	-8.0	-.822	.1	.71777	.69265	1.0083	.69839
200	10443.0	10554.0	111.0	1.063	1.2	.64009	6.75548	.9895	6.68443
201	784.0	816.0	32.0	4.082	1.3	.73010	.59576	.9608	.57240
202	419.0	428.0	9.0	2.148	.2	.71515	.30608	.9790	.29965
203	444.0	439.0	-5.0	-1.126	.1	.58082	.25498	1.0114	.25789
204	294.0	316.0	22.0	7.483	1.6	.91143	.28801	.9304	.26796
205	327.0	332.0	5.0	1.529	.1	.76685	.25459	.9849	.25076
206	211.0	223.0	12.0	5.687	.7	.87402	.19491	.9462	.18442
207	299.0	292.0	-7.0	-2.341	.2	.81182	.23705	1.0240	.24273
208	183.0	182.0	-1.0	-.546	.0	.80983	.14739	1.0055	.14820
209	184.0	184.0	.0	.000	.0	.76694	.14112	1.0000	.14112
210	299.0	301.0	2.0	.669	.0	.62254	.18738	.9934	.18614
211	457.0	486.0	29.0	6.346	1.8	.65481	.31824	.9403	.29925
212	223.0	218.0	-5.0	-2.242	.1	.89833	.19584	1.0229	.20033
213	703.0	721.0	18.0	2.560	.5	.68859	.49647	.9750	.48408
214	267.0	271.0	4.0	1.498	.1	1.02676	.27825	.9852	.27414
215	257.0	274.0	17.0	6.615	1.1	.71617	.19623	.9380	.18405
216	223.0	219.0	-4.0	-1.794	.1	.68016	.14895	1.0183	.15167
217	289.0	297.0	8.0	2.768	.2	.74501	.22127	.9731	.21531
218	516.0	523.0	7.0	1.357	.1	.76039	.39768	.9866	.39236
219	1865.0	1912.0	47.0	2.520	1.2	.68625	1.31210	.9754	1.27985
220	650.0	652.0	2.0	.308	.0	.84435	.55051	.9969	.54883
221	662.0	674.0	12.0	1.813	.2	.83518	.56291	.9822	.55289
222	12301.0	12423.0	122.0	.992	1.2	.95650	11.88257	.9902	11.76588
223	364.0	365.0	1.0	.275	.0	.99264	.36231	.9973	.36132
224	203.0	205.0	2.0	.985	.0	.81977	.16805	.9902	.16641
225	21983.0	22083.0	100.0	.455	.5	.80023	17.67148	.9955	17.59146
226	1342.0	1356.0	14.0	1.043	.1	.73200	.99260	.9897	.98235
227	138.0	122.0	-16.0	-11.594	1.9	.79169	.09659	1.1311	.10925
228	599.0	621.0	22.0	3.673	.8	.90121	.55965	.9646	.53983
229	479.0	466.0	-13.0	-2.714	.4	.77028	.35895	1.0279	.36896
230	355.0	370.0	15.0	4.225	.6	1.03198	.38183	.9595	.36635
231	1756.0	1740.0	-16.0	-.911	.1	.99977	1.73960	1.0092	1.75560
232	366.0	352.0	-14.0	-3.825	.5	1.14754	.40393	1.0398	.42000
233	5368.0	5279.0	-89.0	-1.658	1.5	1.22212	6.45158	1.0169	6.56035
234	469.0	491.0	22.0	4.691	1.0	.97720	.47980	.9552	.45831
235	14839.0	14777.0	-62.0	-.418	.3	.98923	14.61783	1.0042	14.67916
236	1914.0	1889.0	-25.0	-1.306	.3	1.16643	2.20338	1.0132	2.23254
237	504.0	498.0	-6.0	-1.190	.1	1.35348	.67403	1.0120	.68215
238	9703.0	9754.0	51.0	.526	.3	.93707	9.14014	.9948	9.09235
239	3937.0	3959.0	22.0	.559	.1	.85193	3.37278	.9944	3.35404
240	730.0	738.0	8.0	1.096	.1	.67561	.49860	.9892	.49319
241	233.0	234.0	1.0	.429	.0	.64591	.15114	.9957	.15050
242	3669.0	3696.0	27.0	.736	.2	.83390	3.08208	.9927	3.05956
243	884.0	889.0	5.0	.566	.0	.78219	.69537	.9944	.69146
244	187.0	190.0	3.0	1.604	.0	1.12655	.21404	.9842	.21067
245	1224.0	1222.0	-2.0	-.163	.0	1.13142	1.38259	1.0016	1.38485
246	78.0	64.0	-14.0	-17.949	2.5	1.37850	.08822	1.2188	.10752
247	7.0	16.0	9.0	128.571	11.6	1.45894	.02334	.4375	.01021
248	138.0	168.0	30.0	21.739	6.5	1.49350	.25091	.8214	.20610
249	614.0	614.0	.0	.000	.0	.74502	.45744	1.0000	.45744
250	365.0	376.0	11.0	3.014	.3	.67892	.25527	.9707	.24780

251	239.0	235.0	-4.0	-1.674	.1	.81346	.19116	1.0170	.19442
252	532.0	544.0	12.0	2.256	.3	.69444	.37777	.9779	.36944
253	505.0	516.0	11.0	2.178	.2	.66956	.34550	.9787	.33813
254	296.0	307.0	11.0	3.716	.4	.68843	.21135	.9642	.20377
255	322.0	326.0	4.0	1.242	.0	.76038	.24788	.9877	.24484
256	968.0	972.0	4.0	.413	.0	.88120	.85653	.9959	.85300
257	3694.0	3713.0	19.0	.514	.1	1.05607	3.92119	.9949	3.90113
258	217.0	213.0	-4.0	-1.843	.1	.73575	.15672	1.0188	.15966
259	871.0	894.0	23.0	2.641	.6	.60684	.54251	.9743	.52855
260	165.0	176.0	11.0	6.667	.7	.58916	.10369	.9375	.09721
261	345.0	351.0	6.0	1.739	.1	.69710	.24468	.9829	.24050
262	153.0	150.0	-3.0	-1.961	.1	.67600	.10140	1.0200	.10343
263	498.0	517.0	19.0	3.815	.7	.74694	.38617	.9632	.37198
264	265.0	283.0	18.0	6.792	1.2	.63287	.17910	.9364	.16771
265	150.0	152.0	2.0	1.333	.0	.60265	.09160	.9868	.09040
266	300.0	310.0	10.0	3.333	.3	.78639	.24378	.9677	.23592
267	152.0	169.0	17.0	11.184	1.9	.69104	.11679	.8994	.10504
268	126.0	127.0	1.0	.794	.0	.97700	.12408	.9921	.12310
269	146.0	147.0	1.0	.685	.0	.72919	.10719	.9932	.10646
270	62.0	66.0	4.0	6.452	.3	.74556	.04921	.9394	.04622
271	120.0	116.0	-4.0	-3.333	.1	.75742	.08786	1.0345	.09089
272	53.0	72.0	19.0	35.849	6.8	1.00911	.07266	.7361	.05348
273	124.0	115.0	-9.0	-7.258	.7	.81750	.09401	1.0783	.10137
274	251.0	252.0	1.0	.398	.0	.60198	.15170	.9960	.15110
275	5810.0	5935.0	125.0	2.151	2.7	.62856	3.73049	.9789	3.65192
276	149.0	171.0	22.0	14.765	3.2	.58199	.09952	.8713	.08672
277	269.0	265.0	-4.0	-1.487	.1	.61303	.16245	1.0151	.16491
278	188.0	192.0	4.0	2.128	.1	.67567	.12973	.9792	.12703
279	471.0	482.0	11.0	2.335	.3	.66330	.31971	.9772	.31242
280	258.0	258.0	.0	.000	.0	.70825	.18273	1.0000	.18273
281	418.0	426.0	8.0	1.914	.2	.81968	.34919	.9812	.34263
282	608.0	603.0	-5.0	-.822	.0	.68933	.41567	1.0083	.41911
283	1102.0	1122.0	20.0	1.815	.4	.76150	.85441	.9822	.83918
284	866.0	893.0	27.0	3.118	.8	.62557	.55864	.9698	.54174
285	623.0	644.0	21.0	3.371	.7	.61293	.39472	.9674	.38185
286	293.0	292.0	-1.0	-.341	.0	.61120	.17847	1.0034	.17908
287	442.0	466.0	24.0	5.430	1.3	.64869	.30229	.9485	.28672
288	1839.0	1892.0	53.0	2.882	1.5	.64978	1.22939	.9720	1.19495
289	433.0	440.0	7.0	1.617	.1	.66506	.29263	.9841	.28797
290	1006.0	1031.0	25.0	2.485	.6	.61511	.63418	.9758	.61880
291	206.0	222.0	16.0	7.767	1.2	.59419	.13191	.9279	.12240
292	409.0	409.0	.0	.000	.0	.60218	.24629	1.0000	.24629
293	457.0	453.0	-4.0	-.875	.0	.66494	.30122	1.0088	.30388
294	376.0	399.0	23.0	6.117	1.4	.59259	.23644	.9424	.22281
295	364.0	377.0	13.0	3.571	.5	.67094	.25294	.9655	.24422
296	400.0	412.0	12.0	3.000	.4	.51464	.21203	.9709	.20585
297	2597.0	2703.0	106.0	4.082	4.3	.52376	1.41572	.9608	1.36020
298	656.0	674.0	18.0	2.744	.5	.55927	.37695	.9733	.36688
299	506.0	507.0	1.0	.198	.0	.80708	.40919	.9980	.40838
300	1898.0	1925.0	27.0	1.423	.4	.87521	1.68478	.9860	1.66115
301	2008.0	2058.0	50.0	2.490	1.2	.59313	1.22067	.9757	1.19102
302	425.0	432.0	7.0	1.647	.1	1.18322	.51115	.9838	.50287
303	143.0	152.0	9.0	6.294	.6	1.60856	.24450	.9408	.23002
304	70.0	76.0	6.0	8.571	.5	1.76873	.13442	.9211	.12381
305	647.0	638.0	-9.0	-1.391	.1	1.32432	.84492	1.0141	.85684
306	245.0	260.0	15.0	6.122	.9	1.52679	.39697	.9423	.37406
307	80.0	84.0	4.0	5.000	.2	1.66976	.14026	.9524	.13358
308	73.0	63.0	-10.0	-13.699	1.4	2.56121	.16136	1.1587	.18697
309	290.0	301.0	11.0	3.793	.4	1.20219	.36186	.9635	.34864
310	4100.0	4152.0	52.0	1.268	.7	1.10333	4.58102	.9875	4.52365
311	90.0	83.0	-7.0	-7.778	.5	1.50104	.12459	1.0843	.13509
312	278.0	295.0	17.0	6.115	1.0	1.80317	.53194	.9424	.50128
313	1.0	1.0	.0	.000	.0	4.00000	.00400	1.0000	.00400
314	58.0	52.0	-6.0	-10.345	.6	2.46889	.12838	1.1154	.14320
315	10.0	13.0	3.0	30.000	.9	1.64541	.02139	.7692	.01645
316	16.0	19.0	3.0	18.750	.6	2.24124	.04258	.8421	.03586
317	63.0	61.0	-2.0	-3.175	.1	2.58512	.15769	1.0328	.16286
318	23.0	24.0	1.0	4.348	.0	2.12842	.05108	.9583	.04895
319	24.0	30.0	6.0	25.000	1.5	1.80558	.05417	.8000	.04333
320	68.0	66.0	-2.0	-2.941	.1	1.49848	.09890	1.0303	.10190
321	12.0	14.0	2.0	16.667	.3	3.63025	.05082	.8571	.04356
322	213.0	208.0	-5.0	-2.347	.1	1.74265	.36247	1.0240	.37118
323	7069.0	6980.0	-89.0	-1.259	1.1	2.50139	17.45971	1.0128	17.68233
324	461.0	451.0	-10.0	-2.169	.2	2.05567	.92711	1.0222	.94766
325	111.0	100.0	-11.0	-9.910	1.1	1.47644	.14764	1.1100	.16389
326	808.0	822.0	14.0	1.733	.2	1.69169	1.39057	.9830	1.36688
327	13179.0	13070.0	-109.0	-.827	.9	2.16460	28.29138	1.0083	28.52733
328	227.0	227.0	.0	.000	.0	1.38013	.31329	1.0000	.31329
329	442.0	451.0	9.0	2.036	.2	1.07839	.48636	.9800	.47665
330	1880.0	1897.0	17.0	.904	.2	1.49075	2.82795	.9910	2.80260
331	2593.0	2630.0	37.0	1.427	.5	1.49979	3.94445	.9859	3.88896
332	551.0	561.0	10.0	1.815	.2	.97520	.54709	.9822	.53733
333	20.0	22.0	2.0	10.000	.2	3.65647	.08044	.9091	.07313
334	.0	.0	.0	.000	.0	1.00000	.00000	1.0000	.00000
335	362.0	356.0	-6.0	-1.657	.1	1.49894	.53362	1.0169	.54262
336	213.0	227.0	14.0	6.573	.9	.68805	.15619	.9383	.14655
337	239.0	246.0	7.0	2.929	.2	.59411	.14615	.9715	.14199
338	5498.0	5687.0	189.0	3.438	6.5	.60227	3.42509	.9668	3.31126
339	210.0	207.0	-3.0	-1.429	.0	.67951	.14066	1.0145	.14270
340	1176.0	1250.0	74.0	6.293	4.7	.50207	.62759	.9408	.59044
341	277.0	288.0	11.0	3.971	.4	.45506	.13106	.9618	.12605
342	235.0	239.0	4.0	1.702	.1	.53940	.12892	.9833	.12676
343	348.0	381.0	33.0	9.483	3.1	.53083	.20224	.9134	.18473
344	455.0	476.0	21.0	4.615	1.0	.38603	.18375	.9559	.17564
345	203.0	209.0	6.0	2.956	.2	.66404	.13878	.9713	.13480
346	119.0	125.0	6.0	5.042	.3	.49149	.06144	.9520	.05849

347	115.0	119.0	4.0	3.478	.1	.51082	.06079	.9664	.05874
348	141.0	150.0	9.0	6.383	.6	.42143	.06322	.9400	.05942
349	141.0	144.0	3.0	2.128	.1	.42035	.06053	.9792	.05927
350	91.0	100.0	9.0	9.890	.9	.42168	.04217	.9100	.03837
351	434.0	472.0	38.0	8.756	3.3	.56585	.26708	.9195	.24558
352	2.0	4.0	2.0	100.000	2.0	.25000	.00100	.5000	.00050
353	368.0	381.0	13.0	3.533	.5	.56766	.21628	.9659	.20890
354	667.0	690.0	23.0	3.448	.8	.61047	.42123	.9667	.40718
355	130.0	149.0	19.0	14.615	2.8	.69542	.10362	.8725	.09040
356	118.0	113.0	-5.0	-4.237	.2	.75314	.08510	1.0442	.08887
357	121.0	131.0	10.0	8.264	.8	.51254	.06714	.9237	.06202
358	199.0	200.0	1.0	.503	.0	.85066	.17013	.9950	.16928
359	238.0	261.0	23.0	9.664	2.2	.61676	.16097	.9119	.14679
360	244.0	252.0	8.0	3.279	.3	.61994	.15622	.9683	.15126
361	137.0	142.0	5.0	3.650	.2	.70472	.10007	.9648	.09655
362	243.0	254.0	11.0	4.527	.5	.45323	.11512	.9567	.11014
363	680.0	718.0	38.0	5.588	2.1	.45277	.32509	.9471	.30789
364	675.0	709.0	34.0	5.037	1.7	.45511	.32267	.9520	.30720
365	141.0	147.0	6.0	4.255	.3	.44593	.06555	.9592	.06288
366	95.0	93.0	-2.0	-2.105	.0	.55759	.05186	1.0215	.05297
367	91.0	102.0	11.0	12.088	1.3	.51022	.05204	.8922	.04643
368	87.0	90.0	3.0	3.448	.1	.57652	.05189	.9667	.05016
369	396.0	398.0	2.0	.505	.0	.91714	.36502	.9950	.36319
370	229.0	240.0	11.0	4.803	.5	.91006	.21841	.9542	.20840
371	772.0	822.0	50.0	6.477	3.2	.40431	.33234	.9392	.31212
372	545.0	579.0	34.0	6.239	2.1	.50448	.29209	.9413	.27494
373	725.0	766.0	41.0	5.655	2.3	.49785	.38135	.9465	.36094
374	1295.0	1363.0	68.0	5.251	3.6	.42896	.58467	.9501	.55550
375	1295.0	1364.0	69.0	5.328	3.7	.48185	.65725	.9494	.62400
376	79.0	80.0	1.0	1.266	.0	.55377	.04430	.9875	.04375
377	136.0	148.0	12.0	8.824	1.1	.55916	.08276	.9189	.07605
378	394.0	416.0	22.0	5.584	1.2	.47998	.19967	.9471	.18911
379	91.0	103.0	12.0	13.187	1.6	.47682	.04911	.8835	.04339
380	438.0	462.0	24.0	5.479	1.3	.65862	.30428	.9481	.28848
381	304.0	300.0	-4.0	-1.316	.1	.86228	.25868	1.0133	.26213
382	106.0	114.0	8.0	7.547	.6	.94988	.10829	.9298	.10069
383	461.0	474.0	13.0	2.820	.4	.62907	.29818	.9726	.29000
384	268.0	279.0	11.0	4.104	.5	.63631	.17753	.9606	.17053
385	560.0	608.0	48.0	8.571	4.1	.39015	.23721	.9211	.21848
386	13.0	14.0	1.0	7.692	.1	1.19302	.01670	.9286	.01551
387	81.0	80.0	-1.0	-1.235	.0	.88656	.07092	1.0125	.07181
388	61.0	69.0	8.0	13.115	1.0	1.00395	.06927	.8841	.06124
389	184.0	186.0	2.0	1.087	.0	.87055	.16192	.9892	.16018
390	386.0	394.0	8.0	2.073	.2	.84840	.33427	.9797	.32748
391	378.0	395.0	17.0	4.497	.8	.69978	.27641	.9570	.26452
392	405.0	397.0	-8.0	-1.975	.2	.68255	.27097	1.0202	.27643
393	792.0	795.0	3.0	.379	.0	.72288	.57469	.9962	.57252
394	734.0	784.0	50.0	6.812	3.4	.59619	.46741	.9362	.43760
395	453.0	461.0	8.0	1.766	.1	.68658	.31651	.9826	.31102
396	74.0	54.0	-20.0	-27.027	5.4	2.94958	.15928	1.3704	.21827
397	267.0	291.0	24.0	8.989	2.2	.60495	.17604	.9175	.16152
398	137.0	151.0	14.0	10.219	1.4	2.06619	.31199	.9073	.28307
399	522.0	497.0	-25.0	-4.789	1.2	1.24055	.61656	1.0503	.64757
400	54.0	51.0	-3.0	-5.556	.2	1.58295	.08073	1.0588	.08548
401	1357.0	1317.0	-40.0	-2.948	1.2	1.70815	2.24964	1.0304	2.31796
402	5512.0	5332.0	-180.0	-3.266	5.9	1.81031	9.65260	1.0338	9.97846
403	140.0	134.0	-6.0	-4.286	.3	.46417	.06220	1.0448	.06498
404	142.0	148.0	6.0	4.225	.3	.48696	.07207	.9595	.06915
405	2860.0	2892.0	32.0	1.119	.4	1.25856	3.63977	.9889	3.59950
406	1002.0	1007.0	5.0	.499	.0	1.50088	1.51139	.9950	1.50389
407	110.0	97.0	-13.0	-11.818	1.5	1.84220	.17869	1.1340	.20264
408	326.0	332.0	6.0	1.840	.1	1.79287	.59523	.9819	.58447
409	134.0	156.0	22.0	16.418	3.6	1.40817	.21967	.8590	.18869
410	72.0	64.0	-8.0	-11.111	.9	1.73730	.11119	1.1250	.12509
411	1082.0	1090.0	8.0	.739	.1	.93138	1.01520	.9927	1.00775
412	1490.0	1494.0	4.0	.268	.0	.71737	1.07176	.9973	1.06889
413	2220.0	2217.0	-3.0	-.135	.0	.97731	2.16670	1.0014	2.16963
414	1215.0	1197.0	-18.0	-1.481	.3	1.00810	1.20670	1.0150	1.22485
415	288.0	274.0	-14.0	-4.861	.7	2.06763	.56653	1.0511	.59548
416	732.0	738.0	6.0	.820	.0	1.71022	1.26214	.9919	1.25188
417	280.0	289.0	9.0	3.214	.3	.78625	.22723	.9689	.22015
418	167.0	173.0	6.0	3.593	.2	.90725	.15695	.9653	.15151
419	250.0	256.0	6.0	2.400	.1	.82703	.21172	.9766	.20676
420	151.0	154.0	3.0	1.987	.1	.65105	.10026	.9805	.09831
421	493.0	500.0	7.0	1.420	.1	.51106	.25553	.9860	.25195
422	378.0	407.0	29.0	7.672	2.2	.76056	.30955	.9287	.28749
423	396.0	379.0	-17.0	-4.293	.7	.79939	.30297	1.0449	.31656
424	49.0	50.0	1.0	2.041	.0	.57374	.02869	.9800	.02811
425	101.0	107.0	6.0	5.941	.4	.61748	.06607	.9439	.06237

```
                                                       -----------
R SQUARE =    .99971                                      358.9
```

```
0
OTABLE A2( 5)                        ATTRACTION VOLUME BALANCE SUMMARY (ITERATION 5)
0
0                   CROSS CLASSIFICATION OF ATTRACTION ZONES BY DESIRED ATTRACTION VOLUME
                         AND PERCENT ERROR OF RESULTING ATTRACTION VOLUME
0
0                                                    PERCENT ERROR
```

DESIRED ATTRACTION RANGES	-75 TO -100	-50 TO -100	-25 TO -75	-10 TO -50	-5 TO -25	-1 TO -10	0 TO -5	TO -1	0	0 TO 1	1 TO 5	5 TO 10	10 TO 25	25 TO 50	50 TO 75	75 TO 100	100 AND ABOVE	TOTAL
0.0									1									1
.1 - .9																		0
1.0 - 9.9								1									2	3
10.0 - 24.9								1			1	1	3	2				8
25.0 - 49.9											2							3
50.0 - 99.9			1	4	3	4		1			3	5	3	1				25
100.0 - 199.9				2	4	7	1	3		4	24	18	11					74
200.0 - 299.9					2	11	3	3		5	23	14	1					62
300.0 - 399.9					1	7	2	2		3	19	4	1					39
400.0 - 499.9						7	1	1		2	18	8						37
500.0 - 599.9					1	6	1			3	10	2						23
600.0 - 699.9						1	1	2		2	5	2						13
700.0 - 799.9						3	1			2	4	3						13
800.0 - 899.9						3				2	5							10
900.0 - 999.9							3	1		3								7
1000.0 - 1999.9						20	6			10	12	3						51
2000.0 - 2999.9						5	5			3	9							22
3000.0 - 3999.9						2	2			3	1							8
4000.0 - 4999.9						6					1							7
5000.0 - 5999.9						2					2							4
6000.0 - 6999.9						3												3
7000.0 - 7999.9						2												2
8000.0 - 8999.9						3												3
9000.0 - 9999.9						1	2			3	1							7
10000.0 AND ABOVE						1	2			3	1							7
TOTAL	0	0	0	1	7	11	93	28	16	45	140	60	19	3	0	0	2	425

```
OTABLE L1( 5)                           TRIP LENGTH BALANCE (ITERATION 5)
```

SEPARATION	PERCENT DESIRED	PERCENT RESULTING	DESIRED	RESULTING	DIFFERENCE	PCT ERR	CHI-SQUARE	RELATIVE	CORRECTION	CORRECTED RELATIVE
1	.9200	.8889	4266.5	4122.5	-144.0	-3.375	4.9	186.9830	1.0349	193.5143_
2	1.0000	.9676	4637.5	4487.4	-150.1	-3.237	4.9	142.7815	1.0335	147.5580_
3	1.0500	1.0166	4869.3	4714.6	-154.8	-3.179	4.9	127.4674	1.0328	131.6523_
4	1.1200	1.0842	5194.0	5028.0	-165.9	-3.195	5.3	116.6578	1.0330	120.5079_
5	1.2200	1.1812	5657.7	5477.8	-179.9	-3.180	5.7	100.0000	1.0328	103.2850_
6	1.3700	1.3259	6353.3	6148.8	-204.5	-3.219	6.6	81.0792	1.0333	83.7762_
7	1.5000	1.4525	6956.2	6736.1	-220.1	-3.164	7.0	64.4204	1.0327	66.5254_
8	1.6200	1.5698	7512.7	7279.9	-232.8	-3.099	7.2	49.7950	1.0320	51.3873_
9	1.8200	1.7645	8440.2	8183.0	-257.2	-3.048	7.8	41.8164	1.0314	43.1309_
10	2.0300	1.9709	9414.1	9139.8	-274.3	-2.913	8.0	34.5396	1.0300	35.5761_
11	2.3100	2.2457	10712.6	10414.2	-298.3	-2.785	8.3	29.8489	1.0286	30.7040_
12	2.6000	2.5312	12057.4	11738.3	-319.1	-2.647	8.4	26.3031	1.0272	27.0181_
13	2.8900	2.8173	13402.3	13065.0	-337.3	-2.517	8.5	23.2619	1.0258	23.8625_
14	3.1000	3.0248	14376.2	14027.4	-348.7	-2.426	8.5	20.2043	1.0249	20.7066_
15	3.3900	3.3148	15721.0	15372.5	-348.5	-2.217	7.7	18.4892	1.0227	18.9084_
16	3.5900	3.5186	16648.5	16317.4	-331.1	-1.989	6.6	16.7677	1.0203	17.1080_
17	3.6800	3.6177	17065.9	16777.1	-288.8	-1.692	4.9	14.7562	1.0172	15.0102_
18	3.7800	3.7258	17529.6	17278.3	-251.3	-1.434	3.6	13.2552	1.0145	13.4480_
19	3.8200	3.7781	17715.1	17520.6	-194.5	-1.098	2.1	11.8532	1.0111	11.9848_
20	3.8300	3.7969	17761.5	17608.0	-153.5	-.864	1.3	10.7122	1.0087	10.8056_
21	3.8200	3.7949	17715.1	17598.5	-116.6	-.658	.8	9.6099	1.0066	9.6736_
22	3.7300	3.7153	17297.8	17229.8	-67.9	-.393	.3	8.5877	1.0039	8.6216_
23	3.6200	3.6210	16787.6	16792.1	4.4	.026	.0	7.5391	.9997	7.5371_
24	3.4900	3.5049	16184.8	16253.8	69.0	.426	.3	6.8387	.9958	6.8096_
25	3.2700	3.2934	15164.5	15272.9	108.4	.715	.8	6.1479	.9929	6.1043_
26	3.0500	3.0801	14144.3	14284.1	139.8	.988	1.4	5.4632	.9902	5.4098_
27	2.8000	2.8353	12984.9	13148.7	163.8	1.261	2.1	4.6064	.9875	4.5490_
28	2.5700	2.6099	11918.3	12103.3	185.0	1.552	2.9	4.0223	.9847	3.9608_
29	2.4200	2.4651	11222.7	11431.7	209.0	1.863	3.9	3.6184	.9817	3.5523_
30	2.2200	2.2669	10295.2	10512.6	217.4	2.112	4.6	3.1530	.9793	3.0878_
31	2.0700	2.1195	9599.6	9828.9	229.3	2.389	5.5	2.8309	.9767	2.7648_
32	1.9200	1.9691	8903.9	9131.5	227.5	2.556	5.8	2.6173	.9751	2.5520_
33	1.7900	1.8393	8301.1	8529.5	228.4	2.752	6.3	2.4777	.9732	2.4113_
34	1.6000	1.6466	7420.0	7636.0	216.0	2.911	6.3	2.2088	.9717	2.1463_
35	1.4700	1.5166	6817.1	7033.1	216.0	3.169	6.8	2.0093	.9693	1.9476_
36	1.3800	1.4277	6399.7	6621.0	221.3	3.457	7.6	1.9078	.9666	1.8440_
37	1.2800	1.3288	5936.0	6162.2	226.3	3.812	8.6	1.7552	.9633	1.6907_
38	1.1900	1.2373	5518.6	5737.8	219.2	3.972	8.7	1.6462	.9618	1.5833_
39	1.1100	1.1575	5147.6	5367.7	220.1	4.276	9.4	1.5380	.9590	1.4749_
40	1.0300	1.0777	4776.6	4997.7	221.1	4.628	10.2	1.4602	.9558	1.3956_
41	.9500	.9944	4405.6	4611.3	205.8	4.670	9.6	1.4071	.9554	1.3443_
42	.8700	.9103	4034.6	4221.3	186.7	4.627	8.6	1.3285	.9558	1.2697_
43	.7900	.8283	3663.6	3841.0	177.4	4.842	8.6	1.2745	.9538	1.2156_
44	.7100	.7471	3292.6	3464.5	171.9	5.222	9.0	1.2039	.9504	1.1442_
45	.6300	.6630	2921.6	3074.5	152.9	5.233	8.0	1.1091	.9503	1.0539_
46	.5600	.5894	2597.0	2733.2	136.2	5.246	7.1	1.0127	.9502	.9622_
47	.4900	.5153	2272.4	2389.7	117.3	5.164	6.1	.8954	.9509	.8514_
48	.4300	.4505	1994.1	2089.0	94.8	4.756	4.5	.8258	.9546	.7883_

49	.3800	.3985	1762.2	1848.1	85.8	4.872	4.2	.7930	.9535	.7561_
50	.3200	.3358	1484.0	1557.2	73.2	4.936	3.6	.7334	.9530	.6989_
51	.2800	.2931	1298.5	1359.1	60.6	4.670	2.8	.6957	.9554	.6647_
52	.2400	.2515	1113.0	1166.5	53.5	4.804	2.6	.6309	.9542	.6020_
53	.2000	.2101	927.5	974.2	46.7	5.032	2.3	.5476	.9521	.5213_
54	.1600	.1682	742.0	780.0	38.0	5.119	1.9	.4746	.9513	.4515_
55	.1200	.1260	556.5	584.2	27.7	4.985	1.4	.3753	.9525	.3575_
56	.1000	.1047	463.7	485.7	21.9	4.732	1.0	.3200	.9548	.3055_
57	.0800	.0837	371.0	388.2	17.2	4.636	.8	.2664	.9557	.2546_
58	.0700	.0734	324.6	340.2	15.6	4.804	.7	.2428	.9542	.2316_
59	.0600	.0634	278.2	293.9	15.7	5.627	.9	.2168	.9467	.2052_
60	.0500	.0526	231.9	244.2	12.3	5.295	.7	.1978	.9497	.1879_
61	.0400	.0408	185.5	189.2	3.7	2.018	.1	.1700	.9802	.1667_
62	.0000	.0000	.0	.0	.0	6.733	.0	.0000	.9369	.0000_
63	.0000	.0000	.0	.0	.0	30.629	.0	.0000	.7655	.0000_
64	.0000	.0000	.0	.0	.0	78.161	.0	.0000	.5613	.0000_
65	.0000	.0000	.0	.0	.0	146.847	.0	.0000	.4051	.0000_
66	.0000	.0000	.0	.0	.0	256.278	.1	.0000	.2807	.0000_
67	.0000	.0000	.0	.1	.0	402.828	.2	.0000	.1989	.0000_
68	.0000	.0000	.0	.1	.0	450.219	.2	.0000	.1817	.0000_
69	.0000	.0000	.0	.1	.1	506.741	.3	.0000	.1648	.0000_
70	.0000	.0000	.0	.0	.0	248.038	.1	.0000	.2873	.0000_
71	.0000	.0000	.0	.0	.0	26.715	.0	.0000	.7892	.0000_
72	.0000	.0000	.0	.0	.0	-55.403	.0	.0000	1.0000	.0000_
73	.0000	.0000	.0	.0	.0	-91.776	.0	.0000	1.0000	.0000_
74	.0000	.0000	.0	.0	.0	-99.373	.0	.0000	1.0000	.0000_
75	.0000	.0000	.0	.0	.0	-99.809	.0	.0000	1.0000	.0000_
76	.0000	.0000	.0	.0	.0	-99.956	.0	.0000	1.0000	.0000_
77	.0000	.0000	.0	.0	.0	-99.995	.0	.0000	1.0000	.0000_
78	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
79	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
80	.0000	.0000	.0	.0	.0	-99.775	.0	.0000	1.0000	.0000_
81	.0000	.0000	.0	.0	.0	-94.510	.0	.0000	1.0000	.0000_
82	.0000	.0000	.0	.0	.0	-83.322	.0	.0000	1.0000	.0000_
83	.0000	.0000	.0	.0	.0	-62.072	.0	.0000	1.0000	.0000_
84	.0000	.0000	.0	.0	.0	-43.346	.0	.0000	1.0000	.0000_
85	.0000	.0000	.0	.0	.0	35.932	.0	.0000	.7357	.0000_
86	.0000	.0000	.0	.0	.0	171.618	.0	.0000	.3682	.0000_
87	.0000	.0000	.0	.1	.0	434.186	.2	.0000	.1872	.0000_
88	.0000	.0000	.0	.1	.1	748.764	.6	.0000	.1178	.0000_
89	.0000	.0000	.0	.2	.1	1468.901	2.2	.0000	.0637	.0000_
90	.0000	.0000	.0	.2	.2	1840.615	3.4	.0000	.0515	.0000_
91	.0000	.0001	.0	.3	.3	2872.547	8.3	.0000	.0336	.0000_
92	.0000	.0001	.0	.5	.5	4542.695	20.6	.0000	.0215	.0000_
93	.0000	.0001	.0	.3	.3	2997.192	9.0	.0000	.0323	.0000_
94	.0000	.0000	.0	.2	.2	1540.798	2.4	.0000	.0609	.0000_
95	.0000	.0000	.0	.1	.1	901.372	.8	.0000	.0999	.0000_
96	.0000	.0000	.0	.1	.1	589.861	.3	.0000	.1450	.0000_
97	.0000	.0000	.0	.0	.0	299.790	.1	.0000	.2501	.0000_
98	.0000	.0000	.0	.0	.0	24.795	.0	.0000	.8013	.0000_
99	.0000	.0000	.0	.0	.0	-86.320	.0	.0000	1.0000	.0000_
100	.0000	.0000	.0	.0	.0	-99.720	.0	.0000	1.0000	.0000_
101	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
102	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
103	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
104	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
105	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
106	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
107	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
108	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
109	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
110	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
111	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
112	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
113	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
114	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
115	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
116	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
117	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
118	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
119	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
120	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
121	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
122	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
123	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
124	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
125	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
126	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
127	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
128	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
129	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
130	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
131	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
132	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
133	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
134	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
135	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
136	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
137	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
138	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
139	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
140	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
141	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
142	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
143	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
144	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_

145	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
146	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
147	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
148	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
149	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
150	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
151	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
152	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
153	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
154	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
155	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
156	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
157	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
158	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
159	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
160	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
161	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
162	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
163	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
164	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
165	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
166	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
167	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
168	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
169	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
170	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
171	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
172	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
173	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
174	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
175	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
176	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
177	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
178	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
179	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
180	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_

```
                                                             ------------
                                                                 348.6
0                                              DESIRED      RESULTING    PERCENT DIFFENCE
0               AVERAGE INTERNAL TRIP LENGTH   22.51560     22.79496        1.24074
                      TOTAL INTERNAL TRAVEL    10441540.    10571100.       1.24074
1               Distribucion de viajes 1996 (HBW)
```

OTABLE X1   SUMMARY COMPARISON OF
                                   ESTIMATED VS. MODELED
                                   TRIP LENGTH FREQUENCY*

0
0   SUMMARY OF TRIPS BY SEPERATION INTERVAL
0
0
SEPERATION INTERVAL	ESTIMATED PERCENT OF TRIPS	MODELED PERCENT OF TRIPS	DIFFERENCE (MODELED - ESTIMATED	RATIO (MODELED / ESTIMATED)
1 - 10	13.6500%	13.2222%	-.4277%	.9687
11 - 20	32.9899%	32.3709%	-.6190%	.9812
21 - 30	30.9899%	31.1867%	.1968%	1.0063
31 - 40	14.8400%	15.3198%	.4799%	1.0323
41 & UP	7.5303%	7.9003%	.3701%	1.0491

0
0   SUMMARY OF TRAVEL BY SEPERATION INTERVAL
0
0
SEPERATION INTERVAL	ESTIMATED PERCENT OF TRAVEL	MODELED PERCENT OF TRAVEL	DIFFERENCE (MODELED - ESTIMATED	RATIO (MODELED / ESTIMATED)
1 - 10	3.7756%	3.6143%	-.1613%	.9692
11 - 20	23.3460%	22.6522%	-.6939%	.9823
21 - 30	34.4068%	34.2344%	-.1724%	1.0073
31 - 40	22.9743%	23.4394%	.4651%	1.0329
41 & UP	15.4973%	16.0598%	.5625%	1.0492

0
0   SUMMARY OF MEAN TRIP LENGTHS BY SEPERATION INTERVAL
0
0
SEPERATION INTERVAL	ESTIMATED MEAN TRIP LENGTH	MODELED MEAN TRIP LENGTH	DIFFERENCE (MODELED - ESTIMATED	RATIO (MODELED / ESTIMATED)
1 - 10	6.2278	6.2310	.0032	1.0005
11 - 20	15.9336	15.9512	.0176	1.0011
21 - 30	24.9981	25.0225	.0245	1.0010
31 - 40	34.8571	34.8763	.0192	1.0006
41 & UP	46.3369	46.3376	.0007	1.0000
ALL	22.5155	22.7950	.2794	1.0124

						11/16/1999		
0	SEPARATION INTERVAL	ZONE PAIR INCIDENCE	INTERACTION FREQUENCY	INTERCHANGE VOLUME	MAX VOLUME/ INTERACTION	VOLUME / ZONE PAIR	VOLUME / INTERACTION	VOLUME PERCENTAGE	CUMULATIVE VOLUME
	1	441.	76.	1063.0	89.0	2.410	13.987	.229	.23
	2	170.	167.	4561.0	335.0	26.829	27.311	.984	1.21
	3	186.	181.	5385.0	784.0	28.952	29.751	1.161	2.37
	4	190.	183.	4634.0	540.0	24.389	25.322	.999	3.37
	5	259.	251.	6135.0	773.0	23.687	24.442	1.323	4.70
	6	354.	344.	5018.0	517.0	14.175	14.587	1.082	5.78
	7	427.	403.	5217.0	351.0	12.218	12.945	1.125	6.90
	8	671.	616.	6956.0	195.0	10.367	11.292	1.500	8.40
	9	863.	765.	7271.0	150.0	8.425	9.505	1.568	9.97
	10	1111.	974.	9262.0	318.0	8.337	9.509	1.997	11.97
	11	1375.	1212.	12479.0	690.0	9.076	10.296	2.691	14.66
	12	1693.	1441.	12375.0	309.0	7.310	8.588	2.668	17.33
	13	1960.	1627.	12737.0	371.0	6.498	7.829	2.747	20.07
	14	2458.	1951.	14735.0	286.0	5.995	7.553	3.177	23.25
	15	2805.	2175.	16209.0	424.0	5.779	7.452	3.495	26.75
	16	3055.	2331.	15880.0	343.0	5.198	6.813	3.424	30.17
	17	3462.	2635.	17825.0	274.0	5.149	6.765	3.844	34.01
	18	3657.	2674.	17207.0	383.0	4.705	6.435	3.710	37.73
	19	4262.	3092.	19666.0	335.0	4.614	6.360	4.241	41.97
	20	4268.	2907.	16141.0	190.0	3.782	5.552	3.481	45.45
	21	4521.	3027.	18224.0	446.0	4.031	6.020	3.930	49.38
	22	4568.	3032.	17294.0	409.0	3.786	5.704	3.729	53.11
	23	4983.	3105.	17332.0	229.0	3.478	5.582	3.737	56.84
	24	4968.	3024.	16640.0	227.0	3.349	5.503	3.588	60.43
	25	4915.	2938.	15186.0	602.0	3.090	5.169	3.275	63.71
	26	4882.	2753.	12647.0	120.0	2.591	4.594	2.727	66.43
	27	4839.	2677.	13597.0	290.0	2.810	5.079	2.932	69.36
	28	4946.	2618.	13669.0	693.0	2.764	5.221	2.948	72.31
	29	4884.	2382.	10954.0	382.0	2.243	4.599	2.362	74.67
	30	4832.	2265.	10637.0	431.0	2.201	4.696	2.294	76.97
	31	4946.	2214.	11393.0	823.0	2.303	5.146	2.457	79.42
	32	4871.	2120.	9318.0	464.0	1.913	4.395	2.009	81.43
	33	4617.	1909.	7401.0	202.0	1.603	3.877	1.596	83.03
	34	4585.	1818.	7274.0	174.0	1.586	4.001	1.569	84.60
	35	4371.	1714.	7583.0	215.0	1.735	4.424	1.635	86.23
	36	4184.	1585.	6696.0	255.0	1.600	4.225	1.444	87.68
	37	4084.	1525.	6523.0	152.0	1.597	4.277	1.407	89.08
	38	3923.	1377.	5640.0	244.0	1.438	4.096	1.216	90.30
	39	3779.	1287.	5306.0	225.0	1.404	4.123	1.144	91.44
	40	3712.	1239.	5251.0	179.0	1.415	4.238	1.132	92.58
	41	3490.	1060.	4024.0	128.0	1.153	3.796	.868	93.44
	42	3237.	1042.	3977.0	239.0	1.229	3.817	.858	94.30
	43	3109.	906.	3447.0	161.0	1.109	3.805	.743	95.05
	44	3023.	911.	3530.0	97.0	1.168	3.875	.761	95.81
	45	2874.	804.	3152.0	155.0	1.097	3.920	.680	96.49
	46	2714.	679.	2521.0	97.0	.929	3.713	.544	97.03
	47	2594.	646.	2394.0	163.0	.923	3.706	.516	97.55
	48	2396.	559.	1797.0	98.0	.750	3.215	.387	97.93
	49	2394.	530.	1815.0	66.0	.758	3.425	.391	98.32
	50	2252.	500.	1520.0	62.0	.675	3.040	.328	98.65
	51	2017.	434.	1203.0	42.0	.596	2.772	.259	98.91
	52	1950.	379.	913.0	32.0	.468	2.409	.197	99.11
	53	1809.	335.	1026.0	44.0	.567	3.063	.221	99.33
	54	1664.	293.	653.0	21.0	.392	2.229	.141	99.47
	55	1549.	271.	552.0	18.0	.356	2.037	.119	99.59
	56	1511.	229.	555.0	45.0	.367	2.424	.120	99.71
	57	1321.	185.	378.0	19.0	.286	2.043	.082	99.79
	58	1256.	146.	312.0	18.0	.248	2.137	.067	99.86
	59	1135.	143.	271.0	16.0	.239	1.895	.058	99.92
	60	1029.	83.	163.0	21.0	.158	1.964	.035	99.95
	61	1010.	63.	115.0	11.0	.114	1.825	.025	99.98
	62	910.	48.	73.0	8.0	.080	1.521	.016	99.99
	63	796.	10.	11.0	2.0	.014	1.100	.002	99.99
	64	777.	12.	12.0	1.0	.015	1.000	.003	100.00
	65	675.	6.	6.0	1.0	.009	1.000	.001	100.00
	66	598.	2.	2.0	1.0	.003	1.000	.000	100.00
	67	557.	2.	2.0	1.0	.004	1.000	.000	100.00
	68	532.	0.	.0	.0	.000			
	69	431.	0.	.0	.0	.000			
	70	388.	0.	.0	.0	.000			
	71	384.	0.	.0	.0	.000			
	72	309.	0.	.0	.0	.000			
	73	250.	0.	.0	.0	.000			
	74	225.	0.	.0	.0	.000			
	75	230.	0.	.0	.0	.000			
	76	214.	0.	.0	.0	.000			
	77	196.	0.	.0	.0	.000			
	78	189.	0.	.0	.0	.000			
	79	208.	0.	.0	.0	.000			
	80	164.	0.	.0	.0	.000			
	81	206.	0.	.0	.0	.000			
	82	209.	0.	.0	.0	.000			
	83	178.	0.	.0	.0	.000			
	84	206.	0.	.0	.0	.000			
	85	207.	0.	.0	.0	.000			
	86	179.	0.	.0	.0	.000			
	87	182.	0.	.0	.0	.000			

88	159.	0.	.0	.0	.000
89	164.	2.	2.0	1.0	.012
90	182.	0.	.0	.0	.000
91	133.	0.	.0	.0	.000
92	133.	0.	.0	.0	.000
93	110.	0.	.0	.0	.000
94	103.	0.	.0	.0	.000
95	87.	0.	.0	.0	.000
96	83.	0.	.0	.0	.000
97	77.	0.	.0	.0	.000
98	67.	0.	.0	.0	.000
99	75.	0.	.0	.0	.000
100	37.	0.	.0	.0	.000
101	39.	0.	.0	.0	.000
102	53.	0.	.0	.0	.000
103	32.	0.	.0	.0	.000
104	24.	0.	.0	.0	.000
105	17.	0.	.0	.0	.000
106	26.	0.	.0	.0	.000
107	24.	0.	.0	.0	.000
108	19.	0.	.0	.0	.000
109	13.	0.	.0	.0	.000
110	19.	0.	.0	.0	.000
111	19.	0.	.0	.0	.000
112	15.	0.	.0	.0	.000
113	12.	0.	.0	.0	.000
114	9.	0.	.0	.0	.000
115	8.	0.	.0	.0	.000
116	9.	0.	.0	.0	.000
117	8.	0.	.0	.0	.000
118	3.	0.	.0	.0	.000
119	3.	0.	.0	.0	.000
120	7.	0.	.0	.0	.000
121	5.	0.	.0	.0	.000
122	2.	0.	.0	.0	.000
123	1.	0.	.0	.0	.000
124	3.	0.	.0	.0	.000
125	3.	0.	.0	.0	.000
126	2.	0.	.0	.0	.000
127	3.	0.	.0	.0	.000
128	1.	0.	.0	.0	.000
129	3.	0.	.0	.0	.000
130	2.	0.	.0	.0	.000
131	2.	0.	.0	.0	.000
132	0.	0.	.0		
133	1.	0.	.0	.0	.000
134	2.	0.	.0	.0	.000
135	4.	0.	.0	.0	.000
136	4.	0.	.0	.0	.000
137	2.	0.	.0	.0	.000
138	1.	0.	.0	.0	.000
139	0.	0.	.0		
140	1.	0.	.0	.0	.000
141	0.	0.	.0		
142	1.	0.	.0	.0	.000
143	0.	0.	.0		
144	0.	0.	.0		
145	1.	0.	.0	.0	.000
146	0.	0.	.0		
147	0.	0.	.0		
148	0.	0.	.0		
149	0.	0.	.0		
150	0.	0.	.0		

Note: row 89 additionally shows `1.000`, `.000`, `100.00` in the VOLUME/INTERACTION, VOLUME PERCENTAGE, and CUMULATIVE VOLUME columns.

1TABLE G2   TRIP LENGTH FREQUENCY TABLE
O   Distribucion de viajes 1996 (HBW)

11/16/1999

SEPARATION INTERVAL	ZONE PAIR INCIDENCE	INTERACTION FREQUENCY	INTERCHANGE VOLUME	MAX VOLUME/ INTERACTION	VOLUME / ZONE PAIR	VOLUME / INTERACTION	VOLUME PERCENTAGE	CUMULATIVE VOLUME
151	0.	0.	.0					
TOTAL	180625.	80894.	463747.0					

0   AVERAGE TRIP LENGTH = 22.845
0   AVERAGE INTERACTION = 26.744
0   AVERAGE SEPARATION = 34.679

	DESIRED	RESULTING	PERCENT DIFFENCE
AVERAGE INTERNAL TRIP LENGTH	22.51550	22.84538	1.46513
TOTAL INTERNAL TRAVEL	10441490.	10594480.	1.46514

0***
OEXECUTE STOP   11/16/1999
 Run time =   .148 minutes.

ATOM2 output file for calibration of 96 model.
HBNW trip purpose by composite mode.

C:\Eit-DIST\Run_Atom\Run_P2\HBNW96.OUT

```
1
==========================================
==========================================
=                                        =
=      ATOM2 TRIP DISTRIBUTION PROGRAM    =
=                                        =
==========================================
==========================================
=            prepared by                 =
=      Texas Transportation Institue      =
==========================================
=       Version Date:  June 17, 1998      =
==========================================
```

1   Distribucion de viajes 1996 (HBNW)

11/16/1999

            EFFECTIVE CAPACITIES

O   3000 CENTROIDS
O   269 SEPARATIONS
O   60 SECTORS (3600 COMBINATIONS)
1
     REPORT = A1(5),A2(5),L1(5),X1,G2

 &VALUES ALTTRP=22, AN=1., ASSIGN=13, ATERM=.0, ATOP=T, DUMP=T, BINTRA=.0, EXEMPT=F, EXTEND=0, FCTRSD=1, FUTURE=T,
  GEN=52, HOVTRP=34, HWYTRP=33, IMPSEP=15, INTRIP=21, LIMIT=5, M=425, MILE=F, MILSEP=27, MF=28, MODTRP=3, MR=0, MS=4,
  MT=3, N=425, NEGSEP=1, NEWSEP=16, NF=1, NOWSEP=4, NOWTRP=2, NR=0, OMIT=F, ONE=1.0, PLOT=F, PN=1., PTERM=.0,
  RADII=51, RADIIM=1.0, RAWHOV=32, RAWPEK=31, RAWSEP=8, RECORD=14, REPORT=12, RND=.1, RS=26, SAMPLE=.125, SIZE=0,
  SKMTYP=F, SUMTRP=20, SV=25, SWTTRP=24, TABLE=4, TV=0., TYPE=, UT=.0, XP=-.68000E-03 &END
0***
OEXECUTE EDIT2   11/16/1999
OTOTAL ZONE AREA =   13588.6 SQUARE MINUTES
O ALL INTRAZONAL TIMES NOT LISTED ABOVE HAVE BEEN SET TO   1
O
OMAXIMUM SEPARATION = 154 (TIME ONLY)
 MAXIMUM SEPERATION = 167 (TIME PLUS RADII)
0***
OEXECUTE ACCEPT2   11/16/1999
 ITERATION OPTION =   1
0***
OEXECUTE ATOM2   11/16/1999
OTOTAL ZONE AREA =   17301.5 SQUARE MINUTES
1   Distribucion de viajes 1996 (HBNW)

                                                                              11/16/1999
O
OTABLE A1(1)   ATTRACTION VOLUME BALANCE (ITERATION 1)
0   PREVIOUS   CORRECTED
     ZONE   DESIRED   RESULTING   DIFFERENCE   PCT ERR   CHI-SQUARE CORRECTION RELATIVE   CORRECTION   RELATIVE

 R SQUARE =   .89665   465860.7
1   Distribucion de viajes 1996 (HBNW)

                                                                              11/16/1999
OTABLE L1(1)   TRIP LENGTH BALANCE (ITERATION 1)
0   PERCENT   PERCENT   CORRECTED
 SEPARATION DESIRED RESULTING   DESIRED   RESULTING DIFFERENCE   PCT ERR   CHI-SQUARE RELATIVE CORRECTION   RELATIVE

                                                                              332856.4
0   DESIRED   RESULTING   PERCENT DIFFENCE
0   AVERAGE INTERNAL TRIP LENGTH   15.47990   18.93042   22.29030
                 TOTAL INTERNAL TRAVEL   35822030.   43806870.   22.29030
1   Distribucion de viajes 1996 (HBNW)

                                                                              11/16/1999
O
OTABLE A1(2)   ATTRACTION VOLUME BALANCE (ITERATION 2)
0   PREVIOUS   CORRECTED
     ZONE   DESIRED   RESULTING   DIFFERENCE   PCT ERR   CHI-SQUARE CORRECTION RELATIVE   CORRECTION   RELATIVE

 R SQUARE =   .96162   199094.9
1   Distribucion de viajes 1996 (HBNW)

                                                                              11/16/1999
OTABLE L1(2)   TRIP LENGTH BALANCE (ITERATION 2)
0   PERCENT   PERCENT   CORRECTED
 SEPARATION DESIRED RESULTING   DESIRED   RESULTING DIFFERENCE   PCT ERR   CHI-SQUARE RELATIVE CORRECTION   RELATIVE

                                                                              155095.2
0   DESIRED   RESULTING   PERCENT DIFFENCE
0   AVERAGE INTERNAL TRIP LENGTH   15.47990   17.78768   14.90825
                 TOTAL INTERNAL TRAVEL   35822030.   41162470.   14.90824
1   Distribucion de viajes 1996 (HBNW)

                                                                              11/16/1999
O
OTABLE A1(3)   ATTRACTION VOLUME BALANCE (ITERATION 3)
0   PREVIOUS   CORRECTED
     ZONE   DESIRED   RESULTING   DIFFERENCE   PCT ERR   CHI-SQUARE CORRECTION RELATIVE   CORRECTION   RELATIVE

 R SQUARE =   .97432   121874.9

OTABLE L1(3)   TRIP LENGTH BALANCE (ITERATION 3)
0   PERCENT   PERCENT   CORRECTED
 SEPARATION DESIRED RESULTING   DESIRED   RESULTING DIFFERENCE PCT ERR   CHI-SQUARE RELATIVE CORRECTION RELATIVE

                                                                            103966.2
0   DESIRED   RESULTING   PERCENT DIFFENCE
0   AVERAGE INTERNAL TRIP LENGTH   15.47990   17.39246   12.35515
                  TOTAL INTERNAL TRAVEL   35822030.   40247900.   12.35515
1   Distribucion de viajes 1996 (HBNW)

                                                                        11/16/1999
0
OTABLE A1(4)   ATTRACTION VOLUME BALANCE (ITERATION 4)
0   PREVIOUS   CORRECTED
       ZONE   DESIRED   RESULTING   DIFFERENCE   PCT ERR   CHI-SQUARE CORRECTION RELATIVE   CORRECTION   RELATIVE

 R SQUARE =   .98064   88555.1
1   Distribucion de viajes 1996 (HBNW)

                                                                        11/16/1999
OTABLE L1(4)   TRIP LENGTH BALANCE (ITERATION 4)
0   PERCENT   PERCENT   CORRECTED
 SEPARATION DESIRED RESULTING   DESIRED   RESULTING DIFFERENCE PCT ERR   CHI-SQUARE RELATIVE CORRECTION RELATIVE

                                                                            73123.6
0   DESIRED   RESULTING   PERCENT DIFFENCE
0   AVERAGE INTERNAL TRIP LENGTH   15.47990   17.08367   10.36032
                  TOTAL INTERNAL TRAVEL   35822030.   39533310.   10.36032
1   Distribucion de viajes 1996 (HBNW)

                                                                        11/16/1999
0
OTABLE A1(5)   ATTRACTION VOLUME BALANCE (ITERATION 5)
0   PREVIOUS   CORRECTED

ZONE	DESIRED	RESULTING	DIFFERENCE	PCT ERR	CHI-SQUARE	PREVIOUS CORRECTION	RELATIVE	CORRECTION	CORRECTED RELATIVE
1	686.0	1009.0	323.0	47.085	152.1	.07727	.07796	.6799	.05300
2	387.0	514.0	127.0	32.817	41.7	.23078	.11862	.7529	.08931
3	102.0	126.0	24.0	23.529	5.6	.55456	.06987	.8095	.05657
4	304.0	325.0	21.0	6.908	1.5	.93470	.30378	.9354	.28415
5	342.0	365.0	23.0	6.725	1.5	.81690	.29817	.9370	.27938
6	401.0	425.0	24.0	5.985	1.4	1.08739	.46214	.9435	.43605
7	199.0	252.0	53.0	26.633	14.1	.66976	.16878	.7897	.13328
8	2142.0	2364.0	222.0	10.364	23.0	.66928	1.58217	.9061	1.43359
9	1195.0	1284.0	89.0	7.448	6.6	.74183	.95251	.9307	.88649
10	358.0	417.0	59.0	16.480	9.7	.42354	.17662	.8585	.15163
11	1002.0	1368.0	366.0	36.527	133.7	.21669	.29644	.7325	.21713
12	1052.0	1183.0	131.0	12.452	16.3	.38842	.45950	.8893	.40862
13	1430.0	1533.0	103.0	7.203	7.4	.55944	.85763	.9328	.80000
14	1233.0	1305.0	72.0	5.839	4.2	.58209	.75962	.9448	.71771
15	1758.0	1879.0	121.0	6.883	8.3	.59001	1.10863	.9356	1.03724
16	2958.0	3063.0	105.0	3.550	3.7	.66899	2.04912	.9657	1.97887
17	4184.0	4268.0	84.0	2.008	1.7	.85522	3.65009	.9803	3.57825
18	1748.0	1768.0	20.0	1.144	.2	.81147	1.43467	.9887	1.41844
19	2286.0	2336.0	50.0	2.187	1.1	.70514	1.64720	.9786	1.61194
20	1729.0	1764.0	35.0	2.024	.7	.66051	1.16514	.9802	1.14202
21	1891.0	1912.0	21.0	1.111	.2	.69011	1.31950	.9890	1.30501
22	1445.0	1418.0	-27.0	-1.869	.5	1.07815	1.52882	1.0190	1.55793
23	11906.0	11863.0	-43.0	-.361	.2	.84515	10.02601	1.0036	10.06235
24	724.0	714.0	-10.0	-1.381	.1	.96588	.68964	1.0140	.69930
25	1156.0	1138.0	-18.0	-1.557	.3	.92221	1.04948	1.0158	1.06608
26	1737.0	1716.0	-21.0	-1.209	.3	.76241	1.30829	1.0122	1.32430
27	2059.0	1981.0	-78.0	-3.788	3.0	1.11798	2.21472	1.0394	2.30192
28	3237.0	3171.0	-66.0	-2.039	1.3	.92526	2.93399	1.0208	2.99505
29	10286.0	9828.0	-458.0	-4.453	20.4	1.24346	12.22070	1.0466	12.79020
30	35695.0	33381.0	-2314.0	-6.483	150.0	1.46268	48.82563	1.0693	52.21026
31	15648.0	14822.0	-826.0	-5.279	43.6	1.26186	18.70333	1.0557	19.74563
32	32708.0	30747.0	-1961.0	-5.995	117.6	1.30086	39.99768	1.0638	42.54868
33	616.0	851.0	235.0	38.149	89.7	.19224	.16359	.7239	.11842
34	532.0	802.0	270.0	50.752	137.0	.10849	.08701	.6633	.05772
35	1062.0	1325.0	263.0	24.765	65.1	.20955	.27765	.8015	.22254
36	1474.0	1893.0	419.0	28.426	119.1	.17298	.32745	.7787	.25497
37	816.0	952.0	136.0	16.667	22.7	.31484	.29973	.8571	.25691
38	883.0	971.0	88.0	9.966	8.8	.53947	.52382	.9094	.47635
39	2752.0	2965.0	213.0	7.740	16.5	.46799	1.38760	.9282	1.28792
40	1384.0	1550.0	166.0	11.994	19.9	.43292	.67102	.8929	.59916
41	1442.0	1602.0	160.0	11.096	17.8	.47177	.75578	.9001	.68029
42	1794.0	1951.0	157.0	8.751	13.7	.51047	.99594	.9195	.91579
43	2904.0	3074.0	170.0	5.854	10.0	.49673	1.52695	.9447	1.44250
44	2577.0	2717.0	140.0	5.433	7.6	.59130	1.60656	.9485	1.52378
45	1545.0	1652.0	107.0	6.926	7.4	.68838	1.13721	.9352	1.06355
46	2944.0	2992.0	48.0	1.630	.8	.72175	2.15947	.9840	2.12482
47	814.0	833.0	19.0	2.334	.4	.65950	.54936	.9772	.53683
48	2632.0	2647.0	15.0	.570	.1	.71981	1.90534	.9943	1.89454
49	2593.0	2569.0	-24.0	-.926	.2	.76445	1.96388	1.0093	1.98222
50	14618.0	14054.0	-564.0	-3.858	21.8	1.04243	14.65032	1.0401	15.23825
51	38627.0	37157.0	-1470.0	-3.806	55.9	1.02847	38.21478	1.0396	39.72663
52	1166.0	1181.0	15.0	1.286	.2	.65168	.76964	.9873	.75986
53	12445.0	12217.0	-228.0	-1.832	4.2	.85810	10.48337	1.0187	10.67901
54	3214.0	3165.0	-49.0	-1.525	.7	.82798	2.62057	1.0155	2.66114
55	2112.0	2118.0	6.0	.284	.0	.76030	1.61031	.9972	1.60575
56	1810.0	1878.0	68.0	3.757	2.6	.56000	1.05169	.9638	1.01361
57	1047.0	1122.0	75.0	7.163	5.4	.51268	.57522	.9332	.53677
58	663.0	689.0	26.0	3.922	1.0	.61289	.42228	.9623	.40634

59	1640.0	1804.0	164.0	10.000	16.4	.39767	.71740	.9091	.65218
60	1403.0	1662.0	259.0	18.460	47.8	.28815	.47891	.8442	.40428
61	1522.0	1888.0	366.0	24.047	88.0	.32927	.62166	.8061	.50115
62	3324.0	4228.0	904.0	27.196	245.9	.23429	.99057	.7862	.77877
63	2588.0	3694.0	1106.0	42.736	472.7	.13729	.50715	.7006	.35531
64	1996.0	2316.0	320.0	16.032	51.3	.40646	.94137	.8618	.81130
65	1385.0	1650.0	265.0	19.134	50.7	.49117	.81043	.8394	.68027
66	2452.0	3026.0	574.0	23.409	134.4	.33463	1.01260	.8103	.82052
67	1169.0	1415.0	246.0	21.044	51.8	.28739	.40666	.8261	.33596
68	1952.0	2181.0	229.0	11.732	26.9	.59862	1.30560	.8950	1.16851
69	1778.0	1969.0	191.0	10.742	20.5	.38848	.76491	.9030	.69071
70	3887.0	4170.0	283.0	7.281	20.6	.46234	1.92797	.9321	1.79713
71	1863.0	1944.0	81.0	4.348	3.5	.56563	1.09959	.9583	1.05377
72	675.0	687.0	12.0	1.778	.2	.77926	.53535	.9825	.52600
73	2229.0	2230.0	1.0	.045	.0	.75261	1.67832	.9996	1.67757
74	2373.0	2478.0	105.0	4.425	4.6	.49027	1.21489	.9576	1.16341
75	3606.0	3868.0	262.0	7.266	19.0	.43223	1.67187	.9323	1.55863
76	2657.0	2874.0	217.0	8.167	17.7	.37354	1.07354	.9245	.99249
77	1375.0	1520.0	145.0	10.545	15.3	.40916	.62192	.9046	.56259
78	2790.0	3113.0	323.0	11.577	37.4	.39991	1.24492	.8962	1.11575
79	2959.0	3139.0	180.0	6.083	10.9	.46977	1.47461	.9427	1.39005
80	2385.0	2560.0	175.0	7.338	12.8	.58764	1.50436	.9316	1.40152
81	2066.0	2332.0	266.0	12.875	34.2	.49195	1.14724	.8859	1.01638
82	810.0	884.0	74.0	9.136	6.8	.76516	.67640	.9163	.61978
83	17096.0	15654.0	-1442.0	-8.435	121.6	1.93231	30.24837	1.0921	33.03476
84	49663.0	45525.0	-4138.0	-8.332	344.8	1.76375	80.29464	1.0909	87.59303
85	9913.0	8964.0	-949.0	-9.573	90.9	2.05264	18.39987	1.1059	20.34782
86	58.0	46.0	-12.0	-20.690	2.5	1.93101	.08883	1.2609	.11200
87	151.0	131.0	-20.0	-13.245	2.6	3.82604	.50121	1.1527	.57773
88	22503.0	20623.0	-1880.0	-8.354	157.1	1.71172	35.30087	1.0912	38.51891
89	14931.0	13149.0	-1782.0	-11.935	212.7	2.35665	30.98762	1.1355	35.18717
90	4859.0	4303.0	-556.0	-11.443	63.6	2.80175	12.05595	1.1292	13.61373
91	7920.0	7036.0	-884.0	-11.162	98.7	2.47534	17.41648	1.1256	19.60468
92	11541.0	9898.0	-1643.0	-14.236	233.9	3.06553	30.34265	1.1660	35.37933
93	2764.0	2373.0	-391.0	-14.146	55.3	3.36355	7.98171	1.1648	9.29686
94	10421.0	8957.0	-1464.0	-14.049	205.7	2.87518	25.75302	1.1634	29.96228
95	9985.0	8362.0	-1623.0	-16.254	263.8	3.84571	32.15783	1.1941	38.39941
96	17313.0	14031.0	-3282.0	-18.957	622.2	6.08364	85.35957	1.2339	105.32610
97	30100.0	25833.0	-4267.0	-14.176	604.9	3.31489	85.63345	1.1652	99.77807
98	13942.0	12000.0	-1942.0	-13.929	270.5	2.52385	30.28616	1.1618	35.18747
99	15559.0	13730.0	-1829.0	-11.755	215.0	2.27074	31.17730	1.1332	35.33049
100	11504.0	9431.0	-2073.0	-18.020	373.6	4.57492	43.14608	1.2198	52.62989
101	10821.0	8729.0	-2092.0	-19.333	404.4	5.13827	44.85192	1.2397	55.60117
102	11466.0	9132.0	-2334.0	-20.356	475.1	5.91784	54.04173	1.2556	67.85397
103	16311.0	13620.0	-2691.0	-16.498	444.0	3.42066	46.58934	1.1976	55.79433
104	14978.0	12285.0	-2693.0	-17.980	484.2	4.28556	52.64808	1.2192	64.18908
105	489.0	391.0	-98.0	-20.041	19.6	5.43136	2.12366	1.2506	2.65593
106	13306.0	10593.0	-2713.0	-20.389	553.2	5.74724	60.88048	1.2561	76.47274
107	7594.0	6347.0	-1247.0	-16.421	204.8	3.54653	22.50983	1.1965	26.93235
108	18677.0	15178.0	-3499.0	-18.734	655.5	5.23755	79.49547	1.2305	97.82163
109	13433.0	10797.0	-2636.0	-19.623	517.3	5.48986	59.27404	1.2441	73.74532
110	15138.0	11977.0	-3161.0	-20.881	660.1	6.52783	78.18376	1.2639	98.81822
111	17703.0	14216.0	-3487.0	-19.697	686.8	5.46038	77.62479	1.2453	96.66515
112	11021.0	9055.0	-1966.0	-17.839	350.7	4.01077	36.31749	1.2171	44.20266
113	10752.0	9012.0	-1740.0	-16.183	281.6	3.31908	29.91155	1.1931	35.68675
114	27279.0	23148.0	-4131.0	-15.144	625.6	3.24190	75.04341	1.1785	88.43568
115	16260.0	13540.0	-2720.0	-16.728	455.0	3.53526	47.86737	1.2009	57.48327
116	10235.0	8265.0	-1970.0	-19.248	379.2	5.15613	42.61541	1.2384	52.77298
117	34690.0	27691.0	-6999.0	-20.176	1412.1	5.87173	162.59410	1.2528	203.69030
118	9235.0	7341.0	-1894.0	-20.509	388.4	6.36404	46.71841	1.2580	58.77190
119	9720.0	7949.0	-1771.0	-18.220	322.7	4.85509	38.59315	1.2228	47.19152
120	6210.0	5084.0	-1126.0	-18.132	204.2	5.12045	26.03236	1.2215	31.79798
121	2605.0	2176.0	-429.0	-16.468	70.6	4.20341	9.14661	1.1972	10.94987
122	24359.0	20777.0	-3582.0	-14.705	526.7	2.92091	60.68767	1.1724	71.15035
123	3482.0	2876.0	-606.0	-17.404	105.5	4.00723	11.52480	1.2107	13.95319
124	3371.0	2855.0	-516.0	-15.307	79.0	3.31788	9.47256	1.1807	11.18458
125	2992.0	2517.0	-475.0	-15.876	75.4	3.73895	9.41092	1.1887	11.18692
126	265.0	224.0	-41.0	-15.472	6.3	4.38420	.98206	1.1830	1.16181
127	3145.0	2703.0	-442.0	-14.054	62.1	3.26434	8.82351	1.1635	10.26635
128	293.0	256.0	-37.0	-12.628	4.7	3.94887	1.01091	1.1445	1.15702
129	3446.0	3031.0	-415.0	-12.043	50.0	3.09765	9.38899	1.1369	10.67452
130	86.0	71.0	-15.0	-17.442	2.6	14.33339	1.01767	1.2113	1.23267
131	13271.0	11441.0	-1830.0	-13.789	252.3	4.66228	53.34112	1.1600	61.87309
132	171.0	143.0	-28.0	-16.374	4.6	5.84625	.83601	1.1958	.99971
133	5758.0	4809.0	-949.0	-16.481	156.4	5.19198	24.96823	1.1973	29.89542
134	539.0	467.0	-72.0	-13.358	9.6	3.07196	1.43460	1.1542	1.65579
135	680.0	578.0	-102.0	-15.000	15.3	3.56733	2.06192	1.1765	2.42579
136	13674.0	12404.0	-1270.0	-9.288	118.0	2.29506	28.46790	1.1024	31.38262
137	8636.0	7581.0	-1055.0	-12.216	128.9	2.45574	18.61700	1.1392	21.20781
138	5282.0	4479.0	-803.0	-15.203	122.1	3.03573	13.59703	1.1793	16.03472
139	9391.0	7971.0	-1420.0	-15.121	214.7	3.05924	24.38519	1.1781	28.72931
140	7776.0	6706.0	-1070.0	-13.760	147.2	2.85269	19.13013	1.1596	22.18251
141	4342.0	3718.0	-624.0	-14.371	89.7	2.85818	10.62670	1.1678	12.41020
142	3344.0	2894.0	-450.0	-13.457	60.6	2.30446	6.66910	1.1555	7.70611
143	5881.0	5164.0	-717.0	-12.192	87.4	2.25718	11.65605	1.1388	13.27445
144	12247.0	10621.0	-1626.0	-13.277	215.9	2.57327	27.33066	1.1531	31.51479
145	4356.0	3818.0	-538.0	-12.351	66.4	2.76189	10.54490	1.1409	12.03080
146	8082.0	7386.0	-696.0	-8.612	59.9	1.65814	12.24702	1.0942	13.40108
147	5987.0	5243.0	-744.0	-12.427	92.5	2.65572	13.92391	1.1419	15.89977
148	11817.0	11277.0	-540.0	-4.570	24.7	1.16570	13.14562	1.0479	13.77510
149	6404.0	5793.0	-611.0	-9.541	58.3	1.94116	11.24515	1.1055	12.43120
150	6161.0	5588.0	-573.0	-9.300	53.3	1.75044	9.78143	1.1025	10.78443
151	3135.0	2865.0	-270.0	-8.612	23.3	1.54972	4.43994	1.0942	4.85836
152	4823.0	4476.0	-347.0	-7.195	25.0	1.50925	6.75538	1.0775	7.27909
153	7091.0	6852.0	-239.0	-3.370	8.1	1.11055	7.60952	1.0349	7.87494
154	9105.0	8154.0	-951.0	-10.445	99.3	2.13734	17.42783	1.1166	19.46044

155	9984.0	8632.0	-1352.0	-13.542	183.1	2.96452	25.58978	1.1566	29.59781
156	14226.0	12998.0	-1228.0	-8.632	106.0	2.18679	28.42388	1.0945	31.10925
157	10956.0	9890.0	-1066.0	-9.730	103.7	2.13999	21.16451	1.1078	23.44573
158	5140.0	4709.0	-431.0	-8.385	36.1	2.08057	9.79741	1.0915	10.69413
159	12886.0	11863.0	-1023.0	-7.939	81.2	2.07140	24.57301	1.0862	26.69205
160	4207.0	3870.0	-337.0	-8.010	27.0	2.10161	8.13323	1.0871	8.84147
161	23986.0	21398.0	-2588.0	-10.790	279.2	3.14748	67.34973	1.1209	75.49541
162	18112.0	15972.0	-2140.0	-11.815	252.8	3.62999	57.97814	1.1340	65.74631
163	19933.0	17024.0	-2909.0	-14.594	424.5	6.61590	112.62900	1.1709	131.87470
164	187.0	193.0	6.0	3.209	.2	1.52410	.29415	.9689	.28501
165	25429.0	23404.0	-2025.0	-7.963	161.3	2.51029	58.75092	1.0865	63.83426
166	22925.0	21006.0	-1919.0	-8.371	160.6	2.43015	51.04768	1.0914	55.71114
167	153.0	165.0	12.0	7.843	.9	2.17838	.35943	.9273	.33329
168	5470.0	6151.0	681.0	12.450	84.8	.73503	4.52115	.8893	4.02059
169	4239.0	4727.0	488.0	11.512	56.2	.60912	2.87929	.8968	2.58204
170	413.0	447.0	34.0	8.232	2.8	1.29710	.57981	.9239	.53570
171	7832.0	8594.0	762.0	9.729	74.1	.76739	6.59496	.9113	6.01021
172	162.0	148.0	-14.0	-8.642	1.2	2.92523	.43293	1.0946	.47389
173	136.0	126.0	-10.0	-7.353	.7	3.84393	.48433	1.0794	.52277
174	1204.0	1166.0	-38.0	-3.156	1.2	1.60899	1.87609	1.0326	1.93723
175	300.0	285.0	-15.0	-5.000	.8	1.45677	.41518	1.0526	.43703
176	535.0	503.0	-32.0	-5.981	1.9	1.99822	1.00510	1.0636	1.06905
177	503.0	500.0	-3.0	-.596	.0	2.20930	1.10465	1.0060	1.11128
178	919.0	869.0	-50.0	-5.441	2.7	1.31829	1.14560	1.0575	1.21151
179	23018.0	22275.0	-743.0	-3.228	24.0	1.36333	30.36815	1.0334	31.38111
180	6130.0	5527.0	-603.0	-9.837	59.3	2.16866	11.98618	1.1091	13.29388
181	6202.0	5573.0	-629.0	-10.142	63.8	2.15471	12.00817	1.1129	13.36348
182	5052.0	4808.0	-244.0	-4.830	11.8	1.38048	6.63736	1.0507	6.97419
183	349.0	326.0	-23.0	-6.590	1.5	1.10153	.35910	1.0706	.38443
184	37187.0	35340.0	-1847.0	-4.967	91.7	1.01155	35.74807	1.0523	37.61640
185	3768.0	3717.0	-51.0	-1.354	.7	.88023	3.27183	1.0137	3.31672
186	28170.0	27467.0	-703.0	-2.496	17.5	.87348	23.99180	1.0256	24.60586
187	5710.0	5203.0	-507.0	-8.879	45.0	1.65530	8.61255	1.0974	9.45179
188	8576.0	7467.0	-1109.0	-12.931	143.4	2.69155	20.09778	1.1485	23.08271
189	8915.0	7778.0	-1137.0	-12.754	145.0	2.51515	19.56283	1.1462	22.42256
190	5425.0	4789.0	-636.0	-11.724	74.6	2.45391	11.75177	1.1328	13.31246
191	6871.0	6258.0	-613.0	-8.922	54.7	1.78242	11.15440	1.0980	12.24703
192	5450.0	4903.0	-547.0	-10.037	54.9	1.95217	9.57151	1.1116	10.63935
193	8973.0	8078.0	-895.0	-9.974	89.3	2.10153	16.97615	1.1108	18.85702
194	6789.0	6165.0	-624.0	-9.191	57.4	1.92414	11.86232	1.1012	13.06299
195	2676.0	2616.0	-60.0	-2.242	1.3	.95027	2.48591	1.0229	2.54292
196	329.0	314.0	-15.0	-4.559	.7	1.77653	.55783	1.0478	.58448
197	9141.0	8417.0	-724.0	-7.920	57.3	1.86031	15.65821	1.0860	17.00508
198	3002.0	3153.0	151.0	5.030	7.6	.54987	1.73375	.9521	1.65072
199	5233.0	4938.0	-295.0	-5.637	16.6	1.33278	6.58129	1.0597	6.97446
200	71251.0	71070.0	-181.0	-.254	.5	.86539	61.50292	1.0025	61.65956
201	3045.0	3124.0	79.0	2.594	2.0	.78547	2.45382	.9747	2.39177
202	2996.0	3159.0	163.0	5.441	8.9	.60822	1.92137	.9484	1.82223
203	4232.0	4618.0	386.0	9.121	35.2	.35719	1.64950	.9164	1.51163
204	2601.0	2846.0	245.0	9.419	23.1	.58689	1.67029	.9139	1.52651
205	1553.0	1653.0	100.0	6.439	6.4	.58221	.96239	.9395	.90417
206	1967.0	2065.0	98.0	4.982	4.9	.79638	1.64453	.9525	1.56648
207	2490.0	2673.0	183.0	7.349	13.4	.62196	1.66249	.9315	1.54868
208	1478.0	1548.0	70.0	4.736	3.3	.77983	1.20717	.9548	1.15258
209	1401.0	1530.0	129.0	9.208	11.9	.48923	.74853	.9157	.68542
210	2921.0	3196.0	275.0	9.415	25.9	.38476	1.22968	.9140	1.12387
211	4457.0	4871.0	414.0	9.289	38.5	.43467	2.11726	.9150	1.93731
212	1505.0	1669.0	164.0	10.897	17.9	.54696	.91288	.9017	.82318
213	5798.0	6436.0	638.0	11.004	70.2	.41135	2.64747	.9009	2.38503
214	2252.0	2458.0	206.0	9.147	18.8	.68015	1.67180	.9162	1.53169
215	2125.0	2282.0	157.0	7.388	11.6	.57584	1.31406	.9312	1.22365
216	2007.0	2244.0	237.0	11.809	28.0	.39477	.88586	.8944	.79230
217	2583.0	2912.0	329.0	12.737	41.9	.41330	1.20353	.8870	1.06755
218	4279.0	5024.0	745.0	17.411	129.7	.33024	1.65915	.8517	1.41312
219	14518.0	16423.0	1905.0	13.122	250.0	.39226	6.44205	.8840	5.69480
220	3174.0	3541.0	367.0	11.563	42.4	.50207	1.77782	.8964	1.59356
221	5452.0	6427.0	975.0	17.883	174.4	.33266	2.13799	.8483	1.81365
222	33167.0	37378.0	4211.0	12.696	534.6	.53386	19.95472	.8873	17.70662
223	1766.0	1916.0	150.0	8.494	12.7	.73093	1.40046	.9217	1.29082
224	1403.0	1477.0	74.0	5.274	3.9	.73104	1.07974	.9499	1.02564
225	53867.0	53987.0	120.0	.223	.3	1.18563	64.00852	.9978	63.86625
226	10222.0	10340.0	118.0	1.154	1.4	.87204	9.01690	.9886	8.91400
227	1063.0	1073.0	10.0	.941	.1	.90673	.97292	.9907	.96386
228	2692.0	2590.0	-102.0	-3.789	3.9	1.19827	3.10352	1.0394	3.22574
229	3374.0	3443.0	69.0	2.045	1.4	.77272	2.66046	.9800	2.60714
230	2040.0	1976.0	-64.0	-3.137	2.0	1.28755	2.54420	1.0324	2.62661
231	7879.0	7507.0	-372.0	-4.721	17.6	1.45158	10.89701	1.0496	11.43700
232	2061.0	2042.0	-19.0	-.922	.2	1.18969	2.42935	1.0093	2.45195
233	30788.0	29540.0	-1248.0	-4.054	50.6	1.53570	45.36453	1.0422	47.28108
234	4221.0	4190.0	-31.0	-.734	.2	1.09712	4.59692	1.0074	4.63093
235	36488.0	38088.0	1600.0	4.385	70.2	.92092	35.07600	.9580	33.60253
236	3699.0	3663.0	-36.0	-.973	.4	1.21632	4.45538	1.0098	4.49917
237	2136.0	2105.0	-31.0	-1.451	.4	1.42624	3.00223	1.0147	3.04645
238	27313.0	30398.0	3085.0	11.295	348.5	.59803	18.17905	.8985	16.33412
239	9770.0	10480.0	710.0	7.267	51.6	.78243	8.19991	.9323	7.64438
240	6248.0	6871.0	623.0	9.971	62.1	.52035	3.57535	.9093	3.25117
241	1010.0	1172.0	162.0	16.040	26.0	.38363	.44962	.8618	.38747
242	10341.0	11206.0	865.0	8.365	72.4	.68953	7.72693	.9228	7.13048
243	7526.0	8320.0	794.0	10.550	83.8	.57749	4.80468	.9046	4.34616
244	121.0	120.0	-1.0	-.826	.0	1.22970	.14756	1.0083	.14879
245	4495.0	5009.0	514.0	11.435	58.8	.71627	3.58780	.8974	3.21964
246	277.0	296.0	19.0	6.859	1.3	1.02806	.30431	.9358	.28477
247	15.0	12.0	-3.0	-20.000	.6	1.65571	.01987	1.2500	.02484
248	594.0	632.0	38.0	6.397	2.4	1.02645	.64872	.9399	.60971
249	1555.0	1843.0	288.0	18.521	53.3	.30107	.55486	.8437	.46816
250	3183.0	3805.0	622.0	19.541	121.5	.26678	1.01511	.8365	.84917

251	1900.0	2196.0	296.0	15.579	46.1	.37461	.82264	.8652	.71175
252	3562.0	4131.0	569.0	15.974	90.9	.35195	1.45390	.8623	1.25365
253	1170.0	1358.0	188.0	16.068	30.2	.37719	.51222	.8616	.44131
254	2983.0	3433.0	450.0	15.085	67.9	.36386	1.24914	.8689	1.08540
255	3264.0	3718.0	454.0	13.909	63.1	.43598	1.62099	.8779	1.42305
256	5853.0	6565.0	712.0	12.165	86.6	.59542	3.90893	.8915	3.48499
257	7214.0	8099.0	885.0	12.268	108.6	.57969	4.69492	.8907	4.18189
258	1601.0	1939.0	338.0	21.112	71.4	.28228	.54733	.8257	.45192
259	7804.0	9470.0	1666.0	21.348	355.7	.20576	1.94853	.8241	1.60574
260	1345.0	1670.0	325.0	24.164	78.5	.18297	.30555	.8054	.24609
261	2960.0	3732.0	772.0	26.081	201.3	.20216	.75446	.7931	.59839
262	1135.0	1445.0	310.0	27.313	84.7	.17345	.25063	.7855	.19686
263	1681.0	2343.0	662.0	39.381	260.7	.13238	.31016	.7175	.22253
264	2334.0	2952.0	618.0	26.478	163.6	.15996	.47221	.7907	.37336
265	1306.0	1637.0	331.0	25.345	83.9	.15919	.26060	.7978	.20790
266	2597.0	3332.0	735.0	28.302	208.0	.20537	.68428	.7794	.53333
267	1293.0	1659.0	366.0	28.306	103.6	.17993	.29850	.7794	.23265
268	923.0	1299.0	376.0	40.737	153.2	.16687	.21677	.7105	.15403
269	750.0	1017.0	267.0	35.600	95.1	.13319	.13546	.7375	.09989
270	243.0	328.0	85.0	34.979	29.7	.16092	.05278	.7409	.03910
271	463.0	600.0	137.0	29.590	40.5	.18705	.11223	.7717	.08660
272	262.0	367.0	105.0	40.076	42.1	.22803	.08369	.7139	.05974
273	440.0	547.0	107.0	24.318	26.0	.24462	.13381	.8044	.10763
274	2208.0	2744.0	536.0	24.275	130.1	.17470	.47937	.8047	.38573
275	10293.0	12320.0	2027.0	19.693	399.2	.24847	3.06110	.8355	2.55746
276	1146.0	1396.0	250.0	21.815	54.5	.20830	.29079	.8209	.23871
277	2043.0	2560.0	517.0	25.306	130.8	.19317	.49450	.7980	.39464
278	1502.0	1874.0	372.0	24.767	92.1	.19928	.37345	.8015	.29932
279	5048.0	5944.0	896.0	17.750	159.0	.29674	1.76384	.8493	1.49795
280	2364.0	2797.0	433.0	18.316	79.3	.29802	.83355	.8452	.70451
281	981.0	1158.0	177.0	18.043	31.9	.38191	.44225	.8472	.37465
282	5627.0	6676.0	1049.0	18.642	195.6	.29001	1.93611	.8429	1.63189
283	4043.0	4754.0	711.0	17.586	125.0	.33528	1.59392	.8504	1.35553
284	7655.0	9508.0	1853.0	24.206	448.5	.18966	1.80330	.8051	1.45186
285	5981.0	7422.0	1441.0	24.093	347.2	.19853	1.47347	.8058	1.18739
286	2539.0	3284.0	745.0	29.342	218.6	.15217	.49972	.7731	.38635
287	3990.0	5000.0	1010.0	25.313	255.7	.19379	.96894	.7980	.77321
288	5935.0	7554.0	1619.0	27.279	441.6	.17423	1.31612	.7857	1.03404
289	3669.0	4534.0	865.0	23.576	203.9	.21782	.98758	.8092	.79917
290	4910.0	6034.0	1124.0	22.892	257.3	.20769	1.25320	.8137	1.01976
291	1734.0	2102.0	368.0	21.223	78.1	.25408	.53408	.8249	.44058
292	3498.0	4141.0	643.0	18.382	118.2	.24871	1.02992	.8447	.87000
293	4298.0	5280.0	982.0	22.848	224.4	.22509	1.18850	.8140	.96745
294	3000.0	3636.0	636.0	21.200	134.8	.21977	.79910	.8251	.65932
295	3121.0	4081.0	960.0	30.759	295.3	.15506	.63281	.7648	.48395
296	3050.0	4107.0	1057.0	34.656	366.3	.10125	.41582	.7426	.30880
297	8843.0	11817.0	2974.0	33.631	1000.2	.10280	1.21478	.7483	.90905
298	5909.0	7478.0	1569.0	26.553	416.6	.17207	1.28672	.7902	1.01675
299	3806.0	5001.0	1195.0	31.398	375.2	.18847	.94255	.7610	.71733
300	11201.0	14402.0	3201.0	28.578	914.8	.24067	3.46610	.7777	2.69572
301	22851.0	29923.0	7072.0	30.948	2188.7	.14190	4.24606	.7637	3.24255
302	580.0	736.0	156.0	26.897	42.0	.40607	.29887	.7880	.23552
303	194.0	264.0	70.0	36.082	25.3	.50931	.13446	.7348	.09881
304	207.0	317.0	110.0	53.140	58.5	.20064	.06360	.6530	.04153
305	1083.0	1437.0	354.0	32.687	115.7	.39841	.57252	.7537	.43148
306	468.0	707.0	239.0	51.068	122.1	.22517	.15919	.6620	.10538
307	165.0	250.0	85.0	51.515	43.8	.32213	.08053	.6600	.05315
308	141.0	198.0	57.0	40.426	23.0	.69748	.13810	.7121	.09835
309	353.0	448.0	95.0	26.912	25.6	.45499	.20383	.7879	.16061
310	10060.0	12268.0	2208.0	21.948	484.6	.49564	6.08055	.8200	4.98617
311	345.0	518.0	173.0	50.145	86.8	.17879	.09261	.6660	.06168
312	257.0	407.0	150.0	58.366	87.5	.28057	.11419	.6314	.07211
313	5.0	7.0	2.0	40.000	.8	1.03340	.00723	.7143	.00517
314	177.0	315.0	138.0	77.966	107.6	.10296	.03243	.5619	.01822
315	19.0	34.0	15.0	78.947	11.8	.11113	.00378	.5588	.00211
316	53.0	99.0	46.0	86.792	39.9	.07154	.00708	.5354	.00379
317	184.0	361.0	177.0	96.196	170.3	.05021	.01813	.5097	.00924
318	103.0	212.0	109.0	105.825	115.3	.02253	.00478	.4858	.00232
319	106.0	222.0	116.0	109.434	126.9	.02107	.00468	.4775	.00223
320	138.0	167.0	29.0	21.014	6.1	.60450	.10095	.8263	.08342
321	26.0	34.0	8.0	30.769	2.5	1.41419	.04808	.7647	.03677
322	448.0	509.0	61.0	13.616	8.3	.86024	.43786	.8802	.38539
323	19798.0	22192.0	2394.0	12.092	289.5	1.83275	40.67249	.8921	36.28487
324	424.0	513.0	89.0	20.991	18.7	.86026	.44131	.8265	.36475
325	92.0	103.0	11.0	11.957	1.3	.72204	.07437	.8932	.06643
326	480.0	566.0	86.0	17.917	15.4	1.03516	.58590	.8481	.49688
327	38273.0	43955.0	5682.0	14.846	843.5	1.37953	60.63739	.8707	52.79888
328	476.0	669.0	193.0	40.546	78.3	.19698	.13178	.7115	.09376
329	545.0	692.0	147.0	26.972	39.6	.30601	.21176	.7876	.16677
330	4612.0	5827.0	1215.0	26.344	320.1	.52720	3.07197	.7915	2.43143
331	6217.0	7759.0	1542.0	24.803	382.5	.56878	4.41320	.8013	3.53613
332	862.0	1131.0	269.0	31.206	83.9	.23449	.26521	.7622	.20213
333	37.0	39.0	2.0	5.405	.1	4.04102	.15760	.9487	.14952
334	2.0	4.0	2.0	100.000	2.0	2.66667	.01067	.5000	.00533
335	305.0	392.0	87.0	28.525	24.8	.49275	.19316	.7781	.15029
336	1527.0	2055.0	528.0	34.578	182.6	.14076	.28927	.7431	.21495
337	2093.0	2826.0	733.0	35.021	256.7	.11033	.31179	.7406	.23092
338	18124.0	25184.0	7060.0	38.954	2750.1	.09580	2.41255	.7197	1.73623
339	1776.0	2460.0	684.0	38.514	263.4	.09853	.24237	.7220	.17498
340	5913.0	8584.0	2671.0	45.172	1206.5	.05695	.48885	.6888	.33674
341	1361.0	1986.0	625.0	45.922	287.0	.04733	.09399	.6853	.06441
342	1847.0	2653.0	806.0	43.638	351.7	.06137	.16282	.6962	.11335
343	1923.0	2741.0	818.0	42.538	348.0	.06993	.19168	.7016	.13448
344	2135.0	3210.0	1075.0	50.351	541.3	.03552	.11401	.6651	.07583
345	1717.0	2511.0	794.0	46.243	367.2	.07713	.19366	.6838	.13243
346	869.0	1245.0	376.0	43.268	162.7	.06722	.08369	.6980	.05842

347	852.0	1207.0	355.0	41.667	147.9	.07569	.09136	.7059	.06449
348	690.0	1017.0	327.0	47.391	155.0	.04173	.04244	.6785	.02879
349	689.0	1013.0	324.0	47.025	152.4	.04215	.04270	.6802	.02904
350	723.0	1061.0	338.0	46.750	158.0	.04734	.05023	.6814	.03423
351	3230.0	5044.0	1814.0	56.161	1018.8	.03905	.19698	.6404	.12614
352	10.0	11.0	1.0	10.000	.1	.08180	.00090	.9091	.00082
353	2848.0	4369.0	1521.0	53.406	812.3	.04741	.20712	.6519	.13501
354	4854.0	7468.0	2614.0	53.852	1407.7	.05300	.39578	.6500	.25725
355	1130.0	1683.0	553.0	48.938	270.6	.07498	.12619	.6714	.08473
356	865.0	1250.0	385.0	44.509	171.4	.10138	.12673	.6920	.08769
357	876.0	1280.0	404.0	46.119	186.3	.06077	.07778	.6844	.05323
358	1532.0	2222.0	690.0	45.039	310.8	.10071	.22379	.6895	.15429
359	190.0	284.0	94.0	49.474	46.5	.07517	.02135	.6690	.01428
360	213.0	310.0	97.0	45.540	44.2	.08009	.02483	.6871	.01706
361	306.0	429.0	123.0	40.196	49.4	.11150	.04784	.7133	.03412
362	399.0	581.0	182.0	45.614	83.0	.04493	.02610	.6867	.01793
363	429.0	632.0	203.0	47.319	96.1	.04303	.02719	.6788	.01846
364	406.0	600.0	194.0	47.783	92.7	.04805	.02883	.6767	.01951
365	689.0	1018.0	329.0	47.750	157.1	.04759	.04845	.6768	.03279
366	829.0	1217.0	388.0	46.803	181.6	.04711	.05733	.6812	.03905
367	662.0	987.0	325.0	49.094	159.6	.04722	.04661	.6707	.03126
368	605.0	876.0	271.0	44.793	121.4	.05703	.04996	.6906	.03450
369	4067.0	5537.0	1470.0	36.145	531.3	.16015	.88675	.7345	.65133
370	1926.0	2745.0	819.0	42.523	348.3	.12021	.32999	.7016	.23153
371	3720.0	5920.0	2200.0	59.140	1301.1	.02164	.12814	.6284	.08052
372	1660.0	2639.0	979.0	58.976	577.4	.02654	.07003	.6290	.04405
373	1368.0	2142.0	774.0	56.579	437.9	.03340	.07154	.6387	.04569
374	591.0	879.0	288.0	48.731	140.3	.03737	.03285	.6724	.02209
375	591.0	889.0	298.0	50.423	150.3	.04482	.03985	.6648	.02649
376	560.0	826.0	266.0	47.500	126.3	.04653	.03843	.6780	.02605
377	911.0	1378.0	467.0	51.262	239.4	.04077	.05618	.6611	.03714
378	2328.0	3638.0	1310.0	56.271	737.2	.02943	.10706	.6399	.06851
379	464.0	706.0	242.0	52.155	126.2	.03830	.02704	.6572	.01777
380	3858.0	5661.0	1803.0	46.734	842.6	.06176	.34963	.6815	.23828
381	2581.0	3686.0	1105.0	42.813	473.1	.09769	.36010	.7002	.25215
382	360.0	536.0	176.0	48.889	86.0	.09012	.04830	.6716	.03244
383	3993.0	5935.0	1942.0	48.635	944.5	.05143	.30521	.6728	.20534
384	2030.0	3035.0	1005.0	49.507	497.5	.05274	.16008	.6689	.10707
385	2480.0	4068.0	1588.0	64.032	1016.8	.01909	.07765	.6096	.04734
386	52.0	83.0	31.0	59.615	18.5	.05308	.00441	.6265	.00276
387	358.0	597.0	239.0	66.760	159.6	.03780	.02256	.5997	.01353
388	273.0	455.0	182.0	66.667	121.3	.03815	.01736	.6000	.01041
389	811.0	1373.0	562.0	69.297	389.5	.02897	.03977	.5907	.02349
390	2381.0	2314.0	-67.0	-2.814	1.9	1.24765	2.88706	1.0290	2.97065
391	3929.0	3784.0	-145.0	-3.691	5.4	1.23790	4.68422	1.0383	4.86372
392	2719.0	2699.0	-20.0	-.736	.1	.91104	2.45889	1.0074	2.47711
393	3353.0	3419.0	66.0	1.968	1.3	.77936	2.66464	.9807	2.61320
394	3864.0	4032.0	168.0	4.348	7.3	.52788	2.12839	.9583	2.03971
395	3020.0	3102.0	82.0	2.715	2.2	.74082	2.29803	.9736	2.23728
396	193.0	272.0	79.0	40.933	32.3	.52301	.14226	.7096	.10094
397	1645.0	2308.0	663.0	40.304	267.2	.08953	.20664	.7127	.14728
398	373.0	685.0	312.0	83.646	261.0	.05104	.03496	.5445	.01904
399	860.0	794.0	-66.0	-7.674	5.1	1.55041	1.23103	1.0831	1.33335
400	84.0	94.0	10.0	11.905	1.2	3.14706	.29582	.8936	.26435
401	5738.0	4753.0	-985.0	-17.166	169.1	4.74389	22.54770	1.2072	27.22042
402	28701.0	24944.0	-3757.0	-13.090	491.8	4.11126	102.55130	1.1506	117.99730
403	747.0	1125.0	378.0	50.602	191.3	.03653	.04109	.6640	.02729
404	592.0	884.0	292.0	49.324	144.0	.04049	.03579	.6697	.02397
405	7008.0	8738.0	1730.0	24.686	427.1	.57847	5.05471	.8020	4.05395
406	407.0	512.0	105.0	25.799	27.1	.83452	.42727	.7949	.33965
407	194.0	269.0	75.0	38.660	29.0	.55957	.15053	.7212	.10856
408	544.0	710.0	166.0	30.515	50.7	.82840	.58817	.7662	.45065
409	975.0	840.0	-135.0	-13.846	18.7	3.48401	2.92657	1.1607	3.39691
410	524.0	430.0	-94.0	-17.939	16.9	3.07693	1.32308	1.2186	1.61231
411	7132.0	6217.0	-915.0	-12.830	117.4	3.05843	19.01423	1.1472	21.81269
412	10217.0	9340.0	-877.0	-8.584	75.3	1.73344	16.19034	1.0939	17.71056
413	9213.0	8888.0	-325.0	-3.528	11.5	1.19399	10.61216	1.0366	11.00020
414	7585.0	7392.0	-193.0	-2.544	4.9	1.29920	9.60365	1.0261	9.85439
415	275.0	317.0	42.0	15.273	6.4	1.20522	.38206	.8675	.33144
416	515.0	608.0	93.0	18.058	16.8	.84542	.51401	.8470	.43539
417	2778.0	3912.0	1134.0	40.821	462.9	.10447	.40870	.7101	.29023
418	938.0	1259.0	321.0	34.222	109.9	.17431	.21945	.7450	.16350
419	1899.0	2525.0	626.0	32.965	206.4	.16667	.42084	.7521	.31650
420	1124.0	1513.0	389.0	34.609	134.6	.12234	.18510	.7429	.13751
421	1901.0	2520.0	619.0	32.562	201.6	.10664	.26875	.7544	.20273
422	3458.0	3760.0	302.0	8.733	26.4	.55407	2.08330	.9197	1.91597
423	2982.0	3213.0	231.0	7.746	17.9	.59829	1.92231	.9281	1.78411
424	97.0	120.0	23.0	23.711	5.5	.20266	.02432	.8083	.01966
425	200.0	242.0	42.0	21.000	8.8	.19069	.04615	.8264	.03814

```
                                                      -----------
R SQUARE =    .98494                                  66312.8
```

11/16/1999

OTABLE A2(5)   ATTRACTION VOLUME BALANCE SUMMARY (ITERATION 5)

CROSS CLASSIFICATION OF ATTRACTION ZONES BY DESIRED ATTRACTION VOLUME
AND PERCENT ERROR OF RESULTING ATTRACTION VOLUME

PERCENT ERROR

DESIRED ATTRACTION RANGES	-75 TO -100	-50 TO -100	-25 TO -75	-10 TO -50	-5 TO -25	-1 TO -10	0 TO -5	0 TO -1	0	0 TO 1	1 TO 5	5 TO 10	10 TO 25	25 TO 50	50 TO 75	75 TO 100	100 AND ABOVE	TOTAL
0.0																		0
.1 - .9																		0
1.0 - 9.9															1		1	2
10.0 - 24.9					1								1		1			3
25.0 - 49.9												1		1				2
50.0 - 99.9					2								3		1	1		7
100.0 - 199.9					2	2		1			1	1	2	6	1	2	2	20
200.0 - 299.9					2						1	2	3	3				11
300.0 - 399.9						1		2				2	1	6	2	1		15
400.0 - 499.9					1							2	4	5	2			14
500.0 - 599.9					2	1		1				1	1	6	2			14
600.0 - 699.9					1						2			7				10
700.0 - 799.9							1							2	1			4
800.0 - 899.9						1					1	2	1	6	1			12
900.0 - 999.9					1	1							1	2	1			6
1000.0 - 1999.9							4			1	8	11	23	20	2			69
2000.0 - 2999.9						3	6	3		3	4	13	9	10	4			55
3000.0 - 3999.9					5	1	4	1			5	4	7	7	2			36
4000.0 - 4999.9					3	2		1			1	2	6	2	1			18
5000.0 - 5999.9					7	3	1						7	3				21
6000.0 - 6999.9					2	5						1	1					9
7000.0 - 7999.9					4		3						1	5				13
8000.0 - 8999.9					3	2									1			6
9000.0 - 9999.9					36	15	10	2			1	2	2	7	3			78
10000.0 AND ABOVE					36	15	10	2		1	2	2	7	3				78
TOTAL	0	0	0	0	75	34	31	9	0	5	24	44	81	91	23	5	3	425

11/16/1999

OTABLE L1(5)   TRIP LENGTH BALANCE (ITERATION 5)

SEPARATION	PERCENT DESIRED	PERCENT RESULTING	DESIRED	RESULTING	DIFFERENCE	PCT ERR	CHI-SQUARE	RELATIVE	CORRECTION	CORRECTED RELATIVE
1	1.9000	1.6492	43967.9	38163.3	-5804.6	-13.202	766.3	97.1595	1.1521	111.9373_
2	2.0500	1.7855	47439.1	41318.6	-6120.5	-12.902	789.6	133.7244	1.1481	153.5328_
3	2.2600	1.9719	52298.7	45632.2	-6666.5	-12.747	849.8	119.8050	1.1461	137.3075_
4	2.4800	2.1678	57389.7	50165.1	-7224.6	-12.589	909.5	111.2779	1.1440	127.3037_
5	2.6700	2.3401	61786.5	54151.9	-7634.6	-12.356	943.4	100.0000	1.1410	114.0984_
6	2.9000	2.5506	67108.9	59022.7	-8086.2	-12.049	974.3	88.2334	1.1370	100.3215_
7	3.3100	2.9213	76596.7	67602.3	-8994.4	-11.743	1056.2	75.0026	1.1330	84.9816_
8	3.6700	3.2518	84927.5	75249.1	-9678.4	-11.396	1103.0	62.8251	1.1286	70.9055_
9	4.1000	3.6551	94878.1	84582.2	-10295.9	-10.852	1117.3	53.6418	1.1217	60.1714_
10	4.7000	4.2220	108762.7	97700.2	-11062.5	-10.171	1125.2	42.8853	1.1132	47.7411_
11	5.3000	4.8091	122647.3	111286.9	-11360.4	-9.263	1052.3	32.3485	1.1021	35.6507_
12	5.6500	5.1864	130746.6	120019.2	-10727.5	-8.205	880.2	22.8749	1.0894	24.9195_
13	5.8300	5.4186	134912.0	125391.4	-9520.7	-7.057	671.9	15.3608	1.0759	16.5271_
14	5.8100	5.4814	134449.2	126844.7	-7604.5	-5.656	430.1	10.2725	1.0600	10.8883_
15	5.6500	5.4216	130746.6	125461.7	-5284.9	-4.042	213.6	6.8295	1.0421	7.1172_
16	5.2000	5.0777	120333.2	117503.0	-2830.2	-2.352	66.6	4.3770	1.0241	4.4824_
17	4.5100	4.4816	104365.9	103709.3	-656.6	-.629	4.1	2.8428	1.0063	2.8608_
18	3.9800	4.0202	92101.2	93031.4	930.3	1.010	9.4	2.0031	.9900	1.9831_
19	3.4000	3.4998	78679.4	80989.9	2310.5	2.937	67.9	1.4009	.9715	1.3610_
20	2.9200	3.0640	67571.7	70904.7	3333.0	4.933	164.4	1.0029	.9530	.9558_
21	2.4700	2.6437	57158.3	61178.4	4020.1	7.033	282.7	.7281	.9343	.6803_
22	2.1000	2.2868	48596.1	52918.3	4322.2	8.894	384.4	.5483	.9183	.5035_
23	1.9000	2.1071	43967.9	48760.9	4793.0	10.901	522.5	.4546	.9017	.4099_
24	1.6200	1.8326	37488.4	42407.4	4919.0	13.121	645.4	.3554	.8840	.3142_
25	1.4800	1.7088	34248.7	39542.8	5294.1	15.458	818.4	.2932	.8661	.2540_
26	1.2300	1.4487	28463.4	33524.5	5061.1	17.781	899.9	.2209	.8490	.1876_
27	1.0800	1.3022	24992.3	30134.6	5142.4	20.576	1058.1	.1685	.8294	.1397_
28	.9500	1.1647	21983.9	26953.1	4969.2	22.604	1123.2	.1375	.8156	.1121_
29	.8600	1.0752	19901.3	24881.4	4980.1	25.024	1246.2	.1140	.7998	.0912_
30	.7800	.9910	18050.0	22933.4	4883.4	27.055	1321.2	.0991	.7871	.0780_
31	.7500	.9721	17355.8	22495.6	5139.8	29.614	1522.1	.0889	.7715	.0686_
32	.6400	.8507	14810.2	19685.8	4875.6	32.920	1605.0	.0707	.7523	.0532_
33	.5200	.7096	12033.3	16419.7	4386.4	36.452	1598.9	.0517	.7329	.0379_
34	.5000	.6954	11570.5	16091.9	4521.4	39.077	1766.8	.0470	.7190	.0338_
35	.4700	.6606	10876.3	15287.8	4411.6	40.561	1789.4	.0428	.7114	.0305_
36	.4200	.5937	9719.2	13739.5	4020.3	41.364	1663.0	.0386	.7074	.0273_
37	.3900	.5562	9025.0	12870.4	3845.4	42.608	1638.5	.0354	.7012	.0249_
38	.3600	.5194	8330.8	12018.5	3687.7	44.267	1632.4	.0327	.6932	.0227_
39	.3300	.4812	7636.5	11135.8	3499.3	45.823	1603.5	.0296	.6858	.0203_
40	.3100	.4561	7173.7	10554.6	3380.9	47.128	1593.3	.0275	.6797	.0187_
41	.2900	.4312	6710.9	9977.7	3266.8	48.679	1590.2	.0250	.6726	.0168_
42	.2700	.4066	6248.1	9409.6	3161.6	50.601	1599.8	.0229	.6640	.0152_
43	.2500	.3806	5785.3	8808.1	3022.8	52.250	1579.4	.0213	.6568	.0140_
44	.2300	.3530	5322.4	8168.1	2845.7	53.465	1521.4	.0196	.6516	.0128_
45	.2100	.3245	4859.6	7509.4	2649.8	54.526	1444.8	.0180	.6471	.0116_
46	.1900	.2957	4396.8	6841.8	2445.0	55.609	1359.7	.0165	.6426	.0106_
47	.1700	.2665	3934.0	6167.6	2233.6	56.778	1268.2	.0147	.6378	.0094_
48	.1500	.2367	3471.2	5477.7	2006.6	57.807	1159.9	.0130	.6337	.0082_

49	.1300	.2069	3008.3	4788.8	1780.4	59.184	1053.7	.0115	.6282	.0072_
50	.1100	.1763	2545.5	4080.3	1534.8	60.295	925.4	.0100	.6239	.0062_
51	.1000	.1605	2314.1	3713.3	1399.2	60.465	846.0	.0093	.6232	.0058_
52	.0900	.1449	2082.7	3353.6	1270.9	61.024	775.6	.0085	.6210	.0053_
53	.0800	.1292	1851.3	2990.6	1139.3	61.541	701.1	.0077	.6190	.0048_
54	.0700	.1129	1619.9	2613.2	993.4	61.323	609.2	.0071	.6199	.0044_
55	.0600	.0970	1388.5	2244.8	856.3	61.673	528.1	.0064	.6185	.0040_
56	.0500	.0811	1157.1	1876.1	719.0	62.144	446.8	.0057	.6167	.0035_
57	.0400	.0654	925.6	1513.3	587.7	63.491	373.1	.0048	.6117	.0029_
58	.0300	.0496	694.2	1147.7	453.5	65.321	296.2	.0037	.6049	.0022_
59	.0200	.0332	462.8	769.4	306.5	66.233	203.0	.0027	.6016	.0016_
60	.0100	.0166	231.4	384.4	153.0	66.118	101.2	.0015	.6020	.0009_
61	.0000	.0000	.0	.0	.0	40.537	.0	.0000	.7116	.0000_
62	.0000	.0000	.0	.0	.0	5.034	.0	.0000	.9521	.0000_
63	.0000	.0000	.0	.0	.0	-17.246	.0	.0000	1.0000	.0000_
64	.0000	.0000	.0	.0	.0	-26.012	.0	.0000	1.0000	.0000_
65	.0000	.0000	.0	.0	.0	-36.646	.0	.0000	1.0000	.0000_
66	.0000	.0000	.0	.0	.0	-42.748	.0	.0000	1.0000	.0000_
67	.0000	.0000	.0	.0	.0	-48.036	.0	.0000	1.0000	.0000_
68	.0000	.0000	.0	.0	.0	-43.252	.0	.0000	1.0000	.0000_
69	.0000	.0000	.0	.0	.0	-35.591	.0	.0000	1.0000	.0000_
70	.0000	.0000	.0	.0	.0	-22.774	.0	.0000	1.0000	.0000_
71	.0000	.0000	.0	.0	.0	-11.279	.0	.0000	1.0000	.0000_
72	.0000	.0000	.0	.0	.0	-33.081	.0	.0000	1.0000	.0000_
73	.0000	.0000	.0	.0	.0	-52.051	.0	.0000	1.0000	.0000_
74	.0000	.0000	.0	.0	.0	-60.462	.0	.0000	1.0000	.0000_
75	.0000	.0000	.0	.0	.0	-65.922	.0	.0000	1.0000	.0000_
76	.0000	.0000	.0	.0	.0	-68.293	.0	.0000	1.0000	.0000_
77	.0000	.0000	.0	.0	.0	-68.966	.0	.0000	1.0000	.0000_
78	.0000	.0000	.0	.0	.0	-72.379	.0	.0000	1.0000	.0000_
79	.0000	.0000	.0	.0	.0	-81.879	.0	.0000	1.0000	.0000_
80	.0000	.0000	.0	.0	.0	-89.830	.0	.0000	1.0000	.0000_
81	.0000	.0000	.0	.0	.0	-96.815	.0	.0000	1.0000	.0000_
82	.0000	.0000	.0	.0	.0	-99.524	.0	.0000	1.0000	.0000_
83	.0000	.0000	.0	.0	.0	-99.976	.0	.0000	1.0000	.0000_
84	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
85	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
86	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
87	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
88	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
89	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
90	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
91	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
92	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
93	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
94	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
95	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
96	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
97	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
98	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
99	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
100	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
101	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
102	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
103	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
104	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
105	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
106	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
107	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
108	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
109	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
110	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
111	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
112	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
113	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
114	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
115	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
116	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
117	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
118	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
119	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
120	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
121	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
122	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
123	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
124	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
125	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
126	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
127	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
128	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
129	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
130	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
131	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
132	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
133	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
134	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
135	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
136	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
137	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
138	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
139	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
140	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
141	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
142	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
143	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_
144	.0000	.0000	.0	.0	.0	-100.000	.0	.0000	1.0000	.0000_

```
145    .0000    .0000    .0    .0    .0  -100.000        .0    .0000  1.0000    .0000_
146    .0000    .0000    .0    .0    .0  -100.000        .0    .0000  1.0000    .0000_
147    .0000    .0000    .0    .0    .0  -100.000        .0    .0000  1.0000    .0000_
148    .0000    .0000    .0    .0    .0  -100.000        .0    .0000  1.0000    .0000_
149    .0000    .0000    .0    .0    .0  -100.000        .0    .0000  1.0000    .0000_
150    .0000    .0000    .0    .0    .0  -100.000        .0    .0000  1.0000    .0000_
151    .0000    .0000    .0    .0    .0  -100.000        .0    .0000  1.0000    .0000_
152    .0000    .0000    .0    .0    .0  -100.000        .0    .0000  1.0000    .0000_
153    .0000    .0000    .0    .0    .0  -100.000        .0    .0000  1.0000    .0000_
154    .0000    .0000    .0    .0    .0  -100.000        .0    .0000  1.0000    .0000_
155    .0000    .0000    .0    .0    .0  -100.000        .0    .0001  1.0000    .0001_
156    .0000    .0000    .0    .0    .0  -100.000        .0    .0001  1.0000    .0001_
157    .0000    .0000    .0    .0    .0  -100.000        .0    .0001  1.0000    .0001_
158    .0000    .0000    .0    .0    .0  -100.000        .0    .0001  1.0000    .0001_
159    .0000    .0000    .0    .0    .0  -100.000        .0    .0001  1.0000    .0001_
160    .0000    .0000    .0    .0    .0  -100.000        .0    .0001  1.0000    .0001_
161    .0000    .0000    .0    .0    .0  -100.000        .0    .0001  1.0000    .0001_
162    .0000    .0000    .0    .0    .0  -100.000        .0    .0001  1.0000    .0001_
163    .0000    .0000    .0    .0    .0  -100.000        .0    .0001  1.0000    .0001_
164    .0000    .0000    .0    .0    .0  -100.000        .0    .0001  1.0000    .0001_
165    .0000    .0000    .0    .0    .0  -100.000        .0    .0001  1.0000    .0001_
166    .0000    .0000    .0    .0    .0  -100.000        .0    .0001  1.0000    .0001_
167    .0000    .0000    .0    .0    .0  -100.000        .0    .0001  1.0000    .0001_
168    .0000    .0000    .0    .0    .0  -100.000        .0    .0001  1.0000    .0001_
169    .0000    .0000    .0    .0    .0  -100.000        .0    .0001  1.0000    .0001_
170    .0000    .0000    .0    .0    .0  -100.000        .0    .0001  1.0000    .0001_
171    .0000    .0000    .0    .0    .0  -100.000        .0    .0001  1.0000    .0001_
172    .0000    .0000    .0    .0    .0  -100.000        .0    .0001  1.0000    .0001_
173    .0000    .0000    .0    .0    .0  -100.000        .0    .0001  1.0000    .0001_
174    .0000    .0000    .0    .0    .0  -100.000        .0    .0001  1.0000    .0001_
175    .0000    .0000    .0    .0    .0  -100.000        .0    .0001  1.0000    .0001_
176    .0000    .0000    .0    .0    .0  -100.000        .0    .0001  1.0000    .0001_
177    .0000    .0000    .0    .0    .0  -100.000        .0    .0001  1.0000    .0001_
178    .0000    .0000    .0    .0    .0  -100.000        .0    .0001  1.0000    .0001_
179    .0000    .0000    .0    .0    .0  -100.000        .0    .0001  1.0000    .0001_
180    .0000    .0000    .0    .0    .0  -100.000        .0    .0001  1.0000    .0001_
181    .0000    .0000    .0    .0    .0  -100.000        .0    .0001  1.0000    .0001_
182    .0000    .0000    .0    .0    .0  -100.000        .0    .0001  1.0000    .0001_
                                                            ------------
                                                              56294.3
```

```
0                                          DESIRED    RESULTING  PERCENT DIFFENCE
0        AVERAGE INTERNAL TRIP LENGTH      15.47990   16.88991     9.10864
             TOTAL INTERNAL TRAVEL       35822030.  39084930.     9.10864
1           Distribucion de viajes 1996 (HBNW)
```

```
OTABLE X1                          SUMMARY COMPARISON OF
                                   ESTIMATED VS. MODELED
                                   TRIP LENGTH FREQUENCY*
0
0                          SUMMARY OF TRIPS BY SEPERATION INTERVAL
0
0                      ESTIMATED    MODELED    DIFFERENCE      RATIO
           SEPERATION  PERCENT OF  PERCENT OF  ( MODELED -  ( MODELED /
            INTERVAL     TRIPS       TRIPS      ESTIMATED    ESTIMATED)

             1 - 10    30.0400%    26.5152%     -3.5248%      .8827
            11 - 20    48.2500%    46.4605%     -1.7895%      .9629
            21 - 30    14.4700%    16.5609%      2.0909%     1.1445
            31 - 40     4.6900%     6.4949%      1.8050%     1.3849
            41 & UP     2.5501%     3.9685%      1.4185%     1.5562
0
0                          SUMMARY OF TRAVEL BY SEPERATION INTERVAL
0
0                      ESTIMATED    MODELED    DIFFERENCE      RATIO
           SEPERATION  PERCENT OF  PERCENT OF  ( MODELED -  ( MODELED /
            INTERVAL    TRAVEL      TRAVEL      ESTIMATED    ESTIMATED)

             1 - 10    12.2662%     9.9698%     -2.2963%      .8868
            11 - 20    46.6726%    41.5168%     -5.1558%      .9706
            21 - 30    22.8508%    24.1175%      1.2667%     1.1516
            31 - 40    10.5194%    13.3948%      2.8754%     1.3893
            41 & UP     7.6910%    11.0010%      3.3100%     1.5607
0
0                  SUMMARY OF MEAN TRIP LENGTHS BY SEPERATION INTERVAL
0
0                      ESTIMATED    MODELED    DIFFERENCE      RATIO
           SEPERATION  MEAN TRIP   MEAN TRIP   ( MODELED -  ( MODELED /
            INTERVAL    LENGTH      LENGTH      ESTIMATED    ESTIMATED)

             1 - 10     6.3209      6.3507       .0298       1.0047
            11 - 20    14.9739     15.0927       .1188       1.0079
            21 - 30    24.4457     24.5967       .1510       1.0062
            31 - 40    34.7207     34.8329       .1122       1.0032
            41 & UP    46.6877     46.8201       .1324       1.0028

              ALL      15.4800     16.8899      1.4100       1.0911
```

						11/16/1999		
SEPARATION INTERVAL	ZONE PAIR INCIDENCE	INTERACTION FREQUENCY	INTERCHANGE VOLUME	MAX VOLUME/ INTERACTION	VOLUME / ZONE PAIR	VOLUME / INTERACTION	VOLUME PERCENTAGE	CUMULATIVE VOLUME
1	401.	39.	4458.0	936.0	11.117	114.308	.193	.19
2	119.	118.	24947.0	1391.0	209.639	211.415	1.078	1.27
3	182.	179.	57545.0	3007.0	316.181	321.480	2.487	3.76
4	171.	170.	56296.0	5134.0	329.216	331.153	2.433	6.19
5	169.	165.	50575.0	4341.0	299.260	306.515	2.186	8.38
6	226.	223.	63978.0	8382.0	283.089	286.897	2.765	11.14
7	299.	295.	61454.0	4198.0	205.532	208.319	2.656	13.80
8	364.	350.	55815.0	1403.0	153.338	159.471	2.412	16.21
9	423.	407.	61275.0	2510.0	144.858	150.553	2.648	18.86
10	595.	572.	72425.0	2647.0	121.723	126.617	3.130	21.99
11	676.	634.	58824.0	2978.0	87.018	92.782	2.542	24.53
12	1065.	982.	97305.0	2404.0	91.366	99.089	4.205	28.73
13	1522.	1393.	107577.0	4361.0	70.681	77.227	4.649	33.38
14	2170.	1957.	114658.0	2254.0	52.838	58.589	4.955	38.34
15	2974.	2605.	142549.0	2197.0	47.932	54.721	6.160	44.50
16	3862.	3301.	138850.0	2504.0	35.953	42.063	6.000	50.50
17	4594.	3816.	127133.0	1664.0	27.674	33.316	5.494	55.99
18	5354.	4216.	128518.0	2811.0	24.004	30.483	5.554	61.54
19	5802.	4338.	111052.0	1419.0	19.140	25.600	4.799	66.34
20	5905.	4155.	90395.0	3096.0	15.308	21.756	3.906	70.25
21	5956.	3967.	80129.0	2629.0	13.453	20.199	3.463	73.71
22	5911.	3700.	68683.0	1155.0	11.620	18.563	2.968	76.68
23	5646.	3288.	56128.0	1227.0	9.941	17.071	2.425	79.11
24	5585.	3037.	43824.0	665.0	7.847	14.430	1.894	81.00
25	5442.	2829.	40948.0	2386.0	7.524	14.474	1.770	82.77
26	5201.	2532.	31765.0	598.0	6.107	12.545	1.373	84.14
27	5137.	2388.	34656.0	2059.0	6.746	14.513	1.498	85.64
28	5089.	2266.	34707.0	3053.0	6.820	15.316	1.500	87.14
29	4917.	1999.	29295.0	1925.0	5.958	14.655	1.266	88.40
30	4859.	1914.	22912.0	1089.0	4.715	11.971	.990	89.39
31	4650.	1735.	21107.0	370.0	4.539	12.165	.912	90.31
32	4484.	1626.	18157.0	701.0	4.049	11.167	.785	91.09
33	4379.	1526.	18346.0	1121.0	4.190	12.022	.793	91.88
34	4276.	1439.	19219.0	1836.0	4.495	13.356	.831	92.71
35	4012.	1344.	16140.0	517.0	4.023	12.009	.697	93.41
36	3869.	1248.	15829.0	1373.0	4.091	12.683	.684	94.10
37	3772.	1210.	12987.0	687.0	3.443	10.733	.561	94.66
38	3559.	1092.	12394.0	591.0	3.482	11.350	.536	95.19
39	3588.	1063.	10454.0	431.0	2.914	9.834	.452	95.64
40	3358.	989.	10248.0	598.0	3.052	10.362	.443	96.09
41	3184.	929.	9999.0	451.0	3.140	10.763	.432	96.52
42	3018.	870.	9365.0	295.0	3.103	10.764	.405	96.92
43	2843.	813.	9099.0	369.0	3.200	11.192	.393	97.32
44	2625.	690.	8415.0	575.0	3.206	12.196	.364	97.68
45	2633.	658.	7555.0	369.0	2.869	11.482	.326	98.01
46	2455.	638.	5868.0	194.0	2.390	9.197	.254	98.26
47	2309.	571.	6399.0	402.0	2.771	11.207	.277	98.54
48	2190.	529.	5069.0	249.0	2.315	9.582	.219	98.76
49	2115.	503.	4787.0	240.0	2.263	9.517	.207	98.96
50	1968.	418.	4397.0	163.0	2.234	10.519	.190	99.15
51	1853.	373.	3418.0	169.0	1.845	9.164	.148	99.30
52	1766.	398.	3572.0	228.0	2.023	8.975	.154	99.46
53	1647.	319.	3015.0	429.0	1.831	9.451	.130	99.59
54	1402.	267.	2220.0	178.0	1.583	8.315	.096	99.68
55	1390.	216.	2198.0	168.0	1.581	10.176	.095	99.78
56	1252.	211.	1470.0	139.0	1.174	6.967	.064	99.84
57	1184.	157.	1237.0	74.0	1.045	7.879	.053	99.89
58	1116.	165.	1188.0	147.0	1.065	7.200	.051	99.95
59	1006.	122.	443.0	48.0	.440	3.631	.019	99.96
60	883.	100.	493.0	43.0	.558	4.930	.021	99.99
61	842.	67.	180.0	17.0	.214	2.687	.008	99.99
62	719.	36.	66.0	5.0	.092	1.833	.003	100.00
63	712.	19.	42.0	8.0	.059	2.211	.002	100.00
64	613.	16.	22.0	4.0	.036	1.375	.001	100.00
65	546.	10.	16.0	4.0	.029	1.600	.001	100.00
66	515.	7.	8.0	2.0	.016	1.143	.000	100.00
67	456.	1.	1.0	1.0	.002	1.000	.000	100.00
68	406.	0.	.0	.0	.000			
69	377.	0.	.0	.0	.000			
70	335.	1.	1.0	1.0	.003	1.000	.000	100.00
71	289.	0.	.0	.0	.000			
72	240.	0.	.0	.0	.000			
73	215.	0.	.0	.0	.000			
74	206.	0.	.0	.0	.000			
75	188.	0.	.0	.0	.000			
76	156.	0.	.0	.0	.000			
77	142.	0.	.0	.0	.000			
78	130.	0.	.0	.0	.000			
79	122.	0.	.0	.0	.000			
80	145.	0.	.0	.0	.000			
81	122.	0.	.0	.0	.000			
82	112.	0.	.0	.0	.000			
83	129.	0.	.0	.0	.000			
84	126.	0.	.0	.0	.000			
85	143.	0.	.0	.0	.000			
86	140.	0.	.0	.0	.000			

87	163.	0.	.0	.0	.000
88	186.	0.	.0	.0	.000
89	176.	0.	.0	.0	.000
90	195.	0.	.0	.0	.000
91	179.	0.	.0	.0	.000
92	206.	0.	.0	.0	.000
93	189.	0.	.0	.0	.000
94	175.	0.	.0	.0	.000
95	169.	0.	.0	.0	.000
96	180.	0.	.0	.0	.000
97	160.	0.	.0	.0	.000
98	141.	0.	.0	.0	.000
99	98.	0.	.0	.0	.000
100	98.	0.	.0	.0	.000
101	104.	0.	.0	.0	.000
102	92.	0.	.0	.0	.000
103	61.	0.	.0	.0	.000
104	65.	0.	.0	.0	.000
105	59.	0.	.0	.0	.000
106	56.	0.	.0	.0	.000
107	43.	0.	.0	.0	.000
108	26.	0.	.0	.0	.000
109	31.	0.	.0	.0	.000
110	35.	0.	.0	.0	.000
111	17.	0.	.0	.0	.000
112	15.	0.	.0	.0	.000
113	23.	0.	.0	.0	.000
114	14.	0.	.0	.0	.000
115	17.	0.	.0	.0	.000
116	16.	0.	.0	.0	.000
117	10.	0.	.0	.0	.000
118	15.	0.	.0	.0	.000
119	8.	0.	.0	.0	.000
120	3.	0.	.0	.0	.000
121	10.	0.	.0	.0	.000
122	3.	0.	.0	.0	.000
123	5.	0.	.0	.0	.000
124	2.	0.	.0	.0	.000
125	2.	0.	.0	.0	.000
126	1.	0.	.0	.0	.000
127	3.	0.	.0	.0	.000
128	1.	0.	.0	.0	.000
129	2.	0.	.0	.0	.000
130	2.	0.	.0	.0	.000
131	4.	0.	.0	.0	.000
132	1.	0.	.0	.0	.000
133	2.	0.	.0	.0	.000
134	4.	0.	.0	.0	.000
135	2.	0.	.0	.0	.000
136	4.	0.	.0	.0	.000
137	4.	0.	.0	.0	.000
138	2.	0.	.0	.0	.000
139	2.	0.	.0	.0	.000
140	1.	0.	.0	.0	.000
141	4.	0.	.0	.0	.000
142	4.	0.	.0	.0	.000
143	2.	0.	.0	.0	.000
144	0.	0.	.0		
145	2.	0.	.0	.0	.000
146	0.	0.	.0		
147	0.	0.	.0		
148	1.	0.	.0	.0	.000
149	0.	0.	.0		
150	1.	0.	.0	.0	.000
151	0.	0.	.0		
152	0.	0.	.0		
153	0.	0.	.0		

0   TOTAL   180625.   80211.   2314100.0   AVERAGE TRIP LENGTH = 17.835
0   AVERAGE INTERACTION = 25.816
0   AVERAGE SEPARATION = 33.805
0
0   DESIRED   RESULTING   PERCENT DIFFENCE
0   AVERAGE INTERNAL TRIP LENGTH   15.47990   17.83532   15.21600
                   TOTAL INTERNAL TRAVEL   35822030.   41272710.   15.21600
0***

OEXECUTE STOP   11/16/1999
 Run time =   .193 minutes.

C2-12

Appendix C3

**ATOM2 output file for calibration of 96 model.
NHB trip purpose by composite mode.**

C:\Eit-DIST\Run_Atom\Run_P3\NHB96.OUT

```
         ===========================================
         ===========================================
         =                                         =
         =     ATOM2 TRIP DISTRIBUTION PROGRAM      =
         =                                         =
         ===========================================
         ===========================================
         =             prepared by                 =
         =      Texas Transportation Institute      =
         ===========================================
         =     Version Date:  June 17, 1998         =
         ===========================================


1                      Distribucion de viajes 1996 (NHB)


                                                                           11/16/1999
               EFFECTIVE CAPACITIES
               --------------------
0             3000 CENTROIDS
0              269 SEPARATIONS
0               60 SECTORS   (3600 COMBINATIONS)
1
       REPORT = A1(5),A2(5),L1(5),X1,G2

  &VALUES ALTTRP=22, AN=1., ASSIGN=13, ATERM=.0, ATOP=T, DUMP=T, BINTRA=.0, EXEMPT=F, EXTEND=0, FCTRSD=1, FUTURE=T,
   GEN=52, HOVTRP=34, HWYTRP=33, IMPSEP=15, INTRIP=21, LIMIT=5, M=425, MILE=F, MILSEP=27, MF=28, MODTRP=3, MR=0, MS=4,
   MT=3, N=425, NEGSEP=1, NEWSEP=16, NF=1, NOWSEP=4, NOWTRP=2, NR=0, OMIT=F, ONE=1.0, PLOT=F, PN=1., PTERM=.0,
   RADII=51, RADIIM=1.0, RAWHOV=32, RAWPEK=31, RAWSEP=8, RECORD=14, REPORT=12, RND=.1, RS=26, SAMPLE=.125, SIZE=0,
   SKMTYP=F, SUMTRP=20, SV=25, SWTTRP=24, TABLE=4, TV=0., TYPE=, UT=.0, XP=-.68000E-03  &END
0********************************************************************************************************************
OEXECUTE EDIT2                                                                           11/16/1999
OTOTAL ZONE AREA =      8712.0 SQUARE MINUTES
O  ALL INTRAZONAL TIMES NOT LISTED ABOVE HAVE BEEN SET TO     1
O
OMAXIMUM SEPARATION =   84  (TIME ONLY)
 MAXIMUM SEPERATION =   92  (TIME PLUS RADII)
0********************************************************************************************************************
OEXECUTE ACCEPT2                                                                         11/16/1999
 ITERATION OPTION =   1
0********************************************************************************************************************
OEXECUTE ATOM2                                                                           11/16/1999
OTOTAL ZONE AREA =     11092.4 SQUARE MINUTES
1                      Distribucion de viajes 1996 (NHB)


                                                                           11/16/1999
O
OTABLE A1( 1)                          ATTRACTION VOLUME BALANCE (ITERATION 1)
O                                                              PREVIOUS                        CORRECTED
      ZONE    DESIRED    RESULTING    DIFFERENCE    PCT ERR   CHI-SQUARE CORRECTION RELATIVE    CORRECTION   RELATIVE
                                                             ------------
 R SQUARE =    .96819                                           31461.3
1                      Distribucion de viajes 1996 (NHB)


                                                                           11/16/1999
OTABLE L1( 1)                             TRIP LENGTH BALANCE (ITERATION 1)
O          PERCENT   PERCENT                                                                              CORRECTED
 SEPARATION DESIRED RESULTING    DESIRED    RESULTING DIFFERENCE   PCT ERR    CHI-SQUARE   RELATIVE CORRECTION   RELATIVE
                                                                            ------------
                                                                              51996.2
O                                                  DESIRED      RESULTING    PERCENT DIFFENCE
O                   AVERAGE INTERNAL TRIP LENGTH    15.12029     13.45896       -10.98743
                        TOTAL INTERNAL TRAVEL       7469908.     6649157.       -10.98742
1                      Distribucion de viajes 1996 (NHB)


                                                                           11/16/1999
O
OTABLE A1( 2)                          ATTRACTION VOLUME BALANCE (ITERATION 2)
O                                                              PREVIOUS                        CORRECTED
      ZONE    DESIRED    RESULTING    DIFFERENCE    PCT ERR   CHI-SQUARE CORRECTION RELATIVE    CORRECTION   RELATIVE
                                                             ------------
 R SQUARE =    .99283                                            3637.9
1                      Distribucion de viajes 1996 (NHB)


                                                                           11/16/1999
OTABLE L1( 2)                             TRIP LENGTH BALANCE (ITERATION 2)
O          PERCENT   PERCENT                                                                              CORRECTED
 SEPARATION DESIRED RESULTING    DESIRED    RESULTING DIFFERENCE   PCT ERR    CHI-SQUARE   RELATIVE CORRECTION   RELATIVE
                                                                            ------------
                                                                                52.0
O                                                  DESIRED      RESULTING    PERCENT DIFFENCE
O                   AVERAGE INTERNAL TRIP LENGTH    15.12029     15.14901        .18996
                        TOTAL INTERNAL TRAVEL       7469908.     7484097.        .18996
1                      Distribucion de viajes 1996 (NHB)


                                                                           11/16/1999
O
OTABLE A1( 3)                          ATTRACTION VOLUME BALANCE (ITERATION 3)
O                                                              PREVIOUS                        CORRECTED
      ZONE    DESIRED    RESULTING    DIFFERENCE    PCT ERR   CHI-SQUARE CORRECTION RELATIVE    CORRECTION   RELATIVE
                                                             ------------
 R SQUARE =    .99952                                            399.4
```

11/16/1999

OTABLE L1(3)   TRIP LENGTH BALANCE (ITERATION 3)

	PERCENT	PERCENT								CORRECTED
SEPARATION	DESIRED	RESULTING	DESIRED	RESULTING	DIFFERENCE	PCT ERR	CHI-SQUARE	RELATIVE	CORRECTION	RELATIVE

                                         77.1

	DESIRED	RESULTING	PERCENT DIFFENCE
AVERAGE INTERNAL TRIP LENGTH	15.12029	15.10329	-.11245
TOTAL INTERNAL TRAVEL	7469908.	7461508.	-.11244

11/16/1999

OTABLE A1(4)   ATTRACTION VOLUME BALANCE (ITERATION 4)

						PREVIOUS			CORRECTED
ZONE	DESIRED	RESULTING	DIFFERENCE	PCT ERR	CHI-SQUARE	CORRECTION	RELATIVE	CORRECTION	RELATIVE

R SQUARE =   .99989   200.2

11/16/1999

OTABLE L1(4)   TRIP LENGTH BALANCE (ITERATION 4)

	PERCENT	PERCENT								CORRECTED
SEPARATION	DESIRED	RESULTING	DESIRED	RESULTING	DIFFERENCE	PCT ERR	CHI-SQUARE	RELATIVE	CORRECTION	RELATIVE

                                       9.1

	DESIRED	RESULTING	PERCENT DIFFENCE
AVERAGE INTERNAL TRIP LENGTH	15.12029	15.14303	.15041
TOTAL INTERNAL TRAVEL	7469908.	7481143.	.15041

11/16/1999

OTABLE A1(5)   ATTRACTION VOLUME BALANCE (ITERATION 5)

ZONE	DESIRED	RESULTING	DIFFERENCE	PCT ERR	CHI-SQUARE	PREVIOUS CORRECTION	RELATIVE	CORRECTION	CORRECTED RELATIVE
1	153.0	140.0	-13.0	-8.497	1.1	4.69168	.65684	1.0929	.71783
2	86.0	74.0	-12.0	-13.953	1.7	4.03919	.29890	1.1622	.34737
3	23.0	27.0	4.0	17.391	.7	2.87483	.07762	.8519	.06612
4	296.0	302.0	6.0	2.027	.1	1.69532	.51199	.9801	.50182
5	375.0	361.0	-14.0	-3.733	.5	1.47240	.53154	1.0388	.55215
6	529.0	536.0	7.0	1.323	.1	1.69828	.91028	.9869	.89839
7	153.0	149.0	-4.0	-2.614	.1	3.01972	.44994	1.0268	.46202
8	345.0	353.0	8.0	2.319	.2	1.57876	.55730	.9773	.54467
9	190.0	198.0	8.0	4.211	.3	1.36594	.27046	.9596	.25953
10	371.0	380.0	9.0	2.426	.2	1.69450	.64391	.9763	.62866
11	160.0	157.0	-3.0	-1.875	.1	2.87507	.45139	1.0191	.46001
12	172.0	167.0	-5.0	-2.907	.1	1.53347	.25609	1.0299	.26376
13	243.0	249.0	6.0	2.469	.1	1.69610	.42233	.9759	.41215
14	210.0	207.0	-3.0	-1.429	.0	1.40762	.29138	1.0145	.29560
15	279.0	278.0	-1.0	-.358	.0	1.43157	.39798	1.0036	.39941
16	448.0	454.0	6.0	1.339	.1	1.31367	.59641	.9868	.58852
17	697.0	695.0	-2.0	-.287	.0	.99194	.68940	1.0029	.69138
18	474.0	473.0	-1.0	-.211	.0	1.32305	.62580	1.0021	.62712
19	624.0	639.0	15.0	2.404	.4	1.31766	.84199	.9765	.82222
20	260.0	258.0	-2.0	-.769	.0	1.14845	.29630	1.0078	.29860
21	530.0	529.0	-1.0	-.189	.0	1.04523	.55293	1.0019	.55397
22	438.0	434.0	-4.0	-.913	.0	1.27351	.55270	1.0092	.55780
23	2192.0	2201.0	9.0	.411	.0	.93860	2.06586	.9959	2.05741
24	121.0	111.0	-10.0	-8.264	.8	.89645	.09951	1.0901	.10847
25	268.0	277.0	9.0	3.358	.3	.93372	.25864	.9675	.25024
26	280.0	274.0	-6.0	-2.143	.1	.83630	.22915	1.0219	.23416
27	548.0	550.0	2.0	.365	.0	.80038	.44021	.9964	.43861
28	590.0	612.0	22.0	3.729	.8	.74605	.45658	.9641	.44017
29	960.0	952.0	-8.0	-.833	.1	.76010	.72362	1.0084	.72970
30	10659.0	10700.0	41.0	.385	.2	.74934	8.01789	.9962	7.98716
31	3729.0	3754.0	25.0	.670	.2	.72581	2.72469	.9933	2.70654
32	9768.0	9801.0	33.0	.338	.1	.62293	6.10532	.9966	6.08476
33	102.0	112.0	10.0	9.804	1.0	2.64387	.29611	.9107	.26968
34	408.0	399.0	-9.0	-2.206	.2	3.48999	1.39250	1.0226	1.42391
35	176.0	172.0	-4.0	-2.273	.1	2.09459	.36027	1.0233	.36865
36	237.0	236.0	-1.0	-.422	.0	1.93062	.45563	1.0042	.45756
37	130.0	134.0	4.0	3.077	.1	1.58594	.21252	.9701	.20617
38	141.0	136.0	-5.0	-3.546	.2	1.61172	.21919	1.0368	.22725
39	431.0	433.0	2.0	.464	.0	1.41692	.61353	.9954	.61069
40	218.0	206.0	-12.0	-5.505	.7	1.88336	.38797	1.0583	.41057
41	228.0	228.0	.0	.000	.0	1.88062	.42878	1.0000	.42878
42	290.0	314.0	24.0	8.276	2.0	1.63412	.51311	.9236	.47389
43	446.0	427.0	-19.0	-4.260	.8	1.40374	.59940	1.0445	.62607
44	398.0	411.0	13.0	3.266	.4	1.40662	.57812	.9684	.55983
45	243.0	228.0	-15.0	-6.173	.9	1.78419	.40679	1.0658	.43356
46	864.0	890.0	26.0	3.009	.8	1.12134	.99800	.9708	.96884
47	131.0	129.0	-2.0	-1.527	.0	1.15804	.14939	1.0155	.15170
48	626.0	622.0	-4.0	-.639	.0	.93467	.58137	1.0064	.58511
49	666.0	672.0	6.0	.901	.1	.83175	.55893	.9911	.55394
50	4775.0	4795.0	20.0	.419	.1	.71306	3.41912	.9958	3.40486
51	11537.0	11577.0	40.0	.347	.1	.64293	7.44325	.9965	7.41753
52	195.0	179.0	-16.0	-8.205	1.3	1.07726	.19283	1.0894	.21007
53	4983.0	5008.0	25.0	.502	.1	.78518	3.93216	.9950	3.91253
54	953.0	969.0	16.0	1.679	.3	.85576	.82923	.9835	.81554
55	341.0	329.0	-12.0	-3.519	.4	.95049	.31271	1.0365	.32412
56	287.0	308.0	21.0	7.317	1.5	1.03167	.31776	.9318	.29609
57	181.0	169.0	-12.0	-6.630	.8	1.52806	.25824	1.0710	.27658
58	114.0	113.0	-1.0	-.877	.0	1.03690	.11717	1.0088	.11821

59	277.0	282.0	5.0	1.805	.1	1.59512	.44982	.9823	.44185
60	226.0	230.0	4.0	1.770	.1	2.27038	.52219	.9826	.51311
61	254.0	257.0	3.0	1.181	.0	2.72114	.69933	.9883	.69117
62	539.0	538.0	-1.0	-.186	.0	2.01279	1.08288	1.0019	1.08489
63	433.0	427.0	-6.0	-1.386	.1	4.12483	1.76130	1.0141	1.78605
64	335.0	343.0	8.0	2.388	.2	1.81084	.62112	.9767	.60663
65	236.0	233.0	-3.0	-1.271	.0	2.65779	.61927	1.0129	.62724
66	408.0	410.0	2.0	.490	.0	2.57731	1.05670	.9951	1.05154
67	194.0	180.0	-14.0	-7.216	1.0	2.04157	.36748	1.0778	.39606
68	314.0	313.0	-1.0	-.318	.0	1.97859	.61930	1.0032	.62128
69	291.0	292.0	1.0	.344	.0	1.53188	.44731	.9966	.44578
70	612.0	616.0	4.0	.654	.0	1.36096	.83835	.9935	.83291
71	312.0	323.0	11.0	3.526	.4	1.24959	.40362	.9659	.38987
72	192.0	189.0	-3.0	-1.563	.0	1.02210	.19318	1.0159	.19624
73	606.0	613.0	7.0	1.155	.1	1.02708	.62960	.9886	.62241
74	386.0	374.0	-12.0	-3.109	.4	1.10331	.41264	1.0321	.42588
75	576.0	578.0	2.0	.347	.0	1.25397	.72480	.9965	.72229
76	440.0	439.0	-1.0	-.227	.0	1.33418	.58570	1.0023	.58704
77	219.0	228.0	9.0	4.110	.4	1.44428	.32930	.9605	.31630
78	457.0	452.0	-5.0	-1.094	.1	1.58797	.71776	1.0111	.72570
79	479.0	493.0	14.0	2.923	.4	1.32776	.65459	.9716	.63600
80	377.0	374.0	-3.0	-.796	.0	1.79533	.67145	1.0080	.67684
81	328.0	322.0	-6.0	-1.829	.1	2.11166	.67995	1.0186	.69262
82	146.0	139.0	-7.0	-4.795	.3	1.94165	.26989	1.0504	.28348
83	2523.0	2527.0	4.0	.159	.0	.75369	1.90458	.9984	1.90156
84	5576.0	5606.0	30.0	.538	.2	.68725	3.85270	.9946	3.83208
85	1589.0	1598.0	9.0	.566	.1	.75912	1.21307	.9944	1.20624
86	91.0	97.0	6.0	6.593	.4	.87343	.08472	.9381	.07948
87	234.0	223.0	-11.0	-4.701	.5	.88681	.19776	1.0493	.20751
88	3740.0	3765.0	25.0	.668	.2	.66587	2.50699	.9934	2.49035
89	2778.0	2791.0	13.0	.468	.1	.76689	2.14040	.9953	2.13043
90	1138.0	1123.0	-15.0	-1.318	.2	.85800	.96353	1.0134	.97640
91	1771.0	1795.0	24.0	1.355	.3	.84106	1.50970	.9866	1.48952
92	2235.0	2239.0	4.0	.179	.0	.78818	1.76474	.9982	1.76159
93	549.0	550.0	1.0	.182	.0	.85709	.47140	.9982	.47054
94	2364.0	2363.0	-1.0	-.042	.0	.78854	1.86332	1.0004	1.86411
95	1614.0	1637.0	23.0	1.425	.3	.82818	1.35573	.9859	1.33668
96	2648.0	2641.0	-7.0	-.264	.0	.99984	2.64057	1.0027	2.64757
97	4843.0	4866.0	23.0	.475	.1	.86135	4.19131	.9953	4.17150
98	3457.0	3466.0	9.0	.260	.0	.71190	2.46745	.9974	2.46105
99	2640.0	2633.0	-7.0	-.265	.0	.77783	2.04803	1.0027	2.05347
100	1946.0	1949.0	3.0	.154	.0	.84306	1.64312	.9985	1.64059
101	1832.0	1834.0	2.0	.109	.0	.89406	1.63970	.9989	1.63791
102	1938.0	1952.0	14.0	.722	.1	.91189	1.78000	.9928	1.76724
103	4042.0	4050.0	8.0	.198	.0	.79494	3.21951	.9980	3.21315
104	2467.0	2481.0	14.0	.567	.1	.82211	2.03965	.9944	2.02814
105	553.0	554.0	1.0	.181	.0	.89997	.49858	.9982	.49768
106	2148.0	2145.0	-3.0	-.140	.0	.91127	1.95468	1.0014	1.95741
107	1192.0	1198.0	6.0	.503	.0	.81050	.97098	.9950	.96612
108	3565.0	3580.0	15.0	.421	.1	.98778	3.53625	.9958	3.52143
109	2565.0	2566.0	1.0	.039	.0	.94021	2.41258	.9996	2.41164
110	2837.0	2848.0	11.0	.388	.0	.97533	2.77773	.9961	2.76700
111	6340.0	6347.0	7.0	.110	.0	.85895	5.45179	.9989	5.44577
112	3932.0	3938.0	6.0	.153	.0	.79221	3.11974	.9985	3.11498
113	1736.0	1734.0	-2.0	-.115	.0	.81681	1.41635	1.0012	1.41799
114	7160.0	7186.0	26.0	.363	.1	.82231	5.90909	.9964	5.88771
115	4275.0	4278.0	3.0	.070	.0	.83811	3.58545	.9993	3.58294
116	2695.0	2690.0	-5.0	-.186	.0	.88797	2.38863	1.0019	2.39307
117	1096.0	1114.0	18.0	1.642	.3	.94096	1.04823	.9838	1.03130
118	1737.0	1728.0	-9.0	-.518	.0	1.05507	1.82317	1.0052	1.83266
119	2557.0	2561.0	4.0	.156	.0	.98775	2.52962	.9984	2.52567
120	1169.0	1169.0	.0	.000	.0	1.26619	1.48017	1.0000	1.48017
121	451.0	454.0	3.0	.665	.0	1.52136	.69070	.9934	.68613
122	6247.0	6251.0	4.0	.064	.0	.83082	5.19348	.9994	5.19016
123	1010.0	1017.0	7.0	.693	.0	1.12714	1.14630	.9931	1.13841
124	1057.0	1068.0	11.0	1.041	.1	.94750	1.01193	.9897	1.00150
125	507.0	492.0	-15.0	-2.959	.4	1.73722	.85471	1.0305	.88077
126	354.0	368.0	14.0	3.955	.6	1.11980	.41209	.9620	.39641
127	519.0	510.0	-9.0	-1.734	.2	1.38703	.70739	1.0176	.71987
128	188.0	185.0	-3.0	-1.596	.0	2.55456	.47259	1.0162	.48026
129	600.0	610.0	10.0	1.667	.2	1.43923	.87793	.9836	.86354
130	96.0	75.0	-21.0	-21.875	4.6	3.47115	.26034	1.2800	.33323
131	2265.0	2291.0	26.0	1.148	.3	1.36825	3.13467	.9887	3.09909
132	193.0	204.0	11.0	5.699	.6	1.66007	.33865	.9461	.32039
133	997.0	964.0	-33.0	-3.310	1.1	1.31637	1.26898	1.0342	1.31242
134	620.0	627.0	7.0	1.129	.1	1.17326	.73564	.9888	.72742
135	1080.0	1078.0	-2.0	-.185	.0	.90737	.97814	1.0019	.97996
136	2278.0	2278.0	.0	.000	.0	1.04736	2.38588	1.0000	2.38588
137	1356.0	1343.0	-13.0	-.959	.1	.83269	1.11830	1.0097	1.12913
138	1159.0	1169.0	10.0	.863	.1	.80899	.94571	.9914	.93762
139	2326.0	2350.0	24.0	1.032	.2	.81473	1.91461	.9898	1.89505
140	1709.0	1686.0	-23.0	-1.346	.3	.89873	1.51526	1.0136	1.53593
141	702.0	714.0	12.0	1.709	.2	.83501	.59620	.9832	.58618
142	525.0	532.0	7.0	1.333	.1	.71338	.37952	.9868	.37452
143	924.0	929.0	5.0	.541	.0	.77919	.72387	.9946	.71997
144	1980.0	1994.0	14.0	.707	.1	.87905	1.75283	.9930	1.74052
145	726.0	707.0	-19.0	-2.617	.5	1.03126	.72910	1.0269	.74869
146	1831.0	1827.0	-4.0	-.218	.0	.88713	1.62079	1.0022	1.62434
147	964.0	972.0	8.0	.830	.1	1.00658	.97839	.9918	.97034
148	1751.0	1770.0	19.0	1.085	.2	.80218	1.41987	.9893	1.40462
149	1796.0	1782.0	-14.0	-.780	.1	.92127	1.64170	1.0079	1.65460
150	974.0	982.0	8.0	.821	.1	.93940	.92249	.9919	.91498
151	490.0	475.0	-15.0	-3.061	.5	.89532	.42528	1.0316	.43871
152	759.0	766.0	7.0	.922	.1	.92851	.71124	.9909	.70474
153	1732.0	1734.0	2.0	.115	.0	.90424	1.56796	.9988	1.56615
154	1903.0	1904.0	1.0	.053	.0	.99196	1.88869	.9995	1.88770

155	1555.0	1570.0	15.0	.965	.1	1.05716	1.65973	.9904	1.64388
156	2184.0	2163.0	-21.0	-.962	.2	1.03435	2.23731	1.0097	2.25903
157	1669.0	1671.0	2.0	.120	.0	.92810	1.55085	.9988	1.54899
158	794.0	801.0	7.0	.882	.1	1.01578	.81364	.9913	.80653
159	2434.0	2435.0	1.0	.041	.0	1.07729	2.62319	.9996	2.62211
160	679.0	666.0	-13.0	-1.915	.2	1.06396	.70860	1.0195	.72243
161	899.0	908.0	9.0	1.001	.1	1.34773	1.22374	.9901	1.21161
162	369.0	371.0	2.0	.542	.0	1.16252	.43130	.9946	.42897
163	406.0	399.0	-7.0	-1.724	.1	1.50983	.60242	1.0175	.61299
164	214.0	210.0	-4.0	-1.869	.1	1.48086	.31098	1.0190	.31690
165	3915.0	3935.0	20.0	.511	.1	1.12948	4.44451	.9949	4.42193
166	3549.0	3517.0	-32.0	-.902	.3	1.06800	3.75615	1.0091	3.79033
167	286.0	297.0	11.0	3.846	.4	1.89889	.56397	.9630	.54308
168	841.0	829.0	-12.0	-1.427	.2	1.49885	1.24255	1.0145	1.26054
169	683.0	685.0	2.0	.293	.0	1.51474	1.03760	.9971	1.03457
170	897.0	884.0	-13.0	-1.449	.2	1.46040	1.29100	1.0147	1.30998
171	2429.0	2423.0	-6.0	-.247	.0	1.81746	4.40370	1.0025	4.41461
172	369.0	379.0	10.0	2.710	.3	1.53409	.58142	.9736	.56608
173	89.0	94.0	5.0	5.618	.3	1.78069	.16738	.9468	.15848
174	204.0	206.0	2.0	.980	.0	1.10894	.22844	.9903	.22622
175	349.0	330.0	-19.0	-5.444	1.0	1.16285	.38374	1.0576	.40583
176	783.0	800.0	17.0	2.171	.4	1.14663	.91731	.9787	.89781
177	546.0	528.0	-18.0	-3.297	.6	1.34819	.71185	1.0341	.73611
178	1005.0	995.0	-10.0	-.995	.1	1.09530	1.08982	1.0101	1.10078
179	6377.0	6375.0	-2.0	-.031	.0	.92554	5.90033	1.0003	5.90218
180	981.0	987.0	6.0	.612	.0	1.11330	1.09882	.9939	1.09214
181	970.0	959.0	-11.0	-1.134	.1	1.05885	1.01544	1.0115	1.02708
182	783.0	777.0	-6.0	-.766	.0	.96213	.74757	1.0077	.75335
183	680.0	684.0	4.0	.588	.0	.89943	.61521	.9942	.61161
184	6154.0	6194.0	40.0	.650	.3	.65909	4.08242	.9935	4.05606
185	719.0	719.0	.0	.000	.0	.84746	.60933	1.0000	.60933
186	12392.0	12436.0	44.0	.355	.2	.73057	9.08543	.9965	9.05328
187	969.0	974.0	5.0	.516	.0	.69304	.67503	.9949	.67156
188	1721.0	1729.0	8.0	.465	.0	.81728	1.41309	.9954	1.40655
189	1801.0	1801.0	.0	.000	.0	.84244	1.51724	1.0000	1.51724
190	1170.0	1165.0	-5.0	-.427	.0	.80679	.93991	1.0043	.94394
191	1164.0	1180.0	16.0	1.375	.2	.76999	.90859	.9864	.89627
192	1173.0	1176.0	3.0	.256	.0	.77961	.91682	.9974	.91448
193	1824.0	1823.0	-1.0	-.055	.0	.91483	1.66774	1.0005	1.66866
194	1118.0	1122.0	4.0	.358	.0	.91744	1.02937	.9964	1.02570
195	833.0	829.0	-4.0	-.480	.0	.85333	.70741	1.0048	.71082
196	848.0	833.0	-15.0	-1.769	.3	.82045	.68343	1.0180	.69574
197	3418.0	3460.0	42.0	1.229	.5	.96098	3.32498	.9879	3.28462
198	913.0	897.0	-16.0	-1.752	.3	1.29225	1.15915	1.0178	1.17982
199	1105.0	1105.0	.0	.000	.0	.84996	.93920	1.0000	.93920
200	11985.0	12008.0	23.0	.192	.0	.82730	9.93423	.9981	9.91520
201	941.0	930.0	-11.0	-1.169	.1	1.12502	1.04627	1.0118	1.05864
202	476.0	461.0	-15.0	-3.151	.5	1.22784	.56603	1.0325	.58445
203	639.0	663.0	24.0	3.756	.9	1.25516	.83217	.9638	.80205
204	402.0	395.0	-7.0	-1.741	.1	1.70525	.67357	1.0177	.68551
205	472.0	462.0	-10.0	-2.119	.2	1.27267	.58797	1.0216	.60070
206	303.0	310.0	7.0	2.310	.2	1.21794	.37756	.9774	.36904
207	392.0	386.0	-6.0	-1.531	.1	1.28810	.49721	1.0155	.50493
208	232.0	228.0	-4.0	-1.724	.1	1.12109	.25561	1.0175	.26009
209	230.0	252.0	22.0	9.565	2.1	1.31618	.33168	.9127	.30272
210	430.0	416.0	-14.0	-3.256	.5	1.35530	.56381	1.0337	.58278
211	658.0	663.0	5.0	.760	.0	1.44158	.95577	.9925	.94856
212	247.0	225.0	-22.0	-8.907	2.0	1.46447	.32950	1.0978	.36172
213	898.0	913.0	15.0	1.670	.3	1.32289	1.20780	.9836	1.18795
214	354.0	339.0	-15.0	-4.237	.6	1.65899	.56240	1.0442	.58728
215	336.0	348.0	12.0	3.571	.4	1.06630	.37107	.9655	.35828
216	316.0	319.0	3.0	.949	.0	1.45688	.46474	.9906	.46037
217	405.0	394.0	-11.0	-2.716	.3	1.52289	.60002	1.0279	.61677
218	677.0	680.0	3.0	.443	.0	1.76477	1.20004	.9956	1.19475
219	2147.0	2147.0	.0	.000	.0	1.33047	2.85652	1.0000	2.85652
220	1217.0	1225.0	8.0	.657	.1	1.42907	1.75061	.9935	1.73918
221	864.0	840.0	-24.0	-2.778	.7	1.57782	1.32537	1.0286	1.36324
222	6594.0	6589.0	-5.0	-.076	.0	1.34784	8.88094	1.0008	8.88768
223	536.0	531.0	-5.0	-.933	.0	1.31439	.69794	1.0094	.70451
224	228.0	232.0	4.0	1.754	.1	1.14685	.26607	.9828	.26148
225	15873.0	15841.0	-32.0	-.202	.1	1.05344	16.68758	1.0020	16.72129
226	1488.0	1480.0	-8.0	-.538	.0	.94666	1.40106	1.0054	1.40863
227	159.0	156.0	-3.0	-1.887	.1	.90789	.14163	1.0192	.14435
228	927.0	935.0	8.0	.863	.1	.99261	.92809	.9914	.92015
229	530.0	525.0	-5.0	-.943	.0	.94566	.49647	1.0095	.50120
230	531.0	546.0	15.0	2.825	.4	1.02662	.56054	.9725	.54514
231	1421.0	1412.0	-9.0	-.633	.1	.95666	1.35081	1.0064	1.35942
232	555.0	538.0	-17.0	-3.063	.5	1.12430	.60487	1.0316	.62399
233	5443.0	5438.0	-5.0	-.092	.0	1.04687	5.69287	1.0009	5.69810
234	712.0	731.0	19.0	2.669	.5	1.05725	.77285	.9740	.75277
235	12496.0	12442.0	-54.0	-.432	.2	.99085	12.32811	1.0043	12.38162
236	1326.0	1327.0	1.0	.075	.0	1.01185	1.34272	.9992	1.34171
237	583.0	588.0	5.0	.858	.0	1.22644	.72114	.9915	.71501
238	4729.0	4708.0	-21.0	-.444	.1	1.24881	5.87939	1.0045	5.90562
239	2853.0	2854.0	1.0	.035	.0	1.11368	3.17846	.9996	3.17734
240	943.0	951.0	8.0	.848	.1	.92302	.87779	.9916	.87041
241	165.0	161.0	-4.0	-2.424	.1	.94036	.15140	1.0248	.15516
242	3092.0	3086.0	-6.0	-.194	.0	1.03120	3.18227	1.0019	3.18846
243	1138.0	1128.0	-10.0	-.879	.1	1.06644	1.20294	1.0089	1.21361
244	279.0	284.0	5.0	1.792	.1	1.14185	.32428	.9824	.31858
245	755.0	760.0	5.0	.662	.0	1.38842	1.05520	.9934	1.04825
246	155.0	154.0	-1.0	-.645	.0	1.34666	.20739	1.0065	.20873
247	44.0	35.0	-9.0	-20.455	1.8	1.35316	.04736	1.2571	.05954
248	174.0	177.0	3.0	1.724	.1	1.57999	.27966	.9831	.27492
249	1932.0	1924.0	-8.0	-.414	.0	1.66354	3.20066	1.0042	3.21397
250	500.0	506.0	6.0	1.200	.1	1.44543	.73139	.9881	.72271

251	304.0	294.0	-10.0	-3.289	.3	1.31611	.38694	1.0340	.40010
252	576.0	576.0	.0	.000	.0	1.18938	.68508	1.0000	.68508
253	188.0	188.0	.0	.000	.0	1.05151	.19768	1.0000	.19768
254	457.0	455.0	-2.0	-.438	.0	1.07245	.48796	1.0044	.49011
255	500.0	508.0	8.0	1.600	.1	1.11487	.56635	.9843	.55744
256	950.0	935.0	-15.0	-1.579	.2	1.34600	1.25851	1.0160	1.27870
257	3582.0	3586.0	4.0	.112	.0	1.32407	4.74812	.9989	4.74282
258	260.0	244.0	-16.0	-6.154	1.0	1.69724	.41413	1.0656	.44128
259	1215.0	1222.0	7.0	.576	.0	1.41785	1.73261	.9943	1.72269
260	213.0	208.0	-5.0	-2.347	.1	1.48421	.30872	1.0240	.31614
261	471.0	477.0	6.0	1.274	.1	1.62856	.77682	.9874	.76705
262	185.0	178.0	-7.0	-3.784	.3	1.53342	.27295	1.0393	.28368
263	278.0	294.0	16.0	5.755	.9	1.82231	.53576	.9456	.50660
264	365.0	347.0	-18.0	-4.932	.9	1.58517	.55006	1.0519	.57859
265	204.0	209.0	5.0	2.451	.1	1.38947	.29040	.9761	.28345
266	420.0	409.0	-11.0	-2.619	.3	1.65874	.67843	1.0269	.69667
267	209.0	209.0	.0	.000	.0	1.50039	.31358	1.0000	.31358
268	153.0	148.0	-5.0	-3.268	.2	2.36707	.35033	1.0338	.36216
269	143.0	158.0	15.0	10.490	1.6	1.66832	.26360	.9051	.23857
270	89.0	94.0	5.0	5.618	.3	1.60933	.15128	.9468	.14323
271	223.0	199.0	-24.0	-10.762	2.6	1.60232	.31886	1.1206	.35732
272	54.0	63.0	9.0	16.667	1.5	2.70924	.17068	.8571	.14630
273	312.0	326.0	14.0	4.487	.6	1.77085	.57730	.9571	.55251
274	375.0	377.0	2.0	.533	.0	1.30697	.49273	.9947	.49011
275	3849.0	3825.0	-24.0	-.624	.1	1.10958	4.24414	1.0063	4.27077
276	185.0	191.0	6.0	3.243	.2	1.11804	.21355	.9686	.20684
277	327.0	322.0	-5.0	-1.529	.1	1.21192	.39024	1.0155	.39630
278	245.0	234.0	-11.0	-4.490	.5	1.30987	.30651	1.0470	.32092
279	777.0	807.0	30.0	3.861	1.2	1.09901	.88690	.9628	.85393
280	379.0	363.0	-16.0	-4.222	.7	1.15534	.41939	1.0441	.43788
281	160.0	149.0	-11.0	-6.875	.8	1.29106	.19237	1.0738	.20657
282	883.0	873.0	-10.0	-1.133	.1	1.11642	.97463	1.0115	.98580
283	657.0	671.0	14.0	2.131	.3	1.40313	.94150	.9791	.92186
284	1242.0	1231.0	-11.0	-.886	.1	1.29846	1.59841	1.0089	1.61269
285	951.0	958.0	7.0	.736	.1	1.24396	1.19172	.9927	1.18301
286	403.0	385.0	-18.0	-4.467	.8	1.36774	.52658	1.0468	.55120
287	630.0	639.0	9.0	1.429	.1	1.26886	.81080	.9859	.79938
288	1965.0	1961.0	-4.0	-.204	.0	1.37394	2.69429	1.0020	2.69978
289	553.0	545.0	-8.0	-1.447	.1	1.25674	.68492	1.0147	.69498
290	1684.0	1693.0	9.0	.534	.0	1.15783	1.96020	.9947	1.94978
291	274.0	262.0	-12.0	-4.380	.5	1.20981	.31697	1.0458	.33149
292	541.0	539.0	-2.0	-.370	.0	.99180	.53458	1.0037	.53657
293	686.0	679.0	-7.0	-1.020	.1	1.23166	.83630	1.0103	.84492
294	478.0	464.0	-14.0	-2.929	.4	1.17828	.54672	1.0302	.56322
295	503.0	511.0	8.0	1.590	.1	1.47505	.75375	.9843	.74195
296	485.0	488.0	3.0	.619	.0	1.27968	.62449	.9939	.62065
297	2987.0	2989.0	2.0	.067	.0	1.18790	3.55063	.9993	3.54826
298	864.0	846.0	-18.0	-2.083	.4	1.21798	1.03041	1.0213	1.05233
299	607.0	606.0	-1.0	-.165	.0	1.47238	.89226	1.0017	.89373
300	1723.0	1717.0	-6.0	-.348	.0	1.43126	2.45748	1.0035	2.46606
301	3766.0	3746.0	-20.0	-.531	.1	1.18885	4.45344	1.0053	4.47722
302	594.0	598.0	4.0	.673	.0	1.67994	1.00460	.9933	.99788
303	400.0	397.0	-3.0	-.750	.0	3.13334	1.24393	1.0076	1.25333
304	206.0	196.0	-10.0	-4.854	.5	2.98286	.58464	1.0510	.61447
305	3172.0	3146.0	-26.0	-.820	.2	1.91011	6.00921	1.0083	6.05888
306	574.0	590.0	16.0	2.787	.4	2.56148	1.51127	.9729	1.47029
307	145.0	146.0	1.0	.690	.0	2.90369	.42394	.9932	.42103
308	358.0	320.0	-38.0	-10.615	4.0	2.61266	.83605	1.1187	.93533
309	783.0	802.0	19.0	2.427	.5	1.64573	1.31987	.9763	1.28860
310	1817.0	1815.0	-2.0	-.110	.0	1.58746	2.88124	1.0011	2.88441
311	165.0	148.0	-17.0	-10.303	1.8	2.67546	.39597	1.1149	.44145
312	378.0	395.0	17.0	4.497	.8	2.69761	1.06555	.9570	1.01970
313	1.0	2.0	1.0	100.000	1.0	2.00000	.00400	.5000	.00200
314	175.0	187.0	12.0	6.857	.8	3.25607	.60888	.9358	.56981
315	33.0	25.0	-8.0	-24.242	1.9	4.64223	.11606	1.3200	.15319
316	31.0	29.0	-2.0	-6.452	.1	5.04804	.14639	1.0690	.15649
317	235.0	217.0	-18.0	-7.660	1.4	5.31042	1.15236	1.0829	1.24795
318	23.0	19.0	-4.0	-17.391	.7	5.68667	.10805	1.2105	.13079
319	24.0	20.0	-4.0	-16.667	.7	8.83088	.17662	1.2000	.21194
320	246.0	269.0	23.0	9.350	2.2	1.70992	.45997	.9145	.42064
321	14.0	10.0	-4.0	-28.571	1.1	3.42618	.03426	1.4000	.04797
322	531.0	534.0	3.0	.565	.0	1.92921	1.03020	.9944	1.02441
323	4742.0	4702.0	-40.0	-.844	.3	1.83932	8.64851	1.0085	8.72208
324	667.0	648.0	-19.0	-2.849	.5	2.06253	1.33652	1.0293	1.37571
325	163.0	164.0	1.0	.613	.0	1.80040	.29527	.9939	.29347
326	877.0	887.0	10.0	1.140	.1	1.71584	1.52195	.9887	1.50479
327	3096.0	3062.0	-34.0	-1.098	.4	1.81796	5.56658	1.0111	5.62839
328	588.0	585.0	-3.0	-.510	.0	2.87440	1.68152	1.0051	1.69015
329	622.0	611.0	-11.0	-1.768	.2	1.64931	1.00773	1.0180	1.02587
330	826.0	825.0	-1.0	-.121	.0	1.95526	1.61309	1.0012	1.61504
331	1120.0	1122.0	2.0	.179	.0	1.97925	2.22072	.9982	2.21676
332	2317.0	2309.0	-8.0	-.345	.0	1.62154	3.74413	1.0035	3.75710
333	75.0	82.0	7.0	9.333	.7	2.73369	.22416	.9146	.20503
334	.0	.0	.0	.000	.0	1.00000	.00000	1.0000	.00000
335	512.0	497.0	-15.0	-2.930	.4	2.69795	1.34088	1.0302	1.38135
336	271.0	266.0	-5.0	-1.845	.1	1.60051	.42574	1.0188	.43374
337	322.0	325.0	3.0	.932	.0	1.38786	.45105	.9908	.44689
338	6399.0	6353.0	-46.0	-.719	.3	1.43376	9.10871	1.0072	9.17466
339	280.0	281.0	1.0	.357	.0	1.49876	.42115	.9964	.41965
340	2208.0	2190.0	-18.0	-.815	.1	1.48503	3.25221	1.0082	3.27894
341	483.0	479.0	-4.0	-.828	.0	1.41343	.67703	1.0084	.68268
342	304.0	307.0	3.0	.987	.0	1.51835	.46613	.9902	.46158
343	562.0	558.0	-4.0	-.712	.0	1.43954	.80326	1.0072	.80902
344	626.0	639.0	13.0	2.077	.3	1.41384	.90345	.9797	.88507
345	261.0	246.0	-15.0	-5.747	.9	1.93074	.47496	1.0610	.50392
346	133.0	142.0	9.0	6.767	.6	1.31549	.18680	.9366	.17496

347	128.0	115.0	-13.0	-10.156	1.3	1.47364	.16947	1.1130	.18863
348	196.0	188.0	-8.0	-4.082	.3	1.45409	.27337	1.0426	.28500
349	195.0	204.0	9.0	4.615	.4	1.34619	.27462	.9559	.26251
350	115.0	115.0	.0	.000	.0	1.35254	.15554	1.0000	.15554
351	520.0	518.0	-2.0	-.385	.0	2.00530	1.03874	1.0039	1.04275
352	2.0	.0	-2.0	-100.000	2.0	2.66667	.00267	2.0000	.00533
353	461.0	461.0	.0	.000	.0	1.86142	.85812	1.0000	.85812
354	796.0	771.0	-25.0	-3.141	.8	2.11709	1.63228	1.0324	1.68521
355	170.0	211.0	41.0	24.118	9.9	1.90900	.40280	.8057	.32453
356	131.0	100.0	-31.0	-23.664	7.3	2.04313	.20431	1.3100	.26765
357	134.0	144.0	10.0	7.463	.7	1.36842	.19705	.9306	.18337
358	244.0	255.0	11.0	4.508	.5	1.84659	.47088	.9569	.45057
359	46.0	45.0	-1.0	-2.174	.0	1.57494	.07087	1.0222	.07245
360	51.0	47.0	-4.0	-7.843	.3	1.47890	.06951	1.0851	.07542
361	346.0	343.0	-3.0	-.867	.0	1.64735	.56504	1.0087	.56998
362	808.0	813.0	5.0	.619	.0	1.57563	1.28099	.9938	1.27311
363	276.0	271.0	-5.0	-1.812	.1	1.49053	.40393	1.0185	.41139
364	270.0	276.0	6.0	2.222	.1	1.33990	.36981	.9783	.36177
365	196.0	176.0	-20.0	-10.204	2.0	1.57567	.27732	1.1136	.30883
366	139.0	136.0	-3.0	-2.158	.1	1.83132	.24906	1.0221	.25455
367	109.0	105.0	-4.0	-3.670	.1	1.69421	.17789	1.0381	.18467
368	100.0	89.0	-11.0	-11.000	1.2	1.83992	.16375	1.1236	.18399
369	617.0	639.0	22.0	3.566	.8	1.72208	1.10041	.9656	1.06252
370	307.0	291.0	-16.0	-5.212	.8	1.95984	.57031	1.0550	.60167
371	1010.0	1007.0	-3.0	-.297	.0	1.99586	2.00983	1.0030	2.01582
372	579.0	599.0	20.0	3.454	.7	1.92526	1.15323	.9666	1.11473
373	528.0	508.0	-20.0	-3.788	.8	1.76327	.89574	1.0394	.93101
374	486.0	490.0	4.0	.823	.0	1.43071	.70105	.9918	.69533
375	486.0	470.0	-16.0	-3.292	.5	1.66331	.78176	1.0340	.80837
376	90.0	88.0	-2.0	-2.222	.0	1.99693	.17573	1.0227	.17972
377	152.0	140.0	-12.0	-7.895	.9	2.19670	.30754	1.0857	.33390
378	429.0	454.0	25.0	5.828	1.5	2.09678	.95194	.9449	.89952
379	139.0	134.0	-5.0	-3.597	.2	1.92434	.25786	1.0373	.26748
380	585.0	579.0	-6.0	-1.026	.1	2.09430	1.21260	1.0104	1.22517
381	403.0	401.0	-2.0	-.496	.0	2.11650	.84871	1.0050	.85295
382	316.0	308.0	-8.0	-2.532	.2	2.90555	.89491	1.0260	.91815
383	612.0	622.0	10.0	1.634	.2	2.10896	1.31177	.9839	1.29068
384	334.0	318.0	-16.0	-4.790	.8	2.32573	.73958	1.0503	.77679
385	553.0	549.0	-4.0	-.723	.0	2.23296	1.22590	1.0073	1.23483
386	20.0	25.0	5.0	25.000	1.3	3.23232	.08081	.8000	.06465
387	80.0	84.0	4.0	5.000	.2	3.78704	.31811	.9524	.30296
388	61.0	56.0	-5.0	-8.197	.4	4.25013	.23801	1.0893	.25926
389	181.0	165.0	-16.0	-8.840	1.4	4.28609	.70721	1.0970	.77578
390	635.0	655.0	20.0	3.150	.6	1.05019	.68787	.9695	.66687
391	590.0	595.0	5.0	.847	.0	.94246	.56077	.9916	.55605
392	402.0	382.0	-20.0	-4.975	1.0	1.01037	.38596	1.0524	.40617
393	1097.0	1097.0	.0	.000	.0	1.01861	1.11742	1.0000	1.11742
394	1279.0	1306.0	27.0	2.111	.6	1.10984	1.44945	.9793	1.41949
395	452.0	440.0	-12.0	-2.655	.3	1.10007	.48403	1.0273	.49723
396	136.0	140.0	4.0	2.941	.1	2.75450	.38563	.9714	.37461
397	286.0	283.0	-3.0	-1.049	.0	1.54453	.43710	1.0106	.44174
398	415.0	404.0	-11.0	-2.651	.3	5.10152	2.06101	1.0272	2.11713
399	964.0	954.0	-10.0	-1.037	.1	1.18540	1.13088	1.0105	1.14273
400	102.0	112.0	10.0	9.804	1.0	1.51133	.16927	.9107	.15416
401	993.0	983.0	-10.0	-1.007	.1	1.12965	1.11044	1.0102	1.12174
402	1049.0	1078.0	29.0	2.765	.8	1.32860	1.43223	.9731	1.39370
403	135.0	133.0	-2.0	-1.481	.0	1.66128	.22095	1.0150	.22427
404	164.0	157.0	-7.0	-4.268	.3	1.69532	.26617	1.0446	.27803
405	1263.0	1261.0	-2.0	-.158	.0	1.85116	2.33432	1.0016	2.33802
406	700.0	677.0	-23.0	-3.286	.8	2.07574	1.40528	1.0340	1.45302
407	533.0	533.0	.0	.000	.0	2.42345	1.29170	1.0000	1.29170
408	1592.0	1583.0	-9.0	-.565	.1	2.42808	3.84364	1.0057	3.86550
409	176.0	176.0	.0	.000	.0	1.42568	.25092	1.0000	.25092
410	95.0	89.0	-6.0	-6.316	.4	1.39157	.12385	1.0674	.13220
411	1594.0	1609.0	15.0	.941	.1	.79649	1.28155	.9907	1.26960
412	2193.0	2201.0	8.0	.365	.0	.71529	1.57435	.9964	1.56863
413	2715.0	2712.0	-3.0	-.110	.0	.97982	2.65728	1.0011	2.66022
414	1162.0	1165.0	3.0	.258	.0	.97505	1.13593	.9974	1.13300
415	284.0	291.0	7.0	2.465	.2	2.12545	.61851	.9759	.60363
416	1014.0	999.0	-15.0	-1.479	.2	1.79646	1.79466	1.0150	1.82161
417	408.0	411.0	3.0	.735	.0	1.90887	.78455	.9927	.77882
418	270.0	262.0	-8.0	-2.963	.2	1.77791	.46581	1.0305	.48004
419	293.0	290.0	-3.0	-1.024	.0	1.60644	.46587	1.0103	.47069
420	176.0	170.0	-6.0	-3.409	.2	1.55289	.26399	1.0353	.27331
421	573.0	577.0	4.0	.698	.0	1.19146	.68747	.9931	.68271
422	506.0	505.0	-1.0	-.198	.0	1.20188	.60695	1.0020	.60815
423	465.0	459.0	-6.0	-1.290	.1	1.22990	.56452	1.0131	.57190
424	148.0	144.0	-4.0	-2.703	.1	1.07934	.15543	1.0278	.15974
425	290.0	319.0	29.0	10.000	2.9	1.11279	.35498	.9091	.32271

```
                                     -----------
R SQUARE =    .99996                    149.3
```

```
O
OTABLE A2( 5)                          ATTRACTION VOLUME BALANCE SUMMARY (ITERATION 5)
O
O                    CROSS CLASSIFICATION OF ATTRACTION ZONES BY DESIRED ATTRACTION VOLUME
                            AND PERCENT ERROR OF RESULTING ATTRACTION VOLUME
O
O                                                      PERCENT ERROR
                    |-------------------------------------------------------------------------------|
                    I    -75  -50  -25  -10   -5   -1    0         0    1    5   10   25   50   75  100 I
                    I     TO   TO   TO   TO   TO   TO   TO        TO   TO   TO   TO   TO   TO   TO  AND I
        DESIRED     I            TO                                                                    I
   ATTRACTION RANGES I  -100 -100  -75  -50  -25  -10   -5   -1    0    1    5   10   25   50   75  100 ABOVE I  TOTAL
   ------------------ I  ---- ---- ---- ---- ---- ---- ---- ---- ---- ---- ---- ---- ---- ---- ---- ----- I  -----
          0.0        I                                       1                                          I      1
       .1 -     .9   I                                                                                  I      0
      1.0 -    9.9   I    1                                                                          1 I I      2
     10.0 -   24.9   I              1    2                                            1    1             I      5
     25.0 -   49.9   I                   2    1    1                                                    I      4
     50.0 -   99.9   I                   2    3    1                        5    1                       I     12
    100.0 -  199.9   I                   5    8   21    2    3    2    6    6    2                       I     55
    200.0 -  299.9   I                   1    6   15    3    2    3   14    5    1                       I     50
    300.0 -  399.9   I                   1    2   12    3         5   11                                 I     34
    400.0 -  499.9   I                            19    7    1    6    3    1                            I     37
    500.0 -  599.9   I                             8   10    2    9    9                                 I     38
    600.0 -  699.9   I                             4    3         6   11                                 I     24
    700.0 -  799.9   I                             3    1    1    3    5                                 I     13
    800.0 -  899.9   I                             6    2         1    4                                 I     13
    900.0 -  999.9   I                             7    1         8    1                                 I     17
   1000.0 - 1999.9   I                             3   20    4   22    8                                 I     57
   2000.0 - 2999.9   I                                 10    2   12    2                                 I     26
   3000.0 - 3999.9   I                             1    5         7    1                                 I     14
   4000.0 - 4999.9   I                                  2         5                                     I      7
   5000.0 - 5999.9   I                                  1         1                                     I      2
   6000.0 - 6999.9   I                                  3         3                                     I      6
   7000.0 - 7999.9   I                                            1                                     I      1
   8000.0 - 8999.9   I                                                                                  I      0
   9000.0 - 9999.9   I                                  2         5                                     I      7
  10000.0 AND ABOVE  I                                  2         5                                     I      7
                    |----- ---- ---- ---- ---- ---- ---- ---- ---- ---- ---- ---- ---- ---- ---- ------I  -----
         TOTAL          1    0    0    1   13   20  101   75   16   99   75   17    5    1    0    0    1   425
```

```
OTABLE L1( 5)                                   TRIP LENGTH BALANCE (ITERATION 5)
O           PERCENT  PERCENT                                                                              CORRECTED
SEPARATION  DESIRED  RESULTING    DESIRED   RESULTING  DIFFERENCE   PCT ERR   CHI-SQUARE   RELATIVE  CORRECTION  RELATIVE
        1   2.0000   2.0104      9880.6      9931.9       51.2       .518        .3       79.5063     .9948    79.0962_
        2   2.1000   2.1014     10374.7     10381.7        7.0       .067        .0      190.7084     .9993   190.5802_
        3   2.2000   2.1992     10868.7     10864.6       -4.1      -.037        .0      136.7649    1.0004   136.8159_
        4   2.3000   2.2970     11362.7     11347.9      -14.8      -.130        .0      151.7318    1.0013   151.9296_
        5   2.5000   2.4940     12350.8     12321.1      -29.7      -.240        .1      100.0000    1.0024   100.2408_
        6   2.7000   2.6952     13338.9     13315.2      -23.6      -.177        .0       94.8799    1.0018    95.0482_
        7   3.0000   2.9957     14821.0     14799.7      -21.2      -.143        .0       75.7501    1.0014    75.8588_
        8   3.4000   3.3936     16797.1     16765.5      -31.6      -.188        .1       65.2683    1.0019    65.3913_
        9   4.1000   4.0929     20255.3     20220.3      -35.0      -.173        .1       61.2173    1.0017    61.3233_
       10   5.0000   4.9931     24701.6     24667.4      -34.2      -.139        .0       53.8755    1.0014    53.9502_
       11   5.9100   5.9081     29197.3     29187.9       -9.3      -.032        .0       47.4125    1.0003    47.4277_
       12   6.5000   6.4969     32112.1     32096.9      -15.2      -.047        .0       39.6941    1.0005    39.7129_
       13   6.6000   6.5988     32606.1     32600.2       -5.9      -.018        .0       33.2438    1.0002    33.2498_
       14   6.4000   6.3985     31618.0     31610.8       -7.2      -.023        .0       27.2306    1.0002    27.2369_
       15   5.5500   5.5507     27418.8     27422.3        3.5       .013        .0       19.7364     .9999    19.7339_
       16   4.7000   4.7015     23219.5     23227.1        7.5       .033        .0       15.6673     .9997    15.6622_
       17   4.0000   4.0044     19761.3     19783.2       21.9       .111        .0       12.3897     .9989    12.3760_
       18   3.5000   3.5072     17291.1     17326.5       35.4       .205        .1       10.5240     .9980    10.5025_
       19   3.1200   3.1256     15413.8     15441.5       27.7       .179        .0        9.3218     .9982     9.3051_
       20   2.8000   2.8031     13832.9     13848.1       15.2       .110        .0        8.8280     .9989     8.8182_
       21   2.5000   2.5007     12350.8     12354.1        3.3       .027        .0        7.9863     .9997     7.9841_
       22   2.2200   2.2177     10967.5     10956.0      -11.5      -.105        .0        7.1327    1.0011     7.1402_
       23   1.9500   1.9507      9633.6      9637.1        3.5       .036        .0        6.2460     .9996     6.2437_
       24   1.7500   1.7495      8645.6      8643.3       -2.3      -.027        .0        5.7648    1.0003     5.7663_
       25   1.5500   1.5521      7657.5      7667.6       10.1       .132        .0        5.3090     .9987     5.3020_
       26   1.4000   1.4031      6916.4      6931.8       15.4       .222        .0        5.0922     .9978     5.0809_
       27   1.2000   1.2026      5928.4      5941.3       12.9       .218        .0        4.7667     .9978     4.7563_
       28   1.0800   1.0842      5335.5      5356.3       20.8       .390        .1        4.7106     .9961     4.6923_
       29    .9800    .9848      4841.5      4865.3       23.8       .491        .1        4.6295     .9951     4.6069_
       30    .9000    .9002      4446.3      4447.0         .8       .017        .0        4.5640     .9998     4.5632_
       31    .8200    .8177      4051.1      4039.6      -11.5      -.284        .0        4.4960    1.0028     4.5088_
       32    .7400    .7408      3655.8      3660.0        4.1       .113        .0        4.2602     .9989     4.2554_
       33    .6600    .6619      3260.6      3270.2        9.6       .294        .0        3.9834     .9971     3.9717_
       34    .5800    .5865      2865.4      2897.7       32.3      1.127        .4        3.6503     .9889     3.6096_
       35    .5000    .5057      2470.2      2498.5       28.3      1.148        .3        3.3256     .9887     3.2878_
       36    .4400    .4419      2173.7      2183.3        9.5       .438        .0        3.1257     .9956     3.1121_
       37    .3800    .3764      1877.3      1859.6      -17.8      -.946        .2        2.9801    1.0095     3.0085_
       38    .3200    .3160      1580.9      1561.3      -19.6     -1.239        .2        2.6956    1.0125     2.7294_
       39    .2800    .2786      1383.3      1376.4       -6.9      -.496        .0        2.6095    1.0050     2.6225_
       40    .2200    .2221      1086.9      1097.4       10.5       .966        .1        2.2961     .9904     2.2741_
       41    .1800    .1802       889.3       890.1         .8       .094        .0        2.1539     .9991     2.1518_
       42    .1600    .1586       790.5       783.7       -6.7      -.849        .1        2.1760    1.0086     2.1946_
       43    .1400    .1390       691.6       686.9       -4.7      -.686        .0        2.2008    1.0069     2.2160_
       44    .1200    .1214       592.8       599.6        6.8      1.146        .1        2.2324     .9887     2.2071_
       45    .1000    .1009       494.0       498.5        4.4       .897        .0        2.1596     .9911     2.1404_
       46    .0900    .0899       444.6       444.3        -.3      -.070        .0        2.3014    1.0007     2.3031_
```

47	.0800	.0781	395.2	386.1	-9.2	-2.318	.2	2.4407	1.0237	2.4986_
48	.0700	.0677	345.8	334.5	-11.3	-3.260	.4	2.6006	1.0337	2.6883_
49	.0600	.0575	296.4	284.1	-12.3	-4.165	.5	2.6799	1.0435	2.7964_
50	.0500	.0485	247.0	239.6	-7.4	-2.984	.2	2.7087	1.0308	2.7920_
51	.0400	.0394	197.6	194.7	-2.9	-1.479	.0	2.5785	1.0150	2.6172_
52	.0300	.0290	148.2	143.4	-4.8	-3.254	.2	2.2613	1.0336	2.3374_
53	.0200	.0192	98.8	94.7	-4.1	-4.177	.2	1.7143	1.0436	1.7890_
54	.0100	.0098	49.4	48.2	-1.2	-2.484	.0	.9925	1.0255	1.0177_
55	.0000	.0000	.0	.0	.0	-42.130	.0	.0001	1.0000	.0001_
56	.0000	.0000	.0	.0	.0	-51.762	.0	.0001	1.0000	.0001_
57	.0000	.0000	.0	.0	.0	-59.893	.0	.0001	1.0000	.0001_
58	.0000	.0000	.0	.0	.0	-66.931	.0	.0001	1.0000	.0001_
59	.0000	.0000	.0	.0	.0	-74.259	.0	.0001	1.0000	.0001_
60	.0000	.0000	.0	.0	.0	-81.144	.0	.0001	1.0000	.0001_
61	.0000	.0000	.0	.0	.0	-87.201	.0	.0001	1.0000	.0001_
62	.0000	.0000	.0	.0	.0	-91.723	.0	.0001	1.0000	.0001_
63	.0000	.0000	.0	.0	.0	-95.365	.0	.0001	1.0000	.0001_
64	.0000	.0000	.0	.0	.0	-98.133	.0	.0001	1.0000	.0001_
65	.0000	.0000	.0	.0	.0	-99.223	.0	.0001	1.0000	.0001_
66	.0000	.0000	.0	.0	.0	-99.559	.0	.0001	1.0000	.0001_
67	.0000	.0000	.0	.0	.0	-99.751	.0	.0001	1.0000	.0001_
68	.0000	.0000	.0	.0	.0	-99.923	.0	.0001	1.0000	.0001_
69	.0000	.0000	.0	.0	.0	-99.992	.0	.0001	1.0000	.0001_
70	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
71	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
72	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
73	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
74	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
75	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
76	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
77	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
78	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
79	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
80	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
81	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
82	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
83	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
84	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
85	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
86	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
87	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
88	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
89	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
90	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
91	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
92	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
93	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
94	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
95	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
96	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
97	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
98	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
99	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
100	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
101	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
102	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
103	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
104	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
105	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
106	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
107	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
108	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
109	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
110	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
111	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
112	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_

```
                                                                -----------
                                                                    4.9
0                                        DESIRED      RESULTING  PERCENT DIFFENCE
0            AVERAGE INTERNAL TRIP LENGTH  15.12029    15.12224    .01291
                  TOTAL INTERNAL TRAVEL   7469908.     7470872.    .01291
1            Distribucion de viajes 1996 (NHB)
```

```
OTABLE X1                        SUMMARY COMPARISON OF
                                 ESTIMATED VS. MODELED
                                 TRIP LENGTH FREQUENCY*
0
0                        SUMMARY OF TRIPS BY SEPERATION INTERVAL
0
0                      ESTIMATED      MODELED    DIFFERENCE       RATIO
            SEPERATION  PERCENT OF   PERCENT OF  ( MODELED -   ( MODELED /
            INTERVAL      TRIPS        TRIPS      ESTIMATED     ESTIMATED)

              1 - 10     29.3000%     29.2725%    -.0275%       .9991
             11 - 20     49.0799%     49.0949%     .0149%      1.0003
             21 - 30     15.5300%     15.5455%     .0155%      1.0010
             31 - 40      4.9400%      4.9478%     .0078%      1.0016
             41 & UP      1.1501%      1.1393%    -.0108%       .9906
```

```
0                          SUMMARY OF TRAVEL BY SEPERATION INTERVAL
0
0                    ESTIMATED      MODELED    DIFFERENCE       RATIO
           SEPERATION  PERCENT OF   PERCENT OF  ( MODELED -  ( MODELED /
            INTERVAL    TRAVEL       TRAVEL      ESTIMATED    ESTIMATED)

             1 - 10    12.2881%     12.2684%     -.0197%        .9985
            11 - 20    47.8258%     47.8404%      .0146%       1.0004
            21 - 30    25.2244%     25.2497%      .0253%       1.0011
            31 - 40    11.2352%     11.2509%      .0156%       1.0015
            41 & UP     3.4265%      3.3907%     -.0358%        .9897
0
0                  SUMMARY OF MEAN TRIP LENGTHS BY SEPERATION INTERVAL
0
0                    ESTIMATED      MODELED    DIFFERENCE       RATIO
           SEPERATION  MEAN TRIP    MEAN TRIP  ( MODELED -  ( MODELED /
            INTERVAL    LENGTH       LENGTH      ESTIMATED    ESTIMATED)

             1 - 10     6.3413       6.3379      -.0034        .9995
            11 - 20    14.7339      14.7358       .0019       1.0001
            21 - 30    24.5589      24.5622       .0033       1.0001
            31 - 40    34.3887      34.3865      -.0022        .9999
            41 & UP    45.0475      45.0058      -.0417        .9991

             ALL       15.1203      15.1222       .0020       1.0001
0
0          * DATA SUMMARIZED IN THIS TABLE INCLUDES TERMINAL TIMES
0*************************************************************************************************************
OEXECUTE GET2                                                             11/16/1999
1TABLE G2                                    TRIP LENGTH FREQUENCY TABLE
0           Distribucion de viajes 1996 (NHB)
```

						11/16/1999		
SEPARATION INTERVAL	ZONE PAIR INCIDENCE	INTERACTION FREQUENCY	INTERCHANGE VOLUME	MAX VOLUME/ INTERACTION	VOLUME / ZONE PAIR	VOLUME / INTERACTION	VOLUME PERCENTAGE	CUMULATIVE VOLUME
1	90.	80.	9800.0	2705.0	108.889	122.500	1.984	1.98
2	187.	182.	6108.0	911.0	32.663	33.560	1.236	3.22
3	209.	200.	12964.0	1322.0	62.029	64.820	2.624	5.84
4	221.	202.	10633.0	1116.0	48.113	52.639	2.152	8.00
5	326.	317.	13052.0	1126.0	40.037	41.174	2.642	10.64
6	493.	463.	12295.0	582.0	24.939	26.555	2.489	13.13
7	650.	611.	13430.0	552.0	20.662	21.980	2.718	15.85
8	919.	858.	14103.0	620.0	15.346	16.437	2.855	18.70
9	1274.	1196.	19409.0	542.0	15.235	16.228	3.929	22.63
10	1830.	1682.	24592.0	472.0	13.438	14.621	4.978	27.61
11	2523.	2293.	26461.0	226.0	10.488	11.540	5.356	32.96
12	3282.	2906.	31707.0	765.0	9.661	10.911	6.418	39.38
13	4237.	3719.	36400.0	674.0	8.591	9.788	7.368	46.75
14	5070.	4313.	31937.0	460.0	6.299	7.405	6.465	53.21
15	5848.	4757.	29734.0	532.0	5.084	6.251	6.019	59.23
16	6341.	4896.	25670.0	194.0	4.048	5.243	5.196	64.43
17	6765.	4946.	22622.0	230.0	3.344	4.574	4.579	69.01
18	6959.	4894.	18482.0	172.0	2.656	3.776	3.741	72.75
19	7020.	4680.	16171.0	124.0	2.304	3.455	3.273	76.02
20	7026.	4398.	13918.0	174.0	1.981	3.165	2.817	78.84
21	7046.	4230.	11454.0	129.0	1.626	2.708	2.318	81.16
22	6922.	4130.	10892.0	94.0	1.574	2.637	2.205	83.36
23	6827.	3718.	10150.0	117.0	1.487	2.730	2.055	85.42
24	6792.	3540.	9542.0	100.0	1.405	2.695	1.931	87.35
25	6595.	3317.	7671.0	45.0	1.163	2.313	1.553	88.90
26	6357.	3108.	7227.0	74.0	1.137	2.325	1.463	90.36
27	6010.	2759.	5689.0	44.0	.947	2.062	1.152	91.51
28	5650.	2553.	4923.0	36.0	.871	1.928	.996	92.51
29	5349.	2312.	4625.0	31.0	.865	2.000	.936	93.45
30	5148.	2185.	4170.0	41.0	.810	1.908	.844	94.29
31	4834.	1975.	3649.0	61.0	.755	1.848	.739	95.03
32	4594.	1822.	3374.0	58.0	.734	1.852	.683	95.71
33	4280.	1711.	3212.0	39.0	.750	1.877	.650	96.36
34	3980.	1508.	2701.0	41.0	.679	1.791	.547	96.91
35	3755.	1381.	2587.0	38.0	.689	1.873	.524	97.43
36	3471.	1191.	1976.0	55.0	.569	1.659	.400	97.83
37	3236.	1005.	1621.0	36.0	.501	1.613	.328	98.16
38	3141.	980.	1569.0	51.0	.500	1.601	.318	98.48
39	2874.	886.	1400.0	26.0	.487	1.580	.283	98.76
40	2630.	726.	1078.0	22.0	.410	1.485	.218	98.98
41	2319.	560.	784.0	9.0	.338	1.400	.159	99.14
42	2138.	529.	788.0	18.0	.369	1.490	.160	99.30
43	1913.	463.	652.0	23.0	.341	1.408	.132	99.43
44	1716.	391.	537.0	22.0	.313	1.373	.109	99.54
45	1606.	378.	514.0	16.0	.320	1.360	.104	99.64
46	1282.	271.	370.0	24.0	.289	1.365	.075	99.72
47	1181.	256.	339.0	12.0	.287	1.324	.069	99.79
48	1018.	226.	282.0	10.0	.277	1.248	.057	99.84
49	924.	159.	210.0	11.0	.227	1.321	.043	99.89
50	786.	151.	176.0	6.0	.224	1.166	.036	99.92
51	683.	129.	149.0	3.0	.218	1.155	.030	99.95
52	584.	88.	93.0	2.0	.159	1.057	.019	99.97
53	532.	66.	68.0	2.0	.128	1.030	.014	99.99
54	480.	36.	36.0	1.0	.075	1.000	.007	99.99
55	454.	19.	20.0	2.0	.044	1.053	.004	100.00
56	356.	10.	10.0	1.0	.028	1.000	.002	100.00
57	324.	2.	2.0	1.0	.006	1.000	.000	100.00
58	269.	3.	3.0	1.0	.011	1.000	.001	100.00
59	224.	1.	1.0	1.0	.004	1.000	.000	100.00
60	197.	0.	.0	.0	.000			

61	167.	0.	.0	.0	.000
62	147.	0.	.0	.0	.000
63	111.	0.	.0	.0	.000
64	92.	0.	.0	.0	.000
65	71.	0.	.0	.0	.000
66	61.	0.	.0	.0	.000
67	42.	0.	.0	.0	.000
68	28.	0.	.0	.0	.000
69	23.	0.	.0	.0	.000
70	30.	0.	.0	.0	.000
71	17.	0.	.0	.0	.000
72	22.	0.	.0	.0	.000
73	13.	0.	.0	.0	.000
74	17.	0.	.0	.0	.000
75	11.	0.	.0	.0	.000
76	7.	0.	.0	.0	.000
77	2.	0.	.0	.0	.000
78	2.	0.	.0	.0	.000
79	5.	0.	.0	.0	.000
80	5.	0.	.0	.0	.000
81	1.	0.	.0	.0	.000
82	2.	0.	.0	.0	.000
83	1.	0.	.0	.0	.000

```
0     TOTAL      180625.      96368.     494032.0                                      AVERAGE TRIP LENGTH = 15.217
0                                                                                      AVERAGE INTERACTION = 22.103
0                                                                                      AVERAGE SEPARATION  = 26.323
0                                               DESIRED      RESULTING    PERCENT DIFFENCE
0                 AVERAGE INTERNAL TRIP LENGTH   15.12024     15.21734       .64217
                  TOTAL INTERNAL TRAVEL          7469883.     7517852.       .64217
0**********************************************************************************************************************
OEXECUTE STOP                                                                          11/16/1999
 Run time =    .188 minutes.
```

Appendix C4

**ATOM2 output file for calibration of 96 model.
TRTX trip purpose.**

C:\Eit-DIST\Run_Atom\Run_P4\TRTX96.OUT

```
1
=========================================
=========================================
=                                       =
=      ATOM2 TRIP DISTRIBUTION PROGRAM   =
=                                       =
=========================================
=========================================
=========================================
=             prepared by               =
=      Texas Transportation Institute    =
=========================================
=      Version Date:  June 17, 1998      =
=========================================
```

1   Distribucion de viajes 1996 (TRTX)

                                                                                    11/16/1999

             EFFECTIVE CAPACITIES
             ----
0   3000 CENTROIDS
0   269 SEPARATIONS
0   60 SECTORS   (3600 COMBINATIONS)
1
       REPORT = A1(5),A2(5),L1(5),X1,G2

  &VALUES ALTTRP=22, AN=1., ASSIGN=13, ATERM=.0, ATOP=T, DUMP=T, BINTRA=.0, EXEMPT=F, EXTEND=0, FCTRSD=1, FUTURE=T,
    GEN=52, HOVTRP=34, HWYTRP=33, IMPSEP=15, INTRIP=21, LIMIT=5, M=425, MILE=F, MILSEP=27, MF=28, MODTRP=3, MR=0, MS=4,
    MT=3, N=425, NEGSEP=1, NEWSEP=16, NF=1, NOWSEP=4, NOWTRP=2, NR=0, OMIT=F, ONE=1.0, PLOT=F, PN=1., PTERM=.0,
    RADII=51, RADIIM=1.0, RAWHOV=32, RAWPEK=31, RAWSEP=8, RECORD=14, REPORT=12, RND=.1, RS=26, SAMPLE=.125, SIZE=0,
    SKMTYP=F, SUMTRP=20, SV=25, SWTTRP=24, TABLE=4, TV=0., TYPE=, UT=.0, XP=-.68000E-03 &END
0***
OEXECUTE EDIT2   11/16/1999
OTOTAL ZONE AREA =   1492.0 SQUARE MINUTES
0 ALL INTRAZONAL TIMES NOT LISTED ABOVE HAVE BEEN SET TO   1
0
OMAXIMUM SEPARATION =   54 (TIME ONLY)
 MAXIMUM SEPERATION =   57 (TIME PLUS RADII)
0***
OEXECUTE ACCEPT2   11/16/1999
 ITERATION OPTION =   1
0***
OEXECUTE ATOM2   11/16/1999
OTOTAL ZONE AREA =   1899.7 SQUARE MINUTES
1   Distribucion de viajes 1996 (TRTX)

                                                                                    11/16/1999
0
OTABLE A1(1)   ATTRACTION VOLUME BALANCE (ITERATION 1)
0   PREVIOUS   CORRECTED
      ZONE   DESIRED   RESULTING   DIFFERENCE   PCT ERR   CHI-SQUARE CORRECTION RELATIVE   CORRECTION   RELATIVE

 R SQUARE =   .97118   1990.8
1   Distribucion de viajes 1996 (TRTX)

                                                                                    11/16/1999
OTABLE L1(1)   TRIP LENGTH BALANCE (ITERATION 1)
0   PERCENT   PERCENT   CORRECTED
 SEPARATION DESIRED RESULTING   DESIRED   RESULTING DIFFERENCE   PCT ERR   CHI-SQUARE   RELATIVE CORRECTION   RELATIVE

                                                                                479.5
0   DESIRED   RESULTING   PERCENT DIFFENCE
0   AVERAGE INTERNAL TRIP LENGTH   10.42447   11.02592   5.76962
                             TOTAL INTERNAL TRAVEL   531277.   561930.   5.76962
1   Distribucion de viajes 1996 (TRTX)

                                                                                    11/16/1999
0
OTABLE A1(2)   ATTRACTION VOLUME BALANCE (ITERATION 2)
0   PREVIOUS   CORRECTED
      ZONE   DESIRED   RESULTING   DIFFERENCE   PCT ERR   CHI-SQUARE CORRECTION RELATIVE   CORRECTION   RELATIVE

 R SQUARE =   .99546   540.7
1   Distribucion de viajes 1996 (TRTX)

                                                                                    11/16/1999
OTABLE L1(2)   TRIP LENGTH BALANCE (ITERATION 2)
0   PERCENT   PERCENT   CORRECTED
 SEPARATION DESIRED RESULTING   DESIRED   RESULTING DIFFERENCE   PCT ERR   CHI-SQUARE   RELATIVE CORRECTION   RELATIVE

                                                                                 58.8
0   DESIRED   RESULTING   PERCENT DIFFENCE
0   AVERAGE INTERNAL TRIP LENGTH   10.42447   10.57276   1.42256
                             TOTAL INTERNAL TRAVEL   531277.   538835.   1.42256
1   Distribucion de viajes 1996 (TRTX)

                                                                                    11/16/1999
0
OTABLE A1(3)   ATTRACTION VOLUME BALANCE (ITERATION 3)
0   PREVIOUS   CORRECTED
      ZONE   DESIRED   RESULTING   DIFFERENCE   PCT ERR   CHI-SQUARE CORRECTION RELATIVE   CORRECTION   RELATIVE

 R SQUARE =   .99652   404.8

C4-2

```
1                       Distribucion de viajes 1996 (TRTX)
```

```
                                                                             11/16/1999
OTABLE L1( 3)                                 TRIP LENGTH BALANCE (ITERATION 3)
0       PERCENT   PERCENT                                                                           CORRECTED
 SEPARATION DESIRED RESULTING     DESIRED   RESULTING DIFFERENCE  PCT ERR   CHI-SQUARE   RELATIVE CORRECTION  RELATIVE
                                                                            ------------
                                                                                14.4
0                                                      DESIRED     RESULTING    PERCENT DIFFENCE
0                 AVERAGE INTERNAL TRIP LENGTH        10.42447    10.45077        .25233
                      TOTAL INTERNAL TRAVEL           531277.     532618.        .25233
1                       Distribucion de viajes 1996 (TRTX)
```

```
                                                                             11/16/1999
0
OTABLE A1( 4)                              ATTRACTION VOLUME BALANCE (ITERATION 4)
0                                                                  PREVIOUS                       CORRECTED
        ZONE    DESIRED    RESULTING   DIFFERENCE    PCT ERR   CHI-SQUARE CORRECTION RELATIVE    CORRECTION   RELATIVE
                                                              ------------
 R SQUARE =     .99730                                            325.6
1                       Distribucion de viajes 1996 (TRTX)
```

```
                                                                             11/16/1999
OTABLE L1( 4)                                 TRIP LENGTH BALANCE (ITERATION 4)
0       PERCENT   PERCENT                                                                           CORRECTED
 SEPARATION DESIRED RESULTING     DESIRED   RESULTING DIFFERENCE  PCT ERR   CHI-SQUARE   RELATIVE CORRECTION  RELATIVE
                                                                            ------------
                                                                                 9.0
0                                                      DESIRED     RESULTING    PERCENT DIFFENCE
0                 AVERAGE INTERNAL TRIP LENGTH        10.42447    10.43373        .08887
                      TOTAL INTERNAL TRAVEL           531277.     531749.        .08887
1                       Distribucion de viajes 1996 (TRTX)
```

```
                                                                             11/16/1999
0
OTABLE A1( 5)                              ATTRACTION VOLUME BALANCE (ITERATION 5)
0                                                                  PREVIOUS                       CORRECTED
        ZONE    DESIRED    RESULTING   DIFFERENCE    PCT ERR   CHI-SQUARE CORRECTION RELATIVE    CORRECTION   RELATIVE
          1      215.0      205.0       -10.0        -4.651        .5     3.33749    .68419      1.0488       .71756
          2      121.0      125.0         4.0         3.306        .1     2.43189    .30399       .9680       .29426
          3       32.0       30.0        -2.0        -6.250        .1     2.05482    .06164      1.0667       .06575
          4       80.0      100.0        20.0        25.000       5.0     1.06016    .10602       .8000       .08481
          5       86.0       80.0        -6.0        -6.977        .4     1.27095    .10168      1.0750       .10930
          6       93.0       99.0         6.0         6.452        .4     1.31555    .13024       .9394       .12235
          7       55.0       55.0          .0          .000        .0     1.78808    .09834      1.0000       .09834
          8      193.0      175.0       -18.0        -9.326       1.7     1.44738    .25329      1.1029       .27934
          9       62.0       61.0        -1.0        -1.613        .0     1.01351    .06182      1.0164       .06284
         10       93.0       95.0         2.0         2.151        .0     1.24705    .11847       .9789       .11598
         11      103.0      108.0         5.0         4.854        .2     1.11664    .12060       .9537       .11501
         12       86.0       83.0        -3.0        -3.488        .1     1.22394    .10159      1.0361       .10526
         13      153.0      148.0        -5.0        -3.268        .2     1.21240    .17943      1.0338       .18550
         14      143.0      163.0        20.0        13.986       2.8     1.01032    .16468       .8773       .14448
         15      164.0      145.0       -19.0       -11.585       2.2     1.23991    .17979      1.1310       .20335
         16      223.0      222.0        -1.0         -.448        .0     1.01290    .22486      1.0045       .22588
         17       70.0       74.0         4.0         5.714        .2      .89919    .06654       .9459       .06294
         18      123.0      128.0         5.0         4.065        .2      .91791    .11749       .9609       .11290
         19      143.0      136.0        -7.0        -4.895        .3     1.01525    .13807      1.0515       .14518
         20       99.0       95.0        -4.0        -4.040        .2      .94594    .08986      1.0421       .09365
         21       93.0      102.0         9.0         9.677        .9      .84094    .08578       .9118       .07821
         22       94.0       98.0         4.0         4.255        .2      .95149    .09325       .9592       .08944
         23       93.0       84.0        -9.0        -9.677        .9      .83133    .06983      1.1071       .07731
         24       83.0      100.0        17.0        20.482       3.5      .86326    .08633       .8300       .07165
         25       67.0       64.0        -3.0        -4.478        .1      .69026    .04418      1.0469       .04625
         26       92.0       84.0        -8.0        -8.696        .7      .87679    .07365      1.0952       .08066
         27       89.0       85.0        -4.0        -4.494        .2      .82157    .06983      1.0471       .07312
         28       67.0       75.0         8.0        11.940       1.0      .77315    .05799       .8933       .05180
         29       46.0       50.0         4.0         8.696        .3      .76939    .03847       .9200       .03539
         30        9.0        7.0        -2.0       -22.222        .4      .87871    .00615      1.2857       .00791
         31       41.0       37.0        -4.0        -9.756        .4      .72317    .02676      1.1081       .02965
         32        7.0        7.0          .0          .000        .0      .82339    .00576      1.0000       .00576
         33       75.0       75.0          .0          .000        .0     1.27382    .09554      1.0000       .09554
         34      149.0      147.0        -2.0        -1.342        .0     1.84213    .27079      1.0136       .27448
         35      115.0      125.0        10.0         8.696        .9     1.11102    .13888       .9200       .12777
         36      146.0      142.0        -4.0        -2.740        .1     1.17836    .16733      1.0282       .17204
         37       76.0       80.0         4.0         5.263        .2     1.10470    .08838       .9500       .08396
         38       60.0       58.0        -2.0        -3.333        .1     1.23314    .07152      1.0345       .07399
         39      178.0      188.0        10.0         5.618        .6      .91975    .17291       .9468       .16372
         40      112.0       95.0       -17.0       -15.179       2.6     1.43606    .13643      1.1789       .16084
         41      134.0      131.0        -3.0        -2.239        .1     1.28621    .16849      1.0229       .17235
         42      149.0      144.0        -5.0        -3.356        .2     1.15817    .16678      1.0347       .17257
         43      206.0      223.0        17.0         8.252       1.4     1.04057    .23205       .9238       .21436
         44      176.0      166.0       -10.0        -5.682        .6      .95436    .15842      1.0602       .16797
         45      142.0      151.0         9.0         6.338        .6     1.14618    .17307       .9404       .16276
         46      147.0      143.0        -4.0        -2.721        .1     1.02287    .14627      1.0280       .15036
         47       77.0       78.0         1.0         1.299        .0      .84397    .06583       .9872       .06499
         48      110.0      101.0        -9.0        -8.182        .7      .94112    .09505      1.0891       .10352
         49       88.0       86.0        -2.0        -2.273        .0      .83539    .07184      1.0233       .07351
         50       21.0       27.0         6.0        28.571       1.7      .63947    .01727       .7778       .01343
         51       10.0       11.0         1.0        10.000        .1     1.24875    .01374       .9091       .01249
         52      102.0      100.0        -2.0        -1.961        .0      .86883    .08688      1.0200       .08862
         53       57.0       66.0         9.0        15.789       1.4      .81456    .05376       .8636       .04643
         54      105.0      106.0         1.0          .952        .0      .77183    .08181       .9906       .08104
         55      154.0      146.0        -8.0        -5.195        .4      .88537    .12926      1.0548       .13635
         56      171.0      174.0         3.0         1.754        .1      .82528    .14360       .9828       .14112
         57      149.0      157.0         8.0         5.369        .4      .90788    .14254       .9490       .13527
         58       89.0       93.0         4.0         4.494        .2      .80412    .07478       .9570       .07157
```

59	197.0	178.0	-19.0	-9.645	1.8	1.04552	.18610	1.1067	.20597
60	148.0	151.0	3.0	2.027	.1	1.08760	.16423	.9801	.16097
61	189.0	191.0	2.0	1.058	.0	1.52879	.29200	.9895	.28894
62	350.0	348.0	-2.0	-.571	.0	1.20788	.42034	1.0057	.42276
63	326.0	330.0	4.0	1.227	.0	2.55850	.84430	.9879	.83407
64	226.0	224.0	-2.0	-.885	.0	1.09783	.24591	1.0089	.24811
65	191.0	193.0	2.0	1.047	.0	1.60441	.30965	.9896	.30644
66	206.0	197.0	-9.0	-4.369	.4	1.51082	.29763	1.0457	.31123
67	148.0	158.0	10.0	6.757	.7	1.25182	.19779	.9367	.18527
68	173.0	162.0	-11.0	-6.358	.7	1.25140	.20273	1.0679	.21649
69	175.0	172.0	-3.0	-1.714	.1	.92079	.15838	1.0174	.16114
70	199.0	197.0	-2.0	-1.005	.0	.85966	.16935	1.0102	.17107
71	194.0	191.0	-3.0	-1.546	.0	.87782	.16766	1.0157	.17030
72	82.0	92.0	10.0	12.195	1.2	.78319	.07205	.8913	.06422
73	82.0	85.0	3.0	3.659	.1	.84806	.07208	.9647	.06954
74	206.0	193.0	-13.0	-6.311	.8	.85060	.16416	1.0674	.17522
75	245.0	261.0	16.0	6.531	1.0	.77652	.20267	.9387	.19025
76	223.0	218.0	-5.0	-2.242	.1	.89379	.19485	1.0229	.19931
77	118.0	111.0	-7.0	-5.932	.4	.98170	.10897	1.0631	.11584
78	288.0	286.0	-2.0	-.694	.0	1.05948	.30301	1.0070	.30513
79	281.0	287.0	6.0	2.135	.1	.84751	.24324	.9791	.23815
80	170.0	168.0	-2.0	-1.176	.0	1.03410	.17373	1.0119	.17580
81	172.0	168.0	-4.0	-2.326	.1	1.30443	.21914	1.0238	.22436
82	138.0	149.0	11.0	7.971	.9	1.17315	.17480	.9262	.16189
83	35.0	31.0	-4.0	-11.429	.5	1.10736	.03433	1.1290	.03876
84	53.0	40.0	-13.0	-24.528	3.2	1.01456	.04058	1.3250	.05377
85	132.0	145.0	13.0	9.848	1.3	.84530	.12257	.9103	.11158
86	3.0	7.0	4.0	133.333	5.3	.55102	.00386	.4286	.00165
87	7.0	5.0	-2.0	-28.571	.6	.79372	.00397	1.4000	.00556
88	55.0	63.0	8.0	14.545	1.2	.64161	.04042	.8730	.03529
89	94.0	86.0	-8.0	-8.511	.7	1.10550	.09507	1.0930	.10392
90	130.0	130.0	.0	.000	.0	.86493	.11244	1.0000	.11244
91	268.0	267.0	-1.0	-.373	.0	.93780	.25039	1.0037	.25133
92	102.0	101.0	-1.0	-.980	.0	.89181	.09007	1.0099	.09096
93	40.0	35.0	-5.0	-12.500	.6	1.12320	.03931	1.1429	.04493
94	41.0	38.0	-3.0	-7.317	.2	1.07799	.04096	1.0789	.04420
95	45.0	52.0	7.0	15.556	1.1	.87606	.04556	.8654	.03942
96	78.0	74.0	-4.0	-5.128	.2	1.00185	.07414	1.0541	.07814
97	203.0	205.0	2.0	.985	.0	.95923	.19664	.9902	.19472
98	65.0	61.0	-4.0	-6.154	.2	.83416	.05088	1.0656	.05422
99	34.0	38.0	4.0	11.765	.5	1.12038	.04257	.8947	.03809
100	23.0	28.0	5.0	21.739	1.1	.94772	.02654	.8214	.02180
101	19.0	18.0	-1.0	-5.263	.1	.69475	.01251	1.0556	.01320
102	11.0	18.0	7.0	63.636	4.5	.84536	.01522	.6111	.00930
103	82.0	70.0	-12.0	-14.634	1.8	1.05421	.07379	1.1714	.08645
104	126.0	115.0	-11.0	-8.730	1.0	1.17287	.13488	1.0957	.14778
105	11.0	11.0	.0	.000	.0	1.38331	.01522	1.0000	.01522
106	141.0	150.0	9.0	6.383	.6	1.04300	.15645	.9400	.14706
107	54.0	73.0	19.0	35.185	6.7	.92445	.06748	.7397	.04992
108	123.0	102.0	-21.0	-17.073	3.6	1.11727	.11396	1.2059	.13742
109	174.0	177.0	3.0	1.724	.1	1.01599	.17983	.9831	.17678
110	3.0	3.0	.0	.000	.0	1.68750	.00506	1.0000	.00506
111	105.0	113.0	8.0	7.619	.6	1.03767	.11726	.9292	.10896
112	90.0	90.0	.0	.000	.0	.90759	.08168	1.0000	.08168
113	174.0	171.0	-3.0	-1.724	.1	.93336	.15960	1.0175	.16240
114	177.0	175.0	-2.0	-1.130	.0	.98644	.17263	1.0114	.17460
115	76.0	71.0	-5.0	-6.579	.3	.99271	.07048	1.0704	.07545
116	14.0	16.0	2.0	14.286	.3	1.15488	.01848	.8750	.01617
117	6.0	10.0	4.0	66.667	2.7	.72000	.00720	.6000	.00432
118	41.0	47.0	6.0	14.634	.9	1.20822	.05679	.8723	.04954
119	14.0	13.0	-1.0	-7.143	.1	1.15976	.01508	1.0769	.01624
120	41.0	42.0	1.0	2.439	.0	1.16554	.04895	.9762	.04779
121	175.0	178.0	3.0	1.714	.1	1.33746	.23807	.9831	.23406
122	20.0	20.0	.0	.000	.0	.85061	.01701	1.0000	.01701
123	187.0	181.0	-6.0	-3.209	.2	1.23799	.22408	1.0331	.23150
124	92.0	83.0	-9.0	-9.783	.9	1.03354	.08578	1.1084	.09509
125	149.0	152.0	3.0	2.013	.1	1.47497	.22420	.9803	.21977
126	19.0	19.0	.0	.000	.0	1.06738	.02028	1.0000	.02028
127	174.0	193.0	19.0	10.920	2.1	1.12388	.21691	.9016	.19555
128	74.0	69.0	-5.0	-6.757	.3	1.99930	.13795	1.0725	.14795
129	231.0	228.0	-3.0	-1.299	.0	1.40178	.31961	1.0132	.32381
130	5.0	4.0	-1.0	-20.000	.2	5.58036	.02232	1.2500	.02790
131	53.0	52.0	-1.0	-1.887	.0	1.44130	.07495	1.0192	.07639
132	10.0	10.0	.0	.000	.0	1.68067	.01681	1.0000	.01681
133	36.0	31.0	-5.0	-13.889	.7	1.23910	.03841	1.1613	.04461
134	64.0	80.0	16.0	25.000	4.0	1.23829	.09906	.8000	.07925
135	49.0	46.0	-3.0	-6.122	.2	.93328	.04293	1.0652	.04573
136	183.0	163.0	-20.0	-10.929	2.2	1.00037	.16306	1.1227	.18307
137	271.0	285.0	14.0	5.166	.7	.84821	.24174	.9509	.22987
138	81.0	85.0	4.0	4.938	.2	.81999	.06970	.9529	.06642
139	68.0	69.0	1.0	1.471	.0	.87580	.06043	.9855	.05955
140	86.0	83.0	-3.0	-3.488	.1	.85795	.07121	1.0361	.07378
141	50.0	63.0	13.0	26.000	3.4	.82178	.05177	.7937	.04109
142	71.0	56.0	-15.0	-21.127	3.2	.93953	.05261	1.2679	.06671
143	124.0	125.0	1.0	.806	.0	.76509	.09564	.9920	.09487
144	141.0	138.0	-3.0	-2.128	.1	.90719	.12519	1.0217	.12791
145	158.0	164.0	6.0	3.797	.2	.96051	.15752	.9634	.15176
146	246.0	253.0	7.0	2.846	.2	.79312	.20066	.9723	.19511
147	139.0	139.0	.0	.000	.0	.87960	.12226	1.0000	.12226
148	400.0	381.0	-19.0	-4.750	.9	.81504	.31053	1.0499	.32602
149	118.0	124.0	6.0	5.085	.3	.76360	.09469	.9516	.09011
150	169.0	171.0	2.0	1.183	.0	.89628	.15326	.9883	.15147
151	69.0	76.0	7.0	10.145	.7	.82815	.06294	.9079	.05714
152	127.0	112.0	-15.0	-11.811	1.8	.89592	.10034	1.1339	.11378
153	61.0	46.0	-15.0	-24.590	3.7	.88015	.04049	1.3261	.05369
154	134.0	154.0	20.0	14.925	3.0	.77117	.11876	.8701	.10334

155	263.0	265.0	2.0	.760	.0	.89407	.23693	.9925	.23514
156	200.0	212.0	12.0	6.000	.7	.93157	.19749	.9434	.18631
157	174.0	167.0	-7.0	-4.023	.3	.84920	.14182	1.0419	.14776
158	131.0	131.0	.0	.000	.0	.89603	.11738	1.0000	.11738
159	121.0	116.0	-5.0	-4.132	.2	.96980	.11250	1.0431	.11735
160	196.0	183.0	-13.0	-6.633	.9	.94070	.17215	1.0710	.18438
161	103.0	118.0	15.0	14.563	2.2	1.22148	.14413	.8729	.12581
162	6.0	3.0	-3.0	-50.000	1.5	1.88921	.00567	2.0000	.01134
163	6.0	5.0	-1.0	-16.667	.2	1.12208	.00561	1.2000	.00673
164	34.0	46.0	12.0	35.294	4.2	.81482	.03748	.7391	.02770
165	9.0	12.0	3.0	33.333	1.0	.97056	.01165	.7500	.00874
166	22.0	22.0	.0	.000	.0	1.09547	.02410	1.0000	.02410
167	25.0	20.0	-5.0	-20.000	1.0	2.30757	.04615	1.2500	.05769
168	178.0	178.0	.0	.000	.0	1.21951	.21707	1.0000	.21707
169	240.0	231.0	-9.0	-3.750	.3	1.26199	.29152	1.0390	.30288
170	48.0	45.0	-3.0	-6.250	.2	1.19906	.05396	1.0667	.05755
171	227.0	236.0	9.0	3.965	.4	1.52572	.36007	.9619	.34634
172	16.0	12.0	-4.0	-25.000	1.0	1.63906	.01967	1.3333	.02622
173	40.0	42.0	2.0	5.000	.1	1.63188	.06854	.9524	.06528
174	93.0	93.0	.0	.000	.0	1.00476	.09344	1.0000	.09344
175	56.0	66.0	10.0	17.857	1.8	.98039	.06471	.8485	.05490
176	27.0	19.0	-8.0	-29.630	2.4	1.33193	.02531	1.4211	.03596
177	61.0	69.0	8.0	13.115	1.0	1.10198	.07604	.8841	.06722
178	108.0	96.0	-12.0	-11.111	1.3	1.09893	.10550	1.1250	.11868
179	144.0	144.0	.0	.000	.0	.86687	.12483	1.0000	.12483
180	230.0	231.0	1.0	.435	.0	.99801	.23054	.9957	.22954
181	161.0	155.0	-6.0	-3.727	.2	.88588	.13731	1.0387	.14263
182	103.0	114.0	11.0	10.680	1.2	.79519	.09065	.9035	.08190
183	33.0	21.0	-12.0	-36.364	4.4	1.22336	.02569	1.5714	.04037
184	7.0	11.0	4.0	57.143	2.3	.73457	.00808	.6364	.00514
185	104.0	107.0	3.0	2.885	.1	.77333	.08275	.9720	.08043
186	52.0	49.0	-3.0	-5.769	.2	.70024	.03431	1.0612	.03641
187	38.0	42.0	4.0	10.526	.4	.80054	.03362	.9048	.03042
188	66.0	65.0	-1.0	-1.515	.0	.88994	.05785	1.0154	.05874
189	69.0	65.0	-4.0	-5.797	.2	.94512	.06143	1.0615	.06521
190	79.0	80.0	1.0	1.266	.0	.66596	.05328	.9875	.05261
191	45.0	45.0	.0	.000	.0	.95331	.04290	1.0000	.04290
192	79.0	84.0	5.0	6.329	.3	.77630	.06521	.9405	.06133
193	105.0	114.0	9.0	8.571	.8	.84782	.09665	.9211	.08902
194	201.0	181.0	-20.0	-9.950	2.0	1.01525	.18376	1.1105	.20407
195	147.0	149.0	2.0	1.361	.0	.77040	.11479	.9866	.11325
196	40.0	52.0	12.0	30.000	3.6	.68348	.03554	.7692	.02734
197	75.0	64.0	-11.0	-14.667	1.6	.93328	.05973	1.1719	.07000
198	181.0	192.0	11.0	6.077	.7	.86839	.16673	.9427	.15718
199	103.0	109.0	6.0	5.825	.3	.78590	.08566	.9450	.08095
200	100.0	80.0	-20.0	-20.000	4.0	.87811	.07025	1.2500	.08781
201	111.0	120.0	9.0	8.108	.7	.91533	.10984	.9250	.10160
202	150.0	148.0	-2.0	-1.333	.0	.90637	.13414	1.0135	.13596
203	188.0	213.0	25.0	13.298	3.3	.78478	.16716	.8826	.14754
204	156.0	131.0	-25.0	-16.026	4.0	.95040	.12450	1.1908	.14826
205	92.0	107.0	15.0	16.304	2.4	.85783	.09179	.8598	.07892
206	88.0	82.0	-6.0	-6.818	.4	.97456	.07991	1.0732	.08576
207	142.0	137.0	-5.0	-3.521	.2	.99760	.13667	1.0365	.14166
208	58.0	63.0	5.0	8.621	.4	.78890	.04970	.9206	.04576
209	123.0	123.0	.0	.000	.0	.90942	.11186	1.0000	.11186
210	107.0	120.0	13.0	12.150	1.6	.84190	.10103	.8917	.09008
211	164.0	153.0	-11.0	-6.707	.7	.97851	.14971	1.0719	.16048
212	122.0	125.0	3.0	2.459	.1	1.00588	.12573	.9760	.12272
213	302.0	299.0	-3.0	-.993	.0	1.01405	.30320	1.0100	.30624
214	69.0	76.0	7.0	10.145	.7	.95993	.07295	.9079	.06623
215	79.0	70.0	-9.0	-11.392	1.0	.95599	.06692	1.1286	.07552
216	126.0	112.0	-14.0	-11.111	1.6	1.12389	.12588	1.1250	.14161
217	169.0	177.0	8.0	4.734	.4	1.04563	.18508	.9548	.17671
218	319.0	313.0	-6.0	-1.881	.1	1.39155	.43556	1.0192	.44391
219	446.0	453.0	7.0	1.570	.1	.94375	.42752	.9845	.42091
220	114.0	115.0	1.0	.877	.0	.99230	.11411	.9913	.11312
221	391.0	396.0	5.0	1.279	.1	1.06359	.42118	.9874	.41586
222	146.0	140.0	-6.0	-4.110	.2	1.05824	.14815	1.0429	.15450
223	157.0	154.0	-3.0	-1.911	.1	1.02937	.15852	1.0195	.16161
224	119.0	119.0	.0	.000	.0	.94361	.11229	1.0000	.11229
225	18.0	19.0	1.0	5.556	.1	1.12756	.02142	.9474	.02030
226	376.0	381.0	5.0	1.330	.1	.83894	.31964	.9869	.31544
227	45.0	39.0	-6.0	-13.333	.8	1.18646	.04627	1.1538	.05339
228	162.0	168.0	6.0	3.704	.2	.79178	.13302	.9643	.12827
229	194.0	187.0	-7.0	-3.608	.3	.88920	.16628	1.0374	.17250
230	114.0	113.0	-1.0	-.877	.0	.91180	.10303	1.0088	.10395
231	50.0	54.0	4.0	8.000	.3	.85400	.04612	.9259	.04270
232	145.0	154.0	9.0	6.207	.6	.86328	.13294	.9416	.12518
233	166.0	162.0	-4.0	-2.410	.1	.95033	.15395	1.0247	.15776
234	321.0	317.0	-4.0	-1.246	.0	1.01744	.32253	1.0126	.32660
235	31.0	29.0	-2.0	-6.452	.1	.76524	.02219	1.0690	.02372
236	197.0	213.0	16.0	8.122	1.3	.86519	.18429	.9249	.17044
237	133.0	112.0	-21.0	-15.789	3.3	1.09654	.12281	1.1875	.14584
238	149.0	155.0	6.0	4.027	.2	1.00575	.15589	.9613	.14986
239	72.0	63.0	-9.0	-12.500	1.1	1.52006	.09576	1.1429	.10944
240	167.0	178.0	11.0	6.587	.7	.76303	.13582	.9382	.12743
241	107.0	101.0	-6.0	-5.607	.3	.85920	.08678	1.0594	.09193
242	37.0	29.0	-8.0	-21.622	1.7	.87655	.02542	1.2759	.03243
243	213.0	239.0	26.0	12.207	3.2	.81088	.19380	.8912	.17272
244	15.0	23.0	8.0	53.333	4.3	.79611	.01831	.6522	.01194
245	197.0	187.0	-10.0	-5.076	.5	1.17366	.21947	1.0535	.23121
246	77.0	61.0	-16.0	-20.779	3.3	1.46658	.08946	1.2623	.11293
247	2.0	2.0	.0	.000	.0	.88889	.00178	1.0000	.00178
248	183.0	183.0	.0	.000	.0	1.14850	.21018	1.0000	.21018
249	368.0	377.0	9.0	2.446	.2	1.22813	.46300	.9761	.45195
250	219.0	230.0	11.0	5.023	.6	.92643	.21308	.9522	.20289

251	164.0	141.0	-23.0	-14.024	3.2	1.00296	.14142	1.1631	.16449
252	293.0	301.0	8.0	2.730	.2	.93017	.27998	.9734	.27254
253	73.0	75.0	2.0	2.740	.1	.86259	.06469	.9733	.06297
254	85.0	85.0	.0	.000	.0	.79000	.06715	1.0000	.06715
255	92.0	88.0	-4.0	-4.348	.2	.95258	.08383	1.0455	.08764
256	139.0	139.0	.0	.000	.0	.91797	.12760	1.0000	.12760
257	137.0	135.0	-2.0	-1.460	.0	1.03364	.13954	1.0148	.14161
258	164.0	177.0	13.0	7.927	1.0	1.03996	.18407	.9266	.17055
259	496.0	489.0	-7.0	-1.411	.1	.93495	.45719	1.0143	.46374
260	103.0	95.0	-8.0	-7.767	.6	1.07638	.10226	1.0842	.11087
261	195.0	195.0	.0	.000	.0	.98155	.19140	1.0000	.19140
262	133.0	143.0	10.0	7.519	.8	1.02678	.14683	.9301	.13656
263	131.0	125.0	-6.0	-4.580	.3	1.24026	.15503	1.0480	.16247
264	154.0	154.0	.0	.000	.0	.96386	.14843	1.0000	.14843
265	88.0	90.0	2.0	2.273	.0	.91530	.08238	.9778	.08055
266	204.0	203.0	-1.0	-.490	.0	1.00771	.20457	1.0049	.20557
267	103.0	105.0	2.0	1.942	.0	.79786	.08378	.9810	.08218
268	93.0	96.0	3.0	3.226	.1	1.39115	.13355	.9688	.12938
269	148.0	146.0	-2.0	-1.351	.0	1.03951	.15177	1.0137	.15385
270	74.0	77.0	3.0	4.054	.1	1.08894	.08385	.9610	.08058
271	138.0	130.0	-8.0	-5.797	.5	1.06921	.13900	1.0615	.14755
272	64.0	70.0	6.0	9.375	.6	1.68505	.11795	.9143	.10784
273	122.0	120.0	-2.0	-1.639	.0	1.40519	.16862	1.0167	.17143
274	182.0	183.0	1.0	.549	.0	.84914	.15539	.9945	.15454
275	187.0	186.0	-1.0	-.535	.0	.87555	.16285	1.0054	.16373
276	115.0	102.0	-13.0	-11.304	1.5	.94835	.09673	1.1275	.10906
277	171.0	180.0	9.0	5.263	.5	.88600	.15948	.9500	.15151
278	112.0	124.0	12.0	10.714	1.3	.80395	.09969	.9032	.09004
279	155.0	147.0	-8.0	-5.161	.4	.78191	.11494	1.0544	.12120
280	101.0	90.0	-11.0	-10.891	1.2	.82337	.07410	1.1222	.08316
281	68.0	79.0	11.0	16.176	1.8	.73430	.05801	.8608	.04993
282	134.0	139.0	5.0	3.731	.2	.74419	.10344	.9640	.09972
283	282.0	264.0	-18.0	-6.383	1.1	1.09739	.28971	1.0682	.30946
284	354.0	359.0	5.0	1.412	.1	.96026	.34473	.9861	.33993
285	158.0	158.0	.0	.000	.0	.83994	.13271	1.0000	.13271
286	146.0	152.0	6.0	4.110	.2	.83727	.12727	.9605	.12224
287	97.0	91.0	-6.0	-6.186	.4	.82629	.07519	1.0659	.08015
288	113.0	115.0	2.0	1.770	.0	.86407	.09937	.9826	.09764
289	173.0	169.0	-4.0	-2.312	.1	.87947	.14863	1.0237	.15215
290	157.0	155.0	-2.0	-1.274	.0	.82351	.12764	1.0129	.12929
291	94.0	88.0	-6.0	-6.383	.4	.76004	.06688	1.0682	.07144
292	158.0	164.0	6.0	3.797	.2	.73983	.12133	.9634	.11689
293	159.0	164.0	5.0	3.145	.2	.82931	.13601	.9695	.13186
294	122.0	115.0	-7.0	-5.738	.4	.82599	.09499	1.0609	.10077
295	199.0	215.0	16.0	8.040	1.3	.97174	.20892	.9256	.19338
296	191.0	186.0	-5.0	-2.618	.1	.82798	.15400	1.0269	.15814
297	333.0	328.0	-5.0	-1.502	.1	.89259	.29277	1.0152	.29723
298	221.0	217.0	-4.0	-1.810	.1	.85949	.18651	1.0184	.18995
299	304.0	307.0	3.0	.987	.0	1.07316	.32946	.9902	.32624
300	337.0	336.0	-1.0	-.297	.0	.98341	.33042	1.0030	.33141
301	132.0	134.0	2.0	1.515	.0	.95073	.12740	.9851	.12550
302	10.0	6.0	-4.0	-40.000	1.6	1.55010	.00930	1.6667	.01550
303	25.0	35.0	10.0	40.000	4.0	2.19613	.07686	.7143	.05490
304	51.0	33.0	-18.0	-35.294	6.4	2.57667	.08503	1.5455	.13141
305	160.0	168.0	8.0	5.000	.4	1.31143	.22032	.9524	.20983
306	112.0	108.0	-4.0	-3.571	.1	2.05824	.22229	1.0370	.23052
307	27.0	26.0	-1.0	-3.704	.0	2.39738	.06233	1.0385	.06473
308	24.0	25.0	1.0	4.167	.0	1.40807	.03520	.9600	.03379
309	60.0	50.0	-10.0	-16.667	1.7	1.35845	.06792	1.2000	.08151
310	97.0	103.0	6.0	6.186	.4	1.05888	.10906	.9417	.10271
311	101.0	109.0	8.0	7.921	.6	2.07900	.22661	.9266	.20998
312	32.0	33.0	1.0	3.125	.0	1.54849	.05110	.9697	.04955
313	1.0	1.0	.0	.000	.0	8.00000	.00800	1.0000	.00800
314	47.0	50.0	3.0	6.383	.2	2.93709	.14685	.9400	.13804
315	3.0	4.0	1.0	33.333	.3	3.03750	.01215	.7500	.00911
316	15.0	14.0	-1.0	-6.667	.1	4.05162	.05672	1.0714	.06077
317	44.0	51.0	7.0	15.909	1.1	3.73263	.19036	.8627	.16424
318	32.0	27.0	-5.0	-15.625	.8	5.19152	.14017	1.1852	.16613
319	34.0	28.0	-6.0	-17.647	1.1	5.17655	.14494	1.2143	.17600
320	20.0	30.0	10.0	50.000	5.0	1.11483	.03344	.6667	.02230
321	5.0	5.0	.0	.000	.0	2.79018	.01395	1.0000	.01395
322	105.0	101.0	-4.0	-3.810	.2	1.96429	.19839	1.0396	.20625
323	28.0	29.0	1.0	3.571	.0	2.06851	.05999	.9655	.05792
324	49.0	53.0	4.0	8.163	.3	1.38524	.07342	.9245	.06788
325	9.0	6.0	-3.0	-33.333	1.0	1.26173	.00757	1.5000	.01136
326	53.0	53.0	.0	.000	.0	1.27289	.06746	1.0000	.06746
327	42.0	34.0	-8.0	-19.048	1.5	2.53970	.08635	1.2353	.10667
328	85.0	82.0	-3.0	-3.529	.1	2.24741	.18429	1.0366	.19103
329	98.0	116.0	18.0	18.367	3.3	1.12216	.13017	.8448	.10997
330	40.0	30.0	-10.0	-25.000	2.5	1.60030	.04801	1.3333	.06401
331	55.0	51.0	-4.0	-7.273	.3	1.33027	.06784	1.0784	.07316
332	137.0	130.0	-7.0	-5.109	.4	1.01839	.13239	1.0538	.13952
333	4.0	11.0	7.0	175.000	12.3	2.06869	.02276	.3636	.00827
334	1.0	2.0	1.0	100.000	1.0	2.00000	.00400	.5000	.00200
335	60.0	58.0	-2.0	-3.333	.1	2.46549	.14300	1.0345	.14793
336	196.0	208.0	12.0	6.122	.7	1.10844	.23056	.9423	.21725
337	85.0	83.0	-2.0	-2.353	.0	.93416	.07754	1.0241	.07940
338	482.0	483.0	1.0	.207	.0	.97275	.46984	.9979	.46887
339	109.0	106.0	-3.0	-2.752	.1	.94573	.10025	1.0283	.10308
340	166.0	161.0	-5.0	-3.012	.2	.90366	.14549	1.0311	.15001
341	74.0	83.0	9.0	12.162	1.1	.80730	.06701	.8916	.05974
342	172.0	147.0	-25.0	-14.535	3.6	.95487	.14037	1.1701	.16424
343	97.0	114.0	17.0	17.526	3.0	.87776	.10007	.8509	.08514
344	325.0	319.0	-6.0	-1.846	.1	.86734	.27668	1.0188	.28188
345	96.0	99.0	3.0	3.125	.1	.79950	.07915	.9697	.07675
346	39.0	35.0	-4.0	-10.256	.4	.97565	.03415	1.1143	.03805

347	33.0	32.0	-1.0	-3.030	.0	.85308	.02730	1.0313	.02815
348	89.0	95.0	6.0	6.742	.4	.80734	.07670	.9368	.07185
349	88.0	91.0	3.0	3.409	.1	.80037	.07283	.9670	.07043
350	55.0	57.0	2.0	3.636	.1	.84486	.04816	.9649	.04647
351	297.0	292.0	-5.0	-1.684	.1	1.11165	.32460	1.0171	.33016
352	3.0	.0	-3.0	-100.000	3.0	1.68750	.00253	2.0000	.00506
353	246.0	244.0	-2.0	-.813	.0	1.03674	.25296	1.0082	.25504
354	524.0	525.0	1.0	.191	.0	1.20806	.63423	.9981	.63303
355	53.0	53.0	.0	.000	.0	.96088	.05093	1.0000	.05093
356	37.0	33.0	-4.0	-10.811	.4	.87086	.02874	1.1212	.03222
357	41.0	36.0	-5.0	-12.195	.6	1.11447	.04012	1.1389	.04569
358	136.0	144.0	8.0	5.882	.5	.94885	.13663	.9444	.12904
359	33.0	27.0	-6.0	-18.182	1.1	.88100	.02379	1.2222	.02907
360	39.0	55.0	16.0	41.026	6.6	.92757	.05102	.7091	.03618
361	61.0	54.0	-7.0	-11.475	.8	.98562	.05322	1.1296	.06012
362	72.0	73.0	1.0	1.389	.0	.86655	.06326	.9863	.06239
363	42.0	38.0	-4.0	-9.524	.4	.93376	.03548	1.1053	.03922
364	36.0	42.0	6.0	16.667	1.0	.79674	.03346	.8571	.02868
365	89.0	80.0	-9.0	-10.112	.9	.98880	.07910	1.1125	.08800
366	50.0	50.0	.0	.000	.0	.96647	.04832	1.0000	.04832
367	63.0	73.0	10.0	15.873	1.6	.77252	.05639	.8630	.04867
368	61.0	62.0	1.0	1.639	.0	1.02782	.06373	.9839	.06270
369	142.0	143.0	1.0	.704	.0	1.00390	.14356	.9930	.14255
370	149.0	143.0	-6.0	-4.027	.2	1.03578	.14812	1.0420	.15433
371	646.0	643.0	-3.0	-.464	.0	1.04965	.67492	1.0047	.67807
372	114.0	114.0	.0	.000	.0	.91375	.10417	1.0000	.10417
373	89.0	90.0	1.0	1.124	.0	.91760	.08258	.9889	.08167
374	3.0	4.0	1.0	33.333	.3	1.26563	.00506	.7500	.00380
375	2.0	2.0	.0	.000	.0	1.33333	.00267	1.0000	.00267
376	58.0	60.0	2.0	3.448	.1	1.24819	.07489	.9667	.07240
377	113.0	120.0	7.0	6.195	.4	1.07032	.12844	.9417	.12095
378	397.0	394.0	-3.0	-.756	.0	1.14828	.45242	1.0076	.45587
379	49.0	46.0	-3.0	-6.122	.2	1.07200	.04931	1.0652	.05253
380	231.0	224.0	-7.0	-3.030	.2	1.37167	.30725	1.0313	.31685
381	183.0	177.0	-6.0	-3.279	.2	1.42380	.25201	1.0339	.26056
382	97.0	93.0	-4.0	-4.124	.2	1.74430	.16213	1.0430	.16910
383	283.0	296.0	13.0	4.594	.6	1.25813	.37241	.9561	.35605
384	221.0	211.0	-10.0	-4.525	.5	1.24455	.26260	1.0474	.27505
385	691.0	698.0	7.0	1.013	.1	1.05615	.73719	.9900	.72980
386	16.0	17.0	1.0	6.250	.1	3.21255	.05461	.9412	.05140
387	112.0	109.0	-3.0	-2.679	.1	2.41850	.26362	1.0275	.27087
388	85.0	83.0	-2.0	-2.353	.0	2.74543	.22787	1.0241	.23336
389	255.0	253.0	-2.0	-.784	.0	2.31529	.58577	1.0079	.59040
390	60.0	60.0	.0	.000	.0	.77689	.04661	1.0000	.04661
391	105.0	101.0	-4.0	-3.810	.2	.91405	.09232	1.0396	.09597
392	83.0	94.0	11.0	13.253	1.5	.81624	.07673	.8830	.06775
393	60.0	78.0	18.0	30.000	5.4	.76851	.05994	.7692	.04611
394	151.0	141.0	-10.0	-6.623	.7	.83529	.11778	1.0709	.12613
395	115.0	108.0	-7.0	-6.087	.4	.79688	.08606	1.0648	.09164
396	42.0	40.0	-2.0	-4.762	.1	2.37089	.09484	1.0500	.09958
397	212.0	225.0	13.0	6.132	.8	.87371	.19658	.9422	.18523
398	88.0	73.0	-15.0	-17.045	2.6	4.34939	.31751	1.2055	.38275
399	81.0	78.0	-3.0	-3.704	.1	.94695	.07386	1.0385	.07670
400	5.0	6.0	1.0	20.000	.2	1.37787	.00827	.8333	.00689
401	30.0	30.0	.0	.000	.0	1.43686	.04311	1.0000	.04311
402	79.0	75.0	-4.0	-5.063	.2	1.32889	.09967	1.0533	.10498
403	115.0	119.0	4.0	3.478	.1	.90157	.10729	.9664	.10368
404	117.0	124.0	7.0	5.983	.4	.92029	.11412	.9435	.10767
405	52.0	63.0	11.0	21.154	2.3	1.53515	.09671	.8254	.07983
406	52.0	47.0	-5.0	-9.615	.5	1.38708	.06519	1.1064	.07213
407	31.0	28.0	-3.0	-9.677	.3	1.87843	.05260	1.1071	.05823
408	80.0	78.0	-2.0	-2.500	.1	1.84498	.14391	1.0256	.14760
409	97.0	93.0	-4.0	-4.124	.2	1.36942	.12736	1.0430	.13283
410	57.0	56.0	-1.0	-1.754	.0	1.38484	.07755	1.0179	.07894
411	44.0	54.0	10.0	22.727	2.3	.83465	.04507	.8148	.03672
412	59.0	61.0	2.0	3.390	.1	.72728	.04436	.9672	.04291
413	125.0	117.0	-8.0	-6.400	.5	.90383	.10575	1.0684	.11298
414	136.0	142.0	6.0	4.412	.3	.87228	.12386	.9577	.11863
415	60.0	56.0	-4.0	-6.667	.3	1.78355	.09988	1.0714	.10701
416	55.0	60.0	5.0	9.091	.5	1.22613	.07357	.9167	.06744
417	98.0	87.0	-11.0	-11.224	1.2	1.33171	.11586	1.1264	.13051
418	42.0	48.0	6.0	14.286	.9	1.01671	.04880	.8750	.04270
419	91.0	77.0	-14.0	-15.385	2.2	1.02206	.07870	1.1818	.09301
420	62.0	78.0	16.0	25.806	4.1	.87018	.06787	.7949	.05395
421	117.0	113.0	-4.0	-3.419	.1	.84222	.09517	1.0354	.09854
422	168.0	175.0	7.0	4.167	.3	.84883	.14854	.9600	.14260
423	194.0	189.0	-5.0	-2.577	.1	1.08137	.20438	1.0265	.20979
424	17.0	22.0	5.0	29.412	1.5	.47934	.01055	.7727	.00815
425	36.0	36.0	.0	.000	.0	.96704	.03481	1.0000	.03481

```
                                            -----------
                                                324.8
```

R SQUARE = .99716

OTABLE A2(5)   ATTRACTION VOLUME BALANCE SUMMARY (ITERATION 5)
0
0   CROSS CLASSIFICATION OF ATTRACTION ZONES BY DESIRED ATTRACTION VOLUME
                            AND PERCENT ERROR OF RESULTING ATTRACTION VOLUME
0
0   PERCENT ERROR

DESIRED ATTRACTION RANGES	-75 TO -100	-50 TO -100	-25 TO -75	-10 TO -50	-5 TO -25	-1 TO -10	0 TO -5	0 TO -1	0	0 TO 1	1 TO 5	5 TO 10	10 TO 25	25 TO 50	50 TO 75	75 TO 100	100 AND ABOVE	TOTAL
0.0																		0
.1 - .9																		0
1.0 - 9.9	1			3	3				6				1	3	2		3	22
10.0 - 24.9				1	1	3			5		1	2	3	2	3			21
25.0 - 49.9				2	14	9	3		3		3	4	8	4				50
50.0 - 99.9				1	14	18	20		9		20	11	17	6				116
100.0 - 199.9					14	20	43	3	13	5	28	27	8					161
200.0 - 299.9						3	9	7		3	5	6	1					34
300.0 - 399.9							4	4		1	5							14
400.0 - 499.9							2			1	1							4
500.0 - 599.9										1								1
600.0 - 699.9							1				1							2
TOTAL	1	0	0	7	46	53	81	15	36	11	64	50	38	15	5	0	3	425

OTABLE L1(5)   TRIP LENGTH BALANCE (ITERATION 5)

SEPARATION	PERCENT DESIRED	PERCENT RESULTING	DESIRED	RESULTING	DIFFERENCE	PCT ERR	CHI-SQUARE	RELATIVE	CORRECTION	CORRECTED RELATIVE
1	2.9300	2.9346	1493.2	1495.6	2.3	.156	.0	210.5398	.9984	210.2112_
2	4.2000	4.1976	2140.5	2139.3	-1.2	-.057	.0	224.7281	1.0006	224.8564_
3	5.1999	5.1761	2650.1	2638.0	-12.1	-.458	.1	154.9451	1.0046	155.6587_
4	6.1999	6.2087	3159.8	3164.2	4.5	.141	.0	124.5751	.9986	124.3997_
5	6.7499	6.7856	3440.1	3458.3	18.2	.529	.1	100.0000	.9947	99.4737_
6	6.9999	7.0265	3567.5	3581.0	13.6	.380	.1	83.2159	.9962	82.9008_
7	7.0499	7.0718	3593.0	3604.1	11.2	.311	.0	68.2578	.9969	68.0463_
8	6.8799	6.8958	3506.3	3514.4	8.1	.230	.0	55.9716	.9977	55.8430_
9	6.5999	6.6321	3363.6	3380.0	16.4	.487	.1	48.5228	.9952	48.2878_
10	5.8499	5.8341	2981.4	2973.3	-8.1	-.271	.0	38.8273	1.0027	38.9329_
11	5.2999	5.2328	2701.1	2666.9	-34.2	-1.267	.4	32.7502	1.0128	33.1706_
12	4.7000	4.7103	2395.3	2400.6	5.3	.220	.0	27.2561	.9978	27.1962_
13	4.1500	4.1422	2115.0	2111.0	-4.0	-.187	.0	22.2334	1.0019	22.2751_
14	3.7000	3.6661	1885.7	1868.4	-17.3	-.915	.2	18.4458	1.0092	18.6162_
15	3.3000	3.2782	1681.8	1670.7	-11.1	-.660	.1	15.6790	1.0066	15.7832_
16	2.8800	2.8844	1467.8	1470.0	2.3	.155	.0	13.4808	.9985	13.4600_
17	2.5000	2.5189	1274.1	1283.8	9.7	.758	.1	11.4627	.9925	11.3764_
18	2.2000	2.2165	1121.2	1129.6	8.4	.751	.1	10.1511	.9926	10.0755_
19	1.9500	1.9621	993.8	1000.0	6.2	.622	.0	8.8858	.9938	8.8308_
20	1.7000	1.7267	866.4	880.0	13.6	1.570	.2	7.7950	.9845	7.6745_
21	1.4500	1.4551	739.0	741.6	2.6	.353	.0	6.7706	.9965	6.7468_
22	1.2800	1.2603	652.3	642.3	-10.0	-1.535	.2	5.9917	1.0156	6.0852_
23	1.1500	1.1177	586.1	569.6	-16.5	-2.809	.5	5.5419	1.0289	5.7020_
24	.9700	.9550	494.4	486.7	-7.7	-1.548	.1	5.1065	1.0157	5.1868_
25	.8300	.8439	423.0	430.1	7.1	1.676	.1	4.8552	.9835	4.7752_
26	.7100	.7122	361.8	363.0	1.1	.315	.0	4.4754	.9969	4.4614_
27	.5900	.5875	300.7	299.4	-1.3	-.430	.0	3.9736	1.0043	3.9908_
28	.4900	.5014	249.7	255.6	5.8	2.338	.1	3.7365	.9772	3.6511_
29	.4100	.4284	209.0	218.3	9.4	4.497	.4	3.3936	.9570	3.2476_
30	.3300	.3435	168.2	175.1	6.9	4.106	.3	3.0695	.9606	2.9485_
31	.2500	.2388	127.4	121.7	-5.7	-4.460	.3	2.5096	1.0467	2.6267_
32	.1800	.1514	91.7	77.1	-14.6	-15.912	2.3	1.9324	1.1892	2.2980_
33	.1300	.1143	66.3	58.3	-8.0	-12.049	1.0	1.7214	1.1370	1.9572_
34	.0800	.0921	40.8	46.9	6.2	15.143	.9	1.2872	.8685	1.1179_
35	.0500	.0463	25.5	23.6	-1.9	-7.410	.1	.7445	1.0800	.8041_
36	.0300	.0239	15.3	12.2	-3.1	-20.312	.6	.5351	1.2549	.6715_
37	.0200	.0153	10.2	7.8	-2.4	-23.701	.6	.3909	1.3106	.5123_
38	.0100	.0088	5.1	4.5	-.6	-12.343	.1	.2389	1.1408	.2725_
39	.0000	.0000	.0	.0	.0	-89.273	.0	.0001	1.0000	.0001_
40	.0000	.0000	.0	.0	.0	-91.802	.0	.0001	1.0000	.0001_
41	.0000	.0000	.0	.0	.0	-94.026	.0	.0001	1.0000	.0001_
42	.0000	.0000	.0	.0	.0	-96.256	.0	.0001	1.0000	.0001_
43	.0000	.0000	.0	.0	.0	-97.973	.0	.0001	1.0000	.0001_
44	.0000	.0000	.0	.0	.0	-99.599	.0	.0001	1.0000	.0001_
45	.0000	.0000	.0	.0	.0	-99.998	.0	.0001	1.0000	.0001_
46	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
47	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
48	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
49	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
50	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
51	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
52	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
53	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
54	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
55	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
56	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
57	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
58	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
59	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
60	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
61	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_

```
62     .0000      .0000       .0        .0       .0  -100.000        .0      .0001   1.0000    .0001_
63     .0000      .0000       .0        .0       .0  -100.000        .0      .0001   1.0000    .0001_
64     .0000      .0000       .0        .0       .0  -100.000        .0      .0001   1.0000    .0001_
65     .0000      .0000       .0        .0       .0  -100.000        .0      .0001   1.0000    .0001_
66     .0000      .0000       .0        .0       .0  -100.000        .0      .0001   1.0000    .0001_
67     .0000      .0000       .0        .0       .0  -100.000        .0      .0001   1.0000    .0001_
68     .0000      .0000       .0        .0       .0  -100.000        .0      .0001   1.0000    .0001_
69     .0000      .0000       .0        .0       .0  -100.000        .0      .0001   1.0000    .0001_
70     .0000      .0000       .0        .0       .0  -100.000        .0      .0001   1.0000    .0001_
71     .0000      .0000       .0        .0       .0  -100.000        .0      .0001   1.0000    .0001_
72     .0000      .0000       .0        .0       .0  -100.000        .0      .0001   1.0000    .0001_
73     .0000      .0000       .0        .0       .0  -100.000        .0      .0001   1.0000    .0001_
74     .0000      .0000       .0        .0       .0  -100.000        .0      .0001   1.0000    .0001_
75     .0000      .0000       .0        .0       .0  -100.000        .0      .0001   1.0000    .0001_
76     .0000      .0000       .0        .0       .0  -100.000        .0      .0001   1.0000    .0001_
77     .0000      .0000       .0        .0       .0  -100.000        .0      .0001   1.0000    .0001_
78     .0000      .0000       .0        .0       .0  -100.000        .0      .0001   1.0000    .0001_
79     .0000      .0000       .0        .0       .0  -100.000        .0      .0001   1.0000    .0001_
80     .0000      .0000       .0        .0       .0  -100.000        .0      .0001   1.0000    .0001_
81     .0000      .0000       .0        .0       .0  -100.000        .0      .0001   1.0000    .0001_
82     .0000      .0000       .0        .0       .0  -100.000        .0      .0001   1.0000    .0001_
                                                               ------------
                                                                   9.5
```

		DESIRED	RESULTING	PERCENT DIFFENCE
0
0   AVERAGE INTERNAL TRIP LENGTH   10.42447   10.41284   -.11147
            TOTAL INTERNAL TRAVEL   531277.   530685.   -.11148
1   Distribucion de viajes 1996 (TRTX)

OTABLE X1   SUMMARY COMPARISON OF
                                   ESTIMATED VS. MODELED
                                   TRIP LENGTH FREQUENCY*

0
0   SUMMARY OF TRIPS BY SEPERATION INTERVAL
0
0   ESTIMATED   MODELED   DIFFERENCE   RATIO
            SEPERATION PERCENT OF PERCENT OF (MODELED - (MODELED /
            INTERVAL   TRIPS   TRIPS   ESTIMATED   ESTIMATED)

             1 - 10   58.6595%   58.7646%   .1051%   1.0018
            11 - 20   32.3797%   32.3392%   -.0406%   .9987
            21 - 30   8.2099%   8.2054%   -.0046%   .9994
            31 - 40   .7500%   .6909%   -.0591%   .9211
            41 & UP   .0008%   .0000%   -.0008%   .0029
0
0   SUMMARY OF TRAVEL BY SEPERATION INTERVAL
0
0   ESTIMATED   MODELED   DIFFERENCE   RATIO
            SEPERATION PERCENT OF PERCENT OF (MODELED - (MODELED /
            INTERVAL   TRAVEL   TRAVEL   ESTIMATED   ESTIMATED)

             1 - 10   33.5523%   33.6583%   .1060%   1.0020
            11 - 20   45.0069%   45.0515%   .0446%   .9999
            21 - 30   19.0885%   19.1263%   .0379%   1.0009
            31 - 40   2.3475%   2.1638%   -.1837%   .9207
            41 & UP   .0049%   .0000%   -.0049%   .0020
0
0   SUMMARY OF MEAN TRIP LENGTHS BY SEPERATION INTERVAL
0
0   ESTIMATED   MODELED   DIFFERENCE   RATIO
            SEPERATION MEAN TRIP   MEAN TRIP   (MODELED - (MODELED /
            INTERVAL   LENGTH   LENGTH   ESTIMATED   ESTIMATED)

             1 - 10   5.9627   5.9643   .0016   1.0003
            11 - 20   14.4898   14.5065   .0167   1.0012
            21 - 30   24.2375   24.2726   .0350   1.0014
            31 - 40   32.6270   32.6125   -.0146   .9996
            41 & UP   61.5000   41.7416   -19.7584   .6787

               ALL   10.4245   10.4131   -.0114   .9989

OEXECUTE GET2   11/16/1999
1TABLE G2   TRIP LENGTH FREQUENCY TABLE
0   Distribucion de viajes 1996 (TRTX)

SEPARATION INTERVAL	ZONE PAIR INCIDENCE	INTERACTION FREQUENCY	INTERCHANGE VOLUME	MAX VOLUME/ INTERACTION	VOLUME / ZONE PAIR	11/16/1999 VOLUME / INTERACTION	VOLUME PERCENTAGE	CUMULATIVE VOLUME
1	450.	323.	1505.0	90.0	3.344	4.659	2.953	2.95
2	802.	595.	1664.0	80.0	2.075	2.797	3.265	6.22
3	1642.	1183.	2894.0	71.0	1.762	2.446	5.679	11.90
4	2380.	1600.	3339.0	38.0	1.403	2.087	6.552	18.45
5	3138.	1919.	3462.0	22.0	1.103	1.804	6.793	25.24
6	3822.	2213.	3760.0	15.0	.984	1.699	7.378	32.62
7	4433.	2453.	3549.0	28.0	.801	1.447	6.964	39.58
8	5193.	2570.	3666.0	22.0	.706	1.426	7.193	46.78
9	5712.	2549.	3377.0	14.0	.591	1.325	6.626	53.40
10	6293.	2466.	2962.0	12.0	.471	1.201	5.812	59.21
11	6679.	2236.	2603.0	8.0	.390	1.164	5.108	64.32
12	7153.	2140.	2363.0	5.0	.330	1.104	4.637	68.96
13	7575.	1972.	2139.0	5.0	.282	1.085	4.197	73.16
14	7677.	1718.	1865.0	7.0	.243	1.086	3.659	76.82
15	7991.	1612.	1702.0	6.0	.213	1.056	3.340	80.15
16	8174.	1403.	1451.0	4.0	.178	1.034	2.847	83.00
17	8190.	1239.	1261.0	3.0	.154	1.018	2.474	85.48
18	8176.	1096.	1115.0	2.0	.136	1.017	2.188	87.66
19	8216.	976.	985.0	2.0	.120	1.009	1.933	89.60
20	7797.	884.	893.0	3.0	.115	1.010	1.752	91.35
21	7499.	695.	699.0	2.0	.093	1.006	1.372	92.72
22	7164.	663.	665.0	2.0	.093	1.003	1.305	94.03
23	6587.	565.	567.0	2.0	.086	1.004	1.113	95.14
24	6163.	465.	467.0	2.0	.076	1.004	.916	96.05
25	5638.	425.	426.0	2.0	.076	1.002	.836	96.89
26	5207.	341.	342.0	2.0	.066	1.003	.671	97.56
27	4756.	303.	303.0	1.0	.064	1.000	.595	98.16
28	4225.	236.	236.0	1.0	.056	1.000	.463	98.62
29	3773.	210.	211.0	2.0	.056	1.005	.414	99.03
30	3239.	164.	164.0	1.0	.051	1.000	.322	99.35
31	2710.	112.	112.0	1.0	.041	1.000	.220	99.57
32	2409.	78.	78.0	1.0	.032	1.000	.153	99.73
33	1991.	47.	47.0	1.0	.024	1.000	.092	99.82
34	1691.	46.	46.0	1.0	.027	1.000	.090	99.91
35	1373.	23.	23.0	1.0	.017	1.000	.045	99.95
36	1124.	11.	11.0	1.0	.010	1.000	.022	99.98
37	880.	7.	7.0	1.0	.008	1.000	.014	99.99
38	679.	4.	4.0	1.0	.006	1.000	.008	100.00
39	547.	0.	.0	.0	.000			
40	401.	1.	1.0	1.0	.002	1.000	.002	100.00
41	315.	0.	.0	.0	.000			
42	209.	0.	.0	.0	.000			
43	192.	0.	.0	.0	.000			
44	120.	0.	.0	.0	.000			
45	82.	0.	.0	.0	.000			
46	64.	0.	.0	.0	.000			
47	38.	0.	.0	.0	.000			
48	18.	0.	.0	.0	.000			
49	15.	0.	.0	.0	.000			
50	8.	0.	.0	.0	.000			

1TABLE G2   TRIP LENGTH FREQUENCY TABLE
0   Distribucion de viajes 1996 (TRTX)

SEPARATION INTERVAL	ZONE PAIR INCIDENCE	INTERACTION FREQUENCY	INTERCHANGE VOLUME	MAX VOLUME/ INTERACTION	VOLUME / ZONE PAIR	11/16/1999 VOLUME / INTERACTION	VOLUME PERCENTAGE	CUMULATIVE VOLUME
51	8.	0.	.0	.0	.000			
52	6.	0.	.0	.0	.000			
53	0.	0.	.0					
TOTAL	180625.	37543.	50964.0					

0   AVERAGE TRIP LENGTH = 10.367
0   AVERAGE INTERACTION = 12.056
0   AVERAGE SEPARATION = 18.355
0
0   DESIRED   RESULTING   PERCENT DIFFENCE
0   AVERAGE INTERNAL TRIP LENGTH   10.42424   10.36657   -.55316
                  TOTAL INTERNAL TRAVEL   531261.   528322.   -.55317
0***
OEXECUTE STOP   11/16/1999
 Run time =   .361 minutes.

Appendix C5

ATOM2 output file for calibration of 96 model.
EXLO trip purpose by auto mode.

C:\Eit-DIST\Run_Atom\Run_P5\EXLO96.OUT

1

```
=============================================
=============================================
=                                           =
=        ATOM2 TRIP DISTRIBUTION PROGRAM     =
=                                           =
=============================================
=============================================
=             prepared by                   =
=        Texas Transportation Institute      =
=============================================
=        Version Date:  June 17, 1998       =
=============================================


1                       Distribucion de viajes 1996 (EXLO)


                                                                        11/16/1999
            EFFECTIVE CAPACITIES
            --------------------
0          3000 CENTROIDS
0           269 SEPARATIONS
0            60 SECTORS  (3600 COMBINATIONS)
1
      REPORT = A1(5),A2(5),L1(5),X1,G2

  &VALUES ALTTRP=22,  AN=1.,   ASSIGN=13,  ATERM=.0,  ATOP=T,  DUMP=T,  BINTRA=.0,  EXEMPT=F,  EXTEND=0,  FCTRSD=1,  FUTURE=T,
   GEN=52,  HOVTRP=34,  HWYTRP=33,  IMPSEP=15,  INTRIP=21,  LIMIT=5,  M=425,  MILE=F,  MILSEP=27,  MF=28,  MODTRP=3,  MR=0,  MS=4,
   MT=3,  N=438,  NEGSEP=1,  NEWSEP=16,  NF=1,  NOWSEP=4,  NOWTRP=2,  NR=0,  OMIT=F,  ONE=1.0,  PLOT=F,  PN=1.,  PTERM=.0,
   RADII=51,  RADIIM=1.0,  RAWHOV=32,  RAWPEK=31,  RAWSEP=8,  RECORD=14,  REPORT=12,  RND=.1,  RS=26,  SAMPLE=.125,  SIZE=0,
   SKMTYP=F,  SUMTRP=20,  SV=25,  SWTTRP=24,  TABLE=4,  TV=0.,  TYPE=,  UT=.0,  XP=-.68000E-03  &END
0*************************************************************************************************************************
OEXECUTE EDIT2                                                                          11/16/1999
OTOTAL ZONE AREA =      1492.0 SQUARE MINUTES
0  ALL INTRAZONAL TIMES NOT LISTED ABOVE HAVE BEEN SET TO     1
0
OMAXIMUM SEPARATION =   54  (TIME ONLY)
 MAXIMUM SEPERATION =   55  (TIME PLUS RADII)
0*************************************************************************************************************************
OEXECUTE ACCEPT2                                                                        11/16/1999
 ITERATION OPTION =   1
0*************************************************************************************************************************
OEXECUTE ATOM2                                                                          11/16/1999
OTOTAL ZONE AREA =      1899.7 SQUARE MINUTES
1                       Distribucion de viajes 1996 (EXLO)


                                                                        11/16/1999
0
OTABLE A1( 1)                              ATTRACTION VOLUME BALANCE (ITERATION 1)
0                                                                   PREVIOUS                      CORRECTED
      ZONE    DESIRED    RESULTING    DIFFERENCE    PCT ERR    CHI-SQUARE  CORRECTION  RELATIVE    CORRECTION    RELATIVE
                                                              ------------
 R SQUARE =    .94104                                            44305.3
1                       Distribucion de viajes 1996 (EXLO)


                                                                        11/16/1999
OTABLE L1( 1)                               TRIP LENGTH BALANCE (ITERATION 1)
0          PERCENT   PERCENT                                                                          CORRECTED
 SEPARATION DESIRED RESULTING     DESIRED    RESULTING DIFFERENCE   PCT ERR    CHI-SQUARE  RELATIVE CORRECTION   RELATIVE
                                                              ------------
                                                              2871986.0
0                                            DESIRED      RESULTING   PERCENT DIFFENCE
0               AVERAGE INTERNAL TRIP LENGTH    14.94984     14.56106     -2.60055
                TOTAL INTERNAL TRAVEL          7385699.     7193630.     -2.60055
1                       Distribucion de viajes 1996 (EXLO)


                                                                        11/16/1999
0
OTABLE A1( 2)                              ATTRACTION VOLUME BALANCE (ITERATION 2)
0                                                                   PREVIOUS                      CORRECTED
      ZONE    DESIRED    RESULTING    DIFFERENCE    PCT ERR    CHI-SQUARE  CORRECTION  RELATIVE    CORRECTION    RELATIVE
                                                              ------------
 R SQUARE =    .93599                                            47814.0
1                       Distribucion de viajes 1996 (EXLO)


                                                                        11/16/1999
OTABLE L1( 2)                               TRIP LENGTH BALANCE (ITERATION 2)
0          PERCENT   PERCENT                                                                          CORRECTED
 SEPARATION DESIRED RESULTING     DESIRED    RESULTING DIFFERENCE   PCT ERR    CHI-SQUARE  RELATIVE CORRECTION   RELATIVE
                                                              ------------
                                                              19339.1
0                                            DESIRED      RESULTING   PERCENT DIFFENCE
0               AVERAGE INTERNAL TRIP LENGTH    14.94984     15.87353      6.17858
                TOTAL INTERNAL TRAVEL          7385699.     7842031.      6.17858
1                       Distribucion de viajes 1996 (EXLO)


                                                                        11/16/1999
0
OTABLE A1( 3)                              ATTRACTION VOLUME BALANCE (ITERATION 3)
0                                                                   PREVIOUS                      CORRECTED
      ZONE    DESIRED    RESULTING    DIFFERENCE    PCT ERR    CHI-SQUARE  CORRECTION  RELATIVE    CORRECTION    RELATIVE
                                                              ------------
 R SQUARE =    .97554                                            12366.0
```

```
1                     Distribucion de viajes 1996 (EXLO)


                                                                               11/16/1999
OTABLE L1( 3)                                TRIP LENGTH BALANCE (ITERATION 3)
0          PERCENT   PERCENT                                                                       CORRECTED
 SEPARATION DESIRED  RESULTING    DESIRED    RESULTING  DIFFERENCE   PCT ERR   CHI-SQUARE  RELATIVE CORRECTION  RELATIVE
                                                                              ------------
                                                                                41619.4
0                                                   DESIRED     RESULTING   PERCENT DIFFENCE
0                  AVERAGE INTERNAL TRIP LENGTH    14.94984     14.59933      -2.34456
                   TOTAL INTERNAL TRAVEL          7385699.     7212537.      -2.34456
1                     Distribucion de viajes 1996 (EXLO)


                                                                               11/16/1999
0
OTABLE A1( 4)                             ATTRACTION VOLUME BALANCE (ITERATION 4)
0                                                               PREVIOUS                  CORRECTED
      ZONE    DESIRED    RESULTING    DIFFERENCE    PCT ERR   CHI-SQUARE  CORRECTION RELATIVE  CORRECTION  RELATIVE
                                                             ------------
  R SQUARE =    .95607                                          27011.9
1                     Distribucion de viajes 1996 (EXLO)


                                                                               11/16/1999
OTABLE L1( 4)                                TRIP LENGTH BALANCE (ITERATION 4)
0          PERCENT   PERCENT                                                                       CORRECTED
 SEPARATION DESIRED  RESULTING    DESIRED    RESULTING  DIFFERENCE   PCT ERR   CHI-SQUARE  RELATIVE CORRECTION  RELATIVE
                                                                              ------------
                                                                                7608.3
0                                                   DESIRED     RESULTING   PERCENT DIFFENCE
0                  AVERAGE INTERNAL TRIP LENGTH    14.94984     15.48458       3.57688
                   TOTAL INTERNAL TRAVEL          7385699.     7649877.       3.57688
1                     Distribucion de viajes 1996 (EXLO)


                                                                               11/16/1999
0
OTABLE A1( 5)                             ATTRACTION VOLUME BALANCE (ITERATION 5)
0                                                               PREVIOUS                  CORRECTED
      ZONE    DESIRED    RESULTING    DIFFERENCE    PCT ERR   CHI-SQUARE  CORRECTION RELATIVE  CORRECTION  RELATIVE
```

ZONE	DESIRED	RESULTING	DIFFERENCE	PCT ERR	CHI-SQUARE	PREVIOUS CORRECTION	RELATIVE	CORRECTION	CORRECTED RELATIVE
1	153.0	133.0	-20.0	-13.072	2.6	2.29404	.30511	1.1504	.35099
2	86.0	83.0	-3.0	-3.488	.1	.86900	.07213	1.0361	.07473
3	23.0	25.0	2.0	8.696	.2	.36287	.00907	.9200	.00835
4	296.0	336.0	40.0	13.514	5.4	.36305	.12198	.8810	.10746
5	375.0	430.0	55.0	14.667	8.1	.58294	.25066	.8721	.21860
6	529.0	600.0	71.0	13.422	9.5	.33511	.20106	.8817	.17727
7	153.0	161.0	8.0	5.229	.4	.34440	.05545	.9503	.05269
8	345.0	389.0	44.0	12.754	5.6	.33046	.12855	.8869	.11401
9	190.0	219.0	29.0	15.263	4.4	.58262	.12759	.8676	.11070
10	371.0	425.0	54.0	14.555	7.9	.36739	.15614	.8729	.13630
11	160.0	162.0	2.0	1.250	.0	.37947	.06147	.9877	.06072
12	172.0	198.0	26.0	15.116	3.9	.38517	.07626	.8687	.06625
13	243.0	257.0	14.0	5.761	.8	.34051	.08751	.9455	.08274
14	210.0	239.0	29.0	13.810	4.0	.35289	.08434	.8787	.07411
15	279.0	320.0	41.0	14.695	6.0	.42355	.13554	.8719	.11817
16	448.0	511.0	63.0	14.063	8.9	.57948	.29611	.8767	.25961
17	697.0	681.0	-16.0	-2.296	.4	2.52233	1.71771	1.0235	1.75807
18	474.0	542.0	68.0	14.346	9.8	.58711	.31821	.8745	.27829
19	624.0	715.0	91.0	14.583	13.3	.42054	.30069	.8727	.26242
20	260.0	298.0	38.0	14.615	5.6	.37728	.11243	.8725	.09809
21	530.0	604.0	74.0	13.962	10.3	.37807	.22835	.8775	.20038
22	438.0	505.0	67.0	15.297	10.2	.38564	.19475	.8673	.16891
23	2192.0	2340.0	148.0	6.752	10.0	2.07423	4.85369	.9368	4.54670
24	121.0	126.0	5.0	4.132	.2	2.08215	.26235	.9603	.25194
25	268.0	265.0	-3.0	-1.119	.0	2.52284	.66855	1.0113	.67612
26	280.0	272.0	-8.0	-2.857	.2	2.47668	.67366	1.0294	.69347
27	548.0	584.0	36.0	6.569	2.4	2.05184	1.19827	.9384	1.12441
28	590.0	617.0	27.0	4.576	1.2	1.24613	.76886	.9562	.73522
29	960.0	1021.0	61.0	6.354	3.9	2.06696	2.11037	.9403	1.98428
30	10659.0	11719.0	1060.0	9.945	105.4	1.00221	11.74485	.9095	10.68252
31	3729.0	4264.0	535.0	14.347	76.8	.59142	2.52183	.8745	2.20542
32	9768.0	9466.0	-302.0	-3.092	9.3	2.57914	24.41415	1.0319	25.19305
33	102.0	108.0	6.0	5.882	.4	.35716	.03857	.9444	.03643
34	408.0	351.0	-57.0	-13.971	8.0	1.07690	.37799	1.1624	.43938
35	176.0	171.0	-5.0	-2.841	.1	.88114	.15067	1.0292	.15508
36	237.0	244.0	7.0	2.954	.2	.36490	.08904	.9713	.08648
37	130.0	137.0	7.0	5.385	.4	.34989	.04793	.9489	.04549
38	141.0	150.0	9.0	6.383	.6	.34571	.05186	.9400	.04875
39	431.0	479.0	48.0	11.137	5.3	.23172	.11099	.8998	.09987
40	218.0	213.0	-5.0	-2.294	.1	.86770	.18482	1.0235	.18916
41	228.0	225.0	-3.0	-1.316	.0	.82588	.18582	1.0133	.18830
42	290.0	297.0	7.0	2.414	.2	.38500	.11435	.9764	.11165
43	446.0	494.0	48.0	10.762	5.2	.24328	.12018	.9028	.10850
44	398.0	454.0	56.0	14.070	7.9	.35964	.16328	.8767	.14314
45	243.0	258.0	15.0	6.173	.9	.34758	.08968	.9419	.08446
46	864.0	989.0	125.0	14.468	18.1	.37901	.37484	.8736	.32746
47	131.0	152.0	21.0	16.031	3.4	.41601	.06323	.8618	.05450
48	626.0	716.0	90.0	14.377	12.9	.42099	.30143	.8743	.26354
49	666.0	760.0	94.0	14.114	13.3	.58649	.44573	.8763	.39060
50	4775.0	5457.0	682.0	14.283	97.4	.59000	3.21962	.8750	2.81724
51	11537.0	11918.0	381.0	3.302	12.6	1.31507	15.67305	.9680	15.17201
52	195.0	224.0	29.0	14.872	4.3	.41717	.09345	.8705	.08135
53	4983.0	5694.0	711.0	14.269	101.4	.58709	3.34288	.8751	2.92546
54	953.0	1092.0	139.0	14.586	20.3	.38078	.41581	.8727	.36288
55	341.0	389.0	48.0	14.076	6.8	.38181	.14852	.8766	.13020
56	287.0	325.0	38.0	13.240	5.0	.42268	.13737	.8831	.12131
57	181.0	203.0	22.0	12.155	2.7	.22576	.04583	.8916	.04086
58	114.0	131.0	17.0	14.912	2.5	.58922	.07719	.8702	.06717

C5-3

59	277.0	294.0	17.0	6.137	1.0	.34521	.10149	.9422	.09562
60	226.0	209.0	-17.0	-7.522	1.3	.84830	.17729	1.0813	.19172
61	254.0	222.0	-32.0	-12.598	4.0	1.55673	.34559	1.1441	.39541
62	539.0	531.0	-8.0	-1.484	.1	.84373	.44802	1.0151	.45477
63	433.0	361.0	-72.0	-16.628	12.0	1.76156	.63592	1.1994	.76275
64	335.0	342.0	7.0	2.090	.1	.39084	.13367	.9795	.13093
65	236.0	222.0	-14.0	-5.932	.8	.84061	.18662	1.0631	.19838
66	408.0	376.0	-32.0	-7.843	2.5	.85707	.32226	1.0851	.34968
67	194.0	191.0	-3.0	-1.546	.0	.83566	.15961	1.0157	.16212
68	314.0	309.0	-5.0	-1.592	.1	.84050	.25971	1.0162	.26392
69	291.0	309.0	18.0	6.186	1.1	.34615	.10696	.9417	.10073
70	612.0	680.0	68.0	11.111	7.6	.22932	.15593	.9000	.14034
71	312.0	329.0	17.0	5.449	.9	.34551	.11367	.9483	.10780
72	192.0	211.0	19.0	9.896	1.9	.23317	.04920	.9100	.04477
73	606.0	644.0	38.0	6.271	2.4	.34085	.21951	.9410	.20655
74	386.0	410.0	24.0	6.218	1.5	.34446	.14123	.9415	.13296
75	576.0	534.0	-42.0	-7.292	3.1	.83408	.44540	1.0787	.48043
76	440.0	407.0	-33.0	-7.500	2.5	.84038	.34204	1.0811	.36977
77	219.0	193.0	-26.0	-11.872	3.1	1.05542	.20370	1.1347	.23114
78	457.0	393.0	-64.0	-14.004	9.0	1.98864	.78154	1.1628	.90881
79	479.0	489.0	10.0	2.088	.2	.35424	.17322	.9796	.16968
80	377.0	400.0	23.0	6.101	1.4	.34119	.13648	.9425	.12863
81	328.0	324.0	-4.0	-1.220	.0	.86226	.27937	1.0123	.28282
82	146.0	128.0	-18.0	-12.329	2.2	1.11359	.14254	1.1406	.16258
83	2523.0	3228.0	705.0	27.943	197.0	.79707	2.57295	.7816	2.01101
84	5576.0	7379.0	1803.0	32.335	583.0	.36361	2.68310	.7557	2.02751
85	1589.0	1689.0	100.0	6.293	6.3	2.04495	3.45393	.9408	3.24943
86	91.0	124.0	33.0	36.264	12.0	.36984	.04586	.7339	.03366
87	234.0	337.0	103.0	44.017	45.3	.21720	.07320	.6944	.05082
88	3740.0	4287.0	547.0	14.626	80.0	.65795	2.82061	.8724	2.46072
89	2778.0	2898.0	120.0	4.320	5.2	1.26550	3.66741	.9586	3.51555
90	1138.0	1210.0	72.0	6.327	4.6	2.06252	2.49564	.9405	2.34714
91	1771.0	1978.0	207.0	11.688	24.2	1.05158	2.08002	.8953	1.86234
92	2235.0	2187.0	-48.0	-2.148	1.0	2.51567	5.50177	1.0219	5.62252
93	549.0	569.0	20.0	3.643	.7	1.31643	.74905	.9649	.72272
94	2364.0	2446.0	82.0	3.469	2.8	1.26146	3.08553	.9665	2.98209
95	1614.0	1575.0	-39.0	-2.416	.9	2.42914	3.82590	1.0248	3.92063
96	2648.0	2815.0	167.0	6.307	10.5	2.03606	5.73151	.9407	5.39149
97	4843.0	5456.0	613.0	12.657	77.6	1.03977	5.67296	.8876	5.03559
98	3457.0	3590.0	133.0	3.847	5.1	1.25334	4.49950	.9630	4.33281
99	2640.0	2592.0	-48.0	-1.818	.9	2.37280	6.15030	1.0185	6.26420
100	1946.0	2066.0	120.0	6.166	7.4	1.99961	4.13119	.9419	3.89124
101	1832.0	1956.0	124.0	6.769	8.4	2.00200	3.91590	.9366	3.66766
102	1938.0	1894.0	-44.0	-2.270	1.0	2.40217	4.54971	1.0232	4.65541
103	4042.0	4624.0	582.0	14.399	83.8	.41738	1.92998	.8741	1.68707
104	2467.0	2803.0	336.0	13.620	45.8	.57604	1.61463	.8801	1.42109
105	553.0	577.0	24.0	4.340	1.0	1.24515	.71845	.9584	.68857
106	2148.0	2110.0	-38.0	-1.769	.7	2.30495	4.86345	1.0180	4.95104
107	1192.0	1525.0	333.0	27.936	93.0	.63153	.96308	.7816	.75278
108	3565.0	3900.0	335.0	9.397	31.5	1.06802	4.16526	.9141	3.80747
109	2565.0	2725.0	160.0	6.238	10.0	1.96580	5.35681	.9413	5.04228
110	2837.0	3117.0	280.0	9.870	27.6	1.06938	3.33326	.9102	3.03383
111	6340.0	6297.0	-43.0	-.678	.3	2.15968	13.59949	1.0068	13.69236
112	3932.0	3844.0	-88.0	-2.238	2.0	2.34333	9.00775	1.0229	9.21397
113	1736.0	1974.0	238.0	13.710	32.6	.57891	1.14276	.8794	1.00498
114	7160.0	8163.0	1003.0	14.008	140.5	.41995	3.42806	.8771	3.00685
115	4275.0	4534.0	259.0	6.058	15.7	1.08056	4.89927	.9429	4.61940
116	2695.0	2842.0	147.0	5.455	8.0	1.96444	5.58294	.9483	5.29417
117	1096.0	1211.0	115.0	10.493	12.1	1.05795	1.28117	.9050	1.15951
118	1737.0	1710.0	-27.0	-1.554	.4	2.23260	3.81774	1.0158	3.87802
119	2557.0	2527.0	-30.0	-1.173	.4	2.20244	5.56556	1.0119	5.63164
120	1169.0	1215.0	46.0	3.935	1.8	1.21631	1.47782	.9621	1.42187
121	451.0	513.0	62.0	13.747	8.5	.33295	.17080	.8791	.15016
122	6247.0	7080.0	833.0	13.334	111.1	.57324	4.05857	.8823	3.58106
123	1010.0	1153.0	143.0	14.158	20.2	.42295	.48766	.8760	.42717
124	1057.0	1202.0	145.0	13.718	19.9	.57730	.69391	.8794	.61020
125	507.0	536.0	29.0	5.720	1.7	.34097	.18276	.9459	.17287
126	354.0	403.0	49.0	13.842	6.8	.37976	.15304	.8784	.13444
127	519.0	575.0	56.0	10.790	6.0	.23673	.13612	.9026	.12286
128	188.0	186.0	-2.0	-1.064	.0	.85510	.15905	1.0108	.16076
129	600.0	612.0	12.0	2.000	.2	.40568	.24827	.9804	.24341
130	96.0	84.0	-12.0	-12.500	1.5	3.63601	.30542	1.1429	.34906
131	2265.0	2312.0	47.0	2.075	1.0	.39735	.91866	.9797	.89999
132	193.0	188.0	-5.0	-2.591	.1	.72403	.13612	1.0266	.13974
133	997.0	1104.0	107.0	10.732	11.5	.23514	.25959	.9031	.23443
134	620.0	689.0	69.0	11.129	7.7	.23618	.16273	.8999	.14643
135	1080.0	1223.0	143.0	13.241	18.9	.35104	.42932	.8831	.37913
136	2278.0	2400.0	122.0	5.356	6.5	.33249	.79798	.9492	.75741
137	1356.0	1535.0	179.0	13.201	23.6	.34331	.52698	.8834	.46553
138	1159.0	1321.0	162.0	13.978	22.6	.41250	.54492	.8774	.47809
139	2326.0	2658.0	332.0	14.273	47.4	.39044	1.03780	.8751	.90817
140	1709.0	1949.0	240.0	14.043	33.7	.37226	.72554	.8769	.63620
141	702.0	800.0	98.0	13.960	13.7	.39279	.31423	.8775	.27574
142	525.0	601.0	76.0	14.476	11.0	.58424	.35113	.8735	.30673
143	924.0	1055.0	131.0	14.177	18.6	.41969	.44277	.8758	.38779
144	1980.0	2094.0	114.0	5.758	6.6	.33587	.70331	.9456	.66502
145	726.0	824.0	98.0	13.499	13.2	.35609	.29342	.8811	.25852
146	1831.0	1939.0	108.0	5.898	6.4	.33533	.65020	.9443	.61398
147	964.0	1068.0	104.0	10.788	11.2	.23505	.25103	.9026	.22659
148	1751.0	1716.0	-35.0	-1.999	.7	.83463	1.43223	1.0204	1.46144
149	1796.0	1900.0	104.0	5.791	6.0	.33913	.64434	.9453	.60908
150	974.0	993.0	19.0	1.951	.4	.36673	.36416	.9809	.35719
151	490.0	502.0	12.0	2.449	.3	.35488	.17815	.9761	.17389
152	759.0	742.0	-17.0	-2.240	.4	.80658	.59849	1.0229	.61220
153	1732.0	1594.0	-138.0	-7.968	11.0	.82593	1.31653	1.0866	1.43051
154	1903.0	2007.0	104.0	5.465	5.7	.33794	.67825	.9482	.64311

155	1555.0	1648.0	93.0	5.981	5.6	.32972	.54338	.9436	.51271
156	2184.0	2307.0	123.0	5.632	6.9	.33006	.76144	.9467	.72085
157	1669.0	1762.0	93.0	5.572	5.2	.33920	.59768	.9472	.56613
158	794.0	833.0	39.0	4.912	1.9	.33953	.28283	.9532	.26959
159	2434.0	2377.0	-57.0	-2.342	1.3	.72706	1.72823	1.0240	1.76967
160	679.0	689.0	10.0	1.473	.1	.36921	.25439	.9855	.25070
161	899.0	830.0	-69.0	-7.675	5.3	.82982	.68875	1.0831	.74601
162	369.0	388.0	19.0	5.149	1.0	.34413	.13352	.9510	.12698
163	406.0	428.0	22.0	5.419	1.2	.34089	.14590	.9486	.13840
164	214.0	183.0	-31.0	-14.486	4.5	.94830	.17354	1.1694	.20294
165	3915.0	3765.0	-150.0	-3.831	5.7	.76106	2.86537	1.0398	2.97953
166	3549.0	3438.0	-111.0	-3.128	3.5	.76061	2.61498	1.0323	2.69940
167	286.0	241.0	-45.0	-15.734	7.1	1.67368	.40336	1.1867	.47867
168	841.0	732.0	-109.0	-12.961	14.1	1.43708	1.05194	1.1489	1.20859
169	683.0	593.0	-90.0	-13.177	11.9	1.45586	.86332	1.1518	.99435
170	897.0	776.0	-121.0	-13.489	16.3	1.34457	1.04339	1.1559	1.20608
171	2429.0	2073.0	-356.0	-14.656	52.2	1.54995	3.21305	1.1717	3.76483
172	369.0	315.0	-54.0	-14.634	7.9	1.77313	.55853	1.1714	.65428
173	89.0	76.0	-13.0	-14.607	1.9	1.77211	.13468	1.1711	.15772
174	204.0	185.0	-19.0	-9.314	1.8	.73973	.13685	1.1027	.15090
175	349.0	301.0	-48.0	-13.754	6.6	.88243	.26561	1.1595	.30797
176	783.0	674.0	-109.0	-13.921	15.2	1.39678	.94143	1.1617	1.09368
177	546.0	469.0	-77.0	-14.103	10.9	.98888	.46378	1.1642	.53993
178	1005.0	874.0	-131.0	-13.035	17.1	1.01208	.88456	1.1499	1.01714
179	6377.0	6213.0	-164.0	-2.572	4.2	.70674	4.39094	1.0264	4.50685
180	981.0	906.0	-75.0	-7.645	5.7	.84496	.76554	1.0828	.82891
181	970.0	988.0	18.0	1.856	.3	.37485	.37035	.9818	.36361
182	783.0	679.0	-104.0	-13.282	13.8	1.01003	.68581	1.1532	.79085
183	680.0	586.0	-94.0	-13.824	13.0	.99392	.58244	1.1604	.67587
184	6154.0	7017.0	863.0	14.023	121.0	.58780	4.12457	.8770	3.61730
185	719.0	823.0	104.0	14.465	15.0	.37676	.31007	.8736	.27089
186	12392.0	14173.0	1781.0	14.372	256.0	.38126	5.40357	.8743	4.72455
187	969.0	1001.0	32.0	3.302	1.1	1.28484	1.28612	.9680	1.24501
188	1721.0	1965.0	244.0	14.178	34.6	.58428	1.14812	.8758	1.00555
189	1801.0	2057.0	256.0	14.214	36.4	.41542	.85452	.8755	.74817
190	1170.0	1336.0	166.0	14.188	23.6	.58453	.78093	.8757	.68390
191	1164.0	1331.0	167.0	14.347	24.0	.41929	.55808	.8745	.48806
192	1173.0	1342.0	169.0	14.408	24.3	.41498	.55691	.8741	.48677
193	1824.0	2086.0	262.0	14.364	37.6	.37543	.78315	.8744	.68479
194	1118.0	1277.0	159.0	14.222	22.6	.36991	.47238	.8755	.41356
195	833.0	952.0	119.0	14.286	17.0	.38174	.36342	.8750	.31799
196	848.0	967.0	119.0	14.033	16.7	.41701	.40325	.8769	.35362
197	3418.0	3785.0	367.0	10.737	39.4	.25327	.95861	.9030	.86566
198	913.0	844.0	-69.0	-7.558	5.2	.85832	.72442	1.0818	.78365
199	1105.0	1169.0	64.0	5.792	3.7	.34306	.40103	.9453	.37908
200	11985.0	11741.0	-244.0	-2.036	5.0	.81568	9.57688	1.0208	9.77591
201	941.0	924.0	-17.0	-1.807	.3	.77985	.72058	1.0184	.73384
202	476.0	468.0	-8.0	-1.681	.1	.81383	.38087	1.0171	.38739
203	639.0	553.0	-86.0	-13.459	11.6	1.04248	.57649	1.1555	.66614
204	402.0	348.0	-54.0	-13.433	7.3	1.05422	.36687	1.1552	.42380
205	472.0	438.0	-34.0	-7.203	2.4	.83432	.36543	1.0776	.39380
206	303.0	262.0	-41.0	-13.531	5.5	1.05305	.27590	1.1565	.31907
207	392.0	340.0	-52.0	-13.265	6.9	1.04887	.35662	1.1529	.41116
208	232.0	202.0	-30.0	-12.931	3.9	1.48416	.29980	1.1485	.34433
209	230.0	197.0	-33.0	-14.348	4.7	1.04227	.20533	1.1675	.23972
210	430.0	375.0	-55.0	-12.791	7.0	1.03705	.38889	1.1467	.44593
211	658.0	571.0	-87.0	-13.222	11.5	1.49294	.85247	1.1524	.98235
212	247.0	215.0	-32.0	-12.955	4.1	1.55137	.33354	1.1488	.38319
213	898.0	778.0	-120.0	-13.363	16.0	1.90508	1.48215	1.1542	1.71076
214	354.0	305.0	-49.0	-13.842	6.8	2.33144	.71109	1.1607	.82533
215	336.0	292.0	-44.0	-13.095	5.8	1.51565	.44257	1.1507	.50926
216	316.0	273.0	-43.0	-13.608	5.9	1.86192	.50830	1.1575	.58837
217	405.0	343.0	-62.0	-15.309	9.5	1.91348	.65633	1.1808	.77496
218	677.0	589.0	-88.0	-12.999	11.4	5.56233	3.27621	1.1494	3.76569
219	2147.0	1836.0	-311.0	-14.485	45.0	1.86278	3.42006	1.1694	3.99938
220	1217.0	1035.0	-182.0	-14.955	27.2	1.88228	1.94816	1.1758	2.29074
221	864.0	746.0	-118.0	-13.657	16.1	3.59890	2.68478	1.1582	3.10945
222	6594.0	5481.0	-1113.0	-16.879	187.9	2.88591	15.81770	1.2031	19.02972
223	536.0	459.0	-77.0	-14.366	11.1	1.88157	.86364	1.1678	1.00852
224	228.0	197.0	-31.0	-13.596	4.2	1.53906	.30319	1.1574	.35091
225	15873.0	13764.0	-2109.0	-13.287	280.2	1.82183	25.07565	1.1532	28.91789
226	1488.0	1296.0	-192.0	-12.903	24.8	1.47678	1.91391	1.1481	2.19745
227	159.0	137.0	-22.0	-13.836	3.0	.99584	.13643	1.1606	.15834
228	927.0	807.0	-120.0	-12.945	15.5	1.45084	1.17083	1.1487	1.34493
229	530.0	456.0	-74.0	-13.962	10.3	2.30049	1.04902	1.1623	1.21926
230	531.0	460.0	-71.0	-13.371	9.5	1.44004	.66242	1.1543	.76466
231	1421.0	1311.0	-110.0	-7.741	8.5	.81383	1.06693	1.0839	1.15646
232	555.0	481.0	-74.0	-13.333	9.9	1.00585	.48381	1.1538	.55825
233	5443.0	4721.0	-722.0	-13.265	95.8	1.02837	4.85495	1.1529	5.59743
234	712.0	620.0	-92.0	-12.921	11.9	1.03639	.64256	1.1484	.73791
235	12496.0	10640.0	-1856.0	-14.853	275.7	2.39681	25.50203	1.1744	29.95051
236	1326.0	1136.0	-190.0	-14.329	27.2	2.28026	2.59038	1.1673	3.02363
237	583.0	500.0	-83.0	-14.237	11.8	2.44625	1.22313	1.1660	1.42616
238	4729.0	3902.0	-827.0	-17.488	144.6	2.97181	11.59602	1.2119	14.05371
239	2853.0	2433.0	-420.0	-14.721	61.8	1.85864	4.52207	1.1726	5.30270
240	943.0	820.0	-123.0	-13.043	16.0	2.10523	1.72629	1.1500	1.98524
241	165.0	148.0	-17.0	-10.303	1.8	1.46042	.21614	1.1149	.24097
242	3092.0	2627.0	-465.0	-15.039	69.9	1.74988	4.59694	1.1770	5.41063
243	1138.0	968.0	-170.0	-14.938	25.4	1.77991	1.72295	1.1756	2.02553
244	279.0	239.0	-40.0	-14.337	5.7	2.18815	.52297	1.1674	.61049
245	755.0	634.0	-121.0	-16.026	19.4	1.80090	1.14177	1.1909	1.35968
246	155.0	130.0	-25.0	-16.129	4.0	1.83329	.23833	1.1923	.28416
247	44.0	42.0	-2.0	-4.545	.1	1.80483	.07580	1.0476	.07941
248	174.0	145.0	-29.0	-16.667	4.8	1.87160	.27138	1.2000	.32566
249	1932.0	1674.0	-258.0	-13.354	34.5	5.70560	9.55117	1.1541	11.02322
250	500.0	432.0	-68.0	-13.600	9.2	3.15153	1.36146	1.1574	1.57577

251	304.0	249.0	-55.0	-18.092	10.0	2.81851	.70181	1.2209	.85683
252	576.0	485.0	-91.0	-15.799	14.4	2.74086	1.32932	1.1876	1.57874
253	188.0	165.0	-23.0	-12.234	2.8	1.53315	.25297	1.1394	.28823
254	457.0	395.0	-62.0	-13.567	8.4	1.29921	.51319	1.1570	.59374
255	500.0	417.0	-83.0	-16.600	13.8	2.86307	1.19390	1.1990	1.43154
256	950.0	784.0	-166.0	-17.474	29.0	2.75850	2.16266	1.2117	2.62057
257	3582.0	2961.0	-621.0	-17.337	107.7	2.75744	8.16477	1.2097	9.87714
258	260.0	226.0	-34.0	-13.077	4.4	4.22174	.95411	1.1504	1.09765
259	1215.0	1038.0	-177.0	-14.568	25.8	3.22618	3.34878	1.1705	3.91981
260	213.0	186.0	-27.0	-12.676	3.4	4.22830	.78646	1.1452	.90063
261	471.0	419.0	-52.0	-11.040	5.7	4.21558	1.76633	1.1241	1.98554
262	185.0	169.0	-16.0	-8.649	1.4	4.85849	.82108	1.0947	.89882
263	278.0	251.0	-27.0	-9.712	2.6	4.69106	1.17746	1.1076	1.30412
264	365.0	332.0	-33.0	-9.041	3.0	4.97886	1.65298	1.0994	1.81729
265	204.0	191.0	-13.0	-6.373	.8	2.57534	.49189	1.0681	.52537
266	420.0	393.0	-27.0	-6.429	1.7	2.73440	1.07462	1.0687	1.14845
267	209.0	188.0	-21.0	-10.048	2.1	2.38128	.44768	1.1117	.49769
268	153.0	141.0	-12.0	-7.843	.9	4.27727	.60309	1.0851	.65442
269	143.0	127.0	-16.0	-11.189	1.8	5.19702	.66002	1.1260	.74317
270	89.0	80.0	-9.0	-10.112	.9	3.37740	.27019	1.1125	.30059
271	223.0	207.0	-16.0	-7.175	1.1	2.74775	.56878	1.0773	.61275
272	54.0	50.0	-4.0	-7.407	.3	9.10586	.45529	1.0800	.49172
273	312.0	286.0	-26.0	-8.333	2.2	4.43274	1.26776	1.0909	1.38301
274	375.0	349.0	-26.0	-6.933	1.8	1.97718	.69004	1.0745	.74144
275	3849.0	3317.0	-532.0	-13.822	73.5	2.33544	7.74666	1.1604	8.98911
276	185.0	161.0	-24.0	-12.973	3.1	2.37136	.38179	1.1491	.43870
277	327.0	295.0	-32.0	-9.786	3.1	2.26566	.66837	1.1085	.74087
278	245.0	222.0	-23.0	-9.388	2.2	1.90531	.42298	1.1036	.46680
279	777.0	670.0	-107.0	-13.771	14.7	2.27377	1.52343	1.1597	1.76672
280	379.0	323.0	-56.0	-14.776	8.3	2.35938	.76208	1.1734	.89420
281	160.0	142.0	-18.0	-11.250	2.0	1.12405	.15961	1.1268	.17985
282	883.0	789.0	-94.0	-10.646	10.0	2.28361	1.80177	1.1191	2.01643
283	657.0	563.0	-94.0	-14.307	13.4	4.30230	2.42219	1.1670	2.82661
284	1242.0	1069.0	-173.0	-13.929	24.1	4.31120	4.60867	1.1618	5.35451
285	951.0	851.0	-100.0	-10.515	10.5	2.84358	2.41989	1.1175	2.70425
286	403.0	355.0	-48.0	-11.911	5.7	3.91777	1.39081	1.1352	1.57886
287	630.0	578.0	-52.0	-8.254	4.3	3.08221	1.78152	1.0900	1.94179
288	1965.0	1837.0	-128.0	-6.514	8.3	3.15506	5.79584	1.0697	6.19969
289	553.0	506.0	-47.0	-8.499	4.0	2.77334	1.40331	1.0929	1.53366
290	1684.0	1542.0	-142.0	-8.432	12.0	2.28654	3.52585	1.0921	3.85054
291	274.0	253.0	-21.0	-7.664	1.6	2.40089	.60743	1.0830	.65784
292	541.0	470.0	-71.0	-13.124	9.3	1.34350	.63145	1.1511	.72683
293	686.0	632.0	-54.0	-7.872	4.3	2.50652	1.58412	1.0854	1.71947
294	478.0	441.0	-37.0	-7.741	2.9	1.97607	.87145	1.0839	.94456
295	503.0	473.0	-30.0	-5.964	1.8	2.98143	1.41021	1.0634	1.49966
296	485.0	463.0	-22.0	-4.536	1.0	2.45919	1.13861	1.0475	1.19271
297	2987.0	2866.0	-121.0	-4.051	4.9	3.25355	9.32467	1.0422	9.71835
298	864.0	832.0	-32.0	-3.704	1.2	2.13062	1.77267	1.0385	1.84085
299	607.0	585.0	-22.0	-3.624	.8	3.43252	2.00803	1.0376	2.08354
300	1723.0	1643.0	-80.0	-4.643	3.7	3.07416	5.05084	1.0487	5.29677
301	3766.0	3604.0	-162.0	-4.302	7.0	2.75978	9.94626	1.0450	10.39335
302	594.0	578.0	-16.0	-2.694	.4	3.33258	1.92623	1.0277	1.97955
303	400.0	395.0	-5.0	-1.250	.1	6.65096	2.62713	1.0127	2.66039
304	206.0	210.0	4.0	1.942	.1	3.03908	.63821	.9810	.62605
305	3172.0	3045.0	-127.0	-4.004	5.1	3.97387	12.10044	1.0417	12.60512
306	574.0	566.0	-8.0	-1.394	.1	4.25634	2.40909	1.0141	2.44314
307	145.0	146.0	1.0	.690	.0	4.19676	.61273	.9932	.60853
308	358.0	352.0	-6.0	-1.676	.1	3.85961	1.35858	1.0170	1.38174
309	783.0	746.0	-37.0	-4.725	1.7	3.44729	2.57168	1.0496	2.69923
310	1817.0	1723.0	-94.0	-5.173	4.9	3.71821	6.40648	1.0546	6.75599
311	165.0	171.0	6.0	3.636	.2	3.42397	.58550	.9649	.56495
312	378.0	374.0	-4.0	-1.058	.0	3.79600	1.41970	1.0107	1.43489
313	1.0	3.0	2.0	200.000	4.0	1.33333	.00400	.3333	.00133
314	175.0	181.0	6.0	3.429	.2	3.27837	.59338	.9669	.57371
315	33.0	32.0	-1.0	-3.030	.0	3.55799	.11386	1.0313	.11741
316	31.0	36.0	5.0	16.129	.8	2.42752	.08739	.8611	.07525
317	235.0	268.0	33.0	14.043	4.6	2.68910	.72068	.8769	.63194
318	23.0	27.0	4.0	17.391	.7	1.82795	.04935	.8519	.04204
319	24.0	32.0	8.0	33.333	2.7	1.90588	.06099	.7500	.04574
320	246.0	209.0	-37.0	-15.041	5.6	1.70933	.35725	1.1770	.42049
321	14.0	11.0	-3.0	-21.429	.6	4.04209	.04446	1.2727	.05659
322	531.0	454.0	-77.0	-14.501	11.2	2.55345	1.15927	1.1696	1.35588
323	4742.0	4112.0	-630.0	-13.286	83.7	4.43908	18.25348	1.1532	21.05010
324	667.0	623.0	-44.0	-6.597	2.9	1.57311	.98005	1.0706	1.04927
325	163.0	144.0	-19.0	-11.656	2.2	1.04042	.14982	1.1319	.16959
326	877.0	767.0	-110.0	-12.543	13.8	1.03616	.79473	1.1434	.90871
327	3096.0	2680.0	-416.0	-13.437	55.9	3.00954	8.06557	1.1552	9.31754
328	588.0	572.0	-16.0	-2.721	.4	3.95126	2.26012	1.0280	2.32334
329	622.0	609.0	-13.0	-2.090	.3	.93721	.57076	1.0213	.58294
330	826.0	790.0	-36.0	-4.358	1.6	1.62500	1.28375	1.0456	1.34225
331	1120.0	1072.0	-48.0	-4.286	2.1	1.77743	1.90541	1.0448	1.99072
332	2317.0	2143.0	-174.0	-7.510	13.1	1.62340	3.47894	1.0812	3.76141
333	75.0	64.0	-11.0	-14.667	1.6	3.91040	.25027	1.1719	.29328
334	.0	.0	.0	.000	.0	1.00000	.00000	1.0000	.00000
335	512.0	463.0	-49.0	-9.570	4.7	3.67399	1.70106	1.1058	1.88108
336	271.0	233.0	-38.0	-14.022	5.3	3.16202	.73675	1.1631	.85691
337	322.0	293.0	-29.0	-9.006	2.6	2.77773	.81388	1.0990	.89443
338	6399.0	5626.0	-773.0	-12.080	93.4	3.82169	21.50084	1.1374	24.45500
339	280.0	240.0	-40.0	-14.286	5.7	3.66595	.87983	1.1667	1.02646
340	2208.0	1912.0	-296.0	-13.406	39.7	3.51419	6.71913	1.1548	7.75933
341	483.0	431.0	-52.0	-10.766	5.6	2.76729	1.19270	1.1206	1.33660
342	304.0	263.0	-41.0	-13.487	5.5	3.46743	.91193	1.1559	1.05410
343	562.0	492.0	-70.0	-12.456	8.7	3.80027	1.86973	1.1423	2.13575
344	626.0	555.0	-71.0	-11.342	8.1	3.38514	1.87875	1.1279	2.11910
345	261.0	232.0	-29.0	-11.111	3.2	3.51067	.81447	1.1250	.91628
346	133.0	119.0	-14.0	-10.526	1.5	2.13553	.25413	1.1176	.28403

347	128.0	118.0	-10.0	-7.813	.8	2.69836	.31841	1.0847	.34539
348	196.0	174.0	-22.0	-11.224	2.5	2.70367	.47044	1.1264	.52992
349	195.0	177.0	-18.0	-9.231	1.7	3.43039	.60718	1.1017	.66893
350	115.0	104.0	-11.0	-9.565	1.1	3.50095	.36410	1.1058	.40261
351	520.0	469.0	-51.0	-9.808	5.0	3.18723	1.49481	1.1087	1.65736
352	2.0	1.0	-1.0	-50.000	.5	5.33333	.00533	2.0000	.01067
353	461.0	405.0	-56.0	-12.148	6.8	3.27971	1.32828	1.1383	1.51195
354	796.0	706.0	-90.0	-11.307	10.2	4.13122	2.91664	1.1275	3.28845
355	170.0	150.0	-20.0	-11.765	2.4	3.15962	.47394	1.1333	.53714
356	131.0	117.0	-14.0	-10.687	1.5	2.16429	.25322	1.1197	.28352
357	134.0	122.0	-12.0	-8.955	1.1	2.71494	.33122	1.0984	.36380
358	244.0	212.0	-32.0	-13.115	4.2	2.39775	.50832	1.1509	.58505
359	46.0	42.0	-4.0	-8.696	.3	2.80454	.11779	1.0952	.12901
360	51.0	40.0	-11.0	-21.569	2.4	3.21746	.12870	1.2750	.16409
361	346.0	298.0	-48.0	-13.873	6.7	2.18567	.65133	1.1611	.75624
362	808.0	709.0	-99.0	-12.252	12.1	2.72828	1.93435	1.1396	2.20445
363	276.0	241.0	-35.0	-12.681	4.4	3.34541	.80624	1.1452	.92333
364	270.0	238.0	-32.0	-11.852	3.8	2.71440	.64603	1.1345	.73289
365	196.0	173.0	-23.0	-11.735	2.7	2.80331	.48497	1.1329	.54945
366	139.0	128.0	-11.0	-7.914	.9	2.06790	.26469	1.0859	.28744
367	109.0	101.0	-8.0	-7.339	.6	1.99311	.20130	1.0792	.21725
368	100.0	95.0	-5.0	-5.000	.3	2.07300	.19694	1.0526	.20730
369	617.0	631.0	14.0	2.269	.3	.90682	.57220	.9778	.55951
370	307.0	308.0	1.0	.326	.0	.90931	.28007	.9968	.27916
371	1010.0	927.0	-83.0	-8.218	6.8	2.72099	2.52236	1.0895	2.74820
372	579.0	520.0	-59.0	-10.190	6.0	2.78818	1.44986	1.1135	1.61436
373	528.0	483.0	-45.0	-8.523	3.8	3.02223	1.45974	1.0932	1.59574
374	486.0	441.0	-45.0	-9.259	4.2	3.07172	1.35463	1.1020	1.49285
375	486.0	433.0	-53.0	-10.905	5.8	3.93725	1.70483	1.1224	1.91350
376	90.0	88.0	-2.0	-2.222	.0	1.92741	.16961	1.0227	.17347
377	152.0	145.0	-7.0	-4.605	.3	1.92497	.27912	1.0483	.29260
378	429.0	382.0	-47.0	-10.956	5.1	2.89678	1.10657	1.1230	1.24272
379	139.0	124.0	-15.0	-10.791	1.6	1.94979	.24177	1.1210	.27102
380	585.0	541.0	-44.0	-7.521	3.3	1.97423	1.06806	1.0813	1.15492
381	403.0	384.0	-19.0	-4.715	.9	2.07757	.79779	1.0495	.83726
382	316.0	329.0	13.0	4.114	.5	.96257	.31669	.9605	.30417
383	612.0	618.0	6.0	.980	.1	1.09626	.67749	.9903	.67091
384	334.0	340.0	6.0	1.796	.1	1.08583	.36918	.9824	.36267
385	553.0	497.0	-56.0	-10.127	5.7	2.76403	1.37372	1.1127	1.52851
386	20.0	23.0	3.0	15.000	.4	.95142	.02188	.8696	.01903
387	80.0	89.0	9.0	11.250	1.0	1.01892	.09068	.8989	.08151
388	61.0	68.0	7.0	11.475	.8	1.02786	.06989	.8971	.06270
389	181.0	188.0	7.0	3.867	.3	2.53280	.47617	.9628	.45844
390	635.0	709.0	74.0	11.654	8.6	.22529	.15973	.8956	.14306
391	590.0	656.0	66.0	11.186	7.4	.22798	.14956	.8994	.13451
392	402.0	423.0	21.0	5.224	1.1	.34320	.14517	.9504	.13797
393	1097.0	1158.0	61.0	5.561	3.4	.34803	.40302	.9473	.38179
394	1279.0	1309.0	30.0	2.346	.7	.37717	.49372	.9771	.48241
395	452.0	461.0	9.0	1.991	.2	.37267	.17180	.9805	.16845
396	136.0	141.0	5.0	3.676	.2	3.44087	.48516	.9645	.46796
397	286.0	249.0	-37.0	-12.937	4.8	3.18694	.79355	1.1486	.91147
398	415.0	533.0	118.0	28.434	33.6	1.35100	.72008	.7786	.56067
399	964.0	979.0	15.0	1.556	.2	.35302	.34560	.9847	.34031
400	102.0	106.0	4.0	3.922	.2	.38552	.04087	.9623	.03932
401	993.0	1130.0	137.0	13.797	18.9	.38026	.42970	.8788	.37760
402	1049.0	1107.0	58.0	5.529	3.2	.33970	.37605	.9476	.35634
403	135.0	120.0	-15.0	-11.111	1.7	2.50057	.30007	1.1250	.33758
404	164.0	144.0	-20.0	-12.195	2.4	2.28822	.32950	1.1389	.37527
405	1263.0	1213.0	-50.0	-3.959	2.0	3.88980	4.71833	1.0412	4.91282
406	700.0	667.0	-33.0	-4.714	1.6	3.56726	2.37936	1.0495	2.49708
407	533.0	524.0	-9.0	-1.689	.2	3.54297	1.85652	1.0172	1.88840
408	1592.0	1768.0	176.0	11.055	19.5	2.28702	4.04344	.9005	3.64093
409	176.0	200.0	24.0	13.636	3.3	.38609	.07722	.8800	.06795
410	95.0	109.0	14.0	14.737	2.1	.38307	.04175	.8716	.03639
411	1594.0	1554.0	-40.0	-2.509	1.0	2.52743	3.92763	1.0257	4.02872
412	2193.0	2247.0	54.0	2.462	1.3	1.36048	3.05699	.9760	2.98352
413	2715.0	2341.0	-374.0	-13.775	51.5	1.01598	2.37842	1.1598	2.75840
414	1162.0	1069.0	-93.0	-8.003	7.4	.82448	.88137	1.0870	.95804
415	284.0	253.0	-31.0	-10.915	3.4	2.09157	.52917	1.1225	.59401
416	1014.0	885.0	-129.0	-12.722	16.4	1.64159	1.45281	1.1458	1.66457
417	408.0	410.0	2.0	.490	.0	1.02684	.42101	.9951	.41895
418	270.0	291.0	21.0	7.778	1.6	1.03597	.30147	.9278	.27971
419	293.0	264.0	-29.0	-9.898	2.9	2.52382	.66629	1.1098	.73948
420	176.0	154.0	-22.0	-12.500	2.8	2.52752	.38924	1.1429	.44484
421	573.0	540.0	-33.0	-5.759	1.9	2.76164	1.49129	1.0611	1.58242
422	506.0	445.0	-61.0	-12.055	7.4	1.82333	.81138	1.1371	.92261
423	465.0	398.0	-67.0	-14.409	9.7	2.21141	.88014	1.1683	1.02831
424	148.0	133.0	-15.0	-10.135	1.5	2.32547	.30929	1.1128	.34417
425	290.0	275.0	-15.0	-5.172	.8	2.70043	.74262	1.0545	.78313
426	.0	.0	.0	.000	.0	1.00000	.00000	1.0000	.00000
427	.0	.0	.0	.000	.0	1.00000	.00000	1.0000	.00000
428	.0	.0	.0	.000	.0	1.00000	.00000	1.0000	.00000
429	.0	.0	.0	.000	.0	1.00000	.00000	1.0000	.00000
430	.0	.0	.0	.000	.0	1.00000	.00000	1.0000	.00000
431	.0	.0	.0	.000	.0	1.00000	.00000	1.0000	.00000
432	.0	.0	.0	.000	.0	1.00000	.00000	1.0000	.00000
433	.0	.0	.0	.000	.0	1.00000	.00000	1.0000	.00000
434	.0	.0	.0	.000	.0	1.00000	.00000	1.0000	.00000
435	.0	.0	.0	.000	.0	1.00000	.00000	1.0000	.00000
436	.0	.0	.0	.000	.0	1.00000	.00000	1.0000	.00000
437	.0	.0	.0	.000	.0	1.00000	.00000	1.0000	.00000
438	.0	.0	.0	.000	.0	1.00000	.00000	1.0000	.00000

```
                                              -----------
R SQUARE =    .98614                             6502.1
```

OTABLE A2(5)   ATTRACTION VOLUME BALANCE SUMMARY (ITERATION 5)
0
0   CROSS CLASSIFICATION OF ATTRACTION ZONES BY DESIRED ATTRACTION VOLUME
                       AND PERCENT ERROR OF RESULTING ATTRACTION VOLUME
0
0   PERCENT ERROR

DESIRED ATTRACTION RANGES	-75 TO -100	-50 TO -100	-25 TO -75	-10 TO -50	-5 TO -25	-1 TO -10	0 TO -5	TO -1	0	0 TO 1	1 TO 5	5 TO 10	10 TO 25	25 TO 50	50 TO 75	75 TO 100	100 AND ABOVE	TOTAL
0.0									14									14
.1 - .9																		0
1.0 - 9.9			1														1	2
10.0 - 24.9				1								1	2	1				5
25.0 - 49.9						1	2						1					4
50.0 - 99.9				5	1	2						3	1					12
100.0 - 199.9				21	8	6				1	7	5	7					55
200.0 - 299.9				21	10	4					3	5	6	1				50
300.0 - 399.9				11	5	4			1	3	4	6						34
400.0 - 499.9				14	6	4			1	3	2	6	1					37
500.0 - 599.9				15	8	5				3	2	5						38
600.0 - 699.9				7	3	3			1	3	1	6						24
700.0 - 799.9				6		3				1		3						13
800.0 - 899.9				7	1	2						3						13
900.0 - 999.9				4	2	1				4	1	5						17
1000.0 - 1999.9				9	7	8				2	13	17	1					57
2000.0 - 2999.9				5	1	6				4	7	2	1					26
3000.0 - 3999.9				4		5				1	1	3						14
4000.0 - 4999.9				2							1	4						7
5000.0 - 5999.9				1									1					2
6000.0 - 6999.9				2		1	1					2						6
7000.0 - 7999.9												1						1
8000.0 - 8999.9																		0
9000.0 - 9999.9				2		2				1	1	1						7
10000.0 AND ABOVE				2		2				1	1	1						7
TOTAL	0	0	0	1	137	53	58	1	14	4	35	44	83	7	0	0	1	438

OTABLE L1(5)   TRIP LENGTH BALANCE (ITERATION 5)

SEPARATION	PERCENT DESIRED	PERCENT RESULTING	DESIRED	RESULTING	DIFFERENCE	PCT ERR	CHI-SQUARE	RELATIVE	CORRECTION	CORRECTED RELATIVE
1	.0000	.0000	.0	.0	.0	-20.008	.0	.0459	1.0000	.0459_
2	.3000	.3979	1482.1	1965.9	483.8	32.642	157.9	928.1626	.7539	699.7485_
3	.7200	.7736	3557.0	3821.9	264.8	7.445	19.7	1863.8360	.9307	1734.6830_
4	1.1000	1.1137	5434.4	5502.2	67.8	1.248	.8	7527.7100	.9877	7434.9380_
5	1.7000	2.4815	8398.5	12259.4	3860.8	45.970	1774.8	100.0000	.6851	68.5071_
6	2.5000	3.3396	12350.8	16498.6	4147.8	33.583	1393.0	237.9390	.7486	178.1204_
7	3.5000	5.2927	17291.1	26147.8	8856.7	51.221	4536.5	104.0720	.6613	68.8212_
8	4.6500	6.8488	22972.5	33835.3	10862.8	47.286	5136.6	78.8511	.6790	53.5360_
9	5.9000	7.3187	29147.9	36156.6	7008.8	24.045	1685.3	160.5817	.8062	129.4539_
10	6.5500	6.6950	32359.1	33075.4	716.3	2.214	15.9	386.5283	.9783	378.1572_
11	6.9500	6.0970	34335.2	30121.0	-4214.2	-12.274	517.2	560.4050	1.1399	638.8108_
12	7.1700	5.6237	35422.1	27782.7	-7639.3	-21.567	1647.5	560.0482	1.2750	714.0432_
13	7.1300	5.2392	35224.5	25883.2	-9341.3	-26.519	2477.2	1084.5400	1.3609	1475.9530_
14	7.0000	4.9282	34582.2	24346.8	-10235.4	-29.597	3029.4	650.8589	1.4204	924.4800_
15	6.3500	5.1190	31371.0	25289.6	-6081.5	-19.386	1178.9	680.2032	1.2405	843.7737_
16	5.4200	4.8482	26776.5	23951.7	-2824.9	-10.550	298.0	245.0953	1.1179	274.0020_
17	4.3500	3.8189	21490.4	18866.7	-2623.7	-12.209	320.3	282.8627	1.1391	322.1986_
18	3.6800	3.2896	18180.4	16251.5	-1928.8	-10.609	204.6	222.3615	1.1187	248.7527_
19	3.2000	3.3004	15809.0	16304.9	495.9	3.137	15.6	150.1953	.9696	145.6270_
20	3.0000	3.3494	14821.0	16546.9	1726.0	11.645	201.0	78.4110	.8957	70.2322_
21	2.6500	2.8966	13091.8	14310.0	1218.2	9.305	113.3	121.2088	.9149	110.8907_
22	2.4100	2.4621	11906.2	12163.4	257.2	2.160	5.6	104.4672	.9789	102.2583_
23	2.1000	2.1063	10374.7	10405.6	30.9	.298	.1	145.3064	.9970	144.8748_
24	1.8500	1.9058	9139.6	9415.3	275.7	3.017	8.3	48.7760	.9707	47.3476_
25	1.6500	1.6845	8151.5	8322.1	170.6	2.093	3.6	53.6784	.9795	52.5779_
26	1.4000	1.4698	6916.4	7261.2	344.7	4.984	17.2	46.2170	.9525	44.0228_
27	1.2000	1.2872	5928.4	6359.4	431.0	7.270	31.3	32.0878	.9322	29.9130_
28	1.0000	1.1037	4940.3	5452.5	512.2	10.368	53.1	19.1907	.9061	17.3879_
29	.8500	.9123	4199.3	4507.1	307.9	7.332	22.6	24.9128	.9317	23.2111_
30	.7300	.8035	3606.4	3969.3	362.9	10.062	36.5	34.9782	.9086	31.7804_
31	.6000	.7016	2964.2	3465.9	501.7	16.925	84.9	13.1776	.8552	11.2702_
32	.5000	.5689	2470.2	2810.5	340.3	13.778	46.9	22.8152	.8789	20.0525_
33	.4000	.4639	1976.1	2292.1	315.9	15.987	50.5	22.7296	.8622	19.5966_
34	.3500	.4054	1729.1	2002.6	273.5	15.818	43.3	21.0104	.8634	18.1409_
35	.3000	.3470	1482.1	1714.1	232.0	15.653	36.3	27.7582	.8647	24.0012_
36	.2500	.3022	1235.1	1493.2	258.1	20.896	53.9	26.1999	.8272	21.6713_
37	.2000	.2341	988.1	1156.5	168.4	17.042	28.7	17.1023	.8544	14.6121_
38	.1500	.2108	741.0	1041.5	300.5	40.547	121.8	11.3148	.7115	8.0505_
39	.1000	.1264	494.0	624.5	130.5	26.412	34.5	13.3627	.7911	10.5708_
40	.0700	.0686	345.8	338.8	-7.1	-2.042	.1	11.4057	1.0208	11.6435_
41	.0400	.0373	197.6	184.1	-13.5	-6.855	.9	16.5139	1.0736	17.7293_
42	.0200	.0189	98.8	93.3	-5.5	-5.614	.3	11.5544	1.0595	12.2417_
43	.0100	.0083	49.4	40.9	-8.5	-17.213	1.5	13.2334	1.2079	15.9849_
44	.0000	.0000	.0	.0	.0	-91.710	.0	.0004	1.0000	.0004_
45	.0000	.0000	.0	.0	.0	-98.272	.0	.0004	1.0000	.0004_
46	.0000	.0000	.0	.0	.0	-99.938	.0	.0004	1.0000	.0004_
47	.0000	.0000	.0	.0	.0	-100.000	.0	.0004	1.0000	.0004_
48	.0000	.0000	.0	.0	.0	-100.000	.0	.0004	1.0000	.0004_

49	.0000	.0000	.0	.0	.0	-100.000	.0	.0004	1.0000	.0004_
50	.0000	.0000	.0	.0	.0	-100.000	.0	.0004	1.0000	.0004_
51	.0000	.0000	.0	.0	.0	-100.000	.0	.0004	1.0000	.0004_
52	.0000	.0000	.0	.0	.0	-100.000	.0	.0004	1.0000	.0004_
53	.0000	.0000	.0	.0	.0	-100.000	.0	.0004	1.0000	.0004_
54	.0000	.0000	.0	.0	.0	-100.000	.0	.0004	1.0000	.0004_
55	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
56	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
57	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
58	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
59	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
60	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
61	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
62	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
63	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
64	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
65	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
66	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
67	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
68	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
69	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
70	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
71	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
72	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
73	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
74	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
75	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
76	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
77	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
78	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
79	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
80	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
81	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_
82	.0000	.0000	.0	.0	.0	-100.000	.0	.0001	1.0000	.0001_

```
                                                        ------------
                                                           25406.0
0                                         DESIRED      RESULTING    PERCENT DIFFENCE
0              AVERAGE INTERNAL TRIP LENGTH      14.94984      14.69329       -1.71605
                   TOTAL INTERNAL TRAVEL      7385699.      7258957.       -1.71605
1              Distribucion de viajes 1996 (EXLO)
```

OTABLE X1   SUMMARY COMPARISON OF
                          ESTIMATED VS. MODELED
                          TRIP LENGTH FREQUENCY*

0
0   SUMMARY OF TRIPS BY SEPERATION INTERVAL
0
0   ESTIMATED   MODELED   DIFFERENCE   RATIO
        SEPERATION PERCENT OF   PERCENT OF (MODELED –   (MODELED /
         INTERVAL   TRIPS   TRIPS   ESTIMATED   ESTIMATED)

SEPERATION INTERVAL	ESTIMATED PERCENT OF TRIPS	MODELED PERCENT OF TRIPS	DIFFERENCE (MODELED – ESTIMATED	RATIO (MODELED / ESTIMATED)
1 – 10	26.9200%	34.2616%	7.3416%	1.2727
11 – 20	54.2500%	45.6135%	-8.6365%	.8408
21 – 30	15.8400%	16.6317%	.7917%	1.0500
31 – 40	2.9200%	3.4288%	.5088%	1.1743
41 & UP	.0701%	.0644%	-.0057%	.9192

0
0   SUMMARY OF TRAVEL BY SEPERATION INTERVAL
0

SEPERATION INTERVAL	ESTIMATED PERCENT OF TRAVEL	MODELED PERCENT OF TRAVEL	DIFFERENCE (MODELED – ESTIMATED	RATIO (MODELED / ESTIMATED)
1 – 10	14.1112%	18.0133%	3.9021%	1.2546
11 – 20	53.2540%	46.2687%	-6.9853%	.8539
21 – 30	25.8176%	27.6129%	1.7952%	1.0512
31 – 40	6.6221%	7.9230%	1.3008%	1.1759
41 & UP	.1950%	.1822%	-.0128%	.9182

0
0   SUMMARY OF MEAN TRIP LENGTHS BY SEPERATION INTERVAL
0

SEPERATION INTERVAL	ESTIMATED MEAN TRIP LENGTH	MODELED MEAN TRIP LENGTH	DIFFERENCE (MODELED – ESTIMATED	RATIO (MODELED / ESTIMATED)
1 – 10	7.8366	7.7251	-.1114	.9858
11 – 20	14.6754	14.9044	.2290	1.0156
21 – 30	24.3668	24.3946	.0278	1.0011
31 – 40	33.9041	33.9516	.0475	1.0014
41 & UP	41.5955	41.5501	-.0454	.9989
ALL	14.9498	14.6933	-.2565	.9828

OEXECUTE GET2   11/16/1999
1TABLE G2   TRIP LENGTH FREQUENCY TABLE
0   Distribucion de viajes 1996 (EXLO)

| | | | | | | 11/16/1999 | | |
SEPARATION INTERVAL	ZONE PAIR INCIDENCE	INTERACTION FREQUENCY	INTERCHANGE VOLUME	MAX VOLUME/ INTERACTION	VOLUME / ZONE PAIR	VOLUME / INTERACTION	VOLUME PERCENTAGE	CUMULATIVE VOLUME
1	180797.	0.	.0	.0	.000			
2	20.	6.	2579.0	2244.0	128.950	429.833	.522	.52
3	23.	3.	5732.0	5698.0	249.217	1910.667	1.160	1.68
4	14.	0.	.0	.0	.000			
5	107.	15.	3032.0	756.0	28.336	202.133	.614	2.30
6	139.	33.	27088.0	2757.0	194.878	820.849	5.483	7.78
7	294.	60.	19121.0	644.0	65.037	318.683	3.870	11.65
8	319.	74.	34862.0	2121.0	109.285	471.108	7.057	18.71
9	350.	64.	32543.0	2776.0	92.980	508.484	6.587	25.29
10	410.	95.	46000.0	1661.0	112.195	484.211	9.311	34.60
11	364.	83.	26434.0	1928.0	72.621	318.482	5.351	39.96
12	593.	156.	39711.0	3381.0	66.966	254.558	8.038	47.99
13	435.	69.	13501.0	1121.0	31.037	195.667	2.733	50.73
14	532.	151.	28523.0	896.0	53.615	188.894	5.774	56.50
15	468.	114.	16033.0	1035.0	34.259	140.640	3.245	59.74
16	455.	131.	37654.0	2689.0	82.756	287.435	7.622	67.37
17	401.	91.	12190.0	530.0	30.399	133.956	2.467	69.83
18	423.	128.	15212.0	1063.0	35.962	118.844	3.079	72.91
19	316.	93.	11803.0	1555.0	37.351	126.914	2.389	75.30
20	374.	105.	30961.0	2937.0	82.783	294.867	6.267	81.57
21	265.	79.	8133.0	3317.0	30.691	102.949	1.646	83.22
22	326.	104.	12463.0	528.0	38.230	119.837	2.523	85.74
23	242.	78.	4218.0	521.0	17.430	54.077	.854	86.59
24	347.	112.	15353.0	1039.0	44.245	137.080	3.108	89.70
25	323.	122.	6402.0	321.0	19.820	52.475	1.296	91.00
26	412.	123.	5949.0	705.0	14.439	48.366	1.204	92.20
27	332.	125.	7604.0	316.0	22.904	60.832	1.539	93.74
28	390.	150.	6266.0	406.0	16.067	41.773	1.268	95.01
29	319.	117.	3905.0	285.0	12.241	33.376	.790	95.80
30	362.	154.	2869.0	189.0	7.925	18.630	.581	96.38
31	335.	131.	5029.0	499.0	15.012	38.389	1.018	97.40
32	247.	88.	1972.0	225.0	7.984	22.409	.399	97.80
33	192.	89.	2591.0	407.0	13.495	29.112	.524	98.32
34	141.	44.	1745.0	352.0	12.376	39.659	.353	98.67
35	163.	59.	1571.0	551.0	9.638	26.627	.318	98.99
36	114.	40.	1802.0	741.0	15.807	45.050	.365	99.36
37	79.	28.	654.0	128.0	8.278	23.357	.132	99.49
38	86.	25.	908.0	181.0	10.558	36.320	.184	99.67
39	67.	14.	727.0	429.0	10.851	51.929	.147	99.82
40	79.	31.	522.0	246.0	6.608	16.839	.106	99.93
41	45.	19.	252.0	69.0	5.600	13.263	.051	99.98
42	34.	14.	88.0	53.0	2.588	6.286	.018	99.99
43	24.	10.	27.0	5.0	1.125	2.700	.005	100.00
44	22.	3.	3.0	1.0	.136	1.000	.001	100.00
45	16.	0.	.0	.0	.000			
46	19.	0.	.0	.0	.000			
47	8.	0.	.0	.0	.000			
48	10.	0.	.0	.0	.000			
49	4.	0.	.0	.0	.000			
50	2.	0.	.0	.0	.000			

1TABLE G2   TRIP LENGTH FREQUENCY TABLE
0   Distribucion de viajes 1996 (EXLO)

| | | | | | | 11/16/1999 | | |
SEPARATION INTERVAL	ZONE PAIR INCIDENCE	INTERACTION FREQUENCY	INTERCHANGE VOLUME	MAX VOLUME/ INTERACTION	VOLUME / ZONE PAIR	VOLUME / INTERACTION	VOLUME PERCENTAGE	CUMULATIVE VOLUME
51	0.	0.	.0					
52	3.	0.	.0	.0	.000			
53	1.	0.	.0	.0	.000			
TOTAL	191844.	3230.	494032.0					

0   AVERAGE TRIP LENGTH = 14.751
0   AVERAGE INTERACTION = 21.961
0   AVERAGE SEPARATION = 2.114
0   DESIRED   RESULTING   PERCENT DIFFENCE
0   AVERAGE INTERNAL TRIP LENGTH   14.94981   14.75108   -1.32934
                  TOTAL INTERNAL TRAVEL   7385685.   7287504.   -1.32934
0***
OEXECUTE STOP   11/16/1999
 Run time =   .239 minutes.