Broward Travel Characteristics Study

Final Report

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BROWARD TRAVEL CHARACTERISTICS STUDY
FINAL REPORT

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EXECUTIVE SUMMARY

The Broward Travel Characteristics Study (BTCS) was initiated in February, 1996, in order to improve the travel forecasting accuracy of the Florida Standard Urban Transportation Model System (FSUTMS) for Broward County. The prime Consultant for this effort was Walter H. Keller, Inc., of Coral Springs, Florida, with Regional Research Associates, Inc. and Marda L. Zimring, Inc., both of Boca Raton, Florida, as subconsultants.

The Study procedure for this effort utilized a series of telephone and mail-out questionnaire surveys to establish the socio-economic and travel characteristics of Broward County. A systematic random sample pool of 6,851 households was drawn from the Property Appraiser records of Broward County. A Telephone Cross-Reference Directory and State apartment listings were used to identify phone numbers and substitute replacement households when unlisted phone numbers were encountered. More than 13,000 telephone calls were made in early February, 1996, to identify individual households and the profile of their travel characteristics, the household FSUTMS Standard Cell classification and to seek subsequent participation in the upcoming mail-out travel log surveys. In order to improve participation in the questionnaire surveys, an active Public Awareness Program was implemented.

Mail-out survey packages were sent to 2,625 households that agreed to participate in the mail-out portion of the Study. A survey package was developed including the Household Verification Survey, the Travel Log Survey and the Direct Utility Assessment (DUA) Survey. All households were requested to complete the Household Verification Survey which included most of the questions asked in the Telephone Screener Survey with additional information on the Travel Maker's Profile Code and household income.

The Travel Log Surveys were scheduled for the fourth and fifth weeks of March, 1996. The DUA survey was forwarded to thirty-three percent (33%) of all households. This questionnaire survey used a disaggregate travel demand modeling technique based upon responses to a series of hypothetical situations. A major goal of the DUA Survey was to identify the survey participant's propensity to use travel modes other than "drive alone" and to develop coefficients for use in transit modeling.

Approximately thirty-three percent (33%) of all travel logs and twenty-two percent (22%) of all DUA Surveys were returned by survey participants. Multiple staff members were used for data entry, data review and editing, cross checking of proper address logging, elimination of duplicate information and correcting, as appropriate, incorrect data. Eighty-

eight percent (88%) of the returned travel log packages were found to be substantially complete. Many of the households which returned travel logs were contacted to verify information or correct inconsistencies. The remaining 116 travel log packages either not able to be edited, from households which refused to participate in the survey or were returned by the postmaster.

Comparison of the socio-economic characteristics of the Household Verification Survey with the 1990 U.S. Census data for Broward County indicates that the characteristics of the survey participants are generally comparable to the 1990 U.S. Census characteristics except in a few selected categories. First, the survey data set had a higher percentage of non-employed households. For example, according to the Census, approximately eighteen percent (18%) of the households in Broward County do not have any employed members. However, households without any employed members comprised approximately forty-six percent (46%) of the households in the travel study. This led to lower than anticipated vehicle trip rates. Second, the survey data set has a higher percentage of single family units. Finally, the survey data set is low in zero auto households and in larger size households. Difficulties in finding zero auto households is common in travel studies of this type. While larger size households were identified in the Telephone Screener Survey and forwarded travel log packages, a much lower rate of return was experienced from this subgroup. The prospect of completing travel log forms for many household members six years and older discouraged the participation of large size households.

Broward County trip rates were found to be generally lower than the standard FSUTMS trip rates. This may be due in large part to the higher than anticipated number of households without employed members. To address this issue, the raw household vehicle trip rates were weighted using the employment characteristics of each household. As stated earlier, the sample of households returning travel logs had a larger percentage of households with non-employed members when compared to the 1990 Census results. The weighting of the vehicle trip rates based upon the Census was used to de-emphasize the households with non-employed members and amplify the trip rates from households with employed members.

A larger than expected variance was found in the trip rates of the various FSUTMS Standard Cells for Broward County. Much of this variance may have been caused by the divergent trip rates from households with employed members versus those without employees. This variance significantly increased the number of samples required to meet statistical goals. Based on the reasons stated above, recommended new trip rates could not be developed for all cells.

Travel characteristics for Broward County were also identified for trip length (in minutes), auto occupancy and internal - external relationships. Geographic Information System (GIS) procedures were utilized to identify the trip end locations of travel log information for approximately eighty-three percent (83%) of all trip ends noted in the travel logs.

The following table provides highlights of the findings of the Broward Travel Characteristics Study.

Broward Travel Characteristics Study

Characteristics	SF	MF	All HH
Dwelling Units	389	478	867
People/HH*	2.55	1.66	1.95
Autos/HH	1.92	1.24	1.56
Avg $/HH	$42,000	$32,000	$45,029
Per Trips/HH/Day	8.74	5.15	6.75
Veh Trips/HH/Day	6.83	3.99	5.24
HBW Trips/HH	1.57	0.61	1.03
HBS Trips/HH	0.88	0.72	0.79
HBR Trips/HH	0.48	0.38	0.42
HBO Trips/HH	1.60	0.90	1.20
NHB Trips/HH	2.32	1.39	1.80
Weighted Veh Trips/HH/Day	9.42	3.59	6.16
HBW Trips/HH	2.66	0.89	1.67
HBS Trips/HH	0.60	0.37	0.47
HBR Trips/HH	0.59	0.25	0.40
HBO Trips/HH	2.04	0.71	1.29
NHB Trips/HH	3.54	1.36	2.32
Avg Trip Length (mi)	7.00	6.75	6.90
Avg Travel Time(min)	16.25	16.86	16.51
Avg Auto Occupancy	1.39	1.34	1.37

Source: Walter H. Keller, Inc.
Note: * Denotes Household

Experience gained from the BTCS suggests future survey efforts be modified to extend the survey period to improve survey participation. The travel log survey period for the BTS was two (2) weeks. During this time frame, survey households had to be contacted by telephone to confirm participation, schedule days and answer questions. The logistics of contacting all prospective participants could be greatly improved with a longer survey period and less participants at one time. BTCS and the TC2S efforts revealed that personal telephone contacts significantly improve survey participation and return rates.

I. Introduction

The Florida Department of Transportation (Department) initiated a study to identify the localized trip making characteristics of Broward County in order to improve the travel forecasting process. This Study, known as the Broward Travel Characteristics Study (BTCS), was initiated in late 1995. The consulting firm of Walter H. Keller, Inc. (WHK), of Coral Springs, Florida, was selected as the Department's consultant. Subconsultants assisting WHK for this effort are Regional Research Associates, Inc. and Marda L. Zimring, Inc. Both subconsultant firms are located in Boca Raton, Florida.

The goal of the Study is to identify localized socio-economic and travel characteristics that can be utilized to improve the travel making forecasts prepared by the Florida Standard Urban Transportation Model System (FSUTMS) for Broward County.

The Study has four major components:

Task 1 - Survey Design and Preparation;
Task 2 - Survey Implementation and Quality Control;
Task 3 - Analyze Survey Results; and,
Task 4 - Final Report

Technical Memorandum #1 addressed the Survey Design and Preparation. In this Memorandum, the survey methodology was described, the survey and questionnaire forms were presented and the schedule of activities for obtaining "peak season" survey results were discussed. The Public Awareness Program, which was important in the Study's success, was also described in detail.

The Final Report addresses Tasks 2 through 4. In this Memorandum, an overview of the survey process was reviewed, the steps taken to improve the survey quality were described and the efforts taken to improve survey results were presented.

This Final Report provides a summary of the first technical memorandum and additional material on the socio-economics of Broward County and survey participants, the results of the travel log surveys, the travel characteristics of Broward County, and the results of the GIS address-matching effort. The Appendix contains information on the survey design, public awareness program, quality control procedures, the DUA survey, and the multiple classification analysis for trip rates.

Section II of this Final Report provides a synopsis of the survey design methodology. In this section, an overview of the Study's sampling method is reviewed and the survey procedure is described. This section also provides descriptions on the various questionnaires and survey goals. A brief discussion of the Public Awareness Program is presented. This program was deemed a major factor in the high return rate of the mail-out questionnaire and travel log packages. The Quality Control efforts are then reported, along with the various procedures implemented to arrive at complete and reliable results.

The Telephone Screener Survey and the Household Verification Surveys are presented in Section III of this Final Report. The basis for the overall study, the FSUTMS Standard Trip Production Cross Classification Structure is defined. The Telephone Screener Survey's major purpose was to identify participants and the associated household cell and to seek subsequent participation in the mail-out travel log effort. In this Section, the screener survey process is reported along with the dwelling unit characteristics of the survey respondents. The efforts made to ensure that bias was not encountered by not contacting all prospective parties is reviewed. Finally, the characteristics of the households which returned the travel logs is compared with 1990 Census characteristics of Broward County.

The results of the Travel Log Surveys including resulting trip rates is given in Section IV of the Report. Trips rates are provided by FSUTMS Standard Cell for Broward County for the trip purposes of Home-Based Work (HBW), Home-Based Shopping (HBS), Home-Based Social-Recreation (HBSR), and Home-Based Other (HBO). Non-Home Based (NHB) trips are also computed along with total trips. A discussion and series of tables are then used to explain the difference and travel log results for internal, internal-external (IE), and external-external (EE) trips. This Section also provides travel characteristics for trip length (in minutes), auto occupancy, income and comparisons with the travel study results from other Florida areas.

Section V presents the DUA Survey in detail. This Section explains the methodology, the DUA results and the DUA analysis. Multiple regression analysis is utilized to determine the effects of alternative modal choices versus the survey participants current mode of travel. The results of perceived importance characteristics for various modal choices is then reported.

Geographic Information System (GIS) procedures were utilized to identify the trip end locations of travel log information. Section VI of this Final Report describes the address

matching process and the address matching results. Figures are presented for Broward County depicting the trip end locations matched.

The last Section of the Report provides an analysis of friction factors, the statistical basis of the Study results, a discussion of the multiple classification analysis employed, and the recommended trip rates for Broward County. Standard statistical procedures are used to identify the resulting percent error for the given confidence levels of the Trip Rate Cells. This procedure is then followed by the five (5) standard trip purposes with the current trip rate assignment. Based on the results of this Study, recommended trip rates are provided for the statistically significant cells.

Survey forms, trip length frequency graphs, GIS data attribute tables, friction factors, and multiple classification of trip rates data are all included in the Appendix to the Report.

II. Survey Design Methodology

Study Design Overview

A series of questionnaire surveys were performed to identify the travel characteristics of Broward County households. Major travel characteristics sought included; household trip generation, trip purpose, trip length, travel time and modal split. A random selection process was utilized to develop a household sample pool from the Broward County Property Appraisers file. Additional samples were also obtained using cluster sampling techniques to provide expanded sampling of rental apartment and mobile home households. Telephone numbers were obtained from a Cross Reference Directory. A Telephone Screener Survey was used to classify the general household characteristics, establish the appropriate FSUTMS Cell group and to seek subsequent participation in completing a household Travel Log Diary.

A portion of households identified through the telephone screener surveys that agreed to participate in the Travel Log portion of the study were selected to receive detailed travel log survey forms for each household member older than 5 years of age, a household verification survey and a Direct Utility Assessment (DUA) Questionnaire. Households were advised to complete the travel diaries for a selected day. The travel log survey form provided the information needed to define Broward's travel characteristics. The returned survey forms was coded, edited and processed by both analog and GIS means to provide current Broward travel information.

The Broward Travel Characteristics Study initial methodology included three (3) procedures to identify and select households for participating in the Travel Log portion of the study. These procedures included random selections from the Broward County Property Appraiser files, Cluster Sampling of "hard to get" households and "face to face" interviews at transit terminals in Broward County. However, after discussions with representatives from the Department and the FAU/FIU Joint Center, it was determined that the interviews at transit locations would cause bias in the survey results. Because of the potential for bias, the "face-to-face" interviews were not utilized.

Based on the Department's statistical requirements, it was estimated that approximately 1,085 travel logs were needed to be completed and returned. Assuming a 35% completion of travel logs from targeted households and a 50% telephone contact rate within the sample pool, approximately 6,500 households were estimated to be the sample size for this study.

The major portion of the sample was randomly selected from the Broward County Property Appraiser files. The Property Appraiser files were utilized to develop a stratified sample pool of residential units with descriptions of unit type, assessed values and sales price. The random sample of households was drawn from a sample pool stratified (by income and dwelling unit type).

The Broward file has N = 526,481 residential records. The sample was generated in 'replicas' of 527 properties. A replica was created by dividing the universe of properties by the replica size (in this application that would be 526,481 / 527 = 999). A random number generator selected a number between 1 and 999 and then a replica was generated by systematically drawing every 999th record beginning with the initial random number.

For example, if the initial random number between 1 and 1,578 drawn was 500, then the 500th record in the combined file would be selected, then the 2,078th, then the 3,656th, and so on until the end of the file was reached. This method would produce 100 sample properties systematically drawn from a random starting position. This process was repeated (each pass through the file starts with a new random number) until the desired sample size is reached. With the replica size of 527 samples, thirteen (13) replicas produced an initial sample set of 6,851 households.

An initial test of the first 192 samples was performed to establish an expected telephone match from the cross reference directory and to establish whether the sample pool of 6,851 samples would be a sufficient pool to obtain the desired number of completed surveys. CD-ROM Cross Reference Directories were obtained from City Publishing Company which included all addresses with published phone numbers in Broward County. The CD-ROM software allows location by either address or name. Only 49.5% of the samples tested provided phone numbers and of this amount, about 15.5% of the phone numbers were for different owners than that identified in the property appraiser file.

Forty-nine percent (49%) of the initial test sample were found to have either unlisted phone numbers (6.7%), lived outside of Broward County (33%) or could not be found within the cross reference listing (10.8%). In instances where the property was not included on the CD-ROM, an adjacent property with a listed phone number was substituted (6.7%). This procedure increased samples to a total of 56.2% matched records.

Because the CD-ROM telephone address matches were consistent with initial estimates, the sample pool was kept at 6,851 properties (requiring 13 replicas). Additional representative

samples (replicas) could have been drawn if needed without bias to the overall sampling design.

Approximately seventy-five percent (75%) percent of the single family properties were homesteaded and thus the address of record is the mailing address of the property. Approximately fifty percent (50%) of the condominium properties were also homesteaded. These addresses matched the cross reference directories addresses and allowed for the determination of telephone numbers. The following table compares Broward County dwelling unit information from the 1990 Census to the survey sample derived from the Property Appraiser files:

Table 1 - 1990 Census and Survey Sample Comparison

Dwelling Units	1990 Census		Survey Sample	
	#	%	#	%
Single Family Home	234,232	37.3%	3,549	51.8%
Multi-family, Co-op or Condo	360,415	57.3%	3,255	47.5%
Mobile Home	28,552	4.5%	47	0.7%
Other	5,461	0.9%	-	-
Total Dwelling Units	628,660	100.0%	6,851	100.0%

Sources: Walter H. Keller, Inc.
U. S. Bureau of Census

According to the 1990 Census, Broward County contains 28,552 mobile home units representing 4.5% of the total units in Broward County. The sample set generated from the Property Appraiser file contained a universe of 6,851 dwelling units. Of these units, 45 were mobile home dwelling units and 2 were mobile home parks. The sample set should have included 308 mobile home properties (4.5% * 6,851) to be representative of the entire County. Three methods were used to ensure that the sample set would be representative of the County. First, the 45 individual mobile home owners were used from the original list of 6,851. Second, additional mobile home dwelling units were selected from the 2 mobile home parks contained on the original list of properties from the CD-ROM. Finally, neighboring mobile home units located in the same parks containing the first 45 dwelling units were also identified from the CD-ROM.

Rental apartments were also identified using the Appraiser files. According to the 1990 Census, in Broward County 57.3% of all dwelling units are either multi-family, co-op, or condominium units. In the survey sample, 47.5% (3,255) of the dwelling units are either

multi-family, co-op, or condominium units. Additional rental apartment dwelling units were included in the survey to ensure that a representative sample of Broward County rental apartment units were included in the study. The Broward Travel Characteristics sample contained 249 rental apartment complexes which each have less than 9 dwelling units. The same sample also contained 22 rental complexes with more than 9 dwelling units each. An average of 2 dwelling units were identified in each of the smaller rental complexes from the CD-ROM, and 25 dwelling units were identified from the CD-ROM in each of the larger complexes. Using this methodology, an additional 562 rental apartment dwelling units were added to the sample.

The Property Appraiser files contains apartment dwelling units listed primarily by the address of the property owner. This address was not always the same as the property address.

The Property Appraiser files and the State's apartment listings resulted in a combined 996 rental apartment samples. Table 2 provides a breakdown of the sample pool:

Table 2 - Broward Study Sample Set

Category	Sample
Replicas 1 - 13	5,340
Multi-Family (< 9 Dwelling Units)	256
Multi-Family (> 9 Dwelling Units)	306
Mobile Homes	318
Rental Apartments	434
Total Sample	6,654

Source: Walter H. Keller, Inc.

The Department required the travel log portion of the survey to be completed prior to the end of the "peak season" thereby requiring the survey logs to be completed by the end of March, 1996. Based on the initial statistical assessments, it was estimated that 1,085 fully completed travel logs were needed to be returned. With a 35% completion of travel logs by targeted households, it was anticipated that 3,100 households would need to be selected to participate in the mail out surveys. Seven hundred seventy seven (770) of all households participating would also be asked to complete the Direct Utility Assessment (DUA) questionnaire. Figure 1 highlights the projected sample size, timing and composition of the proposed travel log distribution. The face-to-face surveys and transit dependent households were not included in the actual survey effort because concerns were raised that

this would create bias in the survey results. Figure 2 details actual survey sample size, timing and composition for the BTCS.

Several efforts were initiated to improve the participation in the Broward Travel Characteristics Survey. A Public Awareness Program was implemented to make the public knowledgeable about the effort and its importance, introductory flyers were being mailed to all survey prospects (6,851 households) and to Broward media. A 1-800 phone number was used to provide a central location to receive information about the Study. Because of the difficulty in securing participation in the travel log portion, personal phone calls were also made to survey participants prior, during and after the survey.

Efforts were being made to provide "easy to read" instructions with emphasis on the importance of proper coding of trip ends information. Survey forms were printed in separate colors to facilitate coding of the separate forms. Additional information on the Public Awareness Program can be found in Section IV of this report.

Broward Travel Characteristics Study
FDOT District IV

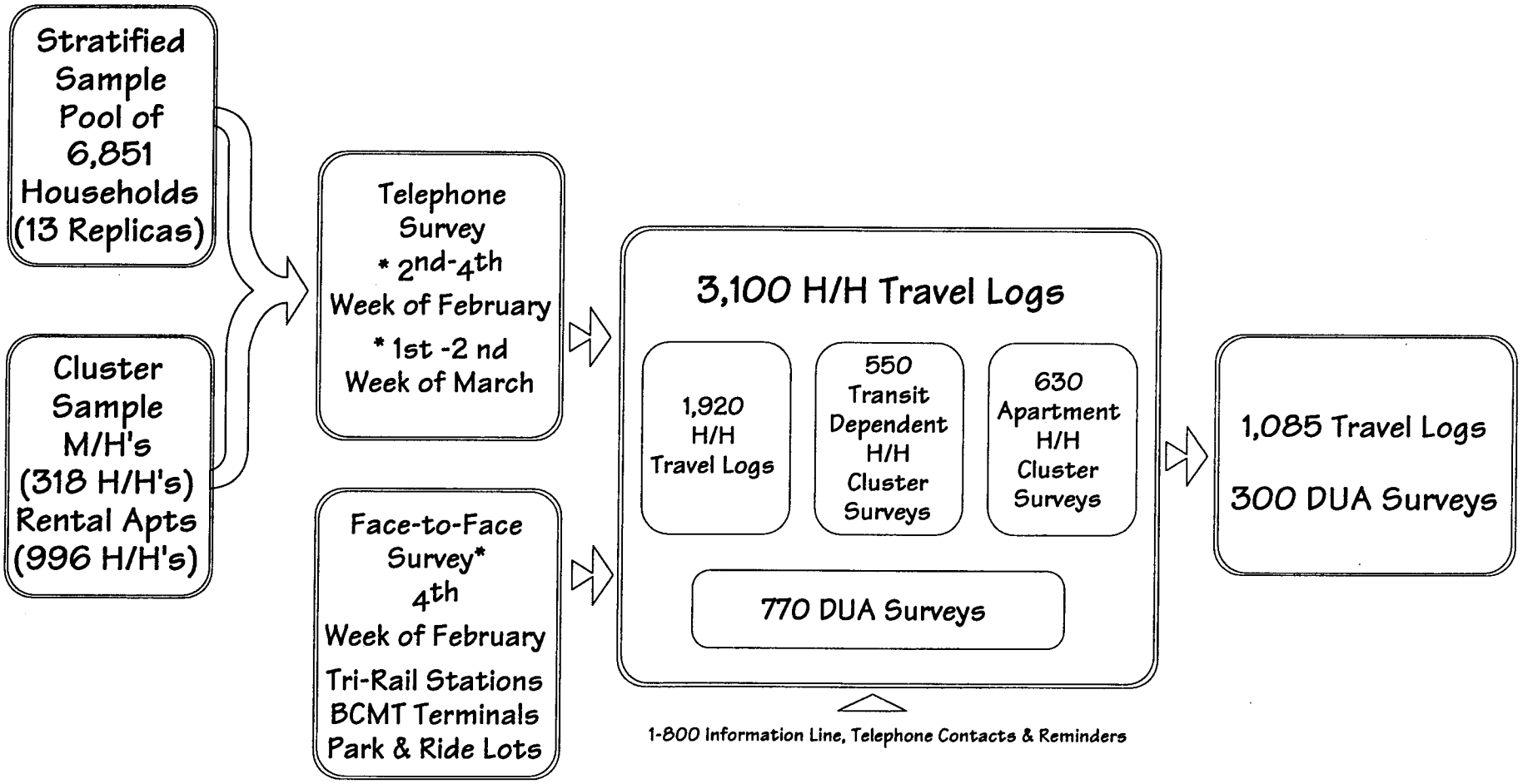


Fig. 1- Travel Log Sample Sets

Note- *Face-to-Face Survey not conducted

Broward Travel Characteristics Study
FDOT District IV

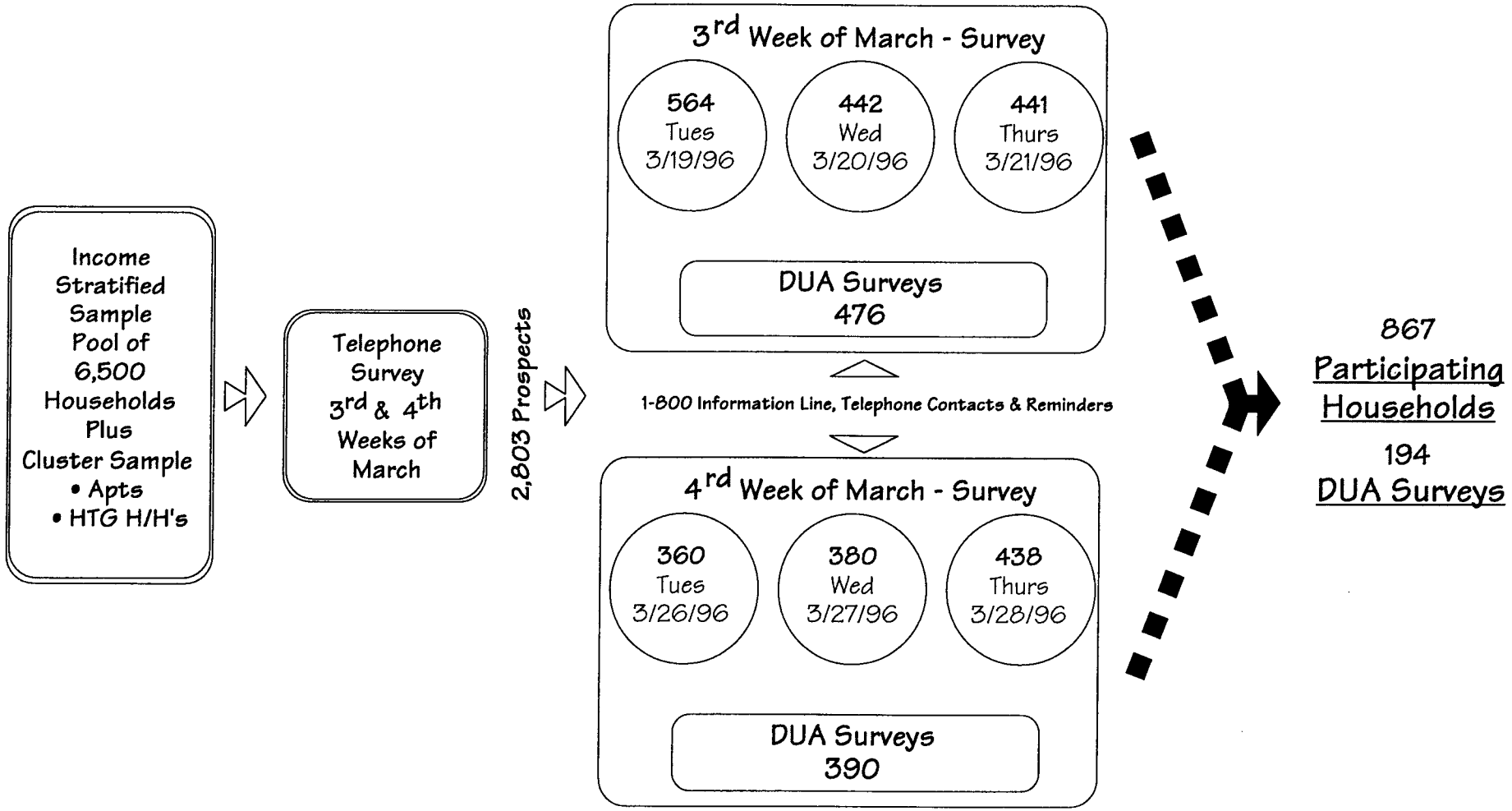


Fig. 2- Travel Log Results

Questionnaire and Travel Log Design

Several survey questionnaires and travel logs were developed in the Broward Travel Characteristics Survey. These included the Telephone Survey Questionnaire, the Household Verification Survey, the Mail-out Travel Logs and the Direct Utility Assessment (DUA) Questionnaire.

The Telephone Survey Questionnaire was used as a screening survey to identify general household characteristics, but, more importantly to secure participation in the follow-up mail-out surveys. Introductory letters were mailed to all of the survey pool prospects approximately 3 - 7 days before the first telephone call was made. The questionnaire included questions on dwelling unit type, whether the unit is owned, number of people in the household by lifestyle classification, the number of vehicles available and whether the household is a year round or seasonal housing unit. Based upon a meeting with representatives from WHK, FDOT, and the FAU/FIU Joint Center, the initial telephone screener survey was revised. The revised survey included expanded dwelling unit types and a question soliciting the name of a contact member for the household. Additionally, pre-testing of the preliminary questionnaires was also performed to identify any needed revisions or modifications. Appendix A contains example Telephone Survey Questionnaires.

Three mail-out surveys questionnaires were prepared. The Household Verification Survey was prepared to secure additional information on the dwelling unit characteristics, general household travel characteristics and the profile code of the travel makers. Another important characteristic sought in the Household Verification Survey was household income.

The Travel Log Survey Questionnaire was designed to provide a variety of travel information. Major data items provided include trip number, trip start information, trip end information and travel characteristics. Trip start information included trip origin location by either address, name and City or nearest intersection. The Travel Log was also designed to be analyzed by Geographic Information System (GIS) processing and the trip location information boxes were design for GIS use. Travel characteristics included travel means (mode) and whether travel is made as the driver, passenger and the number of persons in the vehicle.

The Travel Logs were designed in two (2) formats: individual forms for each household member older than five (5) years old; and a household booklet which includes the

individual household member forms. In each case, the individual household member forms were designed such that 12 person trips could be tabulated. Each household was also provided separate sheets for persons making greater than 12 daily person trips. This form was similar to the other daily travel log forms except blanks were provided for the trip number.

The final mail-out survey questionnaire was the Direct Utility Assessment (DUA). The major purpose of this survey questionnaire was to test the propensity for transit and other mode usage in the Broward Area. Eight Hundred Seventy-Five (875) households were forwarded the DUA questionnaire. The DUA questionnaire asks specific mode choice questions relative to the first trip noted on the Travel Log for the household contact member or adult household member. Given different values of travel time, travel cost and accessibility, participants were asked to evaluate the preferred travel mode considering Bus, Tri-Rail and Shared Ride. Additional questions were also provided in order to determine satisfaction with the performance of the evaluated modes and safety.

The mail-out survey packages also included a letter from the Department thanking the household for participating in the survey, indicating the day the travel log should be kept and advising the household of the 1-800 telephone number for questions and information. An information packet was also provided in each package to facilitate questionnaire completion and to improve the reliability of the survey results along with a pre-addressed postage paid return envelope.

Public Awareness Program

The Public Awareness Program for the Broward Travel Characteristics Study had five major components. The first was the development of a comprehensive mailing list which reached all residents of Broward County through public agencies, civic groups, private associations, and other broad-based points of contact. The second effort was the development of public awareness information to give the project an identity, clearly describe the purpose of the project, and alert all residents to the forthcoming requests for cooperation in a way which would make them receptive to participating. This will involve a staged release of information which will hold public and media attention for the duration of the survey effort.

The third component was the mailing, telephoning, and follow-up to ensure that the message got out to the public and was understood. It included integrating the public

awareness with the cluster sampling part of the survey. As transit data was a critical aspect of the project, it received deserved attention in the Public Awareness Program. Bus advertising and posters displayed at transit stops were used. This effort continued until all surveys were returned.

A fourth component of the Public Awareness Program was coordinated with the first three efforts in terms of project identity, information and timing. This was a direct mailing to the households selected to participate in the survey. This correspondence reinforced the perception that this is a public service project, and prepared the recipients for the phone calls to follow.

Comprehensive Mailing List

The mailing list was intended to broadcast the message to the residents in Broward County in order to reach most residents from several different sources. To that end, the following categories of recipients were selected.

- Newspapers, radio and television stations, cable providers.
- County and municipal offices and administrators and elected officials.
- Civic groups, public service clubs, property owners associations, and special interest groups.
- Schools.
- Commercial locations including grocery stores, drug stores, banks, post offices and video outlets.
- Tri-Rail, Broward County Transit, and other transit providers.

Public Awareness Information

In developing the materials which were distributed, one of the key elements was the identity of the project. "Where Are We Going?" which was well received and understood in the Treasure Coast Study was repeated. It gave the project a name which tied directly to its purpose and the completion of the travel logs along with the ultimate aim of the public awareness program. The "Where Are We Going?" identity was used in all contacts to give the elements of the study a consistency that will allow it to be marketed and administered with little confusion or reticence on the part of those residents ultimately selected for the survey.

It was imperative that the project be identified as a Florida Department of Transportation undertaking and that its purpose was to improve the roadways and transit opportunities in Broward County. The message to be carried was that this was a unique opportunity for the residents of the area to assure that the roads and transit built are the ones needed to get them where they go, faster, safer, and more conveniently. It was conveyed that the value of the study and its benefit to Broward relies upon the participation of the residents.

All written correspondence carried the Florida Department of Transportation logo. It was imperative that the study be identified as an FDOT project; that participation was a civic duty and represented tax dollars at work. Due to the constant barrage of telephone marketing calls which any household is likely to receive and due to the well ingrained hesitancy of the public to give out information over the phone, it was necessary to distance the survey from all private marketing campaigns, telephone solicitations, and surveying for commercial, for profit companies.

The public awareness mailing, which was sent to approximately 400 recipients on the mailing list described above, gave a descriptive overview of the project, a sample of the telephone survey questions that needed to be asked, an example of the travel log format, and an explanation of the analysis which took place following the data collection activities. It included the FDOT logo, the 1-800 telephone number, and a request to post the mailing and disseminate the information. It was conceived that this mailing be a single, brightly colored page in order to attract maximum attention both as the letter was opened and especially when posted. It was anticipated, for example, that condominium associations would include the information at their meetings prior to the survey and post the colored sheet in the mail room.

After broad exposure to the public awareness message, residents were aware that the Florida Department of Transportation were asking for the help of thousands of households. They expected phone calls ; they knew that they would be asked to keep a travel log; and they also knew that the information required in the logs was where you went, when you went, why you went (shopping, work, doctor appointment), and what was your mode of transportation (car, bike, transit).

The successful completion of the Public Awareness Program required reaching the entire Broward population through overlapping venues, educating the public as to the purpose of the survey, and instilling in the public a willingness to cooperate in the survey when contacted. A copy of the flyers which will be used are included in the Appendix A.

Follow-Up Procedures

Once the public awareness information mailing was completed, calls were made to ensure that it has been received, that the recipients understood the message, and that the information will be disseminated to the intended audience. All newspapers, radio stations, and television stations were called to encourage news, editorial, and feature coverage of the project. In order to keep the message fresh and interesting, it was anticipated that there would be a three phase program. The Phase I message was the basic statement of the project purpose; Phase II involved the transit aspect of the project; Phase III encouraged those participating in the surveying responses to stay with it. Appendix A includes the various versions of the press release flyers.

Direct Mailing

A flyer was mailed to each household prior to its being contacted by telephone to verify general household characteristics and seeking participation in completing travel logs. This mailing had the "Where Are We Going?" identity as well as the Florida Department of Transportation Logo. It was consistent with the mailing to the 400 recipients described above.

Quality Control Plan

Several procedures were initiated to improve the quality of the survey process. These procedures included:

- Designing a sample set of sufficient size to achieve desired accuracy;
- Ensuring that the sample set was random and unbiased;

- Periodic testing and evaluation of all survey procedures;
- Training and monitoring of survey personnel; and,
- Providing procedures for completing forms based on partial responses.

The Property Appraisers' records were used to select the random sample set (see Technical Memorandum #1 for additional detail). This data set provides a fixed sample frame with several known characteristics for subsequent use in the income stratification, household classification and location distribution of the selected households in the Broward County. The initial sample pool was proposed at 6,654 households.

Temporary personnel were used in conjunction with existing consultant team staff to perform the Telephone Survey. All survey personnel were given instructions and training in performing the telephone calls, logging survey responses and responding to various questions. All telephone calls were made from the offices of Walter H. Keller, Inc., to maintain quality control and to monitor results. Experienced supervisors were always present during the telephone call period between 4:00 PM - 8:30 PM on weekdays, and between 12:00 PM to 6:30 PM on weekends. The time and number of each call was logged, response to the call was indicated and any unanswered calls were repeated at different times. In instances where an answering machine was present, a brief message was left. Each day supervisory personnel would review survey completion results, sort individual telephone questionnaire sheets for processing and prepare for repeat phone calls. Telephone survey personnel were normally very successful in obtaining responses to the questionnaire once a completed call was obtained.

At least three (3) attempts were made to contact each household by telephone. Attempts were also made to contact a subset of households through a fourth telephone call to verify any potential bias due to non-contact. March 19 - 21 and March 26 - 28 were selected as the travel log dates for the survey . In some instances, a commercial listing or an unlisted phone number was also encountered in the sample set. When a commercial listing was found it was dropped from the sample set. The adjacent property address listing from the CD-ROM was used in-lieu of the address with the unlisted phone number. To increase the participation of respondents residing in mobile homes, additional phone calls were made to stress the importance of their participation in the survey. The table on the following page details the number of households which were selected for each travel log day:

Table 3 - Travel Log Day Assignments

Series	Households	Travel Date
1000	564	3/19/96
2000	442	3/20/96
3000	441	3/21/96
4000	360	3/26/96
5000	380	3/27/96
6000	438	3/28/96
Total	2,625	

Source: Walter H. Keller, Inc.

The survey forms were prepared to obtain requested information, verify household characteristics, provide income information (Household Verification Survey), describe the daily trip making events (Travel Logs) and to estimate the propensity for using transit (DUA Survey). Survey forms were pre-tested and modified as appropriate. Efforts were made to provide a variety of ways to answer the trip end information on the Travel Logs. The survey form instructed the survey participant to provide the actual address of the trip end, followed by the place name and City. If the address was not known, the survey participant was instructed to identify the nearest intersection by street names. The quadrant of the intersection was also requested to further refine the area.

Households that agreed to participate in the Travel Characteristics Survey were mailed an informational packet and travel logs. Each survey form was printed on differently colored paper to improve recognition of the different forms. Additionally, one-third of participating households were also provided with a DUA questionnaire. Consultant company names were not indicated on any of the survey material. Only the Florida Department of Transportation name was provided to indicate the public nature of the survey effort. Pre-addressed postage paid envelopes were also included in the packet for travel log mail back.

The mail-out was made one-week prior to the start of the first travel log survey day. Each household was contacted to confirm that the packet was received and to answer any questions about their packet or travel log date. An 800 number was included in the informational packet for any subsequent questions or assistance. Follow-up calls were also made after the scheduled survey period to make sure that the travel logs were completed. In a few instances, travel logs were also rescheduled to the following week or the first week in April in order to accommodate survey participants' scheduling problems.

Quality Control Efforts in Coding and Editing Survey Responses

Several procedures were initiated to improve the quality of the completed survey questionnaires and travel logs. These procedures included:

- Manual review of each returned questionnaire/survey for completeness;
- Retention of H/H# and questionnaire/surveys for subsequent review;
- Identification of missing or in-complete information;
- Phone contact to locate missing information on Travel Logs;
- Use of the CD-ROM Cross Reference Directory to determine address;
- Use of standard abbreviations for GIS processing;
- Use of prior telephone survey to provide missing information;
- Use of standard statistical analysis procedures to identify keypunch errors;
- Re-checking of responses at several stages in the editing process;
- Re- Review of Files not Matched in GIS geo-coding process, and
- Purging of incomplete questionnaire/surveys.

Multiple staff members were used for data entry, data review and editing, cross checking of proper address logging, elimination of duplicate information and correcting as appropriate incorrect data entry. In order to minimize and identify errors, different staff members were used at various stages of the process. The CD-ROM Cross Reference Directory was a significant resource in instances where the name of the trip end place was noted, the City was known and the adjacent street was provided. Telephone books for Broward, Dade, and Palm Beach Counties were also used in instances where only the name of the trip end was provided. Additionally, the retention of the returned questionnaires and surveys with the household number improved the editing and checking of responses.

III. TELEPHONE AND HOUSEHOLD VERIFICATION SURVEY RESULTS

Telephone Screener Survey

In this portion of the Final Report, the results of the telephone screener and household verification survey are presented. The results of these surveys are reviewed relative to 1990 Census characteristics. As stated earlier, the telephone screener survey had two major purposes: first to identify the household relative to the FSUTMS Standard Trip Rate Cell; and to secure the household's participation in the subsequent mail-out travel survey. All households in the mail-out survey were also requested to complete a Household Verification Survey. This survey's major objectives were to confirm the telephone survey results, provide additional information on the travel maker's profile and to secure generalized household income data.

More than 13,000 telephone calls were made to contact households for the travel log survey. Many households needed to be contacted multiple times until someone in the household could be reached. From the initial sample set of 6,654 households, forty-two percent (42%) of the households (2,803) participated in the Household Characteristics Survey and ninety-three percent (93%) of those households (2,625) agreed to participate in a subsequent travel log survey.

The Telephone Screener Survey sought to obtain information dwelling unit type, number of people per household, occupant status, vehicles per household, and if the household was permanent or seasonal. The sample set from the Telephone Screener Survey is comprised of the households which completed the Telephone Screener Survey and agreed to participate in the travel log portion of the study. Table 4 provides a comparison of the results of the Telephone Screener and the 1990 Census:

Table 4 - Telephone Screener Results

Category	Households	Survey %	County %
Dwelling Unit Type:			
Single-Family	1,305	50.0%	37.3%
Duplex, Triplex, Quadplex, or Villa	92	3.5%	8.1%
Townhouse	128	4.9%	6.6%
Apartment (Rental)	195	7.5%	9.5%
Apartment (Condo)	778	29.8%	33.2%
Mobile Home or Trailer	104	4.0%	4.5%
Motel or Hotel	2	0.1%	0.0%
Other	4	0.2%	0.9%
Total:	2,608	100.0%	100.0%
Occupant Status:			
Owner-Occupied Units	2,222	85.2%	68.0%
Renter-Occupied Units	365	14.0%	32.0%
Other	8	0.3%	
No Responce	13	0.5%	
Total:	2,608	100.0%	100.0%
Household Members:			
1 Household Member	652	25.0%	29.3%
2 Household Members	1,087	41.7%	37.2%
3 Household Members	380	14.6%	14.6%
4 Household Members	301	11.5%	11.3%
5 Household Members	129	4.9%	4.9%
6 or More Household Members	48	1.8%	2.7%
No Responce	11	0.4%	-
Total:	2,608	100.0%	100.0%
Vehicles Per Household:			
0 Vehicles	180	6.9%	10.3%
1 Vehicle	1,089	41.8%	43.9%
2 Vehicles	1,029	39.5%	34.7%
3 or More Vehicles	299	11.5%	11.0%
No Responce	11	0.4%	-
Total:	2,608	100.0%	100.0%

Sources: Walter H. Keller, Inc.
1990 Census

Table 4 contains household information about dwelling unit type, occupant status, household members, and vehicles per household. The household distribution from the

Telephone Screener is similar to the 1990 Census with the majority of the dwelling units being either single family or condominium apartments. Approximately eighty-five percent (85%) of the households which agreed to participate in the travel log portion of the survey resided in owner-occupied dwelling units. This is greater than the sixty-eight percent (68%) which was reported in the 1990 Census. This difference may be the result of using the CD-ROM directory obtain telephone numbers. In some cases, households which were renting after the phone numbers were published. This led to a lower than expected number of households which resided in rental dwelling units being contacted. The breakdown of the number of members per household is consist with the 1990 Census. According to the Telephone Screener, the majority of households, approximately forty-two percent (42%), were comprised of two household members. Households with three members was the second largest group with approximately fifteen percent (15%). Finally, the number of vehicles per households as reported in the Telephone Screener Survey is also consistent with the 1990 Census. In both the Telephone Screener results and the 1990 Census, the majority of households had one vehicle.

Table 5 details the FSUTMS cell structure for the households which answered the Telephone Screener Survey and agreed to participate in the travel log portion of the survey. For the BTCS, the standard FSUTMS cell structure was increased to provide an analysis of households with more than two vehicles and also households with more than five members.

Table 5 - Telephone Screener Cell Distribution

	Autos per D.U.	Persons per D.U.						Total
		1	2	3	4	5	>5	
Resident Single-Family Dwelling Units	0	22	9	8	0	1	0	**40**
	1	137	137	44	21	4	6	**349**
	2	23	265	142	164	64	15	**673**
	>2	3	43	65	70	40	18	**239**
Resident Multi-Family Dwelling Units	0	99	35	4	1	0	1	**140**
	1	345	347	33	9	3	3	**740**
	2	18	239	61	21	13	4	**356**
	>2	5	12	23	15	4	1	**60**

Source: Walter H . Keller, Inc.
Note: 2597 Complete Telephone Screener Surveys

The majority of households which argreed to participate in the survey where comprised of multi-family households with one vehicle, twenty-eight percent (28%), and single family households with two vehicles, twenty-five percent (25%). This is consistent with the 1990 Census which reported that thirty-seven percent (37%) of the households in Broward County resided in single-family dwelling units while approximately thirty-three percent (33%) of the households occupied a condominium dwelling unit. Many of these condominiums, which are located in the eastern portion of the County, have residents with only one vehicle.

Household Verification Survey

A total of 2,625 questionnaire packages were distributed to Broward County households as part of the travel log survey process. Each household was also requested to complete a Household Verification Survey Questionnaire. The questionnaire included information requested in the Telephone Screener Survey and additional information on travel maker profile code and household income. The survey data was coded into the computer for analysis. In instances where the survey was not returned with the mail-back package, the Telephone Screener Survey was used. Appendix A contains a complete set of all survey forms used.

Eight hundred sixty-seven (867) packages were returned with travel logs and household verification forms. A stratification of data was developed for 867 households. Coded data sets for the 867 households are available from the Florida Department of Transportation. Table 6 provides a tabulation of the questions and possible coding response to the Household Verification Survey.

Table 7 depicts the household characteristics for Broward County versus the 1990 Census. In general, Table 7 reveals the survey respondents are consistent with the Broward County characteristics as noted in the 1990 Census.

Table 7 - Household Verification Survey Results Vs. 1990 Census

Household Characteristics	1990 Census		Survey Sample	
	#	%	#	%
1. Dwelling Units				
Universe: Housing Units				
Single Family Home	234,232	37.3%	389	44.9%
Duplex, Triplex, or Quadplex	50,671	8.1%	23	2.7%
Townhouse	41,746	6.6%	53	6.1%
Apartment (Rental)	59,428	9.5%	41	4.7%
Apartment (Condo)	208,570	33.2%	318	36.7%
Mobile Home or Trailer	28,552	4.5%	36	4.2%
Motel or Hotel	-	0.0%	1	0.1%
Other	5,461	0.9%	6	0.7%
Total # Dwelling Units	**628,660**	**100.0%**	**867**	**100.0%**
2. Tenure				
Universe: Occupied Housing Units				
Owner	359,587	68.0%	770	88.8%
Renter	168,855	32.0%	90	10.4%
Other	-	-	7	0.8%
Total # Occupied Housing Units	**528,442**	**100.0%**	**867**	**100.0%**
3. Household Size				
Universe: Households				
1 Person HH	154,512	29.3%	260	30.0%
2 Person HH	196,212	37.2%	425	49.0%
3 Person HH	77,092	14.6%	84	9.7%
4 Person HH	59,731	11.3%	73	8.4%
5 Person HH	25,840	4.9%	19	2.2%
6 Person HH	8,787	1.7%	6	0.7%
7 or more Person HH	5,686	1.1%	0	0.0%
Total # Households	**527,860**	**100.0%**	**867**	**100.0%**
4. Household Employment & Vehicles				
Universe: Households				
No Employed Person HH	63,545	18.8%	398	45.9%
1 Employed Person HH	93,936	27.9%	237	27.3%
2 Employed Person HH	141,308	41.9%	188	21.7%
3 or more Employed Person HH	38,495	11.4%	44	5.1%
Total	**337,284**	**100.0%**	**867**	**100.0%**
Universe: Employed Persons				
Persons Employed Full-time	539,737	80.1%	613	76.7%
Persons Employed Part-time	133,965	19.9%	142	23.3%
Total	**673,702**	**100.0%**	**755**	**100.0%**
Universe: Occupied Housing Units				
No Vehicles HH	54,467	10.3%	38	4.4%
1 Vehicle HH	232,218	43.9%	427	49.3%
2 Vehicle HH	183,459	34.7%	312	36.0%
3 or more Vehicle HH	58,298	11.0%	90	10.4%
Total	**528,442**	**100.0%**	**867**	**100.0%**
Average #Vehicles per HH	1.46		1.52	
5. Travel Maker Characteristics				
Universe: Persons				
#Persons Working Outside Home	577,031	45.2%	407	46.9%
#Persons Working at Home	11,058	0.9%	57	6.6%
#Homemakers	390,998	30.6%	194	22.4%
#Unemployed Persons	33,907	2.7%	50	5.8%
#Pre-schoolers	22,346	1.8%	44	5.1%
#Students(K-12)	168,078	13.2%	96	11.1%
#College Students	72,921	5.7%	20	2.3%
Total	**1,276,339**	**100.0%**	**868**	**100.0%**
6. Residency				
Universe: Dwelling Units				
Occupied Dwelling Units	528,442	84.1%	824	95.0%
Seasonal Dwelling Units	52,202	8.3%	43	5.0%
Other Vacant Dwelling Units	48,016	7.6%	-	-
Total	**628,660**	**100.0%**	**867**	**100.0%**
7. Family Income				
Universe: Families				
Families Under $14,999	47,159	14.0%	93	10.7%
Families $15,000 - $49,999	180,243	53.4%	405	46.7%
Families $50,000 - $74,999	65,679	19.5%	127	14.6%
Families $75,000 - $99,999	44,203	13.1%	112	12.9%
Non-Responce	-	-	130	15.0%
Median Family Income	36,801	-	-	-
Total # Families	**337,284**	**100.0%**	**867**	**100.0%**
Universe: Households				
Median HH Income	30,571			

Sources: Walter H. Keller, Inc.
1990 Census

The survey respondents differed in three areas; tenure, low income households, and households without autos. The survey was more heavily oriented to single family households, and therefore, multi-family households were under-represented. The survey results also indicated under-representation of low income households and households without autos. Low income households represented approximately 10.7% of survey respondents versus the 14.0% of all households in Broward County in the 1990 Census. Households without a vehicle represented 4.4% in the survey versus 10.3% in the 1990 Census. Some of these differences may not be as exaggerated as suggested due to the changes in Broward County demographics since the 1990 Census. However, it was believed that the lower income households would be more difficult to locate from the sample selection method and that these households would also be households without a vehicle.

Table 8 provides the FSUTMS Cell structure based upon the Household Verification Survey. The number of cells have been increased to provide greater sensitivity for households that have either more than five (5) members or more than two (2) vehicles.

Table 8 - Household Verification Survey Distribution by FSUTMS Cell Structure

	Autos per D.U.	Persons per D.U.					Total
		1	2	3	4	5+	
Resident Single-Family Dwelling Units	0	1	0	0	0	0	**1**
	1	48	54	11	2	0	**115**
	2+	9	125	51	65	23	**273**
Resident Multi-Family Dwelling Units	0	29	8	0	0	0	**37**
	1	168	140	3	1	0	**312**
	2+	5	98	19	5	2	**129**

Source: Walter H . Keller, Inc.
Note: 867 Households Surveyed

The majority of households within the survey are single family with two vehicles and multi-family with one vehicle. As expected the hard to get cells, those with either zero vehicles or five or more members, had very few households. The following table provides a comparison between results from the Telephone Screener Survey and the Household Verification Survey.

Table 9 - Telephone Screener and Household Verification Comparison

Autos Per D.U.		Telephone Screener	Household Verification
Single Family	0	1.5%	0.1%
	1	13.4%	13.3%
	2	25.9%	22.8%
	>2	9.2%	8.7%
Multi-Family	0	5.4%	4.3%
	1	28.5%	36.0%
	2	13.7%	13.1%
	>2	2.3%	1.7%

Source: Walter H. Keller, Inc.

Table 9 shows that the distribution of households for the two surveys are very similar, however, there is a decrease in the percentage of zero auto households for both single family and multi-family households. These households, which were specifically targeted during the Telephone Screener Survey, had a lower than anticipated rate of participation in the mail back portion of the survey. In an effort to increase participation, each zero auto household which did not return a travel log survey package was contacted by telephone. Many of these households responded that they did not complete the travel logs because they did not own a car. Although each household was contacted prior to their travel log date to provide any additional instructions, many households thought the survey was only interested in households with vehicles.

IV. TRAVEL CHARACTERISTICS SURVEY RESULTS

The major goal of the Broward Travel Characteristics Survey was to establish the travel characteristics of the area and individual counties so as to enable improved transportation modeling. In this section of the Final Report, the results of the mail-out household travel logs will be reviewed and analyzed.

The response rate from the returned travel log packages was approximately thirty-three percent (33%). Eight-hundred sixty-seven (867) returned travel log packages. Of these households, thirteen (13) households completed the survey for more than on weekday. These thirteen (13) multi-day travel logs were included to comprise the sample set of eight-hundred eighty (880) households. The returned travel log packages were reviewed for completeness and, as appropriate, edited or corrected through the quality control procedures mentioned previously.

As mentioned earlier, the initial sample set and the households which returned travel log packages were representative of Broward County. Not all FSUTMS Standard Cells were found during the telephone survey, or when found, did not return the travel log packages. Difficulties were encountered in finding households without autos and in obtaining return packages from larger sized families. Unless noted in the discussions and presentations that follow in this Section of the report, the data and findings relate to 880 households. The coded Travel Logs for both sets of households can be obtained from the Florida Department of Transportation. Table 10, on the following page, provides the Travel Log Survey coding sheet which was used for coding purposes.

Trip Production Rates

Consistent with the major goals of the Study, the travel log results were analyzed and vehicle trips per household were developed for each reported FSUTMS Cell. In order to facilitate the review and to be consistent with prior studies, cell results were aggregated into single family and multi-family groupings. Results were also weighted to the housing unit distribution as identified in the 1990 Census. Table 11 provide the resulting vehicle trip rates per FSUTMS Cell by the standard trip purposes of home-based work (HBW), home-based shopping (HBS), home-based social-recreation (HBR), home-based other (HBO),and non-home-based (NHB). Approximately eight percent (8%) of the single-family and twenty-four percent (24%) of the multi-family households did not report any trips. Table 11 also includes the results of additional weighting to compensate for the employment characteristics of the sample set.

Note that Table 11 includes trip rates based upon internal trips only. The difference between internal and internal -external trips is provided in Table 12. Figure 3 provides the graphic results of Table 12.

Table 13 highlights the internalization within Broward County, internalization within Broward County and external -external trips. Note that the travel log results indicate that a small number of external -external trips are associated with the making of internal - external trips. Table 13, for example, indicates that approximately eighty-nine (89%) of the trips which began in Broward County also had a destination in Broward County. Additionally, the highest percentage of trips occurring outside of Broward County had wither an origin or destination in Dade County.

Comparisons of the aggregate trip rates from the Broward area with the results of other Department studies is provided in Table 14. This table also includes the results of the vehicle trip weighting.

Table 11 - Broward County Unweighted and Weighted Vehicle Trips per H/H by Cell

Cell	# of H/H	# of Day Logs	Trip Purpose HBW	HBS	HBR	HBO	NHB	Total Trips
Unweighted Trip Results								
1 †	1	1	0.00	0.00	0.00	0.00	0.00	0.00
6	48	48	0.85	0.52	0.40	1.04	1.73	4.54
7	55	104	0.27	1.04	0.51	1.20	0.91	3.93
8	11	28	0.45	0.91	0.18	1.45	1.55	4.54
9 †	2	6	3.00	0.00	1.00	2.00	1.50	7.50
11 †	9	10	1.56	0.11	0.22	0.78	0.56	3.23
12	125	239	1.66	0.97	0.40	1.20	2.30	6.53
13	52	141	2.21	0.85	0.48	1.79	3.60	8.93
14	65	216	2.28	1.06	0.62	2.72	3.49	10.17
15	23	97	2.70	0.65	0.78	2.65	2.00	8.78
16	31	31	0.00	0.06	0.00	0.00	0.00	0.06
17 †	9	16	0.00	0.00	0.00	0.00	0.00	0.00
21	173	173	0.54	0.55	0.44	0.86	1.24	3.63
22	143	271	0.16	0.91	0.38	0.92	1.05	3.42
23 †	3	9	0.33	0.00	0.00	0.56	0.11	1.00
24 †	1	1	1.00	0.00	0.00	3.00	1.00	5.00
26 †	5	5	0.80	0.40	0.00	1.20	2.20	4.60
27	98	181	1.23	1.04	0.41	1.05	2.02	5.75
28	19	47	2.16	0.68	0.47	1.63	3.68	8.62
29 †	5	17	2.00	1.20	1.20	2.20	5.80	12.40
30 †	2	10	2.50	0.00	0.00	1.50	3.00	7.00
SF H/H	391	890	1.57	0.88	0.48	1.60	2.32	6.83
MF H/H	489	761	0.61	0.72	0.38	0.90	1.39	3.99
All H/H	880	1,651	1.13	0.80	0.43	1.27	1.89	5.52
Wt H/H *			1.03	0.79	0.42	1.20	1.80	5.24
% Change Survey vs. Weighted								5.4%
Weighted Trip Rate Results								
1 †	1	1	0.00	0.00	0.00	0.00	0.00	0.00
6	48	48	0.86	0.35	0.25	0.75	1.49	3.70
7	55	104	0.36	0.50	0.22	0.75	0.57	2.40
8	11	28	0.63	0.63	0.19	1.70	1.85	5.00
9 †	2	6	3.06	0.00	0.41	0.82	1.53	5.82
11 †	9	10	1.45	0.05	0.23	0.45	0.36	2.54
12	125	239	2.80	0.45	0.51	1.28	3.37	8.41
13	52	141	4.06	0.69	0.85	2.66	6.87	15.13
14	65	216	4.30	1.02	1.00	4.50	6.01	16.83
15	23	97	4.85	1.00	1.29	4.51	3.64	15.29
16	31	31	0.00	0.03	0.00	0.00	0.00	0.03
17 †	9	16	0.00	0.00	0.00	0.00	0.00	0.00
21	173	173	0.53	0.31	0.26	0.53	0.86	2.49
22	143	271	0.18	0.43	0.17	0.50	0.66	1.94
23 †	3	9	1.02	0.00	0.00	1.70	0.34	3.06
24 †	1	1	1.93	0.00	0.00	5.80	1.93	9.66
26 †	5	5	0.82	0.29	0.00	0.86	2.00	3.97
27	98	181	2.07	0.54	0.34	1.01	2.65	6.61
28	19	47	4.07	0.54	0.64	2.50	6.34	14.09
29 †	5	17	3.81	0.45	1.95	3.40	3.75	13.36
30 †	2	10	4.83	0.00	0.00	2.90	5.80	13.53
SF H/H	391	890	2.66	0.60	0.59	2.04	3.54	9.42
MF H/H	489	761	0.89	0.37	0.25	0.71	1.36	3.59
All H/H	880	1,651	1.84	0.49	0.44	1.43	2.53	6.73
Wt H/H *			1.67	0.47	0.40	1.29	2.32	6.16
% Change Survey vs. Weighted								9.4%

Source: Walter H. Keller, Inc.

Note: † - Limited samples and may not be statistically valid at Cell level

Table 12 - Internal/External Trip Rates by Purposes

Category		HBW	HBS	HBR	HBO	NHB	Total
Single Family	Internal Trips	1.24	0.86	0.45	1.55	2.14	6.25
	Internal-External Trips	0.33	0.02	0.02	0.04	0.18	0.59
	Total Trips	1.57	0.87	0.48	1.60	2.32	6.83
Multi Family	Internal Trips	0.55	0.94	0.47	1.24	1.53	4.74
	Internal-External Trips	0.13	0.03	0.04	0.07	0.14	0.41
	Total Trips	0.68	0.97	0.52	1.31	1.67	5.15
All Units	Internal Trips	0.83	0.77	0.39	1.16	1.66	4.81
	Internal-External Trips	0.21	0.02	0.03	0.05	0.14	0.45
	Total Trips	1.04	0.79	0.42	1.21	1.80	5.26

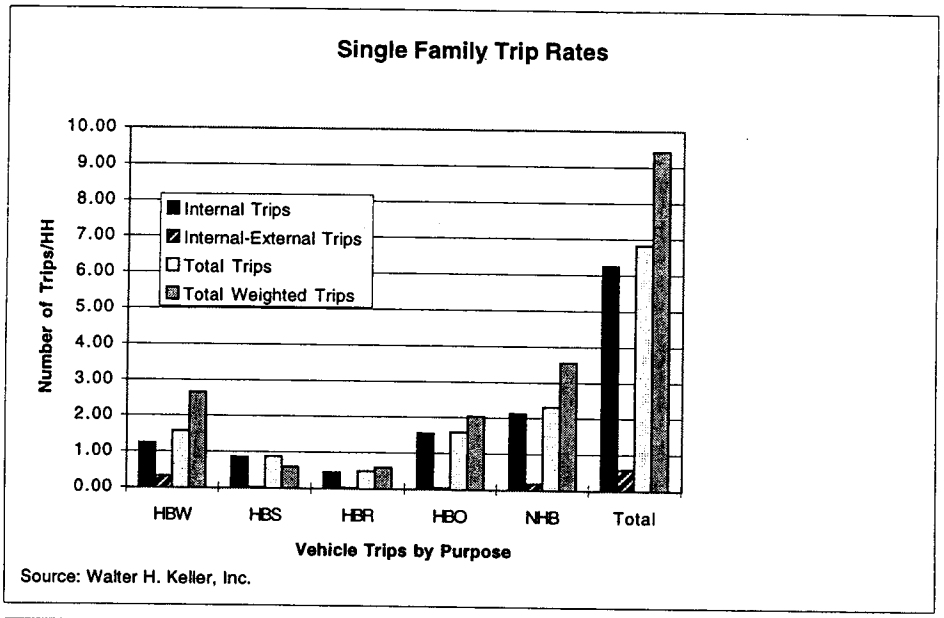
Source: Walter H. Keller, Inc.

Table 13 - Internal/External Vehicle Trips Matrix

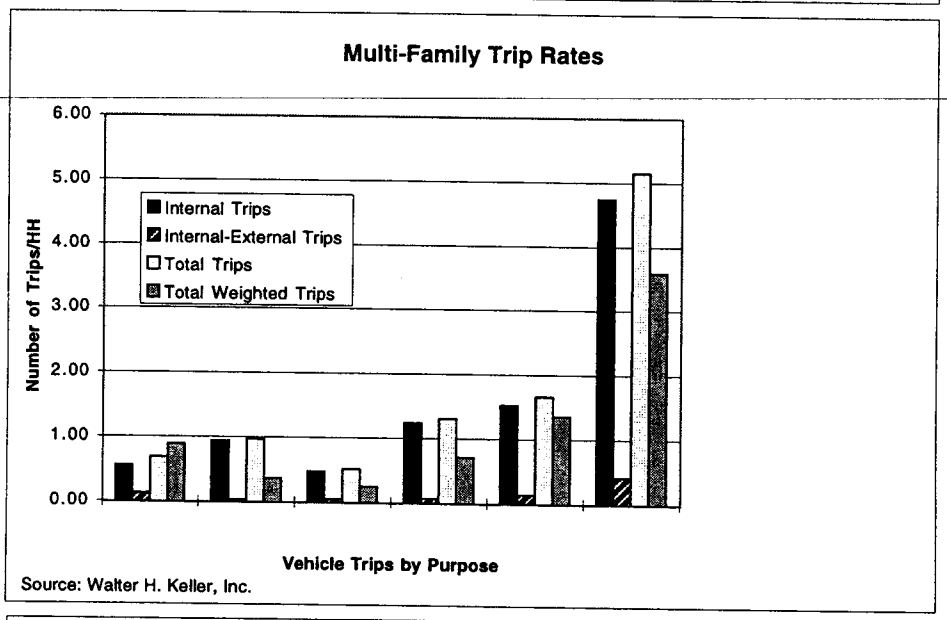
Origin	Destination			
	Broward County	Dade County	Palm Bch County	Other Counties
Broward County	89.42%	2.64%	1.40%	0.21%
Dade County	2.56%	1.06%	0.02%	0.04%
Palm Bch County	1.37%	-	0.93%	-
Other Counties	0.32%	-	0.02%	-

Source: Walter H. Keller, Inc.

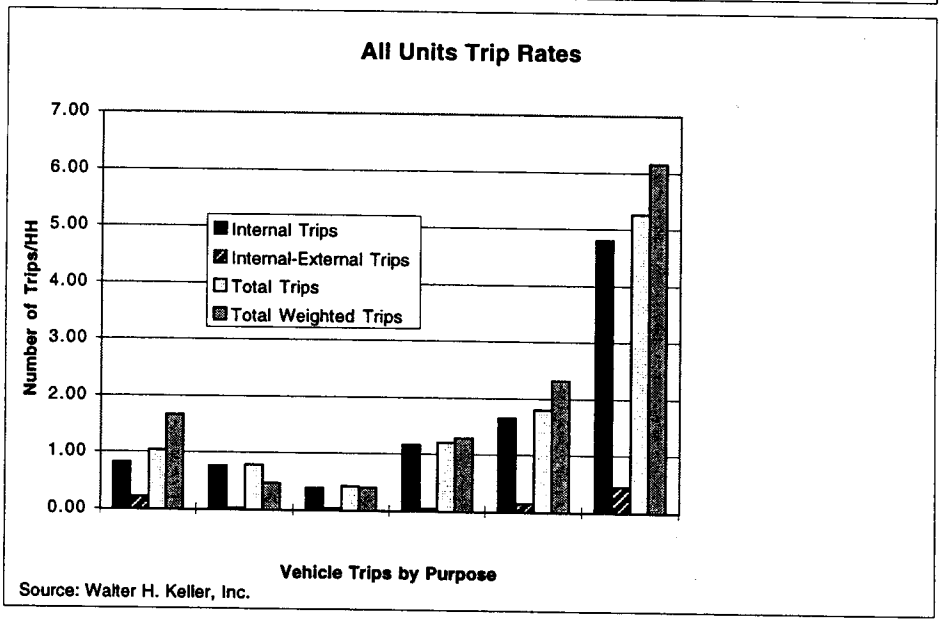
Figure 3 - Broward Trip Rate Production



Source: Walter H. Keller, Inc.



Source: Walter H. Keller, Inc.



Source: Walter H. Keller, Inc.

Trip rates were recorded for each trip purpose for the all three counties and the Broward. Table 14 provides a comparison between the total weighted and unweighted trip rates for the study area and rates from other urban areas in the State. According to Table 14, the unweighted trip rates in the study area are lower for HBS, HBR, HBR and NHB when compared to the other urban areas. This may be the result of greater trip chaining in the study area. Additionally, many of the multi family households in the survey reported that they did not make any trips during their assigned travel log day. On the other hand, the weighted trip rates are more consistent with the other travel studies. The weighted trip rates have a higher rate for HBW and NHB while the HBS and HBR are lower in comparison to the other studies. Table 15 provides a comparison of single family and multi family trip rates for Broward, Martin, St. Lucie and Indian River Counties. When the single and multi family trips rates are separated, the unweighted HBW and NHB rates for single family are more consistent with other recent studies. However, the 6.83 trips per single family household are still lower than previous studies such as SEFTC. The weighted trip rates are more consistent with the results of previous travel studies with the single-family rate approaching 10.0.

Table 14 - Comparison of Trip Rates w/Other Areas

Study Date	Area	Trip Purpose HBW	HBS	HBR	HBO	NHB	All Trips
1996	Broward Co.†	1.03	0.79	0.42	1.20	1.80	5.24
1996	Broward Co.†‡	1.67	0.47	0.40	1.30	2.33	6.17
1995	Martin Co†	0.66	1.14	0.66	1.87	1.84	6.17
1995	St. Lucie Co.†	1.08	0.85	0.59	1.46	1.75	5.73
1995	Indian River Co.†	0.83	0.92	0.65	2.02	2.14	6.56
1995	Treasure Coast	0.84	0.98	0.63	1.78	2.10	6.33
1992	LCTCS	1.11	1.49	1.45	1.42	1.48	7.73
1988	TUTCE	1.13	1.41	1.63	1.59	1.49	10.16
1987	OUTCS	1.18	1.75	1.81	1.81	1.74	10.30
1986	SEFTC	1.14	1.60	1.84	1.71	1.65	8.80
1985	PPHTCE	1.10	1.40	1.70	1.50	1.50	9.55

Source: Walter H. Keller, Inc.

Notes: LCTCS - Lee County Travel Characteristics
TUTCE - Tallahassee Urban Travel Characteristics Evaluation
OUTCS - Orlando Urban Area Travel Characteristics Study
SEFTC - Southeast Florida Travel Characteristics
PPHTC - Pasco Pinellas Hillsborough Travel Characteristics
† - Exclusive of E-E trips
‡ - Weighted by Number of Employed People in HH

Table 15 - Comparison of Single Family and Multi Family Trip Rates w/Other Areas

Study Date	Unit Type	Area	Trip Purpose HBW	HBS	HBR	HBO	NHB	All Trips
1996	SF	Broward Co.	1.57	0.88	0.48	1.60	2.32	6.83
1996	SF	Broward Co.†	2.66	0.59	0.59	2.04	3.54	9.42
1995	SF	Martin Co.	0.89	1.22	0.73	2.10	2.33	7.27
1995	SF	St. Lucie Co.	1.31	0.78	0.63	1.47	1.94	6.13
1995	SF	Indian River Co.	1.02	0.90	0.62	2.06	2.35	6.95
1995	SF	Treasure Coast	1.08	0.95	0.66	1.86	2.44	6.99
1996	MF	Broward Co.	0.61	0.72	0.38	0.90	1.39	3.99
1996	MF	Broward Co.†	0.88	0.38	0.26	0.71	1.37	3.60
1995	MF	Martin Co.	0.33	1.02	0.55	1.53	1.14	4.57
1995	MF	St. Lucie Co.	0.00	1.17	0.40	1.42	0.88	3.87
1995	MF	Indian River Co.	0.24	1.00	0.74	1.89	1.48	5.35
1995	MF	Treasure Coast	0.23	1.04	0.57	1.58	1.22	4.65

Source: Walter H. Keller, Inc.
Notes: Trip rates exclusive of E-E Trips
†-Weighted by number of employees in HH

Trip Length

The distance traveled was recorded in the travel log between destinations by participants noting the mileage and travel time. This information was analyzed and stratified by trip purpose. Table 16 on the following page provides the aggregate trip length, in minutes, for Broward County for the weighted and unweighted results by trip purpose and provides a comparison with other urban areas in the State.

Table 16 - Trip Length Comparisons with Other Areas (in Minutes)

Study Date	Area	Trip Purpose HBW	HBS	HBR	HBO	NHB	All Trips
1996	Broward Co.	23.47	12.05	17.25	14.62	15.55	16.51
1996	Broward Co.†	11.23	7.12	8.62	7.71	8.24	8.50
1995	Martin Co.	27.22	15.46	23.72	22.32	17.17	20.07
1995	St. Lucie Co.	23.94	15.39	36.47	21.19	17.78	21.15
1995	Indian River Co.	19.09	16.95	22.59	21.83	19.79	20.21
1995	Treasure Coast	23.27	15.92	27.24	21.84	18.31	20.44
1992	LCTCS	21.20	15.35	18.29	16.93	14.10	17.90
1988	TUTCE	19.60	13.35	15.57	15.42	13.06	16.26
1987	OUTCS	19.48	11.98	15.53	13.03	13.55	14.44
1986	SEFTC	23.05	13.06	17.89	16.21	16.11	-
1985	PPHTCE	23.30	15.30	19.10	18.00	16.40	-

Source: Walter H. Keller, Inc.

Notes: LCTCS - Lee County Travel Characteristics
TUTCE - Tallahassee Urban Travel Characteristics Evaluation
OUTCS - Orlando Urban Area Travel Characteristics Study
SEFTC - Southeast Florida Travel Characteristics
PPHTC - Pasco Pinellas Hillsborough Travel Characteristics
† - Skim Time Excluding Zero Time Trips

Graphs of trip length distribution by trip purpose are provided in the Appendix pages E-1 through E-5. Comparisons between the Broward County results and other urban areas is then provided on pages E-6 through E-10.

Auto Occupancy

Auto occupancy was computed from information included in the travel logs. This information was analyzed and stratified by trip purpose. Table 17, provides the aggregate auto occupancy for Broward County by trip purpose for the weighted and unweighted results. Comparison with other urban areas in the State are also provided in Table 17:

Table 17 - Auto Occupancy Comparisons with Other Areas

Study Date	Area	Trip Purpose					All Trips
		HBW	HBS	HBR	HBO	NHB	
1996	Broward Co.	1.08	1.36	1.46	1.57	1.38	1.37
1996	Broward Co.†	1.75	1.27	1.40	1.72	1.71	1.63
1995	Martin Co.	1.06	1.65	1.85	1.67	1.65	1.62
1995	St. Lucie Co.	1.12	1.71	1.88	1.71	1.81	1.68
1995	Indian River Co.	1.15	1.60	1.67	1.82	1.62	1.64
1995	Treasure Coast	1.11	1.65	1.80	1.74	1.69	1.64
1992	LCTCS	1.11	1.49	1.45	1.42	1.48	1.43
1991	PBTS	1.14	1.46	1.65	1.58	1.42	1.43
1990	TUTCE	1.13	1.41	1.63	1.59	1.49	1.42
1987	OUTCS	1.18	1.75	1.81	1.81	1.74	1.67
1986	SEFTC	1.14	1.60	1.84	1.71	1.65	1.63
1985	PPHTCE	1.10	1.40	1.70	1.50	1.50	-

Source: Walter H. Keller, Inc.

Notes: LCTCS - Lee County Travel Characteristics
PBTS - Palm Beach Travel Study
TUTCE - Tallahassee Urban Travel Characteristics Evaluation
OUTCS - Orlando Urban Area Travel Characteristics Study
SEFTC - Southeast Florida Travel Characteristics
PPHTC - Pasco Pinellas Hillsborough Travel Characteristics
†-Weighted by number of employees in HH

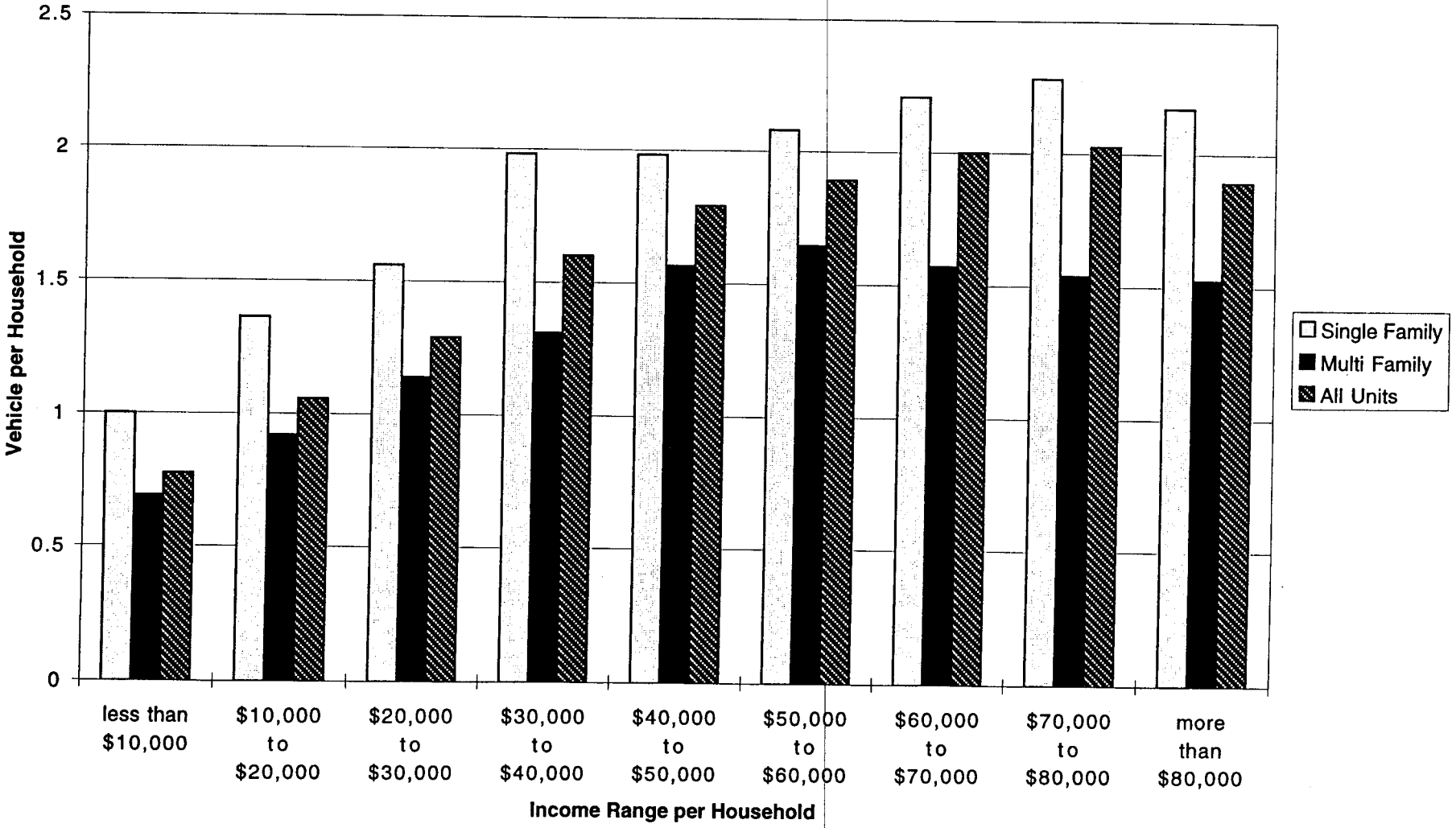
Income Relationship with Travel Characteristics

An important part of the survey process for the Broward Travel Characteristics Survey was to identify income and "life-style" characteristics associated with travel patterns. Approximately seventy-six percent (76%) of all returned Household Verification Surveys indicated the income range of the household before taxes. With 470 households responding to the income question, the average income for single family units was $43,704, multi-family D.U. household income was $44,454, and the average income of all units was $43,894. An analysis was performed to identify the number of vehicles per household by income range and household type.

Figure 4 presents the results of the number of vehicles per household type analysis. Figure 4 indicates that for single family dwelling units the vehicles per household peak in the $70,000 to $80,000 income range. For multi-family dwelling units, the peak was in both the $50,000 to $60,000 income range and the greater than $100,000 income range.

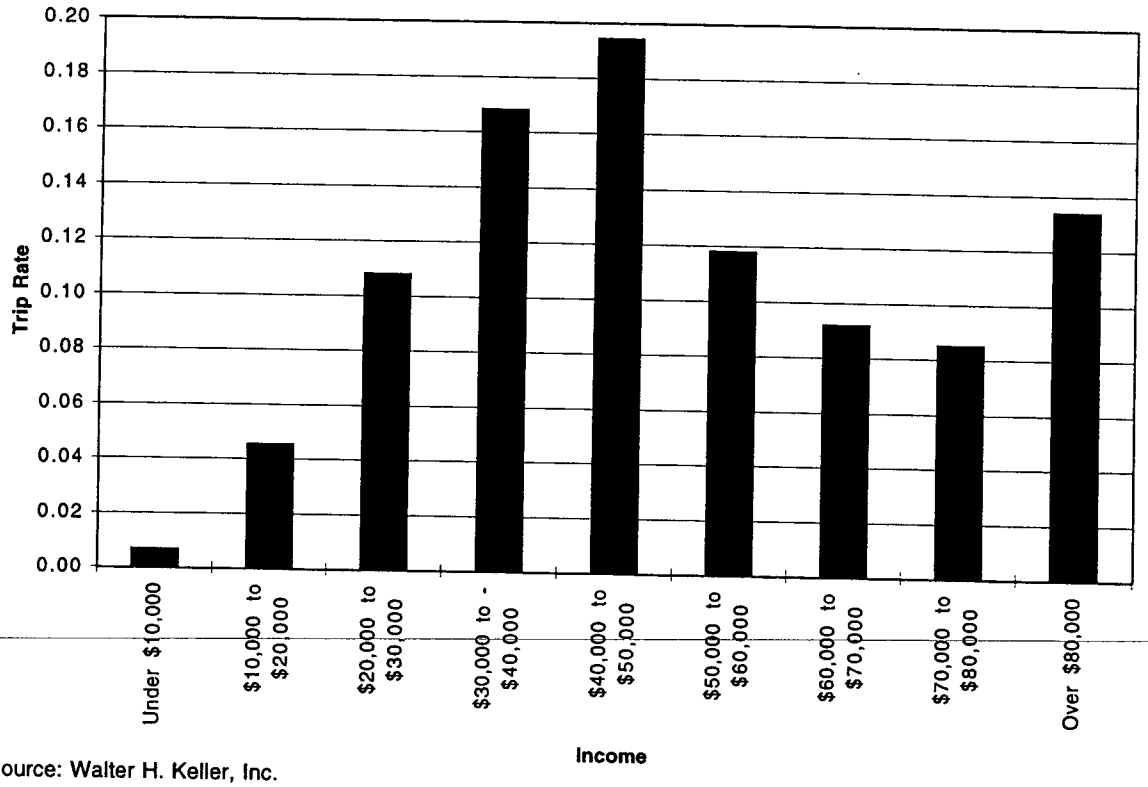
The effects of income on the number of trips by trip purpose is illustrated in Figures 5 - 10. These Figures indicate the number of trips and income range for Home-Based Work Trips (see Figure 5), for Home-Based Shopping Trips (see Figure 6), for Home-Based Social Recreation Trips (see Figure 7), for Home-Based Other Trips (see Figure 8), for Non Home-Based Trips (see Figure 9) and for All Trips (see Figure 10).

Figure 4 - Number of Vehicle per Dwelling Unit Type & Income



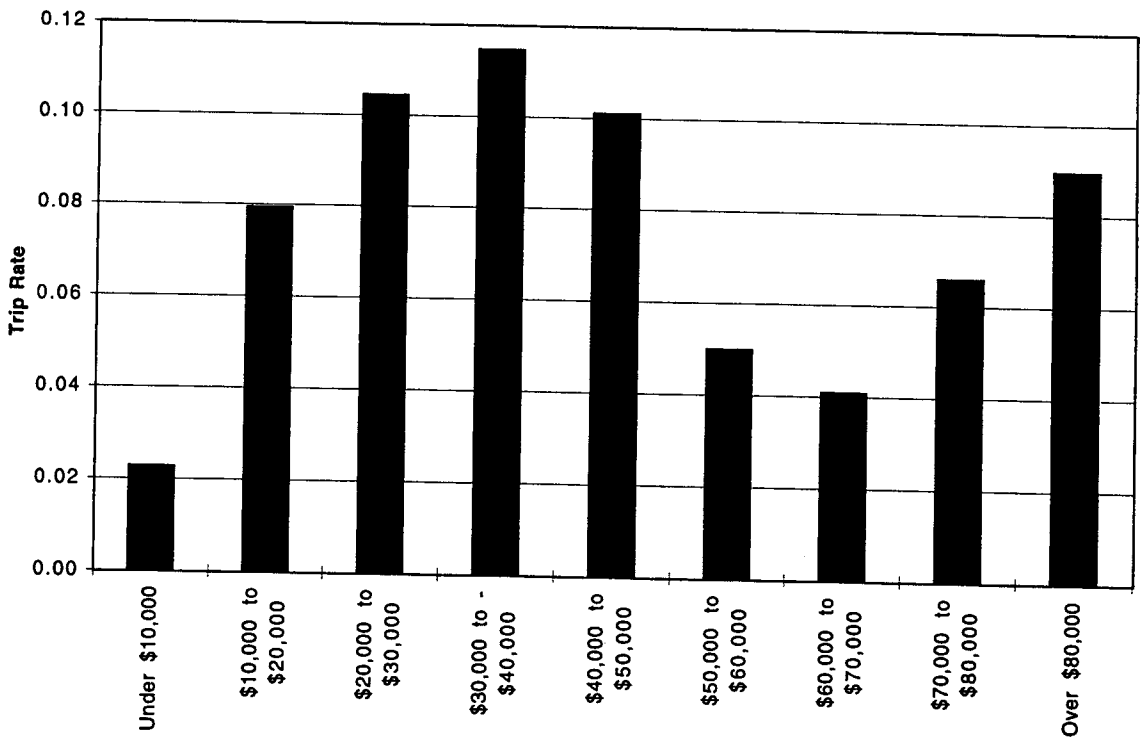
Source: Walter H. Keller, Inc.

Figure 5- Average HBW Vehicle Trip Rate vs Income



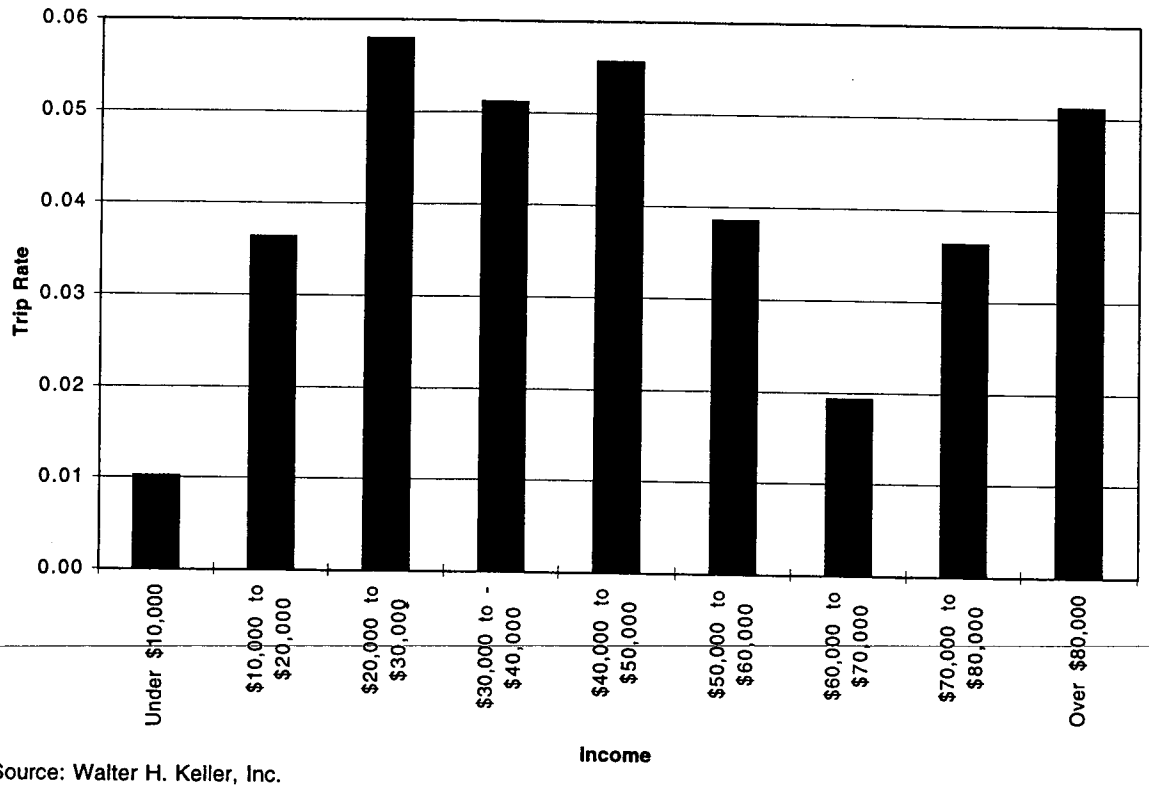
Source: Walter H. Keller, Inc.

Figure 6 - Average HBS Vehicle Trip Rate vs Income



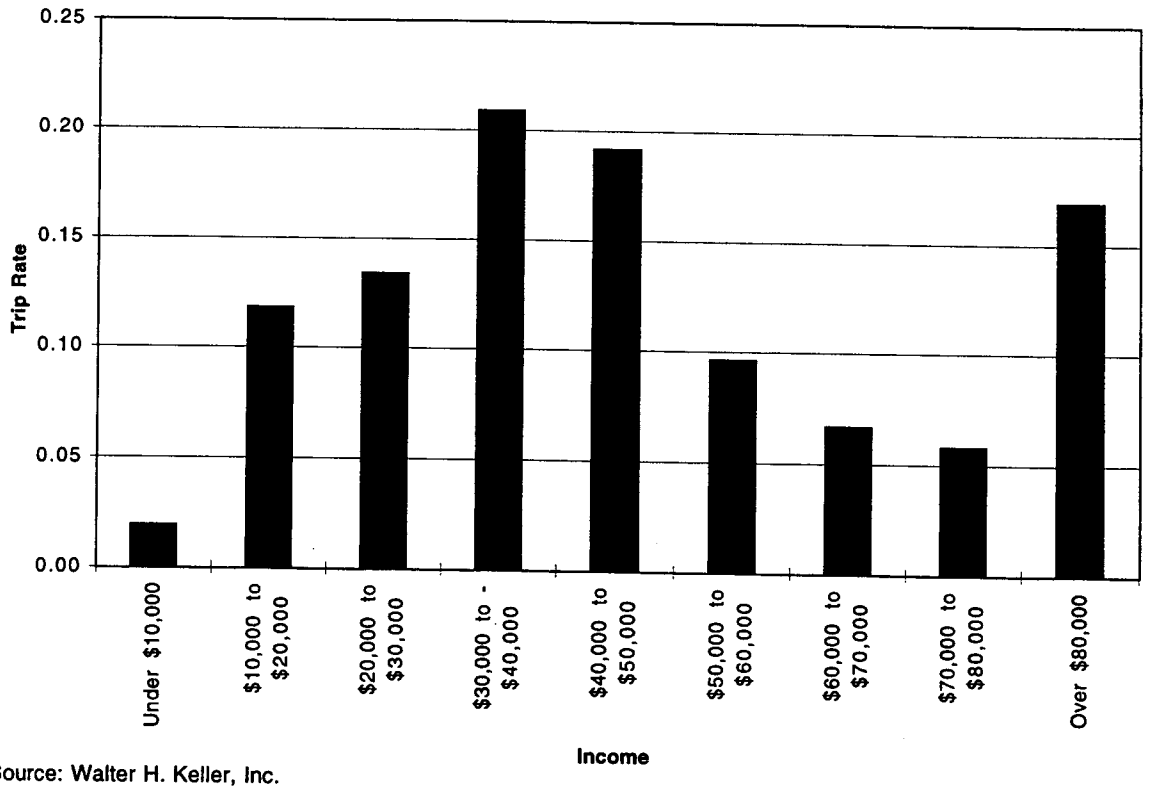
Source: Walter H. Keller, Inc.

Figure 7 - Average HBR Vehicle Trip Rate vs Income



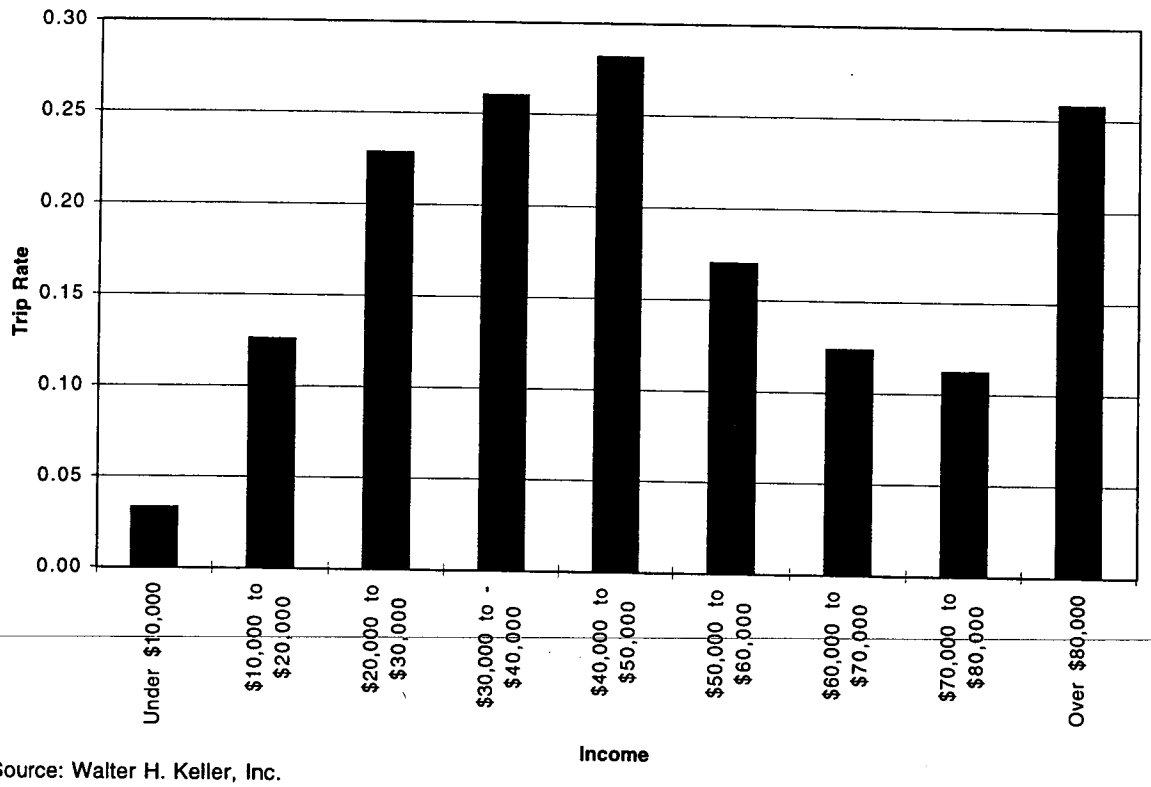
Source: Walter H. Keller, Inc.

Figure 8 - Average HBO Vehicle Trip Rate vs Income



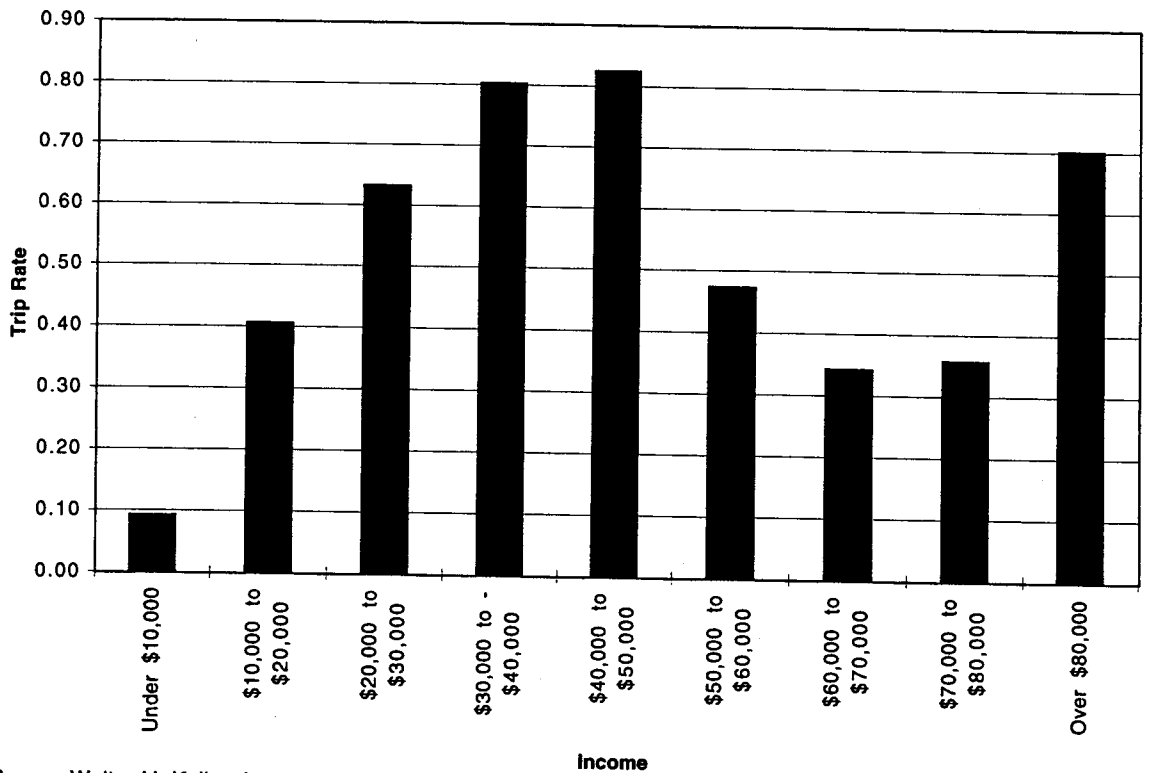
Source: Walter H. Keller, Inc.

Figure 9 - Average NHB Vehicle Trip Rate vs Income



Source: Walter H. Keller, Inc.

Figure 10 - Average Total Vehicle Trip Rate vs Income



Source: Walter H. Keller, Inc.

V. DUA Survey Design and Methodology

Direct Utility Assessment (DUA) is a disaggregate travel demand modeling technique based on obtaining responses to a series of hypothetical situations (Kocur, et. al., 1982). DUA models can contain variables which do not vary in current data sets, travel modes which do not currently exist, and other effects which are difficult to treat in traditional travel demand models. A unique characteristic of the DUA models is that they are based entirely on stated behavior, not actual behavior. The responses collected from this DUA survey are analyzed with maximum-likelihood logistic regression models to estimate the effects of different modal attributes on the travel mode choice behavior.

A systematic random sample pool of 6,851 households was drawn from the Property Appraiser records of Broward County. After conducting a telephone interview process, survey packages were sent to 2,625 households that agreed to participate in the mail-out survey of the Study. The DUA survey was forwarded to thirty-three percent (33%) of these households. Among the households which received the DUA survey, approximately twenty-two percent (22%) returned the DUA questionnaire. This resulted in a total of 194 households that returned the DUA survey. However, some of the returned DUA survey forms had incomplete responses. This further reduced the valid sample size for various parts of the questionnaire survey.

According to the "Guide to Forecasting Travel Demand with Direct Utility Assessment" (Kocur et. al., 1982), direct utility assessment (DUA) is a technique for assessing the effects on consumer behavior of policy changes. Information on consumer preferences is obtained by presenting a survey respondent with a series of situations, and asking what he or she would do under each. A travel alternative in a DUA survey is represented by a group of attributes, each with a set of different values. The response scale to the situations is defined by a relative term, such as "always", "probably", or "indifferent", and is normally rated by the respondent on a scale of one to five. For example, a scale of one (1) represents "always choose the current mode", and a scale of five (5) means "always choose alternative mode".

As stated earlier, a DUA survey can be based on a series of hypothetical situations that contain variables which do not vary in current data sets or some effects which are difficult to treat in traditional travel demand models. For the Broward County Travel Characteristics Study, four alternative travel modes are considered to be relevant to the transportation planning tasks of the study area. These four alternative modes are drive alone, county bus

system, Tri-Rail, and car pool. A set of pairwise hypothetical situations, which are "current mode versus county bus system", "current mode versus Tri-Rail", and "current mode versus car pool", are included in the Part 1 of the DUA survey (see Appendix 1 for the DUA questionnaire). Respondents give their likelihood of choosing one travel mode over another, on a 1-5 scale, for their work trips and non-work trips, respectively.

In addition to those standard DUA questions, the questionnaire also asked respondents to state their perceived satisfaction levels on six different general aspects of five selected travel modes: drive alone, county bus system, car pool, Tri-Rail train, and Tri-Rail feeder bus. The six general aspects included in the evaluation are travel time, travel cost, convenience (e.g., easy access, flexible schedules, availability when needed, etc.), safety (e.g., safety from crime, safety from accident, protection from bad weather, etc.), comfort (e.g., comfort of seating, feeling of relaxation, feeling of privacy, etc.), and reliability (e.g., arriving the destination on time, free from mechanical problems, etc.) Finally, the respondents were asked to rank the importance levels of each of the six aspects in their travel mode choice decisions on a scale of 1 (very important) to 5 (very unimportant). This part of the survey is designed to supplement the data collected from the DUA analysis.

DUA Survey Results

Frequency Distributions of DUA Responses

The DUA survey first collects data on the current travel choices for work trips and non-work trips. The data set clearly shows that "drive alone" is the primary type of transportation for both work trips and non-work trips in Broward County (see Tables 18 and 19). It also should be noted that there are more than one quarter of the people who did not answer their current travel choices for work trips. On the contrary, only five people did not the same question for non-work trips. This difference in responses could be a reflection of the respondents' employment status.

For each type of pairwise comparisons (i.e., current mode versus county bus system, current mode versus Tri-Rail, and current mode versus car pool), there are eight (8) hypothetical situations. Frequency distributions of the responses to the eight situations under each of the three sets of pairwise comparison are provided in Tables 20-22, respectively.

Table 18 - Frequency Distribution of the Primary Type of Transportation for Work Trips

Response	Frequency	Percent	Valid Percent
Drive Alone	123	63.4%	87.2%
Car Pool	7	3.6%	5.0%
County Bus System	6	3.1%	4.3%
Tri-Rail	4	2.1%	2.8%
Other	1	0.5%	0.7%
No Response	53	27.3%	N/A
Total:	194	100.0%	100.0%

Source: Regional Research Associates, Inc.

Table 19 - Frequency Distribution of the Primary Type of Transportation for Non-Work Trips

Response	Frequency	Percent	Valid Percent
Drive alone	165	85.1%	87.3%
Car pool	9	4.6%	4.8%
County bus system	7	3.6%	3.7%
Tri-Rail	7	3.6%	3.7%
Other	1	0.5%	0.5%
No response	5	2.6%	N/A
Total:	194	100.0%	100.0%

Source: Regional Research Associates, Inc.

Table 20 - Frequency Distribution of the DUA Responses to Current Mode versus County Bus System for Work Trips and Non-Work Trips

Situation*	Response**	Work Trips		Non-Work Trips	
		Frequency	Valid %	Frequency	Valid %
A	1	58	58.0%	67	52.8%
	2	16	16.0%	25	19.7%
	3	15	15.0%	20	15.7%
	4	7	7.0%	12	9.4%
	5	4	4.0%	3	2.4%
	Missing	94	N/A	67	N/A
	Mean	N/A	1.83	N/A	1.89
B	1	63	64.9%	69	58.0%
	2	16	16.5%	23	19.3%
	3	10	10.3%	19	16.0%
	4	2	2.1%	5	4.2%
	5	6	6.2%	3	2.5%
	Missing	97	N/A	75	N/A
	Mean	N/A	1.68	N/A	1.74
C	1	65	68.4%	71	59.7%
	2	14	14.7%	26	21.8%
	3	10	10.5%	14	11.8%
	4	3	3.2%	4	3.4%
	5	3	3.2%	4	3.4%
	Missing	99	N/A	75	N/A
	Mean	N/A	1.58	N/A	1.69
D	1	64	66.7%	71	60.2%
	2	11	11.5%	22	18.6%
	3	13	13.5%	17	14.4%
	4	4	4.2%	4	3.4%
	5	4	4.2%	4	3.4%
	Missing	98	N/A	76	N/A
	Mean	N/A	1.68	N/A	1.71
E	1	65	68.4%	72	60.5%
	2	12	12.6%	23	19.3%
	3	12	12.6%	15	12.6%
	4	4	4.2%	5	4.2%
	5	2	2.1%	4	3.4%
	Missing	99	N/A	75	N/A
	Mean	N/A	1.59	N/A	1.71
F	1	64	66.7%	71	60.2%
	2	13	13.5%	24	20.3%
	3	13	13.5%	16	13.6%
	4	3	3.1%	2	1.7%
	5	3	3.1%	5	4.2%
	Missing	98	N/A	76	N/A
	Mean	N/A	1.63	N/A	1.69
G	1	67	69.8%	75	63.6%
	2	13	13.5%	22	18.6%
	3	10	10.4%	14	11.9%
	4	3	3.1%	3	2.5%
	5	3	1.5%	4	3.4%
	Missing	98	N/A	76	N/A
	Mean	N/A	1.56	N/A	1.64
H	1	66	69.5%	74	62.2%
	2	12	12.6%	22	18.5%
	3	12	12.6%	17	14.3%
	4	2	2.1%	2	1.7%
	5	3	3.2%	4	3.4%
	Missing	99	N/A	75	N/A
	Mean	N/A	1.57	N/A	1.66

Source: Regional Research Associates, Inc.

Notes: *See the DUA questionnaire in Appendix 1 for the definitions.
** 1: "always choose the current mode"; 2: "probably choose the current mode"; 3: "indifferent"; 4: "probably choose the alternative mode"; and 5: "always choose the alternative mode".

Table 21 - Frequency Distribution of the DUA Responses to Current Mode versus Tri-Rail for Work Trips and Non-Work Trips

Situation*	Response**	Work Trips		Non-Work Trips	
		Frequency	Valid %	Frequency	Valid %
A	1	59	60.2%	67	54.9%
	2	16	16.3%	22	18.0%
	3	14	14.3%	21	17.2%
	4	6	6.1%	7	5.7%
	5	3	3.1%	5	4.1%
	Missing	96	N/A	72	N/A
	Mean	N/A	1.76	N/A	1.86
B	1	63	65.6%	69	58.5%
	2	15	15.6%	24	20.3%
	3	13	13.5%	19	16.1%
	4	2	2.1%	4	3.4%
	5	3	3.1%	2	1.7%
	Missing	98	N/A	76	N/A
	Mean	N/A	1.61	N/A	1.69
C	1	68	70.8%	71	60.7%
	2	12	12.5%	23	19.7%
	3	13	13.5%	21	17.9%
	4	0	0.0%	0	0.0%
	5	3	3.1%	2	1.7%
	Missing	98	N/A	77	N/A
	Mean	N/A	1.52	N/A	1.62
D	1	68	71.6%	73	62.4%
	2	9	9.5%	23	19.7%
	3	11	11.6%	17	14.5%
	4	3	3.2%	2	1.7%
	5	4	4.2%	2	1.7%
	Missing	99	N/A	77	N/A
	Mean	N/A	1.59	N/A	1.61
E	1	61	64.2%	68	58.1%
	2	16	16.8%	26	22.2%
	3	13	13.7%	16	13.7%
	4	2	2.1%	5	4.3%
	5	3	3.2%	2	1.7%
	Missing	99	N/A	77	N/A
	Mean	N/A	1.63	N/A	1.69
F	1	62	65.3%	69	59.0%
	2	15	15.8%	23	19.7%
	3	12	12.6%	17	14.5%
	4	3	3.2%	6	5.1%
	5	3	3.2%	2	1.7%
	Missing	99	N/A	77	N/A
	Mean	N/A	1.63	N/A	1.71
G	1	65	68.4%	72	61.5%
	2	14	14.7%	25	21.4%
	3	10	10.5%	17	14.5%
	4	3	3.2%	1	0.9%
	5	3	3.2%	2	1.7%
	Missing	99	N/A	77	N/A
	Mean	N/A	1.58	N/A	1.60
H	1	66	68.8%	72	62.1%
	2	14	14.6%	24	20.7%
	3	12	12.5%	16	13.8%
	4	1	1.0%	2	1.7%
	5	3	3.1%	2	1.7%
	Missing	98	N/A	78	N/A
	Mean	N/A	1.55	N/A	1.60

Source: Regional Research Associates, Inc.

Notes: *See the DUA questionnaire in Appendix 1 for the definitions.
** 1: "always choose the current mode"; 2: "probably choose the current mode"; 3: "indifferent"; 4: "probably choose the alternative mode"; and 5: "always choose the alternative mode".

Table 22 - Frequency Distribution of the DUA Responses to Current Mode versus Car Pool for Work Trips and Non-Work Trips

Situation*	Response**	Work Trips		Non-Work Trips	
		Frequency	Valid %	Frequency	Valid %
A	1	42	42.4%	60	50.4%
	2	21	21.2%	25	21.0%
	3	13	13.1%	19	16.0%
	4	14	14.1%	10	8.4%
	5	9	9.1%	5	4.2%
	Missing	95	N/A	75	N/A
	Mean	N/A	2.26	N/A	1.95
B	1	49	50.5%	57	49.1%
	2	19	19.6%	30	25.9%
	3	14	14.4%	18	15.5%
	4	10	10.3%	8	6.9%
	5	5	5.2%	3	2.6%
	Missing	97	N/A	78	N/A
	Mean	N/A	2.00	N/A	1.88
C	1	45	50.5%	60	52.2%
	2	21	19.6%	26	22.6%
	3	14	14.4%	15	13.0%
	4	10	10.3%	10	8.7%
	5	5	5.2%	4	3.5%
	Missing	99	N/A	79	N/A
	Mean	N/A	2.04	N/A	1.89
D	1	45	47.4%	60	52.2%
	2	23	24.2%	27	23.5%
	3	12	12.6%	15	13.0%
	4	10	10.5%	9	7.8%
	5	5	5.3%	4	3.5%
	Missing	99	N/A	79	N/A
	Mean	N/A	2.02	N/A	1.87
E	1	51	53.7%	60	53.1%
	2	16	16.8%	24	21.2%
	3	12	12.6%	17	15.0%
	4	13	13.7%	10	8.8%
	5	3	3.2%	2	1.8%
	Missing	99	N/A	81	N/A
	Mean	N/A	1.96	N/A	1.85
F	1	51	52.6%	60	52.6%
	2	19	19.6%	25	21.9%
	3	12	12.4%	16	14.0%
	4	12	12.4%	11	9.6%
	5	3	3.1%	2	1.8%
	Missing	97	N/A	80	N/A
	Mean	N/A	1.94	N/A	1.86
G	1	45	47.4%	59	51.3%
	2	18	18.9%	25	21.7%
	3	10	10.5%	15	13.0%
	4	16	16.8%	12	10.4%
	5	6	6.3%	4	3.5%
	Missing	99	N/A	79	N/A
	Mean	N/A	2.16	N/A	1.93
H	1	51	53.7%	64	55.7%
	2	16	16.8%	23	20.0%
	3	14	14.7%	14	12.2%
	4	10	10.5%	11	9.6%
	5	4	4.2%	3	2.6%
	Missing	99	N/A	79	N/A
	Mean	N/A	1.95	N/A	1.83

Source: Regional Research Associates, Inc.

Notes: *See the DUA questionnaire in Appendix 1 for the definitions.
** 1: "always choose the current mode"; 2: "probably choose the current mode"; 3: "indifferent"; 4: "probably choose the alternative mode"; and 5: "always choose the alternative mode".

Frequency distributions presented in Tables 20-22 clearly show that most respondents would "always" (i.e., response = 1) or "probably" (i.e., response = 2) choose their current travel mode over the alternative modes under various hypothetical situations. It should be noted that, for each pairwise comparison of travel modes, the frequency distributions for the eight different hypothetical situations are very similar to each other. This could be an indication that the respondents did not perceive the variations in modal attributes of the hypothetical situations significant enough to switch their travel mode choices. However, both the frequency distribution and the mean values of the responses suggest that Car Pool was perceived by a higher percent of the respondents as a potential alternative mode (i.e., responses = 4 or 5) than the County Bus System and the Tri-Rail for work trips. Another pattern observed in the data set is that both the County Bus System and the Tri-Rail appear to be more attractive to non-work trips than to work trips (Tables 20 & 21). Car Pool, on the other hand, appears to be more attractive to work trips than to non-work trips (Table 22).

Regression Analysis of DUA Responses

Logistic regression analysis is applied to the DUA responses in order to evaluate the effects of different modal attributes on the stated mode choice behavior under different hypothetical situations. There are four modal attributes (i.e., travel time, bus headway, one-way bus cost, and type of bus service) included in the analysis of "current mode versus county bus system". For the evaluation of "current mode versus Tri-Rail", travel time, Tri-Rail headway, one-way Tri-Rail cost, and Tri-Rail access method are included in the analysis. For the hypothetical situations of "current mode versus car pool", travel time, number of people in car pool, HOV lane, and parking preference are included in the model. Results of the logistic regressions analyses of the three sets of hypothetical situations are provided in Tables 23-25 for work trips and in Tables 26-28 for non-work trips.

Table 23 - Logistic Regression Analysis Result of Current Mode versus County Bus System (Work Trips)

Variables	Const.	Time	Headway	Cost	Service
Coefficient	-0.8885	-0.0755	-0.0229	-0.1342	-0.2417
Wald Statistic	0.8119	1.7728	0.6630	0.0575	0.7389
Significance Level	0.3675	0.1830	0.4155	0.8106	0.3900

Source: Regional Research Associates, Inc.

Table 24 - Logistic Regression Analysis Result of Current Mode versus Tri-Rail (Work Trips)

Variables	Const.	Time	Headway	Cost	Service
Coefficient	-1.5694	-0.0283	-0.0084	-0.0421	-0.5217
Wald Statistic	1.7760	0.2083	0.6546	0.0185	2.6918
Significance Level	0.1826	0.6481	0.4185	0.8919	0.1009

Source: Regional Research Associates, Inc.

Table 25 - Logistic Regression Analysis Result of Current Mode versus Car Pool (Work Trips)

Variables	Const.	Time	# of People	HOV	Parking
Coefficient	-1.0037	-0.0046	-0.0303	-0.3055	-0.2377
Wald Statistic	2.9698 *	0.1390	0.0246	2.4740	1.5006
Significance Level	0.0848	0.9060	0.8754	0.1157	0.2206

Source: Regional Research Associates, Inc.
Note: * significant at 90% confidence level.

Table 26 - Logistic Regression Analysis Result of Current Mode versus County Bus System (Non-work Trips)

Variables	Const.	Time	Headway	Cost	Service
Coefficient	-0.5405	-0.0630	-0.0316	-0.5551	-0.1771
Wald Statistic	0.3743	1.5115	1.5161	1.1724	0.4828
Significance Level	0.5407	0.2189	0.2182	0.2789	0.4871

Source: Regional Research Associates, Inc.

Table 27 - Logistic Regression Analysis Result of Current Mode versus Tri-Rail (Non-work Trips)

Variables	Const.	Time	Headway	Cost	Access
Coefficient	-0.8266	-0.0192	-0.0324	-0.0824	-0.3649
Wald Statistic	0.5232	0.0979	8.3985 **	0.0722	1.3850
Significance Level	0.4695	0.7543	0.0038	0.7882	0.2393

Source: Regional Research Associates, Inc.
** significant at 99% confidence level.

Table 28 - Logistic Regression Analysis Result of Current Mode versus Car Pool (Non-work Trips)

Variables	Const.	Time	# of People	HOV	Parking
Coefficient	-2.0619	0.0104	0.1031	-0.1314	-0.1199
Wald Statistic	10.6708 **	0.0626	0.2471	0.4013	0.3342
Significance Level	0.0011	0.8025	0.6191	0.5264	0.5632

Source: Regional Research Associates, Inc.
** significant at 99% confidence level.

One way to assess how well the derived models fit the data is to compare the model predictions to the reported choices. Table 29 lists the percentage of correct prediction for each of the derived models. Although the percentages of correct prediction are quite high, they are mainly due to the correct predictions of choosing the current travel mode, which accounts for the majority of the reported choices, over the alternative mode. When the logistic regression models are evaluated by the "Goodness of Fit" statistic, none of the models is statistically significant. A review of the frequency distributions of the respondents' choices gives two possible explanations. First of all, most of the reported choices are highly in favor of their current travel mode (i.e., drive alone). Secondly, the reported choices by each respondent remain the same or, at the most, show a slight variation in response to the eight different hypothetical situations. In other words, the hypothetical variations on the modal attributes of alternative travel modes do not have a significant impact on the likelihood of choosing the travel mode reported by most of the respondents.

Table 29 - Percentage of Correct Predictions for each of the Logistic Regression Models

	Current Mode vs. Bus		Current Mode vs. Tri-Rail		Current Mode vs. Car Pool	
	Work	Non-work	Work	Non-work	Work	Non-work
Correct Prediction	91.70%	91.76%	93.26%	94.23%	79.76%	86.38%

Source: Regional Research Associates, Inc.

In terms of the independent variables included in the models, there are only three cases that are statistically significant. The first case is the "Tri-Rail headway" variable for non-work trips when the current mode is compared with the Tri-Rail (see Table 27). This suggests that a higher frequency of Tri-Rail train runs is likely to have some impacts on the use of

Tri-Rail service for non-work trips. Another two cases occur to the "constant" term in the models of "current mode versus car pool" for both work trips and non-work trips. This is an indication that the variations of the modal attributes in the hypothetical situations are weak in explaining the reported choices.

Stated Satisfaction Levels and Importance Ratings

In the DUA survey part, respondents stated their mode choice behavior in response to a set of hypothetical situations. Since these hypothetical situations are defined by specific values of some pre-determined modal attributes, they are unable to reflect other modal attributes that are not included or those attribute values that are not covered in these hypothetical situations. In order to obtain additional information on the general perception of different travel modes from this survey, respondents were also asked to state their satisfaction levels on six broadly-defined aspects (i.e., travel time, travel cost, convenience, safety, comfort, and reliability) of the alternative travel modes and their perceived importance ratings of these six aspects (see the questionnaire in Appendix A for details).

Table 30 lists the average satisfaction levels on the six broadly-defined modal attributes for each of the five travel modes (drive alone, county bus system, car pool, Tri-Rail train, and Tri-Rail feeder bus). A response of "1" represents very satisfied with "5" being very unsatisfied. As expected, drive alone receives the highest average satisfaction levels on all six modal attributes, followed by the car pool mode. Tri-Rail train, Tri-Rail feeder bus, and county bus system receive much lower satisfaction levels on all six modal attributes, with the Tri-Rail train perceived slightly better than both Tri-rail feeder bus and the county bus system. It should also be noted that the most satisfactory aspect for each of the five travel modes perceived by the respondents are: convenience for drive alone, safety for both the county bus system and the Tri-Rail feeder bus system, travel cost for car pool, and both safety and comfort for Tri-Rail train. Since most of the respondents are not current bus or Tri-Rail users, their stated satisfaction levels of these two modes must be interpreted carefully. Nevertheless, these stated satisfaction levels do give us some general ideas about how the public perceive the different characteristics of alternative travel modes.

In order to gain additional insights on the relationships between the satisfaction levels and importance ratings on the modal attributes, Table 31 gives the frequency distribution of the importance ratings perceived by the respondents on each of the six broadly-defined modal attributes. This Table indicates that reliability and convenience are perceived as the two

most important modal attributes in individual mode choice decisions, followed by safety, travel time, and comfort. Travel cost is perceived as the least important modal attribute. This is further supported by the average importance ratings of the six modal attributes listed in Table 32. It is important to observe that the respondents gave very low satisfaction levels on the two most important attributes (i.e., reliability and convenience) to all travel modes except the "drive alone" mode. The perceived importance ratings reported here suggest that future DUA surveys need to design specific measurement scales in order to incorporate these additional modal attributes in the analysis.

Table 30 - Average Satisfactions Levels of All Valid Responses

Responces	Drive Alone	County Bus	Car Pool	Tri-Rail Train	Tri-Rail Feeder Bus
Travel Time	1.59	3.18	2.91	2.91	3.17
Travel Cost	1.81	2.83	2.58	2.99	3.02
Convenience	1.26	3.37	2.97	3.32	3.42
Safety	1.73	2.82	2.62	2.71	2.93
Comfort	1.28	3.03	2.63	2.71	2.96
Reliability	1.32	2.94	2.62	2.81	2.95

Source: Regional Research Associates, Inc.

Table 31 - Frequency Distribution of Perceived Importance Ratings of the Six Modal Attributes

Responces	Very Important	Important	Neutral	Very Unimportant	Unimportant	Missing
Time	106 (66.3%)	36 (22.5%)	16 (10.0%)	2 (1.3%)	0 (0.0%)	34 (N/A)
Cost	45 (30.6%)	66 (44.9%)	27 (18.4%)	6 (4.1%)	3 (2.0%)	47 (N/A)
Convenience	112 (73.2%)	34 (22.2%)	5 (3.3%)	0 (0.0%)	2 (1.3%)	41 (N/A)
Safety	104 (70.3%)	32 (21.6%)	10 (6.8%)	0 (0.0%)	2 (1.4%)	46 (N/A)
Comfort	81 (54.0%)	50 (33.3%)	15 (10.0%)	2 (1.3%)	2 (1.3%)	44 (N/A)
Reliability	115 (77.2%)	26 (17.4%)	5 (3.4%)	0 (0.0%)	3 (2.0%)	45 (N/A)

Source: Regional Research Associates, Inc.

Table 32 - Average Importance Ratings of the Six Selected Modal Attributes

	Travel Time	Travel Cost	Convenience	Safety	Comfort	Reliability
Rating	1.46	2.02	1.34	1.41	1.63	1.32

Source: Regional Research Associates, Inc.

DUA Summary

The DUA survey described in this report was conducted as part of the Broward County Travel Characteristics Survey. A set of pairwise hypothetical situations were presented to the survey subjects, and coefficients were derived from logistic regression analyses based on the stated mode choice behavior. The results indicate that most modal attributes included in the survey do not statistically account for the stated travel mode choices by the respondents, although the derived models generally obtain a high percentage of correct predictions. In addition, the respondents' stated satisfaction levels and importance ratings on the six broadly-defined modal attributes suggest that additional modal attributes other than travel time and travel cost are important variables to be included in the DUA analysis. The above findings can help shed some light on the modeling of future transit alternatives in Broward County.

References

Kocur, G., Adler, T., Hyman, W. and Aunet, B. 1982. *Guide to Forecasting Travel Demand with Direct Utility Assessment*, U.S. Department of Transportation, Urban Mass Transportation Administration, Washington, D.C., Report No. UTMA-NH-11-0001-82-1.

VI. GIS TRAVEL LOG ADDRESS MATCHING RESULTS

In this portion of the Final Report, the results of the address-matching task of the Broward Travel Characteristics is presented. Address-matching capability in a geographic information system (GIS) allows users to create a database that consists of both the locations of trip ends and the travel characteristics associated with the trips. Such a database provides a higher geographic resolution level than the travel log databases that are commonly aggregated to the traffic analysis zones (TAZ) level.

Travel Log Survey Design

Each participating household was required to fill out a travel log for every household member older than six (6) years of age, regardless of whether the household member was a passenger or driver. Information on the starting and ending locations of each trip were recorded as street addresses. If the street address of a trip end was not known, the names of the intersecting streets of the nearest intersection or the name of the place was recorded. Additional information such as starting time, arrival time, mileage, destination type, means of travel, major routes used, etc. was also reported on the travel logs (see the travel log survey forms in Appendix A).

Address-Matching Procedures

The travel log survey data set be address-matched individually for the trip ends in Broward County and its two neighboring counties (Palm Beach County and Dade County). Also, due to the many incidents of identical street names (e.g., NW 10th Street) existing in several cities, this study included the city codes as part of the address-matching process. Appendix C provides a break-down of the records in the travel log survey data set by the three counties according to the "origin city code" in each record. It should be noted that a similar break-down by the "origin county code" provides a slightly different result.

The GIS databases originally used for the address-matching task in this project are files of Broward County, Palm Beach County and Dade County from the American Digital Cartography, Inc. (ADC, 3003 W. College Avenue, Appleton, WI 54914-2910) in July of 1996. However, a review of these ETAK GIS databases identified many street segments with missing street address range data and, in some cases, missing street segments. Therefore, it was decided that these ETAK street GIS databases would not deliver a satisfactory address-matching result and that alternative GIS street databases were needed

for performing the address-matching tasks using Arc/Info version 7.0.4 running on the FDOT District 4 Office's RISC-6000 workstation. As a result, the latest Arc/Info GIS street database created by the Planning Information Technology Division of the Broward County Department of Strategic Planning and Growth Management was obtained to run address-matching for the travel log records in Broward County and ETAK GIS databases were used for the records in Palm Beach County and Dade County.

The Broward County's GIS street database was digitized from 1":300' section maps using the State Plane Coordinate System and North American Datum-27 (NAD27). To keep the GIS databases of the three counties consistent, the ETAK GIS streets databases of Palm Beach County and Dade County were projected into the same coordinate system and the same datum using the PROJECT command in Arc/Info version 7.0.4. Due to the different map scales used in the creation of the Broward County GIS streets database and the ETAK GIS streets databases, streets that cross the county boundary lines do not line up exactly. However, the discrepancies were in general very small that would not cause a significant impact on the positional accuracy of the resulting address-matched coverages for the purpose of this study.

The Arc/Info point coverages created from the address-matching process were then overlaid with traffic analysis zone (TAZ) coverages in order to derive TAZ ID's for further transportation planning analysis. A distance offset of 100 feet was used in the Arc/Info ADDRESSMATCH command. This distance offset reduces the chance of having trip end points located exactly on TAZ boundary lines when a polygon overlay function is used to derive the TAZ ID's associated with individual trip ends.

Address Matching Results

The travel log data set loaded into an INFO table was re-selected by the city codes and saved into separate INFO files. For Broward County and Palm Beach County, one INFO file was created for each city. For Dade County, three separate INFO files were created for Miami, Miami Beach and the remaining parts of the county. The ADDRESSMATCH command in Arc/Info, with a minimum matching score of 98, was performed on the "origin street address" and "origin city code" data items in each of the INFO files. In order to achieve a higher hit rate, the interactive REJECT option was used during the address-matching process. Rejected records with obvious typos, misspellings, or alternate street names were corrected and matched during this interactive process. Records that could not be resolved during this interactive process were written into the reject files. Table 33

provides a list of the address-matching results by cities, the matching rates for each of the three counties, and the overall matching rate of the three counties combined.

Table 33 - Address-Matching Results of Travel Log Survey Data Set.

Study Area	Total #	Matched #	Matched %	Rejected #	Rejected %
Broward County	5,740	4,853	85%	887	15%
Bonaventure	6	4	67%	2	33%
Coconut Creek	116	94	81%	22	19%
Cooper City	75	71	95%	4	5%
Coral Springs	350	332	95%	18	5%
Dania	61	51	84%	10	16%
Davie	255	216	85%	39	15%
Deerfield Beach	173	151	87%	22	13%
Fort Lauderdale	1,426	1,182	83%	244	17%
Hallandale	115	99	86%	16	14%
Hillsboro Beach	7	4	57%	3	43%
Hollywood	606	512	84%	94	16%
Lauderdale-By-The-Sea	32	31	97%	1	3%
	34	30	88%	4	12%
Lauderhill	70	55	79%	15	21%
Lazy Lake	0	0			
Lighthouse Point	61	49	80%	12	20%
Margate	189	138	73%	51	27%
Mirarar	97	81	84%	16	16%
	54	47	87%	7	13%
Oakland Park	63	54	86%	9	14%
Parkland	8	6	75%	2	25%
Pembroke Park	1	1	100%	0	0%
Pembroke Pines	345	304	88%	41	12%
Plantation	425	397	93%	28	7%
Pompano Beach	562	478	85%	84	15%
Sea Ranch Lakes	8	7	88%	1	13%
Sunrise	318	209	66%	109	34%
Tamarac	217	198	91%	19	9%
Weston	25	13	52%	12	48%
Wilton Manors	41	39	95%	2	5%
Palm Beach County	114	54	47%	60	53%
Boca Raton	85	43	51%	42	49%
Boynton Beach	6	1	17%	5	83%
Delray Beach	12	5	42%	7	58%
Lake Worth	3	0	0%	3	100%
Lantana	1	1	100%	0	0%
Wellington	1	0	0%	1	100%
	6	4	67%	2	33%
Dade County	188	93	49%	95	51%
Miami	88	44	50%	44	50%
Miami Beach	57	33	58%	24	42%
Remainder of County	43	16	37%	27	63%
Total	6,042	5,000	83%	1,042	17%

Source: Regional Research Associates, Inc.

The graphic results of the GIS matching effort is provided in Figures 11 through 13. Figure 11 displays the 4,853 trip ends identified in Broward County. The Palm Beach County 54 matched trip ends are presented in Figure 12. Matched trips ends totaling 93 are presented in Figure 13 for Dade County. Note that most data points represent multiple trip ends. Figure 14 presents the locations of each single-family household which participated in the travel log portion of the survey while Figure 15 details the locations of the multi-family households which returned travel logs.

Address Matching Summary

The address-matching task of travel log data described above was conducted as part of the Broward County Travel Characteristics Survey. Travel log data collected from the survey was loaded into Arc/Info GIS database and the ADDRESSMATCH function in Arc/Info was used to match the data against the Broward County address-based streets coverage and the ETAK streets files of Palm Beach County and Dade County. The overall address-matching rate of the three counties is approximately eighty-three percent (83%). Several shortcomings of the data sets that were identified during the address-matching process are outlined below.

- The ETAK streets files appeared to have many street segments with missing street address range data. This had a direct impact on the relatively low address-matching rates of trip log survey data for Palm Beach County and Dade County.
- Some respondents provided incomplete or wrong street address data (e.g., a street address without a street number, or without a street type, or with an non-existing street type).
- Some trip log survey data records have an incorrect city code (e.g., A street address in Coconut Creek was listed as being within Coral Springs). These incorrect city codes could be due to the fact that some respondents did not know where the city limits are actually located.

Even with the above shortcomings, the final overall address-matching rate of approximately eighty-three percent (83%) for the three counties is better than the original expectation.

There are several benefits of geocoding travel log data to the individual point location than to the aggregate traffic analysis zone (TAZ) level. First of all, the trip end locations derived

from the address-matching process make it possible to examine the trip distribution pattern within an individual TAZ. Secondly, geocoding at the point level opens up the possibility of associating trip ends to the street network for further analyses. Thirdly, the point distribution can be overlaid with census polygon coverages (e.g., census tracts). This will generate more accurate analysis results than overlaying trip log data aggregated to the TAZ level with the census tracts layer, since the polygon-on-polygon overlay function does not split the attribute data item values among the derived smaller polygons. Hopefully, these benefits will be realized through future creative uses of the GIS databases created from this study.

VII. Recommended Trip Rates and Study Findings

This portion of the Final Report will provide friction factor analysis, the statistical basis of the Study, discuss the multiple classification procedure which was employed, provide recommendations on trip rates for Broward County, as appropriate, highlight the major findings of the Study and provide suggestions for further investigation.

Friction Factor Analysis

Recommended friction factors where generated for Broward County based upon travel time data from the Study. The friction factor rate table was derived by using the TRANPLAN Calibrate Gravity Model function. Table 34, on the following page, details Broward County friction factors for each of the five (5) FSUTMS trip purposes.

The recommended friction factors should only be considered preliminary for subsequent studies. Additional analyses using the gravity model may be necessary to adjust the friction factors and achieve valid model results. Appendix E contains the TRANPLAN script and input file.

Statistical Analysis of Study Results

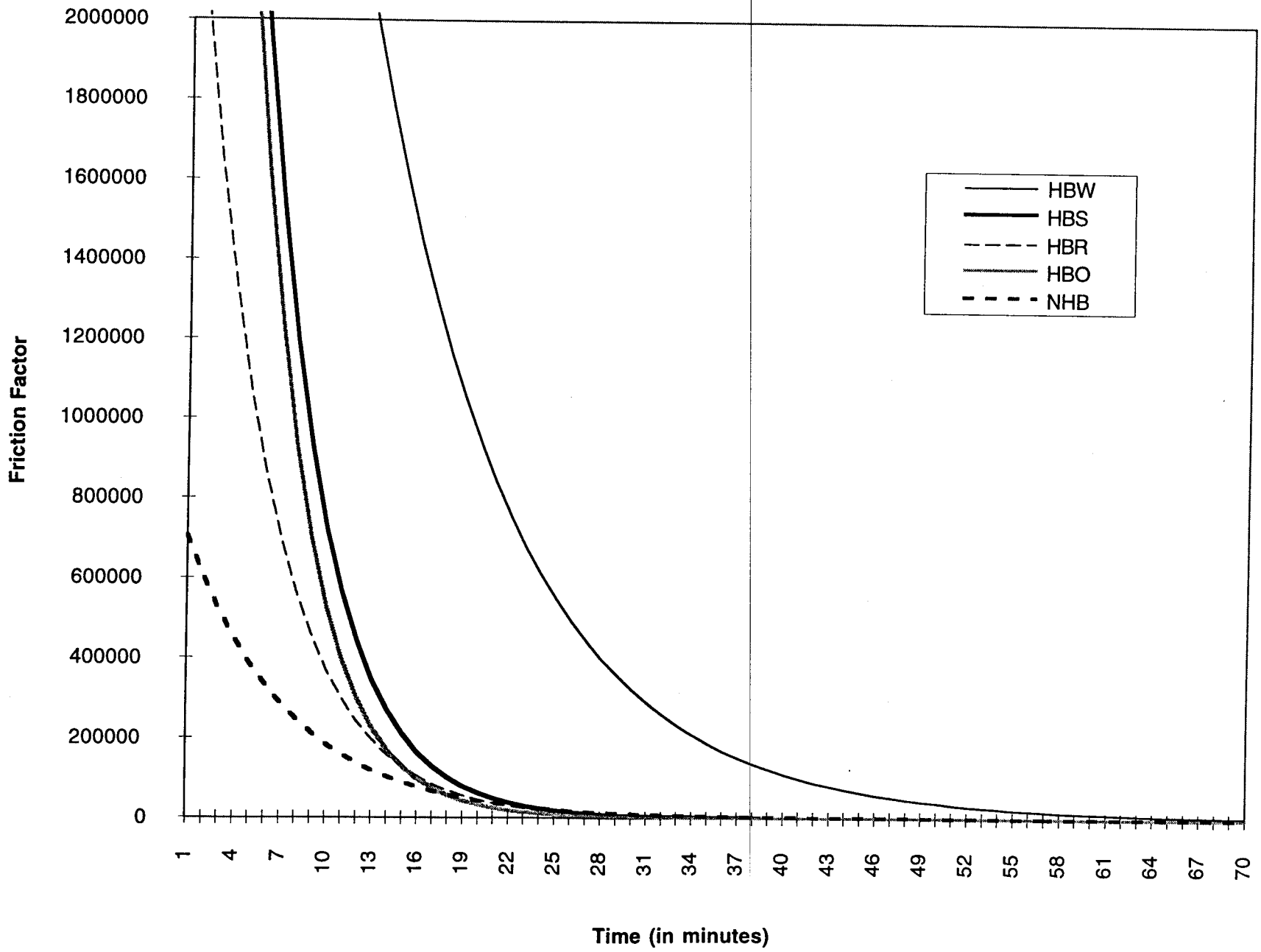
Difficulties were encountered in contacting and obtaining returned travel log packages for some of the standard cell groups as identified in Figure 1 (see page 9). Major cells with limited sample sizes included households with no autos (both single family and multi-family) and large size households. The difficulty of finding zero auto households and obtaining responses from large size households has been documented in prior travel characteristic studies. Large size households, while identified in the telephone screener survey and forwarded travel log packages, returned the travel logs with a much lower frequency than the survey participants as a whole. For example, while almost thirty-three percent (33%) of all travel log packages were returned, only fourteen percent (14%) of households of five (5) or more persons returned travel log packages. The response rate for large size households was further complicated in that each household member six years and older required travel logs.

Table 34 - Broward - Friction Factor Table

Time	HBW	HBS	HBR	HBO	NHB
1	7203374	6769609	2515202	6663608	705056
2	6470791	5283215	2034040	5028641	607870
3	5812734	4123198	1644904	3794833	524080
4	5221624	3217894	1330198	2863758	451840
5	4690647	2511372	1075691	2161128	389557
6	4213681	1959977	869870	1630894	335860
7	3785233	1529652	703424	1230755	289564
8	3400362	1193812	568821	928791	249650
9	3054639	931710	459972	700915	215237
10	2744074	727154	371949	528947	185568
11	2465095	567511	300770	399171	159989
12	2214486	442918	243210	301236	137935
13	1989362	345680	196665	227328	118922
14	1787131	269790	159027	171554	102529
15	1605464	210561	128592	129463	88396
16	1442267	164336	103981	97699	76212
17	1295664	128259	84080	73729	65706
18	1163966	100103	67988	55639	56649
19	1045658	78128	54976	41988	48840
20	939377	60977	44454	31686	42108
21	843902	47591	35946	23911	36304
22	758131	37144	29067	18044	31300
23	681080	28991	23504	13617	26985
24	611861	22627	19006	10276	23265
25	549678	17660	15369	7754	20059
26	493816	13784	12427	5852	17294
27	443632	10758	10049	4416	14910
28	398548	8397	8126	3332	12855
29	358047	6554	6571	2515	11083
30	321662	5115	5314	1898	9555
31	288975	3992	4297	1432	8238
32	259610	3116	3475	1080	7102
33	233229	2432	2810	815	6123
34	209530	1898	2273	615	5279
35	188238	1482	1838	464	4552
36	169111	1156	1486	350	3924
37	151927	903	1202	264	3383
38	136489	705	972	199	2917
39	122620	550	786	151	2515
40	110161	429	636	114	2168
41	98967	335	514	86	1869
42	88911	262	416	65	1612
43	79877	204	336	49	1390
44	71760	159	272	37	1198
45	64469	124	220	28	1033
46	57918	97	178	21	891
47	52033	76	144	16	768
48	46746	59	116	12	662
49	41996	46	94	9	571
50	37728	36	76	7	492
51	33895	28	62	5	424
52	30451	22	50	4	366
53	27356	17	40	3	315
54	24577	13	33	2	272
55	22079	10	26	2	234
56	19835	8	21	1	202
57	17820	6	17	1	174
58	16009	5	14	1	150
59	14382	4	11	1	130
60	12921	3	9	0	112
61	11607	2	7	0	96
62	10428	2	6	0	83
63	9368	1	5	0	72
64	8416	1	4	0	62
65	7561	1	3	0	53
66	6792	1	3	0	46
67	6102	1	2	0	40
68	5482	0	2	0	34
69	4924	0	1	0	29
70	4424	0	1	0	25

Source: Walter H. Keller, Inc.

Figure 16 - Broward Friction Factors



The validity of trip rates within cells is a function of the number of samples obtained and the variance of the trip rates within the respective cell. Table 35, on the next page, provides a statistical review of the trip rate variable for the 867 households which returned completed travel logs. Since some of the households completed multiple day travel logs, the number of one-day travel logs totaled 880.

As can be observed from Table 35, a wide variety of cells had either zero or very small (i.e., less than ten) observations. For the most part, these cells do not occur with significance in Broward County. The majority of the Group "A" cells (12 - 14, 22 and 27 and the Group "B" cells (6- 7 and 16 and 21), however, had sufficient responses that would normally be expected to produce statistically reliable results. Unfortunately, the responses obtained produced higher than expected variance which increased the number of samples required to meet project statistical goals.

Table 35 - Statistical Analysis of Cell Trip Rates
(% Error for Given Confidence Levels)

	Group-Cell	H/H's	Veh Trips Per H/H	Standard Deviation	Standard Error	t	t (SE)	Resulting Error	Target Error	Met Goal?	Explanation
Single Family	D-1	1	0.00	0.00	-	-	-	-	25.0%	No Variance	Single Case
	B-6	48	4.33	3.33	0.49	1.68	0.82	18.8%	15.0%	No - Close	Large Variance
	B-7	55	3.84	2.88	0.39	1.67	0.66	17.1%	15.0%	No - Close	Large Variance
	B-8	11	4.36	3.50	1.11	1.81	2.01	46.0%	15.0%	No	Large Variance
	C-9	2	7.50	2.12	2.12	6.31	13.39	178.6%	20.0%	No	Two Cases
	D-11	9	2.78	1.72	0.61	1.86	1.13	40.6%	25.0%	No	Few Cases, Large Variance
	A-12	125	5.90	4.27	0.38	1.65	0.63	10.7%	10.0%	No - Close	Large Variance
	A-13	52	7.92	7.96	1.11	1.68	1.87	23.6%	10.0%	No	Large Variance
	A-14	65	9.15	5.97	0.75	1.67	1.25	13.6%	10.0%	No - Close	Large Variance
	A-15	23	8.30	4.23	0.90	1.71	1.54	18.6%	10.0%	No	Large Variance
Multi-Family	B-16	31	0.07	0.36	0.07	1.70	0.11	172.6%	15.0%	No	Large Variance
	B-17	9	0.00	0.00	0.00	1.86	0.00	0.0%	15.0%	Yes - No Trips	Zero Auto HH
	B-21	173	3.41	2.81	0.22	1.65	0.35	10.4%	15.0%	Yes	Large Sample
	A-22	143	3.16	2.79	0.23	1.65	0.39	12.2%	10.0%	No - Close	Large Variance
	C-23	3	2.33	2.08	1.47	2.92	4.30	184.2%	20.0%	No	Few Cases, Large Variance
	D-24	1	5.00	0.00	-	-	-	-	25.0%	No Variance	Single Case
	D-26	5	3.00	2.55	1.28	2.13	2.72	90.6%	25.0%	No	Few Cases, Large Cases
	A-27	98	5.20	3.99	0.41	1.66	0.67	12.9%	10.0%	No - Close	Large Variance
	B-28	19	7.47	3.81	0.90	1.73	1.56	20.8%	15.0%	No - Close	Few Cases, Large Variance
	C-29	5	10.20	4.97	2.49	2.13	5.30	51.9%	20.0%	No	Few Cases, Large Variance
	C-30	2	7.00	4.24	4.24	6.31	26.79	382.7%	20.0%	No	Few Cases, Large Variance
	Totals	880									

Source: Regional Research Associates, Inc.
Walter H. Keller, Inc.

Study statistical goals per scope:

Group A - 90% confidence with accuracy 10% or better
Group B - 90% confidence with accuracy 15% or better
Group C - 90% confidence with accuracy 20% or better
Group D - 90% confidence with accuracy 25% or better
Group E - 80% confidence with accuracy 50% or better

Cells D-2, E-3, E-4, E-5, C-10, E-18, E-19, E-20 and D-25 did not return Travel Logs or were not found in the sampling.

Normally in a travel survey, 25 to 30 observations are usually sufficient to produce results within the expected confidence level. In Cell-12, for example, 125 observations produced an error of 10.7%. This error was slightly more than the desired 10%, however, while a large number of observations were obtained, the variance of the trip rate response increased the number of samples required to a much higher than the expected 25 -30 sample range.

Multiple Classification Analysis of Trip Rates

In order to increase the range of cells for which trip rates can be recommended, a multiple classification analysis of the Broward County trip rate data was performed. This additional analysis was performed in response to the low completion rate for certain cells discussed earlier. The variables in the two-way classification were the persons per dwelling unit and the number of vehicles per dwelling unit. Recommended trip rates were created for each of the five (5) standard FSUTMS trip purposes. Appendix D contains a detailed description of the procedure employed for the multiple classification analysis.

An analysis of variance (ANOVA) was performed separately for single family and multi-family dwelling units. In order to determine if the ANOVA was statistically significant, the statistical significance of both persons per dwelling unit and vehicles per dwelling unit were measured independently of each other.

For single family dwelling units, the number of vehicles per dwelling unit was not always significant for each FSUTMS trip purpose. For multi-family dwelling units, neither persons per dwelling unit nor vehicles per dwelling unit were statistically significant for Home Based Other trips. However, the results generally support the two way classification as being statistically significant for both types of dwelling units and each trip purpose. The results also demonstrated that there is little evidence of interaction between persons and vehicles per dwelling unit. Table 36 contains the trip rates which were generated by the ANOVA procedure for each cell and trip purpose.

Table 36 - Analysis of Variance Trip Rates

Cell	# of H/H	# of Day Logs	Trip Purpose					Total Trips
			HBW	HBS	HBR	HBO	NHB	
1 †	1	1	0.00	0.00	0.00	0.00	0.00	0.00
2	0	0	0.00	0.09	0.00	0.00	0.00	0.09
3	0	0	0.12	0.00	0.00	0.14	0.91	1.17
4	0	0	0.59	0.17	0.18	1.13	0.80	2.87
5	0	0	1.02	0.00	0.33	1.11	0.00	2.46
6	48	48	0.03	0.39	0.34	0.59	0.58	1.93
7	55	104	0.21	0.89	0.39	0.77	0.93	3.19
8	11	28	0.58	0.80	0.33	1.31	2.20	5.22
9 †	2	6	1.05	0.97	0.61	2.30	2.09	7.02
10	0	0	1.48	0.60	0.76	2.28	1.11	6.23
11 †	9	10	1.14	0.48	0.37	1.14	1.80	4.93
12	125	239	1.32	0.98	0.42	1.32	2.15	6.19
13	52	141	1.69	0.89	0.36	1.86	3.42	8.22
14	65	216	2.16	1.06	0.64	2.85	3.31	10.02
15	23	97	2.59	0.69	0.79	2.83	2.33	9.23
16	31	31	0.00	0.00	0.00	0.00	0.00	0.00
17 †	9	16	0.00	0.27	0.01	0.00	0.02	0.30
18	0	0	1.05	0.00	0.00	0.74	1.50	3.30
19	0	0	0.67	0.35	0.66	1.48	2.56	5.73
20	0	0	2.01	0.00	0.00	0.65	1.73	4.40
21	173	173	0.23	0.43	0.34	0.71	0.81	2.53
22	143	271	0.27	0.90	0.37	0.84	1.10	3.49
23 †	3	9	1.37	0.58	0.29	1.58	2.58	6.41
24 †	1	1	0.99	0.98	1.02	2.32	3.64	8.96
25	0	0	2.33	0.00	0.02	1.49	2.81	6.66
26 †	5	5	0.97	0.70	0.37	1.00	1.87	4.92
27	98	181	1.01	1.17	0.40	1.13	2.16	5.88
28	19	47	2.11	0.85	0.32	1.87	3.64	8.79
29 †	5	17	1.73	1.25	1.05	2.61	4.70	11.35
30 †	2	10	3.07	0.25	0.05	1.78	3.87	9.03
SF H/H	391	890	1.24	0.86	0.45	1.56	2.15	6.26
MF H/H	489	761	0.50	0.71	0.34	0.86	1.29	3.70
All H/H	880	1,651	0.90	0.79	0.40	1.24	1.75	5.08
Wt H/H *			0.83	0.77	0.39	1.17	1.67	4.83
% Change Survey vs. Weighted								5.3%

Source: Walter H. Keller, Inc.

Notes: † - Limited samples and may not be statistically valid at Cell level
Based upon unweighted results

Recommended Trip Rates

As discussed above, the low completion rate in certain cells limits the range of cells for which trip rates can be recommended. Recommendations were developed however, for cells where adequate response was received and based upon the ANOVA analysis. Tables 37 through 41 provide rates for the standard FSUTMS five (5) trip purposes. The numbers in each table that are not bold are the standard trip rates for each cell. In instances where revised trip rates are suggested, bold numbers have been added to the respective cell above the standard trip rate number. The revised rates are drawn from both the weighted and unweighted trip rates for Broward County contained in Table 11 and the ANOVA trip rates for Broward County found in Table 36.

Essentially, project confidence levels and accuracies were obtained for the following cell:

- Group "B" - Cell 21.

Project confidence levels and accuracies were almost obtained for the following cells:

- Group "A" - Cell 12, 14, 22, 27 and
- Group "B" - Cell 6, 7 and 28.

These cells with the lowest errors were used first to develop recommended rates from either the trip rates in Table 10 or the ANOVA trip rates and then in instances where the adjacent rate would be inconsistent with the revised rate or if the adjacent rate was identified for revision but the error was slightly higher than desired, the cell was revised.

Table 37 - Home-Based Work Trip Rates

CROSS CLASSIFICATION						
	AUTO/ D.U.	PERSONS PER D.U. 1	2	3	4	5+
RESIDENT SINGLE-FAMILY D.U.'S	0	1	2	3	4	5
		0.00	**0.00**	**0.12**	**0.59**	**1.02**
		0.00	-	-	-	-
		0.40	***0.80***	***1.15***	***1.40***	***1.55***
		(0.00)	-	-	-	-
	1	6	7	8	9	10
		0.03	**0.21**	**0.58**	**1.05**	**1.48**
		0.85	*0.27*	*0.45*	*3.00*	-
		0.50	***1.10***	***1.50***	***1.75***	***1.90***
		(0.86)	(0.36)	(0.63)	(3.06)	-
	2+	11	12	13	14	15
		1.14	**1.32**	**1.69**	**2.16**	**2.59**
		1.56	*1.66*	*2.21*	*2.28*	*2.70*
		1.05	***2.00***	***2.45***	***2.60***	***2.65***
		(1.45)	(2.80)	(4.06)	(4.30)	(4.85)
RESIDENT MULTI-FAMILY D.U.'S	0	16	17	18	19	20
		0.00	**0.00**	**1.05**	**0.67**	**2.01**
		0.00	*0.00*	-	-	-
		0.15	***0.35***	***0.55***	***0.80***	***1.00***
		(0.00)	(0.00)	-	-	-
	1	21	22	23	24	25
		0.23	**0.27**	**1.37**	**0.99**	**2.33**
		0.54	*0.16*	*0.33*	*1.00*	-
		0.45	***0.65***	***0.90***	***1.00***	***1.10***
		(0.53)	(0.18)	(1.02)	(1.93)	-
	2+	26	27	28	29	30
		0.97	**1.01**	**2.11**	**1.73**	**3.07**
		0.80	*1.23*	*2.16*	*2.00*	*2.50*
		1.20	***1.55***	***1.85***	***2.05***	***2.15***
		(0.82)	(2.07)	(4.07)	(3.81)	(4.83)

Sources: Walter H. Keller, Inc.
Florida Department of Transportation

Notes:
0.00 - Anova trip rate
0.00 - Unweighted trip rate
0.00 - FSUTMS default rate
(0.00) - Weighted trip rate (by employment)
0.00 - Recommended trip rate

Table 38 - Home-Based Shopping Trip Rates

CROSS CLASSIFICATION	AUTO/ D.U.	PERSONS PER D.U. 1	2	3	4	5+
RESIDENT SINGLE-FAMILY D.U.'S	0	1	2	3	4	5
		0.00	**0.09**	**0.00**	**0.17**	**0.00**
		0.00	-	-	-	-
		0.30	***0.35***	***0.40***	***0.45***	***0.45***
		(0.00)	-	-	-	-
	1	6	7	8	9	10
		0.39	**0.89**	**0.80**	**0.97**	**0.60**
		0.52	*1.04*	*0.91*	*0.00*	-
		0.80	***1.05***	***1.20***	***1.30***	***1.30***
		(0.35)	(0.50)	(0.63)	(0.00)	-
	2+	11	12	13	14	15
		0.48	**0.98**	**0.89**	**1.06**	**0.69**
		0.11	*0.97*	*0.85*	*1.06*	*0.65*
		0.90	***1.25***	***1.45***	***1.60***	***1.70***
		(0.05)	(0.45)	(0.69)	(1.02)	(1.00)
RESIDENT MULTI-FAMILY D.U.'S	0	16	17	18	19	20
		0.00	**0.27**	**0.00**	**0.35**	**0.00**
		0.06	*0.00*	-	-	-
		0.30	***0.35***	***0.40***	***0.45***	***0.45***
		(0.03)	(0.00)	-	-	-
	1	21	22	23	24	25
		0.43	**0.90**	**0.58**	**0.98**	**0.00**
		0.55	*0.91*	*0.00*	*0.00*	-
		0.50	***1.25***	***1.50***	***1.65***	***1.70***
		(0.31)	(0.43)	(0.00)	(0.00)	-
	2+	26	27	28	29	30
		0.70	**1.17**	**0.85**	**1.25**	**0.25**
		0.40	*1.04*	*0.68*	*1.20*	*0.00*
		0.65	***1.40***	***1.65***	***1.85***	***1.95***
		(0.29)	(0.54)	(0.54)	(0.45)	(0.00)

Sources: Walter H. Keller, Inc.
Florida Department of Transportation

Notes:
0.00 - Anova trip rate
0.00 - Unweighted trip rate
0.00 - FSUTMS default rate
(0.00) - Weighted trip rate (by employment)
0.00 - Recommended trip rate

Table 39 - Home-Based Recreation Trip Rates

CROSS CLASSIFICATION						
	AUTO/ D.U.	PERSONS PER D.U.				
		1	2	3	4	5+
RESIDENT SINGLE-FAMILY D.U.'S	0	1 **0.00** *0.00* ***0.20*** (0.00)	2 **0.00** - ***0.25*** -	3 **0.00** - ***0.30*** -	4 **0.18** - ***0.40*** -	5 **0.33** - ***0.45*** -
	1	6 **0.34** *0.40* ***0.65*** (0.25)	7 **0.39** *0.51* ***0.85*** (0.22)	8 **0.33** *0.18* ***1.10*** (0.19)	9 **0.61** *1.00* ***1.35*** (0.41)	10 **0.76** - ***1.70*** -
	2+	11 **0.37** *0.22* ***0.85*** (0.23)	12 **0.42** *0.40* ***1.05*** (0.51)	13 **0.36** *0.48* ***1.30*** (0.85)	14 **0.64** *0.62* ***1.65*** (1.00)	15 **0.79** *0.78* ***2.10*** (1.29)
RESIDENT MULTI-FAMILY D.U.'S	0	16 **0.00** *0.00* ***0.30*** (0.00)	17 **0.01** *0.00* ***0.35*** (0.00)	18 **0.00** - ***0.40*** -	19 **0.66** - ***0.45*** -	20 **0.00** - ***0.55*** -
	1	21 **0.34** *0.44* ***0.65*** (0.26)	22 **0.37** *0.38* ***1.05*** (0.17)	23 **0.29** *0.00* ***1.45*** (0.00)	24 **1.02** *0.00* ***1.90*** (0.00)	25 **0.02** - ***2.65*** -
	2+	26 **0.37** *0.00* ***0.75*** (0.00)	27 **0.40** *0.41* ***1.20*** (0.34)	28 **0.32** *0.47* ***1.65*** (0.64)	29 **1.05** *1.20* ***2.20*** (1.95)	30 **0.05** *0.00* ***3.05*** (0.00)

Sources: Walter H. Keller, Inc.
Florida Department of Transportation

Notes:
0.00 - Anova trip rate
0.00 - Unweighted trip rate
0.00 - FSUTMS default rate
(0.00) - Weighted trip rate (by employment)
0.00 - Recommended trip rate

Table 40 - Home-Based Other Trip Rates

CROSS CLASSIFICATION						
	AUTO/ D.U.	PERSONS PER D.U. 1	2	3	4	5+
RESIDENT SINGLE-FAMILY D.U.'S	0	1	2	3	4	5
		0.00	**0.00**	**0.14**	**1.13**	**1.11**
		0.00	-	-	-	-
		0.20	***0.30***	***0.55***	***1.00***	***1.60***
		(0.00)	-	-	-	-
	1	6	7	8	9	10
		0.59	**0.77**	**1.31**	**2.30**	**2.28**
		1.04	*1.20*	*1.45*	*2.00*	-
		0.60	***1.10***	***1.85***	***2.75***	***3.95***
		(0.75)	(0.75)	(1.70)	(0.82)	-
	2+	11	12	13	14	15
		1.14	**1.32**	**1.86**	**2.85**	**2.83**
		0.78	*1.20*	*1.79*	*2.72*	*2.65*
		0.70	***1.20***	***2.20***	***3.55***	***5.35***
		(0.45)	(1.28)	(2.66)	(4.50)	(4.51)
RESIDENT MULTI-FAMILY D.U.'S	0	16	17	18	19	20
		0.00	**0.00**	**0.74**	**1.48**	**0.65**
		0.00	*0.00*	-	-	-
		0.25	***0.45***	***0.70***	***1.10***	***1.70***
		(0.00)	(0.00)	-	-	-
	1	21	22	23	24	25
		0.71	**0.84**	**1.58**	**2.32**	**1.49**
		0.86	*0.92*	*0.56*	*3.00*	-
		0.80	***1.20***	***1.60***	***2.10***	***3.00***
		(0.53)	(0.50)	(1.70)	(5.80)	-
	2+	26	27	28	29	30
		1.00	**1.13**	**1.87**	**2.61**	**1.78**
		1.20	*1.05*	*1.63*	*2.20*	*1.50*
		0.95	***1.50***	***2.30***	***3.40***	***4.65***
		(0.86)	(1.01)	(2.50)	(3.40)	(2.90)

Sources: Walter H. Keller, Inc.
Florida Department of Transportation

Notes:
0.00 - Anova trip rate
0.00 - Unweighted trip rate
0.00 - FSUTMS default rate
(0.00) - Weighted trip rate (by employment)
0.00 - Recommended trip rate

Table 41 - Non-Home-Based Trip Rates

CROSS CLASSIFICATION						
	AUTO/ D.U.	PERSONS PER D.U. 1	2	3	4	5+
RESIDENT SINGLE-FAMILY D.U.'S	0	1	2	3	4	5
		0.00	**0.00**	**0.91**	**0.80**	**0.00**
		0.00	-	-	-	-
		0.40	***0.80***	***1.15***	***1.40***	***1.55***
		(0.00)	-	-	-	-
	1	6	7	8	9	10
		0.58	**0.93**	**2.20**	**2.09**	**1.11**
		1.73	*0.91*	*1.55*	*1.50*	-
		0.50	***1.10***	***1.50***	***1.75***	***1.90***
		(1.49)	(0.57)	(1.85)	(1.53)	-
	2+	11	12	13	14	15
		1.80	**2.15**	**3.42**	**3.31**	**2.33**
		0.56	*2.30*	*3.60*	*3.49*	*2.00*
		1.05	***2.00***	***2.45***	***2.60***	***2.65***
		(0.36)	(3.37)	(6.87)	(6.01)	(3.64)
RESIDENT MULTI-FAMILY D.U.'S	0	16	17	18	19	20
		0.00	**0.02**	**1.50**	**2.56**	**1.73**
		0.00	*0.00*	-	-	-
		0.15	***0.35***	***0.55***	***0.80***	***1.00***
		(0.00)	(0.00)	-	-	-
	1	21	22	23	24	25
		0.81	**1.10**	**2.58**	**3.64**	**2.81**
		1.24	*1.05*	*0.11*	*1.00*	-
		0.45	***0.65***	***0.90***	***1.00***	***1.10***
		(0.86)	(0.66)	(0.34)	(1.93)	-
	2+	26	27	28	29	30
		1.87	**2.16**	**3.64**	**4.70**	**3.87**
		2.20	*2.02*	*3.68*	*5.80*	*3.00*
		1.20	***1.55***	***1.85***	***2.05***	***2.15***
		(2.00)	(2.65)	(6.34)	(3.75)	(5.80)

Sources: Walter H. Keller, Inc.
Florida Department of Transportation

Notes:
0.00 - Anova trip rate
0.00 - Unweighted trip rate
0.00 - FSUTMS default rate
(0.00) - Weighted trip rate (by employment)
0.00 - Recommended trip rate

Appendix A
Survey Forms

BROWARD TRAVEL CHARACTERISTICS SURVEY
TELEPHONE QUESTIONNAIRE

INTERVIEWER AND CONTACT DATA

Fill in Prior to Placing Call or affix label

Interviewer _____

Respondent I. D. # *(Record #)* _____

Respondent Phone # _____

Respondent Last Name _____

Respondent Address _____

Other _____

Fill in After Placing Call

CONTACT RECORD

Contact No.	1	2	3	4
Interviewer Initial				
Date				
Time				
Result				

Result Code:
1 - Refused
2 - No Answers
3 - Not Home
4 - Completed
5 - Ans. Machine - Left Message
6 - Call Back

(Enter Time for Code 4)

Use For Special Comments

COMMENTS _____

_____

_____

INTRODUCTION

Hello Mr/Mrs *(Last Name)*, my name is _____ and I am calling for the Florida Department of Transportation and Broward County for the Broward Travel Characteristics Survey. Did you receive an introductory flyer in the last few days?

(If Yes) - Is it convenient for me to ask you a few questions now?

(Yes) - Thank You
(No) - Set up appointment and note above comments

(If No) - We're sorry you didn't get one, may I read the flyer to you? *Read flyer.* Is it convenient for me to ask you a few questions now?

(Yes) - Thank You
(No) - Set up appointment and note

INTERVIEW

1. Do you live in a:

1. Single Family Home - Detached	☐	7. Mobile Home or Trailer	☐
2. Duplex, Triplex, or Quadplex	☐	8. Motel or Hotel	☐
3. Townhouse - Single Family Attached	☐	9. Other	☐
4. Apartment - Rental	☐	Explain _____	
5. Apartment - Condominium	☐	_____	

2. Do you own or rent? Own ☐ Rent ☐ Other ☐ Specify _____

3. Including yourself, how many people live in your household? Please include anyone living there now, such as relatives or boarders, and anyone who usually lives there but is now away from home (such as someone traveling or in the hospital). Do not include anyone who lives somewhere else, (such as college students who live away from home). Total Number _____

4a. How many household members are 5 years or older: Total Number _____

4b. How many household members are employed Full-Time (35 or more hours per week). Include work without pay in a family business. Do not include house work in your own home, school work, or volunteer work. Total Number _____

4c. How many household members are employed Part-Time (less than 35 hours per week). Total Number _____

5. How many passenger vehicles (which includes cars, trucks, motorcycles or vans) are kept at home and are regularly used by members of your household? Total Number _____

6a. In addition to the above passenger vehicles, does anyone in your household utilize the following means of Transportation: Yes ☐ No ☐

County Bus System (BCT)	☐	*Tri-Rail*	☐
Social Service Transportation	☐	*School Bus*	☐
Car Pool (Commuting to work only)	☐	*Other*	_____

6b. If County Bus System (BCT) or Tri-Rail is used:
How do you get to the station? Walk ☐ Auto ☐ Other _____
How far is the station from home? _____miles.
If Car-pool is used, what is the distance from home to work place _____ miles.

7. Do you live here 6 or more months per year? Yes ☐ No ☐
(If No) How many months per year do you live here _____
During what months do you live here _____to _____

CLOSURE

This completes the first part of the survey. Certain households will be selected to complete the second part of the survey which deals with your travel habits. This second survey will involve keeping a Travel Log for 1 day. This Second Survey is very important in understanding Broward Travel Patterns. If your household is selected, may we mail you a survey package and use you as our contact person for your household?

Yes ☐ No ☐

(If Yes) - May I verify your name? _____

(If Yes) - Is this your correct mailing address including apartment number?
(Read Address from Listing)

(If No) - What is the correct address including apartment number? _____

_____

_____

Thank You very much for taking the time to answer these questions. Good Bye.

BROWARD TRAVEL CHARACTERISTICS STUDY
HOUSEHOLD VERIFICATION SURVEY

1. Which best describes the building you live in?

☐ Single Family Home - Detached ☐ Apartment - Rental ☐ Hotel or Motel
☐ Duplex, Triplex, Quadplex ☐ Apartment - Condominium ☐ Other
☐ Townhouse - Single Family Attached ☐ Mobile Home Specify _____

2. Do you own or rent? Own ☐ Rent ☐ Other (specify) _____

3. Including yourself, how many people live in your household? Please include anyone living there now, such as relatives or boarders. Do not include anyone who usually lives somewhere else (for example, family members who live in a college dormitory). Total Number: _____

4. How many people in your household:
   Are 5 years or older? _____ Are retired? _____
   Have full time jobs? (35 hrs. or more per week) _____ Are licensed drivers? (excluding training permits) _____
   Have part time jobs? (Less than 35 hrs. during Weekday Only) _____

5. How many passenger vehicles (*cars, vans or pickup trucks*) are kept at home for use by members of your household? Total Number: _____

6. This question will identify the Travel Maker Profile. For each of your household member, how many persons living in your household are:

Travel Maker Profile Code

A. Working in the field, (*such as groves or construction sites,*) but go to one site each day _____
B. Working with extensive driving, visiting at least 2 different sites per day, (*such as traveling sales, or delivery workers*) _____
C. Working and Earning income at the home address _____
D. Working outside of the home at an office, store, plant, or business _____
E. Retired _____ **F.** Homemaker _____
G. Unemployed _____ **H.** Pre-school children _____
I. Children in school _____(Kindergarten - 12)
J. College Students living at home _____
K. Schooled at home _____(Kindergarten - 12)
L. Dropped off, or ride with others by auto to school _____ (Kindergarten - 12)
M. Bused to school _____(Kindergarten - 12)
N. Drive themselves to school _____ (High School only)
O. Walk or Bike to school _____(Kindergarten - 12)
P. Walk or Bike to school _____(College)
Q. Commute to College by auto _____

7. If employed, does your employer have a telecommuting program?
   Yes ☐ No ☐ Under Consideration ☐ Don't know ☐

8. Do you live here 6 or more months per year? Yes ☐ No ☐
   (*If No*) How many months per year do you live here _____
   During what months do you live here _____ to _____

9. Is public transportation (Tri-Rail, ***BCt***, or city/community buses) available to your household?
   Yes ☐ No ☐ Don't Know ☐

10. How far is it from your home to the nearest public transportation stop?
    Less than 1/4 Mile ☐ 1/4 to 1/2 Mile ☐ More than 1/2 Mile ☐

11. What was your approximate total family income before taxes in 1995? (*Check one*)

☐ Under $10,000 ☐ $30,000 - $40,000 ☐ $60,000 - $70,000
☐ $10,000 - $20,000 ☐ $40,000 - $50,000 ☐ $70,000 - $80,000
☐ $20,000 - $30,000 ☐ $50,000 - $60,000 ☐ Over $80,000

Thank you very much for taking the time to answer these questions.
Please place in return envelope with travel logs for mailing. For **help** or **assistance** call **Mary** at **1-800-286-6692**.

Florida Department of Transportation • Broward Travel Characteristics Study

1. Household Member Name: _____
2. Travel Maker's Profile Code: _____ (from Household Verification Survey Question 6)
3. Relationship to _____ (First Name of Household Contact Person from Telephone Survey)
   - ___ Self
   - ___ Husband/Wife
   - ___ Son/Daugther
   - ___ Brother/Sister
   - ___ Father/Mother
   - ___ Other Relative
   - ___ Non-Relative
4. Year of Birth 19____
5. Usual or Main Weekday Activity
   - ___ Working (___ Hours/Week)
   - ___ Keeping House
   - ___ Going to School
   - ___ Retired
   - ___ Other (Specify) _____

[ ]

☐ **Did Not Travel on Assigned Day (Please Check)**

Trip No. ▼	Trip Start Information		Trip End Information		Travel Characteristics			
	Start Time & Mileage	**I Started at**	**Arrival Time & Mileage**	**I Traveled to**	**Purpose**	**Destination**	**Travel Means**	**Travel Made As**
Trip 1	___:___ AM PM Mileage Reading	Name of Place (Very Important) Address (Very Important) Or the nearest Street Intersection of and City	___:___ AM PM Mileage Reading	Name of Place (Very Important) Address (Very Important) Or the nearest Street Intersection of and City	___ Work ___ Job Related ___ Shopping ___ School ___ Home ___ Medical ___ Recreation ___ Eat a Meal ___ Other	___ Home ___ Work Place ___ School ___ Store ___ Restaurant ___ Friend's House ___ Recreation Place ___ Other (Specify)	___ Car/Van or Pickup Truck ___ Bicycle ___ School Bus ___ Motorcycle ___ Rail ___ Walk ___ Public Bus ___ Taxicab ___ Other	___ Driver ___ Passenger # Household members in car Total # of Persons in Vehicle
Trip 2	___:___ AM PM Mileage Reading	**Same as Previous Trip End (Last Stop)**	___:___ AM PM Mileage Reading	Name of Place (Very Important) Address (Very Important) Or the nearest Street Intersection of and City	___ Work ___ Job Related ___ Shopping ___ School ___ Home ___ Medical ___ Recreation ___ Eat a Meal ___ Other	___ Home ___ Work Place ___ School ___ Store ___ Restaurant ___ Friend's House ___ Recreation Place ___ Other (Specify)	___ Car/Van or Pickup Truck ___ Bicycle ___ School Bus ___ Motorcycle ___ Rail ___ Walk ___ Public Bus ___ Taxicab ___ Other	___ Driver ___ Passenger # Household members in car Total # of Persons in Vehicle
Trip 3	___:___ AM PM Mileage Reading	**Same as Previous Trip End (Last Stop)**	___:___ AM PM Mileage Reading	Name of Place (Very Important) Address (Very Important) Or the nearest Street Intersection of and City	___ Work ___ Job Related ___ Shopping ___ School ___ Home ___ Medical ___ Recreation ___ Eat a Meal ___ Other	___ Home ___ Work Place ___ School ___ Store ___ Restaurant ___ Friend's House ___ Recreation Place ___ Other (Specify)	___ Car/Van or Pickup Truck ___ Bicycle ___ School Bus ___ Motorcycle ___ Rail ___ Walk ___ Public Bus ___ Taxicab ___ Other	___ Driver ___ Passenger # Household members in car Total # of Persons in Vehicle
Trip 4	___:___ AM PM Mileage Reading	**Same as Previous Trip End (Last Stop)**	___:___ AM PM Mileage Reading	Name of Place (Very Important) Address (Very Important) Or the nearest Street Intersection of and City	___ Work ___ Job Related ___ Shopping ___ School ___ Home ___ Medical ___ Recreation ___ Eat a Meal ___ Other	___ Home ___ Work Place ___ School ___ Store ___ Restaurant ___ Friend's House ___ Recreation Place ___ Other (Specify)	___ Car/Van or Pickup Truck ___ Bicycle ___ School Bus ___ Motorcycle ___ Rail ___ Walk ___ Public Bus ___ Taxicab ___ Other	___ Driver ___ Passenger # Household members in car Total # of Persons in Vehicle

For Help or Assistance Call Mary @ 755-3822 or 1-800-286-6692

Go to Next Sheet

Trip No. ▼	Trip Start Information		Trip End Information		Travel Characteristics			
	Start Time & Mileage	I Started at	Arrival Time & Mileage	I Traveled to	Purpose	Destination	Travel Means	Travel Made As
Trip 5	__:__ AM PM Mileage Reading	Same as Previous Trip End (Last Stop)	__:__ AM PM Mileage Reading	Name of Place (Very Important) Address (Very Important) Or the nearest Street Intersection of and City	__Work __Job Related __Shopping __School __Home __Medical __Recreation Eat a Meal __Other	__Home __Work Place __School __Store __Restaurant __Friend's House __Recreation Place __Other (Specify)	__Car/Van or Pickup Truck __Bicycle __School Bus __Motorcycle __Rail __Walk __Public Bus __Taxicab __Other	__Driver __Passenger # Household members in car Total # of Persons in Vehicle
Trip 6	__:__ AM PM Mileage Reading	Same as Previous Trip End (Last Stop)	__:__ AM PM Mileage Reading	Name of Place (Very Important) Address (Very Important) Or the nearest Street Intersection of and City	__Work __Job Related __Shopping __School __Home __Medical __Recreation __Eat a Meal __Other	__Home __Work Place __School __Store __Restaurant __Friend's House __Recreation Place __Other (Specify)	__Car/Van or Pickup Truck __Bicycle __School Bus __Motorcycle __Rail __Walk __Public Bus __Taxicab __Other	__Driver __Passenger # Household members in car Total # of Persons in Vehicle
Trip 7	__:__ AM PM Mileage Reading	Same as Previous Trip End (Last Stop)	__:__ AM PM Mileage Reading	Name of Place (Very Important) Address (Very Important) Or the nearest Street Intersection of and City	__Work __Job Related __Shopping __School __Home __Medical __Recreation __Eat a Meal __Other	__Home __Work Place __School __Store __Restaurant __Friend's House __Recreation Place __Other (Specify)	__Car/Van or Pickup Truck __Bicycle __School Bus __Motorcycle __Rail __Walk __Public Bus __Taxicab __Other	__Driver __Passenger # Household members in car Total # of Persons in Vehicle
Trip 8	__:__ AM PM Mileage Reading	Same as Previous Trip End (Last Stop)	__:__ AM PM Mileage Reading	Name of Place (Very Important) Address (Very Important) Or the nearest Street Intersection of and City	__Work __Job Related __Shopping __School __Home __Medical __Recreation __Eat a Meal __Other	__Home __Work Place __School __Store __Restaurant __Friend's House __Recreation Place __Other (Specify)	__Car/Van or Pickup Truck __Bicycle __School Bus __Motorcycle __Rail __Walk __Public Bus __Taxicab __Other	__Driver __Passenger # Household members in car Total # of Persons in Vehicle

For Help or Assistance Call Mary @ 755-3822 or 1-800-286-6692

Go to Next Sheet

Trip No. ▼	Trip Start Information		Trip End Information		Travel Characteristics			
	Start Time & Mileage	I Started at	Arrival Time & Mileage	I Traveled to	Purpose	Destination	Travel Means	Travel Made As
Trip 9	___:___ AM PM Mileage Reading	Same as Previous Trip End (Last Stop)	___:___ AM PM Mileage Reading	Name of Place (Very Important) Address (Very Important) Or the nearest Street Intersection of and City	__Work __Job Related __Shopping __School __Home __Medical __Recreation __Eat a Meal __Other	__Home __Work Place __School __Store __Restaurant __Friend's House __Recreation Place __Other (Specify)	__Car/Van or Pickup Truck __Bicycle __School Bus __Motorcycle __Rail __Walk __Public Bus __Taxicab __Other	__Driver __Passenger # Household members in car Total # of Persons in Vehicle
Trip 10	___:___ AM PM Mileage Reading	Same as Previous Trip End (Last Stop)	___:___ AM PM Mileage Reading	Name of Place (Very Important) Address (Very Important) Or the nearest Street Intersection of and City	__Work __Job Related __Shopping __School __Home __Medical __Recreation __Eat a Meal __Other	__Home __Work Place __School __Store __Restaurant __Friend's House __Recreation Place __Other (Specify)	__Car/Van or Pickup Truck __Bicycle __School Bus __Motorcycle __Rail __Walk __Public Bus __Taxicab __Other	__Driver __Passenger # Household members in car Total # of Persons in Vehicle
Trip 11	___:___ AM PM Mileage Reading	Same as Previous Trip End (Last Stop)	___:___ AM PM Mileage Reading	Name of Place (Very Important) Address (Very Important) Or the nearest Street Intersection of and City	__Work __Job Related __Shopping __School __Home __Medical __Recreation __Eat a Meal __Other	__Home __Work Place __School __Store __Restaurant __Friend's House __Recreation Place __Other (Specify)	__Car/Van or Pickup Truck __Bicycle __School Bus __Motorcycle __Rail __Walk __Public Bus __Taxicab __Other	__Driver __Passenger # Household members in car Total # of Persons in Vehicle
Trip 12	___:___ AM PM Mileage Reading	Same as Previous Trip End (Last Stop)	___:___ AM PM Mileage Reading	Name of Place (Very Important) Address (Very Important) Or the nearest Street Intersection of and City	__Work __Job Related __Shopping __School __Home __Medical __Recreation __Eat a Meal __Other	__Home __Work Place __School __Store __Restaurant __Friend's House __Recreation Place __Other (Specify)	__Car/Van or Pickup Truck __Bicycle __School Bus __Motorcycle __Rail __Walk __Public Bus __Taxicab __Other	__Driver __Passenger # Household members in car Total # of Persons in Vehicle

For Help or Assistance Call Mary @ 755-3822 or 1-800-286-6692

For Additional Trips use Extra Sheet(s)

Sheet 3 of 3 sheets

Florida Department of Transportat · Broward Travel Characteristics Study

(Extra Sheet for Additional Trips)

Trip No. ▼	Trip Start Information		Trip End Information		Travel Characteristics			
	Start Time & Mileage	**I Started at**	**Arrival Time & Mileage**	**I Traveled to**	**Purpose**	**Destination**	**Travel Means**	**Travel Made As**
Trip ___	___:___ AM PM Mileage Reading	**Same as Previous Trip End (Last Stop)**	___:___ AM PM Mileage Reading	______ Name of Place (Very Important) ______ Address (Very Important) **Or** the nearest Street Intersection of ______ and ______ City ______	__ Work __ Job Related __ Shopping __ School __ Home __ Medical __ Recreation __ Eat a Meal __ Other ______	__ Home __ Work Place __ School __ Store __ Restaurant __ Friend's House __ Recreation Place __ Other (Specify) ______	__ Car/Van or Pickup Truck __ Bicycle __ School Bus __ Motorcycle __ Rail __ Walk __ Public Bus __ Taxicab __ Other	__ Driver __ Passenger ______ # Household members in car ______ Total # of Persons in Vehicle
Trip ___	___:___ AM PM Mileage Reading	**Same as Previous Trip End (Last Stop)**	___:___ AM PM Mileage Reading	______ Name of Place (Very Important) ______ Address (Very Important) **Or** the nearest Street Intersection of ______ and ______ City ______	__ Work __ Job Related __ Shopping __ School __ Home __ Medical __ Recreation __ Eat a Meal __ Other ______	__ Home __ Work Place __ School __ Store __ Restaurant __ Friend's House __ Recreation Place __ Other (Specify) ______	__ Car/Van or Pickup Truck __ Bicycle __ School Bus __ Motorcycle __ Rail __ Walk __ Public Bus __ Taxicab __ Other	__ Driver __ Passenger ______ # Household members in car ______ Total # of Persons in Vehicle
Trip ___	___:___ AM PM Mileage Reading	**Same as Previous Trip End (Last Stop)**	___:___ AM PM Mileage Reading	______ Name of Place (Very Important) ______ Address (Very Important) **Or** the nearest Street Intersection of ______ and ______ City ______	__ Work __ Job Related __ Shopping __ School __ Home __ Medical __ Recreation __ Eat a Meal __ Other ______	__ Home __ Work Place __ School __ Store __ Restaurant __ Friend's House __ Recreation Place __ Other (Specify) ______	__ Car/Van or Pickup Truck __ Bicycle __ School Bus __ Motorcycle __ Rail __ Walk __ Public Bus __ Taxicab __ Other	__ Driver __ Passenger ______ # Household members in car ______ Total # of Persons in Vehicle
Trip ___	___:___ AM PM Mileage Reading	**Same as Previous Trip End (Last Stop)**	___:___ AM PM Mileage Reading	______ Name of Place (Very Important) ______ Address (Very Important) **Or** the nearest Street Intersection of ______ and ______ City ______	__ Work __ Job Related __ Shopping __ School __ Home __ Medical __ Recreation __ Eat a Meal __ Other ______	__ Home __ Work Place __ School __ Store __ Restaurant __ Friend's House __ Recreation Place __ Other (Specify) ______	__ Car/Van or Pickup Truck __ Bicycle __ School Bus __ Motorcycle __ Rail __ Walk __ Public Bus __ Taxicab __ Other	__ Driver __ Passenger ______ # Household members in car ______ Total # of Persons in Vehicle

For Help or Assistance Call Mary @ 755-3822 or 1-800-286-6692

Sheet___ of ___ sheets

BROWARD TRAVEL CHARACTERISTICS STUDY
DIRECT UTILITY ASSESSMENT (DUA) QUESTIONNAIRE

Instructions for Completing the DIRECT UTILITY ASSESSMENT (DUA) QUESTIONNAIRE forms:

1. PURPOSE OF THIS DUA QUESTIONNAIRE:

We are trying to obtain your reactions to using different types of transportation for travel within Broward County. The following forms present you with several situations which compare your current choice of transportation to other means of transportation, such as bus, Tri-Rail, and car pool. The transit modes which are compared may not be currently available, but could be provided to better serve Broward County's transportation needs in the future.

2. THIS DUA QUESTIONAIRE SHOULD BE COMPLETED BY:

Either the contact person from the Telephone Survey or one of the adult members of the household should complete this DUA survey.

Name of the Person who completed this form: _____

Your home address: _____

3. YOUR CURRENT TRAVEL CHOICE:

Please indicate below the primary type of transportation that you use to make your WORK TRIPS:

☐ Drive Alone ☐ Car Pool ☐ County Bus System (BCt) ☐ Tri-Rail ☐ Other: please specify _____

Please indicate below the primary type of transportation that you use to make your NON-WORK TRIPS (e.g., shopping trips, social trips, recreational trips, etc.):

☐ Drive Alone ☐ Car Pool ☐ County Bus System (BCt) ☐ Tri-Rail ☐ Other: please specify _____

If the County Bus System (BCt) or Tri-Rail is used:

How do you get to the station or bus stop?

☐ Walk ☐ Auto ☐ Other: please specify_____

How do you get from the station or bus stop to your final destination?

☐ Walk ☐ Tri-Rail Feeder Bus ☐ Other: please specify_____

4. COMPARE CHOICES:

Within each case you are asked to consider several factors. These factors include total travel time, cost, and accessibility as examples. You will be comparing the type(s) of transportation you use for both WORK and NON-WORK trips against other means of travel. Carefully consider the combination of factors in each case and indicate your preference by circling one of the five choices: Definitely my current choice, Probably my current choice, Do not know, Probably alternative mode, or Definitely alternative mode.

5. IF YOU NEED HELP: call **Mary** at **755-3822** or toll-free **1-800-286-6692.**

6. When completed, please return the DUA Survey with the other survey forms in the pre-addressed postage paid envelope. Thank you for your assistance.

Your "CURRENT CHOICE" versus "COUNTY BUS SYSTEM (BCt)"

CASE	*ONE-WAY BUS TRAVEL TIME (including time required to travel to and from the bus stop)*	*BUS FREQUENCY*	*ONE-WAY BUS COST*	*TYPE OF BUS SERVICE*	*YOUR CHOICE*				
					Definitely My Current Choice	*Probably My Current Choice*	*Do Not Know*	*Probably BCt*	*Definitely BCt*
A	Bus is 10 minutes slower than Current Choice	Every 10 minutes	$ 0.75	Express	For WORK trips: 1	2	3	4	5
					For NON-WORK trips: 1	2	3	4	5
B	Bus is 10 minutes slower than Current Choice	Every 10 minutes	$1.25	Local	For WORK trips: 1	2	3	4	5
					For NON-WORK trips: 1	2	3	4	5
C	Bus is 10 minutes slower than Current Choice	Every 20 minutes	$0.75	Local	For WORK trips: 1	2	3	4	5
					For NON-WORK trips: 1	2	3	4	5
D	Bus is 10 minutes slower than Current Choice	Every 20 minutes	$1.25	Express	For WORK trips: 1	2	3	4	5
					For NON-WORK trips: 1	2	3	4	5
E	Bus is 15 minutes slower than Current Choice	Every 10 minutes	$0.75	Local	For WORK trips: 1	2	3	4	5
					For NON-WORK trips: 1	2	3	4	5
F	Bus is 15 minutes slower than Current Choice	Every 10 minutes	$1.25	Express	For WORK trips: 1	2	3	4	5
					For NON-WORK trips: 1	2	3	4	5
G	Bus is 15 minutes slower than Current Choice	Every 20 minutes	$0.75	Express	For WORK trips: 1	2	3	4	5
					For NON-WORK trips: 1	2	3	4	5
H	Bus is 15 minutes slower than Current Choice	Every 20 minutes	$1.25	Local	For WORK trips: 1	2	3	4	5
					For NON-WORK trips: 1	2	3	4	5

Your "CURRENT CHOICE" versus "TRI-RAIL"

CASE	ONE-WAY TRI-RAIL TRAVEL TIME (including time required to travel to and from the Tri-Rail station)	TRI-RAIL FREQUENCY	ONE-WAY TRI-RAIL COST	METHOD OF TRI-RAIL ACCESS	YOUR CHOICE				
					Definitely My Current Choice	Probably My Current Choice	Do Not Know	Probably Tri-Rail	Definitely Tri-Rail
A	Tri-Rail is 10 minutes slower than Current Choice	Every 30 minutes	$ 2.00	Park-and-Ride	For WORK trips: 1	2	3	4	5
					For NON-WORK trips: 1	2	3	4	5
B	Tri-Rail is 10 minutes slower than Current Choice	Every 30 minutes	$3.00	Tri-Rail Feeder Bus	For WORK trips: 1	2	3	4	5
					For NON-WORK trips: 1	2	3	4	5
C	Tri-Rail is 10 minutes slower than Current Choice	Every 60 minutes	$2.00	Tri-Rail Feeder Bus	For WORK trips: 1	2	3	4	5
					For NON-WORK trips: 1	2	3	4	5
D	Tri-Rail is 10 minutes slower than Current Choice	Every 60 minutes	$3.00	Park-and-Ride	For WORK trips: 1	2	3	4	5
					For NON-WORK trips: 1	2	3	4	5
E	Tri-Rail is 15 minutes slower than Current Choice	Every 30 minutes	$2.00	Tri-Rail Feeder Bus	For WORK trips: 1	2	3	4	5
					For NON-WORK trips: 1	2	3	4	5
F	Tri-Rail is 15 minutes slower than Current Choice	Every 30 minutes	$3.00	Park-and-Ride	For WORK trips: 1	2	3	4	5
					For NON-WORK trips: 1	2	3	4	5
G	Tri-Rail is 15 minutes slower than Current Choice	Every 60 minutes	$2.00	Park-and-Ride	For WORK trips: 1	2	3	4	5
					For NON-WORK trips: 1	2	3	4	5
H	Tri-Rail is 15 minutes slower than Current Choice	Every 60 minutes	$3.00	Tri-Rail Feeder Bus	For WORK trips: 1	2	3	4	5
					For NON-WORK trips: 1	2	3	4	5

Your "CURRENT CHOICE" versus "CAR POOL"

CASE	ONE-WAY CAR POOL TRAVEL TIME (including time required to pick up and drop off)	NUMBER OF PEOPLE IN CAR POOL	HIGH OCCUPANCY VEHICLE (HOV) LANE	PARKING INCENTIVES	YOUR CHOICE Definitely My Current Choice / Probably My Current Choice / Do Not Know / Probably Car Pool / Definitely Car Pool
A	Car Pool is 5 minutes slower than Current Choice	2	Yes	Preferred Parking	For WORK trips: 1 2 3 4 5 For NON-WORK trips: 1 2 3 4 5
B	Car Pool is 5 minutes slower than Current Choice	2	No	Regular Parking	For WORK trips: 1 2 3 4 5 For NON-WORK trips: 1 2 3 4 5
C	Car Pool is 5 minutes slower than Current Choice	3	Yes	Regular Parking	For WORK trips: 1 2 3 4 5 For NON-WORK trips: 1 2 3 4 5
D	Car Pool is 5 minutes slower than Current Choice	3	No	Preferred Parking	For WORK trips: 1 2 3 4 5 For NON-WORK trips: 1 2 3 4 5
E	Car Pool is 10 minutes slower than Current Choice	2	Yes	Regular Parking	For WORK trips: 1 2 3 4 5 For NON-WORK trips: 1 2 3 4 5
F	Car Pool is 10 minutes slower thanCurrent Choice	2	No	Preferred Parking	For WORK trips: 1 2 3 4 5 For NON-WORK trips: 1 2 3 4 5
G	Car Pool is 10 minutes slower than Current Choice	3	Yes	Preferred Parking	For WORK trips: 1 2 3 4 5 For NON-WORK trips: 1 2 3 4 5
H	Car Pool is 10 minutes slower than Current Choice	3	No	Regular Parking	For WORK trips: 1 2 3 4 5 For NON-WORK trips: 1 2 3 4 5

For the following questions, we are trying to determine your satisfaction with the performance of each of the travel modes listed. While some of the travel modes listed may not be currently available to you, please use your general perception about such modes to answer the following questions. In each question below, please indicate the degree of satisfaction for each modal characteristics. A smaller number represents a higher level of satisfaction, a larger number represents a lower level of satisfaction.

A. Please indicate, by circling the appropriate number, your satisfaction with the TRAVEL TIME for each of the following travel modes:

	Very Satisfied	Satisfied	Neutral	Unsatisfied	Very Unsatisfied
Drive Alone	1	2	3	4	5
County Bus System (BCt)	1	2	3	4	5
Car Pool	1	2	3	4	5
Tri-Rail Train	1	2	3	4	5
Tri-Rail Feeder Bus	1	2	3	4	5

B. Please indicate, by circling the appropriate number, your satisfaction with the TRAVEL COST for each of the following travel modes:

	Very Satisfied	Satisfied	Neutral	Unsatisfied	Very Unsatisfied
Drive Alone	1	2	3	4	5
County Bus System (BCt)	1	2	3	4	5
Car Pool	1	2	3	4	5
Tri-Rail Train	1	2	3	4	5
Tri-Rail Feeder Bus	1	2	3	4	5

C. Please indicate, by circling the appropriate number, your satisfaction with the CONVENIENCE for each of the following travel modes: (Convenience means easy access, flexible schedules, availability when needed, etc.)

	Very Satisfied	Satisfied	Neutral	Unsatisfied	Very Unsatisfied
Drive Alone	1	2	3	4	5
County Bus System (BCt)	1	2	3	4	5
Car Pool	1	2	3	4	5
Tri-Rail Train	1	2	3	4	5
Tri-Rail Feeder Bus	1	2	3	4	5

D. Please indicate, by circling the appropriate number, your satisfaction with the SAFETY for each of the following travel modes: (Safety from crime, safety from accident, protection from bad weather, etc.)

	Very Satisfied	Satisfied	Neutral	Unsatisfied	Very Unsatisfied
Drive Alone	1	2	3	4	5
County Bus System (BCt)	1	2	3	4	5
Car Pool	1	2	3	4	5
Tri-Rail Train	1	2	3	4	5
Tri-Rail Feeder Bus	1	2	3	4	5

E. Please indicate, by circling the appropriate number, your satisfaction with the COMFORT for each of the following travel modes: (Comfort of seating, feeling of relaxation, feeling of privacy, etc.)

	Very Satisfied	Satisfied	Neutral	Unsatisfied	Very Unsatisfied
Drive Alone	1	2	3	4	5
County Bus System (BCt)	1	2	3	4	5
Car Pool	1	2	3	4	5
Tri-Rail Train	1	2	3	4	5
Tri-Rail Feeder Bus	1	2	3	4	5

F. Please indicate, by circling the appropriate number, your satisfaction with the RELIABILITY for each of the following travel modes: (Arriving at the destination on time, free from mechanical problems, etc.)					
	Very Satisfied	Satisfied	Neutral	Unsatisfied	Very Unsatisfied
Drive Alone	1	2	3	4	5
County Bus System (BCt)	1	2	3	4	5
Car Pool	1	2	3	4	5
Tri-Rail Train	1	2	3	4	5
Tri-Rail Feeder Bus	1	2	3	4	5

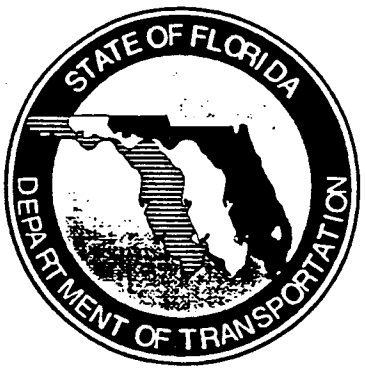
Now, please indicate the IMPORTANCE level for each of the above modal characteristics in your decision of choosing a travel mode. A smaller number means it is more important, a larger number means it is less important.

	Very Important	**Important**	**Neutral**	**Un-important**	**Very Un-important**
Travel Time	1	2	3	4	5
Travel Cost	1	2	3	4	5
Convenience	1	2	3	4	5
Safety	1	2	3	4	5
Comfort	1	2	3	4	5
Reliability	1	2	3	4	5

This Direct Utility Assessment Survey is now concluded. Please use the space below for any comments and place the DUA Survey in the return envelope and mail with the rest of your forms. Thank you for your participation!

Comments on Broward County's Transportation System

Broward Travel Characteristics Study



Travel Log
Instruction Package

(to be reviewed by Adult Household Member)

March 1996

Introduction

This package has been prepared to provide instructions and information useful to completing the questionnaires and Travel Logs for the *Broward Travel Characteristics Study*. This instruction package should be reviewed by the adult household member that will be in charge of completing and coordinating survey responses. Your participation and careful completion of the attached forms will greatly assist the Florida Department of Transportation in planning for the future transportation needs of Broward County.

To help in completing the various questionnaires and Travel Logs the following sections are included:

1. Household Verification Survey
2. Daily Travel Logs
3. Direct Utility Assessment (DUA) Questionnaire
4. Returning Questionnaires and Travel Logs

Please refer to the respective section prior to completing each particular item. Remember the Travel Log is assigned to be completed on your "Travel Log Survey Day." If you have questions or need assistance please call Mary at **755-3822** or **1-800-286-6692.**

The Florida Department of Transportation appreciates your time and effort in assisting in this important Study. The information you provide will help identify the travel needs of Broward County residents.

1. Household Verification Survey

The Household Verification Survey is a follow-up to the telephone survey. The telephone survey provided generalized household characteristics such as dwelling unit type, household size and number of passenger vehicles. The Household Verification Survey provides confirmation of the prior telephone survey information, identifies the household's Trip Maker's Profiles and additional important information that can form the basis for understanding travel characteristics of Broward County.

The Household Verification Survey consists of seven (7) questions which will assist the Florida Department of Transportation in classifying households relative to population, Trip Maker Profile, life cycle characteristics, automobile availability and income characteristics.

The survey has been prepared to be almost self-explanatory. Questions can be completed by either marking the appropriate box provided or by printing the number of the household characteristic requested. Information obtained from this survey will be grouped into similar type households to develop representative characteristics.

An example Household Verification Survey is provided on the following page. The household family in this example is a four (4) person family with one (1) person employed full time, one (1) homemaker, one (1) child in elementary school and one (1) child in high school. The family has two (2) autos. This household example will also be used as the example in the Travel Log discussion.

Please complete your survey and return the survey with your Travel Logs. For help or assistance, please call Mary toll-free at **755-3822** or **1-800-286-6692.**

BROWARD TRAVEL CHARACTERISTICS STUDY
HOUSEHOLD VERIFICATION SURVEY

1. Please indicate your household dwelling unit type:

☒ Single Family Home - Detached	☐ Apartment - Rental	☐ Hotel or Motel
☐ Duplex, Triplex, Quadplex	☐ Apartment - Condominium	☐ Other
☐ Townhouse - Single Family Attached	☐ Mobile Home	Specify _____

2. Do you own or rent? Own ☒ Rent ☐ Other (specify) _____

3. Including yourself, how many people live in your household? Please include anyone living there now, such as relatives or borders, and anyone who usually lives there but is now away from home such as someone traveling or in the hospital. Do not include anyone who usually lives somewhere else. 4

4. How many in your household:
   - How many are 5 years or older? _____
   - Have full time jobs (35 hrs. or more per week)? 1
   - Have part time jobs? (Less than 35 hrs. during Weekday Only) 1
   - How many are retired? _____
   - Are licensed drivers (excluding training permits)? 2
   - How many passenger vehicles (*cars, trucks less than 1 ton, motorcycles or vans*) are regularly used by members of your household? 2

5. This question will identify the Travel Maker Profile. For each of your household member, how many persons living in your household are:

Travel Maker
Profile Code

- **A.** Working in the field, (*such as groves or construction sites,*) but go to one site each day _____
- **B.** Working with extensive driving, visiting at least 2 different sites per day, (*such as traveling sales, or delivery workers*) _____
- **C.** Working and Earning income at the home address _____
- **D.** Working outside of the home at an office, store, plant, or business 1
- **E.** Retired _____
- **F.** Homemaker 1
- **G.** Unemployed _____
- **H.** Pre-school children _____
- **I.** Children in school 2 (Kindergarten - 12)
- **J.** College Students living at home _____
- **K.** Schooled at home _____(Kindergarten - 12)
- **L.** Dropped off, or ride with others by auto to school _____(Kindergarten - 12)
- **M.** Bused to school 2 (Kindergarten - 12)
- **N.** Drive themselves to school _____ (High School only)
- **O.** Walk or Bike to school _____(Kindergarten - 12)
- **P.** Walk or Bike to school _____(College)
- **Q.** Commute to College by auto _____

6. Do you live here 6 or more months per year? Yes ☒ No ☐
   (If No) How many months per year do you live here _____
   During what months do you live here _____to _____

7. What was your approximate total family income before taxes in 1995? (*Check one*)

☐ Under $10,000	☐ $30,000 - $40,000	☐ $60,000 - $70,000
☐ $10,000 - $20,000	☒ $40,000 - $50,000	☐ $70,000 - $80,000
☐ $20,000 - $30,000	☐ $50,000 - $60,000	☐ Over $80,000

Thank you very much for taking the time to answer these questions.
Please place in return envelope with travel logs for ma[illegible] help or assistance call Mary at **1-800-286-6692**.

2. Daily Travel Logs

The Daily Travel Logs will be used to develop improved computerized travel models for Broward County. The Travel Logs are to be used by each household member older than five (5) years of age, regardless of whether the household member is a passenger or driver. The Travel Logs are to be used on your assigned day of the week. This day is the only day for which you should complete the form. It is important that all trips made, regardless of the number or distance, are logged for each household member during the 24 hour period.

In transportation studies, the definition of a trip may be different than those commonly understood. For example, a trip to the store and return trip that has one stop along the way, is defined as three (3) trips. Each stop, regardless of the length of time stopped, is considered a trip. To help understand this concept, an illustration is provided on the following page. This trip concept should be used in completing the Daily Travel Log.

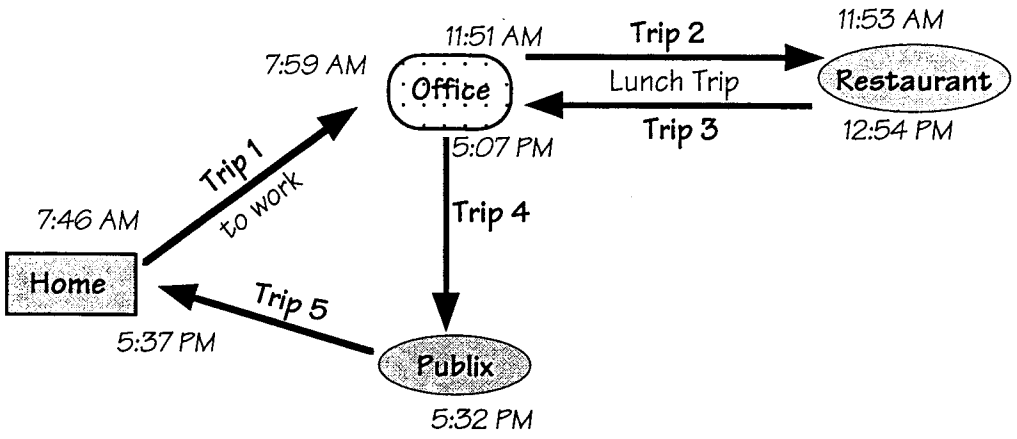
Reduced copies of the three Daily Travel Logs are provided on pages 6 - 8. The examples are based on the four (4) person family previously described in the Household Verification Survey. The following three (3) examples are provided to illustrate the daily trips of the three (3) household members.

Example 1 Husband (Travel Maker Profile Code "D") - Drives from home to the office (**trip 1**); goes to a business lunch out of the office (**trip 2**) and then returns to the office (**trip 3**); leaves the office to return home but stops at the store to pickup some items (**trip 4**) before arriving at home (**trip 5**). The daily log should include all five (5) trips. The example shown on page 6 illustrates the first four trips on sheet 1. Sheet 2 of the Travel Log should be used to indicate the 5th trip.

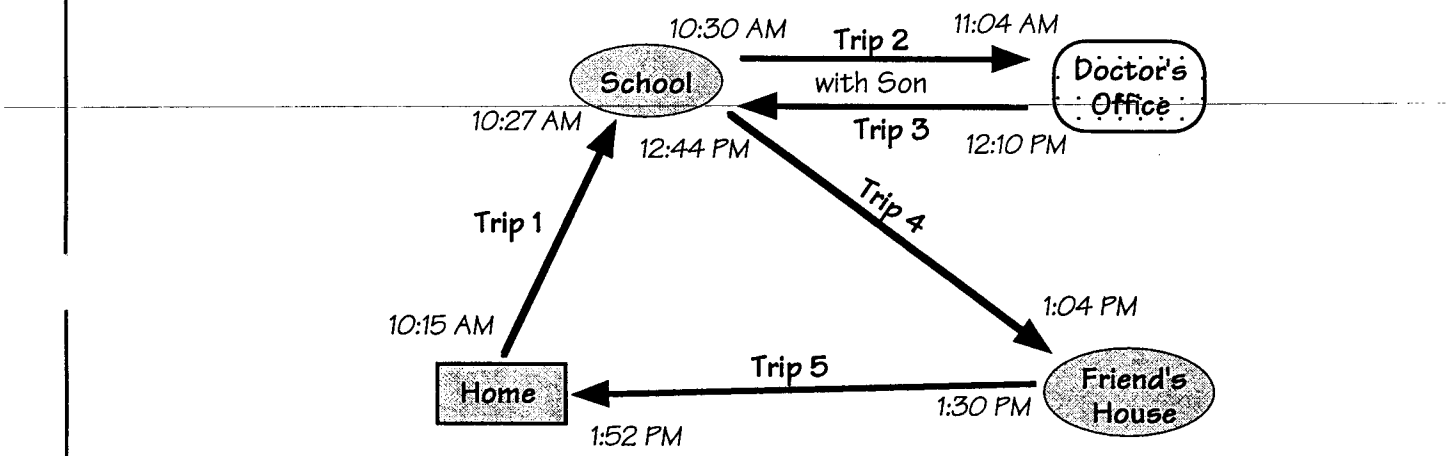
Example 2 Wife (Travel Maker Profile Code "F") - Leaves the house to pick up the 6th grade child at school (**trip 1**); goes from school to the Doctor's office (**trip 2**); leaves the Doctor's office returning the child to school (**trip 3**); visits a friend's house (**trip 4**) and then returns home (**trip 5**). This log would total five (5) trips requiring two Travel Log sheets.

Example 3 Sixth Grade Child (Travel Maker Profile Code "I") - Leaves the house and rides the school bus to school (**trip 1**); leaves school with mother to go to the Doctor (**trip 2**); returns to school with mother from Doctor (**trip 3**); and returns home on the school bus (**trip 4**). This totals four (4) trips.

Example 1: Husband (Travel Maker Profile Code "D")



Example 2: Wife (Travel Maker Profile Code "F")



Example 3: Sixth Grade Child (Travel Maker Profile Code "I")

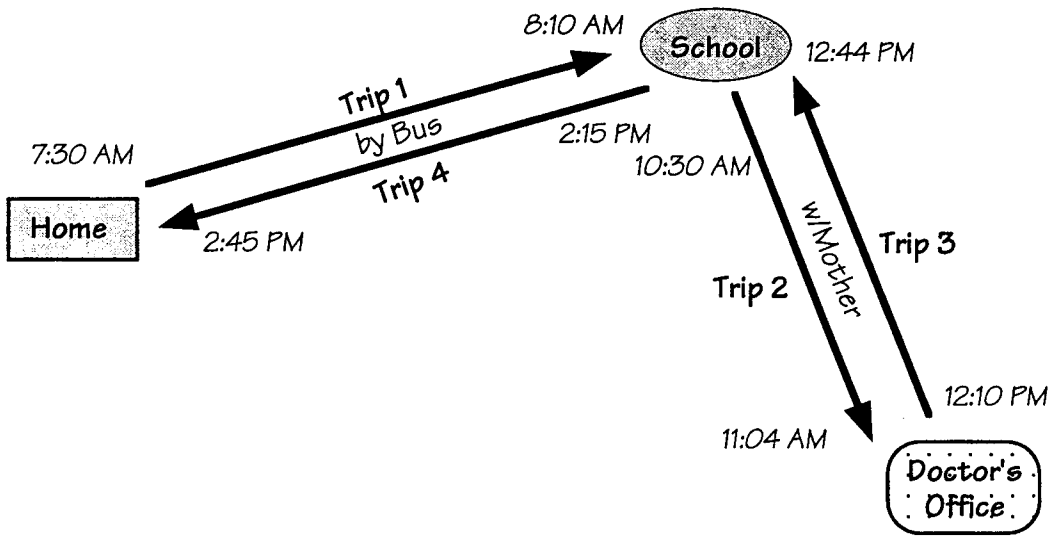


Figure 1 - Trip Examples

Florida Department of Transportation • Broward Travel Characteristics Study

1. Household Number Name: John Smith

2. Travel Maker's Profile Code: D (from Household Verification Survey Question 6)

3. Relationship to John (First Name of Household Contact Person from Telephone Survey)

✓ Self ___ Husband/Wife ___ Son/Daugther ___ Brother/Sister ___ Father/Mother ___ Other Relative ___ Non-Relative

EXAMPLE #1

4. Year of Birth 19 59

5. Usual or Main Weekday Activity

✓ Working (40 Hours/Week)
___ Keeping House
___ Going to School
___ Retired
___ Other (Specify) ___

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☐ **Did Not Travel on Assigned Day (Please Check)**

Trip No.	Trip Start Information: Start Time & Mileage	Trip Start Information: I Started at	Trip End Information: Arrival Time & Mileage	Trip End Information: I Traveled to	Travel Characteristics: Purpose	Destination	Travel Means	Travel Made As
Trip 1	7:46 AM / PM; 783 Mileage Reading	Home (Name of Place); 3201 N.W. 111 Avenue (Address) Or the nearest Street Intersection of and ; City	7:59 AM / PM; 786 Mileage Reading	Sunrise Towers Bldg. (Name of Place); 3111 University Drive (Address) Or the nearest Street Intersection of and ; City Coral Springs	✓Work; Job Related; Shopping; School; Home; Medical; Recreation; Eat a Meal; Other	Home; ✓Work Place; School; Store; Restaurant; Friend's House; Recreation Place; Other (Specify)	✓Car/Van or Pickup Truck; Bicycle; School Bus; Motorcycle; Rail; Walk; Public Bus; Taxicab; Other	✓Driver; Passenger; # Household members in car: 1; Total # of Persons in Vehicle
Trip 2	11:51 AM / PM; 786 Mileage Reading	Same as Previous Trip End (Last Stop)	11:53 AM / PM; 788 Mileage Reading	Red Lobster (Name of Place); 2000 University Drive (Address) Or the nearest Street Intersection of and ; City Coral Springs	Work; Job Related; Shopping; School; Home; Medical; ✓Recreation; ✓Eat a Meal; Other	Home; Work Place; School; Store; ✓Restaurant; Friend's House; Recreation Place; Other (Specify)	✓Car/Van or Pickup Truck; Bicycle; School Bus; Motorcycle; Rail; Walk; Public Bus; Taxicab; Other	✓Driver; Passenger; # Household members in car: 1; Total # of Persons in Vehicle
Trip 3	12:54 AM / PM; 788 Mileage Reading	Same as Previous Trip End (Last Stop)	12:56 AM / PM; 790 Mileage Reading	OFFICE (Name of Place); Address Or the nearest Street Intersection of and ; City	✓Work; Job Related; Shopping; School; Home; Medical; Recreation; Eat a Meal; Other	Home; ✓Work Place; School; Store; Restaurant; Friend's House; Recreation Place; Other (Specify)	✓Car/Van or Pickup Truck; Bicycle; School Bus; Motorcycle; Rail; Walk; Public Bus; Taxicab; Other	✓Driver; Passenger; # Household members in car: 1; Total # of Persons in Vehicle
Trip 4	5:07 AM / PM; 790 Mileage Reading	Same as Previous Trip End (Last Stop)	5:11 AM / PM; 792 Mileage Reading	Publix (Name of Place); 3451 University Drive (Address) Or the nearest Street Intersection of and ; City Coral Springs	Work; Job Related; ✓Shopping; School; Home; Medical; Recreation; Eat a Meal; Other	Home; Work Place; School; ✓Store; Restaurant; Friend's House; Recreation Place; Other (Specify)	✓Car/Van or Pickup Truck; Bicycle; School Bus; Motorcycle; Rail; Walk; Public Bus; Taxicab; Other	✓Driver; Passenger; # Household members in car: 1; Total # of Persons in Vehicle

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Florida Department of Transportatio • **Broward Travel Characteristics Study**

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1. Household Number Name: Mary Smith
2. Travel Maker's Profile Code: F (from Household Verification Survey Question 6)
3. Relationship to John (First Name of Household Contact Person from Telephone Survey)
   - ___ Self
   - ✓ Husband/Wife
   - ___ Son/Daugther
   - ___ Brother/Sister
   - ___ Father/Mother
   - ___ Other Relative
   - ___ Non-Relative

Example #2

4. Year of Birth 19 55
5. Usual or Main Weekday Activity
   - ___ Working (___ Hours/Week)
   - ✓ Keeping House
   - ___ Going to School
   - ___ Retired
   - ___ Other (Specify) ___

☐ **Did Not Travel on Assigned Day (Please Check)**

Trip No.	Trip Start Information: Start Time & Mileage	Trip Start Information: I Started at	Trip End Information: Arrival Time & Mileage	Trip End Information: I Traveled to	Travel Characteristics: Purpose	Destination	Travel Means	Travel Made As
Trip 1	10:15 (AM) PM 261 Mileage Reading	Home (Name of Place) 3201 N.W. 111 Avenue (Address) Or the nearest Street Intersection of ___ and ___ City ___	10:27 (AM) PM 263 Mileage Reading	Coral Springs Middle School (Name of Place) 10300 Wiles Road (Address) Or the nearest Street Intersection of ___ and ___ City Coral Springs	___ Work ___ Job Related ___ Shopping ✓ School ___ Home ___ Medical ___ Recreation ___ Eat a Meal ___ Other	___ Home ___ Work Place ✓ School ___ Store ___ Restaurant ___ Friend's House ___ Recreation Place ___ Other (Specify)	✓ Car/Van or Pickup Truck ___ Bicycle ___ School Bus ___ Motorcycle ___ Rail ___ Walk ___ Public Bus ___ Taxicab ___ Other	✓ Driver ___ Passenger 1 # Household members in car 1 Total # of Persons in Vehicle
Trip 2	10:30 (AM) PM 263 Mileage Reading	Same as Previous Trip End (Last Stop)	11:04 (AM) PM 279 Mileage Reading	Dr. Atlas' Office (Name of Place) (Address) Or the nearest Street Intersection of N.W. 82 Ave. and Broward Blvd. City Plantation	___ Work ___ Job Related ___ Shopping ___ School ___ Home ✓ Medical ___ Recreation ___ Eat a Meal ___ Other	___ Home ___ Work Place ___ School ___ Store ___ Restaurant ___ Friend's House ___ Recreation Place ✓ Other (Specify) Doctor's	✓ Car/Van or Pickup Truck ___ Bicycle ___ School Bus ___ Motorcycle ___ Rail ___ Walk ___ Public Bus ___ Taxicab ___ Other	✓ Driver ___ Passenger 2 # Household members in car 2 Total # of Persons in Vehicle
Trip 3	12:10 AM (PM) 279 Mileage Reading	Same as Previous Trip End (Last Stop)	12:44 AM (PM) 295 Mileage Reading	Coral Springs Middle School (Name of Place) (Address) Or the nearest Street Intersection of ___ and ___ City ___	___ Work ___ Job Related ✓ Shopping ✓ School ___ Home ___ Medical ___ Recreation ___ Eat a Meal ___ Other	___ Home ___ Work Place ✓ School ___ Store ___ Restaurant ___ Friend's House ___ Recreation Place ___ Other (Specify)	✓ Car/Van or Pickup Truck ___ Bicycle ___ School Bus ___ Motorcycle ___ Rail ___ Walk ___ Public Bus ___ Taxicab ___ Other	✓ Driver ___ Passenger 2 # Household members in car 2 Total # of Persons in Vehicle
Trip 4	12:44 AM (PM) 295 Mileage Reading	Same as Previous Trip End (Last Stop)	1:04 AM (PM) 308 Mileage Reading	Friend's House (Name of Place) (Address) Or the nearest Street Intersection of S.E. 11 Ave. and S.E. 3 ST. City Pompano Beach	___ Work ___ Job Related ___ Shopping ___ School ___ Home ✓ Medical ✓ Recreation ___ Eat a Meal ___ Other	___ Home ___ Work Place ___ School ___ Store ✓ Restaurant ✓ Friend's House ___ Recreation Place ___ Other (Specify)	✓ Car/Van or Pickup Truck ___ Bicycle ___ School Bus ___ Motorcycle ___ Rail ___ Walk ___ Public Bus ___ Taxicab ___ Other	✓ Driver ___ Passenger 1 # Household members in car 1 Total # of Persons in Vehicle

For Help or Assistance Call Mary @ 755-3822 or 1-800-286-6692

Go to Next Sheet

Sheet 1 of 3 sheets

Florida Department of Transportation • Broward Travel Characteristics Study

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1. Household Member Name: Kevin Smith
2. Travel Maker's Profile Code: I (from Household Verification Survey Question 6)
3. Relationship to John (First Name of Household Contact Person from Telephone Survey)
   ___ Self ___ Brother/Sister ___ Non-Relative
   ___ Husband/Wife ___ Father/Mother
   ✓ Son/Daugther ___ Other Relative
4. Year of Birth 19 85
5. Usual or Main Weekday Activity
   ___ Working (___ Hours/Week)
   ___ Keeping House
   ___ Going to School
   ___ Retired
   ___ Other (Specify) ___

☐ **Did Not Travel on Assigned Day (Please Check)**

Example #3

Trip No.	Trip Start Information: Start Time & Mileage	Trip Start Information: I Started at	Trip End Information: Arrival Time & Mileage	Trip End Information: I Traveled to	Travel Characteristics: Purpose	Destination	Travel Means	Travel Made As
Trip 1	7:30 AM / PM — Mileage Reading	Home — Name of Place (Very Important); 3201 N.W. 111 Avenue — Address (Very Important) Or the nearest Street Intersection of and ___; City ___	8:10 AM / PM — Mileage Reading	Coral Springs Middle School — Name of Place (Very Important); 10300 Wiles Road — Address (Very Important) Or the nearest Street Intersection of and ___; City Coral Springs	___ Work ___ Job Related ___ Shopping ✓ School ___ Home ___ Medical ___ Recreation ___ Eat a Meal ___ Other	___ Home ___ Work Place ✓ School ___ Store ___ Restaurant ___ Friend's House ___ Recreation Place ___ Other (Specify)	___ Car/Van or Pickup Truck ___ Bicycle ✓ School Bus ___ Motorcycle ___ Rail ___ Walk ___ Public Bus ___ Taxicab ___ Other	___ Driver ✓ Passenger — # Household members in car — Total # of Persons in Vehicle
Trip 2	10:30 AM / PM 263 Mileage Reading	Same as Previous Trip End (Last Stop)	11:04 AM / PM 279 Mileage Reading	Dr. ATlas' OFFICE — Name of Place (Very Important); Address (Very Important) Or the nearest Street Intersection of N.W. 82 AVE. and Broward Blvd.; City Plantation	___ Work ___ Job Related ___ Shopping ___ School ___ Home ✓ Medical ___ Recreation ___ Eat a Meal ___ Other	___ Home ___ Work Place ___ School ___ Store ___ Restaurant ___ Friend's House ___ Recreation Place ✓ Other (Specify) DOCTOR'S	✓ Car/Van or Pickup Truck ___ Bicycle ___ School Bus ___ Motorcycle ___ Rail ___ Walk ___ Public Bus ___ Taxicab ___ Other	___ Driver ✓ Passenger 2 # Household members in car 2 Total # of Persons in Vehicle
Trip 3	12:10 AM / PM 279 Mileage Reading	Same as Previous Trip End (Last Stop)	12:44 AM / PM 295 Mileage Reading	Coral Springs Middle School — Name of Place (Very Important); Address (Very Important) Or the nearest Street Intersection of and ___; City ___	___ Work ___ Job Related ✓ Shopping ___ School ___ Home ___ Medical ___ Recreation ___ Eat a Meal ___ Other	___ Home ___ Work Place ✓ School ___ Store ___ Restaurant ___ Friend's House ___ Recreation Place ___ Other (Specify)	✓ Car/Van or Pickup Truck ___ Bicycle ___ School Bus ___ Motorcycle ___ Rail ___ Walk ___ Public Bus ___ Taxicab ___ Other	___ Driver ✓ Passenger 2 # Household members in car 2 Total # of Persons in Vehicle
Trip 4	2:15 AM / PM — Mileage Reading	Same as Previous Trip End (Last Stop)	2:45 AM / PM — Mileage Reading	Home — Name of Place (Very Important); Address (Very Important) Or the nearest Street Intersection of and ___; City ___	___ Work ___ Job Related ___ Shopping ___ School ✓ Home ___ Medical ___ Recreation ___ Eat a Meal ___ Other	✓ Home ___ Work Place ___ School ___ Store ___ Restaurant ___ Friend's House ___ Recreation Place ___ Other (Specify)	___ Car/Van or Pickup Truck ___ Bicycle ✓ School Bus ___ Motorcycle ___ Rail ___ Walk ___ Public Bus ___ Taxicab ___ Other	___ Driver ✓ Passenger — # Household members in car — Total # of Persons in Vehicle

General Instructions for Completing Travel Logs

1. Travel Logs are to be completed for each Household Member older than 5 years of age, regardless of whether the travel is made as a driver or passenger.

2. Travel Logs are to be completed for your assigned Travel Day Only. Start by filling out the Biographic Section at the top of the first page of each Travel Log Set. The biographic information should be for the household member whose trips are recorded on the set of Travel Logs. The Travel Maker Profile Code can be found in the Household Verification Survey (see question 5).

3. Please log the exact starting time and last 3 whole digits of the car odometer reading in the first column. This information will be used to determine your travel distance.

4. Information on the starting and ending location is very important. Please provide the street address and street name whenever possible. Always provide the name of the place you are starting from and going to, the street name and city.

5. If the street address is not known, please identify the names of the intersecting streets for the nearest intersection. Example 1 - Trip 2 illustrates this response.

6. Once a location has been logged the first time, it does not have to be totally logged again. For example, if the office address is logged, the next time simply note office and check work site in the Destination column. See Example 1 - Trip 3 and Trip 4.

7. Remember to log all trips during the entire 24 hour period. Each household member will be given three (3) pages of Travel Log forms sufficient to log twelve (12) trips. If additional trips are made, please use the extra blank forms provided.

8. The last three (3) columns of the Travel Log relate to destination, means of travel, and whether you are the driver or passenger during the trip. These columns should be checked with the appropriate response.

9. Your time and efforts are very much appreciated. Remember assistance or help is available. Please call Mary at **755-3822** or **1-800-386-6692** for questions and assistance.

3. Direct Utility Assessment (DUA) Questionnaire

Some households will be asked to also complete the Direct Utility Assessment (DUA) Questionnaire. The DUA Questionnaire will be used to establish preferences for different types of travel choices such as car pooling, and using public bus and tri-rail commuter services.

The DUA Questionnaire has been prepared with self-explanatory instructions and totals six pages. One household member should complete the questionnaire. This can either be the contact person from the Telephone Survey or one of the adult members of the household.

The DUA Questionnaire includes an instruction sheet on the first page followed by five pages of questions. The first three pages of questions deal with your current travel choice versus Bus, Tri-Rail and Shared Ride. The current choice is your travel means used and noted in the Daily Travel Log. For example, your current means of travel may be by car. Several situations are presented involving factors such as travel time, cost and accessibility. These questions should be answered to provide your preferences for travel.

Remember if you need help, please call Mary at **755-3822** or **1-800-286-6692.**

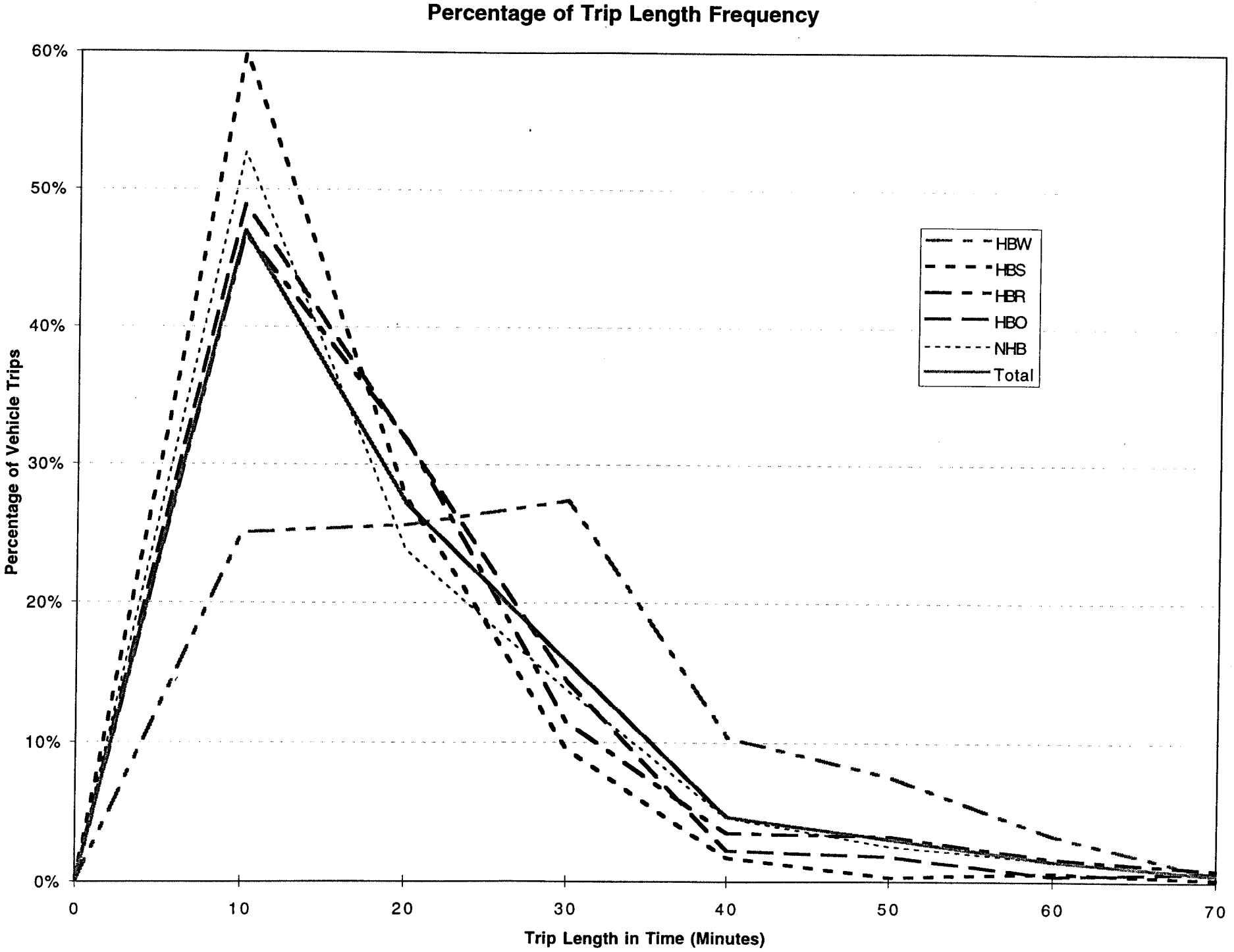
4. Returning Questionnaires and Travel Logs

With completion of the Household Verification Survey, DUA Questionnaire (if selected) and Daily Travel Logs, all survey forms and questionnaires should be returned in the self-addressed, postage paid envelop. Do not return the instruction package, cover letter or unused forms. You will be contacted by telephone after your assigned travel day has passed to verify completion of the forms and to assist you in returning the package. Remember if you need help, please call Mary at **755-3822** or **1-800-286-6692.**

The Florida Department of Transportation appreciates your time and effort in assisting in this important Study. The information you provide will help identify the travel needs of Broward County residents and lead to a more successful transportation system in the future.

Thank You for your assistance.

Appendix B
Trip Length Frequency Graphs


Percentage of Trip Length Frequency
60%
50%
40%
30%
20%
10%
0%
Percentage of Vehicle Trips
0
10
20
30
40
50
60
70
Trip Length in Time (Minutes)
HBW
HBS
HBR
HBO
NHB
Total

Appendix C
GIS Data Attribute Tables

Table 1 - Survey Data Classified by Origin City Code

County	Number of Records
Broward County	5,740 (90.12%)
Palm Beach County	115 (1.81%)
Dade County	188 (2.95%)
Unknown/Others	326 (5.12%)
Total	6,369 (100%)

Table 2 - Survey Data Classified by Origin County Code

County	Number of Records
Broward County	5,739 (90.11%)
Palm Beach County	119 (1.87%)
Dade County	189 (2.97%)
Unknown/Others	322 (5.05%)
Total	6,369 (100%)

Table 3 - Data Items in the Address-matched Point Attribute Table

Description	Item Name	Coding Description
Area (A/I default item)	AREA	
Perimeter (A/I default item)	PERIMETER	
Internal ID (A/I default item)	<cover>#	
User ID (A/I default item)	<cover>-ID	
Address-matching Score	SCORE	
Household ID	HH	
Survey Date	DATE	
Cell ID	CELL	
Individual ID	INDV	
Trip Number	TRIP_NO	
Trip Maker Profile Code	PC	
Trip Starting Time	S_TIME	
Trip Starting Mileage Reading	S_MI	
Trip Origin Address/Intersection Code	S_K	1: street address 2: street intersection
Trip Origin Address/Intersection	STARTED_FR	
Trip Origin City Code	S_CITY	
Trip Origin County Code	S_CO	BW: Broward PB: Palm Beach County DC: Dade County

Description	Item Name	Coding Description
Starting Trip Purpose	S_PUR	1: work 2: Job 3: shopping 4: school 5: home 6: medical 7: recreation 8: eat 9: other
Trip Started from Destination	S_FRM	1: home 2: work place 3: school 4: store 5: restaurant 6: friend's house 7: recreation 8: other
Trip Ending Time	E_TIME	
Trip Destination Mileage Reading	E_MI	
Trip Destination Address/Intersection Code	E_K	1: street address 2: street intersection
Trip Destination Address/Intersection	TRAVELED_TO	
Trip Destination City Code	E_CITY	
Trip Destination County Code	E_CO	Same as S_CO
Ending Trip Purpose	E_PUR	Same as S_PUR
Type of Trip Destination	DES	Same as S_FRM
Travel Means	M	1: car/van/truck 2: bicycle 3: school bus 4: motorcycle 5: rail 6: walk 7: public bus 8: taxi 9: other
Driver/Passenger	DP	1: driver 2: passenger
# of Household Members in Vehicle	NO_HH	
Total # of People in Vehicle	NO_P	
Household Member Name	NAME	
Relationship	REL	1: self 2: husband/wife 3: son/daughter 4: brother/sister 5: father/mother 6: other 7: non-relative
Year of Birth	YOB	
Weekday Activity	WK_ACT	
If Working, Hour per Week	HR_WK	
Standard City Codes used by Broward County Government	SCITY2	

Note: Additonal data items derived from the TAZ coverage are present in the final PAT

DIRECTORY STRUCTURE

All of the files related to this study are stored on the FDOT District 4 Planning Office's RISC-6000 workstation in the directory of /u/gis/application/bctc. Under this directory, the four subdirectories described below were created to organize various files.

/u/gis/application/bctc/broward: This subdirectory stores all of the data files and Arc/Info coverages for Broward County.

/u/gis/application/bctc/palmbeach: This subdirectory stores all of the data files and Arc/Info coverages for Palm Beach County.

/u/gis/application/bctc/dade: This subdirectory stores all of the data files and Arc/Info coverages for Dade County.

/u/gis/application/bctc/final: This subdirectory stores the final address-matched point coverages (i.e., boodmatch, pbodmatch, and dadeodmatch), the final point coverages overlaid with TAZ polygon coverages (i.e., boodtaz, pbodtaz, and dadeodtaz), and the final export files in E00 format (i.e., boodtaz.e00, pbodtaz.e00, and dadeodtaz.e00) of all three counties.

Appendix D
Multiple Classification Analysis

ANOVA - MULTIPLE CLASSIFICATION ANALYSIS
BROWARD COUNTY TRIP RATES

A 2-way analysis of variance and associated multiple classification analysis was performed on the trip log data obtained from the 1996 Broward County Travel Characteristics Study. The two way classification was persons per dwelling unit and number of vehicles per dwelling unit.

Trips were classified as home based work, home based shopping, home based recreational, home based other, home based total (the sum of the four home based trips), and non home based.

The analysis of variance was performed separately for single family detached versus multi-family and other (mobile homes, motel-hotel, and miscellaneous) dwelling units. The following tables presents the statistical inference results:

Single Family

		F	Significance (alpha)
HBW	Main Effects	10.271	.000
	Persons / D.U.	3.486	.008
	Vehicles / D.U.	14.292	.000
	2-way interactions	1.791	.148

		F	Significance (alpha)
HBS	Main Effects	1.608	.144
	Persons / D.U.	2.181	.071
	Vehicles / D.U.	.293	.746
	2-way interactions	.717	.543

		F	Significance (alpha)
HBR	Main Effects	1.222	.294
	Persons / D.U.	1.759	.136
	Vehicles / D.U.	.308	.735
	2-way interactions	.383	.765

		F	Significance (alpha)
HBO	Main Effects	8.280	.000
	Persons / D.U.	10.365	.000
	Vehicles / D.U.	.155	.856
	2-way interactions	.289	.833

		F	Significance (alpha)
HBTOT	Main Effects	13.404	.000
	Persons / D.U.	11.512	.000
	Vehicles / D.U.	2.674	.070
	2-way interactions	.693	.557

		F	Significance (alpha)
NHB	Main Effects	2.989	.007
	Persons / D.U.	1.792	.130
	Vehicles / D.U.	2.565	.078
	2-way interactions	1.445	.229

Multi-Family

		F	Significance (alpha)
HBW	Main Effects	14.394	.000
	Persons / D.U.	5.508	.000
	Vehicles / D.U.	23.260	.000
	2-way interactions	1.406	.231

		F	Significance (alpha)
HBS	Main Effects	6.062	.000
	Persons / D.U.	3.445	.009
	Vehicles / D.U.	6.108	.002
	2-way interactions	.736	.568

		F	Significance (alpha)
HBR	Main Effects	2.088	.053
	Persons / D.U.	1.145	.335
	Vehicles / D.U.	3.959	.020
	2-way interactions	.866	.484

		F	Significance (alpha)
HBO	Main Effects	6.998	.000
	Persons / D.U.	3.271	.012
	Vehicles / D.U.	10.188	.000
	2-way interactions	.206	.935

		F	Significance (alpha)
HBTOT	Main Effects	20.182	.000
	Persons / D.U.	3.000	.018
	Vehicles / D.U.	36.268	.000
	2-way interactions	.889	.470

		F	Significance (alpha)
NHB	Main Effects	9.308	.000
	Persons / D.U.	2.870	.023
	Vehicles / D.U.	13.836	.000
	2-way interactions	1.329	.258

The results generally support the two way classification (persons per dwelling unit and vehicles per dwelling unit) as

statistically significant. The statistical inference results are strongest for the multi-family category, that is, the probability of getting the results obtained in the sample by random chance is very low and thus our confidence in the role of persons per dwelling unit and vehicles per dwelling unit affecting trip rates is very high.

For the single family case the sample results are less compelling for home based shopping and home based recreation trips. For these two trip purposes the effect of persons and vehicles per dwelling unit are not statistically significant at an alpha level of .05. That is, there is a greater than 5 percent chance that the persons and vehicles per dwelling unit classification is not meaningful. This occurs because the within group variation in trip rates is not sufficiently narrow compared to the between group variation. For example, for a given number of persons per dwelling unit the home based shopping and recreation trip rates obtained in the sample vary greatly and thus for these single family trip rates their group (category) trip rate means are not sufficiently different across the 1 thru 5+ persons per dwelling unit classification. Likewise for the number of vehicles per dwelling unit classification.

Nevertheless, the statistical results for the other trip purposes within single family housing are statistically significant and there is no evidence of interaction effects between persons and vehicles per dwelling unit for either single family or multi family housing types.

Hence, the Multiple Classification Analysis was performed using the unadjusted deviations. The following series of tables presents the results. Note that negative values should be interpreted as zero (0) trip rates. A number of the cells in the standard trip rate matrix are not numerically represented in the sample, most likely due to their relatively small proportion in the population.

MULTIPLE CLASSIFICATION ANALYSIS - HOME BASED WORK
Broward County Travel Characteristics Study 1996
Grand Mean - Single Family 1.243

Unadjusted Deviation for Persons per Dwelling Unit

Persons / D.U.	1	2	3	4	5+
Adjustment	-0.43	-0.25	0.12	0.59	1.02

Unadjusted Deviation for Vehicles per Dwelling Unit

Vehicles / D.U.	0	1	2+
Adjustment	-1.24	-0.78	0.33

Trip Rates for Single Family - Home Based Work

	Autos / D.U.	Persons per Dwelling Unit 1	2	3	4	5+
Resident	0	-0.427	-0.247	0.123	0.593	1.023
Single	1	0.033	0.213	0.583	1.053	1.483
Family	2+	1.143	1.323	1.693	2.163	2.593

Grand Mean - Multi-Family 0.493

Unadjusted Deviation for Persons per Dwelling Unit

Persons / D.U.	1	2	3	4	5+
Adjustment	-0.09	-0.05	1.05	0.67	2.01

Unadjusted Deviation for Vehicles per Dwelling Unit

Vehicles / D.U.	0	1	2+
Adjustment	-0.49	-0.17	0.57

Trip Rates for Multi-Family - Home Based Work

	Autos / D.U.	Persons per Dwelling Unit 1	2	3	4	5+
Resident	0	-0.087	-0.047	1.053	0.673	2.013
Multi-	1	0.233	0.273	1.373	0.993	2.333
Family	2+	0.973	1.013	2.113	1.733	3.073

MULTIPLE CLASSIFICATION ANALYSIS - HOME BASED SHOPPING
Broward County Travel Characteristics Study 1996
Grand Mean - Single Family 0.857

Unadjusted Deviation for Persons per Dwelling Unit

Persons / D.U.	1	2	3	4	5+
Adjustment	-0.41	0.09	0	0.17	-0.2

Unadjusted Deviation for Vehicles per Dwelling Unit

Vehicles / D.U.	0	1	2+
Adjustment	-0.86	-0.06	0.03

Trip Rates for Single Family - Home Based Shopping

	Autos / D.U.	Persons per Dwelling Unit 1	2	3	4	5+
Resident	0	-0.413	0.087	-0.003	0.167	-0.203
Single	1	0.387	0.887	0.797	0.967	0.597
Family	2+	0.477	0.977	0.887	1.057	0.687

Grand Mean - Multi-Family 0.695

Unadjusted Deviation for Persons per Dwelling Unit

Persons / D.U.	1	2	3	4	5+
djustment	-0.25	0.22	-0.1	0.3	-0.7

Unadjusted Deviation for Vehicles per Dwelling Unit

Vehicles / D.U.	0	1	2+
Adjustment	-0.65	-0.02	0.25

Trip Rates for Multi-Family - Home Based Shopping

	Autos / D.U.	Persons per Dwelling Unit 1	2	3	4	5+
Resident	0	-0.205	0.265	-0.055	0.345	-0.655
Multi-	1	0.425	0.895	0.575	0.975	-0.025
Family	2+	0.695	1.165	0.845	1.245	0.245

MULTIPLE CLASSIFICATION ANALYSIS - HOME BASED RECREATION
Broward County Travel Characteristics Study 1996
Grand Mean - Single Family 0.45

Unadjusted Deviation for Persons per Dwelling Unit

Persons / D.U.	1	2	3	4	5+
Adjustment	-0.09	-0.04	-0.1	0.18	0.33

Unadjusted Deviation for Vehicles per Dwelling Unit

Vehicles / D.U.	0	1	2+
Adjustment	-0.45	-0.02	0.01

Trip Rates for Single Family - Home Based Recreation

	Autos / D.U.	Persons per Dwelling Unit 1	2	3	4	5+
Resident	0	-0.09	-0.04	-0.1	0.18	0.33
Single	1	0.34	0.39	0.33	0.61	0.76
Family	2+	0.37	0.42	0.36	0.64	0.79

Grand Mean - Multi-Family 0.342

Unadjusted Deviation for Persons per Dwelling Unit

Persons / D.U.	1	2	3	4	5+
Adjustment	-0.02	0.01	-0.07	0.66	-0.34

Unadjusted Deviation for Vehicles per Dwelling Unit

Vehicles / D.U.	0	1	2+
Adjustment	-0.34	0.02	0.05

Trip Rates for Multi-Family - Home Based Recreation

	Autos / D.U.	Persons per Dwelling Unit 1	2	3	4	5+
Resident	0	-0.018	0.012	-0.068	0.662	-0.338
Multi-	1	0.342	0.372	0.292	1.022	0.022
Family	2+	0.372	0.402	0.322	1.052	0.052

MULTIPLE CLASSIFICATION ANALYSIS - HOME BASED OTHER
Broward County Travel Characteristics Study 1996
Grand Mean - Single Family 1.555

Unadjusted Deviation for Persons per Dwelling Unit

Persons / D.U.	1	2	3	4	5+
Adjustment	-0.59	-0.41	0.13	1.12	1.1

Unadjusted Deviation for Vehicles per Dwelling Unit

Vehicles / D.U.	0	1	2+
Adjustment	-1.55	-0.38	0.17

Trip Rates for Single Family - Home Based Other

	Autos / D.U.	Persons per Dwelling Unit 1	2	3	4	5+
Resident	0	-0.585	-0.405	0.135	1.125	1.105
Single	1	0.585	0.765	1.305	2.295	2.275
Family	2+	1.135	1.315	1.855	2.845	2.825

Grand Mean - Multi-Family 0.853

Unadjusted Deviation for Persons per Dwelling Unit

Persons / D.U.	1	2	3	4	5+
Adjustment	-0.13	0	0.74	1.48	0.65

Unadjusted Deviation for Vehicles per Dwelling Unit

Vehicles / D.U.	0	1	2+
Adjustment	-0.85	-0.01	0.28

Trip Rates for Multi-Family - Home Based Other

	Autos / D.U.	Persons per Dwelling Unit 1	2	3	4	5+
Resident	0	-0.127	0.003	0.743	1.483	0.653
Multi-	1	0.713	0.843	1.583	2.323	1.493
Family	2+	1.003	1.133	1.873	2.613	1.783

MULTIPLE CLASSIFICATION ANALYSIS - NON HOME BASED
Broward County Travel Characteristics Study 1996
Grand Mean - Single Family 2.141

Unadjusted Deviation for Persons per Dwelling Unit

Persons / D.U.	1	2	3	4	5+
Adjustment	-0.71	-0.36	0.91	0.8	-0.18

Unadjusted Deviation for Vehicles per Dwelling Unit

Vehicles / D.U.	0	1	2+
Adjustment	-2.14	-0.85	0.37

Trip Rates for Single Family - Non Home Based

	Autos / D.U.	Persons per Dwelling Unit 1	2	3	4	5+
Resident	0	-0.709	-0.359	0.911	0.801	-0.179
Single	1	0.581	0.931	2.201	2.091	1.111
Family	2+	1.801	2.151	3.421	3.311	2.331

Grand Mean - Multi-Family 1.274

Unadjusted Deviation for Persons per Dwelling Unit

Persons / D.U.	1	2	3	4	5+
Adjustment	-0.27	0.02	1.5	2.56	1.73

Unadjusted Deviation for Vehicles per Dwelling Unit

Vehicles / D.U.	0	1	2+
Adjustment	-1.27	-0.19	0.87

Trip Rates for Multi-Family - Non Home Based

	Autos / D.U.	Persons per Dwelling Unit 1	2	3	4	5+
Resident	0	-0.266	0.024	1.504	2.564	1.734
Multi-	1	0.814	1.104	2.584	3.644	2.814
Family	2+	1.874	2.164	3.644	4.704	3.874

.JLTIPLE CLASSIFICATION ANALYSIS - HOME BASED TOTAL (HBW+HBS+HBR+HBO)
Broward County Travel Characteristics Study 1996
Grand Mean - Single Family 4.105

Unadjusted Deviation for Persons per Dwelling Unit

Persons / D.U.	1	2	3	4	5+
Adjustment	-1.52	-0.62	0.15	2.06	2.24

Unadjusted Deviation for Vehicles per Dwelling Unit

Vehicles / D.U.	0	1	2+
Adjustment	-4.1	-1.24	0.54

Trip Rates for Single Family - Home Based Total

	Autos / D.U.	Persons per Dwelling Unit 1	2	3	4	5+
Resident Single Family	0	-1.515	-0.615	0.155	2.065	2.245
	1	1.345	2.245	3.015	4.925	5.105
	2+	3.125	4.025	4.795	6.705	6.885

Grand Mean - Multi-Family 2.382

Unadjusted Deviation for Persons per Dwelling Unit

Persons / D.U.	1	2	3	4	5+
Adjustment	-0.48	0.17	1.62	3.12	1.62

Unadjusted Deviation for Vehicles per Dwelling Unit

Vehicles / D.U.	0	1	2+
Adjustment	-2.33	-0.17	1.15

Trip Rates for Multi-Family - Home Based Total

	Autos / D.U.	Persons per Dwelling Unit 1	2	3	4	5+
Resident Multi-Family	0	-0.428	0.222	1.672	3.172	1.672
	1	1.732	2.382	3.832	5.332	3.832
	2+	3.052	3.702	5.152	6.652	5.152

```
INCLUDE BROWTRVL.IN1.
SET WIDTH=WIDE.
DATE FROM 'C:\geog\papers\district\whk\brow\anodata.dbf'.

WARNING    3062, Text: STREET_NAM changed to STREET_N
VARIABLE NAME HAS BEEN CHANGED-A name has been truncated or was not unique.

WARNING    3062, Text: CITY_STATE changed to CITY_STA
VARIABLE NAME HAS BEEN CHANGED-A name has been truncated or was not unique.

Data written to the active file.
51 variables and 880 cases written.
59 of 603 storage units used.


This procedure was completed at 18:06:11
VALUE LABELS HH_TYPE 1 'SINGLE FAMILY' 2 'DU-TRI-QUAD-PLEX'
3 'TOWNHOUSE-SF ATTACHED' 4 'APARTMENT-RENTAL' 5 'APT-CONDOMINIUM'
6 'MOBILE HOME' 7 'MOTEL OR HOTEL' 8 'OTHER'.
TITLE "BROWARD HOUSEHOLD TRIP GENERATION".
```

```
COMPUTE HBTOT = HBW + HBS + HBR + HBO.
SELECT IF (HH_TYPE=1).
FREQUENCIES HH_TYPE CELL HBW HBS HBR HBO NHB HBTOT N_P N_VEH.
The raw data or transformation pass is proceeding
   391 cases are written to the compressed active file.

***** Memory allows a total of  17873 Values, accumulated across all Variables.
      There also may be up to    2234 Value Labels for each Variable.
```

SINGLE FAMILY

HH_TYPE

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
SINGLE FAMILY	1	391	100.0	100.0	100.0
	Total	391	100.0	100.0	

Valid cases 391 Missing cases 0

CELL

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	1	1	.3	.3	.3
	7	48	12.3	12.3	12.5
	8	55	14.1	14.1	26.6
	9	11	2.8	2.8	29.4
	10	2	.5	.5	29.9
	13	6	1.5	1.5	31.5
	14	106	27.1	27.1	58.6
	15	35	9.0	9.0	67.5
	16	42	10.7	10.7	78.3

17	8	2.0	2.0	80.3
18	2	.5	.5	80.8
19	3	.8	.8	81.6
20	19	4.9	4.9	86.4
21	17	4.3	4.3	90.8
22	23	5.9	5.9	96.7
23	9	2.3	2.3	99.0

CELL

24	4	1.0	1.0	100.0
Total	391	100.0	100.0	

Valid cases 391 Missing cases 0

HBW

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	0	191	48.8	48.8	48.8
	1	43	11.0	11.0	59.8
	2	93	23.8	23.8	83.6
	3	26	6.6	6.6	90.3
	4	26	6.6	6.6	96.9
	5	4	1.0	1.0	98.0
	6	5	1.3	1.3	99.2
	7	2	.5	.5	99.7
	11	1	.3	.3	100.0
	Total	391	100.0	100.0	

Valid cases 391 Missing cases 0

HBS

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	0	225	57.5	57.5	57.5
	1	63	16.1	16.1	73.7
	2	69	17.6	17.6	91.3
	3	12	3.1	3.1	94.4
	4	16	4.1	4.1	98.5
	5	4	1.0	1.0	99.5
	6	1	.3	.3	99.7
	8	1	.3	.3	100.0
	Total	391	100.0	100.0	

Valid cases 391 Missing cases 0

HBR

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	0	302	77.2	77.2	77.2
	1	33	8.4	8.4	85.7
	2	35	9.0	9.0	94.6
	3	11	2.8	2.8	97.4
	4	10	2.6	2.6	100.0
	Total	391	100.0	100.0	

Valid cases 391 Missing cases 0

HBO

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	0	158	40.4	40.4	40.4
	1	66	16.9	16.9	57.3
	2	81	20.7	20.7	78.0
	3	29	7.4	7.4	85.4
	4	35	9.0	9.0	94.4
	5	6	1.5	1.5	95.9
	6	6	1.5	1.5	97.4
	7	4	1.0	1.0	98.5
	8	2	.5	.5	99.0
	9	1	.3	.3	99.2
	11	2	.5	.5	99.7
	12	1	.3	.3	100.0
	Total	391	100.0	100.0	

Valid cases 391 Missing cases 0

NHB

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	0	143	36.6	36.6	36.6
	1	75	19.2	19.2	55.8
	2	53	13.6	13.6	69.3
	3	34	8.7	8.7	78.0
	4	32	8.2	8.2	86.2
	5	17	4.3	4.3	90.5
	6	11	2.8	2.8	93.4
	7	11	2.8	2.8	96.2
	8	6	1.5	1.5	97.7
	9	2	.5	.5	98.2
	10	2	.5	.5	98.7
	13	1	.3	.3	99.0
	14	1	.3	.3	99.2
	17	1	.3	.3	99.5
	22	1	.3	.3	99.7
	46	1	.3	.3	100.0

NHB

Total	391	100.0	100.0

ases 391 Missing cases 0

HBTOT

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	.00	50	12.8	12.8	12.8
	1.00	11	2.8	2.8	15.6
	2.00	95	24.3	24.3	39.9
	3.00	11	2.8	2.8	42.7
	4.00	88	22.5	22.5	65.2
	5.00	9	2.3	2.3	67.5
	6.00	67	17.1	17.1	84.7
	7.00	4	1.0	1.0	85.7
	8.00	26	6.6	6.6	92.3
	9.00	3	.8	.8	93.1
	10.00	16	4.1	4.1	97.2
	11.00	1	.3	.3	97.4
	12.00	5	1.3	1.3	98.7
	13.00	1	.3	.3	99.0
	14.00	1	.3	.3	99.2
	16.00	1	.3	.3	99.5

17.00	1	.3	.3	99.7
18.00	1	.3	.3	100.0
Total	391	100.0	100.0	

Valid cases 391 Missing cases 0

N_P

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	1	58	14.8	14.8	14.8
	2	180	46.0	46.0	60.9
	3	63	16.1	16.1	77.0
	4	67	17.1	17.1	94.1
	5	17	4.3	4.3	98.5
	6	6	1.5	1.5	100.0
Total	391	100.0	100.0		

Valid cases 391 Missing cases 0

N_VEH

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	0	1	.3	.3	.3
	1	116	29.7	29.7	29.9
	2	199	50.9	50.9	80.8
	3	64	16.4	16.4	97.2
	4	11	2.8	2.8	100.0
	Total	391	100.0	100.0	

Valid cases 391 Missing cases 0

This procedure was completed at 18:06:46
DESCRIPTIVES HBW TO NHB HBTOT N_P N_VEH.

Number of Valid Observations (Listwise) = 391.00

Variable	Mean	Std Dev	Minimum	Maximum	N	Label
HBW	1.24	1.57	0	11	391	
HBS	.86	1.26	0	8	391	
HBR	.45	.95	0	4	391	
HBO	1.55	1.91	0	12	391	
NHB	2.14	3.46	0	46	391	
HBTOT	4.10	3.09	.00	18.00	391	
N_P	2.55	1.16	1	6	391	
	1.92	.76	0	4	391	

This procedure was completed at 18:07:04
MEANS TABLES = HBW TO NHB HBTOT BY N_P N_VEH.

***** Given WORKSPACE allows for 10922 Cells with 1 Dimensions for MEANS.

Summaries of HBW
By levels of N_P

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			1.2430	1.5689	391
N_P	1		.8103	1.1310	58
N_P	2		.9889	1.3577	180
N_P	3		1.3651	1.5791	63
N_P	4		1.8358	2.0345	67
N_P	5		2.6471	1.5387	17
N_P	6		1.1667	1.4720	6

Total Cases = 391

Summaries of HBW
By levels of N_VEH

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			1.2430	1.5689	391
[illegible]	0		.0000	.0000	1
[illegible]	1		.4655	1.0167	116
N_VEH	2		1.3920	1.3770	199
N_VEH	3		2.0938	2.1508	64
N_VEH	4		1.9091	2.1659	11

Total Cases = 391

Summaries of HBS
By levels of N_P

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			.8568	1.2568	391
N_P	1		.4483	.8202	58
N_P	2		.9500	1.1831	180
N_P	3		.8571	1.2029	63
N_P	4		1.0299	1.6603	67
N_P	5		.2353	.6642	17
N_P	6		1.8333	2.1370	6

Total Cases = 391

[illegible]es of HBS
[illegible]els of N_VEH

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			.8568	1.2568	391
N_VEH	0		.0000	.0000	1
N_VEH	1		.7931	1.1686	116
N_VEH	2		.8291	1.1105	199
N_VEH	3		1.0469	1.7587	64
N_VEH	4		1.0000	1.2649	11

Total Cases = 391

Summaries of NBR
By levels of N_P

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			.4501	.9511	391
N_P	1		.3621	.7422	58
N_P	2		.4056	.8825	180
N_P	3		.3492	.9009	63
N_P	4		.6269	1.1525	67
[illegible]	5		.5882	1.3257	17
[illegible]	6		1.3333	1.2111	6

Total Cases = 391

Summaries of HBR
By levels of N_VEH

'e	Value	Label	Mean	Std Dev	Cases
For Entire Population			.4501	.9511	391
N_VEH	0		.0000	.0000	1
N_VEH	1		.4310	.8966	116
N_VEH	2		.3869	.9134	199
N_VEH	3		.7188	1.1611	64
N_VEH	4		.2727	.6467	11

Total Cases = 391

Summaries of HBO
By levels of N_P

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			1.5550	1.9099	391
N_P	1		.9655	1.2278	58
N_P	2		1.1444	1.4498	180
N_P	3		1.6825	1.8563	63
N_P	4		2.6716	2.5250	67
N_P	5		2.8235	2.8115	17
N_P	6		2.1667	2.6394	6

›l Cases = 391

Summaries of HBO
By levels of N_VEH

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			1.5550	1.9099	391
N_VEH	0		.0000	.0000	1
N_VEH	1		1.1724	1.3271	116
N_VEH	2		1.7035	2.0616	199
N_VEH	3		1.8906	2.2895	64
N_VEH	4		1.0909	1.2210	11

Total Cases = 391

Summaries of NHB
By levels of N_P

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			2.1407	3.4616	391
	1		1.4310	1.8268	58
	2		1.7778	2.5687	180
N_P	3		3.0476	6.3840	63
N_P	4		2.9403	2.7900	67
N_P	5		2.0000	2.5249	17
N_P	6		1.8333	1.4720	6

Total Cases = 391

---

es of NHB
By levels of N_VEH

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			2.1407	3.4616	391
N_VEH	0		.0000	.0000	1
N_VEH	1		1.2931	1.5826	116
N_VEH	2		2.1859	2.8973	199
N_VEH	3		3.6406	6.2447	64
N_VEH	4		1.7273	1.7939	11

Total Cases = 391

Summaries of HBTOT
By levels of N_P

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			4.1049	3.0904	391
N_P	1		2.5862	1.9106	58
N_P	2		3.4889	2.3553	180
N_P	3		4.2540	2.9401	63
	4		6.1642	4.1582	67
	5		6.2941	3.1576	17
N_P	6		6.5000	4.0866	6

Total Cases = 391

Summaries of HBTOT
By levels of N_VEH

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			4.1049	3.0904	391
N_VEH	0		.0000	.0000	1
N_VEH	1		2.8621	2.1423	116
N_VEH	2		4.3116	2.8557	199
N_VEH	3		5.7500	4.1250	64
N_VEH	4		4.2727	3.6357	11

Total Cases = 391

This procedure was completed at 18:07:19

```
RECODE N_VEH (3=2) (4=2) (5=2) / N_P (6=5) (7=5).
ANOVA VARIABLES =HBW TO NHB BY N_P(1,5) N_VEH(0,2) / STATISTICS 1.
      ' data or transformation pass is proceeding
      ! cases are written to the compressed active file.

'ANOVA' PROBLEM REQUIRES      3776 BYTES OF MEMORY.
```

*** ANALYSIS OF VARIANCE ***

HBW
BY N_P
N_VEH

Source of Variation	Sum of Squares	DF	Mean Square	F	Signif of F
Main Effects	132.041	6	22.007	10.271	.000
N_P	29.876	4	7.469	3.486	.008
N_VEH	61.247	2	30.623	14.292	.000
2-way Interactions	11.514	3	3.838	1.791	.148
N_P N_VEH	11.514	3	3.838	1.791	.148
Explained	143.555	9	15.951	7.444	.000
Residual	816.363	381	2.143		
Total	959.918	390	2.461		

391 Cases were processed.
0 Cases (.0 PCT) were missing.

MULTIPLE CLASSIFICATION ANALYSIS ***

HBW
By N_P
N_VEH

Grand Mean = 1.243

Variable + Category	N	Unadjusted Dev'n	Eta	Adjusted for Independents Dev'n	Beta	Adjusted for Independents + Covariates Dev'n	Beta
N_P							
1	58	-.43		.14			
2	180	-.25		-.25			
3	63	.12		-.01			
4	67	.59		.31			
5	23	1.02		.71			
			.27		.18		

*** MULTIPLE CLASSIFICATION ANALYSIS ***

HBW
By N_P
N_VEH

Grand Mean = 1.243

Variable + Category	N	Unadjusted Dev'n	Eta	Adjusted for Independents Dev'n	Beta	Adjusted for Independents + Covariates Dev'n	Beta

N_VEH				
0	1	-1.24	-1.38	
1	116	-.78	-.72	
2	274	.33	.31	
		.33		.30

Multiple R Squared .138
Multiple R .371

*** ANALYSIS OF VARIANCE ***

HBS
BY N_P
N_VEH

Source of Variation	Sum of Squares	DF	Mean Square	F	Signif of F
Main Effects	15.131	6	2.522	1.608	.144
N_P	13.679	4	3.420	2.181	.071
N_VEH	.918	2	.459	.293	.746
2-way Interactions	3.372	3	1.124	.717	.543
N_P N_VEH	3.372	3	1.124	.717	.543
Explained	18.503	9	2.056	1.311	.229
Residual	597.477	381	1.568		
	615.980	390	1.579		

---

391 Cases were processed.
0 Cases (.0 PCT) were missing.

*** MULTIPLE CLASSIFICATION ANALYSIS ***

HBS
By N_P
N_VEH

Grand Mean = .857

Variable + Category	N	Unadjusted Dev'n	Eta	Adjusted for Independents Dev'n	Beta	Adjusted for Independents + Covariates Dev'n	Beta
N_P							
1	58	-.41		-.46			
2	180	.09		.09			
3	63	.00		.01			
4	67	.17		.20			
5	23	-.20		-.17			
			.15		.17		

*** MULTIPLE CLASSIFICATION ANALYSIS ***

HBS
By N_P
N_VEH

ean = .857

Variable + Category	N	Unadjusted Dev'n	Eta	Adjusted for Independents Dev'n	Beta	Adjusted for Independents + Covariates Dev'n	Beta
N_VEH							
0	1	-.86		-.39			
1	116	-.06		.08			
2	274	.03		-.03			
			.05		.04		
Multiple R Squared					.025		
Multiple R					.157		

*** ANALYSIS OF VARIANCE ***

HBR
BY N_P
N_VEH

Source of Variation	Sum of Squares	DF	Mean Square	F	Signif of F
Main Effects	6.643	6	1.107	1.222	.294
	6.372	4	1.593	1.759	.136
	.559	2	.279	.308	.735
2-way Interactions	1.040	3	.347	.383	.765
N_P N_VEH	1.040	3	.347	.383	.765
Explained	7.684	9	.854	.943	.488
Residual	345.094	381	.906		
Total	352.777	390	.905		

---

391 Cases were processed.
0 Cases (.0 PCT) were missing.

*** MULTIPLE CLASSIFICATION ANALYSIS ***

HBR
By N_P
N_VEH

Grand Mean = .450

Variable + Category	N	Unadjusted Dev'n	Eta	Adjusted for Independents Dev'n	Beta	Adjusted for Independents + Covariates Dev'n	Beta
N_P							
1	58	-.09		-.13			

2	180	-.04	-.05
3	63	-.10	-.09
4	67	.18	.20
5	23	.33	.36
		.13	.15

*** MULTIPLE CLASSIFICATION ANALYSIS ***

HBR
By N_P
N_VEH

Grand Mean = .450

Variable + Category	N	Unadjusted Dev'n	Eta	Adjusted for Independents Dev'n	Beta	Adjusted for Independents + Covariates Dev'n	Beta
N_VEH							
0	1	-.45		-.32			
1	116	-.02		.06			
2	274	.01		-.02			
		.03		.04			

Multiple R Squared .019
Multiple R .137

*** ANALYSIS OF VARIANCE ***

HBO
BY N_P
N_VEH

Source of Variation	Sum of Squares	DF	Mean Square	F	Signif of F
Main Effects	163.770	6	27.295	8.280	.000
N_P	136.674	4	34.168	10.365	.000
N_VEH	1.022	2	.511	.155	.856
2-way Interactions	2.859	3	.953	.289	.833
N_P N_VEH	2.859	3	.953	.289	.833
Explained	166.630	9	18.514	5.617	.000
Residual	1255.938	381	3.296		
Total	1422.568	390	3.648		

391 Cases were processed.
0 Cases (.0 PCT) were missing.

*** MULTIPLE CLASSIFICATION ANALYSIS ***

HBO
By N_P

N_VEH

Grand Mean = 1.555

Variable + Category	N	Unadjusted Dev'n	Eta	Adjusted for Independents Dev'n	Beta	Adjusted for Independents + Covariates Dev'n	Beta
N_P							
1	58	-.59		-.59			
2	180	-.41		-.41			
3	63	.13		.13			
4	67	1.12		1.12			
5	23	1.10		1.11			
			.34		.34		

*** MULTIPLE CLASSIFICATION ANALYSIS ***

HBO
By N_P
N_VEH

Grand Mean = 1.555

Variable + Category	N	Unadjusted Dev'n	Eta	Adjusted for Independents Dev'n	Beta	Adjusted for Independents + Covariates Dev'n	Beta
N_VEH							
0	1	-1.55		-.96			
	116	-.38		.03			
	274	.17		-.01			
			.14		.03		
Multiple R Squared					.115		
Multiple R					.339		

*** ANALYSIS OF VARIANCE ***

NHB
BY N_P
N_VEH

Source of Variation	Sum of Squares	DF	Mean Square	F	Signif of F
Main Effects	207.799	6	34.633	2.989	.007
N_P	83.056	4	20.764	1.792	.130
N_VEH	59.446	2	29.723	2.565	.078
2-way Interactions	50.226	3	16.742	1.445	.229
N_P N_VEH	50.226	3	16.742	1.445	.229
Explained	258.025	9	28.669	2.474	.009
	4415.238	381	11.589		
Total	4673.263	390	11.983		

391 Cases were processed.
0 Cases (.0 PCT) were missing.

*** MULTIPLE CLASSIFICATION ANALYSIS ***

NHB
By N_P
N_VEH

Grand Mean = 2.141

Variable + Category	N	Unadjusted Dev'n	Eta	Adjusted for Independents Dev'n	Beta	Adjusted for Independents + Covariates Dev'n	Beta
N_P							
1	58	-.71		-.14			
2	180	-.36		-.36			
3	63	.91		.78			
4	67	.80		.53			
5	23	-.18		-.49			
			.18		.14		

*** MULTIPLE CLASSIFICATION ANALYSIS ***

NHB
By N_P
N_VEH

Grand Mean = 2.141

Variable + Category	N	Unadjusted Dev'n	Eta	Adjusted for Independents Dev'n	Beta	Adjusted for Independents + Covariates Dev'n	Beta
N_VEH							
0	1	-2.14		-2.00			
1	116	-.85		-.70			
2	274	.37		.30			
			.16		.14		
Multiple R Squared					.044		
Multiple R					.211		

This procedure was completed at 18:07:45
ANOVA VARIABLES = HBTOT BY N_P(1,5) N_VEH(0,2) / STATISTICS 1.

'ANOVA' PROBLEM REQUIRES 2568 BYTES OF MEMORY.

*** ANALYSIS OF VARIANCE ***

HBTOT
BY N_P
N_VEH

	Sum of	Mean	Signif

Source of Variation	Squares	DF	Square	F	of F
Main Effects	646.287	6	107.715	13.404	.000
N_P	370.040	4	92.510	11.512	.000
	42.981	2	21.491	2.674	.070
2-way Interactions	16.708	3	5.569	.693	.557
N_P N_VEH	16.708	3	5.569	.693	.557
Explained	662.996	9	73.666	9.167	.000
Residual	3061.705	381	8.036		
Total	3724.701	390	9.551		

391 Cases were processed.
0 Cases (.0 PCT) were missing.

*** MULTIPLE CLASSIFICATION ANALYSIS ***

HBTOT
By N_P
N_VEH

Grand Mean = 4.105

\ e + Category	N	Unadjusted Dev'n	Eta	Adjusted for Independents Dev'n	Beta	Adjusted for Independents + Covariates Dev'n	Beta
N_P							
1	58	-1.52		-1.05			
2	180	-.62		-.62			
3	63	.15		.04			
4	67	2.06		1.84			
5	23	2.24		2.00			
			.40		.35		

*** MULTIPLE CLASSIFICATION ANALYSIS ***

HBTOT
By N_P
N_VEH

Grand Mean = 4.105

Variable + Category	N	Unadjusted Dev'n	Eta	Adjusted for Independents Dev'n	Beta	Adjusted for Independents + Covariates Dev'n	Beta
N_VEH							
0	1	-4.10		-3.06			
1	116	-1.24		-.55			
	274	.54		.25			
			.27		.13		
Multiple R Squared					.174		
Multiple R					.417		

This procedure was completed at 18:07:54

FINISH.

End of Include file.

```
INCLUDE BROW...IN2.
...TH=WIDE.
.TE FROM 'C:\geog\papers\district\whk\brow\anodata.dbf'.

WARNING 3062, Text: STREET_NAM changed to STREET_N
VARIABLE NAME HAS BEEN CHANGED-A name has been truncated or was not unique.

WARNING 3062, Text: CITY_STATE changed to CITY_STA
VARIABLE NAME HAS BEEN CHANGED-A name has been truncated or was not unique.

Data written to the active file.
51 variables and 880 cases written.
59 of 603 storage units used.


This procedure was completed at 20:36:35
VALUE LABELS HH_TYPE 1 'SINGLE FAMILY' 2 'DU-TRI-QUAD-PLEX'
3 'TOWNHOUSE-SF ATTACHED' 4 'APARTMENT-RENTAL' 5 'APT-CONDOMINIUM'
6 'MOBILE HOME' 7 'MOTEL OR HOTEL' 8 'OTHER'.
TITLE "BROWARD HOUSEHOLD TRIP GENERATION".
```

```
COMPUTE HBTOT = HBW + HBS + HBR + HBO.
SELECT IF (HH_TYPE>1). ——————— MULTI FAMILY
FREQUENCIES HH_TYPE CELL HBW HBS HBR HBO NHB HBTOT N_P N_VEH.
The raw data or transformation pass is proceeding
    489 cases are written to the compressed active file.

***** Memory allows a total of  17873 Values, accumulated across all Variables.
      There also may be up to    2234 Value Labels for each Variable.
```

HH_TYPE

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
DU-TRI-QUAD-PLEX	2	24	4.9	4.9	4.9
TOWNHOUSE-SF ATTACHE	3	54	11.0	11.0	16.0
APARTMENT-RENTAL	4	42	8.6	8.6	24.5
APT-CONDOMINIUM	5	325	66.5	66.5	91.0
MOBILE HOME	6	37	7.6	7.6	98.6
MOTEL OR HOTEL	7	1	.2	.2	98.8
OTHER	8	6	1.2	1.2	100.0
	Total	489	100.0	100.0	

Valid cases 489 Missing cases 0

CELL

Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	25	31	6.3	6.3	6.3
	26	9	1.8	1.8	8.2
	31	173	35.4	35.4	43.6

32	143	29.2	29.2	72.8
33	3	.6	.6	73.4
34	1	.2	.2	73.6
37	5	1.0	1.0	74.6
38	93	19.0	19.0	93.7
39	13	2.7	2.7	96.3
40	1	.2	.2	96.5
41	2	.4	.4	96.9
44	5	1.0	1.0	98.0
45	6	1.2	1.2	99.2
46	4	.8	.8	100.0
Total	489	100.0	100.0	

CELL

Valid cases 489 Missing cases 0

HBW

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	0	373	76.3	76.3	76.3
	1	37	7.6	7.6	83.8
	2	56	11.5	11.5	95.3
	3	7	1.4	1.4	96.7
	4	12	2.5	2.5	99.2
	5	3	.6	.6	99.8
	8	1	.2	.2	100.0
	Total	489	100.0	100.0	

Valid cases 489 Missing cases 0

HBS

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	0	299	61.1	61.1	61.1
	1	90	18.4	18.4	79.6
	2	74	15.1	15.1	94.7
	3	9	1.8	1.8	96.5
	4	12	2.5	2.5	99.0
	5	3	.6	.6	99.6
	6	2	.4	.4	100.0
	Total	489	100.0	100.0	

Valid cases 489 Missing cases 0

HBR

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	0	396	81.0	81.0	81.0
	1	42	8.6	8.6	89.6
	2	37	7.6	7.6	97.1
	3	5	1.0	1.0	98.2
	4	9	1.8	1.8	100.0
	Total	489	100.0	100.0	

Valid cases 489 Missing cases 0

HBO

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	0	272	55.6	55.6	55.6
	1	97	19.8	19.8	75.5
	2	73	14.9	14.9	90.4
	3	21	4.3	4.3	94.7
	4	21	4.3	4.3	99.0
	5	3	.6	.6	99.6
	6	2	.4	.4	100.0
	Total	489	100.0	100.0	

Valid cases 489 Missing cases 0

NHB

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	0	262	53.6	53.6	53.6
	1	76	15.5	15.5	69.1
	2	61	12.5	12.5	81.6
	3	40	8.2	8.2	89.8
	4	19	3.9	3.9	93.7
	5	6	1.2	1.2	94.9
	6	8	1.6	1.6	96.5
	7	6	1.2	1.2	97.8
	8	4	.8	.8	98.6
	9	5	1.0	1.0	99.6
	14	1	.2	.2	99.8
	18	1	.2	.2	100.0
	Total	489	100.0	100.0	

Valid cases 489 Missing cases 0

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent

.00	132	27.0	27.0	27.0
1.00	23	4.7	4.7	31.7
2.00	165	33.7	33.7	65.4
3.00	14	2.9	2.9	68.3
4.00	99	20.2	20.2	88.5
5.00	8	1.6	1.6	90.2
6.00	25	5.1	5.1	95.3
7.00	4	.8	.8	96.1
8.00	17	3.5	3.5	99.6
10.00	2	.4	.4	100.0
Total	489	100.0	100.0	

alid cases 489 Missing cases 0

_P

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	1	209	42.7	42.7	42.7
	2	250	51.1	51.1	93.9
	3	22	4.5	4.5	98.4
	4	6	1.2	1.2	99.6
	5	2	.4	.4	100.0
	Total	489	100.0	100.0	

alid cases 489 Missing cases 0

_VEH

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	0	40	8.2	8.2	8.2
	1	320	65.4	65.4	73.6
	2	114	23.3	23.3	96.9
	3	11	2.2	2.2	99.2
	4	3	.6	.6	99.8
	5	1	.2	.2	100.0
	Total	489	100.0	100.0	

alid cases 489 Missing cases 0

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his procedure was completed at 20:42:19
ESCRIPTIVES HBW TO NHB HBTOT N_P N_VEH.

---

of Valid Observations (Listwise) = 489.00

Variable	Mean	Std Dev	Minimum	Maximum	N	Label
HBW	.49	1.05	0	8	489	
HBS	.70	1.08	0	6	489	

HBR	.34	.81	0	4	489
HBO	.85	1.20	0	6	489
NHB	1.27	2.08	0	18	489
HBTOT	2.38	2.12	.00	10.00	489
₽	1.65	.66	1	5	489
	1.22	.67	0	5	489

This procedure was completed at 20:42:35
MEANS TABLES = HBW TO NHB HBTOT BY N_P N_VEH.

***** Given WORKSPACE allows for 10922 Cells with 1 Dimensions for MEANS.

Summaries of HBW
By levels of N_P

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			.4928	1.0482	489
N_P	1		.4019	.8385	209
N_P	2		.4440	1.0787	250
N_P	3		1.5455	1.5032	22
N_P	4		1.1667	1.4720	6
N_P	5		2.5000	2.1213	2

Total Cases = 489

Summaries of HBW
By levels of N_VEH

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			.4928	1.0482	489
N_VEH	0		.0000	.0000	40
N_VEH	1		.3250	.7762	320
N_VEH	2		.9386	1.4160	114
N_VEH	3		2.5455	1.6348	11
N_VEH	4		.6667	1.1547	3
N_VEH	5		.0000	.0000	1

Total Cases = 489

Summaries of HBS
By levels of N_P

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			.6953	1.0804	489
	1		.4450	.8134	209
	2		.9120	1.2387	250
N_P	3		.5909	.8541	22
N_P	4		1.0000	1.2649	6
N_P	5		.0000	.0000	2

Total Cases = 489

---

ur : of HBS
y .s of N_VEH

ariable	Value Label	Mean	Std Dev	Cases
or Entire Population		.6953	1.0804	489
_VEH	0	.0500	.3162	40
_VEH	1	.6750	1.0507	320
_VEH	2	.9737	1.2442	114
_VEH	3	.8182	1.0787	11
_VEH	4	.3333	.5774	3
_VEH	5	1.0000	.0000	1

Total Cases = 489

---

ummaries of HBR
By levels of N_P

ariable	Value Label	Mean	Std Dev	Cases
or Entire Population		.3415	.8123	489
_P	1	.3254	.7902	209
_P	2	.3480	.8183	250
_P	3	.2727	.6311	22
_P	4	1.0000	1.6733	6
_	5	.0000	.0000	2

Total Cases = 489

Summaries of HBR
By levels of N_VEH

Variable	Value Label	Mean	Std Dev	Cases
For Entire Population		.3415	.8123	489
N_VEH	0	.0000	.0000	40
N_VEH	1	.3625	.8416	320
N_VEH	2	.4123	.8181	114
N_VEH	3	.3636	1.2060	11
N_VEH	4	.0000	.0000	3
N_VEH	5	.0000	.0000	1

Total Cases = 489

Summaries of HBO
By levels of N_P

Vr	Value Label	Mean	Std Dev	Cases
For Entire Population		.8528	1.2023	489
N_P	1	.7273	1.1125	209
N_P	2	.8520	1.1848	250

N_P	3	1.5909	1.5325	22
N_P	4	2.3333	1.7512	6
N_P	5	1.5000	2.1213	2

Cases = 489

Summaries of HBO
By levels of N_VEH

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			.8528	1.2023	489
N_VEH	0		.0000	.0000	40
N_VEH	1		.8469	1.1495	320
N_VEH	2		1.1579	1.3734	114
N_VEH	3		1.1818	1.6624	11
N_VEH	4		.3333	.5774	3
N_VEH	5		.0000	.0000	1

Total Cases = 489

Summaries of NHB
By levels of N_P

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			1.2740	2.0761	489
	1		1.0048	1.6068	209
N_P	2		1.2920	2.1544	250
N_P	3		2.7727	3.2061	22
N_P	4		3.8333	3.6560	6
N_P	5		3.0000	4.2426	2

Total Cases = 489

Summaries of NHB
By levels of N_VEH

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			1.2740	2.0761	489
N_VEH	0		.0000	.0000	40
N_VEH	1		1.0844	1.6785	320
N_VEH	2		1.9211	2.5664	114
N_VEH	3		3.7273	3.2586	11
N_VEH	4		5.0000	7.8102	3
N_VEH	5		1.0000	.0000	1

Total Cases = 489

.ies of HBTOT
By levels of N_P

Variable	Value	Label	Mean	Std Dev	Cases

For Entire Population		2.3824	2.1240	489
N_P	1	1.8995	1.8357	209
N_P	2	2.5560	2.1748	250
N	3	4.0000	2.3299	22
	4	5.5000	2.5100	6
N_r	5	4.0000	.0000	2

Total Cases = 489

Summaries of HBTOT
By levels of N_VEH

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			2.3824	2.1240	489
N_VEH	0		.0500	.3162	40
N_VEH	1		2.2094	1.8510	320
N_VEH	2		3.4825	2.3508	114
N_VEH	3		4.9091	1.9212	11
N_VEH	4		1.3333	1.1547	3
N_VEH	5		1.0000	.0000	1

Total Cases = 489

This procedure was completed at 20:43:06
RECODE N_VEH (3=2) (4=2) (5=2) / N_P (6=5) (7=5).
A' VARIABLES =HBW TO NHB BY N_P(1,5) N_VEH(0,2) / STATISTICS 1.
...w data or transformation pass is proceeding
489 cases are written to the compressed active file.

'ANOVA' PROBLEM REQUIRES 3776 BYTES OF MEMORY.

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* * * A N A L Y S I S O F V A R I A N C E * * *

HBW
BY N_P
N_VEH

Source of Variation	Sum of Squares	DF	Mean Square	F	Signif of F
Main Effects	81.247	6	13.541	14.394	.000
N_P	20.726	4	5.182	5.508	.000
N_VEH	43.765	2	21.883	23.260	.000
2-way Interactions	5.291	4	1.323	1.406	.231
N_P N_VEH	5.291	4	1.323	1.406	.231
Explained	86.538	10	8.654	9.199	.000
Residual	449.687	478	.941		
	536.225	488	1.099		

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489 Cases were processed.
0 Cases (.0 PCT) were missing.

*** MULTIPLE CLASSIFICATION ANALYSIS ***

HBW
By N_P
N_VEH

Grand Mean = .493

Variable + Category	N	Unadjusted Dev'n	Eta	Adjusted for Independents Dev'n	Beta	Adjusted for Independents + Covariates Dev'n	Beta
N_P							
1	209	-.09		.11			
2	250	-.05		-.16			
3	22	1.05		.58			
4	6	.67		.23			
5	2	2.01		1.44			
			.26		.20		

*** MULTIPLE CLASSIFICATION ANALYSIS ***

HBW
By N_P
N_VEH

Grand Mean = .493

Variable + Category	N	Unadjusted Dev'n	Eta	Adjusted for Independents Dev'n	Beta	Adjusted for Independents + Covariates Dev'n	Beta
N_VEH							
0	40	-.49		-.54			
1	320	-.17		-.16			
2	129	.57		.57			
			.34		.34		
Multiple R Squared					.152		
Multiple R					.389		

*** ANALYSIS OF VARIANCE ***

HBS
BY N_P
N_VEH

Source of Variation	Sum of Squares	DF	Mean Square	F	Signif of F
Effects	40.050	6	6.675	6.062	.000
N_P	15.171	4	3.793	3.445	.009
N_VEH	13.451	2	6.725	6.108	.002
2-way Interactions	3.241	4	.810	.736	.568
N_P N_VEH	3.241	4	.810	.736	.568

Explained	43.291	10	4.329	3.932	.000
Residual	526.308	478	1.101		
	569.599	488	1.167		

489 Cases were processed.
0 Cases (.0 PCT) were missing.

*** MULTIPLE CLASSIFICATION ANALYSIS ***

HBS
By N_P
N_VEH

Grand Mean = .695

Variable + Category	N	Unadjusted Dev'n	Eta	Adjusted for Independents Dev'n	Beta	Adjusted for Independents + Covariates Dev'n	Beta
N_P							
1	209	-.25		-.17			
2	250	.22		.17			
3	22	-.10		-.25			
4	6	.30		.16			
	2	-.70		-.87			
			.22		.17		

*** MULTIPLE CLASSIFICATION ANALYSIS ***

HBS
By N_P
N_VEH

Grand Mean = .695

Variable + Category	N	Unadjusted Dev'n	Eta	Adjusted for Independents Dev'n	Beta	Adjusted for Independents + Covariates Dev'n	Beta
N_VEH							
0	40	-.65		-.55			
1	320	-.02		.00			
2	129	.25		.17			
			.21		.17		

Multiple R Squared	.070
Multiple R	.265

*** ANALYSIS OF VARIANCE ***

HBR
BY N_P
N_VEH

Source of Variation	Sum of Squares	DF	Mean Square	F	Signif of F
M ‘ects	8.165	6	1.361	2.088	.053
	2.984	4	.746	1.145	.335
N_VEH	5.160	2	2.580	3.959	.020
2-way Interactions	2.258	4	.565	.866	.484
N_P N_VEH	2.258	4	.565	.866	.484
Explained	10.423	10	1.042	1.599	.104
Residual	311.545	478	.652		
Total	321.967	488	.660		

489 Cases were processed.
0 Cases (.0 PCT) were missing.

*** MULTIPLE CLASSIFICATION ANALYSIS ***

HBR
By N_P
N_VEH

G ean = .342

Variable + Category	N	Unadjusted Dev'n	Eta	Adjusted for Independents Dev'n	Beta	Adjusted for Independents + Covariates Dev'n	Beta
N_P							
1	209	-.02		.02			
2	250	.01		-.02			
3	22	-.07		-.13			
4	6	.66		.60			
5	2	-.34		-.41			
			.10		.10		

*** MULTIPLE CLASSIFICATION ANALYSIS ***

HBR
By N_P
N_VEH

Grand Mean = .342

Variable + Category	N	Unadjusted Dev'n	Eta	Adjusted for Independents Dev'n	Beta	Adjusted for Independents + Covariates Dev'n	Beta
N_VEH							
	40	-.34		-.35			
	320	.02		.02			
2	129	.05		.07			
			.13		.13		
Multiple R Squared					.025		

Multiple R .159

*** ANALYSIS OF VARIANCE ***

HBO
BY N_P
N_VEH

Source of Variation	Sum of Squares	DF	Mean Square	F	Signif of F
Main Effects	56.866	6	9.478	6.998	.000
N_P	17.724	4	4.431	3.271	.012
N_VEH	27.597	2	13.799	10.188	.000
2-way Interactions	1.117	4	.279	.206	.935
N_P N_VEH	1.117	4	.279	.206	.935
Explained	57.982	10	5.798	4.281	.000
Residual	647.416	478	1.354		
Total	705.399	488	1.445		

489 Cases were processed.
0 Cases (.0 PCT) were missing.

*** MULTIPLE CLASSIFICATION ANALYSIS ***

HBO
By N_P
N_VEH

Grand Mean = .853

Variable + Category	N	Unadjusted Dev'n	Eta	Adjusted for Independents Dev'n	Beta	Adjusted for Independents + Covariates Dev'n	Beta
N_P							
1	209	-.13		-.03			
2	250	.00		-.06			
3	22	.74		.58			
4	6	1.48		1.32			
5	2	.65		.47			
			.20		.17		

*** MULTIPLE CLASSIFICATION ANALYSIS ***

HBO
By N_P
N_VEH

Grand Mean = .853

	Adjusted for	Adjusted for Independents

Variable + Category	N	Unadjusted Dev'n	Eta	Independents + Covariates Dev'n	Beta	Dev'n	Beta
N_VEH							
	40	-.85		-.81			
	320	-.01		.03			
2	129	.28		.18			
			.24		.21		
Multiple R Squared					.081		
Multiple R					.284		

*** ANALYSIS OF VARIANCE ***

NHB
BY N_P
N_VEH

Source of Variation	Sum of Squares	DF	Mean Square	F	Signif of F
Main Effects	217.855	6	36.309	9.308	.000
N_P	44.785	4	11.196	2.870	.023
N_VEH	107.951	2	53.976	13.836	.000
2-way Interactions	20.739	4	5.185	1.329	.258
N_P N_VEH	20.739	4	5.185	1.329	.258
Explained	238.594	10	23.859	6.116	.000
al	1864.686	478	3.901		
Total	2103.280	488	4.310		

489 Cases were processed.
0 Cases (.0 PCT) were missing.

*** MULTIPLE CLASSIFICATION ANALYSIS ***

NHB
By N_P
N_VEH

Grand Mean = 1.274

Variable + Category	N	Unadjusted Dev'n	Eta	Adjusted for Independents Dev'n	Beta	Adjusted for Independents + Covariates Dev'n	Beta
N_P							
1	209	-.27		.02			
2	250	.02		-.15			
	22	1.50		.86			
	6	2.56		1.95			
5	2	1.73		.97			
			.23		.15		

*** MULTIPLE CLASSIFICATION ANALYSIS ***

NHB
By N_P
N_VEH

Grand Mean = 1.274

Variable + Category	N	Unadjusted Dev'n	Eta	Adjusted for Independents Dev'n	Beta	Adjusted for Independents + Covariates Dev'n	Beta
N_VEH							
0	40	-1.27		-1.26			
1	320	-.19		-.15			
2	129	.87		.76			
			.29		.26		
Multiple R Squared					.104		
Multiple R					.322		

This procedure was completed at 20:43:29
ANOVA VARIABLES = HBTOT BY N_P(1,5) N_VEH(0,2) / STATISTICS 1.

'ANOVA' PROBLEM REQUIRES 2568 BYTES OF MEMORY.

*** ANALYSIS OF VARIANCE ***

HBTOT
BY N_P
N_VEH

Source of Variation	Sum of Squares	DF	Mean Square	F	Signif of F
Main Effects	442.358	6	73.726	20.182	.000
N_P	43.834	4	10.959	3.000	.018
N_VEH	264.975	2	132.488	36.268	.000
2-way Interactions	12.986	4	3.246	.889	.470
N_P N_VEH	12.986	4	3.246	.889	.470
Explained	455.344	10	45.534	12.465	.000
Residual	1746.145	478	3.653		
Total	2201.489	488	4.511		

489 Cases were processed.
0 Cases (.0 PCT) were missing.

*** MULTIPLE CLASSIFICATION ANALYSIS ***

HBTOT
By N_P

N_VEH

Grand Mean = 2.382

Variable + Category	N	Unadjusted Dev'n	Eta	Adjusted for Independents Dev'n	Beta	Adjusted for Independents + Covariates Dev'n	Beta
N_P							
1	209	-.48		-.07			
2	250	.17		-.07			
3	22	1.62		.78			
4	6	3.12		2.31			
5	2	1.62		.63			
			.28		.15		

* * * M U L T I P L E C L A S S I F I C A T I O N A N A L Y S I S * * *

HBTOT
By N_P
N_VEH

Grand Mean = 2.382

Variable + Category	N	Unadjusted Dev'n	Eta	Adjusted for Independents Dev'n	Beta	Adjusted for Independents + Covariates Dev'n	Beta
N_VEH							
0	40	-2.33		-2.26			
	320	-.17		-.12			
	129	1.15		.99			
			.43		.39		

Multiple R Squared .201
Multiple R .448

This procedure was completed at 20:43:35

FINISH.

End of Include file.

Appendix E
TRANPLAN Script and Input File

GP	1	1	632	1301	1659	1508	993	474	0
GP	2	1	782	959	1034	1161	558	404	0
GP	3	1	0	0	0	0	0	0	0
GP	4	1	768	684	692	863	1177	454	0
[illegible]	5	1	24	25	25	31	1039	201	0
[illegible]	6	1	1086	842	785	1113	610	335	0
GP	7	1	91	80	80	105	1985	372	0
GP	8	1	395	308	285	410	561	201	0
GP	9	1	1140	859	807	1137	718	378	0
GP	10	1	959	695	636	935	541	273	0
GP	11	1	313	254	248	366	1601	518	0
GP	12	1	1721	1561	1544	2047	2250	1075	0
GP	13	1	1660	1479	1482	1973	1793	718	0
GP	14	1	0	0	0	0	113	51	0
GP	15	1	765	547	567	1062	637	355	0
GP	16	1	500	686	904	1106	1480	715	0
GP	17	1	0	0	0	0	520	1037	0
GP	18	1	584	516	526	650	447	480	0
GP	19	1	2189	1979	1968	2504	4504	1562	0
GP	20	1	436	464	468	592	650	484	0
GP	21	1	811	621	661	1127	1856	702	0
GP	22	1	1808	1686	1691	2095	1628	800	0
GP	23	1	52	302	438	334	398	473	0
GP	24	1	1496	1102	1230	2208	321	284	0
GP	25	1	1751	1356	1314	2026	521	420	0
GP	26	1	0	0	0	0	4014	686	0
GP	27	1	2167	2149	2161	2822	985	954	0
GP	28	1	3577	4023	4126	4937	2418	2109	0
GP	29	1	0	0	0	0	315	269	0
[illegible]	30	1	1052	1003	978	1199	684	483	0
[illegible]	31	1	929	829	801	1174	1905	977	0
GP	32	1	839	764	752	958	314	284	0
GP	33	1	8	6	6	8	1622	584	0
GP	34	1	2111	1846	1803	2246	1024	1110	0
GP	35	1	839	909	905	1115	357	329	0
GP	36	1	449	384	388	537	2033	406	0
GP	37	1	444	310	309	476	309	174	0
GP	38	1	81	59	62	107	24	21	0
GP	39	1	762	497	511	1014	425	181	0
GP	40	1	171	113	114	215	134	132	0
GP	41	1	2	1	1	2	146	32	0
GP	42	1	0	0	0	0	3	6	0
GP	43	1	0	0	0	0	0	8	0
GP	44	1	4	3	3	6	2	6	0
GP	45	1	168	110	113	223	40	34	0
GP	46	1	53	39	38	61	259	73	0
GP	47	1	1633	1287	1281	1653	593	418	0
GP	48	1	127	101	106	148	1734	412	0
GP	49	1	35	24	23	42	9	12	0
GP	50	1	419	271	284	588	64	66	0
GP	51	1	315	205	210	418	50	53	0
GP	52	1	53	34	35	70	12	14	0
GP	53	1	4	3	3	6	2	6	0
GP	54	1	0	0	0	0	284	96	0
GP	55	1	0	0	0	0	4	6	0
[illegible]	56	1	0	0	0	0	3	27	0
GP	57	1	0	0	0	0	106	34	0
GP	58	1	819	579	610	1118	716	278	0
GP	59	1	2054	1324	1390	2874	798	404	0
GP	60	1	937	684	712	1217	498	262	0

GP	61	1	1538	999	1026	2037	244	242	0
GP	62	1	1079	761	778	1280	479	260	0
GP	63	1	216	142	140	254	46	46	0
GP	64	1	461	405	402	517	464	197	0
P	65	1	13	9	9	20	2087	636	0
GP	66	1	0	0	0	0	0	376	0
GP	67	1	682	654	661	816	250	240	0
GP	68	1	231	213	218	267	111	92	0
GP	69	1	1001	842	883	1406	1340	568	0
GP	70	1	1926	1670	1720	2589	1321	802	0
GP	71	1	995	674	695	1274	490	264	0
GP	72	1	1975	1568	1626	2515	751	507	0
GP	73	1	988	696	667	1129	588	274	0
GP	74	1	73	51	50	91	322	387	0
GP	75	1	238	170	171	299	409	490	0
GP	76	1	2528	2004	1982	2991	1869	921	0
GP	77	1	589	659	672	808	1226	483	0
GP	78	1	1364	1014	968	1455	337	303	0
GP	79	1	1590	1193	1147	1701	1054	581	0
GP	80	1	87	92	99	118	1298	272	0
GP	81	1	431	456	461	561	286	209	0
GP	82	1	1100	1348	1469	1638	1346	696	0
GP	83	1	3609	3318	3277	4331	5348	1740	0
GP	84	1	514	498	496	616	3987	1363	0
GP	85	1	2616	2505	2501	3200	3102	1194	0
GP	86	1	9	50	73	55	3693	608	0
GP	87	1	850	843	849	1101	5630	1394	0
GP	88	1	1785	1675	1686	2200	1935	818	0
GP	89	1	2285	1644	1625	2690	878	648	0
P	90	1	1918	1482	1411	2112	675	534	0
P	91	1	919	668	662	1000	3522	1055	0
GP	92	1	1104	821	770	1198	697	388	0
GP	93	1	303	225	228	366	342	164	0
GP	94	1	315	205	206	393	52	57	0
GP	95	1	284	233	253	354	367	137	0
GP	96	1	239	204	176	224	78	74	0
GP	97	1	2245	2351	2334	3013	862	785	0
GP	98	1	1389	1340	1310	1637	754	585	0
GP	99	1	511	380	360	605	129	118	0
GP	100	1	106	72	74	145	239	95	0
GP	101	1	1225	1066	1074	1576	897	480	0
GP	102	1	1510	1133	1137	1887	3139	1075	0
GP	103	1	2269	1792	1931	3004	2142	994	0
GP	104	1	905	888	898	1123	3548	851	0
GP	105	1	1090	1011	1091	1569	281	274	0
GP	106	1	460	565	612	673	284	177	0
GP	107	1	1960	1438	1499	2525	2941	1036	0
GP	108	1	4733	3768	4133	6373	2054	1220	0
GP	109	1	0	0	0	0	1025	1321	0
GP	110	1	1824	1278	1378	2340	622	382	0
GP	111	1	3376	2692	2887	4406	925	759	0
GP	112	1	2380	1963	1978	3002	9590	2928	0
GP	113	1	5331	4708	4857	6663	3763	1952	0
GP	114	1	2043	1525	1596	2597	864	515	0
GP	115	1	1262	856	900	1683	545	273	0
P	116	1	1251	915	923	1463	968	439	0
GP	117	1	374	255	259	474	8085	1329	0
GP	118	1	305	229	233	370	332	133	0
GP	119	1	1308	886	917	1704	340	242	0
GP	120	1	1389	921	957	1850	660	315	0

GP	121	1	1873	1262	1332	2429	294	282	0
GP	122	1	745	487	501	953	141	122	0
GP	123	1	4	3	3	5	96	25	0
GP	124	1	1291	838	876	1706	298	205	0
P	125	1	1760	1518	1562	2137	882	517	0
GP	126	1	2168	1459	1526	2776	912	484	0
GP	127	1	1445	946	980	1872	224	210	0
GP	128	1	632	408	449	991	241	127	0
GP	129	1	999	660	653	1181	1405	400	0
GP	130	1	2398	1703	1820	3079	1857	743	0
GP	131	1	2201	1743	1807	2810	678	528	0
GP	132	1	237	190	201	277	46	49	0
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GP	136	1	5879	4954	5326	7617	2428	1472	0
GP	137	1	1574	1335	1264	1599	1260	592	0
GP	138	1	0	0	0	0	0	15	0
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GP	140	1	0	0	0	0	0	3	0
GP	141	1	1615	1637	1568	1979	717	589	0
GP	142	1	1134	993	914	1199	838	408	0
GP	143	1	857	663	627	870	1013	374	0
GP	144	1	992	783	760	1064	229	225	0
GP	145	1	1448	1313	1225	1586	1070	604	0
GP	146	1	808	655	647	875	690	372	0
GP	147	1	905	788	814	1048	3418	1155	0
GP	148	1	0	0	0	0	27	6	0
GP	149	1	0	0	0	0	0	0	0
GP	150	1	731	531	526	894	161	146	0
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GP	161	1	52	64	64	78	1311	284	0
GP	162	1	2358	1742	1643	2537	3443	1174	0
GP	163	1	2127	1697	1614	2391	2018	1117	0
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GP	167	1	62	57	62	82	358	126	0
GP	168	1	683	538	537	790	262	208	0
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GP	170	1	503	399	418	657	981	354	0
GP	171	1	1777	1497	1402	1959	752	567	0
GP	172	1	1580	1626	1677	2095	958	606	0
GP	173	1	1647	1083	1152	2333	1434	687	0
GP	174	1	1798	1227	1314	2555	1042	488	0
GP	175	1	0	0	0	0	16	38	0
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GP	177	1	1564	1507	1701	2413	1244	661	0
GP	178	1	226	184	202	332	585	206	0
GP	179	1	0	0	0	0	1222	379	0
GP	180	1	660	642	639	796	4311	2385	0

GP	181	1	0	0	0	0	720	339	0
GP	182	1	185	129	142	288	155	671	0
GP	183	1	165	124	146	290	566	494	0
GP	184	1	268	271	318	442	226	139	0
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GP	186	1	589	421	445	775	1181	396	0
GP	187	1	0	0	0	0	322	647	0
GP	188	1	0	0	0	0	495	240	0
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GP	190	1	0	0	0	0	505	638	0
GP	191	1	2150	1542	1659	3081	1729	811	0
GP	192	1	536	657	745	796	920	304	0
GP	193	1	1931	2246	2235	2703	927	755	0
GP	194	1	5366	5786	5808	7233	2624	2160	0
GP	195	1	1999	1556	1540	2409	735	506	0
GP	196	1	0	0	0	0	344	167	0
GP	197	1	0	0	0	0	0	15	0
GP	198	1	731	834	930	1206	510	341	0
GP	199	1	357	387	396	474	998	432	0
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GP	202	1	0	0	0	0	1316	650	0
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GP	204	1	0	0	0	0	3593	629	0
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GP	207	1	2215	1786	1760	2540	4995	2024	0
GP	208	1	1223	966	907	1270	475	363	0
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GP	210	1	1388	1056	1031	1450	5270	1267	0
GP	211	1	1049	798	747	1056	1035	469	0
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GP	213	1	606	520	494	671	1675	567	0
GP	214	1	518	404	399	594	1845	624	0
GP	215	1	1837	1932	1947	2400	3222	1246	0
GP	216	1	739	653	629	839	2223	681	0
GP	217	1	1585	1340	1313	1801	3326	1017	0
GP	218	1	1220	977	944	1362	494	379	0
GP	219	1	782	699	687	889	2187	593	0
GP	220	1	320	258	250	357	483	189	0
GP	221	1	1407	1531	1662	1896	2349	938	0
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GP	224	1	1169	1316	1397	1588	932	591	0
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GP	227	1	1848	2524	2908	3023	1624	995	0
GP	228	1	661	669	686	810	2174	623	0
GP	229	1	1761	1580	1584	2055	2679	1071	0
GP	230	1	1197	1043	1036	1381	6404	1873	0
GP	231	1	1658	1378	1344	1871	888	777	0
GP	232	1	1809	1582	1591	2034	1179	644	0
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GP	234	1	1008	850	833	1141	961	430	0
GP	235	1	1229	1094	1119	1469	1095	536	0
GP	236	1	250	218	218	286	5479	1724	0
GP	237	1	817	714	715	981	1554	620	0
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GP	241	1	0	0	0	0	4021	787	0
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GP	243	1	1417	1584	1667	2001	2748	1103	0
GP	244	1	2222	3163	3604	3790	4739	2078	0
P	245	1	462	769	949	911	859	327	0
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GP	247	1	5	3	3	6	164	54	0
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GP	250	1	1722	1365	1328	1906	1519	662	0
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GP	261	1	776	697	731	1063	667	327	0
GP	262	1	2083	1375	1446	2950	1441	558	0
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GP	264	1	0	0	0	0	1	1	0
GP	265	1	1110	840	882	1496	657	374	0
GP	266	1	411	269	253	435	959	392	0
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P	270	1	269	296	333	462	269	121	0
P	271	1	1839	1269	1358	2604	1153	534	0
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GP	282	1	82	91	107	145	1118	370	0
GP	283	1	1295	1196	1263	1825	1178	744	0
GP	284	1	39	41	47	66	450	350	0
GP	285	1	26	28	30	41	415	159	0
GP	286	1	160	238	271	274	1908	1166	0
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GP	289	1	989	840	924	1405	632	340	0
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GP	294	1	517	652	710	785	1971	689	0
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GP	301	1	1	6	9	7	5494	1801	0
GP	302	1	2	9	13	10	3594	899	0
GP	303	1	471	489	482	588	2140	742	0
GP	304	1	483	447	442	540	241	196	0
[illegible]	305	1	189	167	162	207	327	134	0
GP	306	1	373	397	412	495	1174	438	0
GP	307	1	297	358	422	429	1384	415	0
GP	308	1	1068	1174	1306	1448	402	366	0
GP	309	1	477	352	321	473	181	119	0
GP	310	1	1658	1325	1288	1717	991	578	0
GP	311	1	327	941	1251	1070	1223	415	0
GP	312	1	39	224	324	247	0	0	0
GP	313	1	1648	4378	5813	4992	3556	1326	0
GP	314	1	383	1075	1454	1221	2525	847	0
GP	315	1	527	722	864	915	186	144	0
GP	316	1	2040	2372	2661	2901	2684	1309	0
GP	317	1	45	260	377	287	878	276	0
GP	318	1	1076	880	858	1209	594	436	0
GP	319	1	982	910	915	1157	773	404	0
GP	320	1	76	86	94	103	235	67	0
GP	321	1	38	29	27	43	60	24	0
GP	322	1	86	79	78	101	697	239	0
GP	323	1	243	328	360	394	1135	325	0
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GP	325	1	271	496	629	579	3375	716	0
GP	326	1	0	0	0	0	1265	387	0
GP	327	1	60	346	502	383	1246	313	0
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GP	332	1	143	139	133	164	4799	1532	0
GP	333	1	0	0	0	0	4639	1647	0
GP	334	1	0	0	0	0	5193	1576	0
GP	335	1	26	132	190	147	1821	487	0
GP	336	1	0	0	0	0	1357	1385	0
GP	337	1	3	3	3	4	700	182	0
GP	338	1	33	43	51	52	601	208	0
GP	339	1	373	357	359	464	288	186	0
GP	340	1	545	532	521	668	2755	1377	0
GP	341	1	736	643	640	818	279	241	0
GP	342	1	713	589	541	705	375	332	0
GP	343	1	312	298	289	377	556	234	0
GP	344	1	104	123	136	164	2450	729	0
GP	345	1	2290	2203	2240	3016	1425	873	0
GP	346	1	0	0	0	0	74	83	0
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GP	352	1	0	0	0	0	1337	294	0
GP	353	1	47	70	87	90	503	104	0
GP	354	1	1567	1030	1059	2097	477	319	0
GP	355	1	91	60	62	122	18	16	0
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GP	357	1	1512	1050	1006	1683	962	453	0
GP	358	1	1574	1173	1185	1971	981	488	0
GP	359	1	1183	803	754	1199	565	308	0
GP	360	1	1599	1157	1123	1817	638	383	0

GP	361	1	1546	1095	1055	1718	937	486	0
GP	362	1	648	813	887	964	737	462	0
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GP	364	1	0	0	0	0	0	0	0
?	365	1	465	423	422	577	457	276	0
GP	366	1	906	735	715	1034	1450	592	0
GP	367	1	1713	1372	1293	1794	1579	639	0
GP	368	1	1143	950	895	1237	768	456	0
GP	369	1	315	278	268	373	314	174	0
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GP	387	1	1711	1534	1542	1945	2185	2087	0
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GP	389	1	0	0	0	0	2304	800	0
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GP	393	1	303	294	271	317	178	140	0
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GP	401	1	406	481	526	581	3531	755	0
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GP	408	1	443	412	418	551	274	196	0
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GP	410	1	954	1224	1241	1485	2607	1172	0
GP	411	1	4463	4036	4120	5666	5373	2151	0
GP	412	1	1419	1091	1094	1744	1268	718	0
GP	413	1	1316	1085	1061	1399	1056	527	0
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GP	421	1	93	96	95	117	669	222	0
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GP	428	1	362	470	500	563	1029	342	0
GP	429	1	402	408	412	517	1803	628	0
GP	430	1	0	0	0	0	967	343	0
GP	431	1	1510	1559	1545	1974	3746	1866	0
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GP	435	1	867	646	632	955	1069	474	0
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GP	437	1	121	114	125	174	3013	1197	0
GP	438	1	628	549	548	799	3670	1523	0
GP	439	1	1792	1207	1282	2512	1176	662	0
GP	440	1	146	133	133	168	68	49	0
GP	441	1	117	102	106	143	1035	226	0
GP	442	1	284	249	248	327	796	238	0
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GP	445	1	353	284	277	410	93	87	0
GP	446	1	1188	1063	1053	1414	1044	547	0
GP	447	1	704	633	636	800	1467	704	0
GP	448	1	233	207	204	257	450	281	0
GP	449	1	183	133	124	177	424	125	0
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GP	454	1	633	541	470	594	4343	928	0
GP	455	1	2787	2678	2651	3419	1231	1011	0
GP	456	1	1753	1706	1685	2221	856	599	0
GP	457	1	484	435	372	476	501	262	0
GP	458	1	1127	873	772	1038	554	357	0
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GP	461	1	1150	1109	1205	1582	2802	840	0
GP	462	1	0	0	0	0	1393	274	0
GP	463	1	1580	1443	1457	1812	1354	763	0
GP	464	1	3518	3237	3266	4059	1662	1314	0
GP	465	1	2681	2905	2832	3460	2254	1339	0
GP	466	1	1870	1870	1851	2342	1506	1213	0
GP	467	1	0	0	0	0	1025	227	0
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GP	471	1	2559	2310	2298	2891	2134	1039	0
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GP	473	1	3696	3083	3168	4470	4026	1559	0
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GP	494	1	2356	1958	1880	2603	1389	863	0
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GP	500	1	1939	2015	2039	2491	2809	1276	0
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GP	504	1	2914	2727	2765	3795	2587	1328	0
GP	505	1	0	0	0	0	2791	528	0
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P	511	1	258	183	187	339	1230	420	0
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GP	523	1	1310	1409	1424	1740	2568	1007	0
GP	524	1	678	647	678	931	3306	1161	0
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GP	529	1	3097	2606	2609	3432	2109	1280	0
GP	530	1	325	287	297	382	10764	2843	0
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P	536	1	1226	870	846	1383	1061	489	0
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GP	538	1	610	402	386	654	218	139	0
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GP	548	1	26	151	218	166	923	282	0
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GP	561	1	988	878	871	1181	401	294	0
GP	562	1	2013	1727	1882	2527	829	504	0
GP	563	1	340	228	230	435	89	90	0
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GP	566	1	1830	1503	1517	2089	2791	1005	0
GP	567	1	0	0	0	0	3684	1145	0
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GP	620	1	54	243	348	274	61	25	0
GP	621	1	274	175	179	358	411	163	0
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GP	659	1	418	360	365	524	239	137	0
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GP	661	1	1480	1271	1251	1711	1062	539	0
GP	662	1	871	856	882	1137	1078	558	0
GP	663	1	696	631	637	844	721	384	0
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[illegible]	665	1	1585	1462	1543	2262	1924	1064	0
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GP	667	1	20	113	164	125	3796	2017	0
GP	668	1	42	28	25	38	133	45	0
GP	669	1	0	0	0	0	2752	1109	0
GP	670	1	0	0	0	0	41	13	0
GP	671	1	0	0	0	0	0	153	0
GP	672	1	0	0	0	0	4	1	0
GP	673	1	364	649	797	761	346	171	0
GP	674	1	28	77	103	87	113	42	0
GP	675	1	0	0	0	0	15	5	0
GP	676	1	0	0	0	0	415	72	0
GP	677	1	1461	2437	2986	2866	1352	780	0
GP	678	1	100	183	229	214	262	78	0
GP	679	1	2423	4040	4788	4747	3130	2537	0
GP	680	1	970	1597	1906	1883	943	589	0
GP	681	1	0	0	0	0	21	7	0
GP	682	1	557	454	441	588	314	222	0
GP	683	1	1067	784	735	1154	429	306	0
GP	684	1	923	853	854	1105	1338	551	0
GP	685	1	644	694	746	880	1190	567	0
GP	686	1	572	630	647	778	1076	729	0
GP	687	1	989	990	1020	1237	766	472	0
GP	688	1	223	369	449	437	412	162	0
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GP	724	1	951	673	652	1038	1010	420	0
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GP	741	1	298	198	210	423	48	46	0
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GP	774	1	1909	2281	2388	2784	2710	1383	0
GP	775	1	620	665	681	826	2795	890	0
P	776	1	1217	1255	1287	1559	1506	665	0
GP	777	1	1806	1472	1448	2106	1858	858	0
GP	778	1	1497	1325	1319	1893	1052	787	0
GP	779	1	309	375	438	520	2479	846	0
GP	780	1	0	0	0	0	50	45	0

GP	781	1	1241	1356	1340	1677	1439	666	0
GP	782	1	0	0	0	0	9	1	0
GP	783	1	875	1010	1023	1235	873	612	0
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GP	787	1	1579	1053	1035	1876	940	395	0
GP	788	1	943	704	718	1234	279	233	0
GP	789	1	1263	985	1009	1699	384	355	0
GP	790	1	370	269	284	466	948	460	0
GP	791	1	1074	1059	1117	1432	2154	921	0
GP	792	1	1539	1013	1021	1937	541	329	0
GP	793	1	257	243	271	372	783	363	0
GP	794	1	325	309	319	427	677	275	0
GP	795	1	1375	1143	1156	1695	823	433	0
GP	796	1	2392	1588	1603	3035	961	518	0
GP	797	1	0	0	0	0	495	158	0
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GP	799	1	1365	938	926	1653	512	312	0
GP	800	1	143	159	168	211	56	44	0
GP	801	1	0	0	0	0	207	41	0
GP	802	1	41	47	47	57	34	19	0
GP	803	1	0	0	0	0	2415	787	0
GP	804	1	1567	1038	1046	1928	828	402	0
GP	805	1	1651	1274	1333	2146	385	321	0
GP	806	1	2447	1840	1873	3077	1205	687	0
GP	807	1	821	562	567	1069	567	262	0
GP	808	1	55	39	37	63	11	10	0
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GP	815	1	567	617	671	854	199	176	0
GP	816	1	258	172	175	347	1633	563	0
GP	817	1	0	0	0	0	1	0	0
GP	818	1	0	0	0	0	3	1	0
GP	819	1	0	0	0	0	2257	529	0
GP	820	1	0	0	0	0	925	482	0
GP	821	1	0	0	0	0	620	132	0
GP	822	1	0	0	0	0	10	3	0
GP	823	1	4027	3377	3455	4783	1260	948	0
GP	824	1	0	0	0	0	699	163	0
GP	825	1	2538	2160	2152	2865	970	714	0
GP	826	1	2452	1916	2009	2947	860	629	0
GP	827	1	1985	1437	1311	1931	587	445	0
GP	828	1	1058	818	739	978	515	313	0
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GP	830	1	995	677	681	1271	4960	980	0
GP	831	1	1559	1101	1119	1917	908	446	0
GP	832	1	875	783	829	1082	497	270	0
GP	833	1	2568	2227	2200	2851	8010	1819	0
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GP	840	1	8	5	7	15	140	58	0

GP	841	1	0	0	0	0	0	3	0
GP	842	1	0	0	0	0	84	74	0
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GP	847	1	618	442	454	638	605	302	0
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GP	849	1	899	807	834	1070	3953	880	0
GP	850	1	921	624	629	1188	153	151	0
GP	851	1	3197	2520	2575	3954	2067	901	0
GP	852	1	1733	1200	1214	2240	1653	580	0
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GP	854	1	0	0	0	0	1952	451	0
GP	855	1	146	100	99	189	34	31	0
GP	856	1	247	165	169	333	51	47	0
GP	857	1	0	0	0	0	1773	306	0
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GP	864	1	3	2	2	5	1	49	0
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GP	866	1	0	0	0	0	0	50	0
GP	867	1	628	546	544	689	165	177	0
GP	868	1	0	0	0	0	2367	1053	0
GP	869	1	1556	1286	1313	1849	432	361	0
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	871	1	2817	1908	1896	3386	777	549	0
GP	872	1	2975	2129	2049	3339	767	619	0
GP	873	1	0	0	0	0	0	0	0
GP	874	1	2687	1784	1800	3398	810	522	0
GP	875	1	42	28	27	50	7	7	0
GP	876	1	1611	1085	1069	1909	797	404	0
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GP	882	1	740	715	722	891	2457	803	0
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GP	887	1	126	91	87	146	840	189	0
GP	888	1	8	5	5	9	57	16	0
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GP	890	1	180	120	119	215	106	52	0
GP	891	1	0	0	0	0	0	18	0
GP	892	1	24	140	202	154	1085	1125	0
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GP	895	1	0	0	0	0	0	0	15040
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GP	899	1	0	0	0	0	0	0	13312
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GP	901	1	0	0	0	0	0	0	12260
GP	902	1	0	0	0	0	0	0	0
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GP	904	1	0	0	0	0	0	0	0
?P	905	1	0	0	0	0	0	0	0
GP	906	1	0	0	0	0	0	0	0
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GP	909	1	0	0	0	0	0	0	1292
GP	910	1	0	0	0	0	0	0	1750
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GP	912	1	0	0	0	0	0	0	0
GP	913	1	0	0	0	0	0	0	0
GP	914	1	0	0	0	0	0	0	0
GP	915	1	0	0	0	0	0	0	18988
GP	916	1	0	0	0	0	0	0	4992
GP	917	1	0	0	0	0	0	0	0
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GP	921	1	0	0	0	0	0	0	5280
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?P	930	1	0	0	0	0	0	0	17252
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GA	1	1	652	189	3267	741	993	474	561
GA	2	1	156	86	484	371	558	404	161
GA	3	1	0	0	0	0	0	0	0
GA	4	1	544	857	634	633	1177	454	365
GA	5	1	528	1013	399	511	1039	201	325
GA	6	1	226	282	423	362	610	335	183
GA	7	1	947	2065	725	1199	1985	372	641
GA	8	1	302	425	285	302	561	201	178
GA	9	1	315	232	516	475	718	378	213
GA	10	1	223	315	343	303	541	273	166
GA	11	1	1241	737	887	1736	1601	518	549
GA	12	1	1554	1013	1411	2890	2250	1075	821
GA	13	1	908	1175	1005	1017	1793	718	558
GA	14	1	141	83	51	67	113	51	43
GA	15	1	544	315	396	397	637	355	220
GA	16	1	1760	867	769	941	1480	715	552
GA	17	1	2849	305	260	337	520	1037	454
GA	18	1	762	166	329	278	447	480	203
GA	19	1	2422	2623	2514	2758	4504	1562	1374
GA	20	1	837	359	400	385	650	484	261
GA	21	1	1429	455	1191	2223	1856	702	626
GA	22	1	615	787	1083	979	1628	800	485
?A	23	1	1301	249	194	252	398	473	245
GA	24	1	77	0	315	219	321	284	93
GA	25	1	152	0	492	369	521	420	150
GA	26	1	1886	4240	2493	2809	4014	686	1428
GA	27	1	132	23	1005	634	985	954	286

GA	28	1	815	183	2273	1609	2418	2109	731
GA	29	1	738	226	145	188	315	269	161
GA	30	1	145	199	566	417	684	483	198
GA	31	1	1943	873	1129	1265	1905	977	673
[illegible]	32	1	124	0	304	218	314	284	96
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GA	34	1	1406	146	878	696	1024	1110	424
GA	35	1	25	20	357	227	357	329	101
GA	36	1	838	2211	741	887	2033	406	634
GA	37	1	231	23	237	241	309	174	96
GA	38	1	23	0	21	18	24	21	9
GA	39	1	193	259	251	244	425	181	130
GA	40	1	292	53	84	90	134	132	66
GA	41	1	88	146	55	71	146	32	47
GA	42	1	16	0	2	2	3	6	2
GA	43	1	22	0	0	0	0	8	3
GA	44	1	15	0	2	2	2	6	2
GA	45	1	23	7	35	26	40	34	13
GA	46	1	172	153	133	165	259	73	80
GA	47	1	167	139	495	378	593	418	174
GA	48	1	1065	1750	651	825	1734	412	568
GA	49	1	16	0	8	6	9	12	4
GA	50	1	17	0	66	41	64	66	20
GA	51	1	16	0	51	32	50	53	16
GA	52	1	17	0	11	9	12	14	5
GA	53	1	15	0	2	2	2	6	2
GA	54	1	265	0	193	2720	284	96	254
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[illegible]	57	1	94	0	72	1052	106	34	97
[illegible]	58	1	366	352	433	456	716	278	215
GA	59	1	325	319	552	506	798	404	237
GA	60	1	272	169	348	332	498	262	153
GA	61	1	43	0	251	159	244	242	72
GA	62	1	224	146	348	319	479	260	143
GA	63	1	20	0	46	31	46	46	15
GA	64	1	240	282	1451	270	464	197	265
GA	65	1	1742	1371	999	1294	2087	636	692
GA	66	1	1033	0	0	0	0	376	121
GA	67	1	14	0	259	162	250	240	70
GA	68	1	25	0	107	77	111	92	32
GA	69	1	864	332	905	4141	1340	568	617
GA	70	1	838	389	966	886	1321	802	420
GA	71	1	303	63	372	1175	490	264	202
GA	72	1	300	302	568	443	751	507	233
GA	73	1	247	305	376	351	588	274	177
GA	74	1	1028	179	169	210	322	387	195
GA	75	1	1235	219	226	263	409	490	241
GA	76	1	1066	574	1296	2098	1869	921	623
GA	77	1	554	764	705	707	1226	483	373
GA	78	1	43	0	338	225	337	303	95
GA	79	1	595	106	822	970	1054	581	324
GA	80	1	618	1298	501	615	1298	272	406
GA	81	1	95	10	257	204	286	209	82
GA	82	1	723	296	988	962	1346	696	401
	83	1	2175	4718	2546	2601	5348	1740	1657
GA	84	1	3354	2656	1949	2422	3987	1363	1339
GA	85	1	1259	2182	1717	1683	3102	1194	944
GA	86	1	1669	4134	1241	1610	3693	608	1160
GA	87	1	3044	4250	2631	3201	5630	1394	1729

GA	88	1	659	1395	1106	1007	1935	818	586
GA	89	1	548	246	691	565	878	648	288
GA	90	1	188	23	627	1203	675	534	244
GA	91	1	2366	1959	1867	2277	3522	1055	1095
[illegible]	92	1	398	43	552	2265	697	388	323
[illegible]A	93	1	294	126	215	237	342	164	113
GA	94	1	21	0	54	33	52	57	17
GA	95	1	216	179	216	238	367	137	112
GA	96	1	5	0	81	241	78	74	35
GA	97	1	93	27	862	628	862	785	248
GA	98	1	193	110	674	494	754	585	220
GA	99	1	15	0	130	86	129	118	36
GA	100	1	209	23	163	1097	239	95	135
GA	101	1	376	342	635	569	897	480	268
GA	102	1	2179	1760	1700	7768	3139	1075	1387
GA	103	1	1617	1172	1249	2096	2142	994	763
GA	104	1	1439	3540	1449	1638	3548	851	1098
GA	105	1	20	0	292	181	281	274	80
GA	106	1	96	116	211	169	284	177	86
GA	107	1	1925	1544	1652	3876	2941	1036	1052
GA	108	1	1081	372	1595	2335	2054	1220	678
GA	109	1	3631	807	449	583	1025	1321	674
GA	110	1	303	40	513	1513	622	382	253
GA	111	1	377	110	830	617	925	759	284
GA	112	1	6419	4576	5339	7144	9590	2928	2983
GA	113	1	1889	1358	2619	3934	3763	1952	1241
GA	114	1	460	27	710	1752	864	515	327
GA	115	1	244	249	364	335	545	273	165
GA	116	1	547	286	661	2881	968	439	439
[illegible]	117	1	3491	13811	2745	3517	8085	1329	3092
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GA	119	1	121	13	302	245	340	242	98
GA	120	1	310	236	452	438	660	315	196
GA	121	1	15	0	304	190	294	282	82
GA	122	1	25	0	138	96	141	122	40
GA	123	1	67	43	52	67	96	25	29
GA	124	1	78	73	247	190	298	205	86
GA	125	1	336	236	676	1769	882	517	339
GA	126	1	471	159	690	3474	912	484	460
GA	127	1	17	0	229	146	224	210	63
GA	128	1	116	93	167	155	241	127	73
GA	129	1	669	1209	644	719	1405	400	437
GA	130	1	977	1079	1078	1175	1857	743	577
GA	131	1	265	96	594	1182	678	528	255
GA	132	1	14	0	48	29	46	49	14
GA	133	1	584	372	283	335	560	256	203
GA	134	1	465	558	737	652	1107	580	338
GA	135	1	529	452	970	1902	1305	778	466
GA	136	1	896	654	1883	4155	2428	1472	888
GA	137	1	568	621	811	768	1260	592	381
GA	138	1	42	0	0	0	0	15	5
GA	139	1	10	0	0	0	0	4	1
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GA	141	1	125	86	667	463	717	589	206
GA	142	1	289	458	543	481	838	408	250
[illegible]	143	1	518	564	585	622	1013	374	307
GA	144	1	6	0	240	147	229	225	64
GA	145	1	502	249	810	739	1070	604	317
GA	146	1	512	209	475	479	690	372	222
GA	147	1	2593	737	2178	3495	3418	1155	1085

GA	148	1	16	20	12	16	27	6	8
GA	149	1	0	0	0	0	0	0	0
GA	150	1	20	0	162	108	161	146	45
GA	151	1	334	355	862	685	1103	708	325
GA	152	1	49	10	86	67	98	78	30
GA	153	1	9	20	50	35	60	45	17
GA	154	1	12	0	67	43	65	64	19
GA	155	1	21	0	123	85	125	109	35
GA	156	1	1073	581	1036	1179	1663	613	502
GA	157	1	242	342	326	303	544	250	168
GA	158	1	148	33	478	364	525	400	151
GA	159	1	681	740	776	814	1331	509	405
GA	160	1	156	249	90	117	246	57	81
GA	161	1	715	1179	538	680	1311	284	411
GA	162	1	1828	2158	1870	2049	3443	1174	1055
GA	163	1	1757	1272	1162	2171	2018	1117	784
GA	164	1	3476	9595	2538	3291	6932	1265	2476
GA	165	1	9	23	7	9	20	3	6
GA	166	1	95	50	60	78	111	35	36
GA	167	1	307	249	172	213	358	126	122
GA	168	1	192	40	218	180	262	208	88
GA	169	1	331	249	254	817	469	153	182
GA	170	1	701	335	601	2245	981	354	406
GA	171	1	237	83	667	1101	752	567	260
GA	172	1	375	239	755	697	958	606	289
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GA	175	1	105	10	8	10	16	38	16
GA	176	1	1322	468	214	278	527	481	285
GA	177	1	632	352	900	2385	1244	661	478
GA	178	1	413	229	348	411	585	206	180
GA	179	1	1041	541	664	862	1222	379	392
GA	180	1	6028	3045	2068	2541	4311	2385	1743
GA	181	1	931	345	384	498	720	339	270
GA	182	1	1755	23	110	119	155	671	240
GA	183	1	1271	289	308	866	566	494	312
GA	184	1	166	90	155	144	226	139	75
GA	185	1	318	249	111	144	276	116	106
GA	186	1	746	1033	533	599	1181	396	389
GA	187	1	1778	60	201	260	322	647	275
GA	188	1	660	405	212	275	495	240	198
GA	189	1	1878	43	56	73	102	684	243
GA	190	1	1753	508	188	243	505	638	334
GA	191	1	1128	561	1155	1629	1729	811	565
GA	192	1	378	784	448	458	920	304	284
GA	193	1	168	130	853	593	927	755	267
GA	194	1	602	43	2504	4389	2624	2160	924
GA	195	1	283	40	639	1166	735	506	256
GA	196	1	459	299	142	184	344	167	138
GA	197	1	42	0	0	0	0	15	5
GA	198	1	242	146	398	329	510	341	158
GA	199	1	725	116	706	792	998	432	300
GA	200	1	1690	1182	680	881	1534	615	567
GA	201	1	637	305	508	444	724	522	258
GA	202	1	1787	916	613	795	1316	650	520
GA	203	1	5593	877	1294	1678	2299	2035	1155
GA	204	1	1727	3978	1221	1584	3593	629	1139
GA	205	1	1731	1255	2355	2279	3447	1679	1037
GA	206	1	821	372	1146	1102	1565	819	467
GA	207	1	4099	2723	2761	3800	4995	2024	1700

GA	208	1	146	103	408	301	475	363	142
GA	209	1	182	63	577	419	630	512	185
GA	210	1	2528	5034	2168	3053	5270	1267	1685
GA	211	1	629	412	668	1389	1035	469	367
A	212	1	2119	2384	1680	2107	3494	869	1078
GA	213	1	1151	764	960	2689	1675	567	624
GA	214	1	1407	1152	943	2128	1845	624	669
GA	215	1	1657	2112	1785	1954	3222	1246	1009
GA	216	1	1301	1388	1164	1356	2223	681	685
GA	217	1	1594	2600	1628	1789	3326	1017	1026
GA	218	1	146	20	453	347	494	379	142
GA	219	1	995	2052	944	1053	2187	593	684
GA	220	1	283	305	268	283	483	189	153
GA	221	1	1224	1182	1420	1478	2349	938	712
GA	222	1	1151	485	5646	1752	2554	1654	1131
GA	223	1	1429	415	2093	1969	2705	1529	804
GA	224	1	377	219	738	622	932	591	277
GA	225	1	79	0	474	326	480	419	136
GA	226	1	788	631	983	989	1516	674	458
GA	227	1	768	289	1286	1139	1624	995	484
GA	228	1	994	1843	1011	1117	2174	623	671
GA	229	1	1260	1733	1521	1520	2679	1071	824
GA	230	1	4123	3792	3331	4044	6404	1873	1985
GA	231	1	754	189	735	582	888	777	315
GA	232	1	503	438	841	1819	1179	644	426
GA	233	1	1531	558	931	2667	1437	890	636
GA	234	1	493	581	569	947	961	430	327
GA	235	1	585	362	756	914	1095	536	342
GA	236	1	4482	1295	3363	4549	5479	1724	1691
A	237	1	1011	717	931	1021	1554	620	485
A	238	1	880	674	722	2296	1291	456	505
GA	239	1	1192	1710	1183	1180	2246	913	719
GA	240	1	2689	1567	1616	2001	3014	1106	1005
GA	241	1	2161	3762	1578	2047	4021	787	1259
GA	242	1	1876	1212	1346	1746	2527	683	783
GA	243	1	1386	1451	1648	1696	2748	1103	834
GA	244	1	2659	1720	3114	3218	4739	2078	1429
GA	245	1	566	322	531	599	859	327	263
GA	246	1	1637	684	1842	1929	2672	1219	805
GA	247	1	147	27	1132	134	164	54	155
GA	248	1	3778	3244	3167	3769	5869	1833	1815
GA	249	1	2227	3417	1852	2235	4142	1036	1289
GA	250	1	684	916	908	1243	1519	662	491
GA	251	1	1072	1341	851	1047	1815	468	565
GA	252	1	1610	2992	1274	1544	3144	732	991
GA	253	1	1455	1146	1413	3249	2397	886	849
GA	254	1	166	63	175	130	213	192	76
GA	255	1	1238	890	1035	1170	1794	685	567
GA	256	1	480	608	624	604	1038	453	318
GA	257	1	380	286	443	396	646	381	208
GA	258	1	594	216	689	2476	979	455	412
GA	259	1	491	531	527	702	911	366	293
GA	260	1	130	60	675	451	701	621	204
GA	261	1	350	345	423	401	667	327	208
GA	262	1	638	976	803	1603	1441	558	495
A	263	1	854	183	882	936	1223	592	372
GA	264	1	4	0	1	1	1	1	1
GA	265	1	412	189	473	448	657	374	206
GA	266	1	846	365	571	679	959	392	314
GA	267	1	110	56	136	2718	195	96	234

GA	268	1	252	100	310	351	386	299	135
GA	269	1	117	23	234	195	273	189	81
GA	270	1	93	183	160	143	269	121	81
GA	271	1	626	531	737	1719	1153	534	422
	272	1	1060	986	590	688	1255	491	436
GA	273	1	0	0	3	2	3	3	1
GA	274	1	1710	1365	1256	2928	2328	866	856
GA	275	1	671	574	750	1398	1205	527	414
GA	276	1	437	770	319	414	817	159	256
GA	277	1	503	372	457	471	748	348	241
GA	278	1	119	20	34	34	52	57	26
GA	279	1	276	73	333	446	440	247	143
GA	280	1	469	103	525	552	722	345	216
GA	281	1	153	27	166	166	219	122	68
GA	282	1	935	800	526	660	1118	370	377
GA	283	1	803	299	880	1521	1178	744	428
GA	284	1	921	339	208	258	450	350	217
GA	285	1	408	239	213	268	415	159	144
GA	286	1	3017	1219	948	1180	1908	1166	803
GA	287	1	171	96	164	151	238	145	79
GA	288	1	742	325	934	2335	1285	694	490
GA	289	1	318	269	432	394	632	340	195
GA	290	1	225	63	235	896	337	149	145
GA	291	1	1799	1003	755	905	1507	754	572
GA	292	1	866	495	653	730	1096	473	357
GA	293	1	573	810	354	449	879	222	287
GA	294	1	1305	1431	2207	1115	1971	689	764
GA	295	1	594	355	723	717	1057	515	322
GA	296	1	507	498	663	653	1044	464	316
	297	1	26	0	146	101	149	129	42
	298	1	221	332	326	302	539	244	164
GA	299	1	1940	2633	1505	1859	3333	831	1043
GA	300	1	608	342	500	569	830	329	262
GA	301	1	4950	1039	3417	4431	5494	1801	1708
GA	302	1	2469	2324	1730	2243	3594	899	1126
GA	303	1	1533	634	1330	2014	2140	742	678
GA	304	1	57	7	228	166	241	196	69
GA	305	1	184	139	205	216	327	134	99
GA	306	1	704	588	686	756	1174	438	361
GA	307	1	883	774	739	889	1384	415	426
GA	308	1	47	0	406	268	402	366	114
GA	309	1	47	60	143	110	181	119	53
GA	310	1	343	389	726	607	991	578	295
GA	311	1	736	634	692	789	1223	415	374
GA	312	1	0	0	4646	0	0	0	473
GA	313	1	1955	1833	2087	2252	3556	1326	1082
GA	314	1	2022	770	1523	1892	2525	847	783
GA	315	1	41	23	168	123	186	144	53
GA	316	1	1625	541	1930	1973	2684	1309	805
GA	317	1	759	136	555	720	878	276	267
GA	318	1	386	60	497	426	594	436	189
GA	319	1	278	418	512	440	773	404	234
GA	320	1	120	183	112	128	235	67	73
GA	321	1	43	10	41	47	60	24	18
GA	322	1	577	219	417	520	697	239	218
	323	1	676	760	568	678	1135	325	352
GA	324	1	986	1478	835	1400	1831	474	597
GA	325	1	1735	3221	1338	3179	3375	716	1161
GA	326	1	1065	389	741	960	1265	387	393
GA	327	1	859	1219	473	614	1246	313	416

GA	328	1	317	485	285	328	607	172	189
GA	329	1	607	435	451	536	823	286	263
GA	330	1	343	319	467	548	717	330	222
GA	331	1	1050	472	819	1130	1387	436	432
GA	332	1	4061	940	2995	3844	4799	1532	1468
GA	333	1	4527	598	2971	3853	4639	1647	1466
GA	334	1	4332	999	3224	5823	5193	1576	1686
GA	335	1	1329	890	966	1250	1821	487	563
GA	336	1	3805	535	759	984	1357	1385	742
GA	337	1	496	345	371	480	700	182	215
GA	338	1	519	276	331	416	601	208	196
GA	339	1	224	90	208	192	288	186	96
GA	340	1	3283	624	1750	2135	2755	1377	972
GA	341	1	46	10	272	187	279	241	79
GA	342	1	364	60	312	257	375	332	136
GA	343	1	362	232	346	372	556	234	173
GA	344	1	1924	1029	1360	2037	2450	729	785
GA	345	1	634	276	1127	2540	1425	873	528
GA	346	1	228	43	37	48	74	83	44
GA	347	1	135	143	69	90	167	49	57
GA	348	1	204	130	274	530	377	228	138
GA	349	1	1774	2082	1562	2520	2975	1119	1008
GA	350	1	1317	760	1194	4400	1881	872	812
GA	351	1	770	721	946	1105	1507	658	469
GA	352	1	809	1255	524	679	1337	294	430
GA	353	1	260	505	191	240	503	104	159
GA	354	1	229	96	384	323	477	319	145
GA	355	1	2	0	18	12	18	16	5
GA	356	1	193	302	273	263	469	193	142
GA	357	1	486	468	615	1150	962	453	333
GA	358	1	549	319	678	2378	981	488	415
GA	359	1	284	113	427	1667	565	308	253
GA	360	1	241	232	474	530	638	383	200
GA	361	1	558	269	662	649	937	486	288
GA	362	1	747	402	449	442	737	462	271
GA	363	1	73	120	56	73	137	27	42
GA	364	1	0	0	0	0	0	0	0
GA	365	1	373	226	294	279	457	276	158
GA	366	1	1068	1096	726	1443	1450	592	534
GA	367	1	670	1112	881	851	1579	639	486
GA	368	1	511	37	613	595	768	456	234
GA	369	1	255	183	188	184	314	174	109
GA	370	1	793	452	449	583	865	288	288
GA	371	1	569	485	318	412	687	207	229
GA	372	1	721	369	500	1083	844	366	314
GA	373	1	2396	425	806	2354	1342	935	665
GA	374	1	3464	2411	1431	1855	3193	1263	1171
GA	375	1	836	1265	521	667	1331	316	433
GA	376	1	516	721	426	492	907	270	287
GA	377	1	439	654	352	428	791	198	248
GA	378	1	302	53	224	286	350	116	107
GA	379	1	1871	1026	637	800	1381	716	552
GA	380	1	298	266	111	144	284	108	106
GA	381	1	134	0	145	159	191	89	56
GA	382	1	1230	877	836	1084	1625	448	512
GA	383	1	56	0	90	64	93	92	31
GA	384	1	48	103	57	59	119	39	37
GA	385	1	1203	392	1239	2962	1801	794	654
GA	386	1	22	0	580	359	557	540	156
GA	387	1	4224	847	1434	1453	2185	2087	1018

GA	388	1	85	149	63	81	160	31	50
GA	389	1	2197	1006	1258	1631	2304	800	765
GA	390	1	11563	3530	2932	4140	5805	4390	2743
GA	391	1	0	0	437	262	413	413	116
GA	392	1	6461	4486	4111	5255	8015	2455	2590
GA	393	1	45	10	165	547	178	140	80
GA	394	1	3650	1517	1159	3522	2337	1424	1123
GA	395	1	3506	1557	1278	1657	2582	1276	1006
GA	396	1	3493	1664	1476	1914	2922	1271	1076
GA	397	1	172	70	58	75	117	63	47
GA	398	1	3561	4994	2166	2665	5334	1491	1769
GA	399	1	381	173	238	309	428	139	138
GA	400	1	1143	146	1249	5682	1636	895	801
GA	401	1	1777	3291	1431	1776	3531	755	1100
GA	402	1	1020	1727	1093	1153	2189	730	679
GA	403	1	1787	2829	1618	1863	3480	968	1082
GA	404	1	1812	4098	1615	1894	4075	932	1272
GA	405	1	1143	1886	1801	1680	3008	1303	907
GA	406	1	388	90	545	523	704	390	209
GA	407	1	1248	2464	897	1154	2425	467	766
GA	408	1	85	40	237	185	274	196	80
GA	409	1	173	27	877	615	909	771	259
GA	410	1	1798	256	1889	2068	2607	1172	776
GA	411	1	2592	3218	3122	3510	5373	2151	1667
GA	412	1	1195	740	742	753	1268	718	455
GA	413	1	465	528	691	632	1056	527	322
GA	414	1	1046	2045	1074	1201	2360	640	725
GA	415	1	230	60	73	95	135	84	57
GA	416	1	160	53	202	177	257	172	82
GA	417	1	320	319	466	403	678	388	211
GA	418	1	589	541	219	284	567	214	211
GA	419	1	1859	1408	1276	1416	2333	1000	783
GA	420	1	299	186	321	320	484	239	151
GA	421	1	529	478	319	392	669	222	223
GA	422	1	1112	996	796	948	1557	518	502
GA	423	1	1020	564	832	1021	1344	613	443
GA	424	1	1274	857	533	584	1091	608	425
GA	425	1	1382	1962	1156	1388	2503	653	778
GA	426	1	1788	1202	1269	1547	2335	785	746
GA	427	1	534	651	429	1027	888	262	315
GA	428	1	573	697	536	597	1029	342	320
GA	429	1	1256	1016	978	1339	1803	628	586
GA	430	1	943	810	408	530	967	343	347
GA	431	1	3805	2032	2105	2432	3746	1866	1340
GA	432	1	768	491	760	1376	1204	522	413
GA	433	1	429	0	330	428	486	156	144
GA	434	1	2133	3835	1429	1853	3834	776	1224
GA	435	1	707	598	625	651	1069	474	345
GA	436	1	2523	3045	1529	1780	3472	1193	1176
GA	437	1	3213	867	1793	2305	3013	1197	1016
GA	438	1	3707	2035	1936	3044	3670	1523	1329
GA	439	1	1005	289	822	2333	1176	662	490
GA	440	1	11	23	56	40	68	49	20
GA	441	1	537	1006	406	504	1035	226	327
GA	442	1	435	614	382	437	796	238	249
GA	443	1	445	548	619	580	990	464	303
GA	444	1	1113	764	1056	1792	1724	719	582
GA	445	1	33	7	90	61	93	87	29
GA	446	1	517	359	735	1436	1044	547	366
GA	447	1	1323	601	897	999	1467	704	495

GA	448	1	571	312	238	254	450	281	179
GA	449	1	239	289	214	249	424	125	131
GA	450	1	521	126	448	517	668	276	206
GA	451	1	336	80	371	485	484	296	162
A	452	1	754	133	371	288	460	536	208
GA	453	1	1129	827	1485	2564	2188	1076	740
GA	454	1	2063	4147	1746	2133	4343	928	1349
GA	455	1	526	93	1118	995	1231	1011	387
GA	456	1	158	302	694	500	856	599	249
GA	457	1	283	80	376	370	501	262	149
GA	458	1	251	53	461	402	554	357	163
GA	459	1	2137	4768	1818	2217	4722	968	1469
GA	460	1	351	498	583	531	913	434	274
GA	461	1	1662	1574	1510	1785	2802	840	853
GA	462	1	752	1292	550	714	1393	274	436
GA	463	1	736	143	1064	1014	1354	763	400
GA	464	1	433	53	1551	1157	1662	1314	475
GA	465	1	918	661	1709	1475	2254	1339	671
GA	466	1	1631	163	1208	1109	1506	1213	546
GA	467	1	624	1036	379	491	1025	227	334
GA	468	1	2225	0	0	0	0	810	261
GA	469	1	746	674	1000	2154	1544	687	542
GA	470	1	1514	2092	1789	1886	3171	1280	988
GA	471	1	1060	727	1475	3622	2134	1039	787
GA	472	1	961	1610	1175	1210	2220	774	676
GA	473	1	2060	2135	2388	2499	4026	1559	1220
GA	474	1	325	103	366	369	505	262	155
GA	475	1	481	518	475	522	862	302	266
GA	476	1	317	103	1076	813	1191	904	342
A	477	1	263	385	316	321	572	216	175
A	478	1	5814	31346	4476	5805	13366	2116	6113
GA	479	1	124	46	40	52	80	45	33
GA	480	1	42	10	1053	41	51	15	119
GA	481	1	6144	136	1099	1425	1677	2236	1055
GA	482	1	152	146	224	216	339	156	101
GA	483	1	126	10	111	549	145	86	77
GA	484	1	49	0	379	240	368	358	106
GA	485	1	131	83	145	252	210	121	75
GA	486	1	361	37	336	1509	459	226	219
GA	487	1	419	425	879	740	1184	693	351
GA	488	1	219	27	1498	1002	1507	1354	429
GA	489	1	130	86	980	644	1009	895	289
GA	490	1	235	30	298	1188	388	201	175
GA	491	1	633	76	544	3253	778	330	417
GA	492	1	480	986	415	481	1013	252	319
GA	493	1	955	867	1410	1322	2084	1033	627
GA	494	1	657	472	1035	881	1389	863	428
GA	495	1	474	359	577	1263	864	436	315
GA	496	1	313	133	829	632	945	714	279
GA	497	1	906	1249	602	774	1444	338	462
GA	498	1	626	521	1186	1871	1580	949	532
GA	499	1	563	382	1594	1250	1902	1311	553
GA	500	1	1458	1122	1847	1845	2809	1276	847
GA	501	1	391	43	711	2010	831	566	341
GA	502	1	245	120	304	822	438	202	165
A	503	1	976	1740	1421	1335	2494	1043	762
GA	504	1	1047	1235	1737	1554	2587	1328	780
GA	505	1	1450	2733	1059	1373	2791	528	876
GA	506	1	169	43	265	913	333	199	144
GA	507	1	1997	1046	944	1315	1830	782	666

GA	508	1	178	156	124	160	253	65	79
GA	509	1	6256	0	0	0	0	2277	735
GA	510	1	858	236	1248	1797	1572	977	522
GA	511	1	1033	90	825	4504	1230	420	604
A	512	1	660	110	466	807	736	240	240
GA	513	1	1171	1750	852	1105	2044	426	639
GA	514	1	20	17	258	165	259	236	73
GA	515	1	16	0	53	33	51	54	16
GA	516	1	42	63	168	116	199	154	59
GA	517	1	99	96	393	277	447	351	131
GA	518	1	163	163	734	525	832	638	240
GA	519	1	1036	372	1121	1200	1626	721	489
GA	520	1	314	206	298	309	473	220	150
GA	521	1	57	7	168	118	175	156	53
GA	522	1	538	86	328	1159	490	252	221
GA	523	1	1392	1275	1543	1632	2568	1007	781
GA	524	1	2660	1013	2010	3140	3306	1161	1076
GA	525	1	265	0	469	423	550	347	159
GA	526	1	1652	4247	1617	1856	4116	928	1275
GA	527	1	17	0	117	72	112	114	33
GA	528	1	255	0	346	2048	424	244	241
GA	529	1	1261	183	1688	1583	2109	1280	638
GA	530	1	7602	12253	5847	7526	10764	2843	4152
GA	531	1	357	90	300	353	454	178	140
GA	532	1	471	661	604	576	1031	452	319
GA	533	1	430	296	308	316	524	270	180
GA	534	1	2573	472	2361	3177	3439	1380	1065
GA	535	1	2792	2378	2160	2739	4203	1100	1293
GA	536	1	752	515	645	766	1061	489	349
A	537	1	356	90	613	1032	734	504	257
A	538	1	111	20	180	160	218	139	65
GA	539	1	362	299	386	374	608	303	193
GA	540	1	209	56	365	960	453	272	175
GA	541	1	807	146	839	4469	1165	536	592
GA	542	1	4351	16427	3084	4000	8630	1584	3602
GA	543	1	8637	17220	6628	8595	17526	3143	5447
GA	544	1	739	1468	1257	1128	2134	949	647
GA	545	1	23	0	8	10	11	9	5
GA	546	1	1420	1175	1125	1621	2152	577	674
GA	547	1	1449	1009	1562	1965	2370	1215	780
GA	548	1	774	535	464	601	923	282	302
GA	549	1	1391	262	275	341	511	527	280
GA	550	1	564	83	583	459	672	607	236
GA	551	1	608	903	881	813	1456	668	446
GA	552	1	162	153	61	79	159	59	59
GA	553	1	2332	282	1087	1356	1685	921	624
GA	554	1	1410	644	671	732	1174	700	448
GA	555	1	276	352	317	319	555	225	172
GA	556	1	56	0	0	0	0	20	7
GA	557	1	3038	4675	2014	2493	4985	1266	1618
GA	558	1	939	1627	897	981	1917	588	601
GA	559	1	52	7	408	272	409	368	116
GA	560	1	831	817	1492	1175	1992	1331	621
GA	561	1	130	53	350	271	401	294	117
GA	562	1	270	389	598	475	829	504	251
A	563	1	95	20	75	57	89	90	34
GA	564	1	23	0	44	29	44	47	15
GA	565	1	40	10	64	43	69	68	23
GA	566	1	1572	1318	1656	1828	2791	1005	842
GA	567	1	3147	624	2313	34948	3684	1145	3293

GA	568	1	57	0	312	217	318	275	90
GA	569	1	100	7	324	238	343	282	100
GA	570	1	124	0	131	138	169	89	51
GA	571	1	21	0	54	34	53	56	17
[illegible]	572	1	345	183	282	320	463	188	147
[illegible]A	573	1	598	179	1205	3996	1455	933	626
GA	574	1	961	980	860	722	1411	883	491
GA	575	1	2519	2912	1759	2092	3760	1173	1222
GA	576	1	42	0	364	241	361	329	102
GA	577	1	218	100	788	588	878	667	252
GA	578	1	138	96	107	138	200	50	61
GA	579	1	573	511	441	572	879	208	268
GA	580	1	681	0	243	315	357	248	149
GA	581	1	1	0	1	1	1	0	0
GA	582	1	1	0	1	1	1	0	0
GA	583	1	352	325	260	336	528	129	163
GA	584	1	423	166	326	2133	554	154	283
GA	585	1	40	27	122	94	144	101	42
GA	586	1	6	0	185	114	177	173	50
GA	587	1	100	23	95	71	110	107	41
GA	588	1	6	0	185	114	177	173	50
GA	589	1	146	46	436	1297	492	359	207
GA	590	1	17	0	15	9	14	19	6
GA	591	1	14	0	67	42	65	66	19
GA	592	1	41	10	65	46	71	68	24
GA	593	1	507	847	367	435	891	239	288
GA	594	1	36	0	90	65	94	84	28
GA	595	1	215	0	181	224	258	93	76
GA	596	1	283	0	241	297	343	125	101
[illegible]	597	1	2	0	2	2	3	1	1
[illegible]	598	1	1	0	1	1	1	0	0
GA	599	1	209	163	305	285	439	226	132
GA	600	1	36	0	65	51	71	58	22
GA	601	1	21	0	123	77	119	118	35
GA	602	1	584	574	449	583	920	212	281
GA	603	1	75	0	200	1118	220	162	128
GA	604	1	101	120	194	170	278	146	82
GA	605	1	11	0	55	35	54	52	16
GA	606	1	6	0	49	33	49	44	14
GA	607	1	36	7	26	21	32	30	12
GA	608	1	2	0	29	19	28	26	8
GA	609	1	67	0	169	134	184	140	54
GA	610	1	17	0	6	4	6	11	4
GA	611	1	69	123	66	75	144	40	45
GA	612	1	2	0	25	17	25	23	7
GA	613	1	1146	2198	1419	2266	2767	980	909
GA	614	1	198	531	677	511	960	568	284
GA	615	1	617	196	570	558	790	470	258
GA	616	1	1312	671	1543	4964	2247	1065	911
GA	617	1	480	76	696	2581	880	494	389
GA	618	1	0	0	0	0	0	0	0
GA	619	1	1797	1873	1759	2547	3124	1210	1023
GA	620	1	64	43	29	36	61	25	22
GA	621	1	343	40	282	337	411	163	126
GA	622	1	688	598	640	744	1147	367	349
[illegible]	623	1	1844	3520	1371	1727	3568	740	1126
[illegible]A	624	1	2912	3241	2220	2852	4628	1241	1457
GA	625	1	935	999	1110	1142	1860	744	565
GA	626	1	361	305	202	220	403	188	144
GA	627	1	1238	505	908	1182	1519	530	481

GA	628	1	356	103	153	199	272	130	101
GA	629	1	507	166	94	122	214	185	111
GA	630	1	5	7	4	5	9	2	3
GA	631	1	2404	355	316	410	625	875	425
	632	1	391	319	227	294	477	142	158
GA	633	1	244	10	33	43	54	89	40
GA	634	1	121	17	299	243	338	240	98
GA	635	1	1056	302	741	894	1176	475	378
GA	636	1	617	113	450	584	713	225	217
GA	637	1	1972	2736	2274	3755	4089	1601	1364
GA	638	1	732	797	534	657	1119	314	355
GA	639	1	522	744	716	679	1201	527	368
GA	640	1	470	505	331	430	715	171	224
GA	641	1	329	130	90	117	192	120	84
GA	642	1	845	422	418	542	805	307	281
GA	643	1	257	43	38	49	76	94	47
GA	644	1	2670	1205	4696	22324	10789	972	3148
GA	645	1	152	166	114	148	243	55	75
GA	646	1	167	83	251	192	306	241	99
GA	647	1	2446	4114	1668	2101	4265	975	1369
GA	648	1	847	535	299	388	681	308	264
GA	649	1	1392	518	716	914	1276	527	444
GA	650	1	712	193	443	569	734	267	238
GA	651	1	263	43	67	76	110	111	56
GA	652	1	550	146	158	205	298	200	131
GA	653	1	232	50	54	70	102	85	50
GA	654	1	256	27	33	27	48	114	43
GA	655	1	2650	940	1141	1320	1983	1180	770
GA	656	1	618	966	808	792	1432	571	438
GA	657	1	789	548	702	788	1187	453	370
	658	1	584	1039	829	794	1477	593	450
GA	659	1	108	93	171	149	239	137	73
GA	660	1	46	120	63	62	132	43	40
GA	661	1	418	641	671	585	1062	539	327
GA	662	1	815	485	683	692	1078	558	356
GA	663	1	449	76	550	551	721	384	216
GA	664	1	319	183	491	825	656	383	225
GA	665	1	1692	648	1279	2742	1924	1064	745
GA	666	1	2667	6996	2006	2601	6110	971	1918
GA	667	1	5542	2670	1761	2284	3796	2017	1547
GA	668	1	99	116	58	69	133	45	45
GA	669	1	3047	1112	1530	1984	2752	1109	958
GA	670	1	35	10	2259	32	41	13	240
GA	671	1	420	0	0	0	0	153	49
GA	672	1	4	0	3	4	4	1	1
GA	673	1	150	149	4567	216	346	171	544
GA	674	1	88	20	74	89	113	42	34
GA	675	1	14	0	10	14	15	5	5
GA	676	1	199	435	149	193	415	72	130
GA	677	1	495	518	987	837	1352	780	403
GA	678	1	113	232	121	130	262	78	81
GA	679	1	3431	634	2420	2187	3130	2537	1158
GA	680	1	388	176	756	650	943	589	277
GA	681	1	19	0	14	19	21	7	6
GA	682	1	147	90	250	200	314	222	98
	683	1	225	37	365	307	429	306	131
GA	684	1	716	598	836	2856	1338	551	539
GA	685	1	1057	594	695	767	1190	567	406
GA	686	1	1467	555	635	679	1076	729	431
GA	687	1	275	246	586	485	766	472	227

GA	688	1	291	96	271	311	412	162	124
GA	689	1	465	345	704	955	987	536	319
GA	690	1	430	359	528	488	791	424	248
GA	691	1	257	186	345	297	478	297	152
	692	1	31	17	96	70	108	86	32
GA	693	1	156	23	216	758	270	162	119
GA	694	1	445	226	527	424	682	513	228
GA	695	1	1684	963	1648	1875	2533	1199	809
GA	696	1	380	332	599	855	862	444	278
GA	697	1	276	66	221	185	278	238	102
GA	698	1	32	37	998	31	52	12	115
GA	699	1	1635	1753	1452	1992	2656	1084	886
GA	700	1	3103	4765	2625	5763	5838	1443	1985
GA	701	1	320	249	549	618	745	431	233
GA	702	1	209	292	357	319	549	270	165
GA	703	1	247	196	381	653	539	288	183
GA	704	1	4	10	3	4	9	1	3
GA	705	1	10	10	8	10	16	4	5
GA	706	1	111	146	83	107	188	41	58
GA	707	1	723	335	1125	3116	1464	879	585
GA	708	1	875	189	918	1239	1288	586	403
GA	709	1	1882	249	1398	1784	2147	725	655
GA	710	1	220	27	373	1098	442	293	184
GA	711	1	931	2035	691	888	1930	350	607
GA	712	1	519	657	538	566	989	368	308
GA	713	1	945	1684	743	2258	1820	404	661
GA	714	1	282	236	327	300	494	272	158
GA	715	1	1023	286	912	1653	1368	558	459
GA	716	1	723	193	833	1365	1154	549	378
GA	717	1	88	30	207	168	243	167	71
GA	718	1	215	43	325	275	387	275	120
GA	719	1	869	418	366	372	650	455	265
GA	720	1	266	43	248	284	356	147	107
GA	721	1	216	83	327	306	430	239	127
GA	722	1	158	46	331	681	396	260	143
GA	723	1	544	236	570	2053	846	376	355
GA	724	1	618	342	656	706	1010	420	306
GA	725	1	148	27	122	143	179	74	56
GA	726	1	69	40	148	119	181	123	54
GA	727	1	3169	6601	2352	3042	6435	1164	2017
GA	728	1	171	66	324	263	388	275	118
GA	729	1	304	389	320	332	584	222	182
GA	730	1	354	408	455	434	736	340	227
GA	731	1	756	926	789	842	1443	521	445
GA	732	1	105	159	273	213	367	230	110
GA	733	1	753	149	866	2899	1156	608	488
GA	734	1	115	20	265	178	274	266	87
GA	735	1	730	113	784	3445	1069	509	498
GA	736	1	251	86	364	1053	459	300	191
GA	737	1	22	0	177	107	168	175	49
GA	738	1	1235	1046	1015	1230	1900	567	586
GA	739	1	639	737	672	631	1141	557	368
GA	740	1	1974	1009	1148	1413	2087	821	706
GA	741	1	2	0	50	31	48	46	13
GA	742	1	616	654	589	891	1039	444	352
	743	1	68	46	338	232	363	304	105
GA	744	1	27	50	48	43	78	36	24
GA	745	1	225	40	77	69	108	123	53
GA	746	1	2624	405	2985	3061	3963	2053	1195
GA	747	1	937	312	838	1004	1311	453	392

GA	748	1	2964	897	2639	3701	4062	1482	1263
GA	749	1	438	329	541	657	825	375	257
GA	750	1	10	0	227	141	219	211	61
GA	751	1	3067	16534	2239	2904	6197	1116	3146
A	752	1	2509	717	2161	2465	3249	1369	1006
GA	753	1	1831	840	1508	1891	2492	856	770
GA	754	1	193	33	35	46	67	70	38
GA	755	1	360	43	418	1792	547	288	257
GA	756	1	487	309	552	548	825	404	255
GA	757	1	338	50	505	1070	623	380	227
GA	758	1	341	176	585	491	739	488	225
GA	759	1	1057	930	1021	1121	1769	658	546
GA	760	1	151	43	474	359	525	402	152
GA	761	1	30	7	235	156	237	212	67
GA	762	1	62	27	61	70	95	35	28
GA	763	1	85	63	167	143	219	130	65
GA	764	1	1575	2012	1234	1528	2669	671	832
GA	765	1	3115	1019	2301	2965	3830	1160	1171
GA	766	1	681	120	1938	1496	2139	1626	620
GA	767	1	63	10	256	186	271	221	78
GA	768	1	200	76	984	676	1030	885	298
GA	769	1	1013	721	1745	1561	2364	1318	702
GA	770	1	1907	1139	2266	2275	3348	1593	1018
GA	771	1	528	100	397	515	629	192	190
GA	772	1	150	166	111	144	239	54	74
GA	773	1	940	804	660	856	1333	342	417
GA	774	1	1000	1378	1804	1587	2710	1383	813
GA	775	1	1725	1587	1512	1767	2795	890	862
GA	776	1	585	980	894	826	1506	665	458
A	777	1	1214	448	1283	2739	1858	858	659
A	778	1	898	415	762	648	1052	787	374
GA	779	1	2092	1687	1200	2839	2479	846	926
GA	780	1	125	27	26	33	50	45	26
GA	781	1	555	867	888	808	1439	666	436
GA	782	1	4	10	3	4	9	1	3
GA	783	1	508	186	698	589	873	612	277
GA	784	1	530	232	314	326	506	304	184
GA	785	1	1861	405	390	405	681	813	387
GA	786	1	552	153	486	719	618	499	240
GA	787	1	362	651	539	1039	940	395	323
GA	788	1	114	33	252	185	279	233	86
GA	789	1	169	27	363	255	384	355	121
GA	790	1	1070	475	525	629	948	460	344
GA	791	1	1747	86	1546	2902	2154	921	728
GA	792	1	234	216	393	426	541	329	173
GA	793	1	833	545	387	459	783	363	287
GA	794	1	519	199	432	496	677	275	212
GA	795	1	314	405	556	485	823	433	248
GA	796	1	445	511	631	675	961	518	308
GA	797	1	434	40	325	4505	495	158	427
GA	798	1	256	130	187	242	333	93	102
GA	799	1	256	146	386	910	512	312	196
GA	800	1	9	13	50	34	56	44	16
GA	801	1	113	189	83	107	207	41	65
GA	802	1	15	20	22	19	34	19	11
A	803	1	2161	13	1638	2125	2415	787	722
GA	804	1	427	335	553	1172	828	402	295
GA	805	1	78	37	361	252	385	321	111
GA	806	1	669	130	948	901	1205	687	358
GA	807	1	361	103	403	1558	567	262	247

GA	808	1	1	0	11	7	11	10	3
GA	809	1	10	0	18	11	17	21	6
GA	810	1	0	0	48	29	46	46	13
GA	811	1	726	697	545	707	1117	264	344
A	812	1	1	0	3	2	3	2	1
GA	813	1	15	0	21	14	21	23	7
GA	814	1	75	13	55	72	87	27	27
GA	815	1	28	3	197	133	199	176	56
GA	816	1	1408	913	849	1064	1633	563	541
GA	817	1	1	0	1	1	1	0	0
GA	818	1	2	0	2	2	3	1	1
GA	819	1	1454	1395	1106	1435	2257	529	692
GA	820	1	1324	123	591	767	925	482	342
GA	821	1	362	465	279	362	620	132	191
GA	822	1	7	7	1353	6	10	3	140
GA	823	1	231	365	1071	751	1260	948	368
GA	824	1	449	422	346	448	699	163	213
GA	825	1	320	100	854	667	970	714	283
GA	826	1	519	206	688	566	860	629	278
GA	827	1	137	143	505	363	587	445	173
GA	828	1	199	146	396	336	515	313	153
GA	829	1	1469	2497	1388	1583	3007	828	931
GA	830	1	2243	5060	1880	2317	4960	980	1543
GA	831	1	516	189	657	2372	908	446	386
GA	832	1	225	126	370	1118	497	270	199
GA	833	1	3278	8275	3141	3611	8010	1819	2489
GA	834	1	335	319	1536	1099	1732	1330	498
GA	835	1	662	624	374	485	832	241	277
GA	836	1	388	359	265	333	544	155	174
A	837	1	261	0	0	0	0	95	31
A	838	1	263	239	174	220	360	103	116
GA	839	1	1	0	1	1	1	0	0
GA	840	1	157	86	69	88	140	58	51
GA	841	1	9	0	0	0	0	3	1
GA	842	1	203	50	42	54	84	74	43
GA	843	1	68	60	48	62	97	25	30
GA	844	1	30	10	10	12	19	11	8
GA	845	1	28	10	21	27	35	10	11
GA	846	1	0	0	0	0	0	0	0
GA	847	1	377	30	465	481	605	302	177
GA	848	1	1209	1212	1817	1735	2753	1280	820
GA	849	1	1805	3732	1625	1943	3953	880	1222
GA	850	1	2	0	160	97	153	151	43
GA	851	1	725	1361	1228	1495	2067	901	648
GA	852	1	790	1235	855	2142	1653	580	597
GA	853	1	396	329	290	377	576	144	178
GA	854	1	1239	1215	954	1237	1952	451	597
GA	855	1	4	0	34	22	34	31	9
GA	856	1	5	0	51	33	51	47	14
GA	857	1	840	1820	646	2258	1773	306	648
GA	858	1	309	252	225	291	444	113	138
GA	859	1	10	0	1	0	1	4	1
GA	860	1	98	76	60	78	123	36	40
GA	861	1	0	0	0	0	0	0	0
GA	862	1	38	0	0	0	0	14	5
A	863	1	0	0	0	0	0	0	0
GA	864	1	132	0	1	0	1	49	16
GA	865	1	169	0	0	0	0	62	20
GA	866	1	137	0	0	0	0	50	16
GA	867	1	66	0	170	107	165	177	53

GA	868	1	2895	1434	1169	1516	2367	1053	885
GA	869	1	87	20	412	291	432	361	123
GA	870	1	668	183	645	2959	952	385	438
GA	871	1	255	96	671	1299	777	549	278
GA	872	1	185	90	702	774	767	619	241
GA	873	1	0	0	0	0	0	0	0
GA	874	1	296	183	651	1160	810	522	281
GA	875	1	0	0	7	4	7	7	2
GA	876	1	371	319	546	1226	797	404	289
GA	877	1	435	70	683	638	850	494	249
GA	878	1	786	777	753	2483	1367	451	529
GA	879	1	1177	30	906	1175	1346	428	401
GA	880	1	803	100	595	11218	920	292	989
GA	881	1	4371	853	3305	4286	5246	1591	1581
GA	882	1	1570	1607	1264	3208	2457	803	895
GA	883	1	347	392	252	327	548	126	171
GA	884	1	4727	120	3621	4696	5380	1720	1604
GA	885	1	4591	0	3535	4584	5198	1671	1546
GA	886	1	482	631	351	456	802	176	250
GA	887	1	459	800	334	885	840	189	299
GA	888	1	40	23	32	40	57	16	17
GA	889	1	89	0	0	0	0	32	10
GA	890	1	53	30	75	74	106	52	31
GA	891	1	49	0	0	0	0	18	6
GA	892	1	3090	1109	397	515	1085	1125	640
GA	893	1	0	0	0	0	0	0	0
GA	894	1	5108	3834	4967	7804	8609	0	0
GA	895	1	0	0	0	0	0	0	0
GA	896	1	18472	13866	17963	28223	31134	0	0
GA	897	1	0	0	0	0	0	0	0
GA	898	1	6572	4933	6391	10041	11077	0	0
GA	899	1	4202	3154	4086	6420	7082	0	0
GA	900	1	3369	2529	3276	5147	5678	0	0
GA	901	1	3784	2841	3680	5782	6378	0	0
GA	902	1	0	0	0	0	0	0	0
GA	903	1	0	0	0	0	0	0	0
GA	904	1	0	0	0	0	0	0	0
GA	905	1	0	0	0	0	0	0	0
GA	906	1	0	0	0	0	0	0	0
GA	907	1	0	0	0	0	0	0	0
GA	908	1	0	0	0	0	0	0	0
GA	909	1	0	0	0	0	0	0	0
GA	910	1	0	0	0	0	0	0	0
GA	911	1	0	0	0	0	0	0	0
GA	912	1	0	0	0	0	0	0	0
GA	913	1	0	0	0	0	0	0	0
GA	914	1	0	0	0	0	0	0	0
GA	915	1	12050	5141	7279	13454	14842	0	0
GA	916	1	3173	1354	1916	3542	3908	0	0
GA	917	1	0	0	0	0	0	0	0
GA	918	1	0	0	0	0	0	0	0
GA	919	1	0	0	0	0	0	0	0
GA	920	1	0	0	0	0	0	0	0
GA	921	1	0	0	0	0	0	0	0
GA	922	1	10734	4580	6484	11985	13222	0	0
GA	923	1	9029	3852	5454	10081	11121	0	0
GA	924	1	7012	2992	4236	7829	8637	0	0
GA	925	1	0	0	0	0	0	0	0
GA	926	1	0	0	0	0	0	0	0
GA	927	1	36487	15568	22040	40739	44941	0	0

GA	928	1	0	0	0	0	0	0	0
GA	929	1	2487	1061	1502	2777	3064	0	0
GA	930	1	10846	4628	6551	12110	13359	0	0
GA	931	1	6031	2573	3643	6734	7429	0	0
	932	1	0	0	0	0	0	0	0
[illegible]	933	1	0	0	0	0	0	0	0
GT	1	1	0	3	1	10	6	1	0
GT	2	1	7	10	3	18	61	1	0
GT	3	1	19	39	5	49	88	1	0
GT	4	1	29	43	15	76	114	1	1
GT	5	1	35	31	21	59	104	1	0
GT	6	1	25	28	17	64	91	1	0
GT	7	1	27	32	8	54	62	1	0
GT	8	1	19	27	7	27	61	1	0
GT	9	1	29	15	15	21	53	1	0
GT	10	1	11	7	12	24	46	1	0
GT	11	1	23	8	3	24	36	1	0
GT	12	1	12	10	5	14	29	1	0
GT	13	1	18	6	1	10	17	1	0
GT	14	1	12	6	1	8	24	1	0
GT	15	1	16	2	1	12	19	1	0
GT	16	1	13	3	3	6	16	1	0
GT	17	1	10	3	2	4	19	1	0
GT	18	1	15	2	3	6	12	1	0
GT	19	1	12	1	3	9	11	1	0
GT	20	1	8	4	1	5	14	1	0
GT	21	1	6	0	1	3	4	1	0
GT	22	1	4	0	0	1	6	1	0
GT	23	1	6	0	2	5	6	1	0
[illegible]	24	1	4	0	0	2	2	1	0
	25	1	2	0	1	2	3	1	0
GT	26	1	5	1	1	1	0	1	0
GT	27	1	1	1	1	1	4	1	0
GT	28	1	2	2	0	0	3	1	0
GT	29	1	1	0	0	1	4	1	0
GT	30	1	2	0	0	0	0	1	0
GT	31	1	0	0	0	0	0	1	0
GT	32	1	0	0	0	0	1	1	0
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GT	35	1	0	0	0	0	1	1	0
GT	36	1	0	0	0	0	1	1	0
GT	37	1	0	0	0	0	0	1	0
GT	38	1	0	0	0	0	0	1	0
GT	39	1	0	0	0	0	0	1	0
GT	40	1	0	0	0	0	0	1	0
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GT	42	1	0	0	0	0	0	1	0
GT	43	1	1	0	0	0	0	1	0
GT	44	1	0	0	0	0	0	1	0
GT	45	1	1	0	0	0	1	1	0
GT	46	1	0	0	0	0	0	1	0
GT	47	1	0	0	0	0	0	1	0
GT	48	1	0	0	0	0	0	1	0
GT	49	1	0	0	0	0	0	1	0
	50	1	0	0	0	0	0	1	0
GT	51	1	0	0	0	0	0	1	0
GT	52	1	0	0	0	0	0	1	0
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GT	55	1	0	0	0	0	0	1	0
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GT	57	1	0	0	0	0	0	1	0
GT	58	1	0	0	0	0	0	1	0
[illegible]	59	1	0	0	0	0	0	1	0
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GT	62	1	0	0	0	0	0	1	0
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GT	68	1	0	0	0	0	0	1	0
GT	69	1	0	0	0	0	0	1	0
GT	70	1	0	0	0	0	0	1	0
GF	1	1	311644	95000	45000	29000	25000	23000	4900
GF	2	1	93389	45000	37000	25000	22000	21000	4200
GF	3	1	43836	33500	27000	21000	19968	19968	3630
GF	4	1	33475	26400	19000	19000	15413	15413	2970
GF	5	1	33350	21400	15000	17000	11977	11977	2610
GF	6	1	32274	18500	12500	14500	9733	9733	2225
GF	7	1	29370	15400	10250	12000	7762	7762	1850
GF	8	1	26647	13500	9300	10600	6077	6077	1525
GF	9	1	26483	12700	8500	9000	5041	5041	1150
GF	10	1	22200	11800	7500	7800	4160	4160	925
GF	11	1	19428	11200	6500	6500	3476	3476	875
GF	12	1	18722	10800	5700	5600	2962	2962	720
GF	13	1	18122	9800	4700	5000	2438	2438	690
[illegible]	14	1	17131	8700	3700	4600	2056	2056	570
[illegible]	15	1	15661	8000	3100	3100	1745	1745	390
GF	16	1	15406	7000	2700	2800	1508	1508	280
GF	17	1	10258	6000	2350	1900	1266	1266	220
GF	18	1	9089	4000	2050	1400	1102	1102	205
GF	19	1	8389	3200	1900	1300	935	935	195
GF	20	1	7768	2550	1800	1200	808	808	185
GF	21	1	6346	2200	1600	1100	678	678	175
GF	22	1	6177	1870	1500	1000	591	591	165
GF	23	1	6041	1700	1400	900	501	501	155
GF	24	1	5709	1600	1270	800	456	456	140
GF	25	1	5256	1450	1180	700	387	387	135
GF	26	1	4364	1275	1090	600	340	340	125
GF	27	1	4047	1125	980	500	293	293	112
GF	28	1	4041	1000	870	400	249	249	107
GF	29	1	3445	850	780	350	220	220	100
GF	30	1	2774	525	672	300	200	200	94
GF	31	1	2310	400	598	250	177	177	88
GF	32	1	2132	275	539	200	154	154	80
GF	33	1	1899	160	465	150	139	139	74
GF	34	1	1779	90	410	110	123	123	72
GF	35	1	1718	70	375	95	110	110	68
GF	36	1	1668	60	350	83	96	96	64
GF	37	1	1654	50	324	75	85	85	60
GF	38	1	1586	40	269	60	74	74	56
GF	39	1	1528	35	228	50	69	69	53
[illegible]	40	1	1190	25	198	40	63	63	50
[illegible]	41	1	808	22	185	35	52	52	47
GF	42	1	655	11	170	32	45	45	44
GF	43	1	548	10	168	27	37	37	41
GF	44	1	263	9	165	24	33	33	38

GF	45	1	199	8	164	21	28	28	36
GF	46	1	96	8	159	19	23	23	34
GF	47	1	91	7	154	16	19	19	32
GF	48	1	86	7	153	14	17	17	30
GF	49	1	83	6	152	12	15	15	28
GF	50	1	65	6	150	11	13	13	26
GF	51	1	41	5	142	10	12	12	24
GF	52	1	39	5	137	9	11	11	23
GF	53	1	36	5	134	9	11	11	22
GF	54	1	32	5	131	8	10	10	20
GF	55	1	28	4	128	7	9	9	19
GF	56	1	27	4	125	6	9	9	18
GF	57	1	23	4	123	5	8	8	17
GF	58	1	21	3	111	5	8	8	16
GF	59	1	20	3	99	4	7	7	15
GF	60	1	18	0	87	4	7	7	14
GF	61	1	18	0	69	3	7	7	13
GF	62	1	14	0	58	3	6	6	12
GF	63	1	12	0	47	3	6	6	11
GF	64	1	10	0	35	3	6	6	11
GF	65	1	9	0	24	3	6	6	10
GF	66	1	7	0	10	2	6	6	9
GF	67	1	2	0	9	1	6	6	8
GF	68	1	1	0	9	1	6	6	7
GF	69	1	0	0	8	1	6	6	3
GF	70	1	0	0	8	1	6	6	2