Treasure Coast Travel Characteristics Study

Final Report

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EXECUTIVE SUMMARY

The Treasure Coast Travel Characteristics Study (TC^2S) was initiated in January, 1995, in order to improve the travel forecasting accuracy of the Florida Standard Urban Transportation Model System (FSUTMS) for this area. 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 the Treasure Coast Area of Martin, St. Lucie and Indian River Counties. A systematic random sample pool of 5,000 households was drawn from the Property Appraiser records of the three (3) counties. A Telephone Cross-Reference Directory was used to match approximately 2,600 of the households. More than 5,100 telephone calls were made in early March, 1995, to identify individual household 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 1,531 households that agreed to participate in the mail-out portion of the Study. A variety of survey packages were 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 4th and 5th weeks of March, 1995. Approximately eighty-three percent (83%) of all households were asked to complete the Travel Log Survey Form for one (1) scheduled day for all household members six years of age or older. Eleven percent (11%) of the households were asked to complete two (2) day logs and the remaining six percent (6%) were asked to complete three (3) day logs.

The DUA survey was forwarded to twenty-five percent (25%) 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 forty-six percent (46%) of all travel logs and thirty-eight percent (38%) of all DUA Surveys were returned by survey participants. After adjusting for incomplete

Treasure Coast Travel Characteristics Study - March,1995

Characteristic	Martin County	St. Lucie County	Indian River County	Treasure Coast (all)
SF DU's*	135	149	129	413
MF DU's	65	26	42	133
Total DU's	200	175	171	546
SF DU's				
People/HH**	2.09	2.12	2.15	2.12
Autos/HH	1.73	1.74	1.80	1.76
Avg $/HH	$48,728	$40,177	$42,679	$43,704
Veh Trips/HH/Day	7.02	6.49	7.23	6.91
HBW Trips/HH	0.89	1.31	1.02	1.08
HBS Trips/HH	1.22	0.78	0.90	0.95
HBSR Trips/HH	0.73	0.63	0.62	0.66
HBO Trips/HH	2.10	1.47	2.06	1.86
NHB Trips/HH	2.33	1.94	2.35	2.44
Avg Trip Length (mi)	6.83	8.69	7.59	7.71
Avg Travel Time(min)	21.00	21.82	18.68	20.44
Avg Auto Occupancy	1.62	1.67	1.64	1.64
MF DU's				
People/HH	1.66	1.65	1.76	1.69
Autos/HH	1.20	1.15	1.38	1.25
Avg $/HH	$38,125	$40,761	$57,361	$44,454
Veh Trips/HH/Day	4.82	4.00	5.33	4.83
HBW Trips/HH	0.33	0.00†	0.24	0.23
HBS Trips/HH	1.02	1.17	1.00	1.04
HBSR Trips/HH	0.55	0.40	0.74	0.57
HBO Trips/HH	1.53	1.42	1.89	1.58
NHB Trips/HH	1.14	0.88	1.48	1.22
Avg Trip Length (mi)	6.69	6.09	9.04	7.46
Avg Travel Time(min)	17.12	16.17	26.33	20.43
Auto Occupancy	1.63	1.71	1.62	1.64
All DU's				
People/HH	1.95	2.05	2.05	2.01
Autos/HH	1.56	1.66	1.70	1.63
Avg $/HH	$45,029	$40,267	$46,250	$43,894
Veh Trips/HH/Day	6.36	6.12	6.79	6.43
HBW Trips/HH	0.66	1.08	0.83	0.84
HBS Trips/HH	1.14	0.85	0.92	0.98
HBSR Trips/HH	0.66	0.59	0.65	0.63
HBO Trips/HH	1.87	1.46	2.02	1.78
NHB Trips/HH	1.84	1.75	2.14	2.10
Avg Trip Length (mi)	6.80	8.39	7.88	7.66
Avg Travel Time(min)	20.07	21.15	20.21	20.44
Auto Occupancy	1.62	1.68	1.64	1.64

Source: Walter H. Keller, Inc.

* DU's = Dwelling Units

**HH = Households

† - Limited number of observations for St. Lucie County multi-family HBW trips.

TREASURE COAST TRAVEL CHARACTERISTICS STUDY
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I. INTRODUCTION

The Treasure Coast area of Florida is generally described as Martin, St. Lucie, and Indian River Counties. This area, like much of Florida, is experiencing significant growth and transportation facilities will be required to meet both the existing and the anticipated travel demand. In order to improve the travel forecasting accuracy, the Florida Department of Transportation (Department) initiated a study to identify the localized trip making characteristics of the Treasure Coast area. This Study known as the Treasure Coast Travel Characteristics Study (TC^2S), was initiated in January, 1995. The consulting firm of Walter H. Keller, Inc. (WHK), was selected as the prime consultant. The subconsultants assisting WHK for this effort was Regional Research Associates, Inc. and Marda L. Zimring, Inc.

TC^2S major objectives was to use a cost-efficient and state-of-the-art behavior analysis methodology to identify the trip making characteristics of the Treasure Coast area. The goal of the Study was to identify localized characteristics that can be utilized to improve the accuracy of the Florida Standard Urban Transportation Model Structure (FSUTMS) demand forecast models for this area.

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.

Technical Memorandum #2 addressed the Survey's Quality Control Plan. 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.

The Direct Utility Assessment (DUA) part of the Study was provided in Technical Memorandum #3 . This Memorandum was primarily prepared by Regional Research Associates, Inc. DUA is a disaggregate travel demand modeling technique based upon

obtaining responses to a series of hypothetical situations. This Memorandum reviews the results of the three modal choices versus the survey participants current mode of travel. Transit coefficients were derived using multiple regression analysis which can be used in future transit modeling.

This Final Report provides summaries of the three (3) technical memorandums and additional material on the socio-economics of the Treasure Coast Area and survey participants, the results of the travel log surveys, the travel characteristics of Treasure Coast Counties and other Counties, the results of the GIS address-matching effort and recommended 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 the individual counties of the Treasure Coast Area.

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 Martin, St. Lucie and Indian River Counties 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. The aggregate trips rates for the Treasure Coast Area are then reported. 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 Martin, St. Lucie, and Indian River Counties 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 the Treasure Coast Area. 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.

Survey forms, trip length frequency graphs, GIS data attribute tables, the results of the multiple classification analysis and the TRANPLAN script and input file are included in the Appendix to the Report.

II. SURVEY DESIGN METHODOLOGY

Overview

A unique feature of the TC^2S survey methodology was the use of the County Property Appraisal Tapes to develop a stratified random sample. The Property Appraiser Tapes 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) in proportion to the population of the three counties.

A systematic random sample was drawn from the combined county files. The combined file had N = 157,823 records. The sample was generated in 'replicas' of 100 properties. A replica was created by dividing the universe of properties by the replica size (in this application that would be 157,823 / 100 = 1,578). A random number generator selected a number between 1 and 1,578 and then a replica was generated by systematically drawing every 1,578th record beginning with the initial random number.

It was estimated that 600 households would need to be completed and returned to meet the Department's statistical requirements. Assuming a 35% agreement of contacted households and a 50% contact rate within the sample pool, approximately 3,500 households were initially estimated to be included in the random sample pool derived from the property appraiser files.

An initial test of the first 100 samples was used to establish the expected telephone match from the Telephone Cross Reference Directory and to establish whether the sample pool of 3,500 samples would be a sufficient pool to obtain the desired number of completed surveys. Forty-eight percent (48%) of the initial test sample were found to have either unlisted phone numbers (15%), lived outside the Treasure Coast area (18%), had an address that was a post office box (6%), or could not be found within the cross reference listing (9%). Because the Telephone Cross Reference Directory address matches were less than initially projected, the sample pool was increased to 5,000 properties (requiring 50 replicas).

The property appraiser data files for each county included the just value of each property and the dwelling's land use categorization based on the residential land use recorded within the property appraiser data. These land use codes identified single family, mobile home, condominium, cooperative, and multi-family housing. The just value variable was used to stratify the sample into 5 classes of equal size ordered from high to low property values. Thus analysis of the survey responses incorporated property value in addition to survey obtained income data. This provided a more solid base for income stratified analysis.

A telephone screener survey was performed to contact the telephone matched households to gather generalized dwelling unit and population characteristics and determine if the households would participate in the mail-out travel characteristics survey. Introductory letters were mailed to all of the survey pool prospects approximately 3 - 7 days before the first telephone call was made. A minimum of at least three (3) telephone calls were made to each household and additional measures were also implemented to identify the potential of bias due to non-contacts or refusals.

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, 1995. It was also desired to obtain a portion of multi-day travel logs in order to ascertain if bias was introduced by only obtaining a single day travel log. The survey methodology provided a two (2) week period of travel log survey with proportions of the participants selected for either a one (1) day log (approximately 70%), two (2) day logs (about 20%), and three (3) day logs (about 10%). Approximately one-half of the households participating in the travel logs were scheduled for the fourth week of March, 1995, and the remainder of the households were scheduled for the fifth week of March, 1995. One fourth of all households (about 440 households) who participated were also asked to complete the Direct Utility Assessment (DUA) questionnaire.

The first week travel log participants totaled 845 households. Telephone contacts with these participants suggested the size and overall complexity of the package was a major concern and may limit full participation. This input was considered relative to larger households with multi-day travel logs. Based on this initial concern, a decision was made to limit the second week travel log participants to one day travel logs. Second week participants totaled 668 households.

Several efforts were initiated to improve the participation in the Treasure Coast Travel Characteristics Survey. A public awareness program was implemented to make the public knowledgeable about the effort and its importance, introductory letters were mailed to all survey prospects (5,000 households) and a 1-800 phone number was established to provide a location for inquiring the Study. Because of the difficulty in securing the participation of travel logging, reminder phone calls were also made to survey participants prior, during and after the survey.

A comprehensive set of questions were included in the questionnaires allowing wide flexibility in the data analysis portion of the Study. Efforts were also made to provide "easy to read" instructions with emphasis on the importance of proper coding of trip ends information. Survey forms were printed in colors to facilitate coding of the separate forms.

Figure 1 highlights the final sample size, timing, and composition of the travel log distribution. Because the Study was initiated in late January, 1995, an accelerated pace was necessary in order to accomplish the travel log portion of the Study by the end of March. Based on this constraint, the actual travel log participant pool was reduced to 1,531 households where completed telephone surveys and an agreement to participate in the mail-out questionnaires were received. Completed and returned travel logs did exceed the initial goals which were set based on 35% participation. Actual participation in the travel logs was 46.4% which resulted in 702 household participating travel logs versus the goal of 620 households.

TC² S
Travel Characteristics Study
FDOT District IV

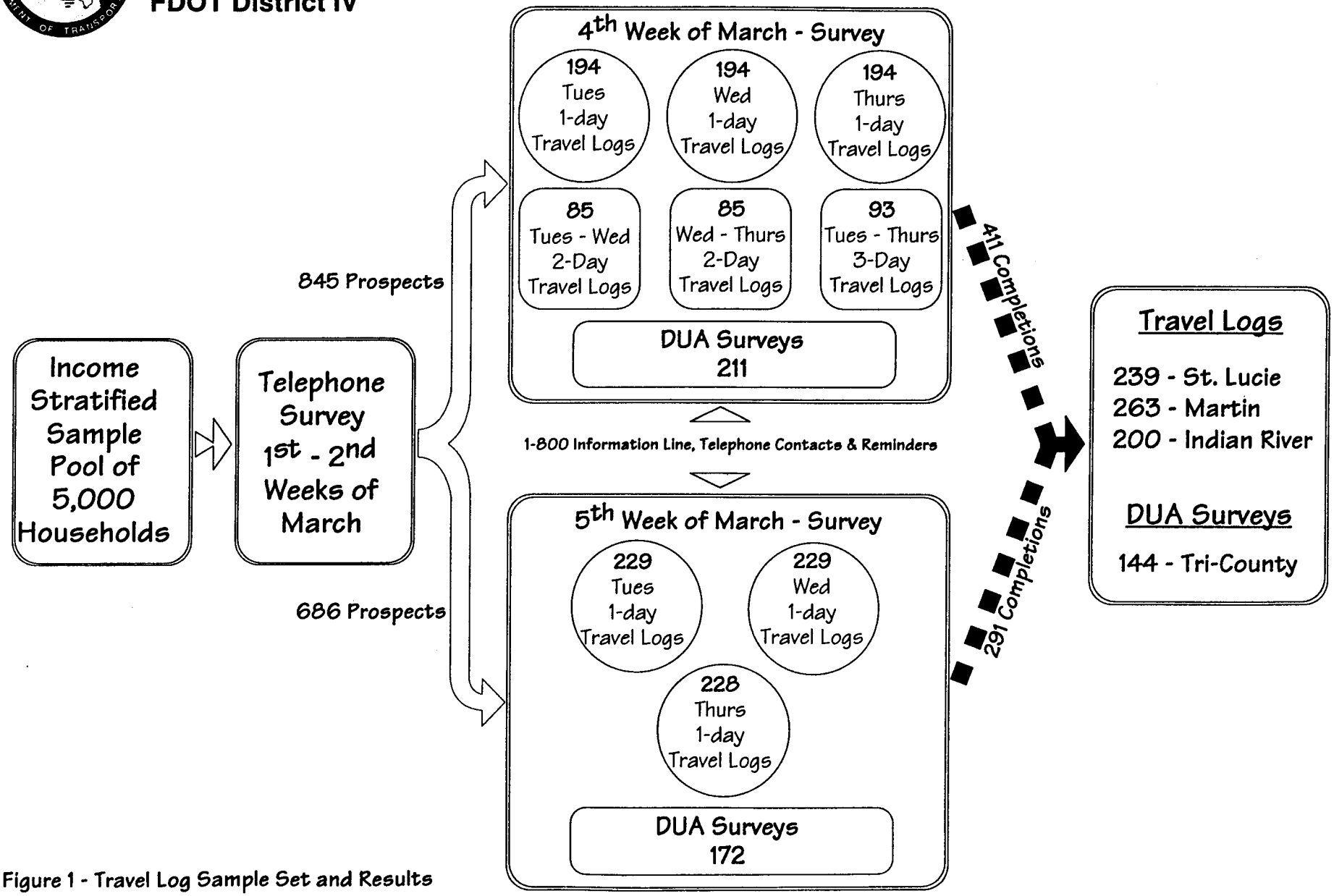


Figure 1 - Travel Log Sample Set and Results

Questionnaire and Travel Log Design

Several survey questionnaires and travel logs were developed in the TC^2S Survey. These include the Telephone Survey Questionnaire, the Household Verification Survey, the mail-out one (1) day and multiple day Travel Logs, and the Direct Utility Assessment (DUA) Questionnaire (see Appendix). 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 included 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 designed for GIS use. Trip end information also included location information, trip destination characteristics and whether the trip was an intermediate stop or final destination. Travel characteristics included travel means (mode), whether travel was made as the driver, passenger and the number of persons in the vehicle and the major routes utilized.

The Travel Logs were designed such that three (3) pages, sufficient for itemizing 12 person trips, would be provided to each travel log participant. 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. In instances where households were selected for multiple days, separate daily forms with different colors and titles were provided.

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 Treasure Coast Area. One fourth of all households were forwarded the DUA questionnaire. The DUA questionnaire asked 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.

Public Awareness Program

The Public Awareness Program for the Treasure Coast Trip Characteristics Study had five major components. The first was the development of a comprehensive mailing list which was to reach all residents of Martin, Indian River, and St. Lucie Counties through public agencies, civic groups, private associations, and other broad-based points of contact. The second effort was the development of public awareness information which was 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. The third component was the mailing, telephoning, and follow-up to ensure that the message got out to the public and was understood.

The 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. It was hoped that this correspondence would reinforce the perception that this is a public service project, and prepare the recipients for the phone calls to follow.

The fifth component of the public awareness program was a series of local workshops set up through the MPOs at which the consultants would give a presentation and be available to answer any questions.

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 Tech 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 Treasure Coast Area.

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. Once a completed call was obtained, telephone survey personnel were normally very successful in obtaining responses to the questionnaire. In a few isolated instances, unsatisfactory telephone survey personnel were re-assigned to improve success rates.

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 attempt to verify any potential bias due to non-contact. Additionally, apartments appeared (without statistical verification) to be somewhat under represented in the sample set and additional measures were used to increase apartment response. 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 Telephone Cross Reference was used in-lieu of the address with the unlisted phone number.

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. Dependent on the household, either a one day, two day or three day travel log was provided. Each survey form and assigned day were printed on different colored paper to improve recognition of the different forms. Additionally, one-fourth 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 travel log survey. Each household was contacted to confirm that the packet was received and to answer any questions. 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 an alternate day 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 incomplete information;
- 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 incorrect data entry. In order to minimize and identify errors, different staff members were used at various stages of the process. The Telephone 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.

III. TELEPHONE AND HOUSEHOLD VERIFICATION SURVEY RESULTS

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 (see Figure 2); 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.

Approximately 2,600 households telephone numbers were matched with the 5,000 samples drawn from the property appraiser files. A total of 5,129 telephone calls were made which resulted in telephone contacts with 2,185 households (approximately 84% of matched households). Seventy-seven percent (77%) of the contacted households participated in the telephone screener survey. The telephone screener survey was completed by 1,688 households. Ninety-one percent (91%) agreed to participate in the mail-out travel log portions of the survey. Table 1 depicts the telephone completion results of the screener survey.

Figure 2 - Trip Rate Matrix and Survey Target Cells

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
	1	6	7	8	9	10
	2+	11	12	13	14	15
RESIDENT MULTI-FAMILY D.U.'S	0	16	17	18	19	20
	1	21	22	23	24	25
	2+	26	27	28	29	30

Source: Florida Department of Transportation

Table 1 - Telephone Screener Survey Results

Telephone Survey Results		
Total Calls Attempted:	**5,129**	
Connections:	**2,185**	**84.3%**
Refusals:	497	19%
Completed Survey:	1,688	65%
Disconnects:	**141**	**5.4%**
Households Not Contacted:	**267**	**10.3%**
Travel Log Participation:		
Yes:	1,531	91%
No:	157	9%
Need to Call Back:	**2,804**	**55%**
No Answer:	1,259	45%
Answering Machine:	923	33%
Not Home/Call Back:	622	22%
Call Backs Attempted:	**2,367**	**46%**
Call Backs Connected:	899	38%
Call Backs Completed:	674	28%
Requiring Additional Calls:	1,468	62%
Housing Dwelling Unit Type:		
Single Family Home:	1,336	79.1%
Duplex:	35	2.1%
Townhouse:	25	1.5%
Apartment:	21	1.2%
Co-op or Condominium:	220	13.0%
Mobile Home:	46	2.7%
Other:	5	0.3%

Source: Walter H. Keller, Inc.

Additional phone calls were made to ascertain whether any bias would occur if households were not contacted. Two hundred forty (240) 4th telephone calls were made resulting in contact of eighty-four (84) additional households. Of this amount, fifty-three (53) households participated in the telephone screener survey. Table 2 compares the dwelling unit distribution and household size composition of the surveyed households prior to the 4th call and of the 4th call grouping. Since the household distribution and household size compositions are comparable, bias is not expected to be encountered with the non-contacted households.

Table 2 - Telephone Survey 4th Call Results

	Total Survey Results	Results 4th Call	Results Before 4th Call	% Distribution Before 4th Call	% Distribution After 4th Call
Dwelling Unit Type:					
Single Family	1,336	41	1,295	79.20%	77.36%
Duplex	35	1	34	2.08%	1.89%
Townhouse	25	1	24	1.47%	1.89%
Apartment	21	0	21	1.28%	0.00%
Condo/Co-op	220	6	214	13.09%	11.32%
Mobile Home	46	3	43	2.63%	5.66%
Other	5	1	4	0.24%	1.89%
Total	1,688	53	1,635		
Persons per Household:					
1 person H/H	311	14	297	18.17%	26.42%
2 person H/H	895	21	874	53.46%	39.62%
3 person H/H	220	9	211	12.91%	16.98%
4 person H/H	179	9	170	10.40%	16.98%
5 person H/H	50	0	50	3.06%	0.00%
6 person H/H	25	0	25	1.53%	0.00%
7 + pers H/H	8	0	8	0.49%	0.00%
	1,688	53	1,635	100.00%	100.00%
		Avg Persons per H/H =		2.33	2.25

Source: Walter H. Keller, Inc.

Household Verification Survey

A total of 1,531 questionnaire packages were distributed to the Treasure Coast 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.

Seven hundred and seven (707) packages were returned with travel logs and household verification forms. However, a portion of the returned packages were not fully completed. Travel log packages were substantially completed in 702 households. Fully completed travel logs, representing all household members, were completed for 546 households. Based on this, two (2) stratifications of data were developed: one for 546 households, and one for 702 households. Coded data sets for the groupings of 702 households and 546 households are available from the Florida Department of Transportation. Table 3 provides a tabulation of the questions and possible coding response to the Household Verification Survey.

Table 4 depicts the household characteristics for each county and Treasure Coast area versus the 1990 census for 546 households. Table 5 depicts the household characteristics for each county and Treasure Coast area versus the 1990 census for 702 households. In general, Tables 4 and 5 reveal the survey respondents are in-line with Treasure Coast characteristics as noted in the 1990 census.

The survey respondents differed in three areas; dwelling unit type distribution, low income households, and households without autos. The survey was more heavily oriented to single family households and, 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 7.5% of survey respondents versus the 21.8% of all households in the Treasure Coast area in the 1990 census. Households without a vehicle represented 0.4% in the survey versus 6.2% in the 1990 census. Some of these differences may not be as exaggerated as suggested due to the changes in the Treasure Coast area 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.

Household Verification Data Coding

H/H #	H/H Type	O R	# P	Full time	Part Time	Lic Driv	# Veh	Profile Code A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	6 or More	# of Mo	Months Fr	Months To	Income	Sub Ph	Inc	City	Cell	Co
2628	1	1	1	0	0	0	0					1													1				4			ST	1	MC
0796	1	1	3	1	0	2	0							1		1									1							VB	3	IC
0271	1	1	1	0	0	1	1					1	1												1				5			ST	6	MC
0293	1	1	1	1	0	1	1				1														1				7			FP	6	LC
0294	6	1	1	0	0	1	1					1													1				3			JB	6	MC
0297	1	1	1	1	0	1	1				1														1				1			VB	6	IC

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

- A: Working in field, (such as gorves or construction sites,) but go to one site each day
- B: Working with extensive driving, visiting at least 2 different sites per day (such astravling 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: School 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 themsevles 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 or More: Do you live here 6 or more month? 1=Yes, 2=No

# of Mo: If No, How many months per year do you live here

Months Fr: During what month do you live here? From what month?

Months To: To what month?

Income: What was your approximate total family income before taxes in 1994?
1=<$15,000 2=$15,000-$19,999 3=$20,000-$29,999
4= $30,000-$39,999 5=$40,000-$49,999 6=$50,000-$59,999
7=$60,000-$74,999 8=$75,000-$99,999 9=$100,000 or more

Sub Ph: Y : Indicates Substitution of unprovided HH Verification Survey information with the Telephone Screen Survey information.

Inc: Do you live In Incorporated Area? Y=Yes N=No

City: What City do you live in? St=Stuart VB=Vero Bch JB=Jesen Bch FP=Fort Pierce

Cell: Classified in What Cell(In the FDOT Standard Classification Matrix Table)?

Co: What County do you live in? MC=Martin IC=Indian County LC=St. Lucie County

Veh: How many passenger vehicle are regularly used? (including cars, trucks, motorcycles, or vans)

Lic Driv: How many in your HH are licensed drivers? (Excluding training Permits)

Part Time: How many in your HH have part time job? (During Weekday Only)

Full time: How many in your HH have full time job?

P: Total # of People in the HH (Including yourself)

O R: Do you own or rent? 1=Own 2=Rent

H/H Type: Household Dwelling Unit Type:
1=Single Family 2=Dulpex 3=Townhouse 4=Apartment
5=Co-op or Condominium 6=Mobile Home 7=Motel or Hotel 8=Other

H/H #: Household Number

Source: Walter H. Keller, Inc.

IV. TRAVEL CHARACTERISTICS SURVEY RESULTS

The major goal of the Treasure Coast 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 forty-six percent (46%). While 707 packages were returned with partially completed survey forms, 702 household packages had substantially completed survey forms. These forms were reviewed for completeness and, as appropriate, edited or corrected through the quality control procedures mentioned previously. The number of fully completed travel log packages totaled 546 households and with multiple day logs which totaled 674 travel log days. The completed travel logs included 200 (36.7%) households from Martin County, 175 (32.1%) households from St. Lucie County and 171 (31.3%) households from Indian River County. Accounting for multiple day logs, resulted in 246 (36.5%) travel log days from Martin County, 205 (30.4%) travel log days from St. Lucie County and 223 (33.1%) travel log days from Indian River County.

While the targeted sample size for meeting the Department's accuracy requirements with returned travel logs was 620 households and 707 households mailed back packages, 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 546 households. The coded Travel Logs for both sets of households can be obtained from the Florida Department of Transportation. Table 6, on the following page, provides the Travel Log Survey coding sheet which was used for coding purposes.

Travel Logs Coding Information

H/H No.	Date	Indv No.	Trip #	PC	K	Address or Int (st/st)	City Cor	Start Time	End Time	MI	T	S	M	D P	#	Rte	Cell	Per Trip	Veh Trip	Trip Time	Day	Per	IEP	EEP	IEV	EEV	CO	IEN	IES	EENS
2628	28	1	0	E	0	NO TRIPS	VB	1250	1300	4.0	7	1	1	2	2		1	NT	NT		1	1					MC			
0796	21	1	1	G	1	663 5 Pl SW	VB	1315	1335	6.0	6	1	1	2	3		3	HBR	HBR	0010	3						IC			
0796	21	1	2	G	1	2470 7 Ct SW	VB	1345	1400	7.0	1	2	1	2	3		3	NHB	NHB	0020	3						IC			
0796	21	1	3	G	1	1745 14 Av	VB	1420	1500	25.0	8	1	1	2	3	2	3	HBO	HBO	0015	3						IC			
0796	21	1	4	G	1	663 5 Pl SW	VB											HBR	HBR	0040	3						IC			

H/H No.	Household Number
Date	Date in which the Travel Log was recorded.
Indv No.	Individual Number
Trip #	Trip Number
PC	Trip Maker Profile Code (from HH Verification Form)
K	Key: 0 = No Trip 1 = Address 2 = Intersection 3 = Other 4 = NW Corner 5 = NE Corner 6 = SE Corner 7 = SW Corner
Address or Int (st/st)	Address or Intersection, or No Trips
City Cor	City
Start Time	Start Time
End Time	End Time
MI	Distance of Trip
T	Trip Type (Destination) : 1=Home 2=Work Site 3=School 4=Shopping 5=Restaurant 6=Personal Business 7= Friend's House 8=Recreation 9=Delivery 10=Other
S	1=Intermediate Stop 2=Final Destination
M	Travel Means: 1=Car 2=Van 3=Bicycle 4=School Bus 5=Motocycle 6=Truck 7=Walk 8=Public Bus 9=Taxicab 10=Other
D P	1=Driver 2=Passenger
#	Number of Persons in Vehicle
Rte	Major Routes Used: 1=I-95 2=US 1 3=Turnpike 4=SR A1A 5=SR 60 6=SR 512 7=SR713 8=SR 70 9=Prima Vista Blvd 10=SR 76
Cell	Classified in What Cell (in the FDOT Standard Classification Matrix Table)?
Per Trip	WHK Assigned Person Trip by Purposes; NT = No Trips
Veh Trip	WHK Assigned Vehicle Trip by Purposes; NT = No Trips
Trip Time	Trip Length in Time (Minutes)
Day	Number of Day Logs of Household
Per	Number of People Recorded their trips
IEP	WHK Assigned IE Person Trips: Example: Entered as IE if the Trip Maker left the TC or came from outside the TC.
EEP	WHK Assigned EE Person Trips: Example: Entered as EE if the Trip Maker went from somewhere outside the TC to somewhere else outside the TC.
IEV	WHK Assigned IE Vehicle Trips: Example: Entered as IE if the Trip Maker left the TC or came from outside the TC.
EEV	WHK Assigned EE Vehicle Trips: Example: Entered as EE if the Trip Maker went from somewhere outside the TC to somewhere else outside the TC.
CO	County in which the HH resides
IEN	WHK Assigned IE Trips traveled inside the TC: IEN : If a trip was made from Martin Co. to Indian River Co. or from St Lucie Co. to Indian River Co., or from Indian River Co. to St. Lucie Co.
IES	WHK Assigned IE Trips traveled inside the TC: IES : If a trip was made from Indian River Co. to Martin Co. or from Martin Co. to St. Lucie Co., or from St. Lucie Co. to Martin Co.
EENS	WHK Assigned EE Trips traveled inside the TC: EE : If a trip was made from a county in the TC other the one being considered to another county in the TC other than the one being considered.

Source : Walter H. Keller, Inc.

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. Tables 7 - 10 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). These results are provided by tables for each county and the Treasure Coast area as a whole.

Note that Tables 7 - 10 include all trips both internal and internal-external. The difference between internal and internal -external trips is provided in Table 11. Figure 3 provides the graphic results of Table 11.

Table 12 provides a trip matrix for the Treasure Coast area with stratifications for each county. This table highlights the internalization within each county, internalization within the Treasure Coast area, the internal - external trips 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 12, for example, indicates that 2.2% of the Martin County trips are trips within the Treasure Coast Area that have trip ends that are not tied to Martin County. Likewise, while not specifically noted in Table 12, 1.7% of all trips (or 23.2% of all external trips), are also external - external trips outside of the Treasure Coast Area.

Table 13 provides a trip matrix that has been adjusted to delete the external - external trips occurring with the Treasure Coast Area and outside of the Treasure Coast Area. In this Table, 3.9% of Martin County, 6.8% of St. Lucie County, and 3.4% of Indian River County trips have been removed in the analysis.

Comparisons of the aggregate trip rates from the Treasure Coast area with the results of other Department studies is provided in Table 14.

TABLE 7 - MARTIN COUNTY
Vehicle Trips Per Day Log

Cell	# of H/H	# of Day Logs	Trip Purpose HBW	HBS	HBR	HBO	NHB	Total Trips
1 †	1	1	0.00	0.00	0.00	0.00	0.00	0.00
6	20	26	0.31	1.04	0.35	0.85	1.27	3.82
7	16	21	0.14	1.29	0.76	1.62	0.86	4.67
11 †	4	6	0.33	0.83	1.00	0.17	0.50	2.83
12	44	50	0.74	1.18	0.82	2.02	2.08	6.84
13	19	24	1.50	1.46	0.58	2.75	2.75	9.04
14 †	9	17	2.41	1.47	1.24	4.18	6.41	15.71
15 †	1	1	3.00	0.00	0.00	11.00	7.00	21.00
21	31	35	0.31	0.97	0.46	1.29	1.14	4.17
22	37	46	0.00	0.98	0.54	1.52	0.80	3.84
23 †	1	1	2.00	0.00	0.00	0.00	0.00	2.00
27 †	15	16	0.75	1.31	0.88	1.56	1.19	5.69
29 †	1	1	2.00	1.00	0.00	3.00	9.00	15.00
30 †	1	1	4.00	0.00	0.00	7.00	0.00	11.00
SF H/H	114	146	0.89	1.22	0.73	2.10	2.33	7.27
MF H/H	86	100	0.33	1.02	0.55	1.53	1.14	4.57
All H/H	200	246	0.66	1.14	0.66	1.87	1.84	6.17
Wt H/H *			0.62	1.12	0.65	1.83	1.76	5.97
% Change Survey vs. Weighted								3.3%

Source: Walter H. Keller, Inc.

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

* - Weighted to Martin 52% SF du's per 1990 Census

Complete responces were not received from cells 2-5, 8-10, 16-20, 24-26 and 28.

TABLE 8 - ST. LUCIE COUNTY
Vehicle Trips Per Day Log

Cell	# of H/H	# of Day Logs	Trip Purpose HBW	HBS	HBR	HBO	NHB	Total Trips
6	18	20	0.15	0.35	0.15	1.50	0.95	3.10
7	37	45	0.42	1.13	0.44	1.16	1.20	4.35
9 †	1	1	0.00	0.00	0.00	4.00	0.00	4.00
11 †	4	6	0.83	0.33	0.67	0.00	3.50	5.33
12	59	66	1.88	0.58	0.74	1.26	1.94	6.40
13	15	19	2.32	1.42	0.95	2.47	2.95	10.11
14 †	7	8	2.13	0.38	0.50	2.63	2.38	8.02
15 †	3	4	2.25	1.00	2.25	2.75	7.50	15.75
21 †	9	10	0.00	0.33	0.22	2.11	0.56	3.22
22	17	21	0.00	1.38	0.29	1.10	0.67	3.44
26 †	1	1	0.00	4.00	0.00	2.00	2.00	8.00
27 †	4	4	0.00	1.50	1.50	1.25	2.50	6.75
SF H/H	144	169	1.31	0.78	0.63	1.47	1.94	6.13
MF H/H	31	36	0.00	1.17	0.40	1.42	0.88	3.87
All H/H	175	205	1.08	0.85	0.59	1.46	1.75	5.73
Wt H/H *			0.88	0.91	0.55	1.45	1.59	5.38
% Change Survey vs. Weighted								6.5%

Source: Walter H. Keller, Inc.

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

* - Weighted to St. Lucie 67% SF du's per 1990 Census

* - Weighted to St. Lucie 67% SF du's per 1990 Census

Complete responces were not received from cells 1-5, 8, 10, 16-20, 23-25 and 28-30.

TABLE 9 - INDIAN RIVER COUNTY
Vehicle Trips Per Day Log

Cell	# of H/H	# of Day Logs	Trip Purpose HBW	HBS	HBR	HBO	NHB	Total Trips
3 †	1	3	0.00	0.67	1.00	0.33	0.33	2.33
6	18	22	0.59	0.82	0.36	1.00	1.45	4.22
7	21	29	0.34	1.10	0.45	1.72	0.93	4.54
8 †	3	3	0.00	0.67	0.00	2.67	1.00	4.34
11 †	3	3	0.00	0.00	1.33	1.00	0.00	2.33
12	59	80	0.96	1.03	0.74	2.04	2.59	7.36
13 †	12	15	2.27	0.73	0.07	2.00	3.80	8.87
14 †	7	10	2.70	0.30	0.60	3.80	4.00	11.40
15 †	3	4	3.00	0.50	2.50	8.25	7.50	21.75
21 †	12	14	0.14	0.43	0.29	1.43	1.93	4.22
22	16	21	0.29	1.33	0.48	1.76	0.90	4.76
27 †	15	18	0.17	1.00	1.44	2.39	1.89	6.89
28 †	1	1	2.00	2.00	0.00	2.00	0.00	6.00
SF H/H	127	169	1.02	0.90	0.62	2.06	2.35	6.95
MF H/H	44	54	0.24	1.00	0.74	1.89	1.48	5.35
All H/H	171	223	0.83	0.92	0.65	2.02	2.14	6.56
Wt H/H *			0.73	0.94	0.66	1.99	2.02	6.34
% Change Survey vs. Weighted								3.5%

Source: Walter H. Keller, Inc.

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

* - Weighted to Indian River 62% SF du's per 1990 Census

Complete responces were not received from cells 1-2, 4-5, 9-10, 16-20, 23-26 and 29-30.

TABLE 10 - TREASURE COAST AREA
Vehicle Trips Per Day Log

Cell	# of H/H	# of Day Logs	Trip Purpose HBW	HBS	HBR	HBO	NHB	Total Trips
1 †	1	1	0.00	0.00	0.00	0.00	0.00	0.00
3 †	1	3	0.00	0.67	1.00	0.33	0.33	2.33
6	56	68	0.35	0.76	0.29	1.09	1.31	3.80
7	74	95	0.34	1.16	0.52	1.43	1.17	4.62
8 †	3	3	0.00	0.67	0.00	2.67	1.00	4.34
9 †	1	1	0.00	0.00	0.00	4.00	0.00	4.00
11 †	11	15	0.47	0.47	0.93	0.27	2.67	4.81
12	162	196	1.21	0.91	0.76	1.77	2.37	7.02
13	46	58	1.97	1.26	0.57	2.47	3.83	10.10
14	23	35	2.43	0.89	0.89	3.71	5.11	13.03
15 †	7	9	2.67	0.67	2.11	6.11	7.78	19.34
21	52	59	0.22	0.73	0.37	1.42	1.25	3.99
22	70	88	0.07	1.16	0.47	1.48	0.92	4.10
23	1	1	2.00	0.00	0.00	0.00	0.00	2.00
26 †	1	1	0.00	4.00	0.00	2.00	2.00	8.00
27	34	38	0.39	1.18	1.21	1.92	1.76	6.46
28 †	1	1	2.00	2.00	0.00	2.00	0.00	6.00
29 †	1	1	2.00	1.00	0.00	3.00	9.00	15.00
30 †	1	1	4.00	0.00	0.00	7.00	0.00	11.00
SF H/H	385	484	1.08	0.95	0.66	1.86	2.44	6.99
MF H/H	161	190	0.23	1.04	0.57	1.58	1.22	4.65
All H/H	546	674	0.84	0.98	0.63	1.78	2.10	6.33
Wt H/H *			0.75	0.99	0.62	1.75	1.96	6.07
% Change Survey vs. Weighted								4.3%

Source: Walter H. Keller, Inc.

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

* - Weighted to Treasure Coast 60.7% SF du's per 1990 Census

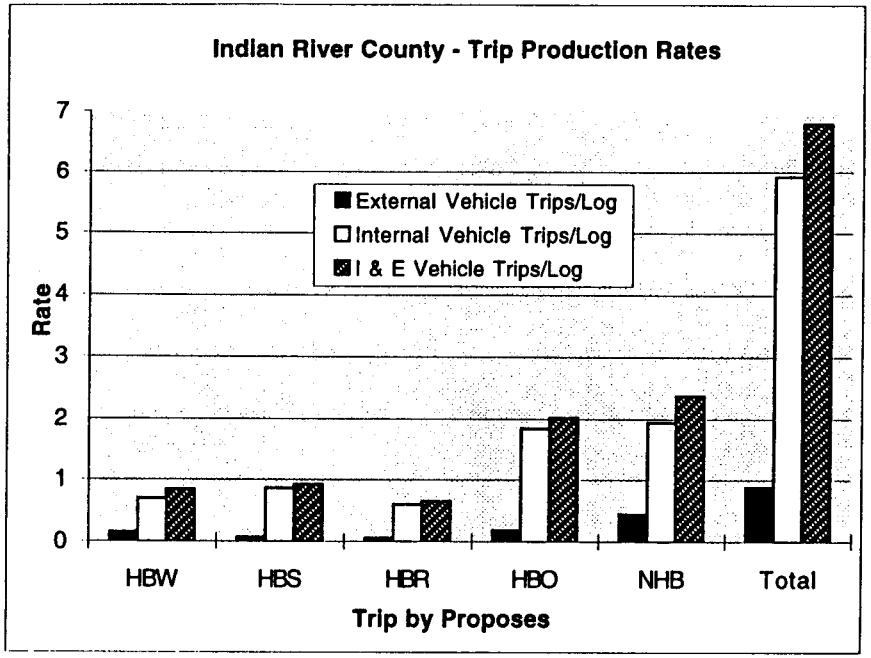
Complete responces were not received from cells 2, 4-5, 10, 16-20 and 24-25.

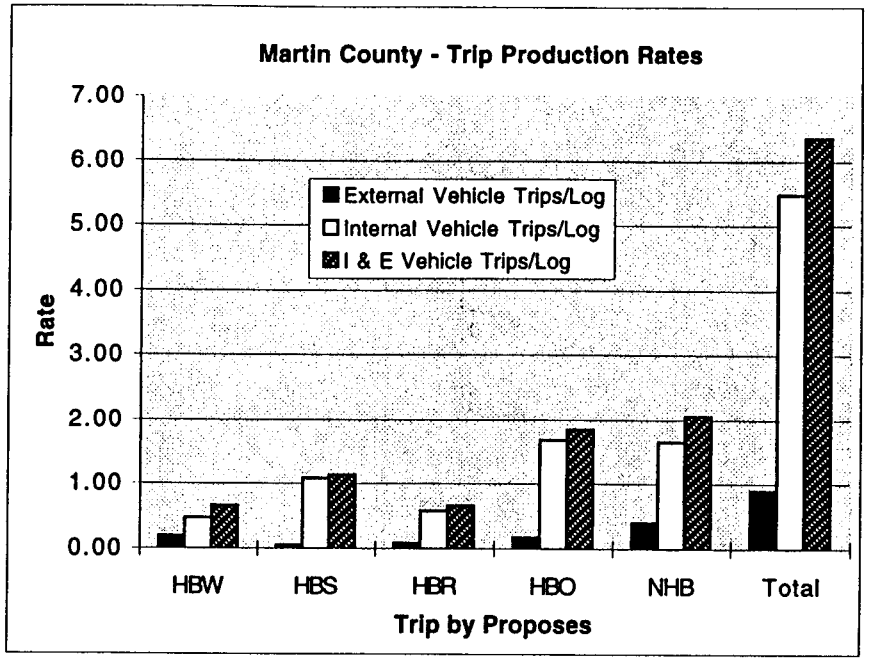
Table 11 - Internal/External Trip Rates by Purposes

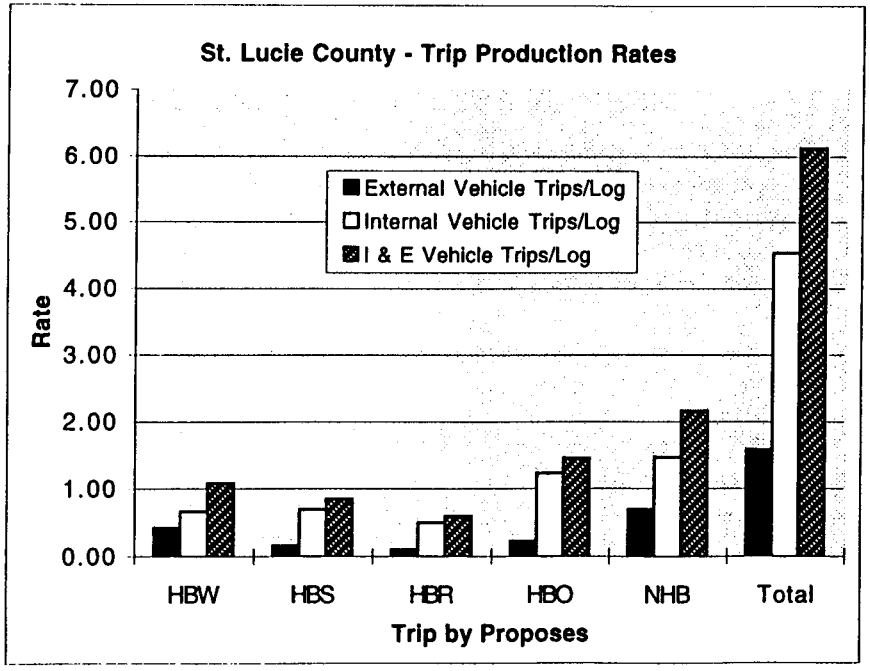
		HBW	HBS	HBR	HBO	NHB	Total
Indian River County	Total Internal Vehicle Trips	153	192	133	410	431	**1,440**
	Total External Vehicle Trips	33	14	11	40	97	**195**
	Total Vehicle Trips	186	206	144	450	528	**1,514**
	Trip Rates						
	Internal Vehicle Trips/Log	0.69	0.86	0.60	1.84	1.93	**5.92**
	External Vehicle Trips/Log	0.15	0.06	0.05	0.18	0.43	**0.87**
	Total Vehicle Trips/Log	0.83	0.92	0.65	2.02	2.37	**6.79**
St. Lucie County	Total Internal Vehicle Trips	136	142	102	251	300	**931**
	Total External Vehicle Trips	85	32	19	46	142	**324**
	Total Vehicle Trips	221	174	121	297	442	**1,255**
	Trip Rates						
	Internal Vehicle Trips/Log	0.66	0.69	0.50	1.22	1.46	**4.54**
	External Vehicle Trips/Log	0.41	0.16	0.09	0.22	0.69	**1.58**
	Total Vehicle Trips/Log	1.08	0.85	0.59	1.45	2.16	**6.12**
Martin County	Total Internal Vehicle Trips	115	267	142	414	407	**1,345**
	Total External Vehicle Trips	46	12	20	42	99	**219**
	Total Vehicle Trips	161	279	162	456	506	**1,564**
	Trip Rates						
	Internal Vehicle Trips/Log	0.47	1.09	0.58	1.68	1.65	**5.47**
	External Vehicle Trips/Log	0.19	0.05	0.08	0.17	0.40	**0.89**
	Total Vehicle Trips/Log	0.65	1.13	0.66	1.85	2.06	**6.36**
Treasure Coast	Total Internal Vehicle Trips	522	644	409	1,148	1,367	**4,090**
	Total External Vehicle Trips	46	15	18	55	109	**243**
	Total Vehicle Trips	568	659	427	1,203	1,476	**4,333**
	Trip Rates						
	Internal Vehicle Trips/Log	0.77	0.96	0.61	1.70	2.03	**6.07**
	External Vehicle Trips/Log	0.07	0.02	0.03	0.08	0.16	**0.36**
	Total Vehicle Trips/Log	0.84	0.98	0.63	1.78	2.19	**6.43**

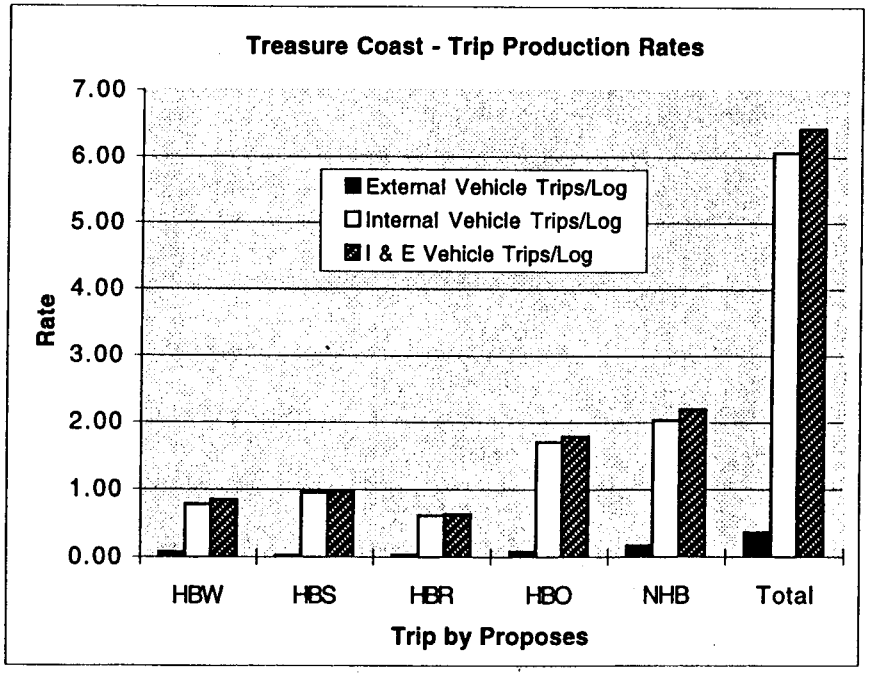
Source: Walter H. Keller, Inc.

Figure 3 - Internal/External Trip Rates by Purposes









Source: Walter H. Keller, Inc.

Table 12 - Internal • External Matrix (All Trips w/o Adjustment)

		DESTINATION				
		Martin	St. Lucie	Indian River	Treasure	Outside Treasure
ORIGIN	Martin County	86.0%	4.4%	0.2%	2.2%	7.2%
	St. Lucie County	11.9%	74.2%	3.7%	5.7%	4.5%
	Indian River County	1.0%	5.3%	87.1%	1.7%	4.9%
	Treasure Coast	-	-		94.4%	-
	Outside Treasure Coast	-	-		-	5.6%

Source: Walter H. Keller, Inc.
Note: Outside of Treasure Coast includes E.E. Trips made during I.E Trip.

Table 13 - Internal • External Matrix (w/Adjustment)

		DESTINATION				
		Martin	St. Lucie	Indian River	Treasure	Outside Treasure
ORIGIN	Martin County	89.5%	4.5%	0.3%	-	5.7%
	St. Lucie County	12.7%	79.3%	3.9%	-	4.0%
	Indian River County	1.0%	5.5%	90.2%	-	3.3%
	Treasure Coast	-	-	-	95.8%	-
	Outside Treasure Coast	-	-	-	-	4.2%

Source: Walter H. Keller, Inc.
Note: % have been adjusted to not include E.E. Trips

Trip Rates

Trip rates were recorded for each trip purpose for the all three counties and the Treasure Coast. Table 14 provides a comparison between the total trip rates for the study area and rates from other urban areas in the State. According to Table 14, the trip rates in the study area are lower for HBW, HBS, and HBR when compared to the other urban areas. This may be the result of greater trip chaining in the study area.

Table 14 - Comparison of Trip Rates w/Other Areas

Study Date	Area	Trip Purpose					All Trips
		HBW	HBS	HBR	HBO	NHB	
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

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 15, below, provides the aggregate trip length, in minutes, by County and for the Treasure Coast Area by trip purpose. Trip length comparisons, in minutes, with other urban areas in the State is provided in Table 16, on the following page.

Table 15 - Trip Length (in Minutes)

County - TC Area	HBW	HBS	HBR	HBO	NHB	All
Martin County	27.22	15.46	23.72	22.32	17.17	20.07
St. Lucie County	23.94	15.39	36.47	21.19	17.78	21.15
Indian River County	19.09	16.95	22.59	21.83	19.79	20.21
Treasure Coast	23.27	15.92	27.24	21.84	18.31	20.44

Source: Walter H. Keller, Inc.
Note: Trip lengths based upon internal and external trips

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

Study Date	Area	Trip Purpose HBW	HBS	HBR	HBO	NHB	All Trips
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

Graphs of trip length distribution by trip purpose and respective county are provided in the Appendix pages E-1 through E-10. Pages E-1 through E-5 provide Treasure Coast comparisons where the percentage of each county's trip length (in minutes) by purpose is compared along with the Treasure Coast Area. Comparisons with the Treasure Coast results with 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 by County and for the Treasure Coast Area by trip purpose. Comparison with other urban areas in the State is provided in Table 18:

Table 17 - Auto Occupancy by Purpose

County - TC Area	HBW	HBS	HBR	HBO	NHB	All
Martin County	1.06	1.65	1.85	1.67	1.65	1.62
St. Lucie County	1.12	1.71	1.88	1.71	1.81	1.68
Indian River County	1.15	1.60	1.67	1.82	1.62	1.64
Treasure Coast	1.11	1.65	1.80	1.74	1.69	1.64

Source: Walter H. Keller, Inc.

Table 18 - Auto Occupancy Comparisons with Other Areas

Study Date	Area	Trip Purpose HBW	HBS	HBR	HBO	NHB	All Trips
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

Income Relationship with Travel Characteristics

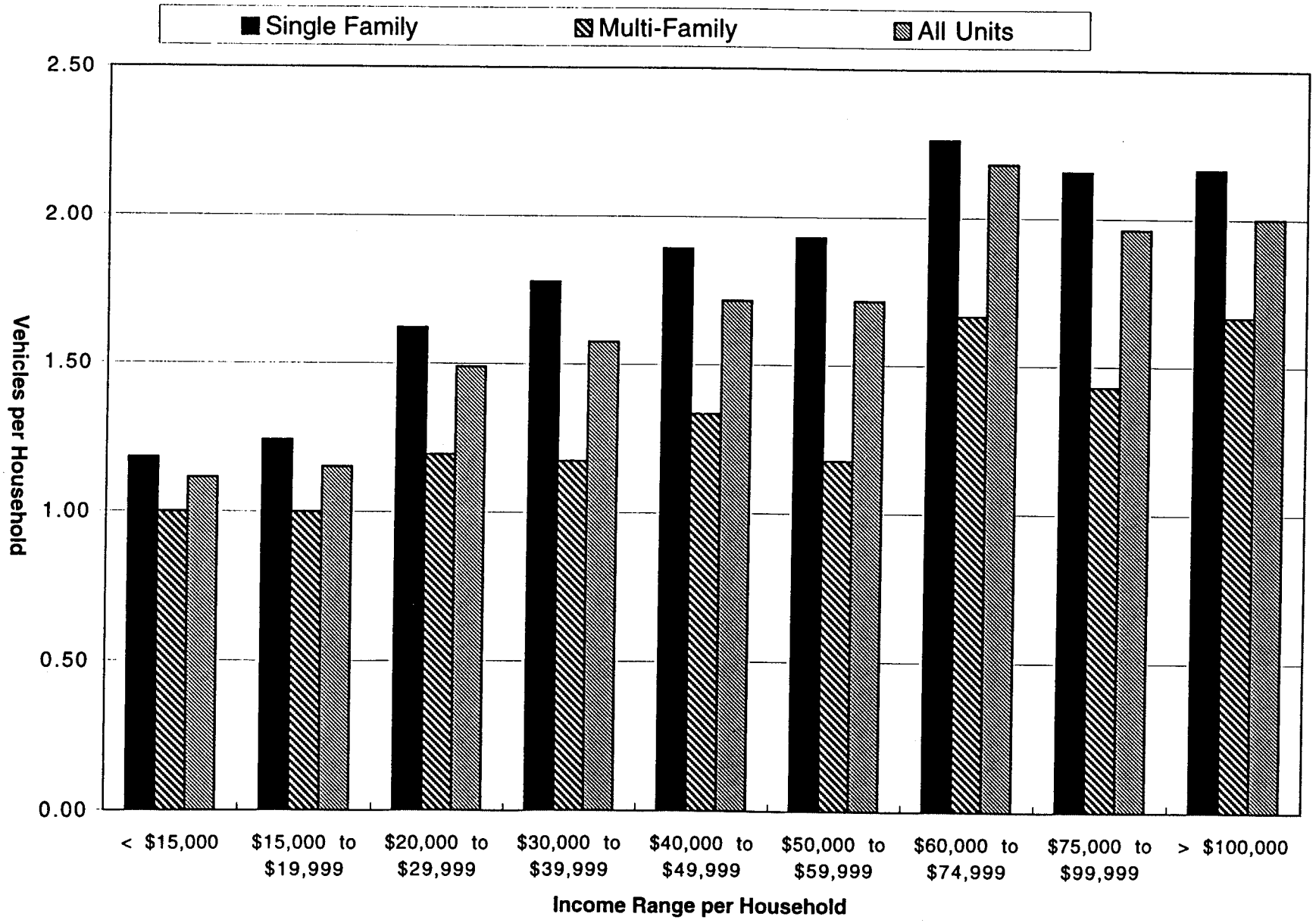
An important part of the survey process for the Treasure Coast Travel Characteristics Survey was to identify income and "life-style" characteristics associated with travel patterns. Approximately seventy-six percent (76%) of all returned Household Verification Surveys indicated the income range of the 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 $67,500 income range with 2.26 vehicles per household. For multi-family dwelling units, the peak was in both the $67,000 income range and the greater than $100,000 income range with 1.67 vehicles per multi-family household.

The effects of income on trip length in minutes by trip purpose is illustrated in Figures 5 - 10. These Figures indicate the average trip length in minutes 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).

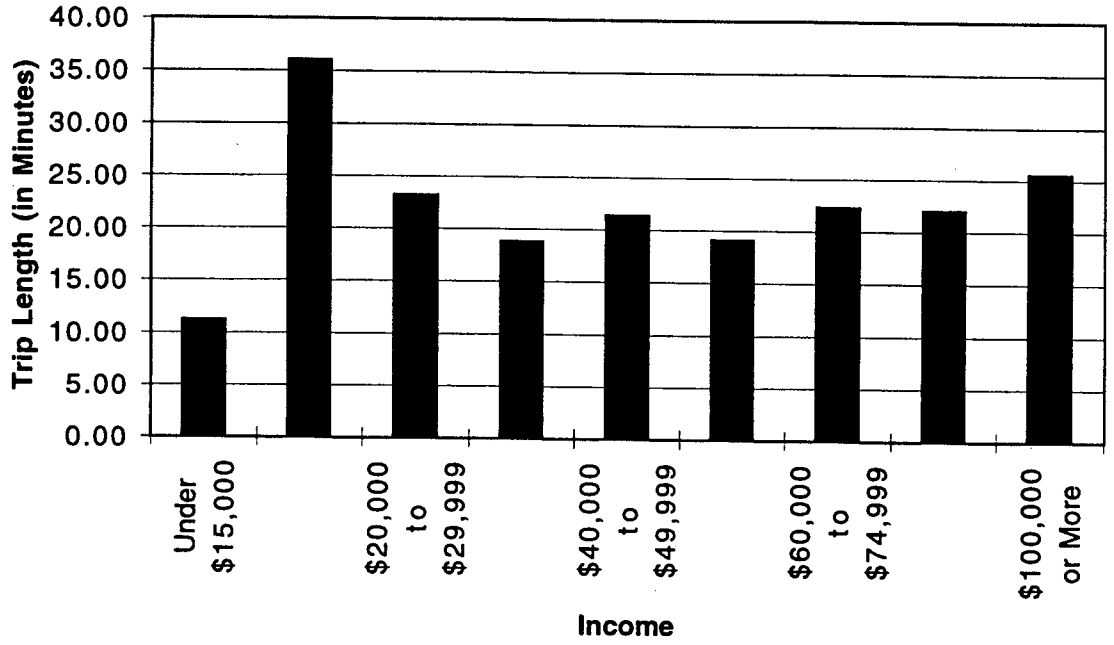
For the most part, only a few income categories provided significant differences: the highest income group (i.e., greater than $100,000) has the highest trip length for Home-Based Social Recreation Trips and the next to lowest income group (i.e., $15,000 -$19,999) has very high trip lengths for Home-Based Work, Home-Based Shopping and Non-Home Based Trips.

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



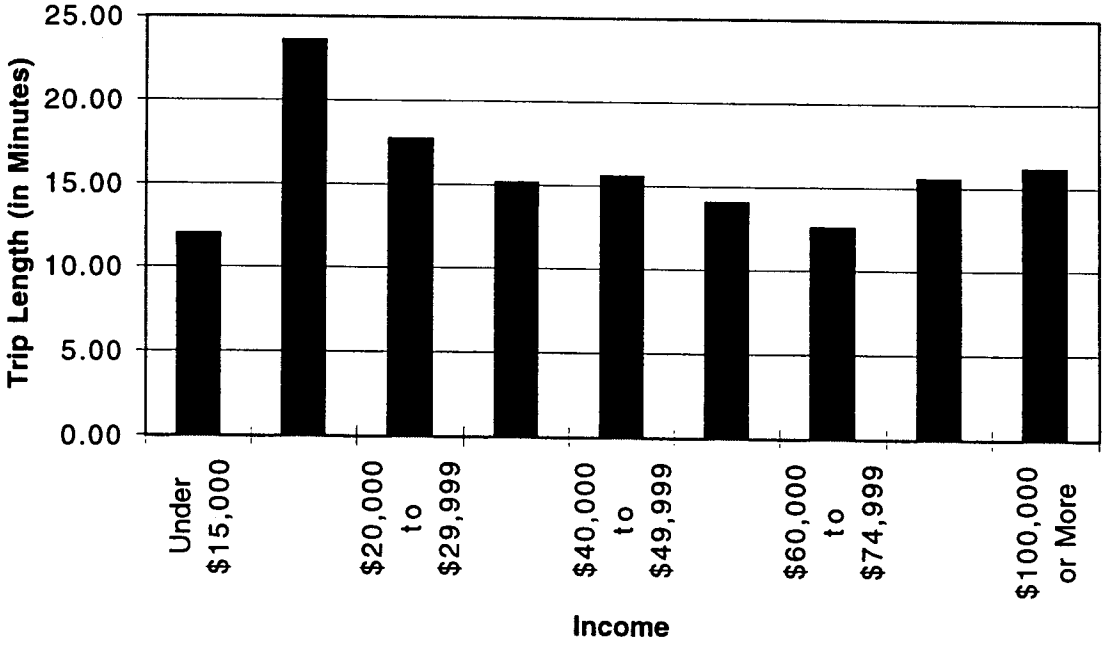
Source: Walter H. Keller, Inc.

Figure 5 - Average HBW Trip Length vs Income



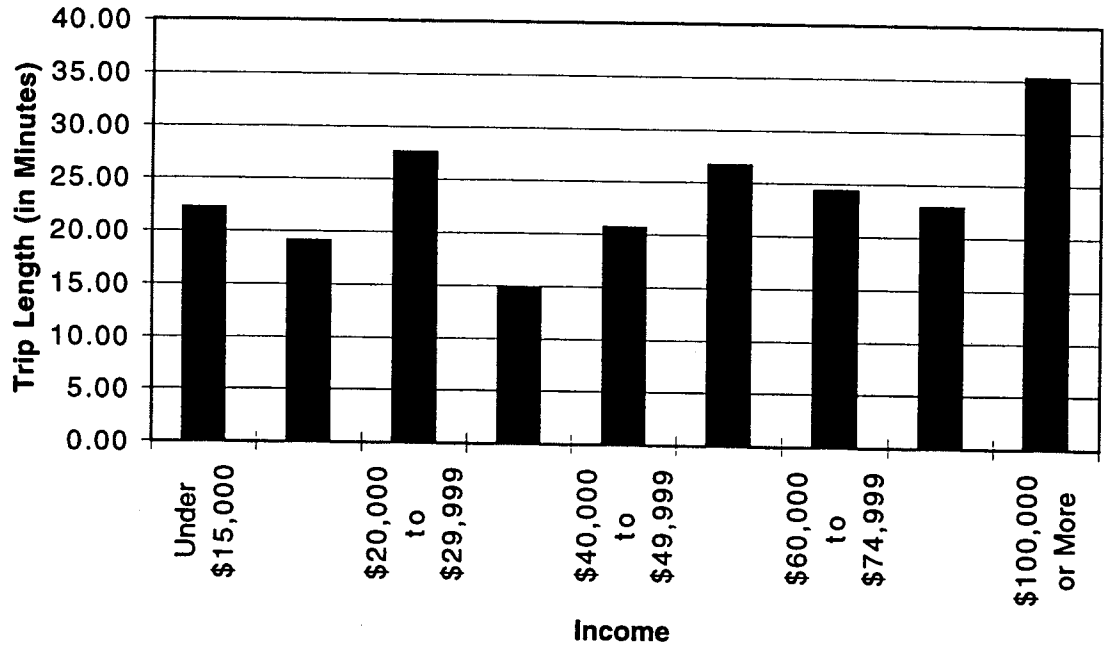
Source: Walter H. Keller, Inc.

Figure 6 - Average HBS Trip Length vs Income



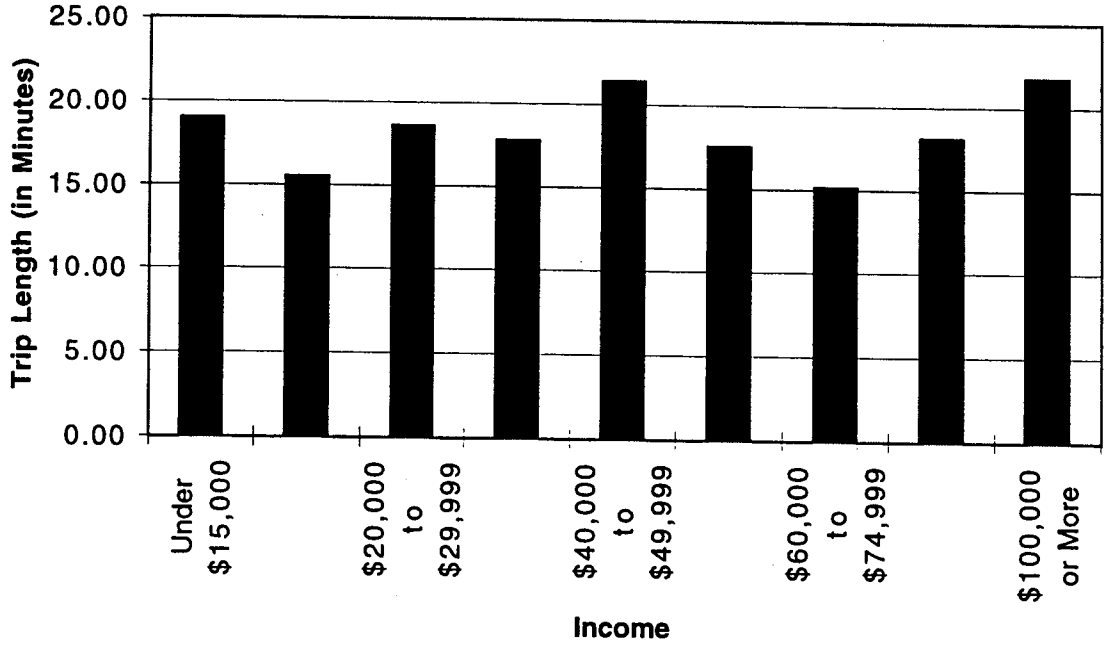
Source: Walter H. Keller, Inc.

Figure 7 - Average HBR Trip Length vs Income



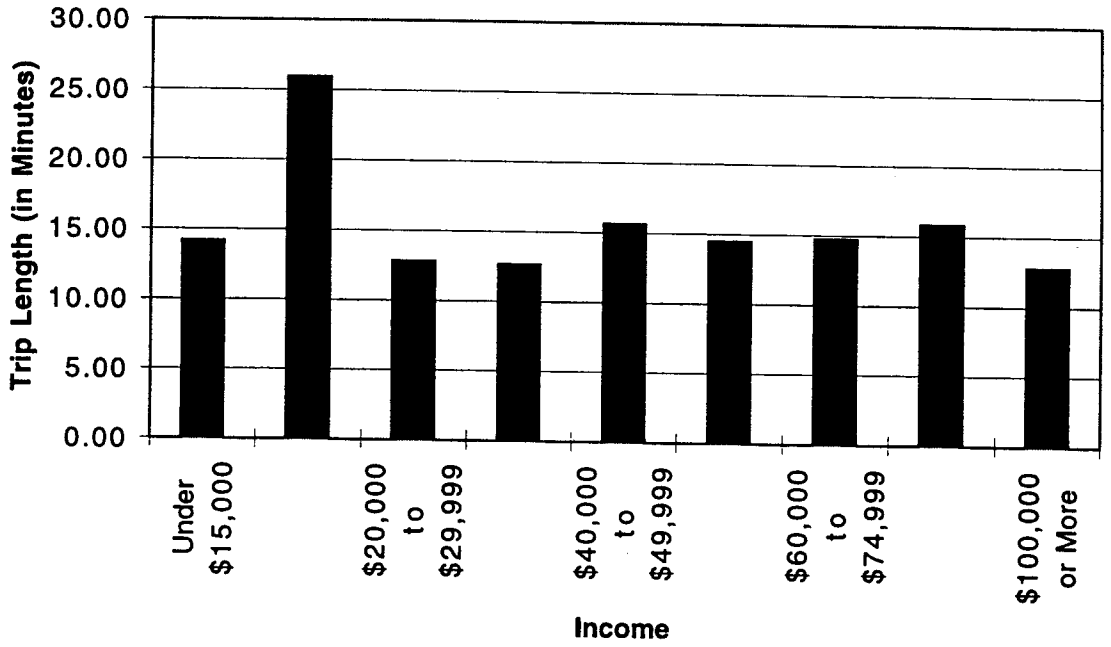
Source: Walter H. Keller, Inc.

Figure 8 - Average HBO Trip Length vs Income



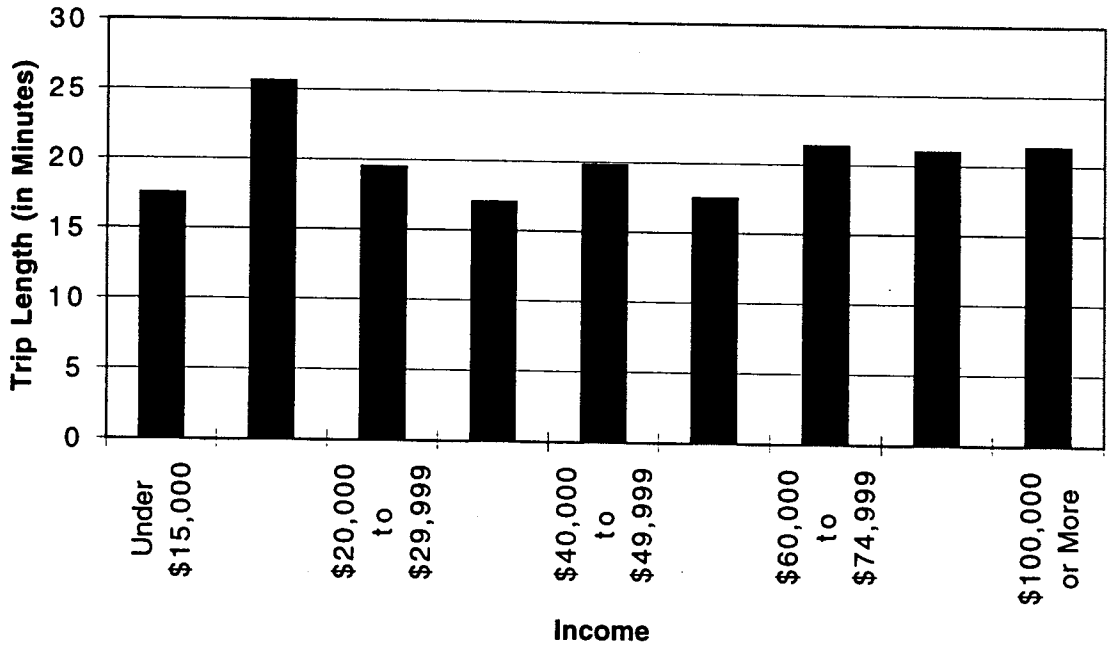
Source: Walter H. Keller, Inc.

Figure 9 - Average NHB Trip Length vs Income



Source: Walter H. Keller, Inc.

Figure 10 - Average Total Trip Length vs Income



Source: Walter H. Keller, Inc.

V. DUA Survey Design and Methodology

One fourth of all households participating in the Study's mail-out survey received the Direct Utility Assessment (DUA) Questionnaire Survey (approximately 440 households). From these households, 144 DUA surveys were returned for analysis. Some of the returned DUA survey forms had incomplete responses, which reduced the total sample size to approximately 80 households.

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 by asking what he or she would do under each situation. 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".

For the Treasure Coast 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, shared ride, bus, and Tri-Rail. A set of pairwise hypothetical situations, which are "current mode versus bus", "current mode versus Tri-Rail", and "current mode versus shared ride", are included in Part 1 of the DUA survey (see Appendix 1 for the DUA questionnaire). Two key reasons for using pairwise situations of the current mode versus each of the other three alternative modes are two fold. First of all, it was expected that drive alone would be the dominant travel mode in the study area. Therefore, this type of pairwise situation will cover the "drive alone" mode automatically since most people in the study area are driving alone. Secondly, for those respondents whose current travel mode is not drive alone, these samples could lead to additional information on the potential differences of the stated behavior to the same set of hypothetical situations compared to that indicated by respondents whose current travel mode is drive alone. This part of the DUA survey is similar to that used in the "Tampa Bay Regional Transportation Analysis" (FDOT, 1991).

In addition to the typical DUA questions, the questionnaire also asked respondents to state their perceived satisfaction levels for six different general aspects related to the four alternative travel modes (see Appendix 1 for the questionnaire details). These six aspects 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.). This set of questions is included in the survey to capture other important factors in the travel mode choice decisions. Finally, the respondents are asked to rank the importance levels of each of the six aspects of 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 for the DUA analysis.

DUA Survey Results

Frequency Distributions of DUA Responses

For each type of pairwise comparisons (i.e., current mode versus bus, current mode versus Tri-Rail, and current mode versus shared ride), there are eight (8) hypothetical situations. The frequency distributions of the responses to the eight situations under each of the three sets of pairwise comparisons are provided in Tables 19 through 21. For each table, the valid percent is the frequency divided the total number of complete responses

Table 19 - Frequency Distribution of the DUA Responses to Current Mode versus Bus (All Respondents).

Response*	Frequency	Percent	Valid Percent
1	685	59.5	73.9
2	142	12.3	15.3
3	58	5.0	6.3
4	41	3.6	4.4
5	1	0.1	0.1
Missing	225	19.5	N/A
Total:	**1,152**	**100.0**	**100.0**

Source: Regional Research Associates

* 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 20 - Frequency Distribution of the DUA Responses to Current Mode versus Tri-Rail (All Respondents).

Response	Frequency	Percent	Valid Percent
1	684	59.4	77.3
2	121	10.5	13.7
3	38	3.3	4.3
4	40	3.5	4.5
5	2	0.2	0.2
Missing	267	23.2	N/A
Total:	**1,152**	**100.0**	**100.0**

Source: Regional Research Associates

Table 21 - Frequency Distribution of the DUA Responses to Current Mode versus Shared Ride (All Respondents).

Response	Frequency	Percent	Valid Percent
1	463	40.2	52.8
2	169	14.7	19.3
3	62	5.4	7.1
4	124	10.8	14.1
5	59	5.1	6.7
Missing	275	23.9	N/A
Total:	**1,152**	**100.0**	**100.0**

Source: Regional Research Associates

It is evident from the Tables above that most respondents stated that they would "always" (i.e., response = 1) or "probably" (i.e., response = 2) choose their current travel mode over bus, Tri-Rail, or shared ride under various hypothetical situations. However, the Tables also indicate that the likelihood of choosing an alternative mode (i.e., responses = 4 or 5) is the highest for shared ride (20.8% of valid responses), followed by Tri-Rail (4.7% of valid responses) and bus (4.5% of valid responses). This pattern is supported by the average values of the responses towards the three alternative modes as summarized in Table 22. Since the response values are based on a scale of 1 (always choose the current mode) to 5 (always choose the alternative mode), a higher average response value in Table 22 suggests that more respondents would give consideration to choosing a particular alternative mode.

Table 25 - Frequency Distribution of the DUA Responses to Current Mode versus Shared Ride (Drive Alone Respondents Only).

Response	Frequency	Percent	Valid Percent
1	308	45.3	57.9
2	96	14.1	18.0
3	31	4.6	5.8
4	77	11.3	14.5
5	20	2.9	3.8
Missing	148	21.8	N/A
Total:	**680**	**100.0**	**100.0**

Source: Regional Research Associates

Table 26 - Frequency Distribution of the DUA Responses to Current Mode versus Bus (Shared Ride Respondents Only).

Response	Frequency	Percent	Valid Percent
1	219	48.9	59.8
2	81	18.1	22.1
3	50	11.2	13.7
4	15	3.3	4.1
5	1	0.2	0.3
Missing	82	18.3	N/A
Total:	**448**	**100.0**	**100.0**

Source: Regional Research Associates

Table 27 - Frequency Distribution of the DUA Responses to Current Mode versus Tri-Rail (Shared Ride Respondents Only).

Response	Frequency	Percent	Valid Percent
1	248	55.4	72.5
2	62	13.8	18.1
3	18	4.0	5.3
4	14	3.1	4.1
5	0	0.0	0.0
Missing	106	23.7	N/A
Total:	**448**	**100.0**	**100.0**

Source: Regional Research Associates

Table 28 - Frequency Distribution of the DUA Responses to Current Mode versus Shared Ride (Shared Ride Respondents Only).

Response	Frequency	Percent	Valid Percent
1	155	34.6	46.1
2	73	16.3	21.7
3	22	4.9	6.5
4	47	10.5	14.0
5	39	8.7	11.6
Missing	112	25.0	N/A
Total:	**448**	**100.0**	**100.0**

Source: Regional Research Associates

Some interesting patterns are identified from Tables 22 through 28. While drive alone respondents show a similar frequency distribution pattern towards bus and Tri-Rail (Tables 23 and 24), shared ride respondents have a weaker commitment to their current mode when bus is presented as a feasible alternative (Table 26). In addition, shared ride respondents show a stronger support to their chosen travel mode as indicated in Table 28.

Regression Analysis of DUA Responses

Multiple regression analyses are performed on the DUA responses in order to evaluate the effects of different modal attributes on the stated mode choice behavior for different hypothetical situations. For the hypothetical situations of both "current mode versus bus" and "current mode versus Tri-Rail", three modal attributes (travel time, travel cost, and headway) are included in the analysis. For the hypothetical situations of "current mode versus shared ride", travel time, number of people in the shared ride, and parking preference are included in the regression analysis. Results of the multiple regressions analyses of all respondents, with the records of missing values removed, for the three sets of hypothetical situations are provided in Tables 29 through 31.

Table 29 - Multiple Regression Analysis Result: Current Mode vs. Bus (All Respondents with missing value records removed, n = 927).

Variables	Const.	Cost	Time	Headway
Coefficient	1.9252	-0.2241	-0.0122	-0.0069
t Statistic	12.439*	-2.131*	-2.326*	-1.311

Source: Regional Research Associates
* significant at 95% confidence level.

Table 30 - Multiple Regression Analysis Result: Current Mode vs. Tri-Rail (All Respondents with missing value records removed, n = 885).

Variables	Const.	Cost	Time	Headway
Coefficient	1.9720	-0.1195	-0.0102	-0.0034
t Statistic	11.371*	-2.275*	-1.948	-1.958

Source: Regional Research Associates
* significant at 95% confidence level.

Table 31 - Result of Multiple Regression Analysis: Current Mode vs. Shared Ride (All Respondents with missing value records removed, n=877).

Variables	Const.	Time	# of People	Parking
Coefficient	2.4089	-0.0241	-0.1379	0.2809
t Statistic	9.036*	-1.352	-1.544	3.145*

Source: Regional Research Associates
* significant at 95% confidence level.

The partial regression coefficients of all of the variables in the regression equations have the expected signs (i.e., negative signs for travel time, travel cost, headway, number of people in a shared ride, and a positive sign for parking preference). For the "current mode versus bus", both travel time and travel cost are statistically significant. For the "current mode versus Tri-Rail", only travel cost is statistically significant. For the "current mode versus shared ride", only parking preference enters into the regression model as a statistically significant variable. These differences suggest that different modal attributes had different effects on the stated behavior of the respondents when alternative travel modes were evaluated. Travel time appears to be an insignificant variable for Tri-Rail and shared ride, and parking preference becomes an important variable for the shared ride mode in the mode choice decision.

Similar multiple regression analyses were also performed on the respondents whose current mode is drive alone and on the respondents whose current mode is shared ride, respectively (Tables 32 through 37). The results of these regression analyses are expected to shed additional light on the differences between the respondent groups.

Table 32 - Multiple Regression Analysis Result: Current Mode vs. Bus (Drive Alone Respondents w/missing value records removed, n = 560).

Variables	Const.	Cost	Time	Headway
Coefficient	1.5768	-0.0604	-0.0122	-0.0040
t Statistic	8.939*	-0.505	-2.052*	-0.664

Source: Regional Research Associates
* significant at 95% confidence level.

Table 33 - Multiple Regression Analysis Result: Current Mode vs. Tri-Rail (Drive Alone Respondents with missing value records removed, n = 542).

Variables	Const.	Cost	Time	Headway
Coefficient	1.9422	-0.1184	-0.0112	-0.0032
t Statistic	8.726*	-1.760	-1.671	-1.420

Source: Regional Research Associates
* significant at 95% confidence level.

Table 34 - Multiple Regression Analysis Result: Current Mode vs. Shared Ride (Drive Alone Respondents with missing value records removed, n = 532).

Variables	Const.	Time	# of People	Parking
Coefficient	2.2272	-0.0231	-0.1424	0.3595
t Statistic	7.015*	-1.083	-1.336	3.372*

Source: Regional Research Associates
* significant at 95% confidence level.

Table 35 - Multiple Regression Analysis Result: Current Mode vs. Bus (Shared Ride Respondents with missing value records removed, n = 366).

Variables	Const.	Cost	Time	Headway
Coefficient	2.4066	-0.4523	-0.0113	-0.0105
t Statistic	8.879*	-2.457*	-1.232	-1.144

Source: Regional Research Associates
* significant at 95% confidence level.

Table 36 - Multiple Regression Analysis Result: Current Mode Vs Tri-Rail (Shared Ride Respondents with missing value records removed, n = 342).

Variables	Const.	Cost	Time	Headway
Coefficient	1.9338	-0.1070	-0.0072	-0.0034
t Statistic	7.032*	-1.285	-0.861	-1.207

Source: Regional Research Associates
* significant at 95% confidence level.

Table 37 - Multiple Regression Analysis Result: Current Mode Vs Shared Ride (Shared Ride Respondents with missing value records removed, n = 336).

Variables	Const.	Time	# of People	Parking
Coefficient	2.6751	-0.0256	-0.1328	0.1569
t Statistic	5.661*	-0.813	-0.842	0.995

Source: Regional Research Associates
* significant at 95% confidence level.

Again, the partial regression coefficients of all of the variables have the expected signs. However, "t" statistics of the partial regression coefficients in these regression models show different results compared to those in the regression models of all of the respondents. For the regression models of drive alone respondents only, travel time is the only statistically significant variable for the bus mode, none of the variables is significant for Tri-Rail, and parking preference stays as significant for shared ride. On the other hand, travel cost is the only statistically significant variable in the regression model for the bus mode and none of the variables is significant for the other two alternative modes in the models of shared ride respondents only. This suggests that the coefficients and their "t" statistics in the regression models vary with the population groups whose current travel modes are different. Therefore, the use of a single set of coefficients to estimate potential modal split of the entire population may not be sufficient to catch the differences between the population groups.

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 perceptions 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 Technical Memorandum #3 for details).

After removing the missing value records, there are seventy-three (73) valid records for the analysis of stated satisfaction levels and importance ratings. Table 38 lists the average satisfaction levels for the six broadly-defined modal attributes of each of the four travel modes (drive alone, bus, Tri-Rail, and shared ride). As expected, drive alone receives the highest average satisfaction levels on all six modal attributes, followed by the shared ride mode. Bus and Tri-Rail modes receive much lower satisfaction levels on all six modal attributes than drive alone and shared ride modes, with the Tri-Rail perceived slightly better than bus. It should also note that the most satisfactory aspect of the four travel modes perceived by the respondents are convenience for drive alone, reliability for both bus and Tri-Rail, and travel cost for shared ride. Since most of the respondents are not current bus or Tri-Rail riders, 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 general public perceive the different aspects associated with alternative travel modes.

Table 38 - Average Satisfactions Levels of All Valid Responses*.

	Drive Alone	Bus	Tri-Rail	Shared Ride
Travel Time	1.27	3.18	3.03	2.53
Travel Cost	1.62	2.84	3.07	2.27
Convenience	1.04	3.41	3.47	2.68
Safety	1.62	2.95	2.82	2.47
Comfort	1.10	3.03	2.93	2.42
Reliability	1.29	2.79	2.71	2.40

Source: Regional Research Associates
* 1 means "very satisfied"; 2 means "satisfied"; 3 means "neutral", 4 means "unsatisfied"; and 5 means "very unsatisfied".

Although the regression models derived for the DUA analysis are all statistically significant in terms of the hypothesis testing of the overall model, their coefficients of determination, R^2, are generally low. In other words, the models do not explain a high percentage of the variations in the stated mode choice behavior.

In order to gain additional insights into the modal attributes that may be important in individual mode choice decision processes, Table 39 lists the frequency distribution of the importance ratings perceived by the respondents for each of the six broadly-defined modal attributes. This Table indicates that reliability, safety and convenience are perceived as

more important modal attributes in individual mode choice decisions, and travel time, comfort and travel cost are perceived as less important modal attributes. This is further supported by the average importance ratings of the six modal attributes listed in Table 40. Based upon the perceived importance ratings, future DUA surveys will need to design specific measurement scales in order to incorporate these additional modal attributes in the analysis.

Table 39 - Frequency Distribution of Perceived Importance Ratings of the Six Modal Attributes.

	Very Important	Important	Neutral	Very Un-important	Un-important	Missing
Time	76 (61.29%*)	37 (29.84%)	5 (4.03%)	5 (4.03%)	1 (0.81%)	20 (N/A)
Cost	40 (33.90%)	53 (44.92%)	16 (13.56%)	5 (4.23%)	4 (3.39%)	26 (N/A)
Convenience	88 (73.33%)	28 (23.33%)	4 (3.34%)	0 (0.00%)	0 (0.00%)	24 (N/A)
Safety	90 (75.00%)	27 (22.50%)	3 (2.50%)	0 (0.00%)	0 (0.00%)	24 (N/A)
Comfort	57 (47.50%)	52 (43.33%)	8 (6.67%)	3 (2.50%)	0 (0.00%)	24 (N/A)
Reliability	91 (76.47%)	26 (21.85%)	2 (1.68%)	0 (0.00%)	0 (0.00%)	25 (N/A)

Source: Regional Research Associates
* Percentage of valid responses.

Table 40 - Average Importance Ratings of the Six Selected Modal Attributes*.

	Travel Time	Travel Cost	Conve-nience	Safety	Comfort	Reliability
Average Importance Rating	1.53	1.98	1.30	1.28	1.64	1.25

Source: Regional Research Associates
* 1 means "very important"; 2 means "important"; 3 means "neutral"; 4 means "unimportant"; and 5 means "very unimportant".

DUA Summary

The DUA survey described in this report was conducted as part of the Treasure Coast Travel Characteristics Survey. A set of pairwise hypothetical situations were presented to the survey subjects, and coefficients were derived from multiple regression analyses based on the stated mode choice behavior to the hypothetical situations. The results indicate that these coefficients vary with both the alternative travel mode presented to the survey subjects as well as the subjects whose current travel modes are different. These coefficients can be used to assist in the modeling of transit alternatives in the Treasure Coast area. In addition, analysis results of 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.

References

Florida Department of Transportation. 1991. *Technical Memoranda 1 & 7: Household Survey and Direct Utility Analysis - Tampa Bay Regional Transportation Analysis*, prepared by Gannett Fleming, Inc., Tampa, FL.

Florida Department of Transportation (FDOT) District IV Office. 1995. *Technical memorandum #1 - Survey Design and Methodology of Treasure Coast Travel Characteristics Study*, prepared by Walter H. Keller, Inc., Coral Springs, FL.

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-

VI. GIS Travel Log Address Matching Results

In this portion of the Final Report, the results of the address-matching task of the Treasure Coast Travel Characteristics Study 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 zone (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 and Results

The GIS databases used for the address-matching task in this project are the Dynamap/2000 3.1 enhanced TIGER/Line files (Geographic Data Technology, Inc., 13 Dartmouth College Highway, Lyme New Hampshire 03768) for Martin, St. Lucie and Indian River Counties. These Dynamap files were imported into Arc/Info GIS software and corresponding address coverages were created. The address coverages were then projected into the State Plane Coordinate system (NAD 1927) using the Arc/Info PROJECT function.

The travel log data was sorted by the city codes into four separate files: one file for each of the three counties and a fourth file containing all of the trip ends that have either missing city code or are located outside the tri-county area. Four separate INFO table files were defined to load the travel log data for each of the four travel log files. The address-matching function in Arc/Info, with a minimum matching score of 98, was performed on the trip ends located in each of the three counties as well as the trip ends located outside the study area. For the trip ends outside the study area, two representative points located just north of and south of the study area were used in the address-matching process. These four address-matched coverages (i.e., Martin, St. Lucie and Indian River Counties plus the outside-study-area) were appended into a seamless coverage.

Table 41 summarizes the address-matching results of the trip ends located within each of the three counties and the overall matching rate for the Treasure Coast area. In addition, there were 450 trip ends with missing city codes or were located outside the Treasure Coast area. Among them, 45 trip ends outside the study area were matched to either a representative point located just north of or a representative point just south of the Treasure Coast area. The data item definitions of the resultant Arc/Info point attribute table (PAT) are provided in Appendix C, Table C-1. Table C-2 in the Appendix provides the cryptic codes used with specific data items such as the city codes in the Travel Logs.

Table 41 - Address-matching Results of the Trip Ends Located within the Treasure Coast Area.

	Total Trip Ends	Matched Trip Ends	Rejected Trip Ends
Martin County	2,899	1,826 62.99%	1,073 37.01%
St. Lucie County	2,243	1,309 58.36%	934 41.64%
Indian River County	2,364	1,516 64.13%	848 35.87%
Treasure Coast	7,506	4,651 61.96%	2,855 38.04%

Source: Regional Research Associates, Inc.

The graphic results of the GIS matching effort is provided in Figures 11 through 13. Figure 11 displays the 1,826 trip ends identified in Martin County. The St. Lucie County 1,309 matched trip ends are presented in Figure 12. Matched trips ends totaling 1,516 are presented in Figure 13. Note that most data points represent multiple trip ends.

Address Matching Summary

The overall matching rate of the trip ends located within the Treasure Coast area is approximately 62%, at a minimum matching score of 98. A higher matching rate was not achieved mainly due to the following reasons:

- The Dynamap/2000 files used in the address-matching task was released in 1993, which was outdated by two years and could have some missing street addresses;
- Some respondents provided incomplete or wrong street address data (e.g., a street address without street type or with a non-existing street type); and
- Some respondents used place names to indicate the locations of their trip ends, which required a significant effort to find the corresponding street addresses.

Due to the budget constraint, an extensive effort of correcting the address data was considered unfeasible. However, with more up-to-date address coverages and more resources to edit the data set, it would be possible to improve the overall address-matching rate.

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

Reference

Florida Department of Transportation (FDOT) District IV Office, 1995. Technical Memorandum #1 - Survey Design and Methodology of Treasure Coast Travel Characteristics Study, prepared by Walter H. Keller, Inc., Coral Springs, FL.

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 the individual counties and the Treasure Coast Area, as appropriate, highlight the major findings of the Study and provide suggestions for further investigation.

Friction Factor Analysis

Recommended friction factors where generated for the Treasure Coast area based upon travel time data from the Study. The friction factor rate table was derived by using the TRANPLAN Calibrate Gravity Model function. Table 42, on the following page, details Treasure Coast area friction factors for each of the five (5) FSUTMS trip purposes.

Figure 14 compares the different friction factors for each trip purpose and internal-external trips. According to the graph, the friction factor decreases over time for each type of trip with the exception of truck-taxi. For these trips, the friction factor first decreases and then begins to increase after approximately twenty (20) minutes.

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

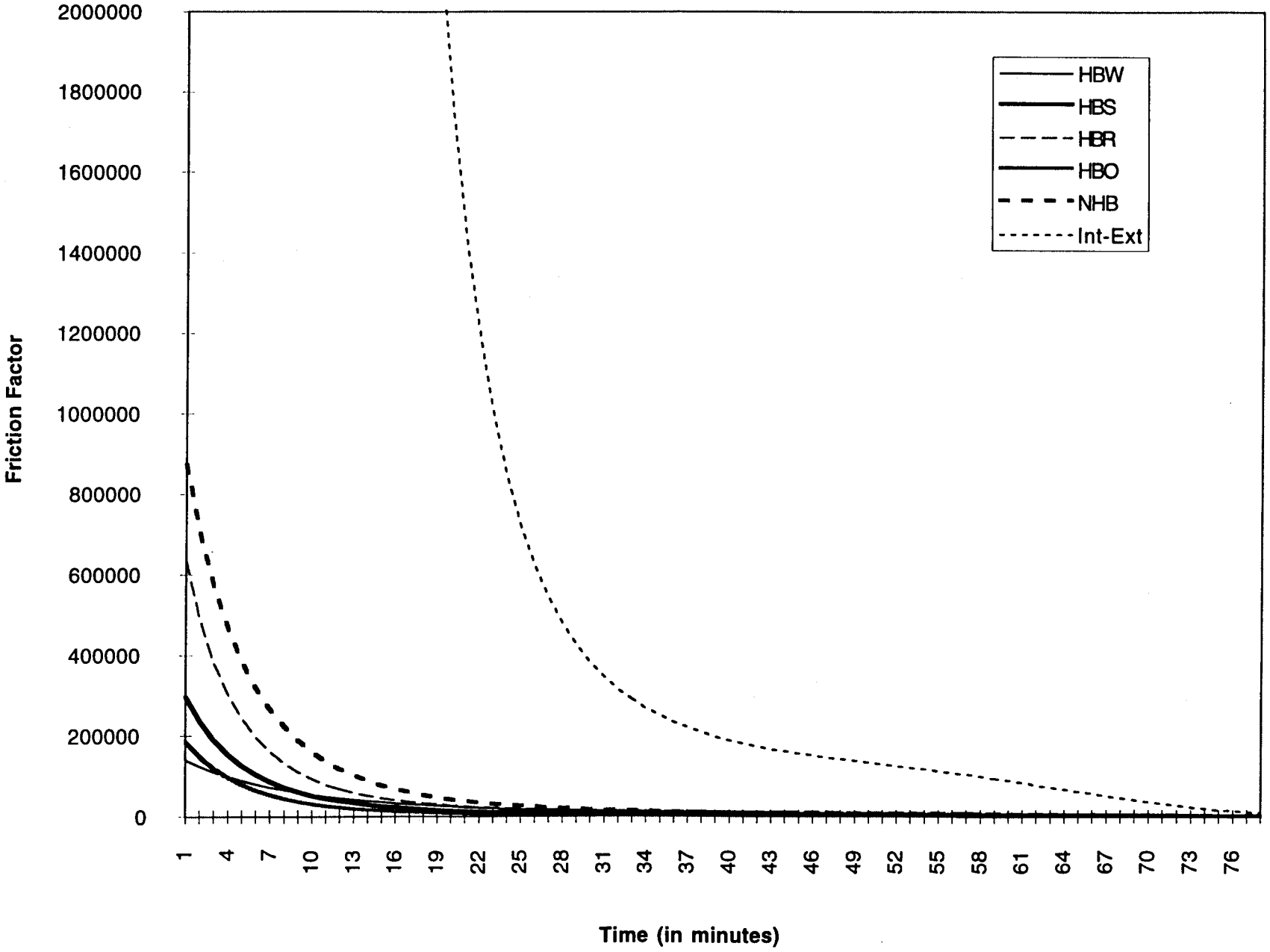
Difficulties were encountered in contacting and obtaining returned travel log packages for some of the standard cell groups as identified in Figure 2 (see page 13). Major cells with limited sample sizes included households with no autos (both single family and multi-family) and large size households. 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 forty-six percent (46%) of all travel log packages were returned, only eighteen percent (18%) 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 42 - Treasure Coast - Friction Factor Table

Time	HBW	HBS	HBR	HBO	NHB	Int-Ext
1	139449	295571	633513	185675	872730	9999999
2	123884	235553	489696	148587	703599	9999999
3	110427	189359	382999	119711	571236	9999999
4	98758	153522	303002	97085	466970	9999999
5	88610	125504	242408	79247	384311	9999999
6	79757	103433	196054	65098	318373	9999999
7	72014	85920	160254	53808	265451	9999999
8	65222	71925	132351	44747	222725	9999999
9	59249	60663	110408	37434	188030	9999999
10	53981	51540	93005	31499	159696	9999999
11	49324	44102	79090	26656	136431	9999999
12	45196	38000	67877	22683	117224	9999999
13	41528	32963	58775	19407	101285	9999999
14	38261	28782	51333	16693	87991	7577693
15	35344	25290	45208	14432	76848	5723698
16	32734	22360	40135	12541	67463	4386738
17	30394	19886	35909	10951	59522	3409907
18	28290	17789	32368	9608	52772	2687137
19	26396	16001	29387	8469	47009	2145826
20	24686	14471	26866	7499	42068	1735670
21	23139	13154	24723	6669	37814	1421407
22	21738	12017	22896	5956	34136	1178037
23	20466	11031	21332	5341	30945	987642
24	19309	10173	19990	4809	28164	837242
25	18254	9422	18836	4346	25733	717337
26	17291	8763	17840	3943	23600	620909
27	16411	8184	16980	3590	21721	542720
28	15604	7671	16236	3280	20061	478825
29	14864	7217	15592	3006	18589	426228
30	14184	6813	15035	2765	17279	382632
31	13557	6452	14552	2550	16111	346264
32	12980	6129	14133	2359	15064	315740
33	12446	5838	13771	2189	14124	289973
34	11952	5576	13457	2036	13277	268104
35	11494	5338	13184	1899	12511	249447
36	11070	5123	12948	1775	11817	233449
37	10674	4925	12741	1663	11185	219662
38	10306	4745	12560	1561	10609	207720
39	9963	4578	12401	1469	10081	197321
40	9642	4424	12257	1385	9596	188213
41	9342	4280	12127	1308	9148	180184
42	9060	4146	12005	1237	8735	173057
43	8795	4019	11889	1171	8350	166677
44	8545	3899	11775	1111	7992	160911
45	8310	3784	11659	1055	7658	155643
46	8087	3674	11538	1003	7343	150772
47	7876	3567	11409	955	7047	146207
48	7675	3463	11270	909	6766	141867
49	7484	3361	11117	867	6500	137681
50	7302	3260	10948	826	6246	133585
51	7128	3160	10761	789	6003	129520
52	6960	3061	10553	753	5770	125438
53	6799	2961	10324	718	5544	121294
54	6644	2861	10071	686	5327	117053
55	6494	2760	9794	655	5115	112685
56	6348	2659	9493	625	4910	108169
57	6207	2556	9168	596	4709	103491
58	6068	2453	8819	568	4513	98646
59	5933	2348	8448	541	4321	93635
60	5801	2242	8056	516	4132	88469
61	5671	2135	7645	491	3947	83168
62	5542	2028	7219	466	3764	77756
63	5416	1920	6780	443	3585	72267
64	5290	1812	6332	420	3408	66739
65	5166	1705	5878	397	3234	61217
66	5042	1598	5424	376	3063	55748
67	4919	1492	4972	355	2894	50379
68	4797	1387	4526	334	2729	45160
69	4674	1284	4092	314	2567	40137
70	4552	1184	3672	295	2409	35355
71	4430	1087	3271	276	2254	30850
72	4307	992	2890	258	2103	26656
73	4185	902	2532	240	1956	22796
74	4062	815	2200	224	1814	19288
75	3939	733	1895	207	1677	16138
76	3816	656	1618	192	1545	13347
77	3692	583	1368	177	1418	10907
78	3569	515	1146	162	1297	8802

Source: Walter H. Keller, Inc.

Figure 14 - Treasure Coast - 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 43, on the next page, provides a statistical review of the trip rate variable for the 546 households which returned completed travel logs. Since some of the households completed multiple day travel logs, the number of one-day travel logs totaled 674.

As can be observed from Table 43, 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 the Treasure Coast area. The majority of the Group "A" cells (12 - 14, 22 and 27 - except 15) and the Group "B" cells (6, 7 and 16 - except 21, 16 and 28), 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 43 - Statistical Analysis of Cell Trip Rate Errors
(% Error for Given Confidence Levels)

	Cell	H/H's	n	Veh Trips Per H/H	Standard Deviation	Standard Error	t	t (SE)	Resulting Error	Target Error	Met Goal?	Explanation
Single Family	D-1	1	1	0.00	0.00	-	-	-	-	25.0%	No	Single Case
	E-3	1	3	2.33	2.52	1.78	1.8856	3.3560	144.0%	50.0%	No	Few Cases
	B-6	65	79	3.78	2.07	0.24	1.6640	0.3906	10.3%	15.0%	Yes	Adequate Sample
	B-7	86	111	4.42	2.86	0.27	1.6600	0.4530	10.2%	15.0%	Yes	Adequate Sample
	B-8	4	4	3.75	2.36	1.36	2.3534	3.2107	85.6%	15.0%	No	Few Cases
	C-9	1	1	4.00	0.00	-	-	-	-	20.0%	No	Single Case
	D-11	11	15	4.80	5.40	1.44	1.7613	2.5424	53.0%	25.0%	No	Few Cases, Lrg Var
	A-12	167	201	7.12	3.89	0.28	1.6500	0.4539	6.4%	10.0%	Yes	Adequate Sample
	A-13	46	58	10.38	5.30	0.70	1.6710	1.1726	11.3%	10.0%	No-Close	Lrg. Variance
	A-14	23	35	13.49	6.61	1.13	1.6900	1.9152	14.2%	10.0%	No	Lrg. Variance
	A-15	8	10	18.50	5.68	1.89	1.8331	3.4713	18.8%	10.0%	No	Few Cases, Lrg. Var.
Multi-Family	B-21	43	48	4.17	2.69	0.39	1.6750	0.6577	15.8%	15.0%	No-Close	Lrg. Variance
	A-22	58	72	4.40	2.37	0.28	1.6660	0.4678	10.6%	10.0%	No-Close	Lrg. Variance
	D-26	1	1	8.00	0.00	-	-	-	-	25.0%	No	Single Case
	A-27	29	33	6.30	3.25	0.57	1.6870	0.9735	15.5%	10.0%	No	Lrg. Variance
	B-28	1	1	6.00	0.00	-	-	-	-	15.0%	No	Single Case
	C-29	1	1	15.00	0.00	-	-	-	-	20.0%	No	Single Case
	Totals	**546**	**674**									

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

N = Number of One Day Travel Logs
Resulting error for required Confidence Level

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, E4-E-5, C-10, B-16, D-17, E-18-E-20, C-23, D-24-D-25 and C-30 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-22, for example, 72 observations produced an error of 10.6%. 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.

Analysis was performed on the multiple day travel logs to identify any variance with the single day logs. Approximately two-thirds or 67% of all returned and completed travel logs were single day logs, 19% were two (2) day logs and 14% were three (3) day logs. The results of the analysis are provided below in Table 44. While the Table indicates some small differences between the number of days and the trip purpose variables, the aggregate results indicate only very minor differences between the day logs. For example, the trip rate maximum difference from the mean was less than one-half percent (0.5%), the trip length maximum difference was about four percent (4%) and the maximum difference from the mean of auto occupancy was approximately four percent (4%).

Table 44 - Analysis of Variance of Multiple Day Logs

Travel Characteristic	No. Days	No. Logs	Trip Purpose HBW	HBS	HBR	HBO	NHB	All Trips
Trip Rates:								
(Trips/HH)	1 Day Logs	450	0.92	0.98	0.58	1.76	2.19	6.43
	2 Day Logs	128	0.70	0.81	0.79	1.84	2.29	6.44
	3 Day Logs	96	0.68	1.17	0.67	1.81	2.07	6.40
	All Logs	674	0.84	0.98	0.63	1.78	2.19	6.43
Trip Length:								
(Miles/HH)	1 Day Logs	450	21.70	14.71	22.33	18.70	13.42	17.01
	2 Day Logs	128	17.92	17.05	23.40	18.40	12.49	16.76
	3 Day Logs	96	23.32	17.78	20.90	16.26	16.29	17.71
	All Logs	674	21.27	15.63	22.37	18.28	13.61	17.06
Auto Occupancy:								
(People/Vehicle)	1 Day Logs	450	1.10	1.57	1.76	1.71	1.70	1.61
	2 Day Logs	128	1.15	1.77	1.89	1.89	1.59	1.70
	3 Day Logs	96	1.13	1.87	1.80	1.67	1.76	1.71
	All Logs	674	1.11	1.65	1.80	1.74	1.69	1.64

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

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 TC^2S 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 45 contains the trip rates which were generated by the ANOVA procedure for each cell and trip purpose:

Table 45 - ANOVA Trip Rates

Cell	# of H/H	# of Day Logs	Trip Purpose					Total Trips
			HBW	HBS	HBR	HBO	NHB	
1	1	1	0.00	0.25	0.52	0.00	0.00	0.77
2	0	0	0.00	0.53	0.76	0.03	0.00	1.32
3	1	3	0.49	0.76	0.68	0.80	1.37	4.10
4	0	0	1.26	0.43	0.93	2.12	3.05	7.79
5	0	0	1.67	0.24	2.23	4.34	5.11	13.59
6	56	68	0.00	0.69	0.17	0.37	0.35	1.58
7	74	95	0.20	0.97	0.41	1.05	0.81	3.44
8	3	3	0.82	1.20	0.33	1.82	2.40	6.57
9	1	1	1.59	0.87	0.58	3.14	4.08	10.26
10	0	0	2.00	0.68	1.88	5.36	6.14	16.06
11	11	15	0.71	0.68	0.52	1.20	2.22	5.33
12	162	196	1.22	0.96	0.76	1.88	2.68	7.50
13	46	58	1.84	1.19	0.68	2.65	4.27	10.63
14	23	35	2.61	0.86	0.93	3.97	5.95	14.32
15	7	9	3.02	0.67	2.23	6.19	8.01	20.12
16	0	0	0.22	0.79	0.34	1.40	1.25	4.00
17	0	0	0.15	1.15	0.67	1.47	1.17	4.61
18	0	0	2.00	1.00	0.00	1.00	0.00	4.00
19	0	0	2.00	1.00	0.00	3.00	9.00	15.00
20	0	0	4.00	0.00	0.00	5.00	0.00	9.00
21	52	59	0.15	0.74	0.20	1.32	1.07	3.48
22	70	88	0.08	1.10	0.53	1.39	0.99	4.09
23	1	1	1.93	0.95	0.00	0.92	0.00	3.80
24	0	0	1.93	0.95	0.00	2.92	8.82	14.62
25	0	0	3.93	0.00	0.00	4.92	0.00	8.85
26	1	1	0.48	0.95	0.82	1.69	1.89	5.83
27	34	38	0.41	1.31	1.15	1.76	1.81	6.44
28	1	1	2.26	1.16	0.48	1.29	0.64	5.83
29	1	1	2.26	1.16	0.48	3.29	9.64	16.83
30	1	1	4.26	0.16	0.48	5.29	0.64	10.83

Source: Regional Research Associates, Inc.

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 46 through 50 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 below the standard trip rate number. The revised rates are drawn from both the trip rates for the Treasure Coast contained in Table 10 and the ANOVA trip rates for the Treasure Coast found in Table 45.

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

- Group "A" - Cell 12, and
- Group "B" - Cells 6 and 7.

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

- Group "A" - Cell 13, 14, 15, and
- Group "B" - Cell 21.

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 46 - 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 *0.40*	2 *0.80*	3 *1.15*	4 *1.40*	5 *1.55*
	1	6 *0.50* **0.35**	7 *1.10* **0.34**	8 *1.50* **0.82**	9 *1.75* **1.59**	10 *1.90* **2.00**
	2+	11 *1.05* **0.71**	12 *2.00* **1.22**	13 *2.45* **1.84**	14 *2.60* **2.61**	15 *2.65* **3.02**
RESIDENT MULTI-FAMILY D.U.'S	0	16 *0.15*	17 *0.35*	18 *0.55*	19 *0.80*	20 *1.00*
	1	21 *0.45* **0.22**	22 *0.65*	23 *0.90*	24 *1.00*	25 *1.10*
	2+	26 *1.20* **0.48**	27 *1.55* **0.41**	28 *1.85*	29 *2.05*	30 *2.15*

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

Notes: *0.00* - standard trip rate
0.00 - Recommended trip rate

Table 47 - Home-Based Shopping Trip Rates

CROSS CLASSIFICATION	AUTO/ D.U.	PERSONS PER D.U. 1	2	3	4	5+
RESIDENT SINGLE-FAMILY	0	1 *0.30*	2 *0.35*	3 *0.40*	4 *0.45*	5 *0.45*
	1	6 *0.80* **0.76**	7 *1.05* **1.16**	8 *1.20*	9 *1.30*	10 *1.30*
	2+	11 *0.90* **0.68**	12 *1.25* **0.91**	13 *1.45* **1.26**	14 *1.60*	15 *1.70*
RESIDENT MULTI-FAMILY D.U.'S	0	16 *0.30*	17 *0.35*	18 *0.40*	19 *0.45*	20 *0.45*
	1	21 *0.50* **0.74**	22 *1.25* **1.10**	23 *1.50*	24 *1.65*	25 *1.70*
	2+	26 *0.65* **0.95**	27 *1.40* **1.31**	28 *1.65*	29 *1.85*	30 *1.95*

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

Notes: *0.00* - standard trip rate
0.00 - Recommended trip rate

Table 48 - Home-Based Social 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 *0.20*	2 *0.25*	3 *0.30*	4 *0.40*	5 *0.45*
	1	6 *0.65* **0.29**	7 *0.85* **0.52**	8 *1.10*	9 *1.35*	10 *1.70*
	2+	11 *0.85* **0.52**	12 *1.05* **0.76**	13 *1.30* **0.68**	14 *1.65* **0.93**	15 *2.10* **2.23**
RESIDENT MULTI-FAMILY D.U.'S	0	16 *0.30*	17 *0.35*	18 *0.40*	19 *0.45*	20 *0.55*
	1	21 *0.65* **0.37**	22 *1.05* **0.47**	23 *1.45*	24 *1.90*	25 *2.65*
	2+	26 *0.75* **0.82**	27 *1.20* **1.15**	28 *1.65*	29 *2.20*	30 *3.05*

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

Notes: *0.00* - standard trip rate
0.00 - Recommended trip rate

Table 49 - 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 *0.20*	2 *0.30*	3 *0.55*	4 *1.00*	5 *1.60*
	1	6 *0.60* **1.09**	7 *1.10* **1.43**	8 *1.85*	9 *2.75*	10 *3.95*
	2+	11 *0.70*	12 *1.20* **1.77**	13 *2.20* **2.47**	14 *3.55* **3.71**	15 *5.35* **6.11**
RESIDENT MULTI-FAMILY D.U.'S	0	16 *0.25*	17 *0.45*	18 *0.70*	19 *1.10*	20 *1.70*
	1	21 *0.80* **1.32**	22 *1.20* **1.39**	23 *1.60*	24 *2.10*	25 *3.00*
	2+	26 *0.95*	27 *1.50* **1.76**	28 *2.30*	29 *3.40*	30 *4.65*

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

Notes: *0.00* - standard trip rate
♦ **0.00** - Recommended trip rate

Table 50 - 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] *0.40*	[2] *0.80*	[3] *1.15*	[4] *1.40*	[5] *1.55*
	1	[6] *0.50* **1.31**	[7] *1.10* **1.17**	[8] *1.50*	[9] *1.75*	[10] *1.90*
	2+	[11] *1.05* **2.22**	[12] *2.00* **2.68**	[13] *2.45* **4.27**	[14] *2.60* **5.95**	[15] *2.65* **8.01**
RESIDENT MULTI-FAMILY D.U.'S	0	[16] *0.15*	[17] *0.35*	[18] *0.55*	[19] *0.80*	[20] *1.00*
	1	[21] *0.45* **1.07**	[22] *0.65* **0.99**	[23] *0.90*	[24] *1.00*	[25] *1.10*
	2+	[26] *1.20*	[27] *1.55* **1.76**	[28] *1.85*	[29] *2.05*	[30] *2.15*

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

Notes: *0.00* - standard trip rate
0.00 - Recommended trip rate

Appendix A
Survey Forms

TREASURE COAST TRAVEL CHARACTERISTICS SURVEY
TELEPHONE QUESTIONNAIRE

INTERVIEWER AND CONTACT DATA

Fill in Prior to Placing Call

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 the Treasure Coast Travel Characteristics Survey. Did you receive an introduction letter 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 letter to you? *Read Letter.* 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	☐	5. Co-op or Condominium	☐
2. Duplex	☐	6. Mobile Home	☐
3. Townhouse	☐	7. Motel or Hotel	☐
4. Apartment	☐	8. Other	☐
		Explain _____	
		_____	

2. Do you own or rent? Own ☐ Rent ☐

3. Including yourself, how many people are in your household? _____

4. How many in your household are:

Employed in the Home	_____	Pre-school Children	_____
Employed elsewhere	_____	In School (K-12)	_____
Retired	_____	In College	_____

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

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 _____

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 Daily Travel Log for 1 - 3 days. This Second Survey is very important in understanding Treasure Coast Travel Patterns. May we contact you again, by mail, if your household is selected?

Yes ☐ No ☐

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

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

_____

_____

_____

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

TREASURE COAST TRAVEL CHARACTERISTICS STUDY
HOUSEHOLD VERIFICATION SURVEY

1. Please indicate your household dwelling unit type:

☐ Single Family Home	☐ Apartment	☐ Mobile Home
☐ Duplex	☐ Co-op or Condominium	☐ Motel or Hotel
☐ Townhouse	☐ Mobile Home	☐ Other _____

2. Do you own or rent? Own ☐ Rent ☐

3. Including yourself, how many people are in your household? _____

4. How many in your household:
   Have full time jobs? _____
   Have part time jobs? *(During Weekday Only)* _____
   Are licensed drivers (excluding training permits)? _____
   How many passenger vehicles (*including cars, trucks, motorcycles or vans)* are regularly used? _____

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 _____
   - **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 _____

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 1994? (*Check one*)

☐ Under $14,999	☐ $30,000 - $39,999	☐ $60,000 - $74,999
☐ $15,000 - $19,999	☐ $40,000 - $49,999	☐ $75,000 - $99,999
☐ $20,000 - $29,999	☐ $50,000 - $59,999	☐ $100,000 or more

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
Treasure Coast Travel Characteristics Study

Household Member Name: _____

Travel Maker's Profile Code: _____ **(from Household Verification Survey Question 5)**

Day 1 Log

For Help or Assistance Call 1-800-286-6692

Date: _____

Trip Number ↓	Trip Start Information			Trip End Information					Travel Characteristics		
	Start Time & Mileage	Location		Arrival Time & Mileage	Location		Destination	Intermediate Stop or Final Destination	Travel Means	Travel Made As	Major Routes Used
Trip 1	__:__ AM PM Mileage Reading	Address Street Name Name of Place City	Or Nearest Intersection and Check Corner Box N W E S	__:__ AM PM Mileage Reading	Address Street Name Name of Place City	Or Nearest Intersection and Check Corner Box N W E S	__Home __Work Site __School __Shopping __Restaurant __Personal Business __Friend's House __Recreation __Delivery __Other	__Intermediate Stop __Final Destination	__Car __Van __Bicycle __School Bus __Motorcycle __Truck __Walk __Public Bus __Taxicab __Other	__Driver __Passenger Total # of Persons in Vehicle	__I-95 __US 1 __Turnpike __SR A1A __SR 60 __SR 512 __SR 713 __SR 70 __Prima Vista Blvd __SR 76
Trip 2	__:__ AM PM Mileage Reading	Address Street Name Name of Place City	Or Nearest Intersection and Check Corner Box N W E S	__:__ AM PM Mileage Reading	Address Street Name Name of Place City	Or Nearest Intersection and Check Corner Box N W E S	__Home __Work Site __School __Shopping __Restaurant __Personal Business __Friend's House __Recreation __Delivery __Other	__Intermediate Stop __Final Destination	__Car __Van __Bicycle __School Bus __Motorcycle __Truck __Walk __Public Bus __Taxicab __Other	__Driver __Passenger Total # of Persons in Vehicle	__I-95 __US 1 __Turnpike __SR A1A __SR 60 __SR 512 __SR 713 __SR 70 __Prima Vista Blvd __SR 76
Trip 3	__:__ AM PM Mileage Reading	Address Street Name Name of Place City	Or Nearest Intersection and Check Corner Box N W E S	__:__ AM PM Mileage Reading	Address Street Name Name of Place City	Or Nearest Intersection and Check Corner Box N W E S	__Home __Work Site __School __Shopping __Restaurant __Personal Business __Friend's House __Recreation __Delivery __Other	__Intermediate Stop __Final Destination	__Car __Van __Bicycle __School Bus __Motorcycle __Truck __Walk __Public Bus __Taxicab __Other	__Driver __Passenger Total # of Persons in Vehicle	__I-95 __US 1 __Turnpike __SR A1A __SR 60 __SR 512 __SR 713 __SR 70 __Prima Vista Blvd __SR 76
Trip 4	__:__ AM PM Mileage Reading	Address Street Name Name of Place City	Or Nearest Intersection and Check Corner Box N W E S	__:__ AM PM Mileage Reading	Address Street Name Name of Place City	Or Nearest Intersection and Check Corner Box N W E S	__Home __Work Site __School __Shopping __Restaurant __Personal Business __Friend's House __Recreation __Delivery __Other	__Intermediate Stop __Final Destination	__Car __Van __Bicycle __School Bus __Motorcycle __Truck __Walk __Public Bus __Taxicab __Other	__Driver __Passenger Total # of Persons in Vehicle	__I-95 __US 1 __Turnpike __SR A1A __SR 60 __SR 512 __SR 713 __SR 70 __Prima Vista Blvd __SR 76

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 the Treasure Coast area. The following forms present you with several situations which compare your current choice of transportation to other forms of transportation, such as bus, rail transit, and shared ride. The transit modes which are compared do not necessarily currently exist in the Treasure Coast region, but could exist to meet the area's transportation needs at some point in the future.

2. WHO COMPLETES THIS QUESTIONNAIRE:
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 completes this form: _____

3. CONSIDER YOUR FIRST TRIP:
The choices that are offered on the following pages should be evaluated for the first trip you listed in your TRIP LOG. In the TRIP LOG, example #1 (P. 6 of the Introduction packet), the first trip is the home to work trip made by John Smith.

4. SELECT YOUR CURRENT CHOICE:
Please indicate below the type of transportation that you used to make your first trip:

- ☐ Car Driver # of persons in Car _____
- ☐ Car Rider # of persons in Car _____
- ☐ Bus
- ☐ Other: specify _____

In the following forms this will be called your CURRENT CHOICE.

5. COMPARE CHOICES
Within each situation you are asked to consider several factors. These factors include total travel time, cost, and accessibility as examples. You will be comparing the type of transportation you used for the first trip described in your TRIP LOG and indicated above. Carefully consider the combination of factors in each situation and indicate your preference by marking one of the five choices: Definitely my current choice, Probably my current choice, Do not know, Probably alternative mode, or Definitely alternative mode.

6. IF YOU NEED HELP:
- If you need help with these forms, call Mary toll-free at 1-800-286-6692.

Your Current Choice versus Bus:

Situation	Total Travel Time Note: (Total travel time includes the time required to travel to and from the bus stop.)	Bus Frequency	One-Way Bus Cost
A	Bus is 10 minutes slower than the current choice	Every 10 min	$ 0.75
Definitely My Current Choice	Probably My Current Choice	Do Not Know	Probably Bus	Definitely Bus
B	Bus is 20 minutes slower than the current choice	Every 10 min	$ 0.75
Definitely My Current Choice	Probably My Current Choice	Do Not Know	Probably Bus	Definitely Bus
C	Bus is 10 minutes slower than the current choice	Every 20 min	$ 0.75
Definitely My Current Choice	Probably My Current Choice	Do Not Know	Probably Bus	Definitely Bus
D	Bus is 20 minutes slower than the current choice	Every 20 min	$ 0.75
Definitely My Current Choice	Probably My Current Choice	Do Not Know	Probably Bus	Definitely Bus
E	Bus is 10 minutes slower than the current choice	Every 10 min	$ 1.25
Definitely My Current Choice	Probably My Current Choice	Do Not Know	Probably Bus	Definitely Bus
F	Bus is 20 minutes slower than the current choice	Every 10 min	$1.25
Definitely My Current Choice	Probably My Current Choice	Do Not Know	Probably Bus	Definitely Bus
G	Bus is 10 minutes slower than the current choice	Every 20 min	$ 1.25
Definitely My Current Choice	Probably My Current Choice	Do Not Know	Probably Bus	Definitely Bus
H	Bus is 20 minutes slower than the current choice	Every 20 min	$ 1.25
Definitely My Current Choice	Probably My Current Choice	Do Not Know	Probably Bus	Definitely Bus

Your Current Choice versus Tri-Rail:

Situation	Total Travel Time Note: (Total travel time includes the time required to travel to and from the Tri-Rail station.)	Tri-Rail Frequency	One-Way Tri-Rail Cost
A	Tri-Rail is 10 minutes slower than the current choice	Every 30 min	$ 2.00
Definitely My Current Choice	Probably My Current Choice	Do Not Know	Probably Tri-Rail	Definitely Tri-Rail
B	Tri-Rail is 20 minutes slower than the current choice	Every 30 min	$ 2.00
Definitely My Current Choice	Probably My Current Choice	Do Not Know	Probably Tri-Rail	Definitely Tri-Rail
C	Tri-Rail is 10 minutes slower than the current choice	Every 60 min	$ 2.00
Definitely My Current Choice	Probably My Current Choice	Do Not Know	Probably Tri-Rail	Definitely Tri-Rail
D	Tri-Rail is 20 minutes slower than the current choice	Every 60 min	$ 2.00
Definitely My Current Choice	Probably My Current Choice	Do Not Know	Probably Tri-Rail	Definitely Tri-Rail
E	Tri-Rail is 10 minutes slower than the current choice	Every 30 min	$ 3.00
Definitely My Current Choice	Probably My Current Choice	Do Not Know	Probably Tri-Rail	Definitely Tri-Rail
F	Tri-Rail is 20 minutes slower than the current choice	Every 30 min	$3.00
Definitely My Current Choice	Probably My Current Choice	Do Not Know	Probably Tri-Rail	Definitely Tri-Rail
G	Tri-Rail is 10 minutes slower than the current choice	Every 60 min	$ 3.00
Definitely My Current Choice	Probably My Current Choice	Do Not Know	Probably Tri-Rail	Definitely Tri-Rail
H	Tri-Rail is 20 minutes slower than the current choice	Every 60 min	$ 3.00
Definitely My Current Choice	Probably My Current Choice	Do Not Know	Probably Tri-Rail	Definitely Tri-Rail

Your Current Choice versus Shared Ride:

Situation	Total Travel Time Note: (Total travel time includes pick-up and drop-off time.)	Number of people in shared ride	Parking Incentives
A	Shared ride is 5 minutes slower than the current choice	2	Preferred parking
Definitely My Current Choice	Probably My Current Choice	Do Not Know	Probably Shared Ride / Definitely Shared Ride
B	Shared ride is 10 minutes slower than the current choice	2	Preferred parking
Definitely My Current Choice	Probably My Current Choice	Do Not Know	Probably Shared Ride / Definitely Shared Ride
C	Shared ride is 5 minutes slower than the current choice	3	Preferred parking
Definitely My Current Choice	Probably My Current Choice	Do Not Know	Probably Shared Ride / Definitely Shared Ride
D	Shared ride is 10 minutes slower than the current choice	3	Preferred parking
Definitely My Current Choice	Probably My Current Choice	Do Not Know	Probably Shared Ride / Definitely Shared Ride
E	Shared ride is 5 minutes slower than the current choice	2	Regular parking
Definitely My Current Choice	Probably My Current Choice	Do Not Know	Probably Shared Ride / Definitely Shared Ride
F	Shared ride is 10 minutes slower than the current choice	2	Regular parking
Definitely My Current Choice	Probably My Current Choice	Do Not Know	Probably Shared Ride / Definitely Shared Ride
G	Shared ride is 5 minutes slower than the current choice	3	Regular parking
Definitely My Current Choice	Probably My Current Choice	Do Not Know	Probably Shared Ride / Definitely Shared Ride
H	Shared ride is 10 minutes slower than the current choice	3	Regular parking
Definitely My Current Choice	Probably My Current Choice	Do Not Know	Probably Shared Ride / Definitely Shared Ride

For the following questions, we are trying to determine your satisfaction with the performance of each of the travel modes listed. Some of the travel modes listed may not be available to you at this moment, 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 characteristic. A smaller number represents a higher level of satisfaction, a larger number represents a lower level of satisfaction.

A. Please indicate by checking the appropriate box, your satisfaction with the TRAVEL TIME for each of the following modes:

Travel Mode	Very Satisfied (1)	Satisfied (2)	Neutral (3)	Unsatisfied (4)	Very Unsatisfied (5)
Drive Alone					
Shared Ride					
Bus					
Tri-Rail					

B. Please indicate by checking the appropriate box, your satisfaction with the TRAVEL COST for each of the following modes:

Travel Mode	Very Satisfied (1)	Satisfied (2)	Neutral (3)	Unsatisfied (4)	Very Unsatisfied (5)
Drive Alone					
Shared Ride					
Bus					
Tri-Rail					

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

Travel Mode	Very Satisfied (1)	Satisfied (2)	Neutral (3)	Unsatisfied (4)	Very Unsatisfied (5)
Drive Alone					
Shared Ride					
Bus					
Tri-Rail					

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

Travel Mode	Very Satisfied (1)	Satisfied (2)	Neutral (3)	Unsatisfied (4)	Very Unsatisfied (5)
Drive Alone					
Shared Ride					
Bus					
Tri-Rail					

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

Travel Mode	Very Satisfied (1)	Satisfied (2)	Neutral (3)	Unsatisfied (4)	Very Unsatisfied (5)
Drive Alone					
Shared Ride					
Bus					
Tri-Rail					

F. Please indicate by checking the appropriate box, your satisfaction with the RELIABILITY for each of the following modes. (Arriving the destination on time, free from mechanical problems, etc.)

Travel Mode	Very Satisfied (1)	Satisfied (2)	Neutral (3)	Unsatisfied (4)	Very Unsatisfied (5)
Drive Alone					
Shared Ride					
Bus					
Tri-Rail					

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

Modal Characteristics	Very Important(1)	Important(2)	Neutral(3)	Unimportant (4)	Very Unimportant(5)
Travel Time					
Travel Cost					
Convenience					
Safety					
Comfort					
Reliability					

Treasure Coast Travel Characteristics Study

Travel Log
Instruction Package

(to be reviewed by Adult Household Member)

March 1995

Introduction

This package has been prepared to provide instructions and information useful to completing the questionnaires and Travel Logs for the *Treasure Coast 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 Martin, St. Lucie and Indian River Counties.

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 Daily Travel Logs are assigned to be completed on your "Travel Log Survey Day." If you have questions or need assistance please call Mary at **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 Treasure Coast 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 the Treasure Coast area.

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 **1-800-286-6692.**

TREASURE COAST TRAVEL CHARACTERISTICS STUDY
HOUSEHOLD VERIFICATION SURVEY

1. Please indicate your household dwelling unit type:

☒ Single Family Home	☐ Apartment	☐ Mobile Home
☐ Duplex	☐ Co-op or Condominium	☐ Motel or Hotel
☐ Townhouse	☐ Mobile Home	☐ Other _____

2. Do you own or rent? Own ☒ Rent ☐

3. Including yourself, how many people are in your household? 4

4. How many in your household:
   Have full time jobs? 1
   Have part time jobs? *(During Weekday Only)* 1
   Are licensed drivers (excluding training permits)? 2
   How many passenger vehicles (*including cars, trucks, motorcycles or vans)* are regularly used? 2

5. This question will identify the Travel Maker Profile. For each of your household menber, 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, visit ing 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. At home Schooled _____ (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 1994? (*Check one*)

☐ Under $14,999	☐ $30,000 - $39,999	☐ $60,000 - $74,999
☐ $15,000 - $19,999	☐ $40,000 - $49,999	☐ $75,000 - $99,999
☐ $20,000 - $29,999	☒ $50,000 - $59,999	☐ $100,000 or more

Thank you very much for taking the time to answer these questions.
Please place in return envelop with travel logs for mailing. For 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 the Treasure Coast area. The Travel Logs are to be used by each household member older than six (6) 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.

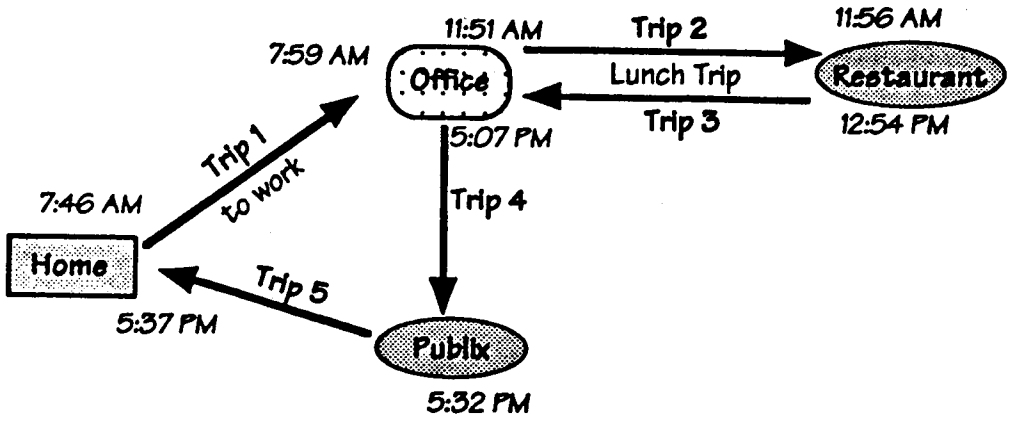
Reduced copies of the three Daily Travel Logs are provided on pages 6 - 8. The examples are based on the four (4) person family previously described in the Household Verification Survey. The following three (3) examples are provided to illustrate the daily trips of the three (3) household members.

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.

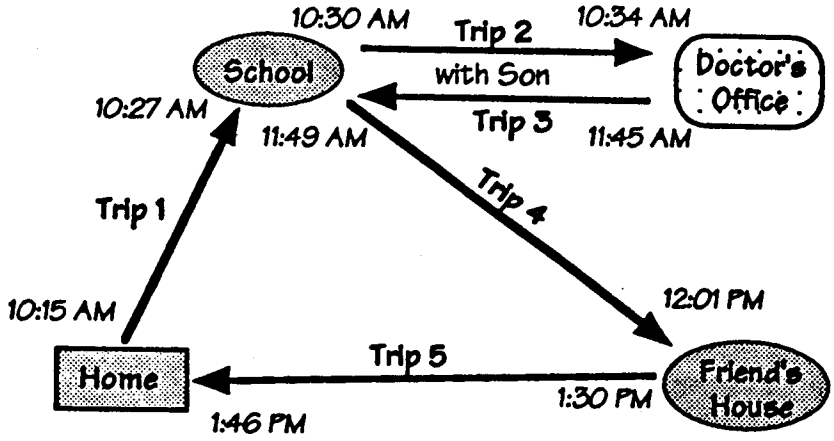
Example 2 — Wife (Travel Maker Profile Code "F") - Leaves the house to pick up the 6th grade child at school (**trip 1**); goes from school to the Doctor's office (**trip 2**); leaves the Doctor's office returning the child to school (**trip 3**); visits a friend's house (**trip 4**) and then returns 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: Six Grade Child (Travel Maker Profile Code "I")

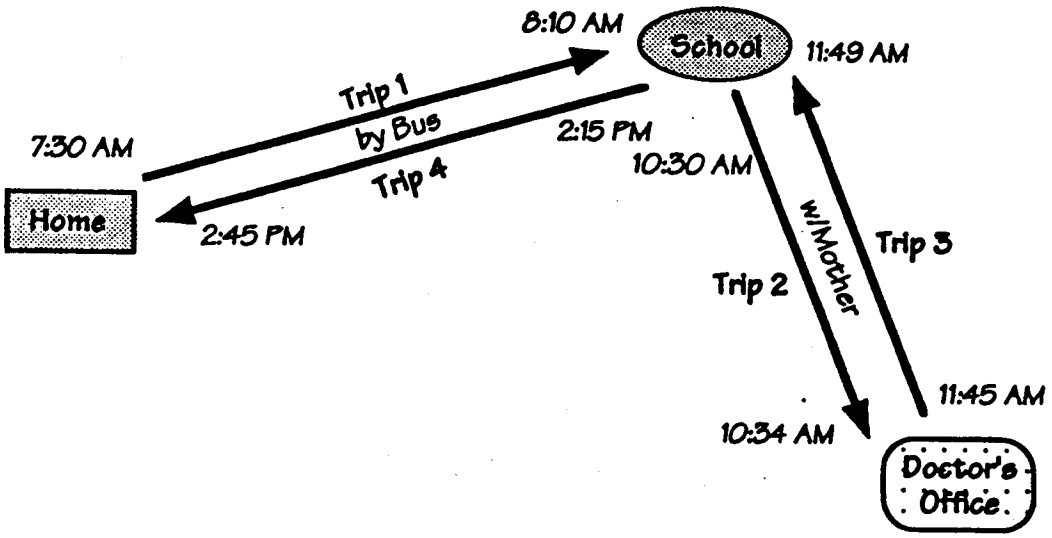


Figure 1 - Trip Examples

Household Member Name: John SmiTH

Travel Maker's Profile Code: ID (from Household Verification Survey Question 5)

For Help or Assistance Call 1-800-286-6692

Florida Department of Transportation
Treasure Coast Travel Characteristics Study

EXAMPLE #1

Day 1 Log

Date: MARCH 21, 1995

Trip Number	Trip Start Information: Start Time & Mileage	Trip Start Information: Location	Trip End Information: Arrival Time & Mileage	Trip End Information: Location	Trip End Information: Destination	Trip End Information: Intermediate Stop or Final Destination	Travel Characteristics: Travel Means	Travel Characteristics: Travel Mode As	Travel Characteristics: Major Routes Used
Trip 1	7:46 AM / PM 783 Mileage Reading	470 Address; MANOR DR. Street Name; HOME Name of Place; STUART City; Or Nearest Intersection: and; Check Corner Box: N W E S	7:59 AM / PM 786 Mileage Reading	2406 Address; MONTEREY RD Street Name; OFFICE (WORK) Name of Place; STUART City; Or Nearest Intersection: and; Check Corner Box: N W E S	Home; X Work Site; School; Shopping; Restaurant; Personal Business; Friend's House; Recreation; Delivery; Other	Intermediate Stop; X Final Destination	X Car; Van; Bicycle; School Bus; Motorcycle; Truck; Walk; Public Bus; Taxicab; Other	X Driver; Passenger; 1 Total # of Persons in Vehicle	1-95; US 1; Turnpike; X SR A1A; SR 60; SR 512; SR 713; SR 70; Prime Vista Blvd; X SR 76
Trip 2	11:51 AM / PM 786 Mileage Reading	Address; OFFICE Street Name; Name of Place; City; Or Nearest Intersection: and; Check Corner Box: N W E S	11:56 AM / PM 788 Mileage Reading	Address; PRAWN BROKER Street Name; Name of Place; City; Or Nearest Intersection: SR A1A and SEWALLS PT. RD; Check Corner Box: N W E S	Home; Work Site; School; Shopping; X Restaurant; Personal Business; Friend's House; Recreation; Delivery; Other	Intermediate Stop; X Final Destination	X Car; Van; Bicycle; School Bus; Motorcycle; Truck; Walk; Public Bus; Taxicab; Other	X Driver; Passenger; 1 Total # of Persons in Vehicle	1-95; US 1; Turnpike; X SR A1A; SR 60; SR 512; SR 713; SR 70; Prime Vista Blvd; SR 76
Trip 3	12:54 AM / PM 788 Mileage Reading	Address; PRAWN BROKER Street Name; Name of Place; City; Or Nearest Intersection: and; Check Corner Box: N W E S	12:59 AM / PM 790 Mileage Reading	Address; OFFICE Street Name; Name of Place; City; Or Nearest Intersection: and; Check Corner Box: N W E S	X Home; Work Site; School; Shopping; Restaurant; Personal Business; Friend's House; Recreation; Delivery; Other	Intermediate Stop; X Final Destination	X Car; Van; Bicycle; School Bus; Motorcycle; Truck; Walk; Public Bus; Taxicab; Other	X Driver; Passenger; 1 Total # of Persons in Vehicle	1-95; US 1; Turnpike; X SR A1A; SR 60; SR 512; SR 713; SR 70; Prime Vista Blvd; SR 76
Trip 4	5:07 AM / PM 790 Mileage Reading	Address; OFFICE Street Name; Name of Place; City; Or Nearest Intersection: and; Check Corner Box: N W E S	5:21 AM / PM 792 Mileage Reading	746 Address; FEDERAL HWY Street Name; PUBLIX Name of Place; STUART City; Or Nearest Intersection: and; Check Corner Box: N W E S	Home; Work Site; School; X Shopping; Restaurant; Personal Business; Friend's House; Recreation; Delivery; Other	X Intermediate Stop; Final Destination	L Car; Van; Bicycle; School Bus; Motorcycle; Truck; Walk; Public Bus; Taxicab; Other	L Driver; Passenger; 1 Total # of Persons in Vehicle	1-95; X US 1; Turnpike; X SR A1A; SR 60; SR 512; SR 713; SR 70; Prime Vista Blvd; SR 76

Sheet 1 of 3 sheets

Household Member Name: MARY SMITH

Florida Department of Transportation
Treasure Coast Travel Characteristics Study

Travel Maker's Profile Code: E (from Household Verification Survey Question 5)

For Help or Assistance Call 1-800-286-6692

EXAMPLE #2

Day 1 Log

Date: MARCH 21, 1995

Trip Number	Trip Start Information: Start Time & Mileage	Trip Start Information: Location	Trip End Information: Arrival Time & Mileage	Trip End Information: Location	Trip End Information: Destination	Trip End Information: Intermediate Stop or Final Destination	Travel Characteristics: Travel Means	Travel Characteristics: Travel Mode As	Travel Characteristics: Major Routes Used
Trip 1	10:15 AM PM 261 Mileage Reading	470 Address MANOR DR Street Name HOME Name of Place STUART City Or Nearest Intersection: and Check Corner Box: N W E S	10:27 AM PM 263 Mileage Reading	Address GEORGIA AVE Street Name STUART MIDDLE Name of Place STUART City Or Nearest Intersection: and Check Corner Box: N W E S	Home, Work Site, X School, Shopping, Restaurant, Personal Business, Friend's House, Recreation, Delivery, Other	X Intermediate Stop Final Destination	Car, Van, Bicycle, School Bus, Motorcycle, Truck, Walk, Public Bus, Taxicab, Other	1 Driver Passenger 1 Total # of Persons in Vehicle	I-95, US 1, Turnpike, X SR A1A, SR 60, SR 512, SR 713, SR 70, Prime Vista Blvd, X SR 76
Trip 2	10:30 AM PM 263 Mileage Reading	Address Street Name STUART MIDDLE SCHOOL Name of Place City Or Nearest Intersection: and Check Corner Box: N W E S	10:34 AM PM 264 Mileage Reading	Address OCEAN BLVD Street Name DR BILLOW'S OFFICE Name of Place STUART City Or Nearest Intersection: and Check Corner Box: N W E S	Home, Work Site, School, Shopping, Restaurant, Personal Business, Friend's House, Recreation, Delivery, X Other	Intermediate Stop X Final Destination	X Car, Van, Bicycle, School Bus, Motorcycle, Truck, Walk, Public Bus, Taxicab, Other	1 Driver 1 Passenger 2 Total # of Persons in Vehicle	I-95, US 1, Turnpike, X SR A1A, SR 60, SR 512, SR 713, SR 70, Prime Vista Blvd, SR 76
Trip 3	11:45 AM PM 264 Mileage Reading	Address Street Name DR. BILLOW'S OFFICE Name of Place City Or Nearest Intersection: and Check Corner Box: N W E S	11:49 AM PM 265 Mileage Reading	Address STUART MIDDLE Street Name Name of Place City Or Nearest Intersection: and Check Corner Box: N W E S	Home, Work Site, X School, Shopping, Restaurant, Personal Business, Friend's House, Recreation, Delivery, Other	Intermediate Stop Final Destination	X Car, Van, Bicycle, School Bus, Motorcycle, Truck, Walk, Public Bus, Taxicab, Other	1 Driver 1 Passenger 2 Total # of Persons in Vehicle	I-95, US 1, Turnpike, X SR A1A, SR 60, SR 512, SR 713, SR 70, Prime Vista Blvd, SR 76
Trip 4	11:49 AM PM 265 Mileage Reading	Address Street Name STUART MIDDLE Name of Place City Or Nearest Intersection: and Check Corner Box: N W E S	12:01 AM PM 269 Mileage Reading	Address FRIEND'S HOUSE Street Name STUART Name of Place City Or Nearest Intersection: HAWTHORNE and SR A1A Check Corner Box: N W E S	Home, Work Site, School, Shopping, Restaurant, Personal Business, X Friend's House, Recreation, Delivery, Other	X Intermediate Stop Final Destination	X Car, Van, Bicycle, School Bus, Motorcycle, Truck, Walk, Public Bus, Taxicab, Other	1 Driver Passenger 1 Total # of Persons in Vehicle	I-95, US 1, Turnpike, X SR A1A, SR 60, SR 512, SR 713, SR 70, Prime Vista Blvd, SR 76

Sheet 1 of 3 sheets

Household Member Name: KEVIN SMITH

Travel Maker's Profile Code: I (from Household Verification Survey Question 5)

For Help or Assistance Call 1-800-286-6692

Florida Department of Transportation
Treasure Coast Travel Characteristics Study

EXAMPLE #3

Day 1 Log

Date: MARCH 21, 1995

Trip Number	Trip Start Information: Start Time & Mileage	Trip Start Information: Location	Trip End Information: Arrival Time & Mileage	Trip End Information: Location	Trip End Information: Destination	Trip End Information: Intermediate Stop or Final Destination	Travel Characteristics: Travel Means	Travel Characteristics: Travel Mode As	Travel Characteristics: Major Routes Used
Trip 1	7:30 AM PM — Mileage Reading	Address Street Name: HOME Name of Place City Or Nearest Intersection and Check Corner Box: N W E S	8:10 AM PM — Mileage Reading	575 Address GEORGIA AVE Street Name: STUART MIDDLE Name of Place: STUART City Or Nearest Intersection and Check Corner Box: N W E S	Home Work Site X School Shopping Restaurant Personal Business Friend's House Recreation Delivery Other	Intermediate Stop X Final Destination	Car Van Bicycle X School Bus Motorcycle Truck Walk Public Bus Taxicab Other	Driver X Passenger — Total # of Persons in Vehicle	I-95 US 1 Turnpike X SR A1A SR 60 SR 512 SR 713 X SR 70 Prima Vista Blvd SR 76
Trip 2	10:30 AM PM 263 Mileage Reading	Address Street Name: STUART MIDDLE Name of Place: STUART City Or Nearest Intersection and Check Corner Box: N W E S	10:34 AM PM 264 Mileage Reading	Address OCEAN BLVD Street Name: DR. BILLOW'S OFFICE Name of Place: STUART City Or Nearest Intersection and Check Corner Box: N W E S	Home Work Site School Shopping Restaurant Personal Business Friend's House Recreation Delivery X Other	Intermediate Stop X Final Destination	X Car Van Bicycle School Bus Motorcycle Truck Walk Public Bus Taxicab Other	Driver X Passenger 2 Total # of Persons in Vehicle	I-95 US 1 Turnpike X SR A1A SR 60 SR 512 SR 713 SR 70 Prima Vista Blvd SR 76
Trip 3	11:45 AM PM 264 Mileage Reading	Address Street Name: DR. BILLOW'S Name of Place City Or Nearest Intersection and Check Corner Box: N W E S	11:49 AM PM 265 Mileage Reading	Address Street Name: STUART MIDDLE Name of Place City Or Nearest Intersection and Check Corner Box: N W E S	Home Work Site X School Shopping Restaurant Personal Business Friend's House Recreation Delivery Other	Intermediate Stop X Final Destination	X Car Van Bicycle School Bus Motorcycle Truck Walk Public Bus Taxicab Other	Driver X Passenger 2 Total # of Persons in Vehicle	I-95 US 1 Turnpike X SR A1A SR 60 SR 512 SR 713 SR 70 Prima Vista Blvd SR 76
Trip 4	2:15 AM PM — Mileage Reading	Address Street Name: STUART MIDDLE Name of Place City: STUART Or Nearest Intersection and Check Corner Box: N W E S	2:45 AM PM — Mileage Reading	Address Street Name: HOME Name of Place City Or Nearest Intersection and Check Corner Box: N W E S	X Home Work Site School Shopping Restaurant Personal Business Friend's House Recreation Delivery Other	Intermediate Stop X Final Destination	Car Van Bicycle X School Bus Motorcycle Truck Walk Public Bus Taxicab Other	Driver X Passenger — Total # of Persons in Vehicle	I-95 US 1 Turnpike X SR A1A SR 60 SR 512 SR 713 X SR 70 Prima Vista Blvd SR 76

Sheet 1 of 3 sheets

General Instructions for Completing Travel Logs

1. Travel Logs are to be completed for each Household Member older than 6 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. Please indicate the Travel Maker Profile Code (see Household Verification Survey - question 5) on each Daily Travel Log with the first name of the individual's log.

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. The corner of the intersection your destination is located should also be checked. 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 five (5) columns of the Travel Log relate to destination, type of stop, means of travel, whether you are the driver or passenger and the major routes used during the trip. These columns should be checked with the appropriate response.

9. Most households will be asked to complete Daily Travel Logs for one (1) Travel Day. A few households will be asked to complete the logs for two and three days. If selected for the longer travel log participation, additional forms will be included in your package for each day.

10. Your time and efforts are very much appreciated. Remember assistance or help is available. Please call Mary at **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 **1-800-286-6692.**

4. Returning Questionnaires and Travel Logs

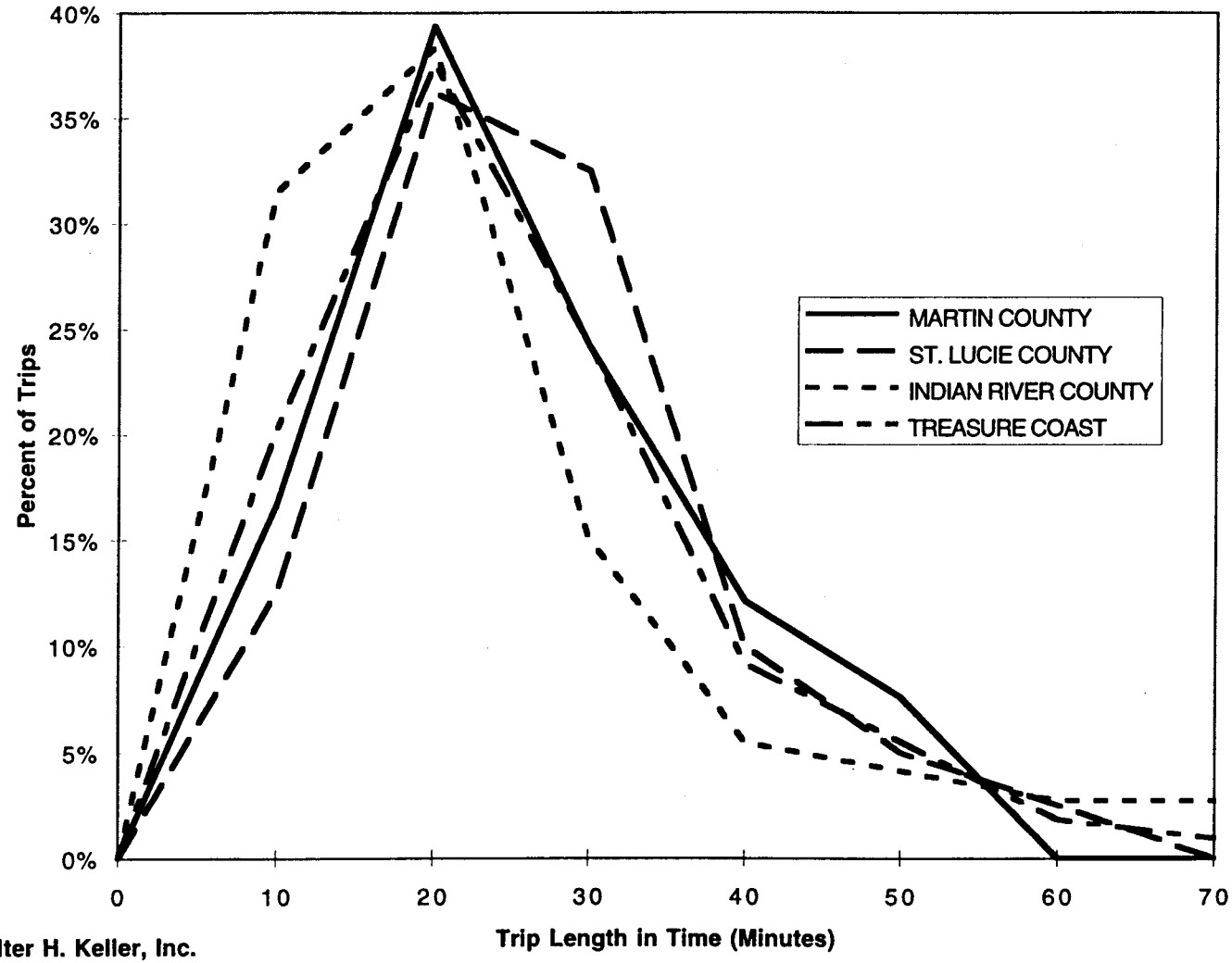
With completion of the Household Verification Survey, DUA Questionnaire (if selected) and Daily Travel Logs, all survey forms and questionnaires should be returned in the self-addressed, postage paid envelop. You will be contacted by telephone after your assigned travel day has passed to verify completion of the forms and to assist you in returning the package. Remember if you need help, please call Mary at **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 Treasure Coast residents and lead to a more successful transportation system in the future.

Thank You for your assistance.

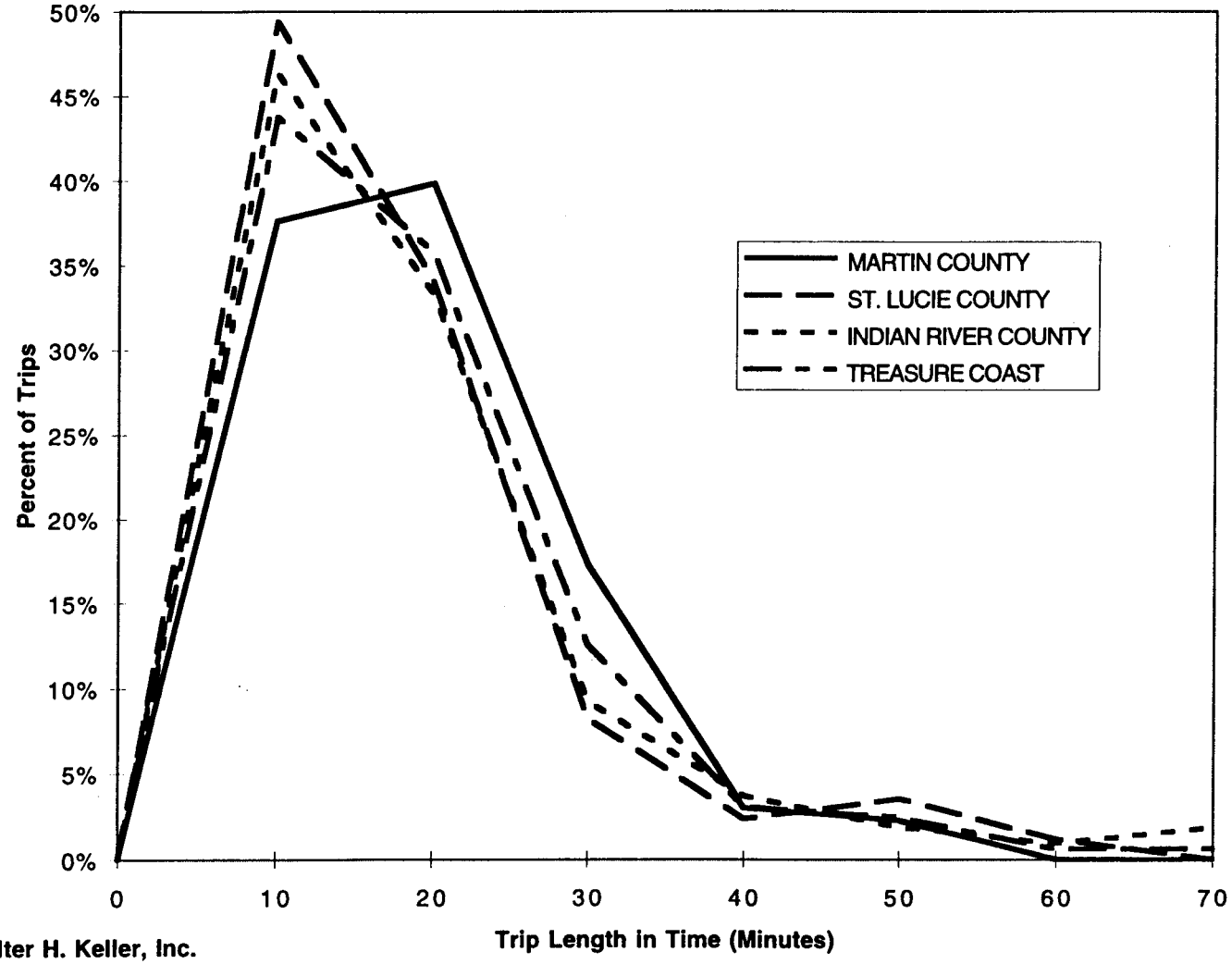
Appendix B
Trip Length Frequency Graphs

Trip Length Frequency Percentages Home Based Work
Martin County, St. Lucie County, Indian River County, and Treasure Coast



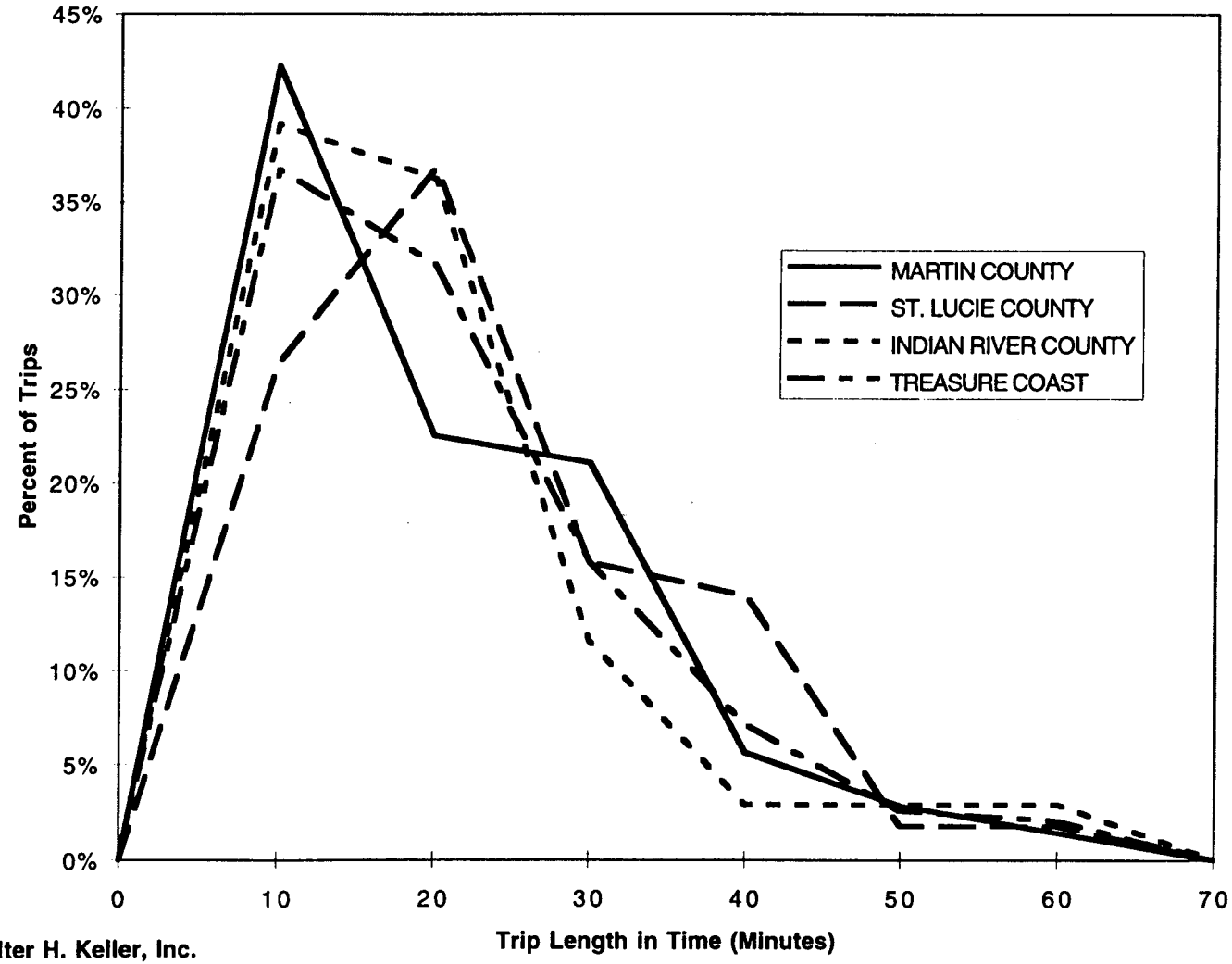
Source: Walter H. Keller, Inc.

Trip Length Frequency Percentages Home Based Shopping
Martin County, St. Lucie County, Indian River County, and Treasure Coast



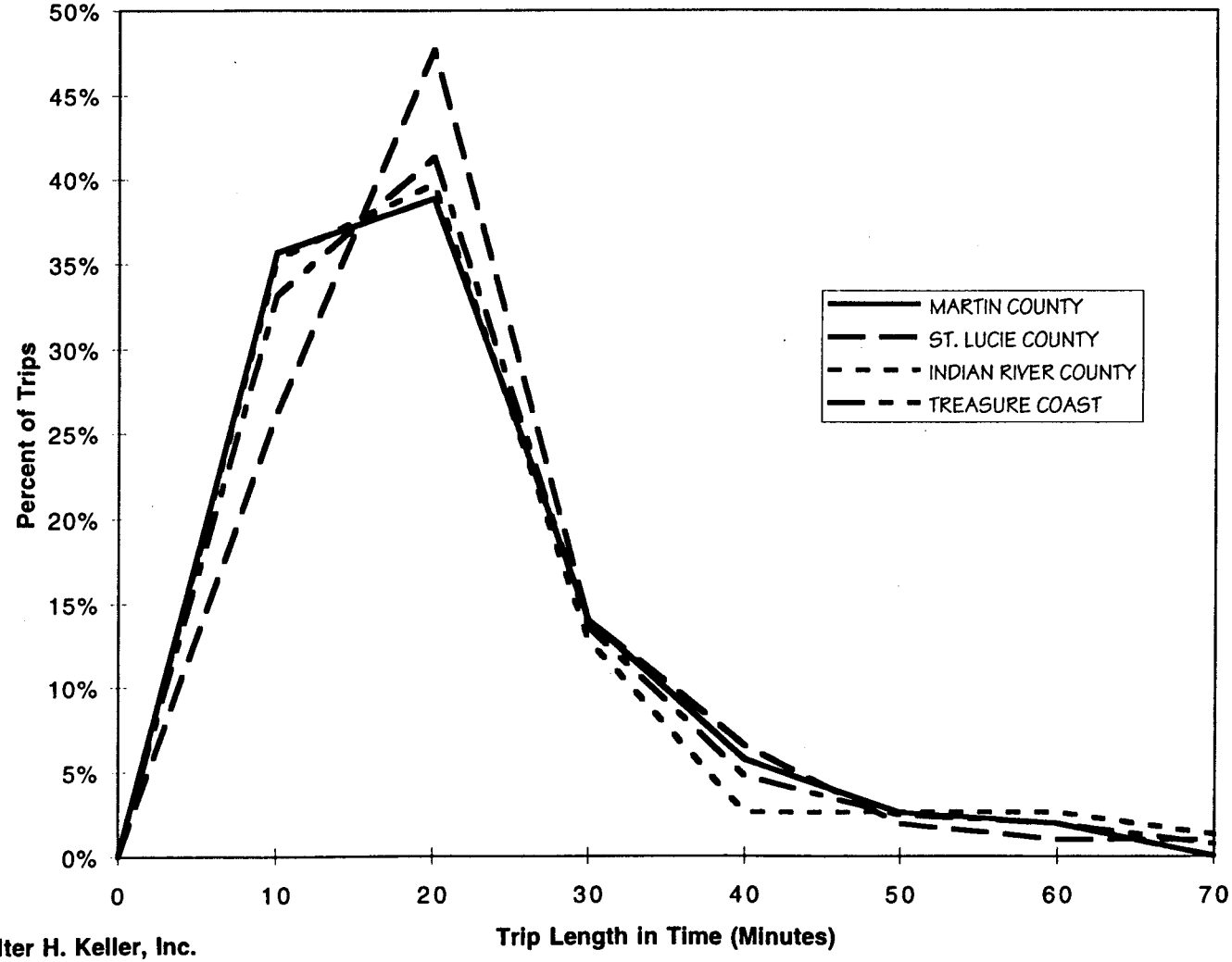
Source: Walter H. Keller, Inc.

Trip Length Frequency Percentages Home Based Recreation
Martin County, St. Lucie County, Indian River County, and Treasure Coast



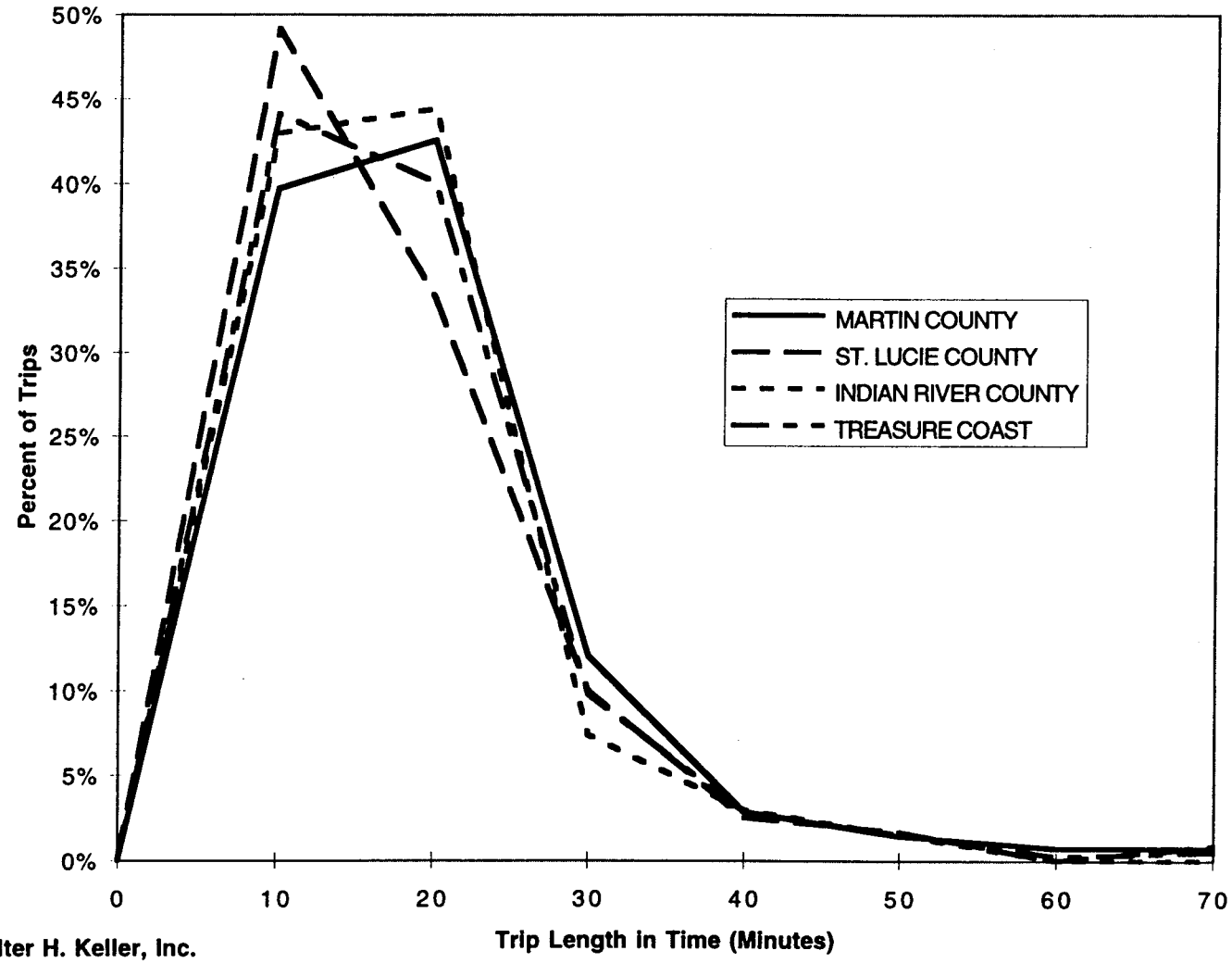
Source: Walter H. Keller, Inc.

Trip Length Frequency Percentages Home Based Other
Martin County, St. Lucie County, Indian River County, and Treasure Coast



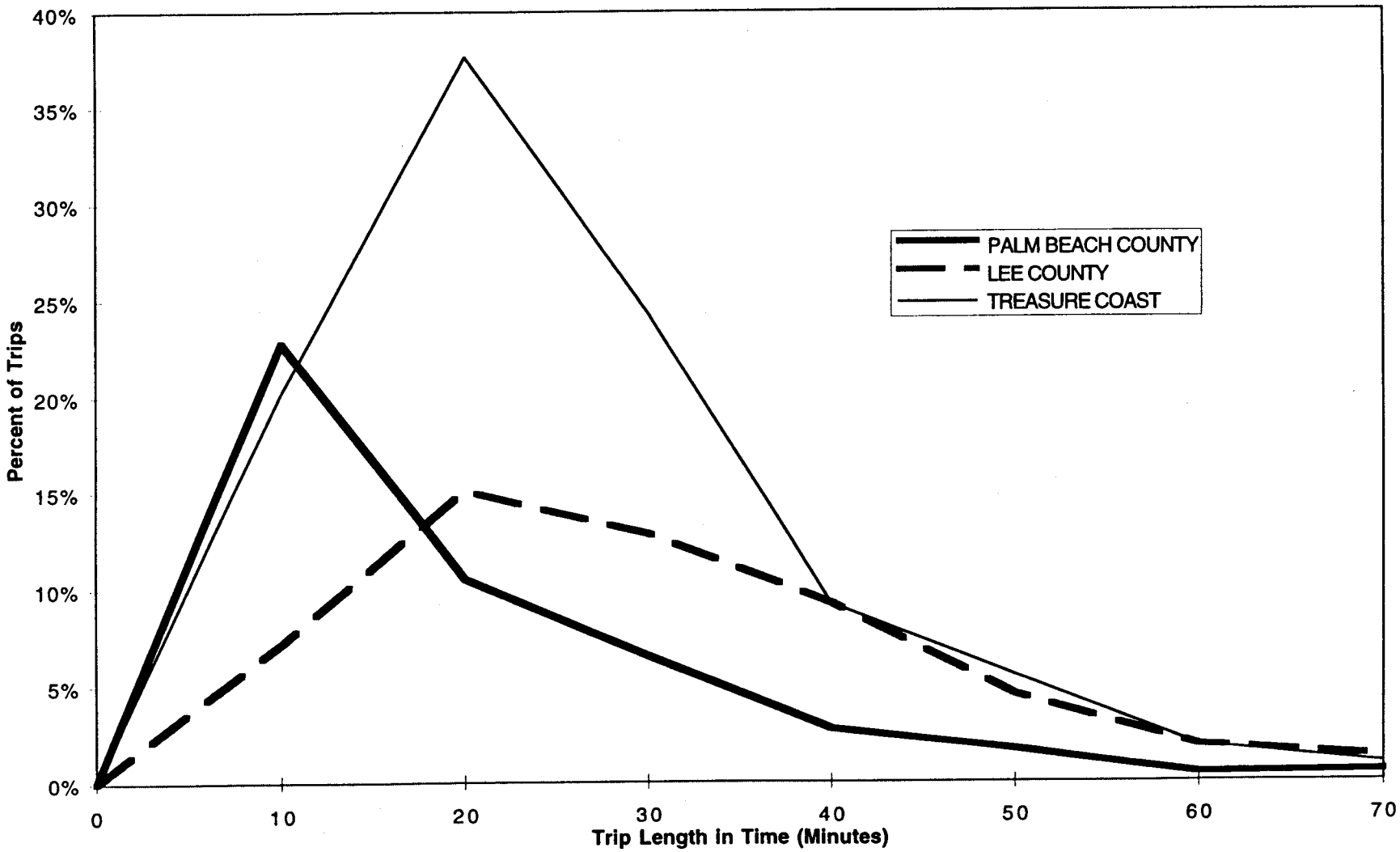
Source: Walter H. Keller, Inc.

Trip Length Frequency Percentages Non-Home Based
Martin County, St. Lucie County, Indian River County, and Treasure Coast



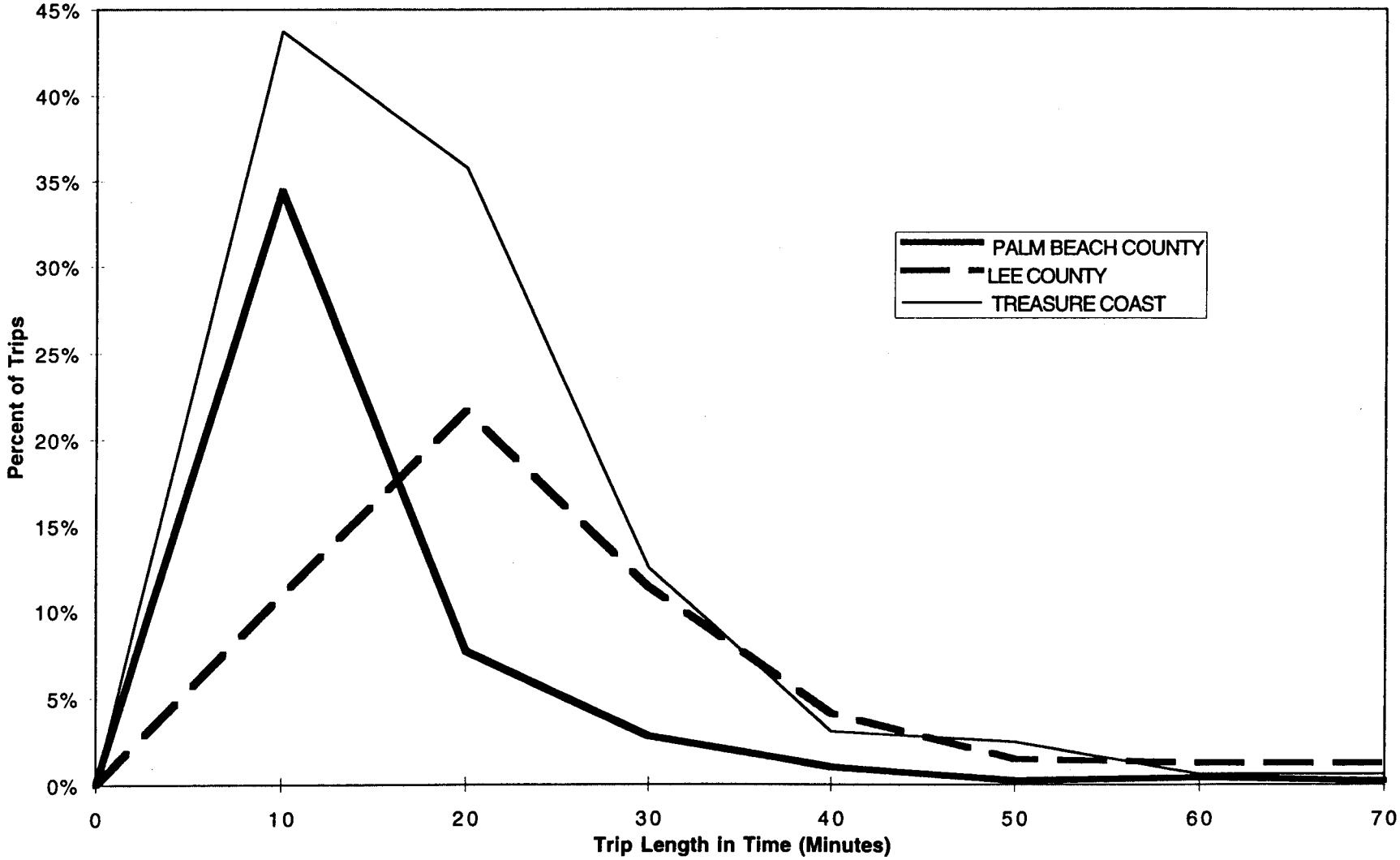
Source: Walter H. Keller, Inc.

Trip Length Frequency Percentages Home Based Work
Palm Beach SEFTC, Lee County, and Treasure Coast



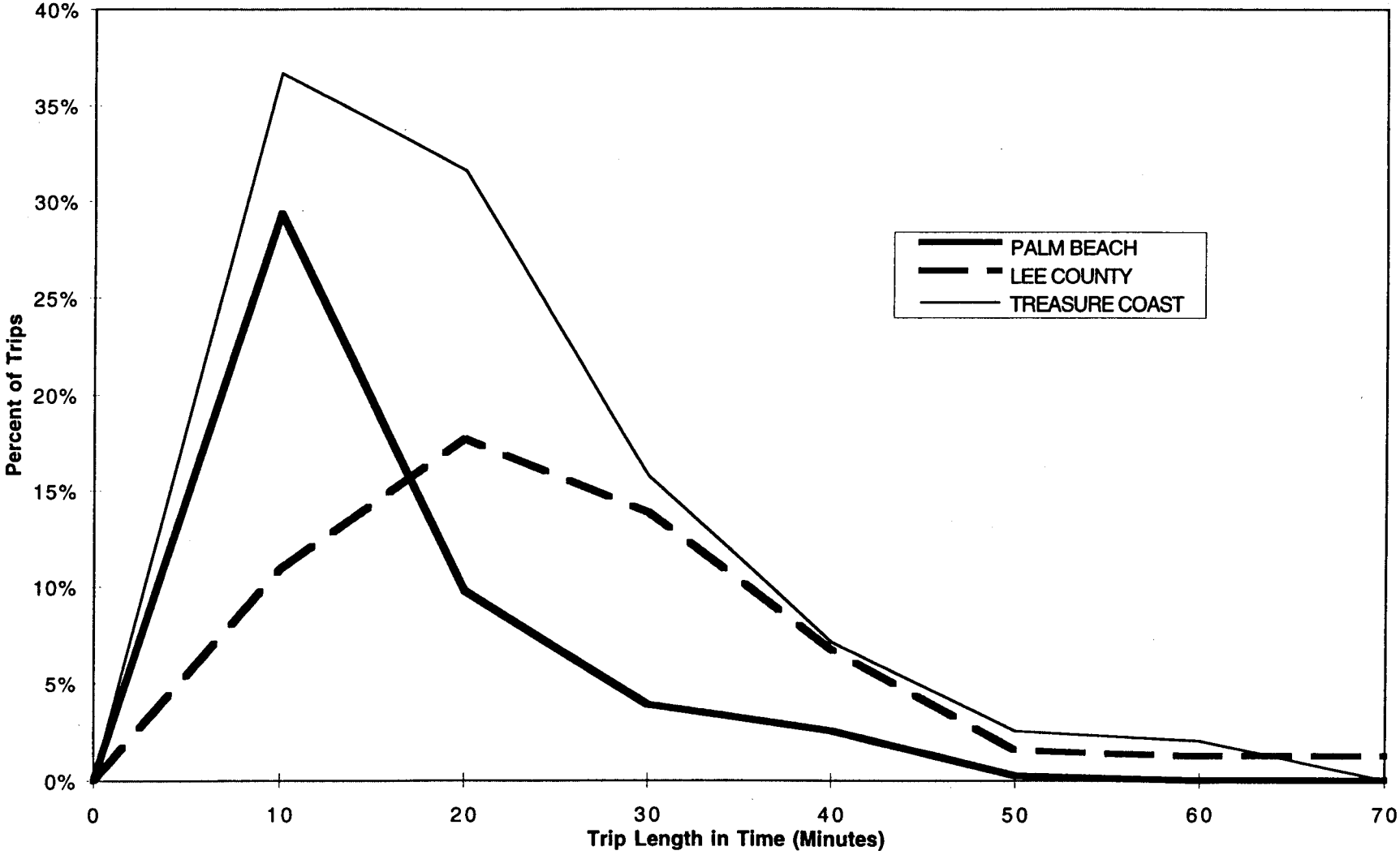
Source: Walter H. Keller, Inc., SEFTC (1986), and LCTC

Trip Length Frequency Percentages Home Based Shopping
Palm Beach SEFTC, Lee County, and Treasure Coast



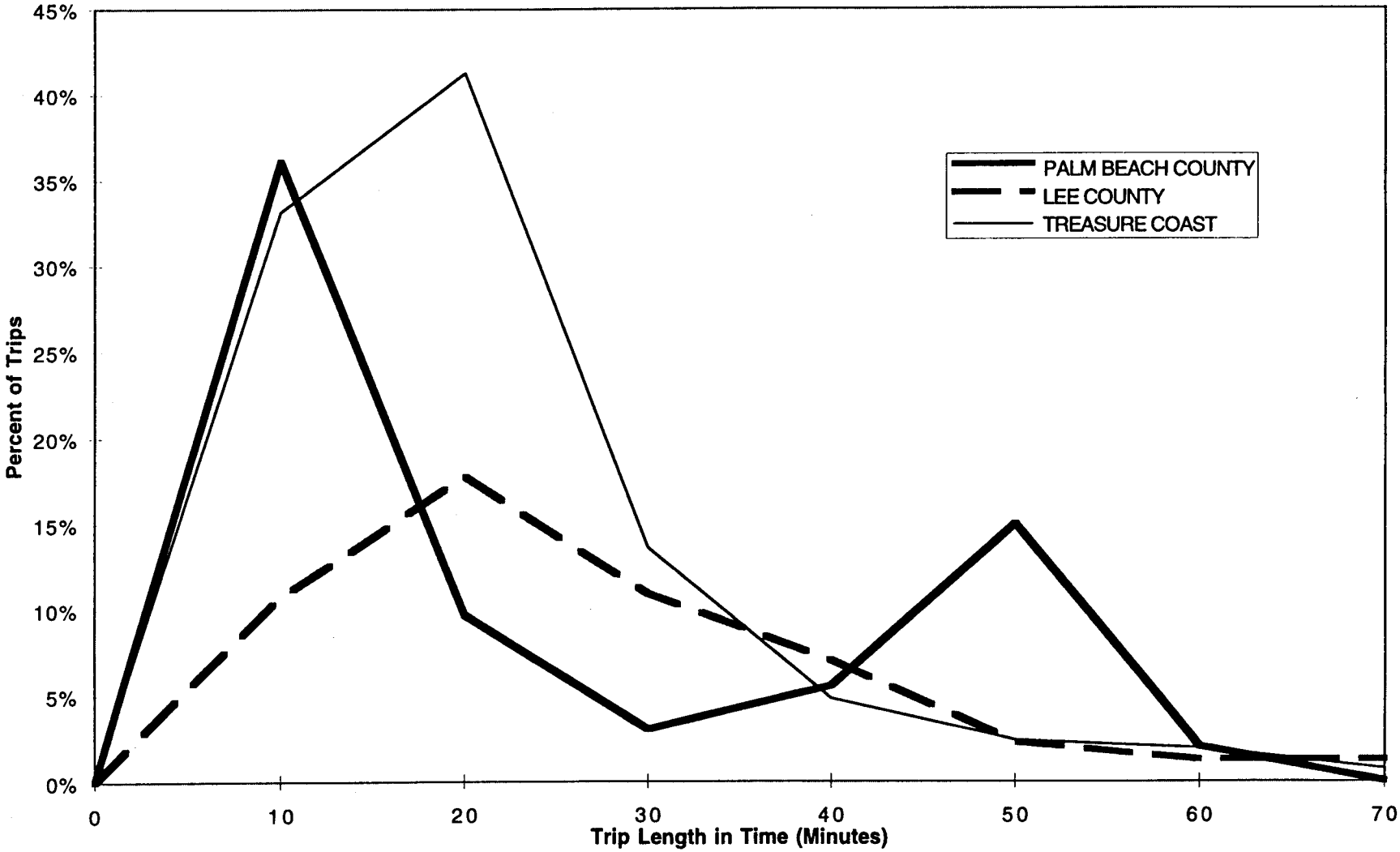
Source: Walter H. Keller, Inc., SEFTC (1986), and LCTC

Trip Length Frequency Percentages Home Based Recreation
Palm Beach SEFTC, Lee County, and Treasure Coast



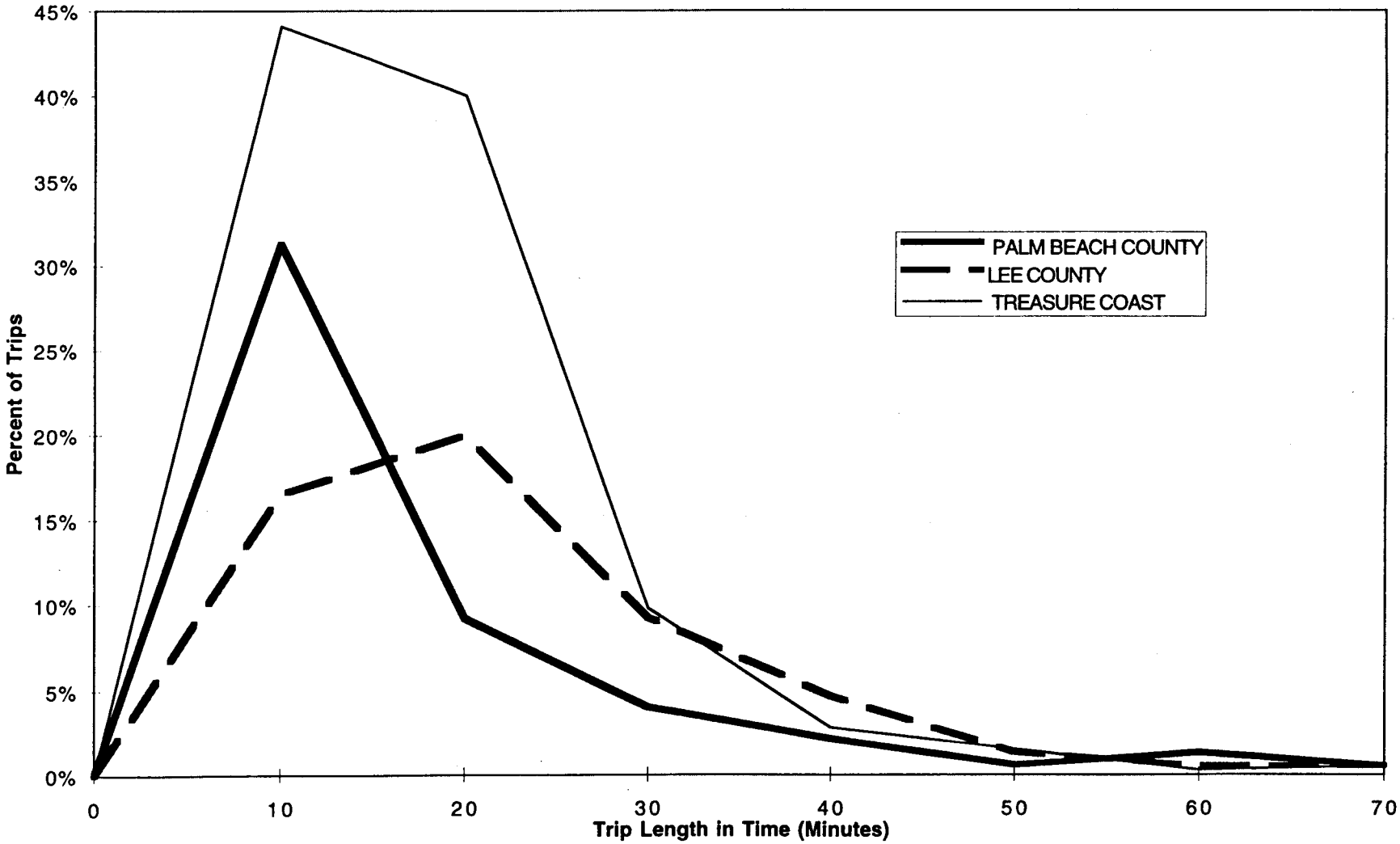
Source: Walter H. Keller, Inc., SEFTC (1986), and LCTC

Trip Length Frequency Percentages Home Based Other
Palm Beach SEFTC, Lee County, and Treasure Coast



Source: Walter H. Keller, Inc., SEFTC (1986), and LCTC

Trip Length Frequency Percentages Non-Home Based
Palm Beach SEFTC, Lee County, and Treasure Coast



Source: Walter H. Keller, Inc., SEFTC (1986), and LCTC

Appendix C
GIS Data Attribute Tables

Table C-1 - Definition of Data Items in the Address-matched Point Attribute Table

Description	Item Name	Item Width	Item Type	# of Decimal Places
Area (A/I default item)	AREA	13	N	6
Perimeter (A/I default item)	PERIMETER	13	N	6
Internal ID (A/I default item)	TCTC_	11	N	0
User ID (A/I default item)	TCTC_ID	11	N	0
Household ID	HH	4	N	0
Survey Date	DT	2	N	0
Individual ID	ID	2	N	0
Trip Number	TN	2	N	0
Trip Maker Profile Code	P	1	C	0
Address Coding Key	K	1	N	0
Address/Intersection	ADDRESS	40	C	0
City Code	CT	2	C	0
Start Time	ST	4	N	0
Arrival Time	ET	4	N	0
Mileage	MILE	5	N	1
Destination Type	T	3	N	0
Intermed. Stop/Final Destination	S	1	N	0
Travel Means	M	1	N	0
Driver/Passenger	D	1	N	0
No. of People in Vehicle	N	2	N	0
Major Routes Used	RTE	8	N	0
Address-matching Score	SCORE	7	N	0

Source: Regional Research Associates, Inc.

Table C-2 - Interpretation Keys of the Address-matched Point Attribute Table

Item Name	Interpretation Key
P	A: Working in the field but go to one site each day B: Working with extensive driving, visiting at least 2 different sites per day 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 (K-12) J: College students living at home K: Schooled at home (K-12) L: Dropped off, or ride with others by auto to school (K-12) M: Bused to school (K-12) N: Drive themselves to school (High school only) O: Walk or bike to school (K-12) P: Walk or bike to school (College) Q: Commute to college by auto
K	1: Street address 2: Name of Place 3: Nearest Intersection
CT	IC: Indian River County FE: Fellesmere GI: Gifford R: Indian River Shores OC: Orchid OS: Oslo RO: Roseland SB: Sebastian VB: Vero Beach WA: Wabasso WB: Winter Beach LC: St. Lucie County FP: Fort Pierce HI: Hutchinson Island ID: Indrio PL: Port St. Lucie LV: St. Lucie Village WC: White City MC: Martin County HS: Hobe Sound

continued

Item Name	Interpretation Key
	IN: Indiantown JB: Jensen Beach OB: Ocean Breeze Park PC: Palm City PS: Port Salerno RI: Rio SP: Seawallís Point ST: Stuart Out of Study Area AF: Patrick AFB BB: Boyton Beach BR: Boca Raton BY: Barefoot Bay CB: Cocoa Beach CC: Cape Canaveral CO: Coconut Creek CS: Coral Springs DB: Daytona Beach FL: Fort Lauderdale GT: Grant IA: Indialantic IS: Islamorada JN: Juno Beach JU: Jupiter JX: Jacksonville KE: Kendall KI: Kissimee KW: Key West ME: Melbourne MG: Margate MI: Miami MO: Micco OK: Okeechobee OR: Orlando PB: Palm Beach PE: St. Petersburg PG: Palm Beach Garden PM: Pompano PN: Plantation PY: Palm Bay RB: Riveria Beach SA: Satellite Beach TI: Titusville TP: Tampa TQ: Tequesta

continued

Item Name	Interpretation Key
	WP: West Palm Beach YJ: Yeehaw Junction
T	1: Home 2: Work site 3: School 4: Shopping 5: Restaurant 6: Personal business 7: Friendís house 8: Recreation 9: Delivery 10: Other
S	1: Intermediate stop 2: Final destination
M	1: Car 2: Van 3: Bicycle 4: School Bus 5: Motorcycle 6: Truck 7: Walk 8: Public Bus 9: Taxicab 10: Other
D	1: Driver 2: Passenger
RTE	1: I-95 2: US 1 3: Turnpike 4: SR A1A 5: SR 60 6: SR 512 7: SR 713 8: SR 70 9: Prima Vista Blvd. 10: SR 76

Source: Regional Research Associates, Inc.

Appendix D
Multiple Classification Analysis

ANOVA - MULTIPLE CLASSIFICATION ANALYSIS *
TC2 TRIP RATES

A 2-way analysis of variance and associated multiple classification analysis was performed on the trip log data obtained from the Treasure Coast 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 versus multi-family dwelling units. The following tables resents the statistical inference results:

Single Family

		F	Significance
HBW	Main Effects	18.002	.000
	Persons / D.U.	9.749	.000
	Vehicles / D.U.	14.043	.000
	2-way interactions	1.607	.171

		F	Significance
HBS	Main Effects	1.814	.095
	Persons / D.U.	2.580	.037
	Vehicles / D.U.	1.499	.224
	2-way interactions	.543	.704

		F	Significance
HBR	Main Effects	4.683	.000
	Persons / D.U.	4.155	.003
	Vehicles / D.U.	3.122	.045
	2-way interactions	.685	.602

		F	Significance
HBO	Main Effects	19.979	.000
	Persons / D.U.	23.552	.000
	Vehicles / D.U.	2.132	.120
	2-way interactions	1.250	.289

		F	Significance
HBTOT	Main Effects	38.629	.000
	Persons / D.U.	35.097	.000

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	Vehicles / D.U.	9.938	.000
	2-way interactions	1.677	.154

		F	Significance
NHB	Main Effects	19.003	.000
	Persons / D.U.	15.403	.000
	Vehicles / D.U.	10.515	.000
	2-way interactions	.857	.490

Multi-Family

		F	Significance
HBW	Main Effects	13.523	.000
	Persons / D.U.	14.525	.000
	Vehicles / D.U.	3.750	.054
	2-way interactions	.304	.738

		F	Significance
HBS	Main Effects	.922	.468
	Persons / D.U.	.913	.458
	Vehicles / D.U.	.286	.593
	2-way interactions	3.996	.020

		F	Significance
HBR	Main Effects	2.945	.014
	Persons / D.U.	.944	.440
	Vehicles / D.U.	9.591	.002
	2-way interactions	.515	.598

		F	Significance
HBO	Main Effects	1.360	.241
	Persons / D.U.	1.255	.290
	Vehicles / D.U.	.835	.362
	2-way interactions	.315	.730

		F	Significance
HBTOT	Main Effects	6.435	.000
	Persons / D.U.	2.175	.074
	Vehicles / D.U.	13.324	.000
	2-way interactions	1.290	.278

		F	Significance

NHB	Main Effects	5.884	.000
	Persons / D.U.	5.453	.000
	Vehicles / D.U.	6.648	.011
	2-way interactions	.061	.940

The results generally support the two way classification as statistically significant and there is little evidence of interaction effects between persons and vehicles per dwelling unit.

The Multiple Classification Analysis was thus performed using the unadjusted deviations. The following series of tables presents the results. Note that negative values should be interpreted as suggesting zero (0) trip rates in the underlying data.

MULTIPLE CLASSIFICATION ANALYSIS - HOME BASED WORK

Grand Mean - Single Family 0.994

Unadjusted Deviation for Persons per Dwelling Unit

Persons / D.U.	1	2	3	4	5+
Adjustment	-0.64	-0.13	0.49	1.26	1.67

Unadjusted Deviation for Vehicles per Dwelling Unit

Vehicles / D.U.	0	1	2+
Adjustment	-0.99	-0.66	0.36

Trip Rates for Single Family - Home Based Work

	Autos / D.U.	Persons per Dwelling Unit 1	2	3	4	5+
Resident	0	-0.636	-0.126	0.494	1.264	1.674
Single	1	-0.306	0.204	0.824	1.594	2.004
Family	2+	0.714	1.224	1.844	2.614	3.024

Grand Mean - Multi-Family 0.216

Unadjusted Deviation for Persons per Dwelling Unit

Persons / D.U.	1	2	3	4	5+
djustment 0		-0.07	1.78	1.78	3.78

Unadjusted Deviation for Vehicles per Dwelling Unit

Vehicles / D.U.	0	1	2+
Adjustment		-0.07	0.26

Trip Rates for Multi-Family - Home Based Work

	Autos / D.U.	Persons per Dwelling Unit 1	2	3	4	5+
Resident	0	0.216	0.146	1.996	1.996	3.996
Multi-	1	0.146	0.076	1.926	1.926	3.926
Family	2+	0.476	0.406	2.256	2.256	4.256

MULTIPLE CLASSIFICATION ANALYSIS - HOME BASED SHOPPING

Grand Mean - Single Family 0.928

Unadjusted Deviation for Persons per Dwelling Unit

Persons / D.U.	1	2	3	4	5+
Adjustment	-0.25	0.03	0.26	-0.07	-0.26

Unadjusted Deviation for Vehicles per Dwelling Unit

Vehicles / D.U.	0	1	2+
Adjustment	-0.43	0.01	0

Trip Rates for Single Family - Home Based Shopping

	Autos / D.U.	Persons per Dwelling Unit 1	2	3	4	5+
Resident	0	0.248	0.528	0.758	0.428	0.238
Single	1	0.688	0.968	1.198	0.868	0.678
Family	2+	0.678	0.958	1.188	0.858	0.668

Grand Mean - Multi-Family 1.026

Unadjusted Deviation for Persons per Dwelling Unit

Persons / D.U.	1	2	3	4	5+
Adjustment	-0.24	0.12	-0.03	-0.03	-1.03

Unadjusted Deviation for Vehicles per Dwelling Unit

Vehicles / D.U.	0	1	2+
Adjustment		-0.05	0.16

Trip Rates for Multi-Family - Home Based Shopping

	Autos / D.U.	Persons per Dwelling Unit 1	2	3	4	5+
Resident	0	0.786	1.146	0.996	0.996	-0.004
Multi-	1	0.736	1.096	0.946	0.946	-0.054
Family	2+	0.946	1.306	1.156	1.156	0.156

MULTIPLE CLASSIFICATION ANALYSIS - HOME BASED RECREATION

Grand Mean - Single Family 0.63

Unadjusted Deviation for Persons per Dwelling Unit

Persons / D.U.	1	2	3	4	5+
Adjustment	-0.23	0.01	-0.07	0.18	1.48

Unadjusted Deviation for Vehicles per Dwelling Unit

Vehicles / D.U.	0	1	2+
Adjustment	0.12	-0.23	0.12

Trip Rates for Single Family - Home Based Recreation

	Autos / D.U.	Persons per Dwelling Unit 1	2	3	4	5+
Resident	0	0.52	0.76	0.68	0.93	2.23
Single	1	0.17	0.41	0.33	0.58	1.88
Family	2+	0.52	0.76	0.68	0.93	2.23

Grand Mean - Multi-Family 0.547

Unadjusted Deviation for Persons per Dwelling Unit

Persons / D.U.	1	2	3	4	5+
Adjustment	-0.21	0.12	-0.55	-0.55	-0.55

Unadjusted Deviation for Vehicles per Dwelling Unit

Vehicles / D.U.	0	1	2+
Adjustment		-0.14	0.48

Trip Rates for Multi-Family - Home Based Recreation

	Autos / D.U.	Persons per Dwelling Unit 1	2	3	4	5+
Resident	0	0.337	0.667	-0.003	-0.003	-0.003
Multi-	1	0.197	0.527	-0.143	-0.143	-0.143
Family	2+	0.817	1.147	0.477	0.477	0.477

MULTIPLE CLASSIFICATION ANALYSIS - HOME BASED OTHER

Grand Mean - Single Family 1.795

Unadjusted Deviation for Persons per Dwelling Unit

Persons / D.U.	1	2	3	4	5+
Adjustment	-0.9	-0.22	0.55	1.87	4.09

Unadjusted Deviation for Vehicles per Dwelling Unit

Vehicles / D.U.	0	1	2+
Adjustment	-1.55	-0.53	0.3

Trip Rates for Single Family - Home Based Other

	Autos / D.U.	Persons per Dwelling Unit 1	2	3	4	5+
Resident	0	-0.655	0.025	0.795	2.115	4.335
Single	1	0.365	1.045	1.815	3.135	5.355
Family	2+	1.195	1.875	2.645	3.965	6.185

Grand Mean - Multi-Family 1.468

Unadjusted Deviation for Persons per Dwelling Unit

Persons / D.U.	1	2	3	4	5+
Adjustment	-0.07	0	-0.47	1.53	3.53

Unadjusted Deviation for Vehicles per Dwelling Unit

Vehicles / D.U.	0	1	2+
Adjustment		-0.08	0.29

Trip Rates for Multi-Family - Home Based Other

	Autos / D.U.	Persons per Dwelling Unit 1	2	3	4	5+
Resident	0	1.398	1.468	0.998	2.998	4.998
Multi-	1	1.318	1.388	0.918	2.918	4.918
Family	2+	1.688	1.758	1.288	3.288	5.288

MULTIPLE CLASSIFICATION ANALYSIS - HOME BASED TOTAL (HBW+HBS+HBR+HBO)

Grand Mean - Single Family 4.347

Unadjusted Deviation for Persons per Dwelling Unit

Persons / D.U.	1	2	3	4	5+
Adjustment	-2.01	-0.31	1.23	3.24	6.99

Unadjusted Deviation for Vehicles per Dwelling Unit

Vehicles / D.U.	0	1	2+
Adjustment	-2.85	-1.4	0.78

Trip Rates for Single Family - Home Based Total

	Autos / D.U.	Persons per Dwelling Unit 1	2	3	4	5+
Resident	0	-0.513	1.187	2.727	4.737	8.487
Single	1	0.937	2.637	4.177	6.187	9.937
Family	2+	3.117	4.817	6.357	8.367	12.117

Grand Mean - Multi-Family 3.258

Unadjusted Deviation for Persons per Dwelling Unit

Persons / D.U.	1	2	3	4	5+
Adjustment	-0.52	0.17	0.74	2.74	5.74

Unadjusted Deviation for Vehicles per Dwelling Unit

Vehicles / D.U.	0	1	2+
Adjustment		-0.34	1.19

Trip Rates for Multi-Family - Home Based Total

	Autos / D.U.	Persons per Dwelling Unit 1	2	3	4	5+
Resident	0	2.738	3.428	3.998	5.998	8.998
Multi-	1	2.398	3.088	3.658	5.658	8.658
Family	2+	3.928	4.618	5.188	7.188	10.188

MULTIPLE CLASSIFICATION ANALYSIS - NON HOME BASED

Grand Mean - Single Family 2.477

Unadjusted Deviation for Persons per Dwelling Unit

Persons / D.U.	1	2	3	4	5+
Adjustment	-0.93	-0.47	1.12	2.8	4.86

Unadjusted Deviation for Vehicles per Dwelling Unit

Vehicles / D.U.	0	1	2+
Adjustment	-2.23	-1.2	0.67

Trip Rates for Single Family - Non Home Based

	Autos / D.U.	Persons per Dwelling Unit 1	2	3	4	5+
Resident	0	-0.683	-0.223	1.367	3.047	5.107
Single	1	0.347	0.807	2.397	4.077	6.137
Family	2+	2.217	2.677	4.267	5.947	8.007

Grand Mean - Multi-Family 1.221

Unadjusted Deviation for Persons per Dwelling Unit

Persons / D.U.	1	2	3	4	5+
Adjustment	0.03	-0.05	-1.22	7.78	-1.22

Unadjusted Deviation for Vehicles per Dwelling Unit

Vehicles / D.U.	0	1	2+
Adjustment		-0.18	0.64

Trip Rates for Multi-Family - Non Home Based

	Autos / D.U.	Persons per Dwelling Unit 1	2	3	4	5+
Resident	0	1.251	1.171	0.001	9.001	0.001
Multi-	1	1.071	0.991	-0.179	8.821	-0.179
Family	2+	1.891	1.811	0.641	9.641	0.641

Appendix E
TRANPLAN Script and Input File

GP	1	1	103	83	76	112	4507	799	0
GP	2	1	287	244	245	349	764	209	0
GP	3	1	867	782	758	1022	1338	502	0
GP	4	1	1195	1210	1266	1603	800	479	0
GP	5	1	1881	1636	1569	2155	1439	708	0
GP	6	1	1535	1263	1236	1799	1141	512	0
GP	7	1	1225	865	819	1275	918	422	0
GP	8	1	1718	1395	1304	1856	557	422	0
GP	9	1	363	357	367	496	625	244	0
GP	10	1	790	855	854	1091	1324	566	0
GP	11	1	263	205	197	278	3196	964	0
GP	12	1	759	637	610	846	1039	365	0
GP	13	1	1138	1333	1359	1727	1518	702	0
GP	14	1	841	569	537	848	829	279	0
GP	15	1	809	1005	1075	1254	446	361	0
GP	16	1	559	504	508	674	651	662	0
GP	17	1	759	541	538	912	236	167	0
GP	18	1	861	675	683	1146	4246	1457	0
GP	19	1	437	576	636	730	8760	2539	0
GP	20	1	732	873	890	1111	2763	794	0
GP	21	1	688	666	660	874	1094	391	0
GP	22	1	541	681	695	848	1005	476	0
GP	23	1	492	577	594	733	1016	437	0
GP	24	1	795	769	814	1126	620	395	0
GP	25	1	1540	1252	1219	1683	686	481	0
GP	26	1	1694	1420	1362	1887	761	504	0
GP	27	1	404	294	294	479	525	642	0
GP	28	1	555	524	524	713	865	305	0
GP	29	1	1475	1166	1117	1681	1667	588	0
GP	30	1	529	363	348	589	229	130	0
GP	31	1	703	633	651	918	311	239	0
GP	32	1	97	71	69	111	230	76	0
GP	33	1	846	722	684	954	332	266	0
GP	34	1	503	351	323	472	116	134	0
GP	35	1	635	439	421	712	152	139	0
GP	36	1	252	185	174	248	187	84	0
GP	37	1	1994	1556	1463	2084	791	548	0
GP	38	1	678	611	614	837	614	267	0
GP	39	1	1637	1334	1326	1966	833	535	0
GP	40	1	381	276	257	369	146	138	0
GP	41	1	16	12	11	16	14	7	0
GP	42	1	211	199	202	275	80	69	0
GP	43	1	0	0	0	0	0	3	0
GP	44	1	0	0	0	0	0	7	0
GP	45	1	463	387	383	557	111	106	0
GP	46	1	0	0	0	0	0	0	0
GP	47	1	0	0	0	0	0	0	0
GP	48	1	0	0	0	0	0	7	0
GP	49	1	863	683	661	928	290	211	0
GP	50	1	367	275	265	434	98	81	0
GP	51	1	0	0	0	0	43	12	0
GP	52	1	666	610	624	827	256	190	0
GP	53	1	1446	1357	1361	1843	1512	575	0
GP	54	1	872	758	730	1000	296	239	0
GP	55	1	448	425	431	564	120	113	0
GP	56	1	1258	1320	1349	1720	431	381	0
GP	57	1	146	125	122	167	75	74	0
GP	58	1	2341	2136	2158	3040	1106	663	0
GP	59	1	786	544	516	804	297	194	0
GP	60	1	549	384	354	516	332	175	0
GP	61	1	881	696	676	1080	236	200	0
GP	62	1	17	11	11	17	14	6	0
GP	63	1	72	46	45	82	42	61	0
GP	64	1	320	248	243	331	155	142	0
GP	65	1	50	33	31	49	8	15	0
GP	66	1	0	0	0	0	0	0	0
GP	67	1	1715	1814	1744	1047	17	539	0
GP	68	1	3	2	2	2	1	4	0
GP	69	1	6	4	4	7	1	8	0
GP	70	1	126	82	81	147	19	31	0
GP	71	1	368	259	257	439	62	71	0
GP	72	1	106	69	68	124	16	20	0
GP	73	1	159	128	131	210	32	53	0

GP	74	1	874	721	716	1061	191	198	0
GP	75	1	153	103	101	183	94	51	0
GP	76	1	7	5	5	7	2	5	0
GP	77	1	56	40	36	53	22	20	0
GP	78	1	178	146	162	254	73	68	0
GP	79	1	116	74	82	179	17	17	0
GP	80	1	2	2	2	3	1	8	0
GP	81	1	136	89	86	146	22	80	0
GP	82	1	30	22	21	33	6	23	0
GP	83	1	79	56	53	90	78	39	0
GP	84	1	73	52	50	84	14	82	0
GP	85	1	186	144	137	192	62	266	0
GP	86	1	34	23	22	38	6	60	0
GP	87	1	1211	993	1040	1687	591	320	0
GP	88	1	45	31	31	55	8	15	0
GP	89	1	703	537	561	990	338	211	0
GP	90	1	0	0	0	0	0	0	0
GP	91	1	0	0	0	0	0	0	0
GP	92	1	0	0	0	0	0	0	0
GP	93	1	0	0	0	0	0	0	0
GP	94	1	0	0	0	0	0	0	0
GP	95	1	0	0	0	0	0	0	0
GP	96	1	0	0	0	0	0	0	0
GP	97	1	0	0	0	0	0	0	0
GP	98	1	0	0	0	0	0	0	0
GP	99	1	0	0	0	0	0	0	0
GP	100	1	0	0	0	0	0	0	0
GP	101	1	1842	1475	1590	2638	677	513	0
GP	102	1	881	730	745	1193	434	350	0
GP	103	1	257	260	249	319	512	225	0
GP	104	1	293	219	223	388	587	158	0
GP	105	1	298	256	253	398	175	137	0
GP	106	1	136	120	116	165	198	83	0
GP	107	1	111	108	103	146	89	47	0
GP	108	1	176	134	140	258	481	181	0
GP	109	1	473	397	424	664	403	161	0
GP	110	1	137	112	105	149	146	82	0
GP	111	1	11	13	13	17	2523	783	0
GP	112	1	29	164	238	181	116	94	0
GP	113	1	476	484	482	661	738	330	0
GP	114	1	277	216	208	328	220	137	0
GP	115	1	87	68	67	106	79	41	0
GP	116	1	308	267	263	366	209	116	0
GP	117	1	12	8	8	16	67	21	0
GP	118	1	124	165	187	190	3025	514	0
GP	119	1	1175	878	850	1382	535	315	0
GP	120	1	1667	1222	1143	1794	455	388	0
GP	121	1	774	702	703	1005	1452	607	0
GP	122	1	80	60	56	89	250	97	0
GP	123	1	475	358	333	446	1041	545	0
GP	124	1	1314	948	1031	1985	561	429	0
GP	125	1	231	173	176	306	539	267	0
GP	126	1	142	198	201	239	235	274	0
GP	127	1	386	347	367	527	466	458	0
GP	128	1	177	137	123	183	41	41	0
GP	129	1	167	125	121	176	406	130	0
GP	130	1	2434	2829	3235	4157	1474	789	0
GP	131	1	866	1013	1480	2061	288	186	0
GP	132	1	427	454	682	971	311	121	0
GP	133	1	107	96	91	125	308	125	0
GP	134	1	1021	887	868	1218	473	348	0
GP	135	1	1029	1334	1356	1614	465	428	0
GP	136	1	4415	3141	3026	5010	915	851	0
GP	137	1	43	32	37	75	7	13	0
GP	138	1	10	8	9	16	2	2	0
GP	139	1	10	8	9	16	2	9	0
GP	140	1	121	104	115	173	71	39	0
GP	141	1	2	2	2	3	0	0	0
GP	142	1	57	40	40	69	161	145	0
GP	143	1	1003	869	863	1258	1172	808	0
GP	144	1	552	454	450	670	313	207	0
GP	145	1	19	15	15	23	15	86	0
GP	146	1	64	60	57	67	62	62	0

GP	147	1	6	5	5	7	1	23	0
GP	148	1	24	22	21	26	265	101	0
GP	149	1	13	12	12	14	35	30	0
GP	150	1	510	482	487	618	197	196	0
GP	151	1	224	182	189	303	194	125	0
GP	152	1	36	29	30	50	60	67	0
GP	153	1	73	56	61	113	100	95	0
GP	154	1	638	506	539	926	158	207	0
GP	155	1	62	55	51	66	143	61	0
GP	156	1	63	64	59	60	309	79	0
GP	157	1	37	38	33	30	319	312	0
GP	158	1	20	14	14	25	781	154	0
GP	159	1	56	321	467	355	452	78	0
GP	160	1	69	55	54	82	82	179	0
GP	161	1	0	0	0	0	98	135	0
GP	162	1	4	3	2	4	1	64	0
GP	163	1	233	180	215	444	41	41	0
GP	164	1	6	5	4	6	140	209	0
GP	165	1	122	82	80	145	20	20	0
GP	166	1	300	205	227	484	177	77	0
GP	167	1	981	1647	2033	2059	844	467	0
GP	168	1	0	0	0	0	529	106	0
GP	169	1	131	115	98	110	66	45	0
GP	170	1	375	1718	2538	1937	0	0	0
GP	171	1	186	188	160	182	244	90	0
GP	172	1	0	0	0	0	0	0	0
GP	173	1	3584	2576	2526	4113	1505	944	0
GP	174	1	391	328	333	470	730	221	0
GP	175	1	682	496	468	737	248	250	0
GP	176	1	200	140	137	248	70	52	0
GP	177	1	0	0	0	0	127	20	0
GP	178	1	0	0	0	0	334	163	0
GP	179	1	116	87	92	167	30	54	0
GP	180	1	14	9	10	23	62	77	0
GP	181	1	241	195	191	296	72	69	0
GP	182	1	231	173	174	325	380	138	0
GP	183	1	829	651	594	874	247	215	0
GP	184	1	481	356	337	527	116	97	0
GP	185	1	418	323	304	439	645	227	0
GP	186	1	390	536	591	671	1024	347	0
GP	187	1	81	99	95	113	85	44	0
GP	188	1	1145	2387	2915	2798	983	644	0
GP	189	1	937	1098	1109	1438	974	480	0
GP	190	1	1540	1127	1058	1674	298	302	0
GP	191	1	3347	2394	2240	3559	633	637	0
GP	192	1	806	533	597	1317	202	179	0
GP	193	1	2565	1801	1779	3183	853	570	0
GP	194	1	209	163	155	262	56	53	0
GP	195	1	103	74	73	130	43	28	0
GP	196	1	356	260	283	553	215	340	0
GP	197	1	37	26	24	35	15	9	0
GP	198	1	2413	1622	1597	2888	461	404	0
GP	199	1	2280	1516	1677	3647	2339	1070	0
GP	200	1	3273	2278	2183	3694	907	677	0
GP	201	1	2191	1525	1461	2473	549	440	0
GP	202	1	216	229	214	248	250	120	0
GP	203	1	1037	1123	1090	1278	386	386	0
GP	204	1	54	53	47	59	16	24	0
GP	205	1	1415	1828	2791	3479	529	728	0
GP	206	1	1897	2372	3622	4598	522	462	0
GP	207	1	506	359	394	803	102	86	0
GP	208	1	4356	3281	3128	4811	1011	930	0
GP	209	1	515	604	659	829	568	256	0
GP	210	1	0	0	0	0	698	136	0
GP	211	1	4476	3737	3799	5373	2263	1314	0
GP	212	1	2361	1562	1725	3764	444	388	0
GP	213	1	851	656	583	779	316	240	0
GP	214	1	0	0	0	0	0	0	0
GP	215	1	0	0	0	0	0	0	0
GP	216	1	1034	847	846	1343	488	430	0
GP	217	1	99	72	77	112	253	139	0
GP	218	1	1673	1071	1285	2936	252	252	0
GP	219	1	191	164	169	252	708	267	0

GP	220	1	233	166	171	322	1486	475	0
GP	221	1	196	141	140	246	152	72	0
GP	222	1	128	139	152	196	38	38	0
GP	223	1	17	15	15	20	5	21	0
GP	224	1	0	0	0	0	0	0	0
GP	225	1	566	647	751	982	297	204	0
GP	226	1	98	73	68	109	22	22	0
GP	227	1	150	174	210	272	331	91	0
GP	228	1	87	65	60	96	259	89	0
GP	229	1	811	748	792	1213	495	443	0
GP	230	1	57	61	61	81	182	87	0
GP	231	1	23	31	31	38	219	78	0
GP	232	1	114	117	117	158	200	102	0
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GP	234	1	0	0	0	0	697	189	0
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GP	236	1	0	0	0	0	156	43	0
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GP	239	1	0	0	0	0	925	301	0
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GP	241	1	106	83	73	91	392	116	0
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GP	243	1	324	245	237	385	128	78	0
GP	244	1	118	106	104	142	314	122	0
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GP	246	1	435	311	296	502	85	85	0
GP	247	1	319	235	234	408	1002	219	0
GP	248	1	58	67	76	97	5627	922	0
GP	249	1	446	455	498	687	779	222	0
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GP	253	1	573	556	558	721	7232	2446	0
GP	254	1	486	397	380	557	424	183	0
GP	255	1	685	581	613	1063	836	426	0
GP	256	1	196	208	221	306	1017	345	0
GP	257	1	155	125	115	166	4492	761	0
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GP	260	1	0	0	0	0	0	16	0
GP	261	1	28	21	19	28	35	15	0
GP	262	1	209	158	158	231	55	56	0
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GP	264	1	37	24	25	52	215	55	0
GP	265	1	73	48	51	104	143	43	0
GP	266	1	348	229	246	522	979	274	0
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GP	268	1	3	2	2	5	0	51	0
GP	269	1	200	134	149	323	294	361	0
GP	270	1	61	40	42	87	653	232	0
GP	271	1	665	625	593	744	1186	345	0
GP	272	1	919	1202	1198	1437	1623	727	0
GP	273	1	0	0	0	0	285	394	0
GP	274	1	265	236	240	346	352	140	0
GP	275	1	90	79	80	116	1737	328	0
GP	276	1	281	256	231	286	508	179	0
GP	277	1	489	342	337	607	166	110	0
GP	278	1	685	535	486	717	151	151	0
GP	279	1	0	0	0	0	495	104	0
GP	280	1	484	349	343	617	86	90	0
GP	281	1	452	398	405	619	1952	730	0
GP	282	1	0	0	0	0	669	127	0
GP	283	1	2347	1655	1585	2681	706	505	0
GP	284	1	528	496	482	660	153	153	0
GP	285	1	710	477	470	850	181	158	0
GP	286	1	236	159	156	282	38	38	0
GP	287	1	1197	805	792	1432	192	192	0
GP	288	1	1331	948	883	1520	347	325	0
GP	289	1	524	418	353	491	173	187	0
GP	290	1	911	726	695	1092	256	256	0
GP	291	1	279	199	190	322	210	78	0
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GP	293	1	93	82	82	106	37	33	0
GP	294	1	505	390	352	470	1095	347	0
GP	295	1	414	397	370	455	1047	409	0
GP	296	1	0	0	0	0	907	332	0
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GP	298	1	404	290	278	469	71	71	0
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GP	301	1	124	107	120	181	49	32	0
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GP	320	1	0	0	0	0	0	0	0
GP	321	1	57	42	43	64	96	77	0
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GP	323	1	210	140	138	246	37	57	0
GP	324	1	487	337	329	542	149	238	0
GP	325	1	1710	1180	1167	2095	396	344	0
GP	326	1	573	398	382	645	568	197	0
GP	327	1	1655	1169	1150	1990	541	420	0
GP	328	1	1121	1044	1007	1341	638	472	0
GP	329	1	994	766	748	1058	437	322	0
GP	330	1	557	417	397	553	323	183	0
GP	331	1	627	445	418	663	143	132	0
GP	332	1	163	110	108	195	35	44	0
GP	333	1	1061	1284	1278	1576	2181	872	0
GP	334	1	52	48	48	63	348	132	0
GP	335	1	832	614	605	1038	461	323	0
GP	336	1	98	89	89	113	337	155	0
GP	337	1	1441	987	974	1753	273	284	0
GP	338	1	882	671	671	1059	180	166	0
GP	339	1	1460	990	977	1739	596	427	0
GP	340	1	476	329	318	532	128	116	0
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GP	342	1	86	71	74	119	64	177	0
GP	343	1	126	99	96	155	32	52	0
GP	344	1	30	19	20	43	4	123	0
GP	345	1	1665	2074	2108	2491	1486	985	0
GP	346	1	104	86	78	103	47	70	0
GP	347	1	215	183	180	254	233	151	0
GP	348	1	715	508	501	874	419	281	0
GP	349	1	105	71	69	116	18	37	0
GP	350	1	287	190	187	337	144	94	0
GP	351	1	698	474	467	842	118	131	0
GP	352	1	858	587	563	952	187	166	0
GP	353	1	629	458	430	681	131	139	0
GP	354	1	430	309	300	503	94	89	0
GP	355	1	1140	836	793	1229	299	251	0
GP	356	1	311	246	232	359	206	128	0
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GP	358	1	736	831	824	1013	3025	823	0
GP	359	1	222	267	270	327	139	117	0
GP	360	1	573	588	633	770	441	240	0
GP	361	1	286	203	195	320	113	68	0
GP	362	1	152	192	192	231	86	80	0
GP	363	1	552	511	486	610	2004	545	0
GP	364	1	0	0	0	0	1673	284	0
GP	365	1	7	6	6	7	366	127	0

GP	366	1	435	316	302	463	670	273	0
GP	367	1	1908	1526	1462	2135	535	466	0
GP	368	1	361	247	237	400	105	98	0
GP	369	1	317	226	207	304	718	182	0
GP	370	1	13	10	10	12	6	3	0
GP	371	1	1659	1257	1200	1822	1185	635	0
GP	372	1	421	504	550	644	1709	633	0
GP	373	1	266	331	378	415	5011	1466	0
GP	374	1	633	644	664	782	2486	817	0
GP	375	1	436	400	381	488	515	227	0
GP	376	1	518	401	374	532	466	263	0
GP	377	1	536	440	418	577	1340	399	0
GP	378	1	385	584	717	697	1025	320	0
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GP	380	1	715	557	519	739	558	282	0
GP	381	1	212	204	206	253	696	223	0
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GP	383	1	95	94	108	159	165	54	0
GP	384	1	295	291	281	370	2625	990	0
GP	385	1	494	362	331	487	221	139	0
GP	386	1	648	494	469	709	1463	438	0
GP	387	1	0	0	0	0	18	245	0
GP	388	1	0	0	0	0	25	18	0
GP	389	1	18	17	17	25	717	259	0
GP	390	1	607	426	402	627	1243	320	0
GP	391	1	0	0	0	0	0	0	0
GP	392	1	66	64	75	105	19	36	0
GP	393	1	307	212	199	317	61	64	0
GP	394	1	131	100	94	149	50	31	0
GP	395	1	210	153	147	248	50	58	0
GP	396	1	1017	1234	1239	1508	719	527	0
GP	397	1	531	532	532	685	673	365	0
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GP	399	1	0	0	0	0	0	0	0
GP	400	1	596	690	802	941	363	166	0
GP	401	1	573	416	388	564	124	261	0
GP	402	1	16	16	20	29	26	36	0
GP	403	1	319	253	262	432	132	95	0
GP	404	1	1874	1434	1432	2350	758	565	0
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GP	406	1	73	48	47	79	127	152	0
GP	407	1	11	9	9	13	12	4	0
GP	408	1	269	209	194	277	4540	1467	0
GP	409	1	168	111	106	177	315	150	0
GP	410	1	108	100	99	132	184	228	0
GP	411	1	423	350	327	460	229	178	0
GP	412	1	192	528	711	601	191	124	0
GP	413	1	838	771	757	959	1091	595	0
GP	414	1	1211	978	913	1191	596	425	0
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GP	416	1	204	141	133	210	295	153	0
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GP	419	1	303	241	233	316	217	183	0
GP	420	1	38	28	25	37	53	20	0
GP	421	1	139	132	138	169	151	98	0
GP	422	1	250	203	200	293	171	135	0
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GP	424	1	88	62	63	107	40	33	0
GP	425	1	632	722	874	1052	114	118	0
GP	426	1	313	228	221	350	69	68	0
GP	427	1	1301	917	862	1369	249	250	0
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GP	429	1	969	921	934	1333	598	363	0
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GP	431	1	82	187	248	227	64	25	0
GP	432	1	6	5	5	8	8	3	0
GP	433	1	338	247	228	333	298	163	0
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GP	435	1	583	503	495	678	199	191	0
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GP	437	1	543	402	388	591	116	149	0
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GP	439	1	1820	1357	1245	1825	411	405	0
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GP	442	1	430	777	941	897	999	384	0
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GP	472	1	0	0	0	0	0	0	0
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GP	504	1	0	0	0	0	0	0	2290
GP	505	1	0	0	0	0	0	0	138
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GA	1	1	4066	10618	2994	3713	4507	799	1219
GA	2	1	772	1228	691	783	764	209	201
GA	3	1	1551	1977	1321	1500	1338	502	369
GA	4	1	832	293	1148	1017	800	479	204
GA	5	1	1202	1763	1689	1485	1439	708	374

GA	6	1	916	1656	1245	2579	1141	512	350
GA	7	1	1037	1121	1021	984	918	422	248
GA	8	1	179	355	875	628	557	422	136
GA	9	1	793	930	612	644	625	244	174
GA	10	1	1692	2467	1206	1504	1324	566	395
GA	11	1	4765	1572	3634	4874	3196	964	836
GA	12	1	973	1408	1070	1103	1039	365	269
GA	13	1	1184	1819	1771	1592	1518	702	388
GA	14	1	724	1611	730	728	829	279	223
GA	15	1	657	0	720	591	446	361	124
GA	16	1	2781	394	805	1580	651	662	301
GA	17	1	172	0	388	998	236	167	81
GA	18	1	6626	1994	4936	9402	4246	1457	1237
GA	19	1	12549	13913	7567	9269	8760	2539	2461
GA	20	1	2728	4895	2419	3263	2763	794	758
GA	21	1	1030	1622	1096	1115	1094	391	287
GA	22	1	1491	749	1200	4077	1005	476	376
GA	23	1	1465	1408	1026	1076	1016	437	290
GA	24	1	1099	997	654	633	620	395	199
GA	25	1	757	338	1006	818	686	481	183
GA	26	1	547	563	1086	836	761	504	194
GA	27	1	2973	918	479	2013	525	642	327
GA	28	1	821	1330	851	870	865	305	228
GA	29	1	1449	2827	1592	1583	1667	588	440
GA	30	1	204	85	328	2093	229	130	120
GA	31	1	423	56	484	2040	311	239	143
GA	32	1	303	467	183	205	230	76	67
GA	33	1	327	169	514	376	332	266	89
GA	34	1	217	0	209	141	116	134	37
GA	35	1	150	0	266	189	152	139	40
GA	36	1	186	141	232	227	187	84	47
GA	37	1	673	338	1194	945	791	548	201
GA	38	1	580	648	713	687	614	267	158
GA	39	1	1022	434	1168	2439	833	535	274
GA	40	1	345	0	232	195	146	138	47
GA	41	1	18	0	20	20	14	7	3
GA	42	1	78	0	137	101	80	69	21
GA	43	1	14	0	0	0	0	3	1
GA	44	1	35	0	0	0	0	7	2
GA	45	1	27	0	209	130	111	106	26
GA	46	1	0	0	0	0	0	0	0
GA	47	1	0	0	0	0	0	0	0
GA	48	1	35	0	0	0	0	7	2
GA	49	1	177	198	435	313	290	211	73
GA	50	1	27	29	167	110	98	81	23
GA	51	1	62	29	46	58	43	12	11
GA	52	1	159	113	402	294	256	190	63
GA	53	1	1164	2738	1449	2787	1512	575	451
GA	54	1	190	0	510	374	296	239	72
GA	55	1	18	0	225	139	120	113	28
GA	56	1	124	0	785	514	431	381	100
GA	57	1	212	0	117	103	75	74	26
GA	58	1	540	1183	1474	1356	1106	663	284
GA	59	1	283	0	467	2091	297	194	133
GA	60	1	389	0	484	473	332	175	82
GA	61	1	88	0	421	287	236	200	55
GA	62	1	18	0	18	19	14	6	3
GA	63	1	265	0	59	60	42	61	22
GA	64	1	409	85	217	188	155	142	54
GA	65	1	35	0	16	9	8	15	4
GA	66	1	0	0	0	0	0	0	0
GA	67	1	230	0	431	452	17	539	73
GA	68	1	18	0	1	0	1	4	1
GA	69	1	35	0	2	1	1	8	2
GA	70	1	62	0	37	21	19	31	8
GA	71	1	53	0	119	68	62	71	17
GA	72	1	18	0	31	18	16	20	5
GA	73	1	110	0	63	37	32	53	13
GA	74	1	35	0	371	1143	191	198	78
GA	75	1	133	0	135	2178	94	51	96
GA	76	1	18	0	3	1	2	5	1
GA	77	1	44	29	28	20	22	20	7
GA	78	1	115	0	123	93	73	68	21

GA	79	1	0	0	33	19	17	17	4
GA	80	1	35	0	1	0	1	8	2
GA	81	1	310	0	42	24	22	80	22
GA	82	1	88	0	12	6	6	23	6
GA	83	1	124	0	108	116	78	39	20
GA	84	1	354	0	28	16	14	82	22
GA	85	1	1186	0	105	78	62	266	77
GA	86	1	283	0	12	8	6	60	17
GA	87	1	412	580	760	1958	591	320	196
GA	88	1	35	0	17	9	8	15	4
GA	89	1	336	225	467	1172	338	211	116
GA	90	1	0	0	0	0	0	0	0
GA	91	1	0	0	0	0	0	0	0
GA	92	1	0	0	0	0	0	0	0
GA	93	1	0	0	0	0	0	0	0
GA	94	1	0	0	0	0	0	0	0
GA	95	1	0	0	0	0	0	0	0
GA	96	1	0	0	0	0	0	0	0
GA	97	1	0	0	0	0	0	0	0
GA	98	1	0	0	0	0	0	0	0
GA	99	1	0	0	0	0	0	0	0
GA	100	1	0	0	0	0	0	0	0
GA	101	1	234	67	736	2507	677	513	193
GA	102	1	250	34	470	1171	434	350	113
GA	103	1	363	507	344	328	512	225	103
GA	104	1	323	800	308	330	587	158	114
GA	105	1	135	102	162	118	175	137	37
GA	106	1	93	186	140	127	198	83	37
GA	107	1	37	62	73	60	89	47	17
GA	108	1	498	51	395	464	481	181	91
GA	109	1	223	367	280	268	403	161	77
GA	110	1	154	34	128	129	146	82	30
GA	111	1	2664	321	1975	2465	2523	783	472
GA	112	1	324	102	70	87	116	94	36
GA	113	1	679	73	642	1510	738	330	168
GA	114	1	259	67	190	184	220	137	47
GA	115	1	76	90	51	47	79	41	17
GA	116	1	113	78	189	165	209	116	39
GA	117	1	62	107	29	34	67	21	15
GA	118	1	1651	4929	1248	1534	3025	514	589
GA	119	1	336	40	524	470	535	315	99
GA	120	1	172	0	523	367	455	388	85
GA	121	1	1434	124	1237	8759	1452	607	536
GA	122	1	274	383	115	130	250	97	57
GA	123	1	1487	986	652	3505	1041	545	343
GA	124	1	695	524	428	343	561	429	135
GA	125	1	739	298	387	441	539	267	119
GA	126	1	669	78	206	192	235	274	74
GA	127	1	1257	344	335	342	466	458	144
GA	128	1	0	0	52	30	41	41	7
GA	129	1	310	276	280	315	406	130	77
GA	130	1	692	1127	1184	981	1474	789	282
GA	131	1	152	40	289	239	288	186	53
GA	132	1	142	332	206	189	311	121	59
GA	133	1	340	29	256	297	308	125	60
GA	134	1	214	247	452	321	473	348	93
GA	135	1	23	73	550	329	465	428	84
GA	136	1	191	40	1095	1510	915	851	199
GA	137	1	18	0	9	5	7	13	2
GA	138	1	0	0	3	1	2	2	0
GA	139	1	27	0	3	1	2	9	2
GA	140	1	53	0	69	67	71	39	13
GA	141	1	0	0	1	0	0	0	0
GA	142	1	460	118	107	125	161	145	50
GA	143	1	1940	485	942	972	1172	808	282
GA	144	1	276	147	276	237	313	207	65
GA	145	1	276	0	15	14	15	86	18
GA	146	1	137	67	45	37	62	62	19
GA	147	1	75	0	2	1	1	23	5
GA	148	1	319	434	111	132	265	101	62
GA	149	1	87	51	17	18	35	30	11
GA	150	1	25	11	243	142	197	196	37
GA	151	1	278	254	115	106	194	125	49

GA	152	1	206	90	30	32	60	67	22
GA	153	1	283	78	67	73	100	95	31
GA	154	1	297	29	176	117	158	207	44
GA	155	1	135	0	127	139	143	61	27
GA	156	1	173	440	156	170	309	79	60
GA	157	1	1018	405	164	194	319	312	109
GA	158	1	517	1312	310	384	781	154	158
GA	159	1	267	681	198	247	452	78	88
GA	160	1	562	73	55	57	82	179	46
GA	161	1	460	158	41	50	98	135	43
GA	162	1	216	0	1	0	1	64	13
GA	163	1	0	0	52	30	41	41	7
GA	164	1	712	191	67	83	140	209	64
GA	165	1	0	0	24	14	20	20	3
GA	166	1	110	107	138	135	177	77	33
GA	167	1	660	834	604	521	844	467	178
GA	168	1	363	648	269	336	529	106	102
GA	169	1	20	29	65	47	66	45	12
GA	170	1	0	0	0	0	0	0	0
GA	171	1	101	310	149	135	244	90	47
GA	172	1	0	0	0	0	0	0	0
GA	173	1	865	761	1349	1096	1505	944	293
GA	174	1	502	923	398	435	730	221	146
GA	175	1	412	11	259	1032	248	250	91
GA	176	1	60	29	66	53	70	52	15
GA	177	1	67	214	50	62	127	20	25
GA	178	1	559	563	131	164	334	163	87
GA	179	1	111	11	31	20	30	54	12
GA	180	1	255	102	26	32	62	77	25
GA	181	1	60	6	81	57	72	69	15
GA	182	1	324	141	294	330	380	138	71
GA	183	1	110	22	279	193	247	215	48
GA	184	1	20	40	127	79	116	97	22
GA	185	1	482	563	424	456	645	227	126
GA	186	1	554	1217	614	609	1024	347	198
GA	187	1	44	78	64	53	85	44	17
GA	188	1	420	327	955	750	983	644	183
GA	189	1	439	761	763	653	974	480	184
GA	190	1	23	0	376	218	298	302	55
GA	191	1	18	0	801	463	633	637	115
GA	192	1	212	102	192	140	202	179	46
GA	193	1	442	287	822	3273	853	570	255
GA	194	1	33	22	60	38	56	53	12
GA	195	1	33	0	43	38	43	28	8
GA	196	1	958	0	203	202	215	340	86
GA	197	1	9	0	16	14	15	9	3
GA	198	1	51	85	529	331	461	404	84
GA	199	1	2501	659	1893	2897	2339	1070	497
GA	200	1	359	247	936	682	907	677	171
GA	201	1	197	62	605	1248	549	440	131
GA	202	1	144	141	204	188	250	120	47
GA	203	1	0	0	489	282	386	386	69
GA	204	1	27	0	21	11	16	24	4
GA	205	1	1214	56	585	413	529	728	158
GA	206	1	95	0	621	406	522	462	94
GA	207	1	11	29	114	71	102	86	19
GA	208	1	173	6	1220	1594	1011	930	214
GA	209	1	334	372	441	416	568	256	107
GA	210	1	465	986	322	403	698	136	137
GA	211	1	1469	907	2016	1767	2263	1314	436
GA	212	1	117	67	504	329	444	388	83
GA	213	1	186	152	304	222	316	240	64
GA	214	1	0	0	0	0	0	0	0
GA	215	1	0	0	0	0	0	0	0
GA	216	1	367	62	528	876	488	430	119
GA	217	1	420	316	135	155	253	139	64
GA	218	1	0	0	319	184	252	252	45
GA	219	1	741	198	550	644	708	267	138
GA	220	1	1480	405	1127	1372	1486	475	280
GA	221	1	122	175	97	89	152	72	32
GA	222	1	0	0	48	28	38	38	7
GA	223	1	55	0	6	4	5	21	4
GA	224	1	0	0	0	0	0	0	0

GA	225	1	113	180	273	197	297	204	57
GA	226	1	0	0	27	15	22	22	4
GA	227	1	170	445	177	187	331	91	64
GA	228	1	237	78	200	1872	259	89	107
GA	229	1	545	11	528	418	495	443	109
GA	230	1	210	78	140	152	182	87	38
GA	231	1	230	180	138	163	219	78	45
GA	232	1	148	186	143	130	200	102	41
GA	233	1	412	355	302	348	460	155	91
GA	234	1	644	360	477	596	697	189	132
GA	235	1	710	360	477	596	697	207	135
GA	236	1	146	78	107	135	156	43	30
GA	237	1	644	360	477	596	697	189	132
GA	238	1	644	360	477	596	697	189	132
GA	239	1	1030	34	744	930	925	301	174
GA	240	1	186	0	155	509	182	68	46
GA	241	1	310	276	262	305	392	116	74
GA	242	1	93	180	98	103	163	49	31
GA	243	1	35	90	112	82	128	78	24
GA	244	1	294	34	264	1118	314	122	88
GA	245	1	0	0	11	6	9	9	2
GA	246	1	0	0	108	63	85	85	15
GA	247	1	544	1515	465	531	1002	219	195
GA	248	1	3095	9192	2297	2857	5627	922	1096
GA	249	1	367	1081	417	423	779	222	150
GA	250	1	75	0	152	125	144	99	26
GA	251	1	0	0	19	11	15	15	3
GA	252	1	354	0	262	3113	322	104	159
GA	253	1	7754	0	5968	8128	7232	2446	1377
GA	254	1	225	367	308	284	424	183	81
GA	255	1	846	51	748	784	836	426	163
GA	256	1	996	271	785	2245	1017	345	239
GA	257	1	2482	7328	1845	2277	4492	761	876
GA	258	1	0	0	19	11	15	15	3
GA	259	1	33	0	49	45	49	29	9
GA	260	1	53	0	0	0	0	16	3
GA	261	1	31	0	31	34	35	15	6
GA	262	1	4	0	70	40	55	56	10
GA	263	1	476	34	104	102	120	171	45
GA	264	1	170	180	133	161	215	55	41
GA	265	1	110	107	94	110	143	43	27
GA	266	1	770	749	632	749	979	274	186
GA	267	1	0	0	14	8	12	12	2
GA	268	1	172	0	1	0	0	51	10
GA	269	1	1138	214	199	224	294	361	109
GA	270	1	765	0	536	2136	653	232	177
GA	271	1	545	1645	639	640	1186	345	228
GA	272	1	1071	1555	1121	1049	1623	727	323
GA	273	1	1350	416	128	160	285	394	124
GA	274	1	252	416	213	209	352	140	72
GA	275	1	1042	2501	800	982	1737	328	336
GA	276	1	321	518	324	331	508	179	99
GA	277	1	88	0	173	963	166	110	59
GA	278	1	0	0	190	110	151	151	27
GA	279	1	354	563	262	328	495	104	95
GA	280	1	11	0	109	63	86	90	16
GA	281	1	2140	254	1573	2697	1952	730	405
GA	282	1	434	986	299	1192	669	127	160
GA	283	1	306	220	709	532	706	505	134
GA	284	1	0	0	193	111	153	153	27
GA	285	1	148	113	171	116	181	158	40
GA	286	1	0	0	48	28	38	38	7
GA	287	1	0	0	244	141	192	192	35
GA	288	1	35	0	425	263	347	325	63
GA	289	1	51	0	218	126	173	187	34
GA	290	1	0	0	325	188	256	256	46
GA	291	1	92	247	133	122	210	78	40
GA	292	1	27	45	86	63	90	60	17
GA	293	1	5	0	45	29	37	33	7
GA	294	1	796	834	735	820	1095	347	207
GA	295	1	908	1036	659	701	1047	409	215
GA	296	1	1138	1003	489	611	907	332	202
GA	297	1	0	0	0	0	0	0	0

GA	298	1	0	0	91	52	71	71	13
GA	299	1	0	0	109	63	86	86	16
GA	300	1	88	0	260	1013	235	179	72
GA	301	1	29	0	51	43	49	32	9
GA	302	1	0	0	0	0	0	0	0
GA	303	1	0	0	0	0	0	0	0
GA	304	1	0	0	0	0	0	0	0
GA	305	1	0	0	0	0	0	0	0
GA	306	1	0	0	0	0	0	0	0
GA	307	1	0	0	0	0	0	0	0
GA	308	1	0	0	0	0	0	0	0
GA	309	1	0	0	0	0	0	0	0
GA	310	1	0	0	0	0	0	0	0
GA	311	1	0	0	0	0	0	0	0
GA	312	1	0	0	0	0	0	0	0
GA	313	1	0	0	0	0	0	0	0
GA	314	1	0	0	0	0	0	0	0
GA	315	1	0	0	0	0	0	0	0
GA	316	1	0	0	0	0	0	0	0
GA	317	1	0	0	0	0	0	0	0
GA	318	1	0	0	0	0	0	0	0
GA	319	1	0	0	0	0	0	0	0
GA	320	1	0	0	0	0	0	0	0
GA	321	1	214	0	90	97	96	77	25
GA	322	1	706	0	204	242	232	212	71
GA	323	1	82	0	49	30	37	57	11
GA	324	1	553	90	143	105	149	238	58
GA	325	1	154	90	457	302	396	344	78
GA	326	1	319	642	374	1080	568	197	137
GA	327	1	418	203	553	1320	541	420	147
GA	328	1	387	265	649	488	638	472	130
GA	329	1	206	0	497	999	437	322	104
GA	330	1	159	247	279	226	323	183	64
GA	331	1	37	0	180	116	143	132	27
GA	332	1	58	11	40	26	35	44	10
GA	333	1	1214	2326	1528	1435	2181	872	433
GA	334	1	421	473	185	219	348	132	81
GA	335	1	531	423	370	505	461	323	116
GA	336	1	441	321	222	248	337	155	78
GA	337	1	168	45	333	205	273	284	59
GA	338	1	39	34	219	135	180	166	35
GA	339	1	668	254	557	1543	596	427	171
GA	340	1	124	51	135	96	128	116	29
GA	341	1	128	40	54	57	68	48	18
GA	342	1	570	62	48	43	64	177	44
GA	343	1	82	6	39	24	32	52	11
GA	344	1	427	0	5	3	4	123	25
GA	345	1	1004	1081	1328	1032	1486	985	312
GA	346	1	111	0	59	38	47	70	15
GA	347	1	140	0	251	214	233	151	44
GA	348	1	494	0	425	7776	419	281	351
GA	349	1	71	0	23	13	18	37	7
GA	350	1	179	0	143	1222	144	94	69
GA	351	1	57	0	155	91	118	131	25
GA	352	1	67	67	211	134	187	166	38
GA	353	1	49	0	170	102	131	139	27
GA	354	1	40	17	113	72	94	89	19
GA	355	1	119	73	339	231	299	251	59
GA	356	1	204	191	161	137	206	128	46
GA	357	1	1108	1104	467	561	858	337	201
GA	358	1	1738	4546	1600	1700	3025	823	612
GA	359	1	22	51	158	100	139	117	26
GA	360	1	230	242	398	342	441	240	85
GA	361	1	35	90	101	76	113	68	22
GA	362	1	9	0	109	68	86	80	16
GA	363	1	1301	2451	1179	1851	2004	545	417
GA	364	1	1014	2720	746	933	1673	284	336
GA	365	1	444	169	271	336	366	127	76
GA	366	1	677	73	591	5026	670	273	285
GA	367	1	179	135	618	402	535	466	105
GA	368	1	117	51	107	76	105	98	25
GA	369	1	411	1081	373	407	718	182	145
GA	370	1	4	0	6	5	6	3	1

GA	371	1	973	236	1121	1924	1185	635	262
GA	372	1	1598	923	1312	3497	1709	633	413
GA	373	1	4929	5700	2885	3528	5011	1466	1061
GA	374	1	2073	2755	1542	1715	2486	817	514
GA	375	1	361	451	385	369	515	227	104
GA	376	1	483	198	408	396	466	263	99
GA	377	1	901	1425	855	938	1340	399	264
GA	378	1	793	834	711	802	1025	320	201
GA	379	1	630	158	682	703	755	344	145
GA	380	1	414	129	521	1147	558	282	130
GA	381	1	547	811	424	466	696	223	143
GA	382	1	3146	3803	2329	2600	3656	1231	756
GA	383	1	97	180	108	111	165	54	32
GA	384	1	3137	547	2151	2589	2625	990	532
GA	385	1	142	0	235	681	221	139	59
GA	386	1	1087	1966	818	904	1463	438	303
GA	387	1	876	6	13	16	18	245	53
GA	388	1	62	34	13	16	25	18	8
GA	389	1	910	236	553	688	717	259	149
GA	390	1	736	1730	681	749	1243	320	248
GA	391	1	0	0	0	0	0	0	0
GA	392	1	60	0	25	15	19	36	7
GA	393	1	37	0	77	48	61	64	13
GA	394	1	13	40	45	33	50	31	10
GA	395	1	71	6	59	39	50	58	13
GA	396	1	269	367	735	515	719	527	141
GA	397	1	502	40	669	636	673	365	128
GA	398	1	0	0	1	0	0	0	0
GA	399	1	0	0	0	0	0	0	0
GA	400	1	172	338	280	246	363	166	71
GA	401	1	538	0	157	98	124	261	53
GA	402	1	119	0	24	26	26	36	10
GA	403	1	57	67	133	96	132	95	26
GA	404	1	494	6	846	3291	758	565	241
GA	405	1	60	0	44	25	33	50	10
GA	406	1	464	147	81	82	127	152	48
GA	407	1	5	17	8	8	12	4	2
GA	408	1	5014	400	3794	4685	4540	1467	875
GA	409	1	372	355	201	210	315	150	72
GA	410	1	509	0	197	170	184	228	58
GA	411	1	241	29	240	202	229	178	50
GA	412	1	152	22	196	171	191	124	38
GA	413	1	752	355	1022	935	1091	595	212
GA	414	1	341	118	634	499	596	425	117
GA	415	1	84	51	52	50	67	40	15
GA	416	1	398	186	225	243	295	153	67
GA	417	1	99	0	77	66	72	62	17
GA	418	1	7	0	57	33	43	45	8
GA	419	1	181	34	239	180	217	183	46
GA	420	1	30	51	38	37	53	20	10
GA	421	1	226	147	108	105	151	98	38
GA	422	1	204	107	156	125	171	135	40
GA	423	1	92	0	107	86	96	78	20
GA	424	1	58	0	42	38	40	33	9
GA	425	1	84	6	142	92	114	118	25
GA	426	1	13	0	90	54	69	68	13
GA	427	1	37	0	325	193	249	250	47
GA	428	1	14	0	163	139	125	123	25
GA	429	1	285	265	577	1294	598	363	144
GA	430	1	102	231	74	79	146	44	31
GA	431	1	39	51	48	47	64	25	12
GA	432	1	7	0	7	8	8	3	1
GA	433	1	265	0	295	290	298	163	58
GA	434	1	290	231	499	384	504	350	102
GA	435	1	11	6	258	154	199	191	37
GA	436	1	73	78	186	132	179	133	35
GA	437	1	173	0	146	93	116	149	30
GA	438	1	27	0	121	69	91	99	18
GA	439	1	71	0	532	321	411	405	78
GA	440	1	305	552	290	275	448	185	93
GA	441	1	199	102	127	146	172	69	36
GA	442	1	894	789	716	776	999	384	204
GA	443	1	347	355	406	1346	514	219	134

GA	444	1	310	118	249	282	309	119	62
GA	445	1	325	56	256	310	311	102	60
GA	446	1	39	124	32	38	73	13	15
GA	447	1	978	332	741	852	922	358	186
GA	448	1	372	78	285	301	323	166	68
GA	449	1	352	0	118	1669	138	99	92
GA	450	1	1317	445	780	1221	848	726	235
GA	451	1	0	0	0	0	0	0	0
GA	452	1	18	0	47	29	36	39	8
GA	453	1	0	0	0	0	0	0	0
GA	454	1	0	0	0	0	0	0	0
GA	455	1	0	0	0	0	0	0	0
GA	456	1	0	0	0	0	0	0	0
GA	457	1	749	598	566	1200	800	0	0
GA	458	1	69	55	52	111	74	0	0
GA	459	1	155	124	117	249	166	0	0
GA	460	1	227	181	171	363	242	0	0
GA	461	1	580	463	438	930	620	0	0
GA	462	1	0	0	0	0	0	0	0
GA	463	1	0	0	0	0	0	0	0
GA	464	1	359	286	271	575	383	0	0
GA	465	1	2857	2280	2157	4577	3050	0	0
GA	466	1	2773	2213	2094	4442	2961	0	0
GA	467	1	512	409	387	821	547	0	0
GA	468	1	0	0	0	0	0	0	0
GA	469	1	0	0	0	0	0	0	0
GA	470	1	0	0	0	0	0	0	0
GA	471	1	0	0	0	0	0	0	0
GA	472	1	0	0	0	0	0	0	0
GA	473	1	0	0	0	0	0	0	0
GA	474	1	0	0	0	0	0	0	0
GA	475	1	0	0	0	0	0	0	0
GA	476	1	0	0	0	0	0	0	0
GA	477	1	0	0	0	0	0	0	0
GA	478	1	0	0	0	0	0	0	0
GA	479	1	0	0	0	0	0	0	0
GA	480	1	0	0	0	0	0	0	0
GA	481	1	0	0	0	0	0	0	0
GA	482	1	0	0	0	0	0	0	0
GA	483	1	0	0	0	0	0	0	0
GA	484	1	0	0	0	0	0	0	0
GA	485	1	0	0	0	0	0	0	0
GA	486	1	0	0	0	0	0	0	0
GA	487	1	0	0	0	0	0	0	0
GA	488	1	0	0	0	0	0	0	0
GA	489	1	0	0	0	0	0	0	0
GA	490	1	0	0	0	0	0	0	0
GA	491	1	0	0	0	0	0	0	0
GA	492	1	361	288	272	578	385	0	0
GA	493	1	519	414	392	831	554	0	0
GA	494	1	1241	991	937	1989	1326	0	0
GA	495	1	0	0	0	0	0	0	0
GA	496	1	0	0	0	0	0	0	0
GA	497	1	0	0	0	0	0	0	0
GA	498	1	0	0	0	0	0	0	0
GA	499	1	0	0	0	0	0	0	0
GA	500	1	0	0	0	0	0	0	0
GA	501	1	0	0	0	0	0	0	0
GA	502	1	457	365	345	733	488	0	0
GA	503	1	2093	1671	1581	3353	2235	0	0
GA	504	1	632	504	477	1012	675	0	0
GA	505	1	40	32	30	64	43	0	0
GA	506	1	1053	841	795	1687	1125	0	0
GT	1	1	0	2	9	7	19	1	0
GT	2	1	3	8	16	22	53	1	0
GT	3	1	3	15	13	20	64	1	1
GT	4	1	12	21	19	36	62	1	1
GT	5	1	47	92	64	121	248	1	2
GT	6	1	12	22	13	41	59	1	2
GT	7	1	20	29	12	39	65	1	0
GT	8	1	23	35	17	30	64	1	0
GT	9	1	5	23	9	22	27	1	0
GT	10	1	66	130	44	209	233	1	3

GT	11	1	7	20	4	19	26	1	0
GT	12	1	14	12	5	30	47	1	3
GT	13	1	11	21	8	27	35	1	1
GT	14	1	4	13	9	16	15	1	1
GT	15	1	90	88	66	186	174	1	10
GT	16	1	16	7	5	21	17	1	2
GT	17	1	11	9	6	15	18	1	1
GT	18	1	8	6	5	12	10	1	0
GT	19	1	4	2	2	5	7	1	0
GT	20	1	64	46	41	123	67	1	8
GT	21	1	5	7	6	11	11	1	0
GT	22	1	7	3	1	8	5	1	2
GT	23	1	7	4	0	7	8	1	2
GT	24	1	10	4	0	4	8	1	0
GT	25	1	44	20	18	50	44	1	12
GT	26	1	4	4	0	1	6	1	2
GT	27	1	1	1	1	5	4	1	2
GT	28	1	2	1	0	4	9	1	3
GT	29	1	0	0	0	3	3	1	0
GT	30	1	51	20	37	59	42	1	24
GT	31	1	0	2	3	2	4	1	0
GT	32	1	3	0	1	7	4	1	1
GT	33	1	1	2	0	4	2	1	2
GT	34	1	2	1	0	1	3	1	0
GT	35	1	18	9	7	17	17	1	8
GT	36	1	1	3	0	1	1	1	2
GT	37	1	0	0	1	1	0	1	0
GT	38	1	2	0	1	1	2	1	1
GT	39	1	0	0	1	1	1	1	0
GT	40	1	6	9	9	15	13	1	6
GT	41	1	0	0	0	0	1	1	0
GT	42	1	1	1	0	0	0	1	0
GT	43	1	0	0	0	1	2	1	1
GT	44	1	1	1	0	1	0	1	0
GT	45	1	16	10	7	15	14	1	13
GT	46	1	2	0	0	0	0	1	0
GT	47	1	0	0	0	2	1	1	1
GT	48	1	0	0	2	1	1	1	0
GT	49	1	1	0	0	1	1	1	0
GT	50	1	4	4	1	1	9	1	5
GT	51	1	0	0	0	0	0	1	1
GT	52	1	0	0	0	1	1	1	0
GT	53	1	0	0	0	0	0	1	0
GT	54	1	1	0	0	0	0	1	0
GT	55	1	2	1	1	4	4	1	5
GT	56	1	0	0	0	0	0	1	2
GT	57	1	0	0	0	0	1	1	2
GT	58	1	0	0	0	0	0	1	1
GT	59	1	0	1	0	0	0	1	1
GT	60	1	6	1	3	9	5	1	12
GT	61	1	0	0	0	0	0	1	1
GT	62	1	0	0	0	0	0	1	0
GT	63	1	0	0	0	0	0	1	0
GT	64	1	0	0	0	0	0	1	0
GT	65	1	1	2	0	1	0	1	5
GT	66	1	0	0	0	0	0	1	0
GT	67	1	0	0	0	0	1	1	0
GT	68	1	1	0	0	0	0	1	0
GT	69	1	0	0	0	0	0	1	0
GT	70	1	2	2	0	1	4	1	4
GT	71	1	0	0	0	0	0	1	0
GT	72	1	1	0	0	0	0	1	0
GT	73	1	0	0	0	0	1	1	1
GT	74	1	0	0	0	0	0	1	0
GT	75	1	0	0	1	3	4	1	7
GT	76	1	0	0	0	0	0	1	1
GT	77	1	0	0	0	1	0	1	0
GT	78	1	0	0	0	0	0	1	0
GF	1	1	40000	64000	35000	38000	60000	60000	68000
GF	2	1	25000	49000	24000	23000	46000	46000	68000
GF	3	1	17000	34000	17000	15000	34500	34500	68000
GF	4	1	11500	24000	11900	9500	26000	26000	68000
GF	5	1	9000	17000	8800	7000	20000	20000	68000

GF	6	1	7000	12000	7200	6000	16500	16500	68000
GF	7	1	5500	8400	5800	4560	12000	12000	68000
GF	8	1	4600	5800	4800	3600	9100	9100	68000
GF	9	1	3950	4200	4000	2950	7100	7100	61000
GF	10	1	3950	3300	3400	2350	5400	5400	50000
GF	11	1	2900	2400	2800	2150	4300	4300	40000
GF	12	1	2550	1800	2380	1800	3400	3400	30000
GF	13	1	2200	1450	2000	1450	2750	2750	19000
GF	14	1	1900	1200	1670	1150	2300	2300	10800
GF	15	1	1650	970	1400	900	1930	1930	9500
GF	16	1	1500	790	1170	750	1650	1650	8500
GF	17	1	1300	660	990	700	1430	1430	7500
GF	18	1	1180	560	840	580	1220	1220	6790
GF	19	1	1070	480	700	500	1050	1050	6100
GF	20	1	980	420	600	440	920	920	5500
GF	21	1	900	465	520	385	810	810	4900
GF	22	1	830	330	450	350	720	720	4500
GF	23	1	770	275	395	295	640	640	3900
GF	24	1	710	240	350	260	580	580	3550
GF	25	1	660	210	315	230	525	525	3250
GF	26	1	620	185	285	205	475	475	3000
GF	27	1	580	165	260	185	430	430	2800
GF	28	1	550	145	235	165	395	395	2600
GF	29	1	510	127	213	147	360	360	2400
GF	30	1	480	113	195	133	327	327	2200
GF	31	1	450	100	177	120	300	300	2050
GF	32	1	425	87	163	107	275	275	1900
GF	33	1	400	75	150	95	252	252	1770
GF	34	1	380	64	147	84	230	230	1650
GF	35	1	360	54	128	74	215	215	1500
GF	36	1	340	47	115	67	200	200	1400
GF	37	1	320	40	100	60	185	185	1300
GF	38	1	300	34	95	54	170	170	1210
GF	39	1	280	29	85	49	155	155	1130
GF	40	1	263	25	76	45	145	145	1050
GF	41	1	245	21	69	40	130	130	960
GF	42	1	230	18	62	34	120	120	880
GF	43	1	215	15	55	29	110	110	820
GF	44	1	200	13	49	25	101	101	760
GF	45	1	187	11	44	21	94	94	700
GF	46	1	176	9	40	18	86	86	640
GF	47	1	165	8	36	15	80	80	600
GF	48	1	155	7	32	13	73	73	560
GF	49	1	145	6	28	11	67	67	520
GF	50	1	135	5	25	9	62	62	490
GF	51	1	128	4	22	8	57	57	455
GF	52	1	119	4	20	7	52	52	420
GF	53	1	111	3	18	6	48	48	395
GF	54	1	103	3	16	5	45	45	370
GF	55	1	96	2	14	4	41	41	350
GF	56	1	90	2	13	4	36	36	325
GF	57	1	64	2	12	3	35	35	305
GF	58	1	78	1	10	3	32	32	285
GF	59	1	73	1	9	2	29	29	265
GF	60	1	69	1	8	2	27	27	245
GF	61	1	65	1	7	2	25	25	225
GF	62	1	61	1	7	1	23	23	205
GF	63	1	57	1	6	1	21	21	185
GF	64	1	53	1	5	1	20	20	165
GF	65	1	50	1	5	1	18	18	145
GF	66	1	47	1	4	1	17	17	125
GF	67	1	44	1	4	1	15	15	115
GF	68	1	41	1	3	1	14	14	105
GF	69	1	38	1	3	1	13	13	95
GF	70	1	36	1	3	1	12	12	85
GF	71	1	34	1	3	1	11	11	75
GF	72	1	32	1	2	1	10	10	65
GF	73	1	30	1	2	1	9	9	55
GF	74	1	28	1	2	1	8	8	50
GF	75	1	26	1	2	1	7	7	45
GF	76	1	24	1	2	1	6	6	40
GF	77	1	22	1	1	1	5	5	35
GF	78	1	20	1	1	1	4	4	30