
Tucson Household Travel Survey Final Report

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1. INTRODUCTION

The objective of Pima Association of Governments' (PAG) Tucson Household Travel Survey (THTS) was to obtain data about activity behavior and travel patterns of Tucson area households. The information collected will be used for modeling travel patterns and planning transportation systems and services within the Tucson area. Specifically, THTS collected data on the activities and travel over a 24-hour period for all members of 2,076 households, a representative sample of the households in the Tucson area.

The data was collected in three steps: (1) a random-digit-dial (RDD) telephone recruitment interview to solicit participation, collect baseline information on the household, and assign an activity day; (2) mailing of an information packet with activity diaries for each household member; (3) telephone interviews the night following the activity day to collect household members' activity and travel information. The survey was pilot tested in August 2000. After minor modifications, the survey went into the field in September of 2000 and was completed in the beginning of December 2000.

This report documents the survey procedures and provides a preliminary evaluation of the survey data collected. All tabulations in this report are of unweighted data.

The report is organized in eight sections. The next (second) section is a review of the data collection procedures. The sampling plan and results are presented in the third section, including summaries of sample disposition and response rates. The distribution of the major characteristics of respondent households and individuals are compared with projected census characteristics for the PAG service area population. The fourth section presents a more detailed profile of the respondent households and the individuals within those households. The fifth section examines the activity and travel patterns reported by the respondents. The sixth section reports the results of geocoding home and location data. The seventh section reviews the data checks performed, and the last section summarizes the findings from this evaluation.

2. DATA COLLECTION PROCEDURES

The Tucson Household Travel Survey was conducted in the following three steps:

- Recruited Tucson area households via telephone to participate in the survey
- Mailed recruited households a packet of survey materials
- Retrieved survey information from all household members

2A. Recruitment

Households were recruited for the Tucson Household Travel Survey from a random-digit-dial list of telephone numbers in the PAG service area, primarily Pima County. The sample was purchased from Survey Sampling, Inc. of Fairfield, Connecticut. Up to five attempts were made to contact each household, and the attempts were made at different times of the evening and/or different days of the week, including Saturday and Sunday. In total, 4,086 households were recruited to participate in the survey.

MORPACE telephone interviewers identified themselves and briefly introduced the study before reviewing the research quality control standards (calls may be monitored, information provided is treated confidentially, and no sales calls result from participating). Interviewers confirmed that the contact person for the household was at least 18 years of age, while Spanish-speaking households were coded as such and called back by a Spanish-speaking interviewer.

Interviewers also confirmed the phone number dialed and the county and zip code of the household, to be sure that the household is located within the PAG planning region.

A secondary introduction was then read to the contact person. This introduction more clearly explained the project purpose and stressed the importance of having all members of the household participate. After the contact person agreed that the household would participate, mailing information was obtained. Each household could choose to have the survey information sent to their home, a post office box, or another address, such as a work location. If a household requested the survey information be sent to an address other than home, the home address information was collected in addition, so that the home location, where most trips begin, would be known. Address information collected included cross streets, in addition to street number and name, city and zip code.

An activity date was then assigned to the household, usually 8 to 17 days from the date of the recruit interview. All days of the week, except Sundays, were assigned as activity dates.

To encourage participation of larger households, which tend to have lower response rates in travel surveys, an incentive was offered to households with four or more members. \$20.00 was offered to households with four members, while households with five or more members were offered \$30.00. Households were told that the incentive would be sent after all household members completed the survey. Households were asked to choose between accepting a check for the household or donating the incentive to the United Way of Greater Tucson. The assumption was that lower income households would be motivated to participate by the cash incentive, while higher income households would be motivated by a charitable donation in their name. Results of the incentives are reported on page 6.

During the recruit interview, households were asked about the number of working vehicles available for their use. The year, make, and model of each vehicle were also recorded.

Also, questions were asked about homeownership, the type of residence, and whether the home is the primary residence. Person information collected for each household member included first name, gender, age, driving ability, public transportation use, and racial/ethnic background. Household information included income, number of fax machines, e-mail access, and Internet access.

The recruit interview concluded by summarizing key information (including the activity date, follow-up telephone call, and the importance of participation) and thanking the household. If requested, the toll-free information number for the survey and the PAG website address were provided.

2B. Survey Material Mailing

Each household that was recruited to participate in the Tucson Household Travel Survey was mailed a packet of survey materials. The packet, which was available in English and Spanish, contained the following items:

- Personalized cover letter, which:
 - Thanked the household for agreeing to participate
 - Stated the survey objective
 - Informed household of locations of the instructions and example guide
 - Asked household members to carry diaries with them on the activity date
 - Reminded household of the retrieval call
 - Reiterated MORPACE's confidentiality policy
 - Provided a toll-free telephone number for questions or concerns and the PAG website address
 - Explained the incentive (if offered)
- Example guide
- Set of diaries – one for each member, regardless of age. Each diary was personalized with a tracking number, telephone number, the respondent's first name or initials, and the assigned activity date.
- Postage-paid return envelope

2C. Retrieval Process

Each recruited household was called the day after the assigned 24-hour activity period. The contact person was asked for and this person was asked if the household members had completed their diaries. If the diaries were completed, the interviewer then asked the person questions about work and school before collecting the information about their travel and activities for the day.

When the retrieval process was completed for the first person in the household, the second person was asked for, and so on, until each member of the household was interviewed.

If the time of the call was inconvenient for the household, a different time was scheduled for retrieval. If the household did not fill out the diaries, a new activity date was assigned. If the household never received or misplaced the diaries, the mailing information was confirmed, a new activity date was assigned, and the survey materials were remailed to the household.

The option of mailing back the activity diaries was offered to households that were not cooperating or threatened to terminate due to the time involved in collecting the extensive travel and activity information over the phone. Diaries received by mail were manually checked and entered into the CATI system by a trained MORPACE interviewer. Respondents were called back if information was missing or clarification was needed.

3. SAMPLE EVALUATION

3A. Recruitment and Response Rate

The Tucson Household Travel Survey used a two-stage sampling process (i.e., household recruitment and household information retrieval). Participation rates for recruitment and retrieval are reported independently.

The CATI electronically recorded a disposition (or outcome) for each of the 57,068 phone numbers in the sample. Call attempts yielded three types of dispositions: (1) eligible, (2) ineligible, and (3) unknown eligibility. Subcategories for each are shown below.

Table 1. Final Sample Disposition

Sample Category	Frequency	Percent
<i>Eligible</i>	<i>21,699</i>	<i>38.0%</i>
Recruited	4,086	7.2%
Refused	14,390	25.2%
Terminated during introductions	2,743	4.8%
Terminated mid-interview	480	0.8%
<i>Ineligible</i>	<i>19,276</i>	<i>33.8%</i>
Question terminated	212	0.4%
Disconnected/changed/new number	12,095	21.2%
Deaf/language barrier	477	0.8%
Wrong number/business number	6,492	11.4%
<i>Unknown Eligibility</i>	<i>16,093</i>	<i>28.2%</i>
No answer or busy	8,963	15.7%
Answering machine	5,650	9.9%
Respondent scheduled for callback	1,480	2.6%
<i>Total Sample</i>	<i>57,068</i>	<i>100.0%</i>

In calculating the response rate, the unknown eligibility sample represents both eligible and ineligible households. Since the exact outcome for these categories is unknown, it is assumed that they would follow the existing distribution for eligible sample and ineligible sample. Of the 40,975 numbers with known outcomes, 53.0% or 21,699 numbers are eligible and 47.0% or 19,276 numbers are ineligible. Therefore, it is assumed that of the 16,093 numbers with unknown eligibility, 53.0% or 8,529 numbers would be eligible. The recruitment rate is then calculated as the number recruited divided by the sum of the total eligible sample plus the portion of unknown eligibility sample assumed to be eligible or $4,086 / (21,699 + 8,529) = 13.5\%$

The completion rate is a measure of how many recruited households complete the survey process. It reflects sample attrition. This rate is calculated by dividing the number of households with completed retrieval information for every member by the number of recruited households. Of the 4,086 recruited households, MORPACE completed retrieval interviews with all members of 2,076 households for a completion rate of 50.8%.

The recruitment response rate was 13.5% and the completion rate was 50.8%.

3B. Comparison of Respondents to Sampling Plan and Population

The sampling plan for the Tucson Household Travel Survey followed a random-digit-dial sample distributed proportionally by zip code within the Pima Association of Governments' planning area. The combined total sample goal was 2,000 households.

Table 2 shows the distribution of respondent households by zip code, compared to the sampling plan.

The following zip codes were not represented in the original sampling plan, but one to three households were recruited in each of the zip codes: 85622, 85652, 85703, 85707, 85720, 85721, 85725, 85728, 85733, 85734, 85740, 85751, and 85752.

Most of the sample goals were exceeded. Three (3) zip codes did not reach the sample goal, but were at least 85% (85711 was 97%, 85718 was 87%, and 85735 was 92%).

The following four (4) zip codes were underrepresented in the survey: 85705, 85706, 85713, and 85746. It is important to note that each of these zip codes contains at least 50 households, a sufficient sample size. Also, the retrieval response rates for these zip codes (44%, 32%, 39%, and 34%, respectively) were significantly lower than the average response rate (51%).

Three (3) additional zip codes were underrepresented in the survey: 85619, 85714, and 85736. However, sample goals for these zip codes were quite small, ranging from 3 to 29 households.

Table 2. Distribution of Households by Zip Code (Compared to Sampling Plan)

Zip Code	City Name	Count of H'hlds	Sample Goals	Sample Target	# Recruited	# Retrieved	% of Target Reached	Response Rate
85614	Green Valley	13,170	3.92%	78	137	91	116%	66%
85619	Mount Lemmon	481	0.14%	3	1	1	35%	100%
85622	Green Valley				1	1		
85629	Sahuarita/Pima County *	2,141	0.64%	13	29	20	157%	69%
85641	Vail **	1,572	0.47%	9	22	11	118%	50%
85652	Cortaro (PO Boxes only)				1	1		
85653	Marana	3,837	1.14%	23	50	30	131%	60%
85654	Rillito *	7	0.00%	0	0	0		
85701	Tucson	2,709	0.81%	16	31	17	106%	55%
85703	Tucson				1	1		
85704	County	13,768	4.09%	82	144	89	109%	62%
85705	Tucson	25,739	7.65%	153	243	106	69%	44%
85706	Tucson	19,670	5.85%	117	195	63	54%	32%
85707	Davis Monthan AFB/Tucson				1	1		
85708	Tucson/Pima County	1,343	0.40%	8	19	10	125%	53%
85710	Tucson	25,435	7.56%	151	353	183	121%	52%
85711	Tucson	17,798	5.29%	106	201	103	97%	51%
85712	Tucson	15,186	4.52%	90	218	104	115%	48%
85713	Tucson/South Tucson	16,940	5.04%	101	152	60	60%	39%
85714	Tucson	4,901	1.46%	29	29	9	31%	31%
85715	Tucson	8,552	2.54%	51	122	79	155%	65%
85716	Tucson	16,470	4.90%	98	239	113	115%	47%
85718	Pima County	15,144	4.50%	90	135	78	87%	58%
85719	Tucson	16,474	4.90%	98	219	119	121%	54%
85720	Tucson				1	0		
85721	University of Arizona				1	1		
85725	Tucson				1	1		
85728	Tucson				1	0		
85730	Tucson	13,443	4.00%	80	204	92	115%	45%
85733	Tucson				1	0		
85734	Tucson				2	0		
85735	Pima County **	3,289	0.98%	20	40	18	92%	45%
85736	Pima County **	2,499	0.74%	15	14	5	34%	36%
85737	Oro Valley	13,049	3.88%	78	156	98	126%	63%
85738	Catalina **	45	0.01%	0	4	2		50%
85739	Pima County	3,264	0.97%	19	59	32	165%	54%
85740	Tucson				3	2		
85741	Marana/Pima County	11,231	3.34%	67	147	82	123%	56%
85742	Marana/Pima County	9,161	2.72%	54	110	64	117%	58%
85743	Marana/Pima County	6,572	1.95%	39	90	40	102%	44%
85745	Tucson/Pima County	12,211	3.63%	73	147	73	101%	50%
85746	Pima County	14,533	4.32%	86	156	53	61%	34%
85747	Tucson *	1,741	0.52%	10	73	37	357%	51%
85748	Tucson	5,073	1.51%	30	103	53	176%	51%
85749	Tucson/Pima County	7,279	2.16%	43	97	62	143%	64%
85750	Pima County	11,544	3.43%	69	131	70	102%	53%
85751	Tucson				1	0		
85752	Tucson				1	1		
	Totals	336,271	100.00%	2,000	4,086	2,076	104%	51%

* PCLIS boundaries do not match zip code map

** Zip code not in PCLIS

The next table shows the distribution of household size of the respondent households and in the Tucson area from the U.S. Census projections for 1999.

Table 3. Distribution of Households by Size

Size of Household	Recruited Households		Respondent Households		1999 Census Projection for Tucson Area
	Frequency	Percent	Frequency	Percent	Percent
1 person	1,011	24.7%	619	29.8%	29.0%
2 persons	1,460	35.7%	771	37.1%	34.6%
3 persons	668	16.3%	252	12.1%	15.0%
4 persons	574	14.0%	282	13.6%	12.0%
5 persons	247	6.0%	105	5.1%	6.1%
6+ persons	126	3.1%	47	2.3%	3.3%
Total	4,086	100.0%	2,076	100.0%	100.0%

The average household size is 2.35 persons, compared to the 1999 U.S. Census estimate of 2.46 persons.

Nationally, nearly all household activity and travel surveys have had lower response rates for larger households than for smaller households. To help alleviate this problem, households with four persons were offered an incentive of \$20.00, which they could have in the form of a check or as a donation to charity (the United Way of Greater Tucson). Households with more than four persons were offered the same options, with a \$30.00 incentive. The offers were made during the recruitment interview with the stipulation that the incentive would only be paid if all members of the household completed the survey (either through the retrieval survey or by mailing back the diaries).

The next table shows the numbers and types of incentives offered and the corresponding completion ratios.

Table 4. Incentives to Larger Households

Incentive	Recruited Households	Respondent Households	Completion Ratio
\$20.00 check	373	203	54.4%
\$20.00 charity donation	199	79	39.7%
Refused \$20.00 incentive	1	0	0.0%
\$30.00 check	268	124	46.3%
\$30.00 charity donation	104	28	26.9%
Refused \$30.00 incentive	1	0	0.0%
Total	946	434	45.9%

Since the overall completion rate of households recruited is 50.8%, the incentives appear to have been successful in keeping completion rates for four-person households at the average (49.2%). However, even with the \$30.00 incentive, the completion rate for households with more than four persons still dropped 10% to 40.8%.

The following table shows the income distribution of the respondent households and of households in the Tucson area from 1999 U.S. Census projections.

Table 5. Distribution of Households by Income (Ranges)

Income	Respondent Households		1999 Census Projection for Tucson Area
	Frequency	Percent	Percent
<\$10,000	67	3.2%	12.9%
\$10,000 - \$19,999	207	10.0%	53.9%
\$20,000 - \$29,999	277	13.3%	
\$30,000 - \$39,999	314	15.1%	
\$40,000 - \$49,999	261	12.6%	
\$50,000 - \$59,999	209	10.1%	
\$60,000 - \$74,999	183	8.8%	16.1%
\$75,000 - \$99,999	159	7.7%	8.4%
\$100,000 - \$124,999	71	3.4%	5.7%
\$125,000 - \$149,999	27	1.3%	
\$150,000 +	31	1.5%	2.9%
Don't know	90	4.3%	--
Refused	180	8.7%	--
Total	2,076	100.0%	100.0%

Non-response to the income question was 8.7% and “don't know” responses added another 4.3% to missing values of income. To decrease non-response to the income question, gross income categories were asked. When asked only if their income was above or below \$30,000, the number of refusals and “don't know” responses decreased by about one-half. The following table shows the gross income distribution.

Table 6. Distribution of Households by Income (Over/Under \$30,000)

Income	Respondent Households		1999 Census Projection for Tucson Area
	Frequency	Percent	Percent
<\$30,000	570	27.5%	44%
>\$30,000	1,376	66.3%	56%
Don't know	40	1.9%	--
Refused	90	4.3%	--
Total	2,076	100.0%	100%

The next table shows the distribution of vehicle ownership by the respondent households and households in the Tucson area from 1999 U.S. Census projections.

Table 7. Distribution of Households Vehicle Ownership

Number of Vehicles Available to the Household	Respondent Households		1999 Census Projection for Tucson Area
	Frequency	Percent	Percent
0 vehicles	61	2.9%	8%
1 vehicle	803	38.7%	40%
2 vehicles	871	42.0%	36%
3 vehicles	253	12.2%	15%
4 vehicles	71	3.4%	
5 vehicles	11	0.5%	
6 vehicles	5	0.2%	
7 vehicles	1	0.0%	
Total	2,076	100.0%	100%

Households with no vehicles are underrepresented, while households with two vehicles are slightly over represented.

Next, the age and racial/ethnic background of the 4,882 persons from the respondent households are tabulated and compared to the distributions of the population of the Tucson area, as reported in the U.S. Census projections for 1999.

Table 8. Age

Age	Persons in Respondent Households		1999 Census Projection for Tucson Area
	Frequency	Percent	Percent
0 – 5 years	407	8.3%	8.7%
6 – 11 years	415	8.5%	8.6%
12 – 17 years	413	8.5%	7.7%
18 – 24 years	319	6.5%	9.9%
25 – 34 years	553	11.3%	14.4%
35 – 44 years	732	15.0%	16.0%
45 – 54 years	799	16.4%	12.3%
55 – 64 years	503	10.3%	8.4%
65+ years	658	13.5%	14.0%
Don't know	27	0.6%	--
Refused	56	1.1%	--
Total	4,882	100.0%	100.0%

The 18-34 age group is underrepresented, while the 45-64 age group is over represented. Age was not obtained for 1.7% of the persons in the respondent households.

Table 9. Racial/Ethnic Background

Racial/Ethnic Background	Persons in Respondent Households	
	Frequency	Percent
White	3,871	79.3%
Spanish/Hispanic/Latino	585	12.0%
Black/African American	73	1.5%
Native American (Indian)	40	0.8%
Asian	52	1.1%
Other race	207	4.2%
Don't know	21	0.4%
Refused	33	0.7%
Total	4,882	100.0%

Census projections do not have Hispanic as a unique category.

4. DISTRIBUTION OF RESPONDENT CHARACTERISTICS

This section presents the descriptive characteristics of the respondent households and persons within these households. These questions were asked during the recruitment interview.

Table 10. Home Ownership

Do you own or rent your home?	Respondent Households	
	Frequency	Percent
Own	1,570	75.6%
Rent	497	23.9%
Refused	9	0.4%
Total	2,076	100.0%

Table 11. Type of Home

Which of the following best describes your home?	Respondent Households	
	Frequency	Percent
Detached house or condominium	1,336	64.4%
Attached house or condominium	280	13.5%
Apartment	257	12.4%
Mobile home	173	8.3%
Farm/Ranch	16	0.8%
Group Quarters/Dormitory/Retirement Facility	5	0.2%
RV, Van, Boat, etc.	4	0.2%
Don't know	1	0.0%
Refused	4	0.2%
Total	2,076	100.0%

Table 12. Primary Residence

How many months per year do you reside at this home?	Respondent Households	
	Frequency	Percent
Less than one month	4	0.2%
One month	5	0.2%
Two months	2	0.1%
Three months	5	0.2%
Four months	4	0.2%
Five months	5	0.2%
Six months	18	0.9%
Seven months	9	0.4%
Eight months	6	0.3%
Nine months	23	1.1%
Ten months	22	1.1%
Eleven months	14	0.7%
Twelve months (Full-time resident)	1,954	94.1%
Refused	5	0.2%
Total	2,076	100.0%

Table 13. Fax Lines

How many fax machines do you have in your home?	Respondent Households	
	Frequency	Percent
None	1,659	79.9%
One	392	18.9%
Two	18	0.9%
Three	1	0.0%
Refused	6	0.3%
Total	2,076	100.0%

Table 14. E-mail Access

Within your home, do you have access to e-mail?	Respondent Households	
	Frequency	Percent
Yes	1,370	66.0%
No	700	33.7%
Don't know	1	0.0%
Refused	5	0.2%
Total	2,076	100.0%

Table 15. Internet Access

Within your home, do you have access to the Internet?	Respondent Households	
	Frequency	Percent
Yes	1,355	65.3%
No	715	34.4%
Don't know	1	0.0%
Refused	5	0.2%
Total	2,076	100.0%

Table 16. Gender

Gender	Persons in Respondent Households	
	Frequency	Percent
Male	2,302	47.2%
Female	2,579	52.8%
Refused	1	0.0%
Total	4,882	100.0%

Table 17. Driving Frequency

Do you drive . . . ?	Persons in Respondent Households	
	Frequency	Percent
Regularly	3,068	62.8%
Occasionally	397	8.1%
Rarely	109	2.2%
Do not drive	481	9.9%
Do not drive (under 12 years of age)	822	16.8%
Don't know	2	0.0%
Refused	3	0.1%
Total	4,882	100.0%

Table 18. Public Transportation Use

Do you use public transportation . . . ?	Persons in Respondent Households	
	Frequency	Percent
Regularly	217	4.4%
Occasionally	238	4.9%
Rarely	424	8.7%
Do not use public transportation	3,997	81.9%
Don't know	3	0.1%
Refused	3	0.1%
Total	4,882	100.0%

The following questions were asked during the retrieval interview.

Table 19. Employment Status

Do you currently work on a regular basis?	Persons in Respondent Households	
	Frequency	Percent
Yes	2,406	59.3%
No	1,633	40.2%
Don't know	21	0.5%
Valid Total	4,060	100.0%
Missing - under 12 years of age	822	
Total	4,882	

Respondents who do not work and are over the age of 40 (or did not report age) were asked if they are retired. This question is summarized in the next table.

Table 20. Retirement

Are you retired?	Persons in Respondent Households	
	Frequency	Percent
Yes	833	81.6%
No	179	17.5%
Don't know	9	0.9%
Valid Total	1,021	100.0%
Missing - currently employed	2,406	
Missing - don't know employment status	21	
Missing - not working, but under age 41	612	
Missing - under 12 years of age	822	
Total	4,882	

Table 21. Number of Jobs

How many different jobs do you have?	Persons in Respondent Households	
	Frequency	Percent
One	2,122	88.2%
Two	227	9.4%
Three	27	1.1%
Four	4	0.2%
Six	1	0.0%
Eight	1	0.0%
Nine	1	0.0%
Don't know	23	1.0%
Valid Total	2,406	100.0%
Missing - not currently employed	1,633	
Missing - don't know employment status	21	
Missing - under 12 years of age	822	
Total	4,882	

Table 22. Full-time or Part-time Work

Do you work full-time, part-time, or occasionally?	Persons in Respondent Households	
	Frequency	Percent
Full-time	1,916	79.6%
Part-time	455	18.9%
Occasionally	32	1.3%
Don't know	3	0.1%
Valid Total	2,406	100.0%
Missing - not currently employed	1,633	
Missing - don't know employment status	21	
Missing - under 12 years of age	822	
Total	4,882	

Table 23. Number of Days Worked Per Week – Outside the Home

During a typical workweek, how many days do you work outside the home?	Persons in Respondent Households	
	Frequency	Percent
One	32	1.3%
Two	88	3.7%
Three	128	5.3%
Four	206	8.6%
Five	1,564	65.0%
Six	214	8.9%
Seven	54	2.2%
None	88	3.7%
Don't know	31	1.3%
Refused	1	0.0%
Valid Total	2,406	100.0%
Missing – not currently employed	1,633	
Missing – don't know employment status	21	
Missing – under 12 years of age	822	
Total	4,882	

Table 24. Number of Days Worked Per Week – At Home

During a typical workweek, how many days do you work at home?	Persons in Respondent Households	
	Frequency	Percent
One	111	4.6%
Two	84	3.5%
Three	47	2.0%
Four	21	0.9%
Five	84	3.5%
Six	29	1.2%
Seven	55	2.3%
None	1,887	78.4%
Don't know	83	3.4%
Refused	5	0.2%
Valid Total	2,406	100.0%
Missing – not currently employed	1,633	
Missing – don't know employment status	21	
Missing – under 12 years of age	822	
Total	4,882	

Table 25. Drop Off Minor on the Way to Work

During your typical trip from home to work, do you drop off a minor?	Persons in Respondent Households	
	Frequency	Percent
Yes	359	15.5%
No	1,910	82.4%
Don't know	48	2.1%
Refused	1	0.0%
Valid Total	2,318	100.0%
Missing – do not work outside the home	88	
Missing – not currently employed	1,633	
Missing – don't know employment status	21	
Missing – under 12 years of age	822	

Table 26. Drop Off Minor on the Way to Work – Location – 1st Mention

Do you typically drop off a minor at day care, school, or somewhere else?	Persons in Respondent Households	
	Frequency	Percent
Day Care	99	27.6%
School	224	62.4%
Bus Stop	8	2.2%
Babysitter	7	1.9%
Family member (father, grandparents)	9	2.5%
Other	12	3.3%
Valid Total	359	100.0%
Missing – do not drop off a minor	1,959	
Missing – do not work outside the home	88	
Missing – not currently employed	1,633	
Missing – don't know employment status	21	
Missing – under 12 years of age	822	
Total	4,882	

Table 27. Drop Off Minor on the Way to Work – Location – 2nd Mention

Do you typically drop off a minor at day care, school, or somewhere else?	Persons in Respondent Households	
	Frequency	Percent
Day Care	0	--
School	20	69.0%
Bus Stop	2	6.9%
Babysitter	0	--
Family member (father, grandparents)	4	13.8%
Other	3	10.3%
Valid Total	29	100.0%
Missing – only one drop off location mentioned	330	
Missing – do not drop off a minor	1,959	
Missing – do not work outside the home	88	
Missing – not currently employed	1,633	
Missing – don't know employment status	21	
Missing – under 12 years of age	822	
Total	4,882	

Table 28. Employer Subsidy of Public Transportation

Does your employer subsidize public transportation use?	Persons in Respondent Households	
	Frequency	Percent
Yes	271	11.3%
No	1,848	76.8%
Don't know	277	11.5%
Refused	10	0.4%
Valid Total	2,406	100.0%
Missing – not currently employed	1,633	
Missing – don't know employment status	21	
Missing – under 12 years of age	822	
Total	4,882	

Table 29. Work Schedule

Which of the following statements best describes your working schedule?	Persons in Respondent Households	
	Frequency	Percent
"I have no flexibility in the times I have to be at work."	992	41.2%
"I can vary my schedule a bit, but not by more than 30 minutes."	680	28.3%
"I'm pretty much free to adjust my schedule as I like."	718	29.8%
Don't know	16	0.7%
Valid Total	2,406	100.0%
Missing - not currently employed	1,633	
Missing - don't know employment status	21	
Missing - under 12 years of age	822	
Total	4,882	

Table 30. Type of Employer

Are you ...?	Persons in Respondent Households	
	Frequency	Percent
Employed by a for-profit company or business	1,317	54.7%
Employed by a not-for-profit, tax-exempt, or charitable organization	295	12.3%
A government employee	526	21.9%
Self-employed in a business, professional practice, or farm	234	9.7%
Working without pay in a family business or farm	15	0.6%
Don't know	18	0.7%
Refused	1	0.0%
Valid Total	2,406	100.0%
Missing - not currently employed	1,633	
Missing - don't know employment status	21	
Missing - under 12 years of age	822	
Total	4,882	

Table 31. Industry

What type of business or industry do you work in?	Persons in Respondent Households	
	Frequency	Percent
Accommodations & Food Services	129	5.4%
Agriculture, Forestry, Mining	29	1.2%
Business Services	86	3.6%
Communications	84	3.5%
Construction	120	5.0%
Educational Services	356	14.8%
Entertainment and Recreation	55	2.3%
Finance, Insurance, Real Estate	103	4.3%
Government Services	229	9.5%
Health Services	286	11.9%
Manufacturing	166	6.9%
Personal Services	95	3.9%
Professional Services	166	6.9%
Repair Services	55	2.3%
Retail Trade	169	7.0%
Transportation	61	2.5%
Utilities	20	0.8%
Wholesale Trade	24	1.0%
Computers/Software	19	0.8%
Landscaping	9	0.4%
Legal	6	0.2%
Aerospace	12	0.5%
Research	19	0.8%
Community and Social Services	27	1.1%
Delivery Services	4	0.2%
Engineering	9	0.4%
Art	7	0.3%
Military	11	0.5%
Protective Services	16	0.7%
Other	17	0.7%
Don't know	15	0.6%
Refused	2	0.1%
Valid Total	2,406	100.0%
Missing - not currently employed	1,633	
Missing - don't know employment status	21	
Missing - under 12 years of age	822	
Total	4,882	

Table 32. Occupation

What is your primary occupation?	Persons in Respondent Households	
	Frequency	Percent
Architecture and Engineering	100	4.2%
Arts, Design, Entertainment, Sports and Media	77	3.2%
Building and Grounds Cleaning and Maintenance	25	1.0%
Business and Financial Operations	134	5.6%
Community and Social Services	42	1.7%
Computers and Mathematics	88	3.7%
Construction	70	2.9%
Education, Training, and Libraries	233	9.7%
Farming, Fishing, and Forestry	7	0.3%
Food Preparation and Service	93	3.9%
Healthcare Practitioners and Technical	159	6.6%
Healthcare Support	83	3.4%
Installation, Maintenance, and Repair	97	4.0%
Legal	40	1.7%
Life, Physical, and Social Sciences	31	1.3%
Management	230	9.6%
Military	33	1.4%
Office and Administrative Support	288	12.0%
Personal Care and Service	81	3.4%
Production	38	1.6%
Protective Service	66	2.7%
Sales	203	8.4%
Transportation	50	2.1%
Scientist/Researcher	24	1.0%
Professional Specialty (Carpenter/Electrician)	32	1.3%
Technician/Technical Support	30	1.2%
Student	7	0.3%
Other	14	0.6%
Don't know	28	1.2%
Refused	3	0.1%
Valid Total	2,406	100.0%
Missing – not currently employed	1,633	
Missing – don't know employment status	21	
Missing – under 12 years of age	822	
Total	4,882	

Table 33. School Attendance

Do you attend school?	Persons in Respondent Households	
	Frequency	Percent
Yes	1,476	30.2%
No	3,375	69.1%
Don't know	31	0.6%
Total	4,882	100.0%

Table 34. Full-time or Part-time School Attendance

Do you attend full-time or part-time?	Persons in Respondent Households	
	Frequency	Percent
Yes	1,167	79.1%
No	306	20.7%
Don't know	3	0.2%
Valid Total	1,476	100.0%
Missing - not attending school	3,406	
Total	4,882	

Table 35. Type of School

What level of school do you attend?	Persons in Respondent Households	
	Frequency	Percent
Day Care	60	4.1%
Nursery School/Preschool	67	4.5%
Elementary/Middle School (Grades K-8)	619	41.9%
High School (Grades 9-12)	274	18.6%
College undergraduate (freshman to senior)	276	18.7%
Graduate or professional school (dental, law, etc.)	116	7.9%
Vocational or trade school	30	2.0%
Home schooling/Independent Study	11	0.7%
Continuing education/Work related	5	0.3%
Community college	3	0.2%
Private/charter school	3	0.2%
Adult education	3	0.2%
Other	6	0.4%
Don't know	3	0.2%
Valid Total	1,476	100.0%
Missing - not attending school	3,406	
Total	4,882	

5. ACTIVITIES AND TRIPS

The following section summarizes the responses to the activity and trip questions asked in the retrieval interview (or obtained from the mailed-back diaries).

The option of mailing the survey back was offered, at the discretion of the interviewer, when a respondent was about to terminate the interview or was not cooperating because of the amount of time involved in conducting the interviews by phone. Mailed-back diaries were manually checked and entered into the CATI system. Respondents were called back if information was missing or if clarification was needed. Twenty-six percent (26%) of the completed household interviews were received by mail. Mailbacks increased the response from households with more than one person from 70% in the overall survey to 77% among mailback households. However, mailback households were more likely to be suburban homeowners with higher incomes. Overall, 45% of completed households are suburban, while 50% of mailback households are suburban. Seventy-six percent (76%) of completed households own their home, compared to 82% of mailback households. Thirty-three percent (33%) of completed households reported an annual household income of \$50,000 or more, while 41% of mailback households reported this income level.

The first day that households recorded activity information for the survey was September 21, 2000. The last day information was recorded was November 18, 2000. The following table shows the distribution of activity dates by calendar week.

Table 36. Activity Date by Calendar Week

Calendar Week	Persons in Respondent Households	
	Frequency	Percent
September 21 – 23, 2000	6	0.1%
September 25 – 30, 2000	594	12.2%
October 2 – 7, 2000	489	10.0%
October 9 – 14, 2000	599	12.3%
October 16 – 21, 2000	641	13.1%
October 23 – 28, 2000	764	15.6%
October 30 – November 4, 2000	908	18.6%
November 6 – November 11, 2000	666	13.6%
November 13 – November 18, 2000	215	4.4%
Total	4,882	100.0%

The following table lists the frequencies of activity dates by day of the week.

Table 37. Activity Date by Day of the Week

Day of Week	Persons in Respondent Households	
	Frequency	Percent
Monday	1,106	22.7%
Tuesday	859	17.6%
Wednesday	788	16.1%
Thursday	711	14.6%
Friday	849	17.4%
Saturday	569	11.7%
Total	4,882	100.0%

Table 38. Total Activities Reported

Activity Reported	Frequency	Percent
Driving, Riding, Walking, Biking, Flying	15,379	24.8%
Sleep	9,645	15.5%
Meals	8,553	13.8%
Work	2,867	4.6%
School	1,647	2.7%
Personal Activities	11,858	19.1%
Personal Business	1,983	3.2%
Personal Internet/E-mail	859	1.4%
Volunteer/Civic/Religious Activities	400	0.6%
Shopping	1,946	3.1%
Sick or Ill/Medical Appointment	406	0.7%
Recreation/Entertainment	4,375	7.0%
Pick-Up/Drop-Off Passenger	1,625	2.6%
Out of the Tucson area	35	0.1%
Don't know	525	0.8%
Refused	1	0.0%
Total	62,104	100.0%

Respondents were given the opportunity to report simultaneous activities, that is, they might be doing two or three activities at once (i.e., eating dinner while watching television). While most of the activities were carried out singly, there were reports of up to five activities carried out simultaneously. The following table gives the frequencies of single and multiple activities reported.

Table 39. Number of Simultaneous Activities Reported

Number of Simultaneous Activities Reported	Frequency	Percent
One	46,126	87.5%
Two	4,473	8.5%
Three	1,609	3.1%
Four	465	0.9%
Five	69	0.1%
Total	52,742	100.0%

Thus, an average of 12.7 activities was reported for each person and 29.9 activities for each household.

The following table shows the first activity reported.

Table 40. Activities Reported (1st Activity)

Activity Reported	Frequency	Percent
Driving, Riding, Walking, Biking, Flying	15,379	29.2%
Sleep	8,963	17.0%
Meals	6,408	12.1%
Work	2,738	5.2%
School	1,442	2.7%
Personal Activities	8,827	16.7%
Personal Business	1,574	3.0%
Personal Internet/E-mail	318	0.6%
Volunteer/Civic/Religious Activities	350	0.7%
Shopping	1,890	3.6%
Sick or Ill/Medical Appointment	365	0.7%
Recreation/Entertainment	2,333	4.4%
Pick-Up/Drop-Off Passenger	1,594	3.0%
Out of the Tucson area	35	0.1%
Don't know	525	1.0%
Refused	1	0.0%
Total	52,742	100.0%

Tables 41 through 44 list the activities for cases where multiple activities were reported simultaneously.

Table 41. Activities Reported (2nd Activity)

Activity Reported	Frequency	Percent
Sleep	245	3.7%
Meals	1,781	26.9%
Work	94	1.4%
School	142	2.1%
Personal Activities	2,657	40.2%
Personal Business	210	3.2%
Personal Internet/E-mail	188	2.8%
Volunteer/Civic/Religious Activities	29	0.4%
Shopping	48	0.7%
Sick or Ill/Medical Appointment	20	0.3%
Recreation/Entertainment	1,178	17.8%
Pick-Up/Drop-Off Passenger	24	0.4%
Total	6,616	100.0%

Table 42. Activities Reported (3rd Activity)

Activity Reported	Frequency	Percent
Sleep	270	12.6%
Meals	315	14.7%
Work	33	1.5%
School	46	2.1%
Personal Activities	350	16.3%
Personal Business	154	7.2%
Personal Internet/E-mail	240	11.2%
Volunteer/Civic/Religious Activities	10	0.5%
Shopping	6	0.3%
Sick or Ill/Medical Appointment	18	0.8%
Recreation/Entertainment	695	32.4%
Pick-Up/Drop-Off Passenger	6	0.3%
Total	2,143	100.0%

Table 43. Activities Reported (4th Activity)

Activity Reported	Frequency	Percent
Sleep	156	29.2%
Meals	48	9.0%
Work	2	0.4%
School	16	3.0%
Personal Activities	24	4.5%
Personal Business	43	8.1%
Personal Internet/E-mail	95	17.8%
Volunteer/Civic/Religious Activities	7	1.3%
Shopping	1	0.2%
Sick or Ill/Medical Appointment	3	0.6%
Recreation/Entertainment	138	25.8%
Pick-Up/Drop-Off Passenger	1	0.2%
Total	534	100.0%

Table 44. Activities Reported (5th Activity)

Activity Reported	Frequency	Percent
Sleep	11	15.9%
Meals	1	1.4%
School	1	1.4%
Personal Business	2	2.9%
Personal Internet/E-mail	18	26.1%
Volunteer/Civic/Religious Activities	4	5.8%
Shopping	1	1.4%
Recreation/Entertainment	31	44.9%
Total	69	100.0%

5A. Travel

A total of 15,379 activities were reported as travel (driving, riding, walking, biking, flying activities - trips).

Table 45. Reported Activity is Travel (Drive, Ride, Walk, etc.) – Number of Transportation Types

Number of Transportation Types	Frequency	Percent
One	14,903	96.9%
Two	399	2.6%
Three	77	0.5%
Total	15,379	100.0%

Table 46. Reported Activity is Travel (Drive, Ride, Walk, etc.) – 1st Mode

Mode	Frequency	Percent
Car, van, truck	13,511	87.9%
Bicycle	209	1.4%
Walk	1,033	6.7%
Motorcycle or moped	29	0.2%
Train	3	0.0%
Taxi	8	0.1%
Bus/School Bus	503	3.3%
Airplane	5	0.0%
Golf cart	19	0.1%
Skateboard	9	0.1%
Shuttle	2	0.0%
Wheelchair	3	0.0%
Gas vehicle	2	0.0%
Electric vehicle	1	0.0%
Scooter	6	0.0%
Hayride	2	0.0%
RV	4	0.0%
Other	5	0.0%
Don't know	25	0.2%
Total	15,379	100.0%

Respondents that used a car, van, or truck for their travel were asked if they were the driver of the vehicle or a passenger, how many people were in the vehicle, and, if the vehicle used was from their household, which vehicle was used.

Table 47. Car/Van/Truck Used for Travel – Driver or Passenger - 1st Mode

Were you the driver or a passenger?	Frequency	Percent
Driver	9,451	70.0%
Passenger	4,029	29.8%
Unknown (originally an other answer)	17	0.1%
Don't know	14	0.1%
Total	13,511	100.0%

Table 48. Car/Van/Truck Used for Travel – Number of People in the Vehicle - 1st Mode

How many people were in the vehicle?	Frequency	Percent
One	6,702	49.6%
Two	3,622	26.8%
Three	1,693	12.5%
Four	912	6.8%
Five	302	2.2%
Six	192	1.4%
Seven	22	0.2%
Eight	2	0.0%
Nine	3	0.0%
Ten	1	0.0%
Eleven	7	0.0%
Twelve	3	0.0%
Unknown (originally an other answer)	17	0.1%
Don't know	32	0.2%
Refused	1	0.0%
Total	13,511	100.0%

Table 49. Car/Van/Truck Used for Travel – Household Vehicle - 1st Mode

Was the vehicle used from your household?	Frequency	Percent
Yes	12,648	93.6%
No	770	5.7%
Unknown (originally an other answer)	17	0.1%
Don't know	76	0.6%
Total	13,511	100.0%

Respondents that used a bus for their travel were asked to specify the type of bus used.

Table 50. Bus Used for Travel – Type of Bus - 1st Mode

Type of Bus	Frequency	Percent
Sun Tran	110	21.9%
Airport Shuttle	1	0.2%
Employer Shuttle Bus	4	0.8%
School Bus	332	66.0%
Van Tran of Tucson	2	0.4%
Cozy Casa Day Care Van	3	0.6%
Park and Recreation Bus	2	0.4%
University of Arizona Shuttle	2	0.4%
Handi Car	4	0.8%
City/Public Bus	1	0.2%
Unknown (originally an other answer)	35	7.0%
Other	4	0.8%
Don't know	3	0.6%
Total	503	100.0%

Table 51. Reported Activity is Travel (Drive, Ride, Walk, etc.) – 2nd Mode

Mode	Frequency	Percent
Car, van, truck	87	18.3%
Bicycle	10	2.1%
Walk	162	34.0%
Motorcycle or moped	5	1.1%
Taxi	1	0.2%
Bus/School Bus	190	39.9%
Airplane	6	1.3%
Shuttle	13	2.7%
Electric vehicle	1	0.2%
Hayride	1	0.2%
Total	476	100.0%

Table 52. Car/Van/Truck Used for Travel – Driver or Passenger – 2nd Mode

Were you the driver or a passenger?	Frequency	Percent
Driver	52	59.8%
Passenger	33	37.9%
Don't know	2	2.3%
Total	87	100.0%

Table 53. Car/Van/Truck Used for Travel – Number of People in the Vehicle – 2nd Mode

How many people were in the vehicle?	Frequency	Percent
One	42	48.3%
Two	24	27.6%
Three	10	11.5%
Four	4	4.6%
Five	1	1.1%
Six	3	3.4%
Ten	1	1.1%
Don't know	2	2.3%

Table 54. Car/Van/Truck Used for Travel – Household Vehicle – 2nd Mode

Was the vehicle used from your household?	Frequency	Percent
Yes	70	80.5%
No	13	14.9%
Don't know	4	4.6%
Total	87	100.0%

Table 55. Bus Used for Travel – Type of Bus – 2nd Mode

Type of Bus	Frequency	Percent
Sun Tran	84	44.2%
Airport Shuttle	2	1.1%
Employer Shuttle Bus	2	1.1%
School Bus	85	44.7%
Park and Recreation Bus	2	1.1%
University of Arizona Shuttle	3	1.6%
City/Public Bus	2	1.1%
Unknown (originally an other answer)	7	3.7%
Don't know	3	1.6%
Total	190	100.0%

Table 56. Reported Activity is Travel (Drive, Ride, Walk, etc.) – 3rd Mode

Mode	Frequency	Percent
Car, van, truck	23	29.9%
Bicycle	2	2.6%
Walk	50	64.9%
Bus/School Bus	1	1.3%
Wheelchair	1	1.3%
Total	77	100.0%

Table 57. Car/Van/Truck Used for Travel – Driver or Passenger – 3rd Mode

Were you the driver or a passenger?	Frequency	Percent
Driver	9	39.1%
Passenger	14	60.9%
Total	23	100.0%

Table 58. Car/Van/Truck Used for Travel – Number of People in the Vehicle – 3rd Mode

How many people were in the vehicle?	Frequency	Percent
One	7	30.4%
Two	5	21.7%
Three	2	8.7%
Four	2	8.7%
Five	5	21.7%
Six	1	4.3%
Don't know	1	4.3%
Total	23	100.0%

Table 59. Car/Van/Truck Used for Travel – Household Vehicle – 3rd Mode

Was the vehicle used from your household?	Frequency	Percent
Yes	19	82.6%
No	4	17.4%

Table 60. Bus Used for Travel - Type of Bus - 3rd Mode

Type of Bus	Frequency	Percent
School Bus	1	100.0%
Total	1	100.0%

Respondents who traveled were asked if they stopped anywhere along the way, other than to change types of transportation. (Note: If a respondent ended the day with a trip, they were not asked if they stopped anywhere along the way.) They were also asked the activity purpose for which they stopped, the address/location of the stop, the number of minutes they stopped, and the transportation mode they were using when they stopped.

Table 61. Stop Activities - 1st Stop (All Mentions)

Activity	Frequency	Percent
Sleep	1	0.0%
Meals	359	13.5%
Work	39	1.5%
School	8	0.3%
Personal Activities	127	4.8%
Personal Business	482	18.2%
Personal Internet/E-mail	1	0.0%
Volunteer/Civic/Religious	19	0.7%
Shopping	580	21.9%
Sick or Ill/Medical Appointment	27	1.0%
Recreation/Entertainment	59	2.2%
Pick-Up/Drop-Off Passenger	929	35.0%
Don't know	22	0.8%
Total	2,653	100.0%

Table 62. Stop Activities - 1st Stop (1st Mention)

Activity	Frequency	Percent
Sleep	1	0.0%
Meals	356	13.7%
Work	38	1.5%
School	7	0.3%
Personal Activities	122	4.7%
Personal Business	464	17.8%
Personal Internet/E-mail	1	0.0%
Volunteer/Civic/Religious	17	0.7%
Shopping	567	21.8%
Sick or Ill/Medical Appointment	27	1.0%
Recreation/Entertainment	57	2.2%
Pick-Up/Drop-Off Passenger	926	35.5%
Don't know	22	0.8%
Total	2,605	100.0%

Table 63. Stop Activities – 1st Stop (2nd Mention)

Activity	Frequency	Percent
Meals	3	6.8%
Work	1	2.3%
School	1	2.3%
Personal Activities	5	11.4%
Personal Business	17	38.6%
Volunteer/Civic/Religious	2	4.5%
Shopping	11	25.0%
Recreation/Entertainment	2	4.5%
Pick-Up/Drop-Off Passenger	2	4.5%
Total	44	100.0%

Table 64. Stop Activities – 1st Stop (3rd Mention)

Activity	Frequency	Percent
Personal Business	1	25.0%
Shopping	2	50.0%
Pick-Up/Drop-Off Passenger	1	25.0%
Total	4	100.0%

Table 65. Mode Used While Stopping (1st Stop)

Mode	Frequency	Percent
Car, van, truck	2,497	95.9%
Bicycle	15	0.6%
Walk	65	2.5%
Motorcycle or moped	4	0.2%
Train	1	0.0%
Taxi	1	0.0%
Bus/School Bus	15	0.6%
Skateboard	2	0.0%
Scooter	1	0.0%
RV	1	0.0%
Don't know	3	0.1%
Total	2,605	100.0%

Some respondents made more than one stop during their trip. The following tables detail the stop activities after the first stop.

Table 66. Stop Activities – Multiple Stops (All Mentions)

Activity	Frequency	Percent
Sleep	1	0.2%
Meals	49	8.5%
Work	16	2.8%
School	4	0.7%
Personal Activities	33	5.7%
Personal Business	139	24.0%
Personal Internet/E-mail	1	0.2%
Volunteer/Civic/Religious	6	1.0%
Shopping	187	32.4%
Sick or Ill/Medical Appointment	2	0.3%
Recreation/Entertainment	11	1.9%
Pick-Up/Drop-Off Passenger	128	22.1%
Don't know	1	0.2%
Total	578	100.0%

Table 67. Stop Activities – Multiple Stops (1st Mention)

Activity	Frequency	Percent
Sleep	1	0.2%
Meals	46	8.1%
Work	16	2.8%
School	4	0.7%
Personal Activities	31	5.5%
Personal Business	137	24.1%
Personal Internet/E-mail	1	0.2%
Volunteer/Civic/Religious	6	1.1%
Shopping	185	32.6%
Sick or Ill/Medical Appointment	2	0.4%
Recreation/Entertainment	11	1.9%
Pick-Up/Drop-Off Passenger	127	22.4%
Don't know	1	0.2%
Total	568	100.0%

Table 68. Stop Activities – Multiple Stops (2nd Mention)

Activity	Frequency	Percent
Meals	3	37.5%
Personal Activities	1	12.5%
Personal Business	1	12.5%
Shopping	2	25.0%
Pick-Up/Drop-Off Passenger	1	12.5%
Total	8	100.0%

Table 69. Stop Activities – Multiple Stops (3rd Mention)

Activity	Frequency	Percent
Personal Activities	1	50.0%
Personal Business	1	50.0%
Total	2	100.0%

Table 70. Mode Used While Stopping (Multiple Stops)

Mode	Frequency	Percent
Car, van, truck	542	95.4%
Bicycle	1	0.2%
Walk	17	3.0%
Motorcycle or moped	2	0.4%
Bus/School Bus	4	0.7%
Don't know	2	0.4%
Total	568	100.0%

The following table summarizes all of the stop activities.

Table 71. Stop Activities – All Stops (All Mentions)

Activity	Frequency	Percent
Sleep	2	0.1%
Meals	408	12.6%
Work	55	1.7%
School	12	0.4%
Personal Activities	160	5.0%
Personal Business	621	19.2%
Personal Internet/E-mail	2	0.1%
Volunteer/Civic/Religious	25	0.8%
Shopping	767	23.7%
Sick or Ill/Medical Appointment	29	0.9%
Recreation/Entertainment	70	2.2%
Pick-Up/Drop-Off Passenger	1,057	32.7%
Don't know	23	0.7%
Total	3,231	100.0%

Trips are often defined as one-way journeys between an origin and a destination. However, people do not think of them that way. Consequently, stops made for short activities along the way are often not reported if the person is questioned about trips only. Also, changes in mode are often perceived as part of the total trip. This survey approached the problem differently, and the total number of one-way journeys between an origin and destination is calculated from information about travel activities, stops, and changes in mode. The following table shows the calculated number of trip segments.

Table 72. Combined Trip Segments

Trip Segment	Total
Travel activities	15,379
Stops	3,173
Mode changes	553
Total trip segments	19,105
Total trip segments per person	3.9
Total trip segments per household	9.2

Thus, there is an average of 3.9 trip segments per person and 9.2 per household.

Table 73. Total Trip Segments by Mode

Mode	Frequency	Percent
Car, van, truck	16,660	87.2%
Bicycle	237	1.2%
Walk	1,327	6.9%
Motorcycle or moped	40	0.2%
Train	4	0.0%
Taxi	10	0.1%
Bus/School Bus	713	3.7%
Airplane	11	0.1%
Golf cart	19	0.1%
Skateboard	11	0.1%
Shuttle	15	0.1%
Wheelchair	4	0.0%
Gas vehicle	2	0.0%
Electric vehicle	2	0.0%
Scooter	7	0.0%
Hayride	3	0.0%
RV	5	0.0%
Other	5	0.0%
Don't know	30	0.2%
Total	19,105	100.0%

5B. Internet Activity

A series of questions was asked about Internet activity at home. Respondents who did not report personal Internet use as an activity were asked, "At home, did you use the Internet or a modem during the day?" The results are presented in the table below.

Table 74. Internet Use

At home, did you use the Internet or a modem during the day?	Persons in Respondent Households	
	Frequency	Percent
Yes	536	12.7%
No	2,471	58.6%
Don't know	1,199	28.4%
Refused	14	0.3%
Valid Total	4,220	100.0%
Missing - reported Internet use as an activity	662	
Total	4,882	

The Internet use questions were not printed in the diaries, so it is important to note that 92% of the "don't know" responses to this question were from mailed back diaries.

Respondents who reported personal Internet use as an activity and respondents who indicated use of the Internet or a modem at home were asked if their Internet use or modem use was for work or personal use.

Table 75. Business or Personal Internet Use

Was your Internet or modem use for . . . ?	Persons in Respondent Households	
	Frequency	Percent
Work	51	4.3%
Personal Use	734	61.3%
Both	177	14.8%
Don't know	235	19.6%
Refused	1	0.1%
Valid Total	1,198	100.0%
Missing - no Internet or modem use reported	3,684	
Total	4,882	

Respondents who reported personal Internet use were asked for what purposes the Internet was used.

Table 76. Purposes of Internet Use (1st Mention)

Your personal use was for . . . ?	Persons in Respondent Households	
	Frequency	Percent
Browsing/Searching/Information seeking	272	29.9%
Browsing/Shopping	18	2.0%
Entertainment/games	64	7.0%
Social (e-mail/chat rooms)	483	53.0%
Banking/Financial	24	2.6%
Travel browsing/reservations	4	0.4%
Studying or on-line courses for school	32	3.5%
Multimedia (CDs/videos/books)	8	0.9%
Don't know	6	0.7%
Valid Total	911	100.0%
Missing - no Internet or modem use reported	3,684	
Missing - no personal Internet use reported	287	
Total	4,882	

Table 77. Purposes of Internet Use (2nd Mention)

Your personal use was for . . . ?	Persons in Respondent Households	
	Frequency	Percent
Browsing/Searching/Information seeking	128	28.4%
Browsing/Shopping	43	9.6%
Entertainment/games	59	13.1%
Social (e-mail/chat rooms)	151	33.6%
Banking/Financial	33	7.3%
Travel browsing/reservations	9	2.0%
Studying or on-line courses for school	16	3.6%
Multimedia (CDs/videos/books)	11	2.4%
Total	450	100.0%

Table 78. Purposes of Internet Use (3rd Mention)

Your personal use was for . . . ?	Persons in Respondent Households	
	Frequency	Percent
Browsing/Searching/Information seeking	20	14.4%
Browsing/Shopping	13	9.4%
Entertainment/games	23	16.5%
Social (e-mail/chat rooms)	41	29.5%
Banking/Financial	20	14.4%
Travel browsing/reservations	4	2.9%
Studying or on-line courses for school	11	7.9%
Multimedia (CDs/videos/books)	7	5.0%
Total	139	100.0%

Table 79. Purposes of Internet Use (4th Mention)

Your personal use was for . . . ?	Persons in Respondent Households	
	Frequency	Percent
Browsing/Searching/Information seeking	1	2.0%
Browsing/Shopping	3	6.1%
Entertainment/games	3	6.1%
Social (e-mail/chat rooms)	12	24.5%
Banking/Financial	8	16.3%
Travel browsing/reservations	4	8.2%
Studying or on-line courses for school	5	10.2%
Multimedia (CDs/videos/books)	13	26.5%
Total	49	100.0%

Table 80. Purposes of Internet Use (5th Mention)

Your personal use was for . . . ?	Persons in Respondent Households	
	Frequency	Percent
Entertainment/games	1	6.7%
Social (e-mail/chat rooms)	1	6.7%
Banking/Financial	4	26.7%
Travel browsing/reservations	4	26.7%
Studying or on-line courses for school	3	20.0%
Multimedia (CDs/videos/books)	2	13.3%
Total	15	100.0%

Table 81. Purposes of Internet Use (All Mentions)

Your personal use was for . . . ?	Persons in Respondent Households	
	Frequency	Percent
Browsing/Searching/Information seeking	421	46.2%
Browsing/Shopping	77	8.5%
Entertainment/games	150	16.5%
Social (e-mail/chat rooms)	688	75.5%
Banking/Financial	89	9.8%
Travel browsing/reservations	25	2.7%
Studying or on-line courses for school	67	7.4%
Multimedia (CDs/videos/books)	41	4.5%
Don't know	6	0.7%
Total	911	100.0%

6. GEOCODING

MapInfo's MapMarker Plus geocoding software was utilized to geocode the locations of all households and of all reported activities. The following table shows the levels of geocoding achieved for the home locations of the 2,076 households.

Table 82. Geocoding Results for Home Locations

Home Locations	Frequency	Percent
Address/Street level	2,069	99.7%
Intersection level	7	0.3%
Total	2,076	100.0%

Table 83. Geocoding Results for Activity Locations

Activity Locations	Frequency	Percent
Address/Street level	20,540	89.0%
Intersection level	1,886	8.2%
Zip centroid level	267	1.2%
Non-geocodable	394	1.7%
Valid Total	23,087	100.0%
Did not change location	14,276	
Travel activities (no location)	15,379	
Total activities	52,742	

Appendix B provides a guide to the geocoding result codes in the data file.

7. DATA COMPUTER CHECKS

MORPACE cleaned the data and performed a series of checks on the data. This section outlines the final results.

Please note that the overwhelming majority of data corrections made were necessary because interviewers needed to back-up within an interview. Although respondents are provided with an activity diary to record all of their activities and travel throughout the 24-hour assigned activity period, some respondents relate their activities to the interviewer in a non-sequential manner. The activity diary and the CATI prompt the respondent to report all activities in a chronological fashion, but sometimes respondents do not use the diary and recall their daily activities out of order. The CATI allows the interviewer to back-up and correct the information, but the answers to questions that were already asked then need to be cleaned up.

All phone numbers were verified during the recruit interview (PHONE=01). All household locations were confirmed as Pima or Pinal county (COUNTY2=01 or 02). Households indicating Pinal county (COUNTY2=02) were confirmed in the 85653 zip code (ZIP_VER=85653).

The mailing information is not missing for any of the observations. Any households that requested the survey materials be sent to anything other than a home address (ADD_TYPE <>01) were also asked for a home address.

No respondent was recruited for a Sunday activity day and no respondent completed the activity diary on a Sunday, in accordance with the study specifications.

All households with four members were asked if they would prefer a \$20.00 check or donation as an incentive for participating in the survey. All five members households were asked if they would prefer a \$30.00 check or donation. Two four-member households that were originally eligible for an incentive had household members removed, which lowered the number of household members to below the incentive requirement of four household members. These households were still provided with the original incentive amount because they were promised an incentive for participating during the recruit interview. However, the household's response to the incentive question was recoded to reflect the situation (INCENT20=05). Two households that added household members were also recoded for the incentive question (INCENT20=04). These households did not receive an incentive, although they had four members, because an incentive was never offered during the recruit interview.

All households were asked to report the number of vehicles available for use by members of the household (VEHICLES). The year (CARYEAR), as well as the make and model (CARTYPE), of each vehicle was recorded.

All households were asked if they own or rent their home (HOME_OWN), in what type of home they live (HOME_TYPE), and how many months per year they reside at the home (PRIMARY).

All households were asked to report the household's annual income (INCOME). Only households with an annual income of \$30,000 or above (INCOME=01) were asked the higher income question (INC_OVER30), while households with an annual income below \$30,000 (INCOME=02) were asked the lower income question (INC_LESS30).

All households were asked to report the number of working fax machines (FAX) at home, as well as whether they have access to e-mail (INTERNETA) and/or the Internet (INTERNETB).

No persons under the age of 12 were asked driving frequency (DRIVE). All persons were asked gender (GENDER), age (AGE), frequency of public transportation use (TRANSIT), and racial/ethnic background (RACE). (Note: Gender was recorded by observation when speaking to the person.)

Only persons over the age of 11 (or persons refusing to indicate age) were asked if they work (JOB). Only persons that do not work (JOB=02) that are at least 40 years of age (or refused to indicate age) were asked if they are retired (RETIRED). Only persons that work (JOB=01) were asked the follow-up work information questions (JOB_NUM, JOB_TIME, JOB_DAYA, JOB_DAYB, JOB_DROP1, JOB_DROP2, JOB_SUB, JOB_FLEX, JOB_COMP, JOB_INDUST, and JOB_OCC). Only persons that typically drop off a minor on their way to work (JOB_DROP1=01) were asked where they drop off a minor (JOB_DROP2).

Only persons who attend school (SCHOOL=01) were asked the follow-up school information questions (SCH_TIME and SCH_TYPE).

Each time an activity took place at a different location, the next activity was correctly reported as a trip (ACTIVITY=01).

Each time a trip was reported (ACTIVITY=01), the respondent was asked the number of transportation types used for the trip (TRAN_NUM) and the mode of each of these (TRAN_TYPE) was recorded.

Each time a trip was taken using a car, van, or truck (TRAN_TYPE=01), the following questions were asked: was the respondent the driver or a passenger (VEH_DP), how many people were in the vehicle (VEH_PEOPLE), and was the vehicle used from the household (VEH_HOUSE). If the vehicle used was from the household (VEH_HOUSE=01), which household vehicle was used (VEH_USED) was asked.

Some transportation types that were recorded as “other” (TRAN_TYPE=996) were recoded into an existing code by MORPACE’s coding department. However, responses recoded as car, van, or truck (TRAN_TYPE=01) after the interview did not go through the follow-up questions for this vehicle type. Therefore, MORPACE answered these questions with special codes for this type of situation (VEH_DP=03, VEH_PEOPLE=91, and VEH_HOUSE=03). Responses recoded as bus (TRAN_TYPE=07) were not asked the follow-up bus question (BUS_TYPE) during the interview. Therefore, this question was also filled with a special code (BUS_TYPE=991).

Each time a trip was taken (ACTIVITY=01), the respondent was asked if they stopped anywhere along the way (STOPA). Follow-up questions, including the type of transportation being used when they stopped (TRAN_STOP), the number of minutes the stop took (STOP_MIN), and the location of the stop were asked for all stops (STOPA=01). Respondents who stopped were asked if they stopped anywhere else (STOPB) until they said no (STOPB=02). One exception that should be noted is the rare situation where a respondent ended the day with a trip. If the last activity of the day was a trip (ACTIVITY=01), the stop questions were not asked.

Each time a trip was taken (ACTIVITY=01), the location questions (name, type, address, city, state, zip, cross streets, and so forth) were not asked.

There are 4,882 end times of 3:00 am, which corresponds to the number of respondents.

Persons who did not report personal Internet use as an activity (ACTIVITY<>08) were asked if they used the Internet or a modem at home during the day (INET1). Persons who reported Internet use as an activity (ACTIVITY=08) and persons who reported using the Internet or a modem at home during their activity period (INET1=01) were asked if their Internet or modem use was for personal use (INET2). Persons who used the Internet for personal use (INET2=02 or 03) were asked for what purpose the Internet was used (INET3).

8. CONCLUSIONS

The results of this review of the Tucson Household Travel Survey survey process and data results are positive.

The sample is generally representative and missing data (refused or don’t know) for demographic variables is as follows:

- Income, 6.3% (above or below \$30,000) and 13.0% for income range increments
- Age, 1.7%
- Ethnic/racial background, 1.1%
- Number of jobs, 1.0%
- Number of days worked per week – outside the home 1.3%, at home 3.7%
- Drop off minor on the way to work, 2.1%
- Employer subsidy of public transportation, 11.9%
- Occupation, 1.3%
- For all other demographic variables, less than 1%
- For activities and transportation mode, less than 1%

An average of 12.7 activities per person and 29.9 activities per household was reported. There is an average of 3.9 trip segments per person and 9.2 per household.

Geocoding of activity locations to address street level is 89.0% and geocoding to street intersection is an additional 8.2%, for a total rate of 97.1%. This ratio excludes activities that occurred at the same location and includes out of region locations.