

CLATSOP COUNTY SUMMARY OF FINDINGS

I Executive Summary

Introduction

The purpose of the 1996 Oregon Travel Behavior Survey is to provide information suitable for gaining an in-depth understanding of the activity and travel behavior of both households in non-metropolitan areas and the individuals within those households. The sampling approach used was designed to ensure that representative statewide data were obtained.

The 1996 Oregon Travel Behavior Survey was conducted under the auspices of the Oregon Department of Transportation. This survey relied on the willingness of area residents to complete diary records of their daily travel. Recruitment of households was conducted through a "recruitment interview" in which respondents were informed of the survey, its purpose and the respondent's obligation to complete diaries. Data on households and household members were also collected during the recruitment interview.

Participating households were assigned a "2-day travel period", which typically occurred 10 days after recruitment. Household members were asked to record travel information in their diaries for the specified 48-hour period. Immediately after the assigned date, households were contacted to retrieve the diary information.

The survey consisted of a scientifically formulated sample design, appropriate instruments for data collection, a package of written materials to communicate with survey respondents, a toll-free survey hotline, and data collection, processing and reporting procedures that comported to standards of the Council of American Survey Research Organizations (CASRO).

Data collection of Clatsop County was conducted from April to November 1996. Of the 611 households that were recruited to participate in the study, 342 completed surveys. The total number of activities reported was 21,707, and the total number of person trips was 5,440. These totals translate into an average of 63.47 activities and 15.91 person trips per household for the two-day period. As expected, trips rates were shown to increase with respect to household size.

Average Person Trips Per Day

- One-person households averaged 3.20 trips per day,
- Two-person households averaged 7.00 trips per day,
- Three-person households averaged 10.81 trips per day,
- Four-person households averaged 15.00 trips per day,
- Five-person households averaged 17.80 trips per day,
- Six-person households averaged 21.90 trips per day, and
- Seven-or-more-person households averaged 27.67 trips per day.

The average rate for all households was roughly eight (8) person trips per day.

Summary of Methods

The accompanying "Technical Memorandum" describes the survey methodology in detail.

II Sampling and Response

Sample Design

The universe consists of households in Clatsop County. The household count for the study area was 13,473 households. It was determined using projections of annual growth rates from 1994 and/or 1995 commercial estimates. For purposes of the survey, a household was defined as “all persons currently living in the same dwelling who typically share meals together as well as share at least a part of their income.”

The Oregon Travel Behavior Survey used a random sample of telephone numbers in the study area. A random sample is one in which the probability, or relative chance, that any given household will be included in the sample is the same for all households in the universe. The sampling frame for the Oregon Travel Behavior Survey consisted of listed and unlisted telephone numbers for Clatsop County drawn in proportion to their distribution within the county. Due to the nature of the sampling frame requested in the survey proposal, households without telephones were excluded from the sample.

The Clatsop County sample includes the city of Astoria and the adjacent (less than 7 miles from city center) communities of Seaside, Warrenton, and Hammond. These communities together are defined by zip codes 97103, 97138, 97146, and 97121. Combined, this sample includes 96% of the county’s households, within a small contiguous geographic area.

Response Rate

The Oregon Travel Behavior Survey used a two-stage sampling process (household recruitment and household retrieval). In such a case, response rates for recruitment and retrieval stages are reported independently, and then an overall response rate is reported by multiplying the two rates.

The **recruitment rate** is calculated using the following formula:

$$\text{Recruitment rate} = \frac{\text{Number of Recruited Households}}{\text{Number of Eligible Households in Sample}}$$

The number of recruited households is known - 611 households. The number of eligible households in the sample is calculated from the dispositions recorded for each sample piece. Contact attempts yielded three types of sample dispositions: (1) Eligible Sample, (2) Ineligible Sample, and (3) Eligibility Unknown Sample (see Table II-1). In estimating the eligible households, the number of eligible sample units is combined with a pro-rated number of eligibility unknown sample units. The pro-rated number is determined by totaling the number of eligible and ineligible sample, and then identifying the portion of the total comprised by eligible or ineligible sample. The number of eligible households is then calculated by adding the proportion of unknown sample (63%) to the total number of recruited households.

Recruitment Rate Calculation		
	Calculation	Total/ Percent
Number of Recruited Households		611
Total Number of Eligible and Ineligible Sample	908 + 536	1,444
Proportion of Eligible Sample	908 / 1,444	63%
Proportion of Ineligible Sample	536 / 1,444	37%
Number of Eligible Households	908 + 383	1,291
Recruitment Rate	611 / 1,291	47%

**Table II-1
Final Sample Dispositions (n=2,051)**

Dispositions	Frequency	Percent	Total Number and Percent
Eligible Sample			44.2%
Recruited	611	29.7	
Second Refusal	176	8.6	
Terminated in middle of interview	72	3.5	
Over Quota	49	2.4	
			908
Ineligible Sample			26.1%
Disconnected Number	308	15.0	
Deaf/Language	11	.5	
Business/Government	151	7.4	
Computer/Fax	39	1.9	
Non-Qualified	27	1.3	
			536
Eligibility Unknown Sample			29.5%
First Refusal	299	14.6	
No Answer	146	7.1	
Busy	9	.4	
Answering Machines	89	4.3	
Call Back Appointments/Requests	65	3.1	
			608
Total Sample Pieces	2,051	100.0	

The **completion rate** is the rate at which recruited households complete the survey process. It is a measure of sample attrition, which is one determinant of sample bias. This rate is calculated by dividing the total number of completed surveys (342) by the total number of recruited households (611). A completion rate of 56% was obtained. The **Overall Response Rate** is calculated by multiplying the recruitment rate (47%) by the completion rate (56%) for a rate of 26%.

The final day-of-week distribution is displayed in Table II-2. A fairly even distribution was obtained across each day of the week. All weekend travel was recorded in conjunction with a weekday (Friday/Saturday and Sunday/Monday) at the client's request.

**Table II-2
Travel Day of Week Distribution
(n=420)**

Travel Day Pairs	Percent
Monday/Tuesday	15.7%
Tuesday/Wednesday	16.5%
Wednesday/Thursday	19.6%
Thursday/Friday	16.9%
Friday/Saturday	15.9%
Saturday/Sunday	0.3%
Sunday/Monday	15.1%

Survey Validation

The objective of validation was to estimate the precision of the survey results and evaluate the reasonableness of the survey results. The survey validation involved comparing regional population and housing characteristics with the 1990 STF-3A Census data for Clatsop County for reasonableness. In 1990 Clatsop County had 33,301 residents in 25,135 households; the total number of housing units was 17,367 while the number of occupied housing units was 13,374. During the study, 611 households were recruited, and 342 actually completed the survey. The following three tables (II-3, II-4, and II-5) compare these Census data elements to the survey data.

Survey respondents reported higher household incomes than are reflected by the Census (Table II-3). Several factors account for this discrepancy. First, the survey contacted only telephone households, while the Census reached every household. Non-telephone households tend to have lower incomes than telephone households, and this bias is reflected in the data. Second, six years have passed since Census data were collected. Incomes tend to increase over time, and this trend is reflected in the data. Third, the unemployment rate of survey respondents was considerably lower than the county-wide rate reported in the Census (see Table IV-4). A higher percentage of employed persons would generate a higher level of income, and this condition is reflected in the data as well.

Household sizes correspond well with Census data (Table II-4). Still, a greater percentage of two-person households completed the survey than are represented by the Census. Also, a smaller percentage of large households completed the survey than are represented by Census data. The burden of collecting activity data over two days may have been too heavy for each member of a large household. Therefore, households with five or more members may be represented less by the survey than by the Census.

Percentages of surveyed housing units with one, two, and three vehicles correspond with Census findings (Table II-5). There is some divergence at the extremes, however. The Census reports a greater percentage of housing units with no vehicles. Potential respondents without vehicles may not have thought a travel survey was relevant to them. First refusals such as this were referred to a Refusal Specialist who attempted to demonstrate the survey's relevance to the respondent. Also, the survey reached only households with telephones. Households with no telephones may be more likely to have no vehicles, and this bias may be represented in the data. Finally, the survey reached more higher-income households than are represented by the Census, and these households are more likely to own vehicles.

**Table II-3
Household Income**

Income	Recruited Households (n=611)	Completed Households (n=342)	Census Data (n=13,473)
\$0-\$4,999	2.29%	2.34%	6.00%
\$5,000-\$9,999	3.76%	4.09%	11.95%
\$10,000-\$14,999	8.02%	9.06%	12.13%
\$15,000-\$19,999	7.86%	7.60%	10.20%
\$20,000-\$24,999	8.51%	8.48%	9.33%
\$25,000-\$29,999	6.38%	7.89%	8.19%
\$30,000-\$34,999	5.24%	3.22%	7.79%
\$35,000-\$39,999	5.89%	6.43%	6.98%
\$40,000-\$44,999	7.53%	5.14%	5.50%
\$45,000-\$49,999	7.20%	8.77%	5.05%
\$50,000-\$54,999	7.20%	9.06%	3.88%
\$55,000-\$59,999	3.44%	3.80%	3.31%
\$60,000-\$100,000	11.46%	10.82%	7.87%
\$100,000 or more	3.60%	3.80%	1.60%
Refused	11.62%	8.48%	--

**Table II-4
Household Size**

Persons per Household	Recruited Households (n=611)	Completed Households (n=342)	Census Data (n=13,473)
1 Person	24.06%	27.49%	27.89%
2 Persons	42.88%	46.78%	35.54%
3 Persons	12.60%	9.65%	14.39%
4 Persons	12.60%	9.36%	13.25%
5 Persons	5.56%	4.39%	6.58%
6 Persons	1.67%	1.46%	1.56%
7 or More Persons	0.65%	0.88%	0.80%
Refused	0.00%	0.00%	--

Table II-5
Vehicles available per Occupied Housing Unit

Vehicles Available	Recruited Households (n=611)	Completed Households (n=342)	Census Data (n=13,374)
None	3.44%	3.51%	8.98%
One	24.22%	26.32%	35.44%
Two	42.06%	42.98%	38.28%
Three	17.35%	16.37%	12.36%
Four	8.02%	6.43%	3.56%
Five or More	4.91%	4.39%	1.38%
Refused	0.00%	0.00%	--

III Household Characteristics

The following tables provide information about respondents' households. Where available, collected data is compared to Census Data.

**Table III-1
Household Size by Income (Completed Households=342)**

Income		HH Size							Total
		1	2	3	4	5	6	7+	
less than \$4,999	Count	6	2	0	0	0	0	0	8
	Row %	75.00%	25.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.0%
	Column %	6.38%	1.25%	0.00%	0.00%	0.00%	0.00%	0.00%	2.3%
\$5,000 to \$9,999	Count	12	2	0	0	0	0	0	14
	Row %	85.71%	14.29%	0.00%	0.00%	0.00%	0.00%	0.00%	100.0%
	Column %	12.77%	1.25%	0.00%	0.00%	0.00%	0.00%	0.00%	4.1%
\$10,000 to \$14,999	Count	15	14	1	1	0	0	0	31
	Row %	48.38%	45.16%	3.23%	3.23%	0.00%	0.00%	0.00%	100.0%
	Column %	15.96%	8.75%	3.03%	3.13%	0.00%	0.00%	0.00%	9.1%
\$15,000 to \$19,999	Count	10	12	2	1	0	1	0	26
	Row %	38.46%	46.15%	7.69%	3.85%	0.00%	3.85%	0.00%	100.0%
	Column %	10.64%	7.50%	6.06%	3.13%	0.00%	20.00%	0.00%	7.6%
\$20,000 to \$24,999	Count	9	15	2	2	0	1	0	29
	Row %	31.03%	51.72%	6.90%	6.90%	0.00%	3.45%	0.00%	100.0%
	Column %	9.58%	9.37%	6.06%	6.25%	0.00%	20.00%	0.00%	8.5%
\$25,000 to \$29,999	Count	11	10	2	2	2	0	0	27
	Row %	40.74%	37.03%	7.41%	7.41%	7.41%	0.00%	0.00%	100.0%
	Column %	11.70%	6.25%	6.06%	6.25%	13.33%	0.00%	0.00%	7.9%
\$30,000 to \$34,999	Count	1	4	3	0	1	0	2	11
	Row %	9.09%	36.37%	27.27%	0.00%	9.09%	0.00%	18.18%	100.0%
	Column %	1.06%	2.50%	9.09%	0.00%	6.67%	0.00%	66.67%	3.2%
\$35,000 to \$39,999	Count	5	8	7	0	2	0	0	22
	Row %	22.73%	36.36%	31.82%	0.00%	9.09%	0.00%	0.00%	100.0%
	Column %	5.32%	5.00%	21.22%	0.00%	13.33%	0.00%	0.00%	6.4%

(Table continues on next page)

**Table III-1 (Continued)
Household Size by Income (Completed Households=342)**

Income		HH Size							Total
		1	2	3	4	5	6	7+	
\$40,000 to \$44,999	Count	3	10	2	4	1	0	1	21
	Row %	14.29%	47.62%	9.52%	19.05%	4.76%	0.00%	4.76%	100.0%
	Column %	3.19%	6.25%	6.06%	12.50%	6.67%	0.00%	33.33%	6.1%
\$45,000 to \$49,999	Count	3	17	2	7	1	0	0	30
	Row %	10.00%	56.67%	6.67%	23.33%	3.33%	0.00%	0.00%	100.0%
	Column %	3.19%	10.63%	6.06%	21.87%	6.67%	0.00%	0.00%	8.8%
\$50,000 to \$54,999	Count	6	17	2	4	2	0	0	31
	Row %	19.36%	54.84%	6.45%	12.90%	6.45%	0.00%	0.00%	100.0%
	Column %	6.38%	10.63%	6.06%	12.50%	13.33%	0.00%	0.00%	9.1%
\$55,000 to \$59,999	Count	2	5	1	3	2	0	0	13
	Row %	15.38%	38.46%	7.70%	23.08%	15.28%	0.00%	0.00%	100.0%
	Column %	2.13%	3.12%	3.03%	9.37%	13.33%	0.00%	0.00%	3.8%
\$60,000 to \$100,000	Count	2	23	4	4	3	1	0	37
	Row %	5.41%	62.16%	10.81%	10.81%	8.11%	2.70%	0.00%	100.0%
	Column %	2.13%	14.38%	12.12%	12.50%	20.00%	20.00%	0.00%	10.8%
more than \$100,000	Count	1	6	2	2	1	1	0	13
	Row %	7.69%	46.15%	15.38%	15.38%	7.69%	7.69%	0.00%	100.0%
	Column %	1.06%	3.75%	6.06%	6.25%	6.67%	20.00%	0.00%	3.8%
Refused	Count	8	15	3	2	0	1	0	29
	Row %	27.59%	51.72%	10.34%	6.90%	0.00%	3.45%	0.00%	100.0%
	Column %	8.51%	9.37%	9.09%	6.25%	0.00%	20.00%	0.00%	8.5%
Total	Count	94	160	33	32	15	5	3	342
	Row %	27.48%	46.78%	9.65%	9.36%	4.39%	1.46%	0.88%	100%
	Column %	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

**Table III-2
Household Size by Number of Vehicles Available
(Completed Households=342)**

Vehicles	HH Size								Total
	1	2	3	4	5	6	7+		
None	Count	9	3	0	0	0	0	0	12
	Row %	75.00%	25.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.0%
	Column %	9.58%	1.87%	0.00%	0.00%	0.00%	0.00%	0.00%	3.5%
1	Count	61	24	3	1	1	0	0	90
	Row %	67.78%	26.67%	3.33%	1.11%	1.11%	0.00%	1.30%	100.0%
	Column %	64.89%	15.00%	9.09%	3.12%	6.67%	0.00%	33.33%	26.3%
2	Count	18	89	15	17	6	1	1	147
	Row %	12.25%	60.54%	10.20%	11.57%	4.08%	0.68%	0.68%	100.0%
	Column %	19.15%	55.63%	45.46%	53.12%	40.00%	20.00%	33.33%	43.0%
3	Count	4	27	9	9	3	2	2	56
	Row %	7.14%	48.22%	16.07%	16.07%	5.36%	3.57%	3.57%	100.0%
	Column %	4.26%	16.88%	27.27%	28.13%	20.00%	40.00%	66.67%	16.4%
4	Count	1	10	4	3	2	2	0	22
	Row %	4.55%	45.45%	18.18%	13.64%	9.09%	9.09%	0.00%	100.0%
	Column %	1.06%	6.25%	12.12%	9.38%	13.33%	40.00%	0.00%	6.4%
5 or more	Count	1	7	2	2	3	0	0	15
	Row %	6.67%	46.67%	13.33%	13.33%	20.00%	0.00%	0.00%	100.0%
	Column %	1.06%	4.37%	6.06%	6.25%	20.00%	0.00%	0.00%	4.4%
Refused	Count	0	0	0	0	0	0	0	0
	Row %	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.0%
	Column %	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total	Count	94	160	33	32	15	5	3	342
	Row %	27.48%	46.78%	9.65%	9.36%	4.39%	1.46%	0.88%	100.0%
	Column %	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

**Table III-3
Dwelling Type (All Housing Units)**

Type of Dwelling	Recruited Households (n=611)	Completed Households (n=342)	Census Data (n=17,367)
Single, Detached	83.96%	84.50%	66.94%
Multi Unit	10.15%	10.82%	24.70%
Mobile Home or Trailer	5.07%	4.09%	7.32%
Other	0.82%	0.59%	1.03%
Refused	0.00%	0.00%	--

**Table III-4
Owner/Renter Status (Occupied Housing Units)**

Tenure	Recruited Households (n=611)	Completed Households (n=342)	Census Data (n=13,374)
Own	80.20%	84.50%	63.25%
Rent	19.31%	15.21%	36.75%
Other	0.49%	0.29%	--
Refused	0.00%	0.00%	--

**Table III-5
Length of Residence (Occupied Housing Units)**

	Recruited Households (n=611)	Completed Households (n=342)	Census Data (n=9,457)
Less than 6 months	4.26%	3.80%	24.83%
6 months to 1 year	5.24%	4.97%	
1 to 5 years	13.75%	12.28%	25.84%
5 to 10 years	12.93%	12.57%	13.94%
10 to 20 years	14.24%	13.74%	19.33%
20 years or more	15.38%	15.50%	16.06%
Refused	34.20%	37.13%	--

IV Person Characteristics

The following tables provide information about the respondents themselves. Where available, collected data is compared to Census Data.

**Table IV-1
Gender**

Gender	Recruited Percentage (n=1471)	Completed Percentage (n=769)	Census Data (n=26,038)
Male	49.90%	48.63%	49.68%
Female	50.03%	51.37%	50.32%
Refused	0.07%	0.00%	--

**Table IV-2
Age of Household Members**

Age	Recruited Percentage (n=1471)	Completed Percentage (n=769)	Census Data (n=33,677)
0-4	4.62%	4.55%	6.84%
5-9	6.80%	5.72%	7.05%
10-14	6.93%	6.11%	7.48%
15-19	7.21%	6.37%	7.73%
20-24	3.40%	3.38%	5.31%
25-34	8.16%	5.85%	14.68%
35-44	16.45%	14.56%	15.72%
45-54	15.57%	18.08%	10.15%
55-64	11.90%	14.30%	9.04%
65-74	10.61%	11.96%	9.12%
75+	7.61%	8.71%	6.89%
Refused	0.74%	0.39%	--

**Table IV-3
Licensed Drivers by Persons**

License Status	Recruited Percentage (n=1471)	Completed Percentage (n=769)	Census Data
Licensed	74.78%	77.50%	--
Non-Licensed	6.73%	5.98%	--
Not Applicable (under 15 years of age)	18.42%	16.38%	--
Refused	0.07%	0.13%	--

**Table IV-4
Employment Status by Persons 16 and older**

Employment Status	Recruited Percentage (n=1171)	Completed Percentage (n=630)	Census Data (n=25,260)
Employed	59.95%	58.41%	58.54%
Unemployed	9.05%	7.14%	3.36%
Not in Labor Force	30.66%	33.97%	38.10%
Refused	0.34%	0.48%	--

**Table IV-5
Telecommute Status by Employed Persons**

Telecommute to Work?	Recruited Percentage (n=702)	Completed Percentage (n=368)	Census Data
Yes	8.83%	6.79%	--
No	37.18%	37.23%	--
Refused	53.99%	55.98%	--

**Table IV-6
Shift or Flexible Work Schedule by Employed Persons**

Shift or Flexible Work Schedule	Recruited Percentage (n=702)	Completed Percentage (n=368)	Census Data
Yes	31.48%	29.89%	--
No	13.68%	12.50%	--
Refused	54.84%	57.61%	--

**Table IV-7
Length of Employment by Employed Persons**

Length of Employment	Recruited Percentage (n=702)	Completed Percentage (n=368)	Census Data
Less than 1 year	11.97%	11.14%	--
1 - 1.9 years	8.26%	8.15%	--
2 - 2.9 years	7.12%	5.71%	--
3 - 3.9 years	7.83%	6.25%	--
4 - 4.9 years	3.99%	3.80%	--
5 or more years	58.55%	61.41%	--
Refused	2.28%	3.53%	--

**Table IV-8
Student Status by Full- or Part-Time Schedule
Persons 3 years and older**

Student Status	Recruited Percentage (n=1436)	Completed Percentage (n=750)	Census Data (n=31,867)
Not Enrolled	73.61%	76.13%	74.77%
Part-Time Student	5.50%	5.47%	25.23%
Full-Time Student	20.47%	18.27%	
Refused	0.42%	0.13%	--

**Table IV-9
Educational Attainment by Persons 25 years and older**

Educational Attainment	Recruited Percentage (n=1045)	Completed Percentage (n=568)	Census Data (n=22,090)
None through 4th Grade	0.48%	0.53%	5.78%
5th through 7th Grade	0.77%	0.88%	
8th Grade	1.72%	1.76%	
9th through 11th Grade	4.88%	3.70%	12.38%
12th Grade	32.92%	29.58%	31.70%
College Freshman to Junior	27.08%	28.87%	6.90%
College Senior	15.69%	16.20%	11.08%
Post Graduate Work	12.73%	15.14%	5.64%
Refused	3.73%	3.35%	--

**Table IV-10
Ethnicity by Person**

Ethnicity	Recruited Percentage (n=1471)	Completed Percentage (n=769)	Census Data (n=33,301)
White, Not Hispanic	94.70%	95.19%	95.25%
Black, Not Hispanic	0.48%	0.26%	0.29%
American Indian, Eskimo or Aleutian, Not Hispanic	1.22%	0.91%	1.08%
Asian or Pacific Islander, Not Hispanic	0.88%	1.17%	1.13%
Other Race, Not Hispanic	0.68%	0.91%	0.006%
Hispanic (Any Race)	1.02%	1.17%	2.25%
Refused	1.02%	0.39%	--

**Table IV-11
Disability Status of Persons 16 years and older**

Disability Status	Recruited Percentage (n=1172)	Completed Percentage (n=630)	Census Data (n=25,260)
With a mobility or self-care limitation	4.86%	4.13%	5.83%
Without a mobility or self-care limitation	94.46%	95.24%	94.17%
Refused	0.68%	0.63%	--

V Travel Characteristics

Respondents were asked to record all activities over a two-day period. In this report, activity data is reported for the 342 households in the Clatsop County study. An average of 63.47 activities were reported by these households for the two-day period. As shown in Table V-1, the most frequently named activities are trips, meals, sleep, amusements (at home), personal hygiene, and household maintenance.

The mean number of activities per household for Day 1 is 31.05 and for Day 2 is 29.68. The relatively small difference between the number of activities reported for each day indicates that the two-day diary worked as planned.

While the diaries focused on respondent activities, information on trips made in conjunction with those activities was also gathered. The mean number of person trips per household was 15.91 for the two-day period. The mean number of trips for Day 1 was 8.37, while an average of 7.51 trips were made per household on Day 2. The average daily trip rate by household size is shown in Table V-2.

The majority of zero-trip households and households with only one to nine trips had an average income of less than \$40,000. Households with incomes over \$40,000 had higher trip rates. This data is shown in Table V-3.

Table V-4 compares household size and trip rates. Smaller households generated fewer trips than larger households. For example, there are no zero-trip households with more than two members, and there are no 70+ trip households with fewer than seven members. These data are shown in Table V-4.

Respondents were asked to record mode usage for each trip taken. Of the 21,707 activities reported by respondents (shown in Table V-1), 16,267 took place at home or had no travel associated with them. For the remaining activities, the travel modes used in accessing the activities are shown in Table V-5.

Table V-6 shows average reported trip times by mode. Private vehicle trips were, on average, the shortest. Walking trips and school bus trips were similar in mean between 22 and 24 minutes. Trips recorded as "other", often out of the area, took the longest and were approximately 104 minutes in length. Bicycle trips were approximately 32 minutes in length. Public bus trips took approximately 38 minutes.

**Table V-1
Activities by Type (n=21707)**

Activity	Frequency	Percent
Trip	5440	25.06%
Meals	3171	14.61%
Sleep	3073	14.16%
Personal Hygiene	1741	8.02%
Work/Work-related activities	991	4.57%
Rest and Relaxation	649	2.99%
School	446	2.05%
Shopping	576	2.65%
Visiting	452	2.08%
Pick-up/Drop-off Passengers	193	0.89%
Household Obligations/Childrearing	252	1.16%
Exercise/Athletics	148	0.68%
Hobbies	155	0.71%
Tag-along	29	0.13%
Pet Care	39	0.18%
Amusements (at home)	2356	10.85%
Amusements (out of home)	132	0.61%
Religion/Civil Services	91	0.42%
Out of area	45	0.21%
Civic	49	0.23%
Medical Care	59	0.27%
Personal Services	19	0.09%
Casual Entertaining	8	0.04%
Culture	1	0.00%
Household/Personal Business	423	1.95%
Professional Services	5	0.02%
Household Maintenance	1076	4.96%
Spectator at Athletic Events	22	0.10%
Incidental	23	0.11%
Wait on Plane	2	0.01%
Wait on Bus	15	0.07%
Formal Entertaining	26	0.12%

Table V-2
Average 1-Day Household Trip Rate
by Household Size

Household Size	Average Daily Trips
One	3.20
Two	7.00
Three	10.81
Four	15.00
Five	17.80
Six	21.90
Seven or more	27.67

**Table V-3
2-Day Household Trips by Household Income (n=342)**

Number of Trips		Income			Total
		Under \$40,000	Over \$40,000	Refused	
none	Count	13	3	3	19
	Row %	68.42%	15.79%	15.79%	100.00%
	Column %	7.74%	2.07%	7.41%	5.56%
1 to 9	Count	62	26	10	98
	Row %	63.27%	26.53%	10.20%	100.00%
	Column %	36.90%	17.93%	37.04%	28.66%
10 to 19	Count	67	50	10	127
	Row %	52.76%	39.37%	7.87%	100.00%
	Column %	39.88%	34.48%	33.33%	37.13%
20 to 29	Count	14	41	4	59
	Row %	23.73%	69.49%	6.78%	100.00%
	Column %	8.33%	28.28%	14.81%	17.25%
30 to 39	Count	2	14	2	18
	Row %	11.11%	77.78%	11.11%	100.00%
	Column %	1.19%	9.65%	7.41%	5.26%
40 to 49	Count	8	4	0	12
	Row %	66.67%	33.33%	0.00%	100.00%
	Column %	4.76%	2.76%	0.00%	3.51%
50 to 59	Count	1	4	0	5
	Row %	20.00%	80.00%	0.00%	100.00%
	Column %	0.60%	2.76%	0.00%	1.46%
60 to 69	Count	0	3	0	3
	Row %	0.00%	100.00%	0.00%	100.00%
	Column %	0.00%	2.07%	0.00%	0.88%
more than 70	Count	1	0	0	1
	Row %	100.00%	0.00%	0.00%	100.00%
	Column %	0.60%	0.00%	0.00%	0.30%
Total	Count	168	145	29	342
	Row %	49.12%	42.40%	8.48%	100.00%
	Column %	100.00%	100.00%	100.00%	100.00%

**Table V-4
2-Day Household Trips by Household Size (n=342)**

Number of Trips	HH Size								Total
	1	2	3	4	5	6	7+		
none	Count	14	5	0	0	0	0	0	19
	Row %	73.68%	26.32%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
	Column %	14.89%	3.12%	0.00%	0.00%	0.00%	0.00%	0.00%	5.56%
1 to 9	Count	58	35	3	1	1	0	0	98
	Row %	59.18%	35.72%	3.06%	1.02%	1.02%	0.00%	0.00%	100.00%
	Column %	61.70%	21.88%	9.09%	3.13%	6.67%	0.00%	0.00%	28.66 %
10 to 19	Count	20	85	12	6	4	0	0	127
	Row %	15.75%	66.93%	9.45%	4.72%	3.15%	0.00%	0.00%	100.00%
	Column %	21.28%	53.13%	36.36%	18.75%	26.67%	0.00%	0.00%	37.13%
20 to 29	Count	2	33	12	10	2	0	0	59
	Row %	3.39%	55.93%	20.34%	16.95%	3.39%	0.00%	0.00%	100.00%
	Column %	2.13%	20.62%	36.37%	31.25%	13.33%	0.00%	0.00%	17.25%
30 to 39	Count	0	2	4	8	1	2	1	18
	Row %	0.00%	11.11%	22.22%	44.44%	5.56%	11.11%	5.56%	100.00%
	Column %	0.00%	1.25%	12.12%	25.00%	6.67%	40.00%	33.33%	5.26%
40 to 49	Count	0	0	2	6	2	1	1	12
	Row %	0.00%	0.00%	16.67%	50.00%	16.67%	8.33%	8.33%	100.00%
	Column %	0.00%	0.00%	6.06%	18.75%	13.33%	20.00%	33.33%	3.51%
50 to 59	Count	0	0	0	0	3	2	0	5
	Row %	0.00%	0.00%	0.00%	0.00%	60.00%	40.00%	0.00%	100.00%
	Column %	0.00%	0.00%	0.00%	0.00%	20.00%	40.00%	0.00%	1.46%
60 to 69	Count	0	0	0	1	2	0	0	3
	Row %	0.00%	0.00%	0.00%	33.33%	66.67%	0.00%	0.00%	100.00%
	Column %	0.00%	0.00%	0.00%	3.12%	13.33%	0.00%	0.00%	0.88%
more than 70	Count	0	0	0	0	0	0	1	1
	Row %	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	100.00%
	Column %	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	33.33%	0.29%
Total	Count	94	160	33	32	15	5	3	342
	Row %	27.48%	46.78%	9.65%	9.36%	4.39%	1.46%	0.88%	100.00%
	Column %	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

**Table V-5
Trip Mode (n=5440)**

Mode	Percent
Private Vehicle	88.51%
Walk	6.86%
Bicycle	0.66%
School Bus	2.61%
Public Bus	0.64%
Other	0.72%

**Table V-6
Average “Reported” Household Trip Times by Mode (n=5440)**

Mode	Mean Trip Length (min.)
Private Vehicle	20.07
Walk	22.44
Bicycle	31.67
School Bus	24.40
Public Bus	38.26
Other (Airplane)	103.77

VI Item Non-Response

The following tables show the item non-response for questions contained on the recruitment instrument. The non-response rate is the percentage of respondents who did not provide an answer to the item. As indicated in the tables below, all efforts were to minimize non-response.

**Table V-1
Percent Item Non-Response - Household Questions (n=611)**

Household Variables	Percent Non-Response
Household Size	0.0%
Household Vehicles	0.0%
Home Ownership	0.0%
Time in Residence	34.2%
Dwelling Type	0.0%
Household Income	11.6%

**Table V-2
Percent Item Non-Response - Person Questions (n=1471)**

Household Variables	Percent Non-Response
Relation to Head of House	0.3%
Age	0.7%
Race	1.0%
Drivers License Status	0.1%
Employment Status	0.3%
Occupation	1.0%
Industry	1.0%
Shiftwork	54.8%
Years at Work Site	2.3%
Student Status	0.4%
Student Level - Head of House	0.3%
Student Level - Others	0.0%
Disability	0.7%