YAKIMA COUNTY DEPARTMENT OF PUBLIC WORKS

YAKIMA COUNTY
HOUSEHOLD TRAVEL SURVEY

Final Report

July 2003

NuStats

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INTRODUCTION

This report documents the design, implementation, and results of the Yakima County Household Travel Survey. NuStats Partners, L.P., of Austin, Texas conducted the study, with design input from Mirai Associates and data collection assistance from NuStats' DataSource. It was sponsored by the Yakima County Department of Public Works, in Yakima, Washington.

The study is an essential element in the transportation planning and modeling efforts for Yakima County. The purpose of the Yakima County Household Travel Survey was to gather data on the socioeconomic characteristics and travel behavior of county residents, including household characteristics, person characteristics, vehicle characteristics and travel-activity patterns. Travel behavior data collected through the course of this study is designed to help transportation planning efforts in the region, including:

- Document the socioeconomic characteristics and travel behavior of individuals from households traveling from and within Yakima County.

- Improve understanding of household travel behavior and an individual's activity-based decisions

- Develop replicable estimates of person trip generation, mode choice, distribution and assignment for the study area.

- Obtain data consistent with requirements of the Transportation Equity Act for the 21st Century (TEA-21) and 1990 Clean Air Amendments

- Update or replace the existing method of forecasting travel volumes to develop a method for accurately predicting mode choices within the region

- Calibrate Yakima County's Transportation Modeling Software (Tmodel2)

- Predict need for roadway lane-age

- Predict the consequences of differing infrastructure improvements

- Assist with identifying management strategies on air quality

A total of 1,503 households were recruited to participate in the study, with 1,107 of them providing travel data for all household members age 16 and older. Unweighted, the 1,107 households represent 3,084 persons (of which 2,221 were age 16 and older), had 2,138 vehicles available to them, and recorded a total of 7,369 trips. When weighted to account for probabilities of selection and non-response bias, the 1,107 households represent 3,175 persons (of which 2,257 were age 16 and older), had 2,122 vehicles available to them, and provided details about 7,706 trips.

The first section of this report details the methods used to design and conduct the study. The second section presents the weighted survey results. The survey instruments and respondent materials are contained in the appendices, as well as unweighted frequencies for all the variables.

METHODOLOGY

The Yakima County Household Travel Survey was conducted over a six-month period from December 2002 through June 2003. It began with design activities in December 2002, followed by a pilot test February 2003. The full study was conducted in March, April and May, with the delivery of the data set to the Yakima County Department of Public Works in June 2003. The methods used to design and conduct the study are summarized in this chapter.

The design effort centered about the specifications for ensuring a random sample and confirmation of data needs for the final data set. From there, the questionnaires and survey materials were designed and pilot tested. These were modified after the pilot test and used in a six-stage data collection process that included: advance notification, recruitment, placement of materials, retrieval, processing, and geocoding. Each of these is summarized below.

SAMPLE DESIGN

The Yakima County Household Travel Survey was designed to provide a data set representative of the county's population and travel patterns. As such, the sample design for the study was designed to guide the collection of data such that the resultant data set would include adequate representation of households by geography as well as the key demographics of household size and household vehicles. The sample design was based on four criteria:

1. Produce statistically adequate observations at a geographic level that would allow for regional and sub-regional transportation planning and modeling.
2. Produce data depicting the diverse travel patterns and mode usage across the county.
3. Minimize non-response bias among population subgroups, particularly those more difficult to reach or known to be under-represented in other travel studies.
4. Maximize participation rates.

The first two criteria were fundamental to the survey design. They were addressed primarily through the statistical method applied, the sampling frames used, the actual process for drawing the sample, and the documentation maintained. Meeting the remaining two criteria required a combination of sample management and careful monitoring during the data collection process.

The purpose of this section is to summarize the sample design developed for the Yakima County Household Travel Survey and to present the process by which the resultant data were weighted to account for the probability of selection and adjusted for non-response bias. The expansion factor calculation is also presented. A map of all households sampled is shown in Figure 1, followed by that of the 1,107 participating households in Figure 2.

FIGURE 1: SAMPLED HOUSEHOLD LOCATIONS

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FIGURE 2: SURVEYED HOUSEHOLD LOCATIONS

Yakima County

Naches

Tieton

Selah

Yakima

Moxee

Union Gap

Wapato

Zillah

Harrah

Toppenish

Granger

Sunnyside

Grandview

Mabton

Cities
• Retrieved Housholds n=1,107
County Boundary

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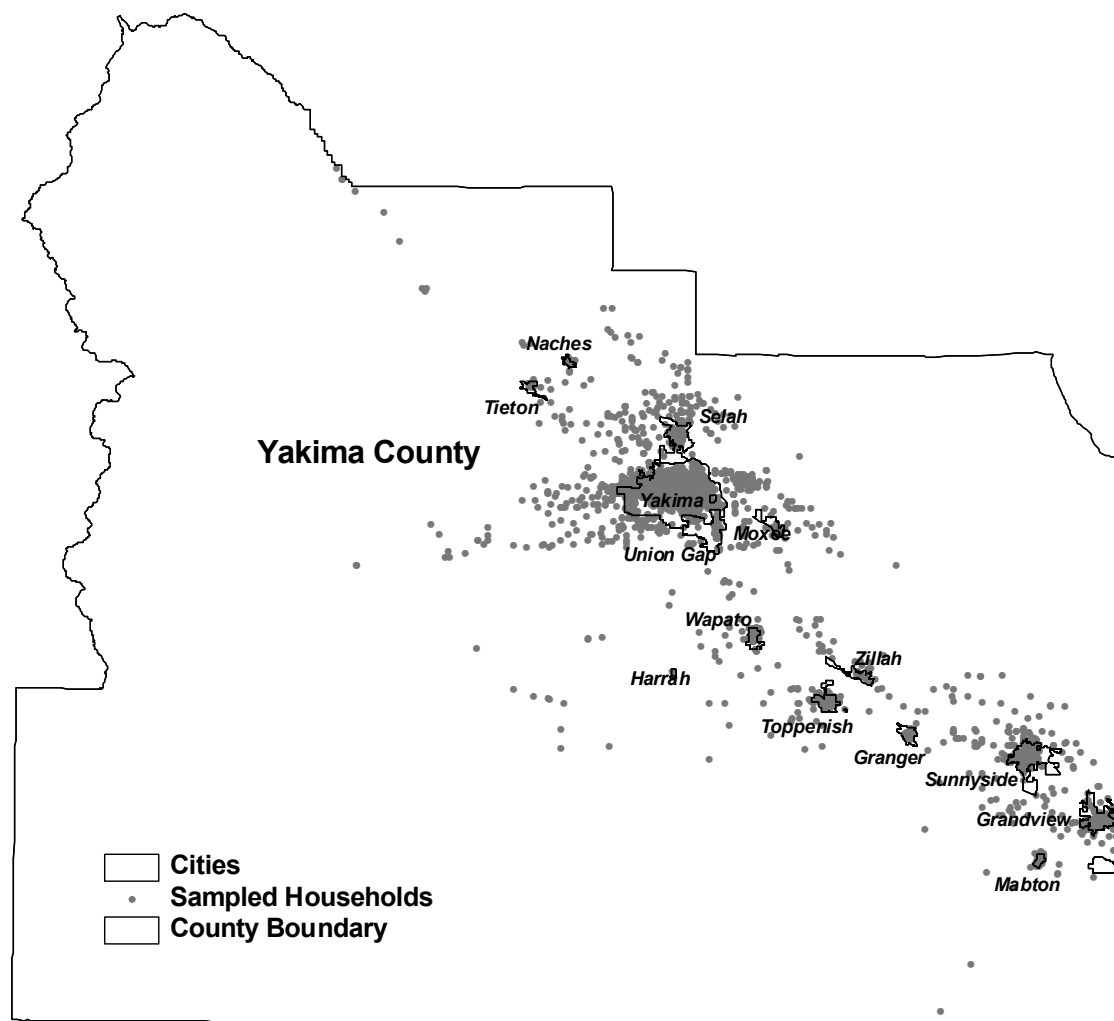**PAGE 4**
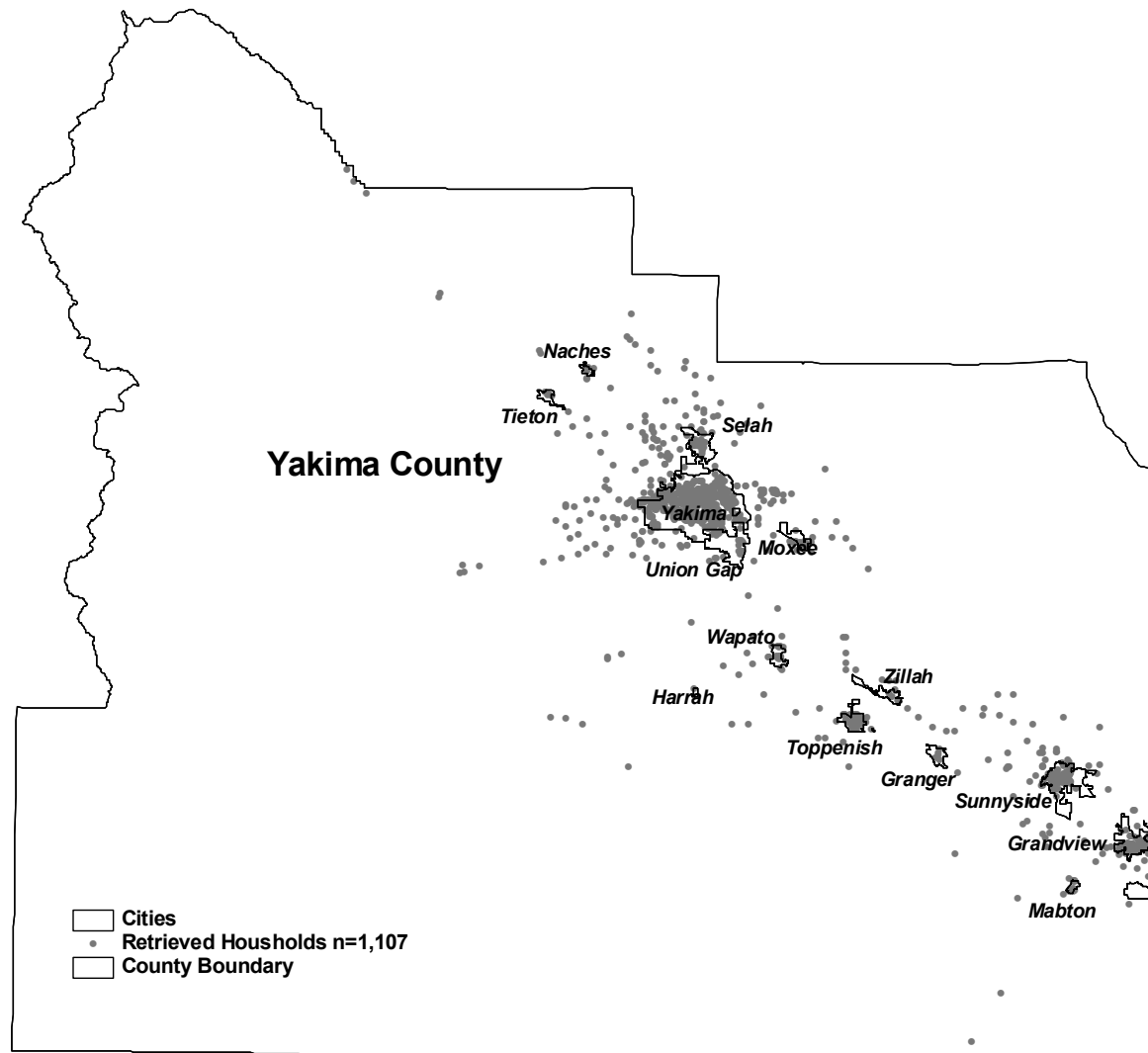
The survey sample was selected randomly, using a probability-based selection process. A major requirement for probability-based samples is that the relative probability (or chance) of any given household being selected is known. Since the sampling frame was a listing of all possible telephone numbers available to county households, households without telephones and households with only cellular telephone numbers were excluded from the study. The sample design assumed the following:

- Study Universe: The sampling frame consisted of all telephone-owning households in Yakima County, WA

- Target Number of Completes: The goal was to obtain travel data from 1,000 households.

Stratification. To ensure sufficient samples for sub-regional analysis, the county was divided into three strata: (1) Yakima/Union Gap/Selah, (2) Sunnyside/Grandview, and (3) remainder of county. The goals were purposefully disproportionate (compared to the household distribution from the census) to allow sufficient samples to meet modeling goals.

TABLE 1: HOUSEHOLD SURVEY DATA COLLECTION GOALS

Region (Strata)	# HH	%	Survey Goals	%
Yakima - Union Gap – Selah	30,837	41.7%	450	45.0%
Sunnyside – Grandview	6,258	8.5%	125	12.5%
All other cities / rural county	36,898	49.8%	425	42.5%
Total	73,993	100.0%	1000	100.0%

Source: Yakima County Household Travel Survey Technical Memorandum on Sampling

As a result of high participation rates throughout the county, the final sample contained 1,107 households, and exceeded the initial target of 1,000 households. The final unweighted distribution of the 1,107 households was:

- Yakima/Union Gap/Selah – 507 households (45.8%)

- Grandview/Sunnyside – 161 households (14.5%)

- Remainder of County – 439 (39.7%)

Assuming that non-response would be uniform across the region, the sampled households were expected to have the same distribution by household size and household vehicles as the 2000 Census. Table 2 shows the proportionate Census distribution and Table 3 shows the actual distribution of the surveyed households. The actual number of surveyed households for each cell is shown in Table 4. When comparing the unweighted survey distribution to that of the census, the survey has about 2% fewer 0-vehicle households and 4% fewer 4+ fewer households. These are well within acceptable limits and after weighting, will represent the census data proportions almost exactly.

TABLE 2: CENSUS DISTRIBUTION OF HOUSEHOLD SIZE BY HOUSEHOLD VEHICLES

Size	Household Vehicles				TOTAL
	0	1	2	3+	
1	4.2%	12.8%	3.3%	1.2%	21.5%
2	1.2%	6.7%	15.5%	6.5%	29.9%
3	0.8%	3.8%	5.9%	5.1%	15.6%
4+	1.5%	6.4%	13.5%	11.7%	33.1%
Total	7.7%	29.7%	38.2%	24.4%	100.0%

Source: CTPP 2000 for Yakima County, Washington

TABLE 3: SURVEY DISTRIBUTION OF HOUSEHOLD SIZE BY HOUSEHOLD VEHICLES

Size	Household Vehicles				TOTAL
	0	1	2	3+	
1	4.3%	13.9%	3.0%	0.5%	21.7%
2	1.0%	7.2%	16.3%	7.4%	31.9%
3	0.2%	4.4%	6.6%	6.3%	17.5%
4+	0.2%	4.6%	14.2%	9.9%	28.9%
Total	5.7%	30.2%	40.0%	24.1%	100.0%

Source: Yakima County Household Travel Survey, unweighted

TABLE 4: ACTUAL SURVEYED HOUSEHOLDS BY SIZE AND HOUSEHOLD VEHICLES

Size	Household Vehicles				TOTAL
	0	1	2	3+	
1	48	154	33	5	240
2	11	80	180	82	353
3	2	49	73	70	194
4+	2	51	157	110	320
Total	63	334	443	267	1107

Source: Yakima County Household Travel Survey, unweighted

Sample Generation. Sample was drawn separately from each county sub-area then packaged together in replicates so that the survey was conducted countywide at the same time (rather than surveying first one stratum then the next, etc.) In addition to the general random samples for the geographic strata, two targeted samples were generated.

- To ensure adequate participation from the Hispanic community, a random sample was drawn from census tracts identified as having a high incidence of Spanish-speaking residents. This included tracts 1, 2, 20.01, 23, and 27.01

- As the study got underway, recruitment for 0-vehicle households was lagging behind that for the other groups. To counteract this, the census data was analyzed to identify those tracts with a higher proportion of large households with no vehicles. Additional sample was randomly generated for those tracts, which included tracts: 1, 2, 3, 5, 6, 7, 15, 17, 18, 19, 20.01, 20.02, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, and 32.

Sample Weighting and Expansion. Given the fact that a probability-based sample was used in the study, there are two adjustments to the data: probability of selection and post-stratification adjustments. The probability of selection is defined as the probability of being selected from the universe (telephone households in Yakima County), as best represented in the 2000 Census. Since there were two targeted samples randomly drawn in addition to the general random sample, households in the targeted samples had a higher probability of selection. This weight adjusts those households accordingly. The second adjustment is the post-stratification adjustment. This adjustment aligns the weighted sample to known population distributions from the data based on 2000 Census (it adjusts the proportion of the households included in the data set to reflect that of the census for key demographic variables).

When completed, the first and second adjustment processes create a single factor that, when applied to the data, both weights the data for both probability of selection and demographic representation.

1. Probability of Selection

The probability of selection is a reflection of the amount of sample drawn for use in the study compared to the study universe. Given that the random sample in the three geographic areas was augmented with two target samples (census tracts identified as having a high likelihood of reaching Hispanic households and those with a high likelihood of reaching households with no vehicles), there are five different probabilities of selection. The probability is calculated by dividing the number of sample pieces selected for a given sample type by the universe of households in that same geography. The five probabilities are:

1. P1 = Area 1 or Yakima/Union Gap/Selah Random Sample: 2,036 samples drawn from a universe of 30,837 households = 0.06602

2. P2 = Area 2 or Grandview/Sunnyside Random Sample: 599 samples drawn from a universe of 6,258 households = 0.09572

3. P3 = Area 3 or the Remainder of the County Random Sample: 2,107 samples drawn from a universe of 36,898 households = 0.05710

4. P4 = Hispanic Target Sample: 127 samples drawn from a universe of 7,687 households = 0.01652

5. P5 = Zero Vehicle Target Sample: 2,600 samples drawn from a universe of 51,597 households = 0.05039

Once the probabilities of selection were calculated, the next step was to assign them to the 1,107 households. This assignment was based on two variables: the geographic area (area 1, 2, or 3 as listed above) and the specific census tract within which each household was located. If a household was located in a census tract that was targeted for the augment sample, it had a higher probability of selection and therefore received the sum of the probabilities associated with that geography and tract. Table 5 summarizes the assignment of probabilities for each Yakima County tract.

TABLE 5: ASSIGNMENT OF PROBABILITIES BASED ON CENSUS TRACTS

Tract	Area (P1, P2, or P3)	Hispanic Target (P4)	0-Vehicle Target (p5)	Formula	Probability
1	1	✓	✓	P1 + P4 + P5	0.13293
2	1	✓	✓	P1 + P4 + P5	0.13293
3	1		✓	P1 + P5	0.11641
4	2			P2	0.09572
5	1		✓	P1 + P5	0.11641
6	1		✓	P1 + P5	0.11641
7	1		✓	P1 + P5	0.11641
8	1			P1	0.06602
9	1			P1	0.06602
10	1			P1	0.06602
11	1			P1	0.06602
12	1			P1	0.06602
13	1			P1	0.06602
14	1			P1	0.06602
15	3		✓	P3 + P5	0.10749
16	3			P3	0.0571
17	3		✓	P3 + P5	0.10749
18	3		✓	P3 + P5	0.10749
19	2		✓	P2 + P5	0.14611
20.01	2	✓	✓	P2 + P4 + P5	0.16263
20.02	2		✓	P2 + P5	0.14611
21	3		✓	P3 + P5	0.10749
22	3		✓	P3 + P5	0.10749
23	3	✓	✓	P3 + P4 + P5	0.12401
24	3		✓	P3 + P5	0.10749
25	3		✓	P3 + P5	0.10749
26	3		✓	P3 + P5	0.10749
27.01	3	✓		P3 + P4	0.07362
27.02	3			P3	0.0571
28	3		✓	P3 + P5	0.10749
29	3		✓	P3 + P5	0.10749
30	3		✓	P3 + P5	0.10749
31	3		✓	P3 + P5	0.10749
32	1		✓	P1 + P5	0.11641

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2. Post-Stratification Adjustment

Once adjusted for the probability of selection, the data also needed adjustment to reflect known population distributions as reflected in the 2000 Census. The variables involved were regional geography ("area"), household size, household vehicles, and household workers. These were chosen because:

- They are closely related to the travel variables of interest

- Census data are available for these variables

- Every household has complete data for these variables (i.e., there is no non-response)

Since it was not possible to obtain accurate household counts from the census for a four-way cross-tabulation of these four variables, a "raking" methodology was used that, in mathematical terms, is called iterative proportional fitting. As the name implies, this is an iterative technique that required sequential matching of weighted sample marginals to first the area variable, then to the household size, household vehicles, then finally the household workers. This process was repeated until the proportions on all four variables matched the proportions for those variables in the census data for Yakima County.

3. Weight Factor

The final weight developed for this project was the expansion factor. It was calculated by dividing the number of universe households by the number of households in the sample (73,993 / 1,107 or 66.841). When applied, each household represents 67 other county households.

SURVEY DESIGN

As discussed in earlier, the goal of the household travel survey was to collect travel behavior data from at least 1,000 Yakima County households (with the final data set containing data from 1,107 households). The survey employed a generally accepted research method for household travel behavior research, in which household members age 16 and older recorded all trips for a specified 24-hour period (from 3 a.m. to 2:59 a.m.) using a specially designed travel log. Households were randomly assigned to non-Holiday weekdays for recording their travel (Monday-Friday). Data collection was via a multi-mode method consisting of telephone recruitment of households, the placement of respondent materials through the U.S. Mail, and telephone retrieval of travel data after the assigned travel day.

The study began with an in-depth review of data needs that would satisfy the modeling requirements and analysis plans that would be relying on the survey data. Those data needs are summarized in Table 6.

TABLE 6: DATA ITEMS COLLECTED

Household Data File	Person Data File	Vehicle Data File	Travel / Activity Data File
For each household	**For each person in HH**	**For each HH vehicle**	**For each person trip**
Household Size	Gender	Year	Destination Address
# Vehicles Owned	Age	Make	Land use type
# Bicycles Owned	Disability Status	Model	Departure time
Household Income	Ethnicity	Fuel Type	Arrival Time
Dwelling Type	Licensed Driver	Body Type	Trip Purpose
Own/ Rent Status	Employment Status		Trip Duration
Home Address	Work Address		Mode
# Visitors on Travel Day	# Days worked		# HH members traveling with
# Commercial Deliveries	Telework Status		# Non-HH members traveling
	Work Land-Use Type		HH vehicle used
	Occupation		Blocks walked to/from bus stop
	Details for Ag Workers		Number of Bus Transfers
	Educational Attainment		
	Student Status		

Once the data needs were identified, the survey instruments were developed. These included both the survey instruments (the recruitment and retrieval questionnaires) and the respondent materials (an advance notification postcard, a study brochure, and the travel logs). A formal pilot test was used to test the instruments and materials prior to using them in the full study.

PILOT STUDY

The Yakima County Household Travel Survey Pilot Test was conducted in February 2003. The goals of the pilot test were twofold: (1) to conduct a "dress rehearsal" of all procedures and instruments designed for use in the full study and (2) to debrief respondents about their participation experience and reactions to materials. The objectives included:

- Examine all stages of data flow procedures and quality assurance process;
- Evaluate respondent reaction to the survey process and explore local levels of respondent cooperation and response rates; and
- Assess project staff training and performance.

Throughout all pilot activities, the focus was to target areas for improvement prior to the start of the full study. The role of the pretest was critical one in the study – it was not designed to make everyone "comfortable," as that approach would have resulted in inadequate and insufficient evaluation of the process. It was referred to as a "dress rehearsal" specifically for this reason – it was a road test of all systems and respondent materials to ensure everything is in place and ready for full implementation. As such, the pilot test households did not count toward the required completes for the actual survey.

The household travel survey pilot consisted of all activities required to produce a data set comprised of 30 households. This included sample generation, advance notification, recruitment, placement of respondent materials, reminder calls, retrieval, geocoding, quality assurance and data delivery. The pilot included a random sample of households from throughout the county. It was conducted using experienced travel survey interviewers at the NuStats' DataSource facility in San Marcos, Texas. In addition, the Yakima County project manager was on-site in San Marcos for the retrieval segment of the pilot.

A comprehensive review of the pilot study was submitted to Yakima County and is available upon request. This review was based on 41 evaluation criteria that were agreed upon prior to the start of the pilot. As a result of the pilot test evaluation, the following changes were made prior to launching the full study:

- A few of the respondents were confused about what to do with their travel logs after their travel days ended (mainly due to the inclusion of business-reply mail envelopes in the survey packets). As a result, an insert was recommended to remind respondents to hold on to their travel logs until after the retrieval interview.

- While respondents used the travel log on their travel days, some seemed to have problems correctly recording their departure times for Place 1 (the anchor for starting their day). As a result, the travel log was modified to simplify the information obtained for Place 1 and to list the place numbers on both sides of the log.

- The travel data included origins and destinations but not route of travel. Yakima County requested this variable be added to the survey. As a result, the travel log was further modified to include "Main Route" used and the retrieval survey was modified to request main route used from all adult respondents who directly reported their trip data.

Upon completion of the pilot test, the instruments and materials were revised and subsequently translated into Spanish. The materials were then printed for use in the full study.

DATA COLLECTION

The Yakima County Household Travel Survey was conducted from March through May of 2003 using a six-stage survey process that included: pre-notification, recruitment, placement of materials, retrieval, processing and geocoding. Details for each stage are provided below. Experienced travel survey interviewers located at the NuStats DataSource El Paso facility conducted all interviews.

Pre-notification. Prior to the start of the recruitment effort, a postcard was mailed to all households included in the randomly generated sample for which a name and address could be located (sometimes referred to as "listed" sample). This postcard, included in Appendix A, briefly introduced the household to the study and let them know they had been randomly selected to participate. It also included contact information for the study web page, the Yakima County project manager, and the NuStats project manager.

Recruitment Interview. The purpose of the recruitment call was to introduce the respondent to the study and, if the respondent agreed to participate, obtain demographic information. This interview was conducted using computer-aided telephone interviewing (CATI) software that was programmed to administer the recruitment interview designed by NuStats. Both the English and Spanish language recruitment instruments were programmed into CATI for the interviewers. Approximately 80% of all interviews were conducted in Spanish.

The recruitment calls began March 21st and were completed on May 9th, recruiting a total of 1,503 households to participate in the study. A total of 6,769 telephone numbers were dialed to recruit these 1,503 households. Of those 6,769 numbers:

- 1,964 numbers (29%) resulted in contact with eligible households.

- 2,487 numbers (37%) were determined to be ineligible (non-working, non-household, or household spoke a language other than English or Spanish).

- 2,318 numbers (34%) were unable to be classified as eligible or ineligible after eight call attempts.

Of the 1,964 eligible households reached, 1,503 of them (77%) agreed to participate in the study and provided their household, person, and vehicle demographics. The average interview length was 16.44 minutes, obviously increasing as household size increased. The recruitment questionnaire is included in Appendix B. A summary of responses to each recruitment question is in Appendix C.

TABLE 7: AVERAGE RECRUITMENT INTERVIEW LENGTH

Household Size	Count	Mean
1	300	9.62
2	452	12.91
3	239	18.43
4	512	22.61

The recruitment instrument itself performed well. All respondents provided data for 10 of the 32 questions (31%). Marginal item non-response was noted for the remaining 22 variables, as follows:

- Vehicle year – 1.4% unknown
- Vehicle fuel type – 0.4% unknown or refused
- Vehicle body type – 0.6% unknown or refused
- Vehicle make – 0.7% unknown or refused
- Household income – 4.6% refused
- Dwelling type – 0.3% refused
- Home ownership – 0.5% refused
- Relationship – 1.6% refused
- Age – 0.6% refused
- Disability – 0.1% refused
- Ethnicity – 0.4% refused
- License driver status – 0.2% refused
- Status if not employed – 0.7% refused
- Work address – 1 person out of 1285 workers refused
- Work land use – 0.4% unknown
- Occupation – 1.1% refused
- If in agricultural occupation, more details – 9.9% refused
- If in agricultural occupation, ownership – 5.5% refused
- If owned agricultural business, number of employees 2 out of 5 refused
- If owned agricultural business, number of commercial pick-ups/deliveries – 2 out of 5 refused
- Highest level of education attained – 1.1% refused
- Student status – 0.3% refused

Packet Mailout. The day following recruitment, the demographic information was processed into the master data set and packets were assembled for each recruited households. These packets included a cover letter, study brochure, travel log, sample travel log, and a postage-paid envelope to return the completed logs after the retrieval interview. Travel days were scheduled 7 to 10 days after recruitment to allow for sufficient time for packets to reach the households using first class mail. Respondent packet materials are included in Appendix D.

Reminder call. The night prior to the assigned travel day, interviewers attempted to contact each household with a reminder call. The purpose of the reminder call was threefold: to remind the household of the upcoming travel day, to ensure that the household had received the survey packet, and to answer any questions that the household members may have. In non-contact experiences, reminder call messages were left on answering machines.

Retrieval of Travel Data. The day after an assigned travel day, telephone calls were made to retrieve the travel data recorded by each eligible household member in his/ her travel log. The interviews were guided using CATI programs and conducted in both English and Spanish. The average interview lasted 26 minutes.

Travel days were assigned beginning Wednesday, April 2nd and continued through Friday, May 16th. Retrieval interviews began on Thursday, April 3rd and continued through Saturday, May 24th. Data was collected from all household members age 16+ for the 1,107 households that completed the study. This is a retrieval rate of 74% (1107 retrieved / 1503 recruited). The overall response rate for the study is determined by multiplying the recruitment rate (77%) by the retrieval rate (74%). For this study, the response rate is 56%. This means that 56% of all eligible households contacted about participation in the Yakima County Household Travel Survey completed all activities associated with the project.

Of the 17 questions on the retrieval interview, 5 had a small amount of item non-response.

- Land use type – 1.0% unknown
- Transit Trips - # blocks walked to bus stop – 5% refused
- Transit Trips - # blocks walked from bus stop – 5% refused
- Transit Trips - # of transfers – 5% refused
- Main Activity – 1 of 9590 places recorded refused

Data Processing. Data processing took place daily from the start of recruitment on March 21st through the end of retrieval on May 24th. Computerized routines extracted the data from the CATI programs and appended it to the master data tables. Other routines created the mailout information for the advance postcards and the respondent packet mailings. As the completed travel data was processed, NuStats staff subjected it to a series of quality checks, confirming consistency within and between the files. When necessary conflicting or missing information was routed back to NuStats DataSource staff for correction calls to the respondents. These activities were performed at the same time that the geocoding task was taking place. Once both data processing and geocoding were completed, the final data files were created for reporting and delivery.

Geocoding. All addresses obtained through the conduct of the travel survey underwent the geocoding process. This included the home addresses, any work or school addresses, and all other locations visited by the household members during the course of the assigned travel day. The geocoding process used ArcView software and coverage files provided by Yakima County. The address details were used to assign latitude and longitude coordinates to each visited location. By using those lat/long coordinates, Yakima County can determine distance traveled and estimate vehicle miles of travel for the region.

As reported earlier, the 2,221 household members age 16+ reported visiting a total of 9,590 places, including the place 1 anchor for the start of the 24-hour period. Because many reported trips were for the purpose of returning to a previous location, there were a total of 5,727 different addresses associated with those 9,590 places (so the remaining 3,863 places were visited more than once).

The addresses reported by the respondents included cross street and landmark details to help with the assignment of latitude and longitude coordinates. Of the 5,727 locations, 1,107 of them were the home addresses associated with the sampled households. All of these were geocoded. In addition, 96% of the work addresses and 87% of the school addresses were matched to a specific coordinate pair. Finally, 94% of all other trip locations were matched. Overall, 94% of all addresses collected were geocoded to specific latitude/longitude coordinates.

SURVEY FINDINGS

This section of the report presents a summary of the demographic characteristics and travel behavior characteristics of the households that participated in the Yakima County Household Travel Survey. The first section presents the household characteristics. This is followed by an overview of the reported travel behavior. In the Trip Characteristics section, details about the type of trips reported and origin-destination flows are presented. The Mode Choice section shows the mode usage patterns by geography and trip purpose, with a specific focus on transit and non-motorized trips. The final section (travel times) looks at travel by time of day and the variations within the county based on type of trip.

RESPONDENT SUMMARY

Demographic characteristics for the 1,107 households are shown in Table 8. As indicated in that table, the households match the census within 5% on all variables except for residence type (9% difference).

TABLE 8: COMPARISON OF HOUSEHOLD CHARACTERISTICS TO CENSUS

Characteristics	Survey Data	Census Data	Difference
Household Size			
1	21.6%	21.5%	+0.1%
2	29.9%	29.9%	--
3	15.6%	15.6%	--
4+	29.9%	33.0%	-0.1%
Household Vehicles			
0	7.7%	7.7%	--
1	29.8%	29.7%	+0.1%
2	38.2%	38.2%	--
3+	24.2%	24.3%	-0.1%
Household Workers			
0	12.2%	12.2%	--
1	30.4%	30.4%	--
2+	57.3%	57.3%	--
Household Income			
< $10k	8.2%	11.0%	-2.8%
$10k - < $25k	27.6%	23.8%	+3.8%
$25k- < $50k	30.0%	32.6%	-2.6%
$50k +	34.1%	32.6%	+1.5%
Residence Type			
Single family	73.4%	64.1%	+9.3%
All other types	26.6%	35.9%	-9.3%
Home Ownership			
Own	69.4%	64.4%	+5.0%
Rent	29.9%	35.6%	-5.7%
Other	0.7%	0.0%	+0.7%
Respondent Age			
<20	34.3%	34.9%	-0.6%
20 – 24	5.3%	6.7%	-1.4%

Characteristics	Survey Data	Census Data	Difference
25 – 54	44.5%	39.5%	+4.0%
55 – 64	8.6%	7.7%	+0.9%
65+	6.8%	11.2%	-4.4%
Respondent Ethnicity			
White	56.6%	56.5%	+0.1%
Black/African American	0.3%	1.0%	-0.7%
Hispanic	38.7%	35.9%	+2.6%
American Indian	2.3%	4.5%	-2.2%
Asian/Pacific Islander	1.0%	1.0%	--
Other	1.2%	1.1%	-0.1%

Source: Yakima County Household Travel Survey, weighted.

The household characteristics were not uniform across the region, which means that travel behavior patterns will vary as well. The average characteristics are shown in Table 9 for the three areas, as well as for the entire county. As indicated in that table:

- **Household Size**. Households in the Yakima/Union Gap/Selah area were smaller than those in the rest of the county (2.68 persons on average compared to 2.87 persons countywide). Households in Grandview/Sunnyside were largest (3.06 persons on average). The average number of members age 16 and older (who provided travel information) was more consistent, ranging from 1.93 in the Yakima area to 2.15 in the non-urban portion of the county.

- **Household Workers**. Households, on average, reported 1.55 workers per household. Households in the two urban areas reported 1.43 workers per household as compared to 1.68 workers reported in the non-urban area.

- **Household Vehicles**. The average number of household vehicles is 1.92. Households in the non-urban area of the county reported an average of 2.14 vehicles per household as compared to 1.68 and 1.76 in the two urban areas.

- **Bicycle Ownership**. Bike ownership was highest in the non-urban portion of the county (1.00) and lowest in Grandview/Sunnyside (0.55 bicycles per household). The county average was 0.88 bicycles per household.

- **Household Income**. Household income averaged in the $25,000 but less than $50,000 range for the entire study area.

- **Household Trips (Age 16+)**. Despite having a larger household size and more workers (which typically suggests higher trip rates), households in the non-urban portion of the county reported an average of 6.97 daily household trips for all household members age 16 and older, which is equal to the countywide average of 6.96 daily household trips. Households in the Yakima/Union Gap/Selah area reported the highest household trip rate of 7.19 daily household trips.

TABLE 9: HOUSEHOLD CHARACTERISTICS BY AREA

Household Characteristics	Yakima/ Union Gap/ Selah	Grandview/ Sunnyside	Rest of County	Total
Sample Size	462	94	551	1,107
HH Size	2.68	3.06	2.99	2.87
HH Members Age 16+	1.93	2.12	2.15	2.05
HH Workers	1.43	1.43	1.68	1.55
HH Vehicles	1.68	1.76	2.14	1.92
HH Bikes	0.81	0.55	1.00	0.88
HH Income	$25k but less than $50k	$25k but less than $50k	$25k but less than $50k	$25k but less than $50k
HH Trips (age 16+)	7.19	5.78	6.97	6.96

Source: Yakima County Household Travel Survey, weighted.

The person-level characteristics of these household members are shown in Table 10, for the county as a whole as well for the sub-county areas. As indicated in that table:

- **Gender**. The participating households were comprised of slightly more females than male, as evidenced by the countywide proportion of 51% female. There were slightly more females in the Yakima/Union Gap/Selah area (52%) as compared to the rest of the county.

- **Age**. The respondents in the Yakima/Union Gap/Selah area were slightly older than those in the other portions of the county. Grandview/Sunnyside households had the highest proportion of members under the age of 15 (29% compared to 27% in the other two areas).

- **Disability**. Respondents in Grandview/Sunnyside were most likely to report being disabled, as 7% answered affirmatively to the question compared to 6% in the Yakima area and 5% in the non-urban area of the county.

- **Ethnicity**. The highest proportion of non-minority respondents was located in the Yakima/Union Gap/Selah area (64%), while Grandview/Sunnyside respondents had the highest proportion of both Hispanic participants (66%) and Native American respondents (3%).

- **Licensed Drivers**. Eighty-six percent of all respondents age 16 and older were licensed to drive. Within the sub-county areas, Grandview/Sunnyside respondents had a lower proportion of licensed drivers (78%).

- **Workers**. 76% of respondents age 16+ indicated they were employed. This includes 74% of those age 16+ in the Yakima/Union Gap/Selah area and 68% in Grandview/Sunnyside. 78% of respondents age 16+ from the non-urban areas were also employed.

- **Students**. Overall, 28% of respondents reported attending school at some level. This includes 31% of Yakima area participants, 30% of Grandview area participants, and 26% of remaining households.

Person Characteristics		Yakima/ Union Gap/ Selah	Grandview/ Sunnyside	Rest of County	Total
Gender	Male	46.2%	49.4%	49.8%	48.3%
	Female	52.9%	48.2%	50.0%	51.0%
	Refused	.9%	2.4%	.2%	.7%
Age	Younger than 15	26.9%	29.4%	26.5%	26.9%
	15 to 19	7.0%	8.4%	7.5%	7.4%
	20 to 24	5.7%	5.8%	4.9%	5.3%
	25 to 24	13.1%	15.4%	13.4%	13.5%
	35 to 44	15.8%	12.6%	16.4%	15.8%
	45 to 54	14.7%	11.6%	16.2%	15.2%
	55 to 64	8.5%	5.7%	9.3%	8.6%
	65+	8.1%	9.2%	5.3%	6.8%
	Refused	.2%	1.7%	.4%	.5%
Disability	Yes	6.1%	7.3%	5.1%	5.7%
	No	93.8%	92.2%	94.8%	94.2%
Ethnicity	White	64.3%	30.3%	55.3%	56.6%
	Black/Afr Amer	.8%			.3%
	Hispanic	31.5%	66.4%	39.2%	38.7%
	Asian / Pacific Isl	.7%		1.4%	1.0%
	Native American	1.3%	3.4%	2.8%	2.3%
	Other or Specify	1.3%		1.3%	1.3%
Licensed to drive	Yes	85.0%	77.5%	88.0%	85.9%
	No	14.7%	22.1%	12.0%	13.9%
	Refused	.3%	.4%		.2%
Worker	Yes	74.2%	67.7%	78.3%	75.8%
	No	25.8%	32.3%	21.7%	24.2%
Student	Yes	30.5%	30.0%	26.4%	28.3%
	No	69.4%	69.1%	72.9%	71.2%
	Refused	.1%	.9%	.7%	.5%

Source: Yakima County Household Travel Survey, weighted.

In general, the participating households in the Yakima/Union Gap/Selah region tend to be smaller, older, and of non-minority descent. They also reported a higher average of household trips than households in the rest of the county. Those in the Grandview/Sunnyside area are larger than average but have fewer vehicles. They are more likely to be of Hispanic descent. They are also younger (with more children), so fewer are licensed to drive, fewer are employed, and more are students. Households in the non-urban region of the county are also larger than average, have more workers and vehicles than average, are less likely to be disabled, and less likely to be a student. Despite these typical "heavy traveler" indicators, these households reported only an average number of household trips.

Vehicle Characteristics. On average, the 1,107 participating households had 1.92 vehicles available. Households in the non-urban area owned 2.14 vehicles on average, while those in the Yakima/Union Gap/Selah area owned 1.68 vehicles, on average. As shown in Table 11, households in the Yakima/Union Gap/Selah area owned vehicles that were slightly older than those in the other portions of the county.

Vehicle Year	Yakima/ Union Gap/ Selah	Grandview/ Sunnyside	Rest of County	Total
Pre-1995	55.0%	50.9%	52.6%	53.3%
1995 - 1999	26.7%	27.5%	27.9%	27.4%
2000	7.2%	6.0%	7.6%	7.4%
2001	4.1%	6.0%	4.6%	4.5%
2002	4.1%	4.8%	4.5%	4.4%
2003	1.8%	1.8%	1.6%	1.7%
Refused	.9%	3.0%	1.3%	1.3%
Total	100.0%	100.0%	100.0%	100.0%

Source: Yakima County Household Travel Survey, weighted.

The fleet composition was also different in the sub-county areas. Households in the Grandview/Sunnyside area were most likely to own a car and least likely to own a sports utility vehicle, while those in the non-urban areas were most likely to own a light-duty truck. Minivan ownership was fairly uniform across the county. Other vehicle types included motorcycles, heavy-duty trucks, and recreational vehicles.

FIGURE 3: VEHICLE TYPE BY GEOGRAPHIC AREA
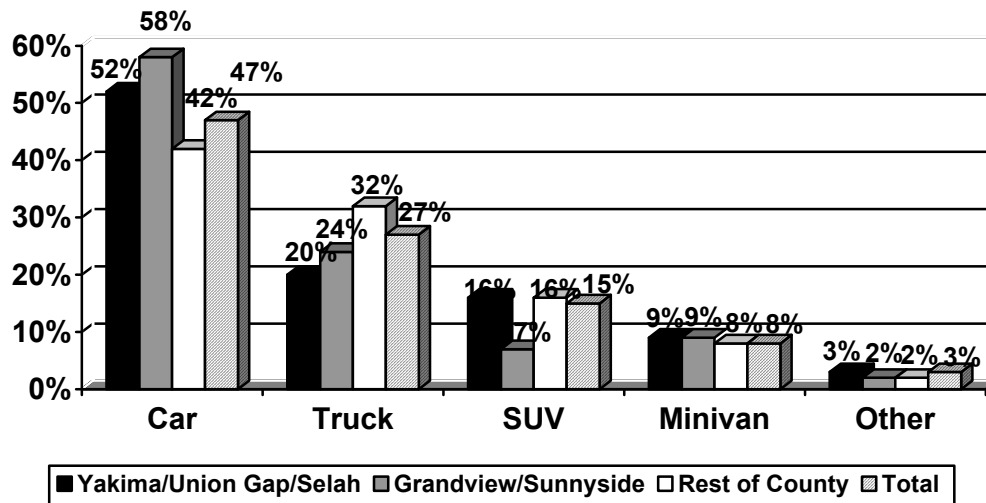
TRAVEL BEHAVIOR

The previous section provided a summary of the demographic characteristics for the participating households. The variations among participating households based on the area of residence suggests that travel behavior also varies throughout the county. The purpose of this section is to review the travel behavior reported by the 1,107 participating households in order to document the extent to which the travel behavior does vary. This includes summaries of trip rates by the different household and person characteristics for each area of the county as well as the county total.

Household Travel. The average household daily trip rate was 6.96 trips for all household members age 16 and older. The average daily person trip rate for these same household members was 3.39 trips. The rates did vary by area, as shown in Figure 3. Households in the Yakima/Union Gap/Selah area made more trips on average, while those in Grandview/Sunnyside made fewer trips on average.

FIGURE 4: TRIP RATES BY GEOGRAPHIC AREA
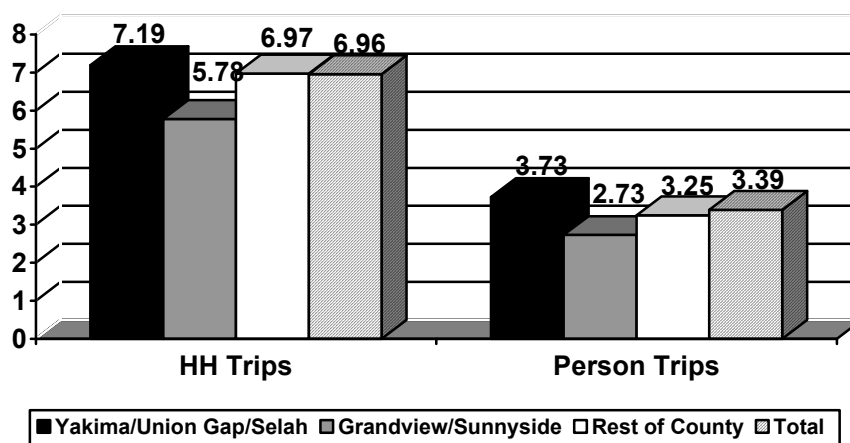
The average number of reported daily household trips increased as household size increased, which was an expected trend. The average number of trips for a 1-person household was 3.2, which is less than half that of 2-person households (7.1 trips). Households with three persons reported 8.4 trips, while those with four or more reported 8.6 trips. As shown in Figure 5, travel by households in Grandview/Sunnyside follows the same trend, but is lower than that reported by households in the rest of the county.

FIGURE 5: TRIP RATES BY HOUSEHOLD SIZE AND GEOGRAPHIC AREA
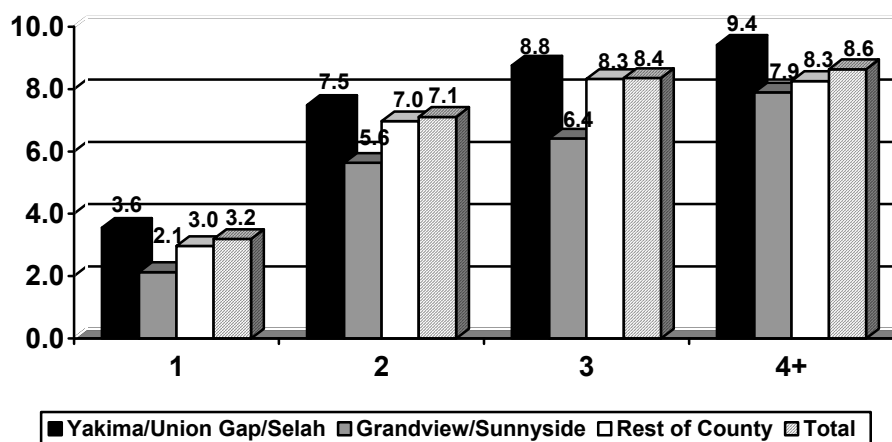
Trip rates increase as household income increases as well. As Table 12 shows, while the Grandview/Sunnyside household trip rate is lower than the other county regions, it still follows the same trend.

TABLE 12: TRIP RATES BY HOUSEHOLD INCOME AND GEOGRAPHIC AREA

Household Income	Yakima/ Union Gap/ Selah	Grandview/ Sunnyside	Rest of County	Total
Less Than $10k	3.15	3.02	4.50	3.52
$10k But Less Than $25k	5.93	5.08	5.45	5.62
$25k But Less Than $50k	7.90	6.43	7.33	7.50
$50k But Less Than $75k	8.81	7.69	7.20	7.83
$75k But Less Than $100k	9.04	*	8.85	8.95
Greater Than $100k	10.48	*	10.10	10.09
Total	7.19	5.78	6.97	6.96

Source: Yakima County Household Travel Survey, weighted. *Denotes less than 10 observations.

Figures 6 and 7 show the household trip rates by household workers and household vehicles, with detail for the sub-county geographic areas. Again, as the number of workers and vehicles available increases, so do the trip rate. Households in the Yakima/Union Gap/Selah area have the highest trip rates, and those in the Grandview/Sunnyside area have the lowest, except for 3+ vehicle households. When reviewing trip rates for 3+ vehicle households, households in the non-urban area of the county had the lowest trip rates. Some Yakima County residents are car collectors, which may explain some of this unexpected variance.

FIGURE 6: TRIP RATES BY HOUSEHOLD WORKERS AND GEOGRAPHIC AREA
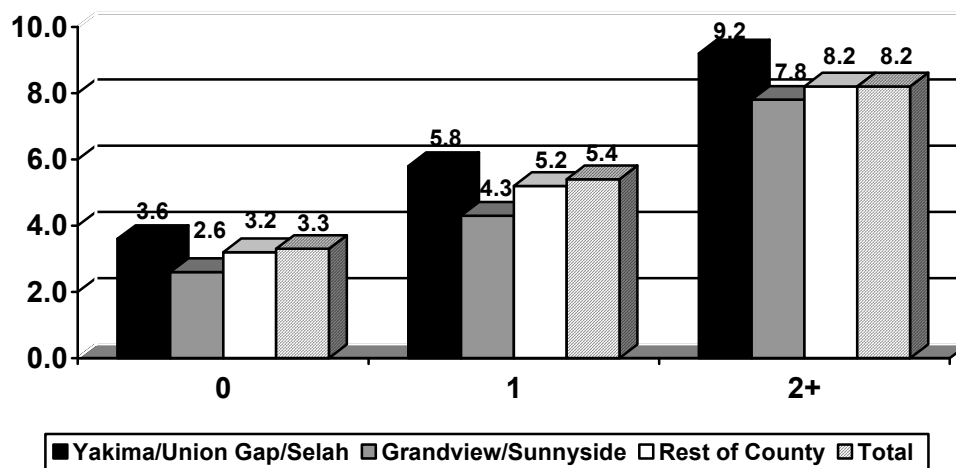
FIGURE 7: TRIP RATES BY HOUSEHOLD VEHICLES AND GEOGRAPHIC AREA
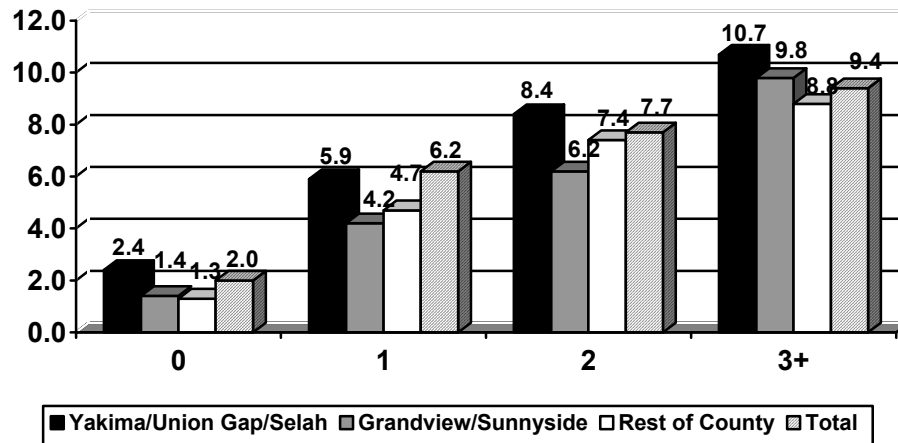
Table 13 shows the average household trip rate according to household size and household vehicles. The trip rate increases as the household size and number of vehicles increases.

TABLE 13: TRIP RATES BY HOUSEHOLD SIZE AND HOUSEHOLD VEHICLES

Household Size	Household Vehicles				Total
	0	1	2	3+	
1	1.96	3.72	3.17	*	3.19
2	1.66	6.50	7.39	8.14	7.11
3	*	6.91	8.20	9.30	8.36
4+	*	6.42	8.32	10.39	8.64
Table Total	2.03	5.28	7.70	9.44	6.96

Source: Yakima County Household Travel Survey, weighted. *Denotes less than 10 observations.

Person Travel. The trend observed in the household trip rates (with Grandview/Sunnyside respondents reporting a lower trip rate) is also observed in the person trip rates. For households from that area of the county, the same general trends in the data are observed, just at a lower magnitude of trip-making. The following is general summary of person-level trip-making.

- **Gender**. Female respondents made more trips, on average, than the male respondents.

- **Ethnicity**. The highest trip-making was made by respondents of mixed descent (as listed in the "other" category). Hispanic respondents reported the lowest trip rates.

- **Worker**. Employed respondents reported making almost 50% more trips than unemployed respondents. The disparity was greatest between employed and unemployed respondents in the Grandview/Sunnyside area.

- **Student**. Students also reported making more trips, on average, than non-students. This was particularly noticeable in the Yakima/Union Gap/Selah area.

- **Age**. The average number of daily person trips was highest for respondents age 45 to 54 (3.68 trips) and lowest for those ages 20 to 24 (2.65 trips). This groups were the same in the Yakima/Union Gap/Selah area. In the Grandview/Sunnyside area, respondents age 55 to 64 reported the most trips (3.19), while those age 16 to 19 reported the least (2.04 trips). In the non-urban area of the county, the highest trip-making was reported by respondents between the ages of 35 and 44, while those age 20 to 24 reported the fewest (3.54 trips and 2.49 trips, respectively).

TABLE 14: PERSON TRIP RATES

PERSON CHARACTERISTICS		YAKIMA/ UNION GAP/ SELAH	GRANDVIEW/ SUNNYSIDE	REST OF COUNTY	TOTAL
Gender	Male	3.66	2.71	3.15	3.30
	Female	3.79	2.75	3.34	3.48
Ethnicity	White	4.08	3.10	3.52	3.74
	Black / Afr Am	2.15*	.	.	2.15
	Hispanic	2.85	2.46	2.70	2.71
	Asian / Pac Isl	5.87*	.	2.83	3.52
	Native American	2.14	4.00	3.35	3.14
	Other	5.02	.	4.65	4.75
Worker	Yes	4.02	3.11	3.52	3.68
	No	2.89	1.95	2.28	2.50
Student	Yes	4.35	2.37	3.42	3.74
	No	3.63	2.79	3.23	3.35
Age	16 to 19	3.59	2.04	2.80	3.02
	20 to 24	2.86	2.59	2.49	2.65
	25 to 34	3.93	2.92	3.30	3.50
	35 to 44	3.91	2.98	3.54	3.65
	45 to 54	4.23	2.81	3.42	3.68
	55 to 64	3.41	3.19	3.33	3.35
	65+	3.30	2.18	2.81	2.96

Source: Yakima County Household Travel Survey, weighted. *Denotes less than 10 observations.

The map on the following page shows the locations of all trips made within Yakima County.

FIGURE 8: REPORTED TRIP LOCATIONS

Yakima County

Naches

Tieton

Selah

Yakima

Moxee

Union Gap

Wapato

Zillah

Harrah

Toppenish

Granger

Sunnyside

Grandview

Mabton

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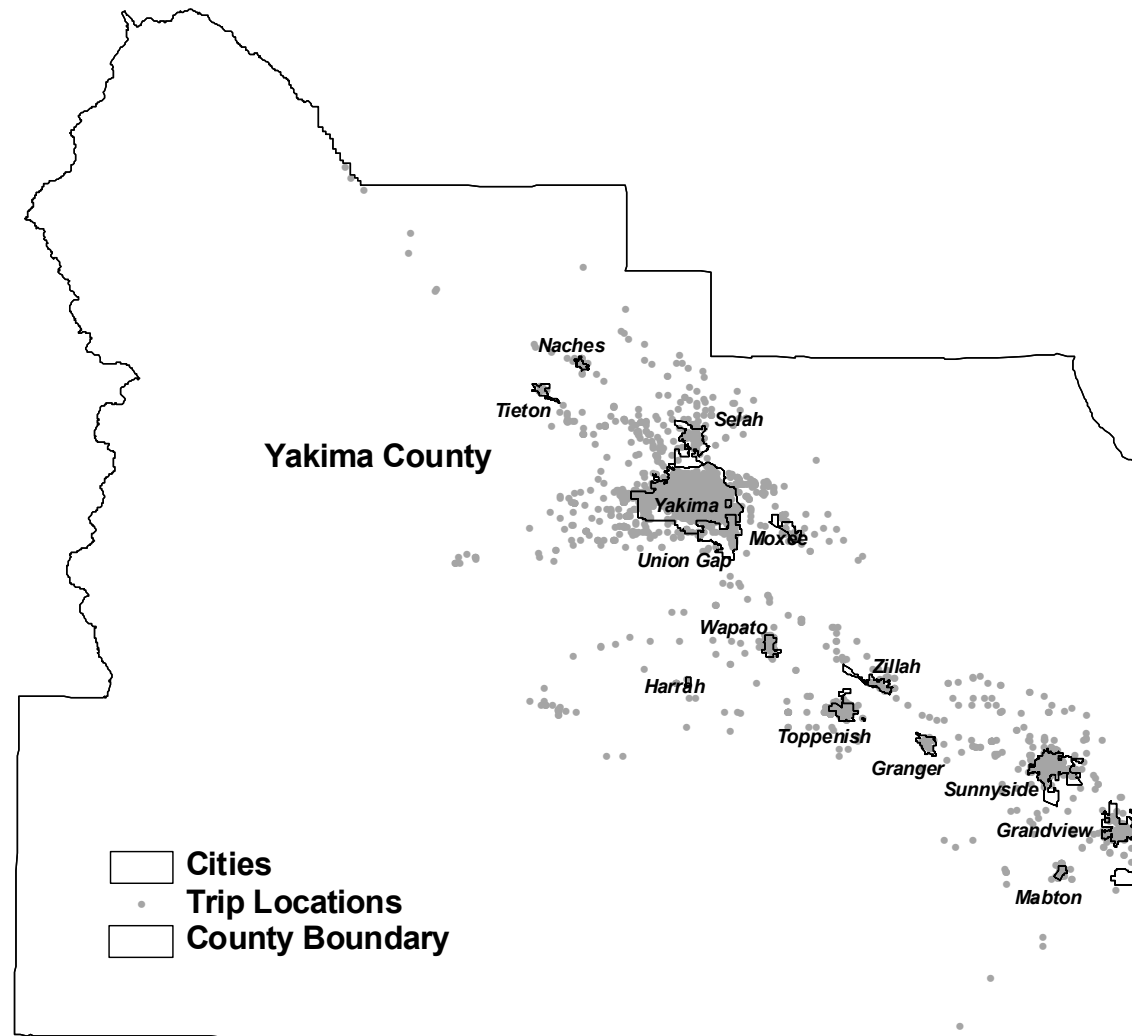
TRIP CHARACTERISTICS

The main portion of the Yakima County Household Travel Survey captured travel purpose for each trip made by the household members age 16 or older. The main activity or reason for travel is shown in Table 15. As indicated in that table, the majority of trips were to return to the home (36%) followed by trips to work (19%) and for shopping (9%). For respondents in the Yakima/Union Gap/Selah area, the main reasons for travel were to return home (36%), work (18%) or to pick up/drop off passengers (10%). Grandview/Sunnyside respondents reported most of their travel as being to return home (39%), for work (22%), and for shopping or passenger needs (9% each). Households in the non-urban area of the county reported 36% of their trips for the purpose of returning home, 20% for work, and 10% for shopping.

TABLE 15: TRIP PURPOSE BY GEOGRAPHIC AREA

Main Activity	Yakima/ Union Gap/ Selah	Grandview/ Sunnyside	Rest of County	Total
Non-Work At Home Activities	36.0%	39.3%	35.7%	36.1%
Work	17.7%	21.8%	20.3%	19.3%
Shopping	8.4%	8.9%	9.8%	9.1%
Pick Up / Drop Off Passenger	9.8%	8.9%	7.9%	8.8%
Personal Business	8.2%	5.7%	6.8%	7.3%
Work-Related	3.4%	2.6%	5.6%	4.4%
Eat Meal	3.8%	2.6%	3.1%	3.4%
Visit	3.0%	2.8%	2.1%	2.5%
School	2.3%	2.8%	2.4%	2.4%
Quick Stop	2.0%	1.8%	2.0%	2.0%
Recreation Or Fitness	1.9%	.9%	1.4%	1.6%
Civic Or Religious	1.2%	.2%	1.7%	1.4%
Entertainment	.8%	1.5%	.6%	.7%
Change Mode	1.0%	.2%	.3%	.6%
Work At Home	.4%	.2%	.1%	.2%
School Related	.2%		.2%	.2%
Total	100.0%	100.0%	100.0%	100.0%

Source: Yakima County Household Travel Survey, weighted.

Another way to classify these trips is using the classical modeling trip purposes of home-based work trips (trips that begin at home and end at work or vice versa), home-based other trips (trips that begin at home and end at a non-home location or vice versa), and non-home based trips (trips that neither begin nor end at home). When the 7,709 weighted trips are reclassified into these 3 categories, the distribution shows that 28% of all reported trips are for the home-based work trip (HBW), 45% for home-based other (HBO), and 27% for non-home based (NHB). Figure 9 shows trip purpose by geography.

FIGURE 9: TRIP PURPOSE BY GEOGRAPHIC AREA

Legend: ■ Yakima/Union Gap/Selah ▨ Grandview/Sunnyside □ Rest of County ▨ Total

Values:
- HBW: 25%, 34%, 29%, 28%
- HBO: 48%, 46%, 42%, 45%
- NHB: 27%, 20%, 28%, 27%
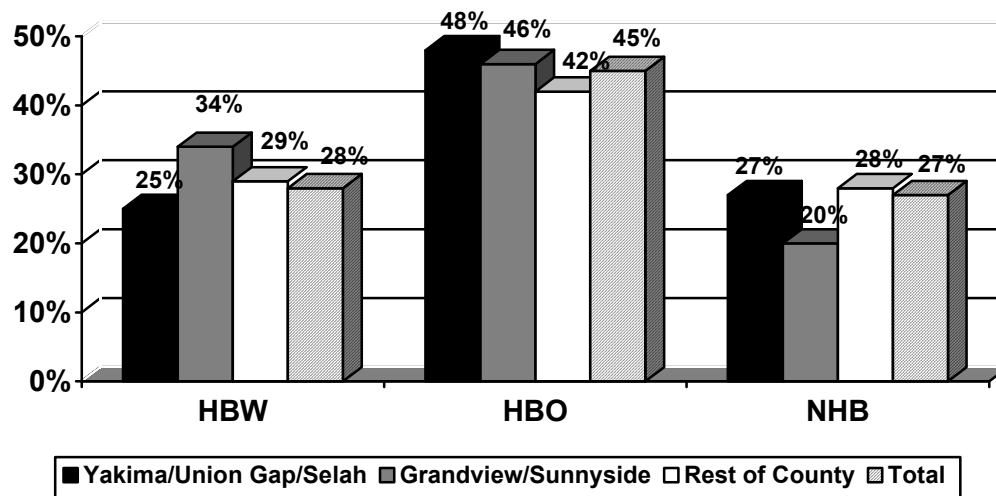
The next series of tables shows the origins and destinations of travel for all reported trips, HBW trips, HBO trips, and NHB trips. For each table, the trip origin is listed in the left hand column and the trip destinations appear in the remaining columns. The cell percentages reflect the proportion of trips that begin in each specific origin city and where they end. For example, in Table 16, 65% of trips that begin in Grandview also end in Grandview, while 1% begin in Grandview and end in Granger, and 3% begin in Grandview and end in Mabton.

Table 17 shows the origin-destination flow for home-based work trips (for both trips from home to work and work to home). Table 18 shows the flows for home-based other trips and Table 19 shows the distribution of non-home based travel.

TABLE 16: ORIGINS AND DESTINATIONS OF TRAVEL – ALL TRIPS

ORIGIN CITY	DESTINATION CITY																TOTAL
	Grandview	Granger	Mabton	Moxee City	Naches	Outlook	Selah	Sunnyside	Tieton	Toppenish	Union Gap	Wapato	White Swan	Yakima	Zillah	Other	
Grandview	65.1%	.6%	3.0%			.6%		16.9%		2.4%		.6%		4.7%	.6%	5.6%	100.0%
Granger	4.7%	58.8%						18.8%		10.6%		1.2%		5.9%			100.0%
Mabton	6.5%		63.2%	1.9%				12.9%						1.9%		13.5%	100.0%
Moxee City			2.5%	13.9%	4.1%		4.1%			.8%	7.4%			63.1%		4.1%	100.0%
Naches				6.7%	8.0%		1.3%		2.7%	1.3%	4.0%			73.3%		2.7%	100.0%
Outlook	6.4%					10.6%		51.1%		4.3%		6.4%		17.0%		4.3%	100.0%
Selah				1.6%	1.0%		44.4%		.6%	.6%	3.5%	.3%		42.8%	.3%	4.8%	100.0%
Sunnyside	8.5%	3.4%	3.4%			4.1%		70.2%		2.0%	.5%	.3%		4.8%	.7%	2.1%	100.0%
Tieton					2.3%				20.5%					43.2%		34.1%	100.0%
Toppenish	1.9%	1.4%		.2%	.2%	.5%	.5%	3.8%		57.8%	3.4%	5.3%	1.2%	17.0%	2.4%	4.3%	100.0%
Union Gap				3.6%	1.6%		2.8%	.8%		2.4%	18.1%	4.8%		63.5%	.8%	1.6%	100.0%
Wapato	.8%	.4%				.8%	.4%	.8%		8.9%	6.1%	53.0%	.8%	22.7%	3.6%	1.6%	100.0%
White Swan										12.5%		4.2%	68.8%	8.3%		6.3%	100.0%
Yakima	.4%	.1%	.1%	1.7%	1.1%	.2%	3.0%	.6%	.3%	1.7%	3.1%	1.3%	.1%	83.7%	.2%	2.4%	100.0%
Zillah	2.6%		6.6%		1.3%		1.3%	10.5%		14.5%		11.8%		13.2%	31.6%	6.6%	100.0%
Other	7.5%		5.3%	1.9%	1.5%	1.1%	3.8%	5.7%	6.0%	6.0%	3.0%	1.1%	1.1%	38.9%	4.2%	12.8%	100.0%

Source: Yakima County Household Travel Survey, weighted.

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TABLE 17: ORIGINS AND DESTINATIONS OF TRAVEL – HOME-BASED WORK TRIPS

ORIGIN CITY	DESTINATION CITY																	TOTAL
	Grandview	Granger	Mabton	Moxee City	Naches	Outlook	Selah	Sunnyside	Tieton	Toppenish	Union Gap	Wapato	White Swan	Yakima	Zillah	Other	
Grandview	50.0%	2.3%	3.4%			2.3%		21.6%		8.0%				1.1%	2.3%	9.1%	100.0%
Granger	7.7%	46.2%						15.4%		11.5%				19.2%			100.0%
Mabton	3.0%		62.7%	4.5%				17.9%								11.9%	100.0%
Moxee City			5.8%	13.5%	3.8%		9.6%			1.9%	5.8%			50.0%		9.6%	100.0%
Naches				6.3%	6.3%					3.1%	6.3%			71.9%		6.3%	100.0%
Outlook	8.0%					20.0%		40.0%		8.0%		8.0%		12.0%		4.0%	100.0%
Selah				4.9%			27.5%			1.0%	3.9%	1.0%		57.8%		3.9%	100.0%
Sunnyside	11.9%	2.1%	6.7%			5.7%		57.2%		4.1%		1.0%		6.2%	1.0%	4.1%	100.0%
Tieton									12.5%					31.3%		56.3%	100.0%
Toppenish	3.6%	2.4%		.6%	.6%	1.2%	.6%	3.6%		46.2%	4.1%	8.9%	.6%	19.5%	1.8%	6.5%	100.0%
Union Gap				7.0%			7.0%			7.0%	9.3%	2.3%		60.5%		7.0%	100.0%
Wapato	2.0%					2.0%	1.0%	2.0%		15.3%	2.0%	42.9%	2.0%	25.5%	5.1%		100.0%
White Swan										9.1%		18.2%	54.5%	18.2%			100.0%
Yakima	.3%	.3%		2.1%	2.0%	.3%	5.7%	1.1%	.4%	3.2%	1.9%	2.4%	.1%	77.6%	.3%	2.5%	100.0%
Zillah	6.7%							20.0%		16.7%		30.0%		6.7%	13.3%	6.7%	100.0%
Other	6.1%		9.8%	6.1%	2.4%	1.2%	3.7%	9.8%	6.1%	13.4%	1.2%			31.7%	2.4%	6.1%	100.0%

Source: Yakima County Household Travel Survey, weighted.

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TABLE 18: ORIGINS AND DESTINATIONS OF TRAVEL – HOME-BASED OTHER TRIPS

ORIGIN CITY	DESTINATION CITY																	TOTAL
	Grandview	Granger	Mabton	Moxee City	Naches	Outlook	Selah	Sunnyside	Tieton	Toppenish	Union Gap	Wapato	White Swan	Yakima	Zillah	Other	
Grandview	69.6%		4.2%					13.6%		.5%		1.0%		6.8%		4.2%	100.0%
Granger	4.9%	51.2%						29.3%		12.2%		2.4%					100.0%
Mabton	9.9%		61.7%					8.6%						3.7%		16.0%	100.0%
Moxee City				13.1%	4.9%							9.8%		72.1%			100.0%
Naches				9.7%	12.9%		3.2%		6.5%					67.7%			100.0%
Outlook	6.7%							53.3%				6.7%		26.7%		6.7%	100.0%
Selah					.7%		56.9%					2.9%		34.3%		5.1%	100.0%
Sunnyside	8.2%	4.5%	2.6%			3.0%		73.9%		1.1%	1.1%			4.1%		1.5%	100.0%
Tieton									31.8%					40.9%		27.3%	100.0%
Toppenish	.6%							3.7%		69.3%	3.1%	1.8%	1.8%	14.1%	3.7%	1.8%	100.0%
Union Gap				8.1%	2.7%		4.1%			1.4%	4.1%	5.4%		71.6%	2.7%		100.0%
Wapato		1.1%								2.2%	6.7%	62.2%		21.1%	5.6%	1.1%	100.0%
White Swan										10.7%			71.4%	7.1%		10.7%	100.0%
Yakima	.5%	.0%	.1%	2.4%	1.0%	.2%	2.2%	.7%	.4%	1.4%	2.8%	1.1%	.1%	84.9%	.1%	2.1%	100.0%
Zillah			15.2%		3.0%					18.2%				9.1%	51.5%	3.0%	100.0%
Other	8.8%		7.5%		2.5%	1.3%	3.8%	1.3%	8.8%	2.5%		3.8%	3.8%	55.0%		1.3%	100.0%

Source: Yakima County Household Travel Survey, weighted.

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TABLE 19: ORIGINS AND DESTINATIONS OF TRAVEL – NON-HOME BASED TRIPS

ORIGIN CITY	DESTINATION CITY																TOTAL
	Grandview	Granger	Mabton	Moxee City	Naches	Outlook	Selah	Sunnyside	Tieton	Toppenish	Union Gap	Wapato	White Swan	Yakima	Zillah	Other	
Grandview	69.4%							19.4%						4.8%		6.5%	100.0%
Granger		94.1%								5.9%							100.0%
Mabton			77.8%					22.2%									100.0%
Moxee City				20.0%										80.0%			100.0%
Naches												8.3%		91.7%			100.0%
Outlook								100.0%									100.0%
Selah					2.8%		45.1%		2.8%	1.4%	2.8%			38.0%	1.4%	5.6%	100.0%
Sunnyside	5.3%	3.3%	1.3%			3.9%		78.3%		.7%		.7%		4.6%	1.3%	.7%	100.0%
Tieton					20.0%									80.0%			100.0%
Toppenish		2.4%					1.2%	3.6%		59.5%	3.6%	4.8%	1.2%	17.9%	1.2%	4.8%	100.0%
Union Gap					2.3%		1.5%	1.5%		1.5%	28.6%	5.3%		59.4%			100.0%
Wapato										7.0%	10.5%	57.9%		19.3%		5.3%	100.0%
White Swan										22.2%			66.7%	11.1%			100.0%
Yakima	.1%	.1%		.1%	.4%		2.3%	.1%	.1%	1.0%	4.7%	.7%	.1%	86.8%	.3%	2.9%	100.0%
Zillah							6.7%	13.3%						33.3%	26.7%	20.0%	100.0%
Other	6.9%					1.0%	3.9%	5.9%	2.9%	2.9%	5.9%			32.4%	9.8%	28.4%	100.0%

Source: Yakima County Household Travel Survey, weighted.

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MODE CHOICE

Travel in Yakima County was mainly by auto (drivers and passengers). As shown in Figure 10, 81% of all trips were by auto drivers. The mode usage remains fairly consistent throughout the county, although the Grandview/Sunnyside respondents made more passenger trips and less auto driver trips, which is consistent with the larger household size noted for this region. Transit usage was higher for Yakima/Union Gap/Selah households. Currently, fixed route service is only available within the city of Yakima. Some social service agencies provide service outside of Yakima.

FIGURE 10: MODE USAGE
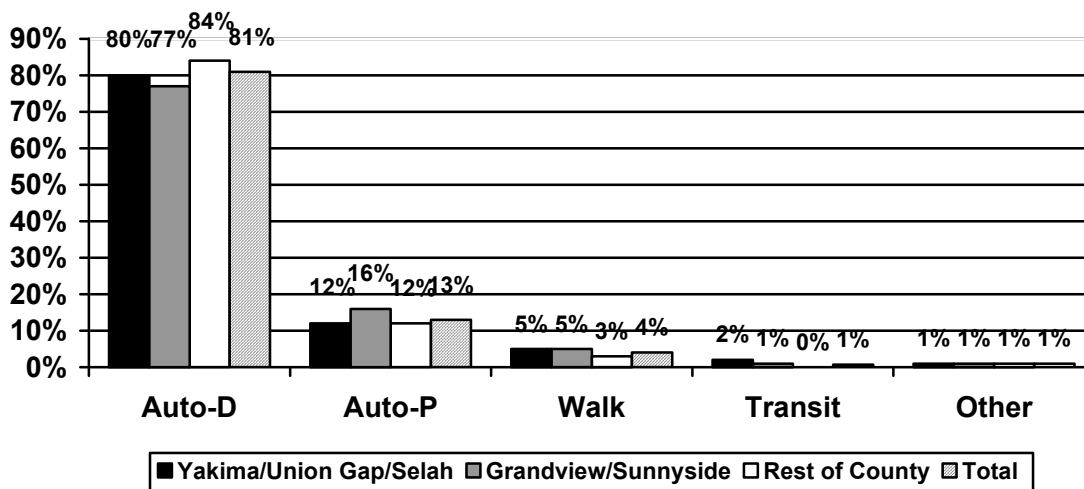
Table 20 presents travel mode by trip purpose. Overall, travel home was the main trip purpose, regardless of mode used. There was variation, however, in the secondary and tertiary trip purposes. For auto-driver trips, outside of the trip home, travel for work and to pick-up or drop-off passengers were most commonly reported (21% and 10% of auto driver trips reported). For auto-passengers, trips for work or shopping were most common (12% each). Non-Home walk trips tended to be for work (15%) or school (7%). Because transit trips were collected based on trip segments, the most commonly reported activity was to change mode of travel at the bus access or egress points.

Activity	Auto-Driver	Auto-Psngr	Walk	Transit	Other	Total
Non-Work At Home Activities	35.3%	39.9%	40.3%	24.6%	38.9%	36.1%
Work	20.6%	12.4%	14.7%	14.0%	16.7%	19.2%
Shopping	8.8%	12.4%	5.4%	14.0%	5.6%	9.2%
Pick Up / Drop Off Passenger	9.6%	5.5%	6.1%			8.8%
Personal Business	7.4%	7.3%	5.8%	8.8%	2.8%	7.3%
Work-Related	5.2%	1.0%	1.9%			4.4%
Eat Meal	3.0%	6.4%	3.8%			3.4%
Visit	2.4%	3.7%	2.2%	1.8%		2.5%
School	1.7%	4.7%	6.7%	3.5%	16.7%	2.4%
Quick Stop	2.2%	1.0%	1.3%	1.8%		2.0%
Recreation Or Fitness	1.4%	1.4%	3.8%	7.0%	6.9%	1.6%
Civic Or Religious	1.3%	2.6%	.6%	1.8%		1.4%
Entertainment	.7%	1.3%	1.3%			.8%
Change Mode	.1%	.2%	5.4%	22.8%	11.1%	.6%
School Related	.1%	.2%	.6%		1.4%	.2%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Yakima County Household Travel Survey, weighted.

Travel by Transit. Of the 7,706 trips reported by the participating households, 56 trips (0.6%) were by transit. Of these, 90% (or 50 trips) were made by households located in the Yakima/Union Gap/Selah area to other locations within the same geographic area. Nine percent of trips (5 trips) were made by households in the Grandview/Sunnyside area to locations within the same area, and the final transit trip was made a non-urban area household on an intercity-bus to Seattle. The demographic characteristics of the transit users are summarized in this section.

Most transit trips were reported by respondents who had no household vehicles. As shown in the table below, 76% of all transit trips were made by households with no vehicles available. Twenty-three percent of transit trips were made by respondents with one household vehicle. One trip was made by a respondent in a household with 3 or more vehicles available.

TABLE 21: VEHICLE OWNERSHIP OF TRANSIT USERS

HH Vehicles	Frequency	Percent
0	42	75.5%
1	13	22.7%
2	0	0.7%
3+	1	1.0%
Total	56	100.0%

Source: Yakima County Household Travel Survey, weighted.

Sixty-one percent of the transit trips were made by respondents earning less than $10,000. An additional 16% of trips were made by those reporting incomes between $10,000 and $25,000 and 21% by respondents in households with reported incomes between $25,000 and $50,000.

TABLE 22: INCOME OF TRANSIT USERS

Household Income	Frequency	Percent
Less Than $10k	34	60.7%
$10k But Less Than $25k	9	16.1%
$25k But Less Than $50k	11	20.5%
$50k But Less Than $75k	1	1.7%
$75k But Less Than $100k	1	1.0%
Total	56	100.0%

Source: Yakima County Household Travel Survey, weighted.

Most transit trips were made by users over the age of 65 (40%) or between the ages of 35 and 44 (31%) and of non-minority descent (81%). More than half (59%) did not hold drivers licenses but were employed (57%). One in three transit trips were made by someone with a disability.

TABLE 23: PERSON LEVEL CHARACTERISTICS OF TRANSIT USERS

Characteristics	N	%
Gender		
Male	27	49.5%
Female	28	50.5%
Age		
16 – 19	5	8.2%
20 – 24	0	0.0%
25 – 34	7	12.9%
35 – 44	17	31.0%
45 – 54	4	7.9%
55 – 64	0	0.0%
65+	22	39.9%
Respondent Ethnicity		
White	45	81.3%
Black/African American	0	0.0%
Hispanic	8	15.3%
American Indian	2	3.4%
Asian/Pacific Islander	0	0.0%
Other	0	0.0%
Licensed Driver Status		
Licensed to Drive	23	40.8%
Not Licensed	33	59.2%
Disability Status		
Disabled	19	33.4%
Not Disabled	37	66.6%
Employment Status		
Employed	32	57.3%
Not Employed	24	42.7%

Source: Yakima County Household Travel Survey, weighted.

Transit trips were reported throughout the week. One-third of the transit trips were made on a Monday, while 27% of the transit trips were taken on a Wednesday. Seventeen percent of transit trips were made on a Thursday, 12% on a Friday, and 11% on a Tuesday.

FIGURE 11: TRANSIT USAGE BY WEEKDAY
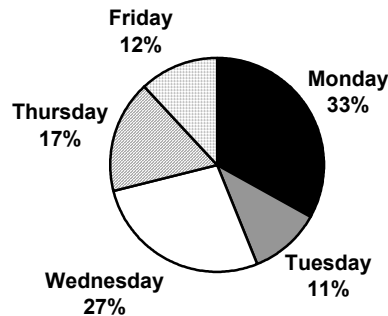
Non-Motorized Travel. Four percent of all trips reported (329 trips) were using non-motorized modes (walk or bicycle). The characteristics of those trips are summarized in this section. This includes information about those who reported the non-motorized trips as well as some information about the non-motorized trips themselves. Sixty-one percent of all non-motorized trips were made to destinations in Yakima. More than half of these walk or bike trips within Yakima were made by respondents who lived in the Yakima/Union Gap/Selah area of the county. An additional 10% of the non-motorized trips in Yakima were made by households who live in the non-urban area.

TABLE 24: LOCATION OF WALK TRIPS BY HOME RESIDENCE LOCATION

LOCATION OF NON-MOTORIZED TRIP	HOME LOCATION			TOTAL
	Yakima/ Union Gap/ Selah	Grandview/ Sunnyside	Rest of County	
Grandview		5.4%		5.4%
Granger			3.9%	3.9%
Harrah			1.2%	1.2%
Mabton			1.8%	1.8%
Moxee City			.3%	.3%
Naches			.6%	.6%
Sunnyside		2.1%	.6%	2.7%
Tieton			.3%	.3%
Toppenish			8.8%	8.8%
Union Gap	1.5%			1.5%
Wapato			7.6%	7.6%
White Swan			3.9%	3.9%
Yakima	51.4%	.3%	9.7%	61.3%
Zillah			.6%	.6%
Total	52.9%	7.9%	39.3%	100.0%

Source: Yakima County Household Travel Survey, weighted.

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Unlike the transit trips, which were made predominantly by members of households with no vehicles, the majority of non-motorized trips were by those in households with one vehicle. As shown in the table below, respondents from households with one vehicle reported 42% of all non-motorized trips. An additional 29% were made by those with two vehicles available.

TABLE 25: VEHICLE OWNERSHIP OF NON-MOTORIZED TRIP MAKERS

HH Vehicles	Frequency	Percent
0	47	14.4%
1	136	41.5%
2	96	29.2%
3+	49	14.9%
Total	329	100.0%

Source: Yakima County Household Travel Survey, weighted.

The following table summarizes the person-level characteristics for those respondents reporting non-motorized travel. More women than men reported travel by non-motorized means, almost half of which are age 35 to 54. These travelers are predominantly white or Hispanic (59% and 37.3% respectively). Most are employed (63%), have a driver's license (55%) and are not disabled (92%).

TABLE 26: PERSON LEVEL CHARACTERISTICS OF TRANSIT USERS

Characteristics	N	%
Gender		
Male	140	42.2%
Female	189	57.6%
Age		
16 – 19	54	16.4%
20 – 24	10	3.0%
25 – 34	58	17.7%
35 – 44	83	25.1%
45 – 54	60	18.3%
55 – 64	22	6.7%
65+	42	12.8%
Respondent Ethnicity		
White	197	58.9%
Black/African American	0	0.0%
Hispanic	123	37.3%
American Indian	9	2.7%
Asian/Pacific Islander	1	0.2%
Other	0	0.0%
Licensed Driver Status		
Licensed to Drive	180	54.8%
Not Licensed	149	45.2%
Disability Status		
Disabled	27	8.1%
Not Disabled	302	91.9%

Characteristics	N	%
Employment Status		
Employed	209	63.4%
Not Employed	120	36.6%

Source: Yakima County Household Travel Survey, weighted.

Mondays and Wednesdays were the days respondents were most likely to report walk or bike trips. In addition, 15% of non-motorized trips were recorded on Tuesday, 16% on Thursday, and 11% on Friday.

FIGURE 12: NON-MOTORIZED TRAVEL BY WEEKDAY
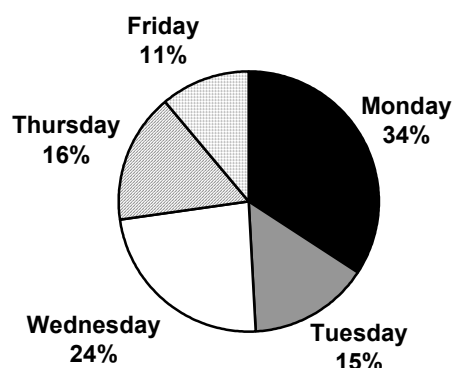
TRAVEL TIMES

During the course of the survey, respondents reported all trips for a designated 24-hour period that began at 3 am and ended at 2:59 am the following calendar day. Figure 12 shows the departure time for all trips. Travel peaks at 7 am, then again at 5 pm. In addition, there is a slight increase in travel at noon. Figure 13 shows the trip departure times by trip purpose. In Figure 13, HBW trips peak at 7 am and 5 pm. HBO trips are more consistent throughout the day, but do show a slight peak at 7 am and 5 pm as well. Non-Home based trips peak at noon and 4 pm.

FIGURE 13: TRIP DEPARTURE TIMES
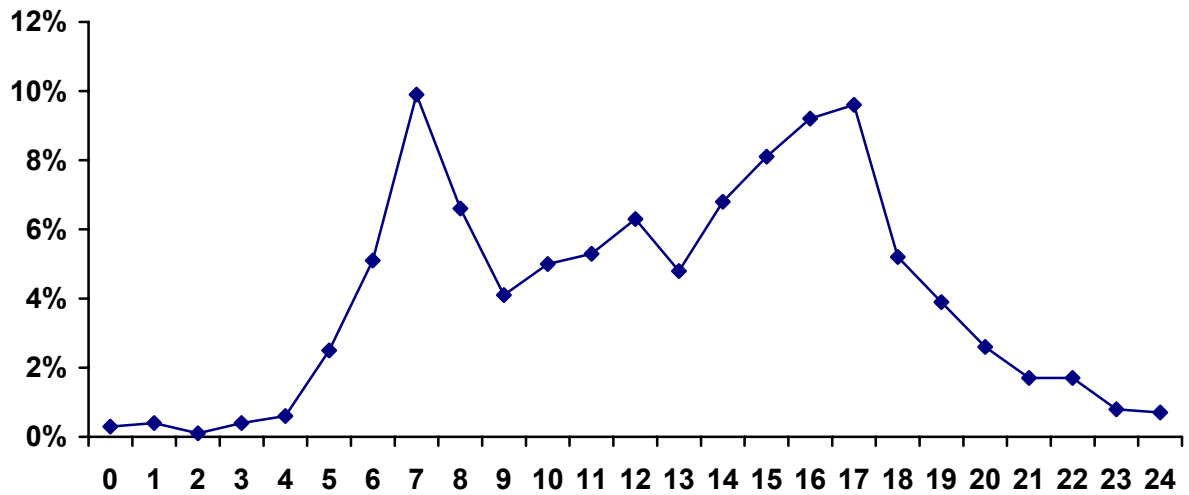
FIGURE 14: TRIP DEPARTURE TIMES BY TRIP PURPOSE

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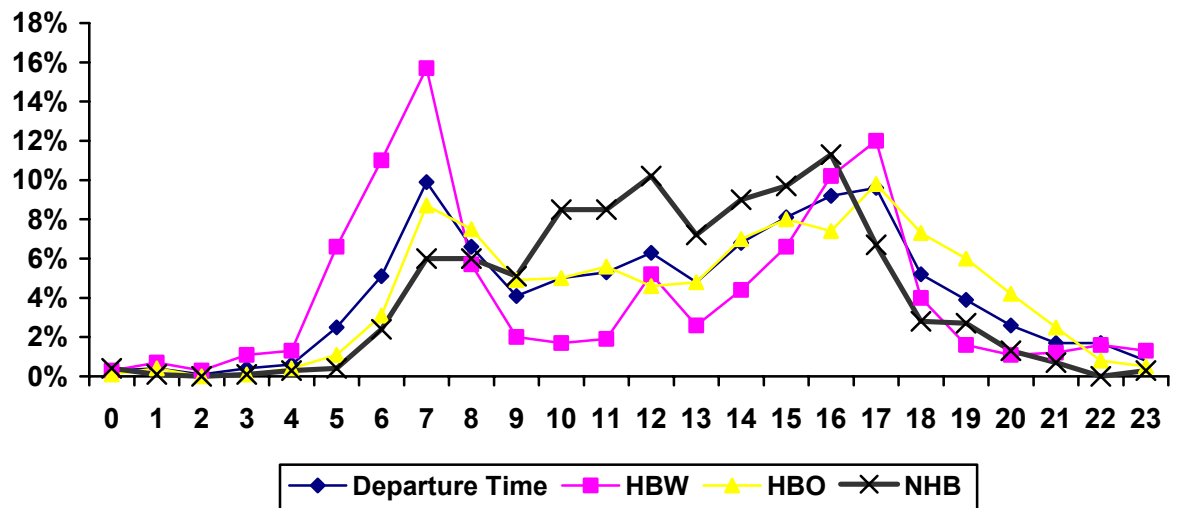
Travel times varied based on the geographic area of the county. Households in the Yakima/Union Gap/Selah area reported a lower morning peak that was more spread out than the other areas. Households in the Grandview/Sunnyside area left earlier in the morning and reported a different afternoon peak than the rest of the county. Respondents from the non-urban portion of the county also had a higher-than-average morning peak, then a later afternoon peak.

FIGURE 15: TRIP DEPARTURE TIMES BY GEOGRAPHIC AREA
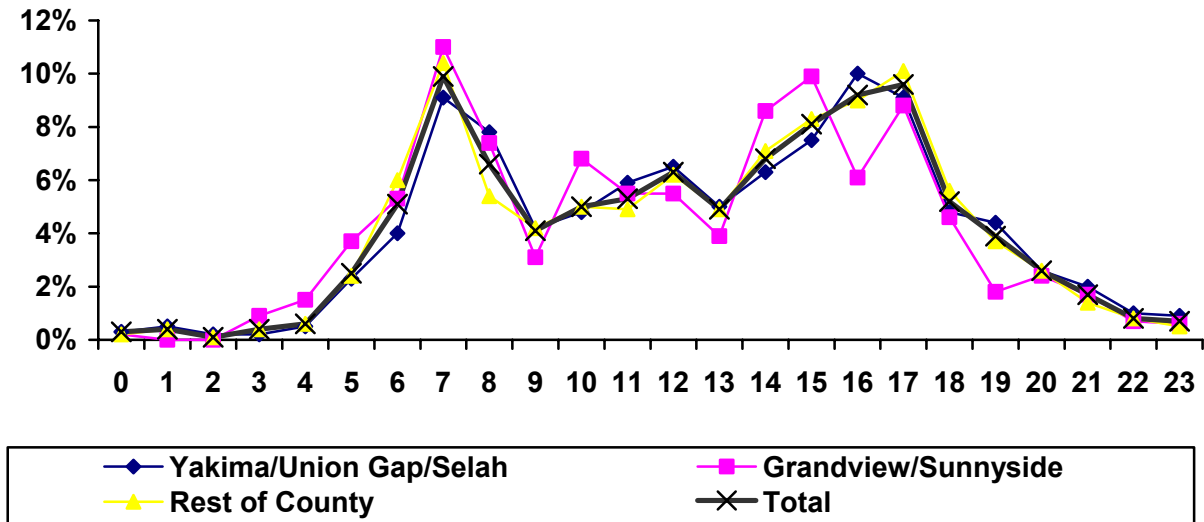
The final graph shows departure times by travel mode. Auto Drivers show a peak at 7 am and 5 pm, but auto passengers show a fairly consistent level of trip making throughout the day, beginning at 6 am and continuing into the evening hours. The "other" modes include bicycle, school bus, taxi, and motorcycle, and show a more pronounced peak due to the smaller sample sizes.

FIGURE 16: TRIP DEPARTURE TIMES BY TRAVEL MODE
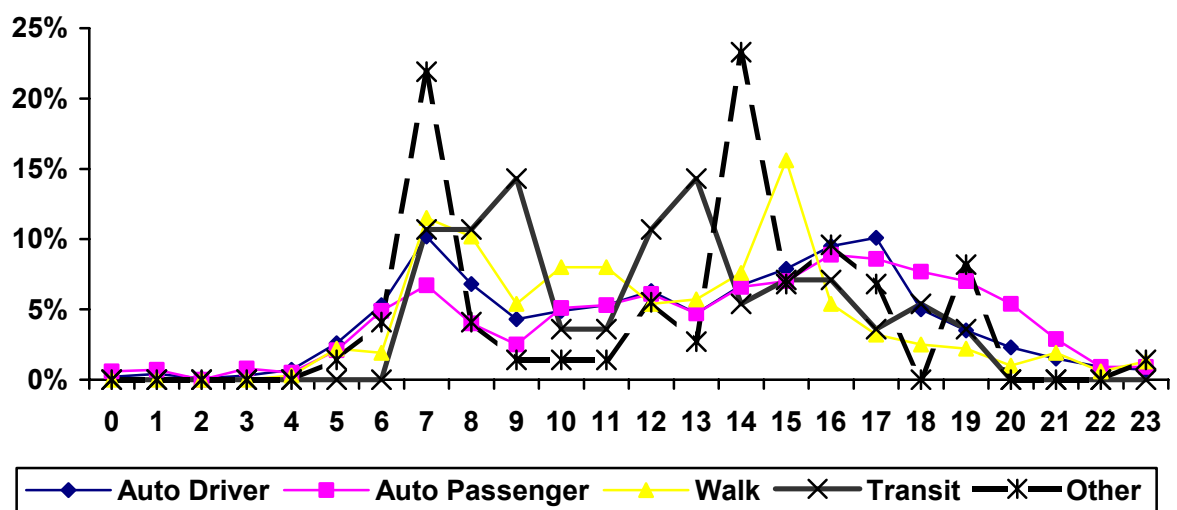
CONCLUSIONS

The Yakima County Household Travel Survey data set is a rich source of information about travel patterns in Yakima County. It was designed to serve as the foundation for transportation planning efforts in the region, as well as to document the socio-economic characteristics of the travelers. The data were weighted to adjust for probability of selection and a post-stratification adjustment brought the household characteristics into line with the 2000 census parameters for geography, household size, household vehicles, and household workers. In sum, the 1,107 households reported a total of 7,709 daily trips when weighted. When expanded, this provides Yakima County with details about 516,000 regional trips.

The survey was successful in documenting household travel behavior in the region. Households in the Grandview/Sunnyside area reported a lower level of trip making than households elsewhere in the county. Households in the Yakima/Union Gap/Selah reported above average trip making. The demographic composition of the households affected these trip rates, as did the land use and development decisions guiding growth in Yakima County. The city of Yakima serves as a major trip attractor for all types of trips, including home-based work, home-based other, and non-home based travel. In the southern portion of the county, Sunnyside is also a frequent travel destination.

Yakima County residents travel mainly by auto, with 94% of all trips being reported as auto-driver or auto-passenger. The main reasons for trip making were to return home from another destination (36%), to go to work (19%) and to shop (9%). Transit usage was primarily between locations within the city of Yakima and made by low-income households with no vehicles and no drivers licenses. Four percent of trips were made by walking or bicycling. These non-motorized trips were also made primarily within Yakima throughout the week.

The travel survey capture 24-hours of trip information. Most trips were reported between 5 am and 8 pm, with peak travel reported at 7 am and 5 pm. Home-based work trips peak at 7 am and 5 pm, but home-based other trips were more consistent throughout the day. Non-home based trips showed peak travel times of noon and 4 pm.

The geocoded information associated with 94% of all locations visited will provide Yakima County with origin and destination flow details that can be used to plan for roadway improvements. It can also be used to calculate trip distance, and thus serve as an input into the vehicle miles traveled calculations. It will also be useful in calibrating the forthcoming regional travel model improvements.

The appendices to this report contain the survey instruments and respondent materials used to conduct the survey. In addition, the unweighted frequencies are presented within the context of the recruitment and retrieval questionnaires. These, combined with the information within the survey methods section of this report, provide a complete documentation of the Yakima County Household Travel Survey.

APPENDICES

APPENDIX A

Advance Postcard

Front

2003

c/o NuStats DataSource
133 W. San Antonio St.
San Marcos, TX 78666

800-447-8287, ext. 2240

YAKIMA COUNTY TRAVEL STUDY

WE'LL CALL YOU SOON TO PARTICIPATE IN THIS IMPORTANT STUDY!

Back

WHAT? Your household has been selected to participate in the *YAKIMA COUNTY TRAVEL STUDY*.

WHO? The study is sponsored by the *YAKIMA COUNTY DEPARTMENT OF PUBLIC WORKS*. It is being conducted by *NUSTATS*, a nationally known research firm.

WHY? We will conduct 1,000 confidential telephone and travel log interviews to collect information on local travel patterns.
The results will be used in future planning to:

- Improve highways
- Reduce congestion
- Provide/improve transit service
- Improve air quality

HOW? It's easy! A surveyor from NuStats WILL CALL YOU soon.

WANT MORE INFORMATION?

Visit the survey webpage: *www.nustats.com/yakima*

Contact: *Stacey Bricka, NuStats at (800) 447-8287 ext. 2240, sbricka@nustats.com or, Alan Adolf, Yakima County at (509) 574-2344, alan.adolf@co.yakima.wa.us*

APPENDIX B

Yakima County Travel Study
Recruitment Questionnaire

Introduction

Hi – my name is _____ and I'm calling on behalf of Yakima County. We're interviewing families in the county about their travel. This study will help to improve the transportation systems in your area and improve air quality. May I speak with [NAME – IF LISTED SAMPLE] / [an adult in the house – IF UNLISTED SAMPLE]?

ADULT ON PHONE: We're *[IF NEW PERSON: YAKIMA COUNTY is]* conducting a study to understand why and how people travel in the county, as part of planning for future transportation needs. [You may have received a postcard providing information about the study.] The study is purely a research effort and the information you provide will be combined with that of 1,000 other households from throughout the county. This will help transportation planners and public officials develop strategies for making wise transit and highway improvements.

To be certain that everyone in the county is properly represented in our study, I'll be asking some questions about your household. This includes information about your vehicles, where family members travel for work or school, and household income. These are important for understanding how much and where people travel, and how travel varies by day of week and time of day. Your participation will involve your recording your travel for one day in a specially prepared travel log, which we will mail to you. In order to prepare the logs, I need to ask a few questions about your household's vehicles and the members of your household.

Household Data

H1 First, I'd like to confirm that you live in Yakima County.
    1…YES
    2   NO –TERMINATE
    9…DK/RF - TERMINATE

H2 And how many people, including yourself, live in your household?
    ENTER NUMBER
    98…DON'T KNOW – TERMINATE WITH BELOW TEXT
    99…REFUSED – terminate "Thank you but without this information, your household will not be eligible to participate in this study." PAUSE AND GIVE FINAL OPPORTUNITY FOR RESPONDENT TO ANSWER BEFORE TERMINATING

H3 Next, how many vehicles are available to members of your household? (This number should include all cars, trucks, vans, and motorcycles, whether owned, leased, or provided by an employer and in working condition.)
    ENTER NUMBER
    98…DON'T KNOW – TERMINATE WITH BELOW TEXT
    99…REFUSED – terminate "Thank you but without this information, your household will not be eligible to participate in this study." PAUSE AND GIVE FINAL OPPORTUNITY FOR RESPONDENT TO ANSWER BEFORE TERMINATING

Vehicle Data

V1-V3 Now I need to get some information about each vehicle.   Starting with the vehicle that is driven the most, what is the vehicle year, make, and model?

V2 What is the fuel type?
    1   Gas
    2   Diesel
    3   Other (specify)

V3 And which of the following best describes this vehicle?
    1   Car
    2   Truck
    3   Sport Utility Vehicle / SUV
    4   Minivan
    5   Full sized passenger or cargo van
    6   Motorcycle
    7   Other (specify)
    9   Refused

Household Data (cont.)

H4 And how many bicycles in working condition are available to your household for traveling to work, school, shopping, or other travel purpose?
    ENTER NUMBER
    98…DON'T KNOW
    99…REFUSED

H5 And to ensure your household properly represents others in the county, can you tell me if your total household income for 2001 was above or below $25,000?

H5a   [IF BELOW $25,000]   Is it above or below $10,000?
        if below $10,000, INCOME=1
        if $10,000 to <$25,000, INCOME=2

H5b   [IF$25,000 OR ABOVE] Is it above or below $75,000?
        if $25,000 to $50,000, INCOME=3
        if $50,000 to $75,000, INCOME=4
        if $75,000 to $100k, INCOME=5
        if $100k or greater, INCOME=6

IF REFUSED: I appreciate your concerns about providing this information, but I only need to properly identify your household as belonging to one of the following categories: READ INCOME LIST
    1    $0 - $9,999
    2    $10,000 - $24,999
    3    $25,000 - $49,999
    4    $50,000 to $74,999
    5    $75,000 to $99,999
    6    $100k or more
    9   REFUSED –

COMPUTE INCOME

H6 Do you live in a …
    1…Unattached single-family home
    2…Duplex
    3…Apartment
    4…Condominium or townhouse
    5…Mobile home or trailer
    6…Group quarters (barracks, dorms, etc).
    7…Other (specify)
    9… REFUSED

H7 Do you own or rent this home?
    1   Own/buying
    2   Rent
    3   Other (specify)
    9   DK/RF

Person Data

Now I need to get some information about each person in your household, so I can prepare individual travel logs. Again, I want to assure you that this information is for research purposes only and will be held in strict confidence. Earlier you indicated that there were<HHSIZ>persons in your household.

First I need the names for each person in the household.
[IF HHSIZE=2] What is the first name of the other person living in your home?

Excluding you, what's the first name of the oldest person?
What's the name of the next oldest person in the household? [EXCLUDING RESPONDENT]
What's the first name of the next oldest person? [EXCLUDING RESPONDENT]

BEGIN SERIES OF QUESTIONS WITH RESPONDENT, THEN COLLECT FOR OTHER HOUSEHOLD MEMBERS

P1 [DON'T ASK FOR RESPONDENT] What is NAME's relationship to you?
    0   SELF / HEAD OF HOUSEHOLD [CAN'T USE FOR OTHER HH MEMBERS]
    1   SPOUSE/PARTNER
    2   MOTHER/FATHER/ -IN-LAW
    3   BROTHER/SISTER
    4   GRANDFATHER/GRANDMOTHER
    5   SON/DAUGHTER
    6   AUNT/UNCLE
    7   OTHER RELATIVE
    8   OTHER NON-RELATIVE
    9   REFUSED

P2 And what is NAME's gender? [RECORD BY OBSERVATION FOR RESPONDENT]
    1   MALE
    2   FEMALE
    9   REFUSED

P3 How old is NAME?
    ____   [enter in years]
    98 98 or older
    99 DON'T KNOW/ REFUSED

P4 Does NAME have any type of physical disability that makes it difficult to get around?
1   YES
2   NO
9   DK/RF

P5 What is NAME's ethnicity?
1   White/Caucasian
2   Black/African American
3   Hispanic
4   Asian
5   Native American
7   Other (specify)
9   Refused

P6 [IF AGE>15] Does NAME have a valid driver's license?
1   YES
2   NO
9   DK/RF

P7 [IF AGE>15] Is NAME employed in a paying or volunteer job?
1   YES
2   NO
9   DK/RF

P8 [IF NOT EMPLOYED] Which of the following best describes NAME's current situation?
1   Retired,
2   Disabled / On Disability Status,
3   Homemaker,
4   Unemployed but looking for work,
5   Unemployed and not looking for work, or
6   a Student?
7   Other (specify)
9   DK/RF

Work Related Questions for Main / Primary Job - ELSE SKIP TO SCHOOL SECTION

W1 How many days per week does NAME work?
____   [1-7]
8 VARIES
9 DK/REFUSED

W2 Out of the last 7 days, how many days were worked at home instead of at HIS normal work location?
____   [0-7]
8 DON'T KNOW
9 REFUSED

W3 What is the name of HIS employer? IF SELF-EMPLOYED, OBTAIN NAME OF BUSINESS
1   SELF EMPLOYED (SPECIFY BUSINESS / COMPANY NAME)
7   OTHER (SPECIFY BUSINESS / COMPANY NAME)
9   DK/RF

W4.Where is HIS job located?
  1   HOME
  2   VARIES – NO FIXED LOCATION
  3   ADDRESS GIVEN – ENTER BELOW
  9   REFUSED

  Address:_____
  City_____
  County_____
  State: _____
  ZIP: _____
  Cross Streets: _____
  Landmarks: _____

W5 Which of the following best describes HIS type of workplace?
  1   Office / Office Building,
  2   Retail Location,
  3   Industrial or Manufacturing Site,
  4   Medical Facility,
  5   Educational
  7   Something else (specify)
  9   DK/RF

W6 Which of the following best describes HIS occupation?
  1   Executive / Administrative / Managerial
  2   Professional specialty
  3   Technician / related support
  4   Sales
  5   Private household
  6   Protective services
  7   Other service (not household or protective)
  8   Agriculture
  9   Forestry or Fishing
  10 Precision / Production / Craft / Repair
  11 Machine Operator, assembler, inspector
  12 Transportation or material moving
  13 Handler, equipment cleaner, helper, laborer
  14 Other (specify)
  98 DK
  99 REFUSED

W7 [IF OCCUPATION=AGRICULTURE] What type of agriculture is that?
  1   Dairy
  2   Other Livestock
  3   Wine
  4   Hops
  5   Fruit
  6   Other (specify)

W8 [IF OCCUPATION=AGRICULTURE] Does HE own this farm/business?
  1   YES
  2   NO
  9   DK/RF

W9 [IF OCCUPATION=AGRICULTURE AND STATUS=OWNER] How many workers does HE employ at this site?
ENTER NUMBER

W10   [IF OCCUPATION=AGRICULTURE AND STATUS=OWNER] How many commercial pick-ups or deliveries are typically made to this site each week?
ENTER NUMBER

School-Related Questions

S1 What is the highest level of education<YOU >have/has attained?
   1   11th grade or less / NOT HS GRADUATE
   2   High school graduate / GED
   3   Some college but have not earned Bachelor's Degree (NOTE: MAY HAVE EARNED ASSOCIATES]
   4   4 years of college or Bachelor's Degree
   5   Post-graduate/Graduate Degree
   6   Technical/Vocational school
   7   OTHER, SPECIFY
   9   DK/RF

S2 Is NAME currently enrolled in any type of school?
   1   YES
   2   NO – GO TO NEXT SECTION
   9   DK/RF

S3 [AGE 18+] What type of school does HE attend?
   1   High school
   2   Technical/Vocation School
   3   2 year college (Community College)
   4   4-year college or university
   7   OTHER, SPECIFY
   9   DK/RF

S5 [ALL STUDENTS] What is the name and address of that school?

Conclusion

H8 Okay – we're almost finished. First, we'd like everyone in your household age 16 and older to keep
     track of their travel on [DAY and DATE]. Is this okay?
   1   Yes
   2   No – Well, lets try a different time. How about [ALT DAY AND DATE].
   Enter assignment number
APRIL 2 THROUGH MAY 16

H9 Where is your home located? [IF LISTED SAMPLE, CONFIRM ADDRESS, IF UNLISTED: OBTAIN]
     PHYSICAL ADDRESS. NO P.O. BOXES ALLOWED
     Is this also your mailing address? IF NOT, OBTAIN

H10 After you record your travel, we'll recontact you to get the information. When would be the best time
      to reach you?
      OBTAIN DAY AND TIME

H11   And should we call you at this telephone number or is there a different phone number where you would prefer to be called?
1   This number
2   Different number ___ - ___ - ____

Thank you for participating in this study. We'll call you on [DAY PRIOR TO TRAVEL DAY] to make sure you've received your diaries and to answer any questions you might have. If you have any questions or comments, you can reach us at 1-888-530-2242. Thank you and have a good day/night.

APPENDIX C

Yakima County Household Travel Study
Recruitment Questionnaire (N=1,107 households, unweighted)

H2 And how many people, including yourself, live in your household? (avg=2.79)

HH Size	Frequency	Percent
1	240	21.7%
2	353	31.9%
3	194	17.5%
4	163	14.7%
5	83	7.5%
6	40	3.6%
7	23	2.1%
8	11	1.0%
Total	1107	100.0%

Number of HH Members age 16+ (avg=2.01)

HH Size (16+)	Frequency	Percent
1	274	24.8%
2	631	57.0%
3	142	12.8%
4	46	4.2%
5	11	1.0%
6	1	0.1%
7+	2	0.2%
Total	1107	100.0%

H3 Next, how many vehicles are available to members of your household? (This number should include all cars, trucks, vans, and motorcycles, whether owned, leased, or provided by an employer and in working condition.) (avg=1.93)

HH Vehicles	Frequency	Percent
0	63	5.7%
1	334	30.2%
2	443	40.0%
3	179	16.2%
4	68	6.1%
5	13	1.2%
6	5	0.5%
7+	2	0.2%
Total	1107	100.0%

Vehicle Data

V1-V3 Now I need to get some information about each vehicle.   Starting with the vehicle that is driven the most, what is the vehicle year, make, and model?

Year	Frequency	Percent
Pre-1995	1198	56.1%
1995-1999	553	25.9%
2000	136	6.4%
2001	93	4.4%
2002	95	4.4%
2003	31	1.5%
Unknown	30	1.4%
Total	2136	100.0%

V2 What is the fuel type?
1   Gas (97.2%)
2   Diesel (2.3%)
3   Other (specify) (0.4%) – 1 combined gas and propane and 8 refused/unknown responses

V3 And which of the following best describes this vehicle?
1   Car (49.3%)
2   Truck (25.9%)
3   Sport Utility Vehicle / SUV (13.2%)
4   Minivan (8.8%)
5   Full sized passenger or cargo van (1.0%)
6   Motorcycle (0.6%)
7   Other (specify) (0.7%) (14 mobile homes, 1 tow truck and 1 semi truck)
9   Refused (0.6%)

Vehicle Make

Vehicle Make	Frequency	Percent
Ford	494	23.1
Chevrolet	381	17.8
Dodge	165	7.7
Toyota	129	6.0
Honda	105	4.9
Nissan	83	3.9
Buick	82	3.8
Gmc	70	3.3
Pontiac	63	2.9
Plymouth	56	2.6
Subaru	51	2.4
Chrysler	47	2.2
Jeep	47	2.2
Mercury	46	2.2
Oldsmobile	44	2.1
Mazda	36	1.7
Volkswagen	26	1.2
Cadillac	25	1.2
Mitsubishi	24	1.1
Geo	20	.9
Lincoln	18	.8
Kia	12	.6
Volvo	11	.5
Isuzu	10	.5
Suzuki	10	.5
Acura	7	.3
BMW	7	.3
Lexus	7	.3
Harley Davidson	5	.2
Mercedes	5	.2
Saturn	5	.2
Audi	4	.2
Porsche	3	.1
Other, Specify	24	1.0
Dont Know	12	.6
Refused	2	.1
Total	2136	100.0

H4 And how many bicycles in working condition are available to your household for traveling to work, school, shopping, or other travel purpose? (avg=0.78)
0 BIKES – 67.6%
1 BIKE – 9.5%
2 + BIKES – 22.9%

H5 And to ensure your household properly represents others in the county, can you tell me if your total household income for 2001 was above or below $25,000?
1     $0 - $9,999 (8.6%)
2     $10,000 - $24,999 (30.9%)
3     $25,000 - $49,999 (27.4%)
4     $50,000 to $74,999 (17.1%)
5     $75,000 to $99,999 (8.0%)
6     $100k or more (3.4%)

9   REFUSED (4.6%)

H6 Do you live in a …
1…Unattached single-family home (72.4%)
2…Duplex (3.3%)
3…Apartment (10.8%)
4…Condominium or townhouse (1.6%)
5…Mobile home or trailer (10.6%)
6…Group quarters (barracks, dorms, etc). (1.1%)
7…Other (specify) (0%)
9… REFUSED (0.3%)

H7 Do you own or rent this home?
1   Own/buying (70.0%)
2   Rent (29.3%)
3   Other (specify) (0.3%) (1 Govt housing, 2 employer provided)
9   DK/RF (0.5%)`

Person Data

P1 [DON'T ASK FOR RESPONDENT] What is NAME's relationship to you?
0   SELF / HEAD OF HOUSEHOLD (35.9%)
1   SPOUSE/PARTNER (23.0%)
2   MOTHER/FATHER/ -IN-LAW (1.9%)
3   BROTHER/SISTER (1.7%)
4   GRANDFATHER/GRANDMOTHER (0.3%)
5   SON/DAUGHTER (33.4%)
6   AUNT/UNCLE (0%)
7   OTHER RELATIVE (0.4%)
8   OTHER NON-RELATIVE (1.8%)
9   REFUSED (1.6%)

P2 And what is NAME's gender? [RECORD BY OBSERVATION FOR RESPONDENT]
1   MALE (48.2%)
2   FEMALE (51.2%)
9   REFUSED (0%)

P3 How old is NAME? (avg. =34.7 years)

Age	Frequency	Percent
Under 15	819	26.6
15-19	216	7.0
20-24	149	4.8
25-34	397	12.9
35-44	420	13.6
45-54	404	13.1
55-64	275	8.9
65+	386	12.5
Refused	18	.6
Total	3084	100.0

P4 Does NAME have any type of physical disability that makes it difficult to get around?
    1   YES (8.6%)
    2   NO (91.3%)
    9   DK/RF (0.1%)

P5 What is NAME's ethnicity?
    1   White/Caucasian (55.0%)
    2   Black/African American (0.4%)
    3   Hispanic (40.4%)
    4   Asian (0.9%)
    5   Native American (1.8%)
    7   Other (specify) (1.0%) (of mixed descent)
    9   Refused (0.4%)

P6 [IF AGE>15] Does NAME have a valid driver's license? N=2221
    1   YES (86.1%)
    2   NO (13.7%)
    9   DK/RF (0.2%)

P7 [IF AGE>15] Is NAME employed in a paying or volunteer job? N=1285
    1   YES (57.9%)
    2   NO (42.1%)
    9   DK/RF (0%)

P8 [IF NOT EMPLOYED] Which of the following best describes NAME's current situation? N=936
    1   Retired, (40.6%)
    2   Disabled / On Disability Status, (9.8%)
    3   Homemaker, (19.7%)
    4   Unemployed but looking for work, (13.1%)
    5   Unemployed and not looking for work, or (2.0%)
    6   a Student? (13.6%)
    7   Other (specify) (0.4%) (maternity leave)
    9   DK/RF (0.7%)

Work Related Questions for Main / Primary Job - ELSE SKIP TO SCHOOL SECTION

W1 How many days per week does NAME work? AVG=5.07 (range=1 to 7)

W2 Out of the last 7 days, how many days were worked at home instead of at HIS normal work location?
    AVG=0.52 (range=0 to 7)

W4.Where is HIS job located?
1   HOME (4.7%)
2   VARIES – NO FIXED LOCATION (13.8%)
3   ADDRESS GIVEN (81.5%)
9   REFUSED – 1 person out of 1285 employed respondents

W5 Which of the following best describes HIS type of workplace?
1   Office / Office Building, (22.5%)
2   Retail Location, (19.2%)
3   Industrial or Manufacturing Site, (23.3%)
4   Medical Facility, (7.9%)
5   Educational (11.0%)
7   Something else (specify) (9.3%) – includes ag (96), military (4), "public" (8), and religious (12)
9   DK/RF Unknown (0.4%)

W6 Which of the following best describes HIS occupation?
1   Executive / Administrative / Managerial (15.3%)
2   Professional specialty (21.7%)
3   Technician / related support (8.6%)
4   Sales (9.6%)
5   Private household (1.6%)
6   Protective services (1.2%)
7   Other service (not household or protective) (3.9%)
8   Agriculture (7.1%)
9   Forestry or Fishing (0.6%)
10 Precision / Production / Craft / Repair (4.2%)
11 Machine Operator, assembler, inspector (4.0%)
12 Transportation or material moving (2.7%)
13 Handler, equipment cleaner, helper, laborer (16.0%)
14 Other (specify) (0%)
98 Don't Know (2.3%)
99 REFUSED (1.1%)

W7 [IF OCCUPATION=AGRICULTURE] What type of agriculture is that? N=91
1   Dairy (7.7%)
2   Other Livestock (9.9%)
3   Wine (6.6)
4   Hops (18.7%)
5   Fruit (33.0%)
6   Other (specify) (14%.2) – Vegetables, produce, combination of fruit and vegetables
7   Refused (9.9%)

W8 [IF OCCUPATION=AGRICULTURE] Does HE own this farm/business?
1   YES (5.5%)
2   NO (89.0%)
9   DK/RF (5.5%)

W9 [IF OCCUPATION=AGRICULTURE AND STATUS=OWNER] How many workers does HE employ at this site? N=5
1 said 250 employees, 1 said 5 employees, 1 said no others, and the other 2 refused

W10   [IF OCCUPATION=AGRICULTURE AND STATUS=OWNER] How many commercial pick-ups or deliveries are typically made to this site each week? N=5
2 said none, 1 said 1, the other 2 refused

Note: the one farmer with 250 employees and one average pick-up/delivery is a fruit farmer.

School-Related Questions - Note: 845 respondents are students – 166 are students age 18+

S1 What is the highest level of education<YOU >have/has attained? N=3084
    1   11th grade or less / NOT HS GRADUATE (50.8%)
    2   High school graduate / GED (19.2%)
    3   Some college but have not earned Bachelor's Degree (14.9%)
    4   4 years of college or Bachelor's Degree (9.4%)
    5   Post-graduate/Graduate Degree (3.3%)
    6   Technical/Vocational school (1.3%)
    7   OTHER, SPECIFY (0%)
    9   DK/RF (1.1%)

S2 Is NAME currently enrolled in any type of school?
    1   YES (27.4%)
    2   NO – GO TO NEXT SECTION – 72.3%
    8   DK/RF (0.3%)

S3 [AGE 18+] What type of school does HE attend? N=166
    1   High school (16.3%)
    2   Technical/Vocation School (9.0%)
    3   2 year college (Community College) (50.0%)
    4   4-year college or university (24.1%)
    7   OTHER, SPECIFY (06%)
    9   DK/RF (0%)

Conclusion

H8 Okay – we're almost finished. First, we'd like everyone in your household age 16 and older to keep track of their travel on [DAY and DATE]. Is this okay?

Travel Day of Week

Travel Day of Week	Frequency	Percent
Monday	219	19.8
Tuesday	203	18.3
Wednesday	223	20.1
Thursday	219	19.8
Friday	243	22.0
Total	1107	100.0

Travel Day

Travel Day	Frequency	Percent
April 2	33	3.0
April 3	34	3.1
April 4	34	3.1
April 7	41	3.7
April 8	39	3.5
April 9	28	2.5
April 10	34	3.1
April 11	17	1.5
April 14	24	2.2
April 15	15	1.4
April 16	10	.9
April 17	20	1.8
April 18	38	3.4
April 21	44	4.0
April 22	45	4.1
April 23	39	3.5
April 24	34	3.1
April 25	49	4.4
April 28	37	3.3
April 29	36	3.3
April 30	44	4.0
May 1	41	3.7
May 2	48	4.3
May 5	45	4.1
May 6	28	2.5
May 7	24	2.2
May 8	21	1.9
May 9	21	1.9
May 12	28	2.5
May 13	40	3.6
May 14	45	4.1
May 15	35	3.2
May 16	36	3.3
Total	1107	100.0

APPENDIX D

c/o NuStats DataSource
133 W. San Antonio St.
San Marcos, Texas 78666

March 10, 2003   «SAMPN»-«NDIARIES»

«FIRSTNAME» «LASTNAME»
«ADDRESS»
«CITY», «STATE» «ZIP»

Dear «FIRSTNAME» «LASTNAME»:

Thank you for agreeing to participate in the *Yakima County Travel Study*.

Your Travel Day is:

‹Wednesday, March 26›

We appreciate your time and help with this very important project. For more information about this study and a list of frequently asked questions, visit the study web site at *www.nustats.com/yakima*.

If you have any questions or comments, please call NuStats at 1-888-530-2242.

Sincerely,

Jesse Palacios

Jesse Palacios
Chairman, Yakima County Board of County Commissioners

Enclosure
Travel logs for each household member age 16 years and older
Information Brochure

Survey conducted by NuStats on behalf of:

WHY PARTICIPATE?

Everyone needs to get from one place to another, somehow. It also costs taxpayers a lot of money to design, build and maintain a transportation infrastructure. By participating in this study you will be providing the information necessary to ensure our region is providing ample transportation routes and choices, while spending money wisely. The study will provide the tools necessary to improve regional mobility, and help us to make efficient and effective decisions leading to improved:

- Walkways and bike paths,
- Public transit service,
- Highway congestion points,
- Accessibility to employment centers, and
- Parking resources.

Your household is one of a select few, statistically chosen, to participate in this study. Therefore, each and every completed survey will be critical to the study's success. Please note that the information you provide will be combined with that from other residents with similar households like yours for analyses. So, it does not matter how often you travel or whether you drive, ride, or walk - we need you to do your part.

WHO IS THE SPONSOR?

Study conducted by NuStats on behalf of:
Yakima County Public Works Department

DO YOU HAVE QUESTIONS?

For more information please contact:

Stacey Bricka of NuStats
800-447-8287, ext. 2240
sbricka@nustats.com

Yakima County Contact:

Alan Adolf
509-574-2344
alan.adolf@co.yakima.wa.us

or
visit the project webpage at

www.nustats.com/yakima

THANK YOU!

You are helping your community plan for the transportation needs of the 21st century.

2003

YAKIMA COUNTY TRAVEL STUDY
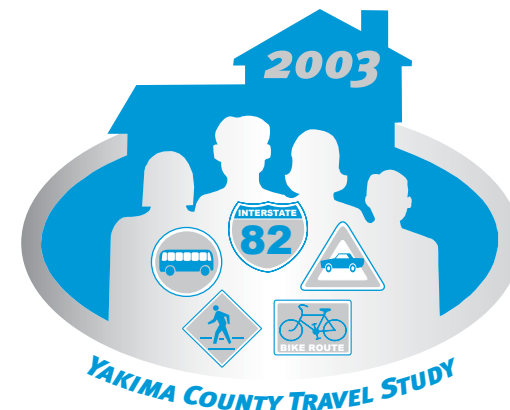
YOUR PARTICIPATION IS IMPORTANT!

See inside for details on how you can help your community plan for the transportation needs of the 21st Century.

Study conducted by NuStats on behalf of

COMMITMENT • SERVICE • EXCELLENCE

YAKIMA COUNTY

NuStats

WHAT IS THE STUDY ABOUT?

The **YAKIMA COUNTY TRAVEL STUDY** is a major study of travel patterns and transportation needs throughout the county. The study will collect and analyze information on:

- where people travel,
- when they travel,
- why they travel, and
- how they travel.

STUDY AREA: YAKIMA COUNTY

SELAH

★ YAKIMA

UNION GAP

SUNNYSIDE

YAKIMA
INDIAN RESERVATION

GRANDVIEW

This information is needed to properly plan for transportation improvements that will reduce congestion, improve air quality, and meet everyone's travel needs.

The information will be used by transportation planners to determine the needs of today's travelers and to anticipate future travel needs so that effective highway and transit improvements can be devised.

WHAT DOES YOUR PARTICIPATION INVOLVE?

The **YAKIMA COUNTY TRAVEL STUDY** is a study of 1,000 households. We have contracted with NuStats, a nationally recognized survey research firm. They understand that your time is valuable and have trained its surveyors to be efficient and polite. NuStats uses the following well-tested 3-phase survey method.

PHASE 1: RECRUITMENT

NuStats will conduct telephone interviews with a random sample of households throughout the study area.

On a confidential basis, you will be asked to provide information about your household, such as the number of people in the household, how many vehicles you own or lease, and household location. The telephone surveyor also collects information about each member of your household, such as age, employment status, and work and school information.

The analysis of this information ensures that all types of households with a wide range of travel patterns are selected to participate.

We guarantee that the information you provide will remain confidential.

PHASE 2: TRAVEL LOGS

The study requires that travel information from all types of people is collected - no matter how much they travel - for an assigned travel day. So NuStats will provide personal travel logs to all members of your household 16 and older. These logs should be carried on the assigned travel day and used to record travel details.

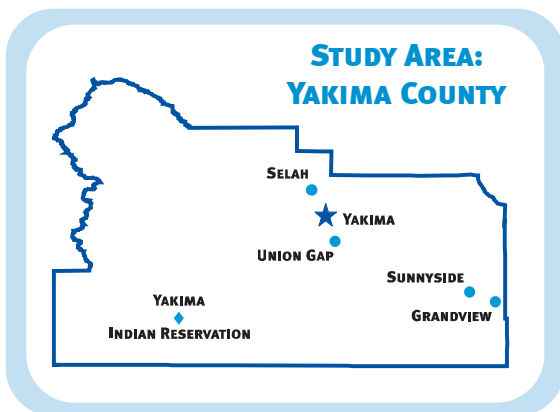It is important that you record exact locations and all trips made on public roads in your logs. This information helps planners calculate how long it takes to get from one place to another and to figure out solutions for making travel easier for everyone. Therefore, all of the places you went to (such as work, school, gas station, ATM, a friend's house, etc.) and how you got there (drive, walk, bike, etc.) should be recorded in detail.

PHASE 3: INFORMATION RETRIEVAL

After your travel day, NuStats will call to collect the log information for each household member. If your information is already recorded in the logs, the interview is quick. NuStats needs to talk directly to each person age 16 and older, so a specific appointment (day and time) is made.

2003

YAKIMA COUNTY TRAVEL STUDY

INTERSTATE 82
BIKE ROUTE

PERSONAL ONE-DAY TRAVEL LOG FOR:

TRAVEL LOG INSTRUCTIONS

Record each PLACE you go to and what you did there beginning at 3am *(or when you wake up)* on your assigned travel day and ending at 2:59am the following day *(or when you go to sleep on your travel day)*.

Follow the easy to use Example inside! ⟶

RECORD the following information about each place: _Place name:_ _Address_ _City/State/Zip_ _Cross street/Landmark:_	What TIME did you ARRIVE? _(record exact times)_	HOW did you get there? _(use **List 1** codes)_	Main road used to get there if by auto, van or truck?	WHY did you go there? _(use **List 2** codes)_	What TIME did you LEAVE? _(record exact times)_
PLACE 1 — WHERE were you at **3am** on your travel day? ☐ Home ☐ Work ☐ Other: _____ _(specify)_	------	------	------	------	: am/pm
PLACE 2 — WHERE did you go next?	: am/pm				: am/pm
PLACE 3 — WHERE did you go next?	: am/pm				: am/pm
PLACE 4 — WHERE did you go next?	: am/pm				: am/pm
PLACE 5 — WHERE did you go next?	: am/pm				: am/pm
PLACE 6 — WHERE did you go next?	: am/pm				: am/pm
PLACE 7 — WHERE did you go next?	: am/pm				: am/pm
PLACE 8 — WHERE did you go next?	: am/pm				: am/pm
PLACE 9 — WHERE did you go next?	: am/pm				: am/pm
PLACE 10 — WHERE did you go next?	: am/pm				: am/pm

Continue on the back of the example insert ➡

LIST 1: How did you get there?

Non-Motorized
1. Walk
2. Bicycle

Auto/Van/Truck
3. Driver
4. Passenger

Other Modes
5. Transit
6. School Bus
7. Taxi/Shuttle
8. Motorcycle
97. Other: _(write code and specify)_

LIST 2: WHY did you go there?

Home
1. Working at home _(job related-for pay)_
2. At home activities: _(eating, TV, sleeping, housework, etc.)_

Work
3. Work _(including regular volunteer work)_
4. Work-related _(meeting, errand, etc.)_

School
5. Attending school
6. School-related _(sports, extra-curricular)_

Personal
7. Quick stop for: gas, ATM, coffee, etc.
8. Shopping
9. Visit friends or relatives
10. Personal business _(medical/dental, drycleaning, errands, pay bills, etc.)_

Social/Entertainment
11. Eat meal outside of home _(restaurant, drive-through, take-out)_
12. Entertainment
13. Recreation, fitness
14. Civic or religious activities

Other
15. Pick-up or drop-off passenger
16. Change mode of transportation _(board/deboard bus, etc.)_
97. Other _(write code and specify)_

EXAMPLE

Top sequence of places:

PLACE 1	PLACE 2	PLACE 3	PLACE 4	PLACE 5	PLACE 6	PLACE 7	PLACE 8	PLACE 9	PLACE 10
My Home	Drop off son at school	Gas Station	Work	Meeting	Restaurant	Meeting	Work	Grocery Store	My Home

Callout notes:
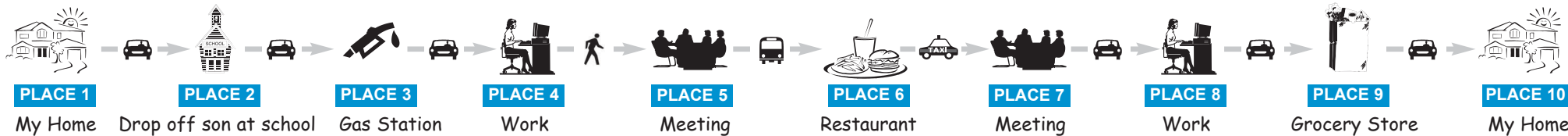
- Record every PLACE you go to, including short walks and quick stops
- Begin your Log at 3am on your travel day
- Record code from LIST 1 (on flap in Log)
- If you traveled by Auto, Van or Truck, record the Main road traveled to get to each place
- Record code from LIST 2 (on flap in Log)
- Record exact times

RECORD the following information about each place: Place name: / Address City/State/Zip Cross street/Landmark:	What TIME did you ARRIVE? (record exact times)	HOW did you get there? (use LIST 1 codes)	Main road used to get there if by auto, van or truck?	WHY did you go there? (use LIST 2 codes)	What TIME did you LEAVE? (record exact times)
PLACE 1 — WHERE were you at 3am on your travel day? ☑ Home ☐ Work ☐ Other: _____ (specify) / Home address was provided in telephone interview.	------	------	------	------	7:10 (am/pm)
PLACE 2 — WHERE did you go next? Eisenhower High School / 702 S. 40th Ave. Yakima/WA/98908 Webster St.	7:13 (am/pm)	3	S. 40th Ave.	15	7:17 (am/pm)
PLACE 3 — WHERE did you go next? Gas Station Texaco / 3707 W. Nob Hill Blvd. Yakima/WA/98902 S. 37th Ave.	7:26 (am/pm)	3	W. Nob Hill Blvd.	7	7:35 (am/pm)
PLACE 4 — WHERE did you go next? Work Yakima County Courthouse / Work address was provided in telephone interview.	7:49 (am/pm)	3	W. Nob Hill Blvd.	3	9:15 (am/pm)
PLACE 5 — WHERE did you go next? Meeting Larson Building / 6 S. 2nd St. Yakima/WA/98901 E. Yakima Ave./Yakima Courthouse	9:18 (am/pm)	1		4	11:43 (am/pm)
PLACE 6 — WHERE did you go next? Black Angus Restaurant / 501 N. Front St. Yakima/WA/98901 E St.	11:57 (am/pm)	5		11	12:50 am/(pm)
PLACE 7 — WHERE did you go next? Meeting Selah City Hall / 115 W. Naches Ave. Selah/WA/98942 N. 1st St.	1:02 am/(pm)	7		4	2:09 am/(pm)
PLACE 8 — WHERE did you go next? Work Yakima County Courthouse / Work address was provided in telephone interview.	2:21 am/(pm)	4	N. 1st St.	3	5:00 am/(pm)

- Person would continue to record Place 9 - Grocery Store, and Place 10 - My Home
- Record exact place name & complete address information (including cross street & landmarks)

For assistance, call NuStats at 888-530-2242

Record PLACES 11-19 on back

RECORD the following information about each place: *Place name:* *Address* *City/State/Zip* *Cross street/Landmark:*	What TIME did you ARRIVE? *(record exact times)*	HOW did you get there? *(use List 1 codes)*	Main road used to get there if by auto, van or truck?	WHY did you go there? *(use List 2 codes)*	What TIME did you LEAVE? *(record exact times)*
PLACE 11 WHERE did you go next?	: am/pm				: am/pm
PLACE 12 WHERE did you go next?	: am/pm				: am/pm
PLACE 13 WHERE did you go next?	: am/pm				: am/pm
PLACE 14 WHERE did you go next?	: am/pm				: am/pm
PLACE 15 WHERE did you go next?	: am/pm				: am/pm
PLACE 16 WHERE did you go next?	: am/pm				: am/pm
PLACE 17 WHERE did you go next?	: am/pm				: am/pm
PLACE 18 WHERE did you go next?	: am/pm				: am/pm
PLACE 19 WHERE did you go next?	: am/pm				: am/pm

APPENDIX E

Yakima County Travel Survey
Retrieval Questionnaire
Weekday Travel Days for Household Members Age 16+ only

Introduction

Hi – my name is _____ and I'm calling on behalf of Yakima County about the travel survey your household recently completed. May I please speak with [RESPONDENT]? I'm calling to gather your household's travel information. Our records show that you recorded travel on [ASSN].

DATA IS GATHERED FOR EACH HOUSEHOLD MEMBER AGE 16+ (with clarification on whether travel log was used and if proxy reporting took place).

1. How many total places did<YOU >visit over the course of the travel day?

2. IF PLACE 1: Okay, where were you at 3 am on [ASSN}.
    OTHERWISE: Where did you go next?
    1   HOME
    2   WORK
    3   SCHOOL
    4   OTHER
    5   OUT OF THE TRAVEL STUDY AREA
         IF OUT OF AREA, OBTAIN CITY AND STATE
         IF NEW PLACE, OBTAIN

LOCATION NAME: What place was that?
        ADDR: What is the street address?
        CROSS STREET: What is the nearest cross street or cross streets?
        LANDMARK: What is the nearest major landmark?

3. Which of the following best describes this place?
    1   Office Building
    2   Retail
    3   Industrial/Manufacturing Site
    4   Medical
    5   Educational
    6   Residential
    7   Other (specify)
    9   DK/RF

4. What time did you get there? MILITARY TIME
5. TRIP DURATION CALCULATED

6. How did you get there?
    1   Walk
    2   Bike
    3   Driver-Auto/Van/Truck
    4   Passenger-Auto/van/truck
    5   Transit
    6   School Bus
    7   Taxi/Shuttle
    8   Motorcycle
    97   OTHER, SPECIFY

IF AUTO (mode=3, 4, or 8)
A1 Which vehicle did<YOU >use?
    ENTER HH VEH NUMBER OR 97 FOR NON-HH VEHICLE

A2 How many others traveled with<YOU >? NOT INCLUDING THE PERSON YOU'RE ON
A3 Of these, how many were household members?
A4 Who were the household members (enter PERNO)
A5 COMPUTE NON-HH MEMBERS
A6 [IF TRIPDUR>15 MIN] What was the main road you traveled on for most of this trip?

IF TRANSIT (mode=5)
T1 How many blocks did you walk to get to the bus?
T2 How many blocks was it from where you got off the bus to your final destination?
T3 Did you make any transfers? IF SO, RECORD NUMBER OF TRANSFERS? IF NONE, RECORD ZERO

8.   What was<YOUR > main purpose for traveling there?
1   WORK AT HOME (FOR PAY)
2   ALL OTHER AT HOME ACTIVITIES
3   WORK
4   WORK RELATED
5   ATTENDING SCHOOL
6   SCHOOL-RELATED ACTIVITIES
7   QUICK STOP FOR GAS, COFFEE, ATM, ETC
8   SHOPPING
9   VISIT FRIENDS/RELATIVES
10   PERSONAL BUSINESS
11   EAT MEAL OUTSIDE OF HOME
12   ENTERTAINMENT
13   RECREATION/FITNESS
14   CIVIC/RELIGIOUS ACTIVITIES
15   PICK-UP OR DROP-OFF PASSENGER
16   CHANGE MODE OF TRANSPORTATION
97   OTHER, SPECIFY

9.   And what other activities did<YOU >do there?
1   WORK AT HOME (FOR PAY)
2   ALL OTHER AT HOME ACTIVITIES
3   WORK
4   WORK RELATED
5   ATTENDING SCHOOL
6   SCHOOL-RELATED ACTIVITIES
7   QUICK STOP FOR GAS, COFFEE, ATM, ETC
8   SHOPPING
9   VISIT FRIENDS/RELATIVES
10   PERSONAL BUSINESS
11   EAT MEAL OUTSIDE OF HOME
12   ENTERTAINMENT
13   RECREATION/FITNESS
14   CIVIC/RELIGIOUS ACTIVITIES
15   PICK-UP OR DROP-OFF PASSENGER
16   CHANGE MODE OF TRANSPORTATION
97   OTHER, SPECIFY

10. Did<YOU >go anywhere else that day?   IF THEY WENT OUT OF THE STUDY AREA, ASK IF THEY CAME BACK INTO THE STUDY AREA THAT DAY. IF THEY SAY "YES", SELECT "Yes".

OTHERWISE, SELECT "No"

11. IF LAST PLACE OF THE DAY, ENTER 0259 OTHERWISE: What time did<YOU >leave for the next place?   ENTER IN MILITARY TIME

IF REPORTED NO TRAVEL
12. So,<YOU >made no trips, including for work or school?
TRUE: Why not?
FALSE OBTAIN TRAVEL

ASK ONLY OF RESPONDENT
13. How many commercial deliveries were made to your residence on ASSN?
14. How many visitors [NON HH MEMBERS] came to your residence on ASSN?

APPENDIX F

Yakima County Travel Survey
Retrieval Questionnaire
Weekday Travel Days for Household Members Age 16+ only

1. How many total places did<YOU >visit over the course of the travel day?

    9,590 places, 7,369 trips

2. IF PLACE 1: Okay, where were you at 3 am on [ASSN}.
    OTHERWISE: Where did you go next?
    1   HOME (50.4%)
    2   WORK (12.0%)
    3   SCHOOL (1.8%)
    4   OTHER (34.3%)
    5   OUT OF THE TRAVEL STUDY AREA (1.5%)

For trips, the distribution is
    1   HOME (36.5%)
    2   WORK (15.1%)
    3   SCHOOL (2.4%))
    4   OTHER (44.4%)
    5   OUT OF THE TRAVEL STUDY AREA (1.5%)

3. Which of the following best describes this place?
    1   Office Building (5.5%)
    2   Retail (19.1%)
    3   Industrial/Manufacturing Site (3.5%)
    4   Medical (3.5%)
    5   Educational (8.0%)
    6   Residential (55.6%)
    7   Other (specify) (3.9%) – includes agricultural (n=110), military (n=3), public (n=103), recreational (n=32) and religious (n=129)
    9   DK/RF (1.0%)

For trips:
    1   Office Building (7.1%)
    2   Retail (24.7%)
    4   Industrial/Manufacturing Site (4.3%)
    4   Medical (4.4%)
    5   Educational (10.4%)
    6   Residential (43.3%)
    7   Other (specify) (5.1%) – includes agricultural (n=108), military (n=3), public (n=103), recreational (n=32) and religious (n=129)
    9   DK/RF (0.8%)

4. What time did you get there? MILITARY TIME

Arrival Time

% arrivals

9%
8%
7%
6%
5%
4%
3%
2%
1%
0%

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

Time of Day

5. TRIP DURATION CALCULATED

Trip Duration

% trips

30%
25%
20%
15%
10%
5%
0%

5   10   15   20   25   30   35   40   45   46
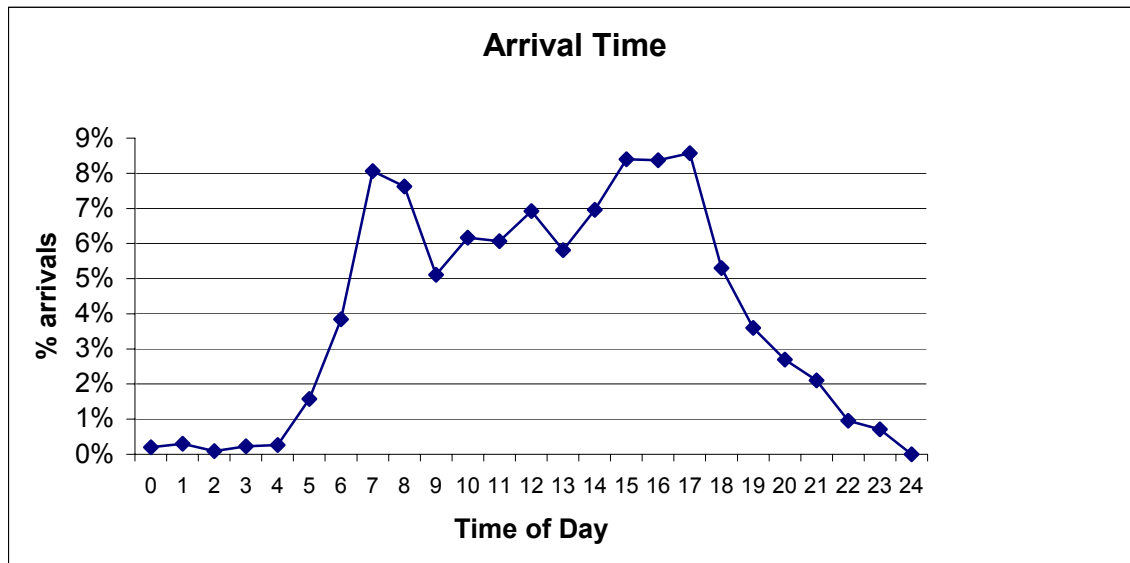
Trip Duration
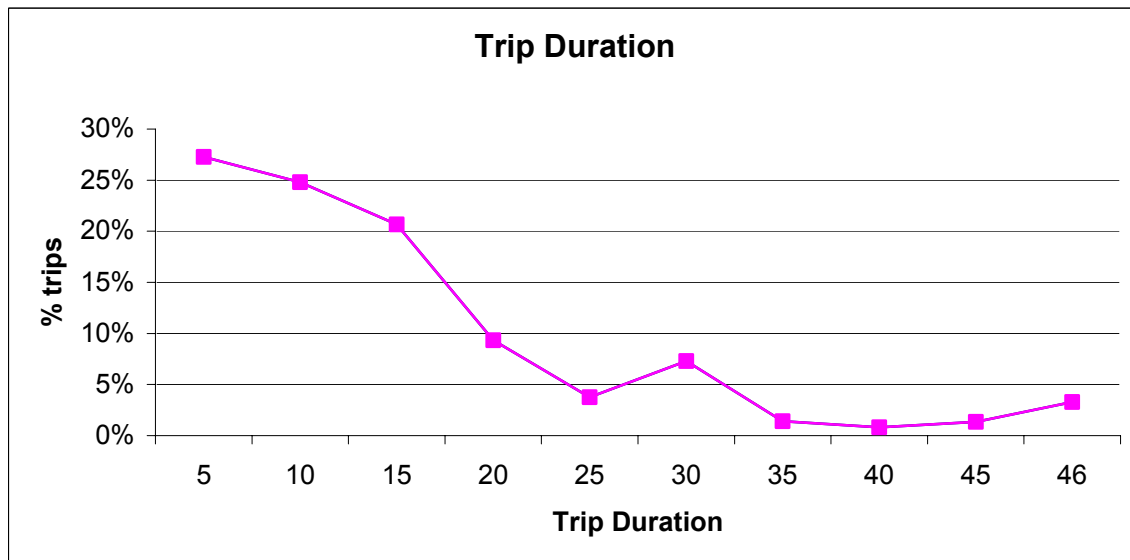
6. How did you get there?
   1   Walk (3.5%)
   2   Bike (0.2%)
   3   Driver-Auto/Van/Truck (81.0%)
   4   Passenger-Auto/van/truck (14.1%)
   5   Transit (0.5%)
   6   School Bus (0.4%)
   7   Taxi/Shuttle (0.1%)
   8   Motorcycle (0.0%)
   97 OTHER, SPECIFY (0.2%) – airplane (1), charter bus (4), electric scooter (2), golf cart (2), wheel chair (5)

IF AUTO (mode=3, 4, or 8)
A1 Which vehicle did<YOU >use? Of the 7,008 auto (driver and passenger) trips, 5.4% were made in non-hh vehicles.

A2 How many others traveled with<YOU >? Excluding respondent: avg=0.57, min=0 and max=11 Including respondent, Mean = 1.57, min=1, max=12

A3 Of these, how many were household members? AVG=0.43, min=0 and max=7

A6 [IF TRIPDUR>15 MIN] What was the main road you traveled on for most of this trip?

Main Road Used

Main Route	Frequency	Percent
I-82	577	7.8
SUMMITVIEW AVE	402	5.5
NOB HILL BLVD	393	5.3
N/A	363	4.9
DK/RF	317	4.3
SR 12	305	4.1
TIETON DR	266	3.6
1ST ST	236	3.2
16TH AVE	221	3.0
YAKIMA AVE	195	2.6
SR 97	173	2.3
40TH AVE	171	2.3
WASHINGTON AVE	166	2.3
LINCOLN AVE	150	2.0
YAKIMA VALLEY HWY	111	1.5
AHTANUM RD	100	1.4
FRUITVALE BLVD	88	1.2
72ND AVE	80	1.1
SR 24	74	1.0
3RD AVE	68	.9
MAIN ST	62	.8
6TH ST	54	.7
WINE COUNTRY RD	53	.7
SR 22	52	.7
WALNUT ST	50	.7
1ST ST, S	49	.7
5TH AVE	49	.7
NOB HILL BLVD, W	47	.6
MEAD AVE	44	.6
1ST ST, N	43	.6
TERRACE HEIGHTS DR	41	.6
1ST AVE	37	.5
FAIR AVE	32	.4
6TH AVE	31	.4
I-90	29	.4
56TH AVE	28	.4
MABTON SUNNYSIDE RD	28	.4
24TH AVE	27	.4
5TH ST	26	.4
2ND ST	25	.3

ENGLEWOOD AVE	25	.3
5TH ST, W	24	.3
VAN BELLE RD	24	.3
16TH AVE, S	23	.3
LINCOLN ST	23	.3
4TH ST	22	.3
B ST	22	.3
OLD NACHES HWY	22	.3
CHESTNUT AVE	21	.3
EUCLID ST	21	.3
WIDE HOLLOW RD	21	.3
YAKIMA AVE, E	21	.3
EDISON AVE	20	.3
FORT RD	19	.3
MIDVALE RD	19	.3
SPEYERS RD	19	.3
TIETON RD	19	.3
16TH AVE, N	18	.2
OLD PROSSER HWY	18	.2
TOPPENISH AVE	18	.2
1ST AVE, W	17	.2
NACHES AVE	17	.2
DIVISION ST	16	.2
DN/RF	16	.2
RUDKIN RD	16	.2
HARRISON AVE	15	.2
LINCOLN AVE, E	15	.2
SUMMITVIEW RD	15	.2
WAPATO RD, W	15	.2
YAKIMA AVE, W	15	.2
32ND AVE	14	.2
ELM ST	14	.2
LATERAL A RD	14	.2
SR 221	14	.2
SUNNYSIDE AVE	14	.2
3RD ST	13	.2
40TH AVE, N	13	.2
72ND AVE, S	13	.2
EDISON ST	13	.2
HARRISON RD	13	.2
KEYS RD	13	.2
TIETON DR, W	13	.2
10TH AVE	12	.2
2ND AVE	12	.2
WAPATO RD	12	.2
WASHINGTON AVE, W	12	.2
16TH ST	11	.1
EUCLID	11	.1
GRANDRIDGE RD	11	.1
INDEPENDENCE RD	11	.1
PARKER BRIDGE RD	11	.1
S HILL RD	11	.1

WASHOUT RD	11	.1
WENAS RD	11	.1
48TH AVE	10	.1
EMERALD RD	10	.1
EUCLID RD	10	.1
JEFFERSON AVE	10	.1
OCCIDENTAL AVE	10	.1
POWERHOUSE RD	10	.1
WENAS RD, S	10	.1
WINE COUNTRY RD, W	10	.1
3RD AVE, S	9	.1
6TH ST, S	9	.1
7TH ST	9	.1
80TH AVE	9	.1
CASTLEVALE RD	9	.1
FORSELL RD	9	.1
GRANDVIEW AVE	9	.1
GRANT AVE	9	.1
MIERAS RD	9	.1
SELAH LOOP RD	9	.1
VALLEY MALL BLVD	9	.1
WENAS RD, N	9	.1
1ST, S	8	.1
2ND ST, E	8	.1
BEAUDRY RD	8	.1
CHESTNUT AVE, W	8	.1
FREMONT AVE	8	.1
GRANDVIEW PAVEMENT RD	8	.1
NW CRESCENT AVE	8	.1
OLD NACHES HWY / 6TH ST	8	.1
WILSON HWY	8	.1
2ND ST, W	7	.1
38TH AVE	7	.1
6TH ST / EDISON	7	.1
BUENA WAY	7	.1
EDISON AVE, E	7	.1
EUCLID AVE	7	.1
MEYERS RD, N	7	.1
POSTMA RD	7	.1
11TH ST	6	.1
34TH AVE	6	.1
4TH AVE	6	.1
66TH AVE	6	.1
ADAMS AVE	6	.1
AVENUE B (GRANDVIEW)	6	.1
D ST	6	.1
ELM ST, S	6	.1
ENGLEWOOD AVE, W	6	.1
FACTORY RD	6	.1
FERSON RD	6	.1
FORK RD, S	6	.1
FRANKLIN AVE	6	.1

GREEN VALLEY RD	6	.1
I-82 / SR 24	6	.1
I-82 / SR 97	6	.1
NACHES-WENAS RD	6	.1
SNIPES PUMP RD	6	.1
TIETON DR / 3RD AVE	6	.1
YOUNG GRADE RD	6	.1
12TH ST	5	.1
18TH ST	5	.1
APPLEWAY RD	5	.1
BEAUCHENE RD	5	.1
EDISON RD	5	.1
FIR ST	5	.1
GILBERT RD	5	.1
I-82 / SR 12	5	.1
MAIN ST.	5	.1
MAPLE GROVE RD	5	.1
OLD COWICHE RD	5	.1
SR 241	5	.1
SR 410	5	.1
TIETON AVE	5	.1
WAPATO AVE, S	5	.1
ZIER RD	5	.1
10TH AVE, S	4	.1
11TH	4	.1
20TH AVE	4	.1
53RD AVE	4	.1
56TH AVE, N	4	.1
8TH ST	4	.1
ADAMS ST	4	.1
BEECH ST	4	.1
BRANCH RD	4	.1
BUENA RD	4	.1
COWICHE RD, N	4	.1
E ST, E	4	.1
ELM, S	4	.1
FAIR AVE, N	4	.1
FERN ST	4	.1
FRANKLIN AND GEORGE WASHINGTON H	4	.1
HANFORD RD	4	.1
I-82 / YAKIMA VALLEY HWY	4	.1
I-84	4	.1
LATERAL 1 RD	4	.1
MABTON RD / MAIN ST	4	.1
MAPLEWAY RD	4	.1
MCPHERSON LN	4	.1
NACHES AVE, S	4	.1
OUTLOOK RD	4	.1
PACIFIC AVE / 18TH ST	4	.1
RAY RD	4	.1
ROBBINS RD	4	.1
SAUL RD	4	.1

SHELLER RD	4	.1
STASSEN WAY, S	4	.1
WALNUT ST, W	4	.1
WAPATO RD, S	4	.1
WASHINGTON AVE / S 1ST ST	4	.1
WELLNER RD	4	.1
YAKIMA CANYON RD	4	.1
12TH AVE	3	.0
16TH AVE / NOB HILL BLVD	3	.0
1ST ST / FRUITVALE BLVD	3	.0
1ST ST, W	3	.0
39TH AVE, S	3	.0
40TH AVE / WASHINGTON AVE	3	.0
40TH AVE, S	3	.0
41ST ST	3	.0
64TH AVE	3	.0
8TH AVE	3	.0
9TH ST	3	.0
ASOTIN AVE	3	.0
B ST, E	3	.0
B ST, W	3	.0
CHERRY AVE	3	.0
CHESTNUT RD	3	.0
EUCLID RD, S	3	.0
EVERGREEN HWY	3	.0
FRANKLIN RD	3	.0
I-182	3	.0
I ST	3	.0
LATERAL B RD	3	.0
NOB HILL BLVD / 1ST ST	3	.0
NORTH AVE	3	.0
ROOSEVELT AVE	3	.0
SCOON RD	3	.0
SPRUCE ST	3	.0
SR 223	3	.0
SUMMITVIEW AVE / 72ND AVE	3	.0
WASHINGTON AVE, E	3	.0
WENAS AVE, N	3	.0
WINE COUNTRY RD, E	3	.0
ZILLAH RD	3	.0
11TH AVE	2	.0
12TH AVE / OUTLOOK RD	2	.0
13TH ST, S	2	.0
14TH	2	.0
15TH AVE	2	.0
16TH AVE / MEAD AVE	2	.0
16TH AVE / SR 12	2	.0
18TH AVE	2	.0
19TH AVE	2	.0
19TH AVE, S	2	.0
1ST ST / I-82	2	.0
24TH AVE / NOB HILL BLVD	2	.0

24TH ST	2	.0
32ND AVE, N	2	.0
32ND AVE, S	2	.0
38TH AVE / 40TH AVE	2	.0
3RD AVE / FRUITVALE BLVD	2	.0
3RD AVE / NOB HILL BLVD	2	.0
3RD ST, S / E MEAD AVE	2	.0
3RD ST, S / E WALNUT ST	2	.0
3RD, E	2	.0
40TH AVE / 38TH AVE	2	.0
45TH AVE	2	.0
48TH AVE, S	2	.0
4TH ST, W	2	.0
5TH AVE, S	2	.0
6TH ST, N	2	.0
72ND AVE / SUMMITVIEW AVE	2	.0
7TH AVE, S	2	.0
7TH ST, S	2	.0
83RD AVE	2	.0
8TH ST, S	2	.0
96TH AVE	2	.0
9TH AVE	2	.0
9TH AVE, S	2	.0
AHTANUM AVE	2	.0
AHTANUM ST	2	.0
BIRCHFIELD RD, W	2	.0
BORTON RD / GILBERT RD	2	.0
BRADEN RD	2	.0
BUTTERFIELD RD	2	.0
CAMAS AVE	2	.0
CANYON RD, N	2	.0
CEMETARY RD	2	.0
CEMETERY RD	2	.0
CHESTNUT AVE / 16TH AVE	2	.0
COUNTY LINE RD	2	.0
COWICHE CITY RD	2	.0
CURTIS ST	2	.0
D ST, E	2	.0
DEKKER RD	2	.0
DIVISION RD	2	.0
DONOHO RD / EAST RD	2	.0
E AVE	2	.0
EDISON / 13TH ST	2	.0
ENGLEWOOD AVE / 40TH AVE	2	.0
FRANKLIN ST	2	.0
FRONT ST	2	.0
GAP RD / JESTER RD / CANAL RD	2	.0
GILBERT RD / BORTON RD	2	.0
GIVENS CORNER	2	.0
GOODLANDER RD / 1ST ST	2	.0
GOODMAN RD	2	.0
GRANDRIDGE RD / 2ND ST	2	.0

GRANDRIDGE RD / W MAIN ST	2	.0
HANKS RD	2	.0
HARTFORD RD	2	.0
HIGHLAND DR	2	.0
I-82 / 1ST ST	2	.0
I-82 / 40TH AVE	2	.0
I-82 / I-90	2	.0
I-82 / SR 221	2	.0
J ST	2	.0
KEYS RD / YAKIMA AVE	2	.0
LAKE WASHINGTON AVE	2	.0
LINCOLN AVE / 16TH AVE	2	.0
LINCOLN AVE / SUNNYSIDE MABTON R	2	.0
LINCOLN AVE, E / YAKIMA VALLEY H	2	.0
LINCOLN AVE, W	2	.0
LINCOLN AVE, W / 12TH AVE	2	.0
LINCOLN ST / MIDVALE RD	2	.0
MABTON SUNNYSIDE RD / 5TH ST	2	.0
MABTON SUNNYSIDE RD / LINCOLN AV	2	.0
MAIN ST / 1ST ST	2	.0
MAIN ST, W	2	.0
MAPLE RD	2	.0
MAPLE ST, E	2	.0
MARKET ST	2	.0
MARSH RD	2	.0
MELROSE ST	2	.0
MERRICK AVE	2	.0
MEYERS RD	2	.0
MEYERS RD, N / E. ZILLAH DR	2	.0
MINT RD	2	.0
NACHES AVE / 3RD ST	2	.0
NACHES RD, S	2	.0
NOB HILL BLVD / 62TH AVE	2	.0
NOB HILL BLVD / COTTONWOOD CANYO	2	.0
NOB HILL BLVD / SR 97	2	.0
NOB HILL BLVD / WASHINGTON AVE	2	.0
NOB HILL BLVD, E	2	.0
OLD NACHES HWY / MAPLEWAY RD	2	.0
OUTLOOK RD, N	2	.0
PACIFIC AVE	2	.0
PECKS CANYON RD	2	.0
PIERCE AVE, N	2	.0
PINE ST	2	.0
PRASCH ST	2	.0
RAILROAD AVE	2	.0
RIVER RD	2	.0
ROWBERRY WAY	2	.0
SATUS AVE, S	2	.0
SCENIC DR	2	.0
SELAH-NACHES RD	2	.0
SIGNAL PEAK RD	2	.0
SKYLINE AVE	2	.0

SR 12 / 16TH AVE	2	.0
SR 12 / 1ST ST	2	.0
SR 12 / DEKKER RD	2	.0
SR 12 / FRUITVALE BLVD	2	.0
SR 240	2	.0
SR 395	2	.0
SR 821	2	.0
SR 97 / I-82	2	.0
SR 97 / NOB HILL BLVD	2	.0
STONE RD	2	.0
SUMMITVIEW AVE / 28TH AVE	2	.0
SUMMITVIEW AVE / 40TH AVE	2	.0
SUNSET DR	2	.0
SWAN RD (SUNNYSIDE)	2	.0
TERRACE HEIGHTS DR / I-82	2	.0
VICTORY WAY	2	.0
VIOLA AVE	2	.0
WALNUT ST / NOB HILL BLVD	2	.0
WANETA RD	2	.0
WAPATO RD, W / LATERAL A RD	2	.0
WASCO AVE	2	.0
WASCO AVE, S	2	.0
WASHINGTON AVE / 1ST AVE	2	.0
WENATCHEE AVE	2	.0
YAKIMA AVE / 1ST ST	2	.0
YAKIMA AVE / KEYS RD	2	.0
ZILLAH DR, E	2	.0
10TH	1	.0
10TH ST	1	.0
13TH AVE	1	.0
13TH ST	1	.0
15TH AVE, S	1	.0
16TH AVE / AHTANUM RD	1	.0
16TH AVE / FRUITVALE BLVD	1	.0
16TH AVE / LINCOLN AVE	1	.0
16TH AVE / SR 12 / 1ST AVE	1	.0
16TH AVE / SR 12 / 1ST AVE (SELA	1	.0
16TH AVE / TIETON DR	1	.0
16TH AVE / TIETON DR / YAKIMA AV	1	.0
16TH AVE, N / NOB HILL BLVD	1	.0
16TH AVE, S / YAKIMA AVE	1	.0
1ST AVE / SR 97	1	.0
1ST AVE / WASHINGTON AVE	1	.0
1ST AVE, S	1	.0
1ST ST (YAKIMA)	1	.0
1ST ST / DONALD WAPATO RD	1	.0
1ST ST / NOB HILL BLVD	1	.0
1ST ST / WASHINGTON AVE	1	.0
1ST ST, S / S MAIN ST	1	.0
1ST STREET (SELAH)	1	.0
24TH AVE, S	1	.0
28TH AVE	1	.0

2ND	1	.0
2ND , E	1	.0
2ND ST, N	1	.0
30TH AVE, N	1	.0
31ST AVE	1	.0
35TH AVE	1	.0
36TH AVE	1	.0
36TH AVE / CASTLEVALE RD	1	.0
38TH AVE, S	1	.0
3RD AVE / YAKIMA AVE	1	.0
3RD AVE, S / AHTANUM RD	1	.0
3RD ST / FERN ST	1	.0
3RD ST / NOB HILL BLVD	1	.0
3RD ST, N	1	.0
3RD, S	1	.0
40TH AVE / I-82	1	.0
40TH AVE / SUMMITVIEW AVE	1	.0
47TH AVE	1	.0
47TH AVE, S	1	.0
4TH AVE, S	1	.0
4TH ST / AVENUE B / GRANDVIEW RD	1	.0
4TH ST, W / AVENUE B / GRANDRIDG	1	.0
56TH AVE / PROSPECT WAY	1	.0
5TH AVE, N	1	.0
63RD AVE	1	.0
66TH AVE, N	1	.0
6TH AVE / WALNUT ST	1	.0
6TH ST / EDISON AVE	1	.0
6TH ST, N / E LINCOLN AVE	1	.0
73RD AVE, S	1	.0
76TH AVE	1	.0
7TH AVE	1	.0
84TH AVE	1	.0
8TH AVE, S	1	.0
9TH ST, W	1	.0
AHTANUM RD -56TH AVE-WASHINGTON AVE-4OTH AVE	1	.0
AHTANUM RD / NOB HILL BLVD	1	.0
AHTANUM RD / S 3RD AVE	1	.0
AHTANUM RD / SR 97	1	.0
AHTENUM RD TO 56TH AVE TO WASHINGTON AVE TO 40TH AVE	1	.0
ARROWSMITH RD	1	.0
BAILEY AVE	1	.0
BIRCHFIELD RD	1	.0
C ST	1	.0
CAN'T REMEMBER	1	.0
COLUMBIA CTR.	1	.0
COTTONWOOD CANYON RD	1	.0
COWICHE CANYON RD	1	.0
CRESCENT RD	1	.0
CUSTER AVE	1	.0
DAZET RD	1	.0
DAZET RD, S	1	.0

DECATUR AVE	1	.0
DONOHO RD / RIDGE RD	1	.0
DOUGLAS DR	1	.0
EDISON / 6TH ST	1	.0
EDISON RD, W	1	.0
EDISON ST.	1	.0
EDISON, E	1	.0
ESTES RD	1	.0
EUCLID ST, S	1	.0
EVERGREEN CT	1	.0
F ST	1	.0
FAIR AVE / TERRACE HEIGHTS DR	1	.0
FERN ST / 3RD ST	1	.0
FOLREE RD	1	.0
FORK RD, N	1	.0
FRUITVALE BLVD / 16TH AVE	1	.0
FRUITVALE BLVD / RIVER RD	1	.0
GAMACHE RD	1	.0
GAP RD	1	.0
GLADE RD	1	.0
GOLDENVALE AVE	1	.0
GOODLANDER RD	1	.0
HARRISON ST	1	.0
HAWTHORNE DR	1	.0
HILLCREST AVE	1	.0
HILLCREST RD	1	.0
I-82 / 16TH AVE / SUMMITVIEW AVE	1	.0
I-82 / NACHES	1	.0
I-82 / SR 22	1	.0
I-82 / TERRACE HEIGHTS DR	1	.0
I-82 / TERRACE HEIGHTS DR.	1	.0
I-82 / W LINCOLN AVE	1	.0
I-84, I-97, I-82	1	.0
I-90 / SR 395 / I-82	1	.0
ILER ST, N (MOXEE)	1	.0
JEROME AVE	1	.0
KERSHAW DR	1	.0
KEYS AVE	1	.0
KING ST	1	.0
LARSON RD	1	.0
LATERAL A RD / W WAPATO RD	1	.0
LINCOLN AVE / 6TH ST	1	.0
LINDEN ST	1	.0
MABTON RD	1	.0
MADISON AVE	1	.0
MAGNOLIA CT	1	.0
MANY RESIDENTIAL STREETS... ONE ROAD USED IS FAIR	1	.0
MAPLE / WALNUT	1	.0
MAPLE ST / NACHES AVE	1	.0
MCLAREN RD	1	.0
MEAD AVE / 1ST ST / WASHINTON AV	1	.0
MEAD AVE, W	1	.0

MENTZER AVE	1	.0
MIZE RD, S	1	.0
MURRAY RD	1	.0
NACHES AVE, N	1	.0
NOB HILL BLVD / 48TH AVE	1	.0
NOB HILL BLVD / TIETON DR / 48TH	1	.0
NOB HILL BLVD, W / N 16TH ST	1	.0
PROGRESSIVE RD	1	.0
PROSPECT WY	1	.0
RACQUET LN.	1	.0
RAINIER ST	1	.0
RENTSCHLEN LN	1	.0
RIDGE RD / DONOHO RD	1	.0
RIVARD RD	1	.0
RIVERSIDE RD / I-82	1	.0
ROZA DR	1	.0
SELAH RD, E	1	.0
SPRUCE ST, W	1	.0
SR 12 / 4OTH AVE	1	.0
SR 12 / I-82	1	.0
SR 12 / NACHES RD	1	.0
SR 14	1	.0
SR 14 / SR 221	1	.0
SR 142 (KLICKITAT CO)	1	.0
SR 221 / SR 14	1	.0
SR 24 / I-82	1	.0
SR 24 / NOB HILL BLVD	1	.0
SR 24 / S 33RD ST / TERRACE HTS	1	.0
SR 26	1	.0
SR 97 / 1ST AVE	1	.0
SR 97 / SR 14	1	.0
SR 97 / VALLEY MALL BLVD	1	.0
STEIN RD, S	1	.0
SUMMITVIEW AVE / TIETON DR	1	.0
SUMMITVIEW COWICHE RD	1	.0
SUMMITVIEW EXT RD	1	.0
SUNTIDES BLVD	1	.0
SW CRESCENT AVE	1	.0
TERRACE HEIGHTS DR / 40TH AVE	1	.0
TERRACE HEIGHTS DR / S 33RD ST /	1	.0
TIETON DR / 11TH AVE	1	.0
TIETON DR / 16TH AVE	1	.0
TIETON DR / 48TH AVE / NOB HILL	1	.0
TIETON DR / S 3RD AVE	1	.0
TIETON DR / SUMMITVIEW AVE	1	.0
TIETON DR AND 72ND AVE	1	.0
TOPPENISH AVE, S	1	.0
TRACK RD, S	1	.0
VIOLA AVE / 31ST AVE	1	.0
WALLA WALLA ST, W	1	.0
WALNUT ST / 6TH AVE	1	.0
WAPATO AVE, N	1	.0

WASHINGTON AVE / 16TH AVE / TIET	1	.0
WASHINGTON AVE / 72ND AVE	1	.0
WASHINGTON AVE / CHESTNUT AVE	1	.0
WASHINGTON AVE / MEAD AVE	1	.0
WASHINGTON AVE / NOB HILL BLVD	1	.0
WASHINGTON AVE, W / 40TH AVE	1	.0
YAKIMA AVE / TIETON DR / 16TH AV	1	.0
Total	7369	100.0

IF TRANSIT (mode=5) N=40
T1 How many blocks did you walk to get to the bus? 0 blocks (13), 1 block (13), 2 blocks (11), 7 blocks (1), refused (2)

T2 How many blocks was it from where you got off the bus to your final destination? 0 blocks (18), 1 block (10), 2 blocks (8), 4 blocks (1), 7 blocks (1), refused (2)

T3 Did you make any transfers? 36 said zero transfers, 2 made 1 transfer each, and 2 refused.

8. What was<YOUR > main purpose for traveling there?
Main Activity at this place

Main Activity	Frequency	Percent
Non-Work At Home Activities	4793	50.0
Work	1145	11.9
Shopping	805	8.4
Personal Business	678	7.1
Pick Up Or Drop Off Passenger	660	6.9
Work-Related	271	2.8
Eat Meal	265	2.8
Visit	259	2.7
School	176	1.8
Quick Stop	148	1.5
Recreation Or Fitness	130	1.4
Civic Or Religious	105	1.1
Entertainment	71	.7
Work At Home	36	.4
Change Mode Of Transportation	34	.4
School Related	13	.1
Refused	1	.0
Total	9590	100.0

Only those places involving travel (excludes anchor Place 1)

Main Activity	Frequency	Percent
Non-Work At Home Activities	2672	36.3
Work	1116	15.1
Shopping	805	10.9
Pick Up Or Drop Off Passenger	660	9.0
Personal Business	658	8.9
Eat Meal	265	3.6
Work-Related	258	3.5
Visit	250	3.4
School	176	2.4
Quick Stop	147	2.0
Recreation Or Fitness	124	1.7
Civic Or Religious	104	1.4
Entertainment	68	.9
Change Mode Of Transportation	34	.5
Work At Home	19	.3
School Related	13	.2
Total	7369	100.0

ASK ONLY OF RESPONDENT
13. How many commercial deliveries were made to your residence on ASSN? Avg=0.06, min=0, max=3
         (56 households reported deliveries on travel day)
14. How many visitors [NON HH MEMBERS] came to your residence on ASSN? Avg=0.49, min=0,
         max=10 (270 households reported visitors on travel day)