

Whatcom Council of Governments Skagit Council of Governments

2008 North Sound Travel Survey *Final Report*

April 15, 2009



206 Wild Basin Rd., Suite A-300
Austin, Texas 78746
Contact: Stacey Bricka, Project Director or Julie Paasche, Project Manager
(512) 306-9065
fax (512) 306-9077
www.nustats.com

This project was funded as a joint effort among Whatcom Council of Governments, Skagit Council of Governments, and Island County Regional Transportation Planning Organizations using Federal Highway Administration funding to provide household travel survey data to calibrate both Council of Governments' travel demand models. The major roles of the organizations are transportation planning which includes both motorized and non-motorized modes of travel.



Skagit/Island Regional
Transportation Planning Organization

The report was prepared on behalf of the Whatcom Council of Governments, Skagit Council of Governments and Skagit/Island Regional Transportation Planning Organizations.

*NuStats is solely responsible for its findings and conclusions,
which may not represent the official views or policies of the funding agencies.*

Table of Contents

1. Introduction	1
1.1 Introduction	1
1.2 Study Sample	1
1.3 Study Area	1
2. Sample Design	2
2.1 Survey Objectives	2
Survey Population	2
Sample Size	2
Sample Size Determination	2
Sample Frame Generation	4
Sample Preparation	4
Sample Results	4
3. Survey Design	6
3.1 Data Collection: Procedures & Participation Rates	6
Geocode Home Addresses	6
Recruitment Telephone Interview	6
Respondent Mailing Packet	8
Reminder Call	8
Data Retrieval Telephone Interview	8
Real-Time Geocoding with TripTracer	8
Processing	9
Data Edit Checks & Cleaning	9
4. Summary Findings	10
4.1 Key Findings	10
Trip Rates	10
Travel Mode and Travel Purpose	10
Trip Duration and Peak Travel Periods	11
Vehicle Characteristics	11
4.2 Summary Data	11
5. Travel Behavior	12
5.1 Overall Trip Rates	12
5.2 Household Trip Rates	12
5.3 Person Trip Rates	15
5.4 Rates of Travel and Non-Travel	18
6. Trip Characteristics	20
6.1 Total Trips	20
6.2 Trip Purpose	22
7. Mode Choice	24
7.1 Travel Mode	24
8. Vehicle Information	28
8.1 Vehicle Occupancy	28
8.2 Vehicle Age	29

8.3 Vehicle Makes and Models	29
9. Travel Times	31
9.1 Travel Time	31
9.2 Trip Start Times	33
10. Multi-Lingual Effort	34
10.1 Recruitment Effort	34
10.2 Retrieval Effort	34
11. Results by County	35
11.1 Tables by County	35
11.2 County-Specific Questions	37
Whatcom County	37
Skagit County	39
Island County	40
Appendix A: CATI Recruitment Interview	41
Appendix B: Respondent Mailing Packet	50
Cover Letters	50
Travel Log	53
Appendix C: CATI Retrieval Interview	57

List of Tables and Figures

Table 2.1: Counties in the Study Area	2
Table 2.2: Distribution of Sample in Study Area by Stratification Variables	3
Table 2.3: Projected Distribution of Surveys in Study Area by Stratification and Geography Variables	3
Table 2.4: Completed Whatcom County Surveys by Stratification Variables	4
Table 2.5: Completed Skagit/Island County Surveys by Stratification Variables	5
Table 3.1: Recruitment Call Outcomes	7
Table 3.2: Retrieval Call Outcomes	8
Table 4.1: Summary Data by MPO	11
Table 5.1: Study-Wide Trip Rates	12
Table 5.2: Household Trip Rates by MPO	12
Table 5.3: Household Trip Rates/Standard Error by Annual Household Income and MPO	13
Table 5.4: Household Trip Rates/Standard Error by Household Vehicles	13
Table 5.5: Household Trip Rates by Household Size	13
Table 5.6: Household Trip Rate/Standard Error by Household Size and Household Vehicles	14
Table 5.7: Household Trip Rates by Residence Type and MPO	14
Table 5.8: Household Trip Rates by Number of Household Workers and MPO	15
Table 5.9: Household Trip Rates by Number of Students and MPO	15
Table 5.10: Person Trip Rates by Gender and MPO	15
Table 5.11: Person Trip Rates by Age and MPO	16
Table 5.12: Trip Rates for Persons with a Valid Driver's License by Age and MPO	16
Table 5.13: Person Trip Rates by Employment Status and MPO	17
Table 5.14: Person Trip Rates by Student Status and MPO	17
Table 5.15: Person Trip Rates by Type of School Attended	18
Figure 5.16: Distribution of Household Trips	18
Table 5.17: Age of Zero Trip Persons	19
Table 5.18: Zero Trip Persons: Reason for Not Traveling	19
Table 6.1: Total Trips by MPO	20
Table 6.2: Cross-County Travel for Work	20
Table 6.3: Cross-County Travel for Shopping Trips	20
Table 6.4: Travel Mode by MPO	21
Figure 6.5: Time of Day of Travel by MPO	21
Table 6.6: Primary Trip Purpose by MPO	22
Figure 6.7: Time of Day of Travel by Trip Purpose	23
Figure 7.1: Travel Mode by MPO	24

Table 7.2: Travel Mode by Trip Purpose (Travel To)	25
Table 7.3: Travel Mode by Vehicle Ownership	26
Table 7.4: Travel Mode by Driver's License Status	27
Table 8.1: Average Vehicle Occupancy by Trip Purpose (Travel To)	28
Table 8.2: Median Vehicle Age by MPO	29
Figure 8.3: Median Vehicle Age by Household Income and MPO	29
Table 8.4: Top 10 Vehicle Makes by MPO	30
Figure 9.1: Travel Time (in Minutes) by MPO	31
Table 9.2: Mean Travel Time (in Minutes) by Primary Trip Purpose and MPO	32
Figure 9.3: Mean Travel Time (in Minutes) by Travel Mode	33
Figure 9.4: Trips by Time of Day and MPO	33
Table 10.1: Final Recruitment Dispositions of Spanish-Speaking Households	34
Table 11.1: Summary Data by County	35
Table 11.2: Travel Mode by County	35
Table 11.3: Primary Trip Purpose by County	36
Table 11.4: Mean Travel Time (in Minutes) by Primary Trip Purpose and County	36
Table 11.5: Frequency of Preferences for Helping Shape Local Policies	37
Table 11.6: Distribution of Preferences for Helping Shape Local Policies	38
Table 11.7: Factors that Increase the Likelihood of Attending Public Meetings or Events	38
Table 11.8: Condition of Public Roads Rating	39
Table 11.9: Frequency of Riding Public Transit	39
Table 11.10: Factors that Encourage Using County Transit More Often	39
Table 11.11: Condition of Public Roads Rating	40
Table 11.12: Frequency of Riding Public Transit	40
Table 11.13: Factors that Encourage Using County Transit More Often	40

1. Introduction

1.1 Introduction

This report presents the methods used to conduct the 2008 North Sound Household Travel Survey and general findings from the effort, which was a comprehensive study of travel behavior in Whatcom, Skagit, and Island Counties. The purpose of the survey was to document the demographic and 24-hour travel behavior characteristics of 1,500 regional households (750 from Whatcom County, and 750 from Skagit and Island Counties). The data will be used by the Whatcom Council of Governments and the Skagit/Island Regional Transportation Planning Organization to update transportation models and to identify transportation needs in the region.

The North Sound Household Travel Survey was conducted by NuStats, a survey research firm that designed, executed, and analyzed the survey data. NuStats was assisted in this effort by its affiliates PTV DataSource, who performed the data collection task, and PTV America, who assisted in the design and review of the resultant data set.

1.2 Study Sample

The 2008 North Sound Household Travel Survey collected data from a total sample of 1,500 households between July and December 2008. The survey was conducted using a computer-assisted telephone interviewing (CATI) system and was based on a random sample of households in Whatcom, Skagit, and Island counties. A socioeconomic stratification was used to define the sample of households to ensure that the study captured the diversity of the population according to specific factors affecting travel behavior in the three-county region. The stratification scheme was based on two household characteristics:

- Household Size – Total number of persons in the household (1, 2, 3, 4+ persons), and
- Household Income Level – Total annual household income from 2007.

Households were contacted by telephone and recruited to participate in the study. For those households amenable to participating in the study, a demographic interview was conducted to obtain the following data about the households and their members: household size, number of vehicles, household income, dwelling type, age, gender, drivers' license, work status and address, and school status and address.

In total, 2,159 households agreed to complete 24-hour travel logs for each member. These logs were mailed to the households and participants recorded travel destination locations, travel mode, trip duration, travel party size, and destination activity. A total of 1,501 households provided complete travel behavior data and these comprise the final data set. The travel behavior data reported herein are based upon these households.

1.3 Study Area

The study area was comprised of three counties in Washington: Whatcom, Skagit, and Island Counties. According to 2000 Census data, this area includes a total of 131,082 households. Roughly half of these households, 64,446, are from Whatcom County, while the remaining 66,636 are from Skagit and Island Counties.

2. Sample Design

2.1 Survey Objectives

The purpose of the 2008 North Sound Household Travel Survey was to document regional demographics and travel behavior in Whatcom, Skagit, and Island Counties. The resultant data will be used to update the regional travel demand models and provide detailed information for assessing other regional transportation needs.

Survey Population

The survey population was defined as all households residing in the three-county region of Northern Washington State, including Whatcom, Skagit, and Island Counties. As presented in Table 2.1, the population, or study universe, comprises 131,082 households.

**Table 2.1:
Counties in the Study Area**

County	Total Households	% of Total Households
Whatcom	64,446	49.2%
Skagit	38,852	29.6%
Island	27,784	21.2%
<i>Total</i>	131,082	100.0%

**Source: Census 2000*

Sample Size

The survey goal was to obtain demographic and travel behavior characteristics from a random sample of 1,500 households, including 750 completed surveys from Whatcom County, as well as 750 completed surveys from Skagit and Island Counties. The sample size by county was calculated by an almost proportionate distribution of completed surveys based on census proportions (Table 2.1). In sum, 1,501 households provided the required data.

Sample Size Determination

Household size and annual income level of the household were used to stratify households to be surveyed in the 2008 North Sound Household Travel Survey. The target number of surveyed households in each category (i.e., cell) was determined based on the distribution of households in the population, then adjusted during fielding for actual incidences encountered. The sample size computation for each category was accomplished as follows.

- 1) The Census 2000 data distribution of households by household size and income were used to determine the initial distribution of overall sample in each cell. Table 2.2 presents this distribution.

**Table 2.2:
Distribution of Sample in Study Area by Stratification Variables**

Household Income	Household Size				Total
	1	2	3	4+	
Less than \$25,000	13.7%	7.8%	2.6%	3.2%	27.4%
\$25,000–\$49,999	7.1%	12.7%	4.9%	7.4%	32.1%
\$50,000–\$74,999	2.0%	8.6%	3.9%	6.7%	21.3%
\$75,000 or more	1.2%	8.1%	3.7%	6.3%	19.2%
<i>Total</i>	24.0%	37.2%	15.1%	23.6%	100.0%

**Source: Census 2000.*

- 2) The distribution of surveys was further stratified by geography: 750 surveys were to come from Whatcom County, while 750 were to come from Skagit and Island Counties. Also, the distribution was updated from the more recent 2006 American Community Survey (ACS) data, which was used to extrapolate¹ the 2000 Census data into the projected distribution in 2008. Table 2.3 presents the breakdown of surveys between these two geographic areas from the 2006 ACS data.

**Table 2.3:
Projected Distribution of Surveys in Study Area by Stratification and Geography Variables**

Household Income	Whatcom – Household Size				Total
	1	2	3	4+	
Less than \$25,000	17.9%	5.4%	1.3%	3.4%	27.8%
\$25,000–\$49,999	7.3%	12.8%	2.5%	4.4%	27.0%
\$50,000–\$74,999	1.8%	7.3%	4.2%	4.8%	18.1%
\$75,000 or more	1.6%	11.6%	5.9%	7.9%	27.0%
<i>Total</i>	28.6%	37.1%	13.8%	20.5%	100.0%
Household Income	Island and Skagit – Household Size				Total
	1	2	3	4+	
Less than \$25,000	13.2%	5.8%	0.8%	2.1%	22.0%
\$25,000–\$49,999	8.2%	9.9%	3.3%	5.1%	26.5%
\$50,000–\$74,999	3.7%	11.4%	2.4%	4.7%	22.3%
\$75,000 or more	2.8%	13.4%	6.2%	6.9%	29.3%
<i>Total</i>	27.9%	40.5%	12.7%	18.8%	100.0%

**Source: ACS 2006*

- 3) During fielding of the survey, incidence levels of households across all cells were carefully tracked and adjustments in the expected goals were adjusted as needed.

¹ The 2006 ACS and 2000 Census distributions for household income by household size were used to calculate the annual rate of change for each of these statistics for each of the 16 cells. These annual rate of change percentages were then applied to project the 2006 ACS statistics to year 2008.

Sample Frame Generation

A sampling frame is the list of elements from which a sample is selected. Properly drawn samples provide information appropriate for describing the population of elements that comprise the sampling frame. The sampling frame for the 2008 North Sound Household Travel Survey included listed, random digit dial (RDD) landline, and RDD cell phone sample.

The home addresses of sample records were geocoded and mapped for visual inspection prior to use to ensure proper coverage of the study area. Additionally, given that multiple sampling frames were used in the study, all sample records were run through duplication checks, both by the sample provider and by NuStats. Any records with identical address and surname information or phone numbers were removed prior to dialing.

Sample Preparation

Given the data collection goals of geography (3 counties) and household size by income, data collection was guided by targets to help ensure that the various goals were met, sample replicates were used to maintain the randomness of the selection process. A replicate is a systematically selected subsample of a sample that is geographically representative of the entire sample. The main benefit of using replicated samples is that the interviewers do not need to contact the entire sample to ensure proper representation of the survey area.

At the beginning of the recruitment interview, screening questions were asked of each household in order to obtain the number of persons in the household and the annual household income in 2007. This allowed a precise allocation of sample into appropriate household size and income stratum. A running account, based on the stratification cell each household fell into, was kept of the households that agreed to participate. A simultaneous account was kept of the households that completed their travel diaries. Once quota for a particular stratum was reached, within an allowed margin of error, subsequent households falling into that cell were not recruited into the study.

Sample Results

The actual completed survey counts are compared with the initial target distribution in Tables 2.4 and 2.5. The differences reflect both adjustments for actual incidence of each type of household reached during the survey effort as well as a mid-course change in the goals to focus only on the geographic goals of the survey effort.

Table 2.4:
Completed Whatcom County Surveys by Stratification Variables

Household Income	1-person			2-person			3-person			4+ person		
	Target	Actual	% of Target	Target	Actual	% of Target	Target	Actual	% of Target	Target	Actual	% of Target
Less than \$25,000	134	58	43.3%	40	26	65.0%	10	3	30.0%	25	3	12.0%
\$25,000–\$49,999	55	78	141.8%	96	87	90.6%	19	24	126.3%	33	23	69.7%
\$50,000–\$74,999	14	19	135.7%	55	112	203.6%	31	37	119.4%	36	47	130.6%
\$75,000 or more	12	16	133.3%	87	135	155.2%	44	36	81.8%	59	46	78.0%

**Table 2.5:
Completed Skagit/Island County Surveys by Stratification Variables**

Household Income	1-person			2-person			3-person			4+ person		
	Target	Actual	% of Target	Target	Actual	% of Target	Target	Actual	% of Target	Target	Actual	% of Target
Less than \$25,000	99	51	51.5%	43	24	55.8%	6	4	66.7%	16	5	31.3%
\$25,000-\$49,999	61	67	109.8%	74	98	132.4%	25	20	80.0%	38	26	68.4%
\$50,000-\$74,999	28	29	103.6%	86	140	162.8%	18	32	177.8%	35	40	114.3%
\$75,000 or more	21	19	90.5%	101	123	121.8%	47	34	72.3%	52	39	75.0%

3. Survey Design

3.1 Data Collection: Procedures & Participation Rates

The survey conformed to standard procedures for conducting a household travel survey. Data collection procedures included the following eight stages, which are described in more detail below:

- 4) Geocode Home Addresses,
- 5) Recruitment Telephone Interview,
- 6) Respondent Packet Mailing,
- 7) Reminder Call,
- 8) Data Retrieval Telephone Interview,
- 9) Real-time Geocoding in TripTracer during Retrieval,
- 10) Processing,
- 11) Data Edit Checks & Cleaning.

Geocode Home Addresses

Once the sample was prepared and replicated, all households addresses were geocoded to confirm proper location in the desired sample frame. During the retrieval telephone interview, all household locations were geocoded using TripTracer, which ensured that a 100% match rate was obtained for surveyed households.

Recruitment Telephone Interview

The recruitment interview was administered using a computer-assisted telephone interviewing (CATI) program, and averaged 12.04 minutes. During recruitment, each household was contacted to secure participation in the study. If the household agreed, household-level demographic information was collected, including income, household size, vehicle ownership, and other household characteristics. In addition, demographic characteristics were obtained for each member of the household, such as age, gender, employment, and school status (see Appendix A for the recruitment questionnaire).

Collecting this information in the first interview had several advantages. First, since the household size and income were known at the start of the survey effort, NuStats was able to minimize over-sampling or inefficient survey fielding by stopping the survey process at that point for any household in quota cells that were full. Second, by collecting this level of information in the first call, NuStats had a unique opportunity to assess potential non-response and non-contacts in later stages of the survey. In addition to securing the household's participation in the study, the recruitment call is used to assign an upcoming weekday as a travel day.

Table 2.2 presents the final call outcomes of all recruitment call attempts. The response rate for the Recruitment Interview stage was 20%. This was calculated using the Council of American Survey Research Organizations, or CASRO, formula, which divides the number of recruited households (2,159) by the sum of all eligible sample (3,631) and a portion of unknown sample that is expected to be eligible (7,206). The portion of unknown sample assigned to the denominator of the response rate was calculated by determining the ratio of overall known eligible units (53%) to ineligible units (47%) and then multiplying the total unknown (13,663) by the percentage of eligible (53%). By using the proportion of

the unknown sample that is expected to be eligible in the denominator, the CASRO response rate gives a better idea of what the actual rate would be if all records were able to be contacted.

An eligible sample piece was defined as those for which the telephone attempt resulted in the qualification of a household for inclusion in the survey.

An ineligible sample piece was defined as those numbers for which a telephone attempt resulted in contact with businesses, bad numbers (disconnects), and computer and fax lines or a non-qualifying household.

Those telephone attempts resulting in no answer, busy, etc. were considered as “unknown sample” because no definitive determination could be made as to the qualifying status of the telephone number.

When calculating the response rate, the assumption was made that if contact had been made with the unknown pieces of sample, the proportion of those units that would have qualified for the study would have been consistent with the occurring ratio of known eligible to ineligible sample. This calculation under-represents the true response rate because it also incorrectly assumes that of the unknown sample that is converted into “eligible” sample, none would be recruited into the study.

**Table 3.1:
Recruitment Call Outcomes**

Call Outcome	Frequency
Eligible Units	
Recruited	2,159
Partial completes	8
Refused to participate	1,464
Subtotal Eligible	3,631
Ineligible Units	
Disconnected number	2,555
Business/Government	180
Computer/Fax line	234
Language barrier	69
Out of area/Over quota	216
Subtotal Ineligible	3,254
Eligibility Unknown Units	
No answer	1,499
Call back	280
Answering machine	5,877
Caller I.D.	74
Busy	407
No screener completed	5,526
Subtotal Eligibility Unknown	13,663
<i>Total</i>	20,548

Respondent Mailing Packet

The day following recruitment, demographic information was processed into the master data set, and packets were assembled for each recruited household. These packets included a cover letter, travel log, example of a completed travel log, and a postage-paid envelope to return the completed logs after the retrieval interview (see Appendix B). Travel days were scheduled 7 to 10 days after recruitment to allow sufficient time for packets to reach the households using first class mail.

Reminder Call

The night prior to the start of the assigned travel period, reminder calls were made to the households. This reminder call served three key purposes:

- 1) Confirm that the household received the packet and answer any questions respondents might have about using the log to track their travel.
- 2) Schedule an appointment to conduct the retrieval interview.
- 3) Increase the likelihood that the household will follow through with recording their travel by reiterating the importance of the study and the household's commitment to participate.

For those instances where an answering machine was reached, the interviewers left brief messages that referenced a toll-free number for respondents to call if they had questions.

Data Retrieval Telephone Interview

The day after the assigned travel period or at the appointed time, 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 of the retrieval instrument (see Appendix C). The average retrieval interview length was 28.9 minutes.

Table 3.2 presents call outcomes for all retrieval interviews. The retrieval rate is 70%. This was calculated by dividing the completed retrieval calls (1,501) by the number of eligible retrieval sample (also known as the number of recruited households) (2,159).

Table 3.2:
Retrieval Call Outcomes

Call Outcome	Frequency
Eligible Units	
Completed	1,501
Disconnected number	16
Pending (no answer, call backs, etc.)	332
Refused to participate	310
<i>Total</i>	2,159

The overall response rate for the study is 14%. This was calculated by multiplying the CASRO response rate from recruitment and the retrieval rate together ($20\% * 70\% = 14\%$). Given that the recruitment rate under-represents true recruitment levels, the final response rate is under-stated.

Real-Time Geocoding with TripTracer

All trip-ends and habitual addresses were geocoded during the retrieval telephone interview with the TripTracer software. The Trip Tracer software was designed to provide interviewers with study area

details (road names, landmark references). Interviewers used this additional detail to confirm respondent-reported locations in real-time. An additional benefit of the use of the Trip Tracer software was that once the interview was completed, full address information, with matching x/y coordinates, for 100% of the locations, was immediately available.

Processing

Data processing took place throughout the study, beginning with placing the initial sample into replicates, continuing with the release of sample for recruitment, processing recruitment data for the respondent mailout, appending the retrieval data to the master SQL tables, and performing quality control on the data. A master control file tracked the progress of each household through the various survey stages with codes to allow for immediate identification of problem cases that were not progressing according to schedule, as well as for confirmation that cleared cases moved along as appropriate.

In order to control for the typically large non-response to the annual household income question, a process was set up to impute the general income range for households that refused based on the number of members in their household and their zip code. If households refused to give us the specific range of their annual income both in the recruitment and retrieval interviews, their general income range was imputed based on the average income level of households of similar size in their zip code. In the final dataset, 10.2% of all households have an imputed income.

Data Edit Checks & Cleaning

Routine and customized edit checks (Data Quality Checks) and data cleaning were performed on master data files. Routine checks included such items as:

- Data range checks (are there data outside the expected range?)
- Checks for missing data (this is done by a combination of queries and direct data viewing of the internal delivery files and minimizes processing problems)
- Checks for proper data skips
- Checks to ensure the deliverable files include the data items on the matrix and that variables are properly named
- Checks for high frequency of item non-responses (checked throughout various stages of data)

4. Summary Findings

This chapter provides an overview of the basic findings of the study, including travel-related and demographic statistics.

4.1 Key Findings

This section presents an overview of the key findings of the 2008 North Sound Household Travel Survey. Each of these findings is supported by detailed data analyses presented in later sections of the report. The results are unweighted. Trip statistics reflect unchained trip segments.

Trip Rates

- Households surveyed in the 2008 North Sound Household Travel Survey reported making an average of 8.5 trips, with an average of 3.7 trips per person.
- Trip rates were higher in Whatcom County with 8.9 trips per household and 3.8 trips per person. Trip rates in Skagit and Island Counties averaged 8.0 trips per household and 3.6 trips per person.
- Households reported an average of 2.3 persons per household and 2.2 vehicles per household.
- Certain demographic characteristics were positively associated with higher rates of travel. These were household income, number of vehicles, number of workers in household, and number of students. Of these, the number of students had the greatest impact on trip rates.
- Households reported an average of 1.3 workers per household. Households with no workers reported making 4.9 trips, while those with three or more workers reported making 15.2 trips.
- Households reported an average of 0.5 students per household. Households with no students reported 6.5 trips, while those with three or more students reported 19.5 trips.
- On average, females made more trips than males. The female trip rate was 3.8, while males averaged 3.6 trips.
- Persons aged 35 to 44 years had the highest person trip rate (4.3 trips) among all age categories. Persons between 18 and 24 years had the lowest trip rates, averaging 3.1.
- Employed persons, either part-time or full-time, reported making an average of 4.1 trips, compared to 3.1 trips for unemployed persons 16 years or older. Students took 3.5 trips, while non-students took 3.7 trips.
- Most households (63.1%) reported making between one and ten trips within a 24-hour period. Only 7.8% reported making zero trips, while 22.2% of surveyed households made between 11 and 20 trips, and 6.0% made more than 20 trips per day.

Travel Mode and Travel Purpose

- Over three-fifths (63.9%) of trips were made by an auto driver, and 19.7% were made by an auto passenger. Transit comprised only 1.6% of all trips, school bus accounted for 2.9%, and non-motorized (walk or bike) accounted for 10.6% combined. The remaining 1.2% of trips was made by taxi/shuttle, motorcycle/scooter, ferry, vanpool, or some other mode.
- The largest percentage of total trips ended at home (33.9%); working at non-home locations was the second most frequent reason for travel (14.0%), followed by shopping(10.2%).
- Average vehicle occupancy for trips in the 2008 North Sound Household Travel Survey was 1.7 persons per vehicle.

Trip Duration and Peak Travel Periods

- The average trip lasted 17.8 minutes.
- On average, auto trips took 17.3 minutes per trip. Walk trips had the shortest average travel time at 13.6 minutes per trip
- The highest frequency of trips started between 3 p.m. and 4 p.m. and accounted for nearly 10% of all vehicle trips.

Vehicle Characteristics

- The average age of all vehicles was 10.0 years. Whatcom County households recorded slightly older vehicles, 10.0 years, than did households in Island and Skagit Counties, 9.0 years.
- Ford was the most popular vehicle make (17.1%) in the area. Chevrolet was the second most popular make (13.0%), and Toyota was third (10.9%).

4.2 Summary Data

Table 4.1 presents the average of persons, vehicles, workers, and trips per household by each Metropolitan Planning Organization (MPO) area, as well as the standard error for each measure.

**Table 4.1:
Summary Data by MPO**

Type	Whatcom County	Skagit/Island Counties	Total
N	750	751	1,501
Persons per household	2.3/<0.1	2.3/<0.1	2.3/<0.1
Vehicles per household	2.1/<0.1	2.3/<0.1	2.2/<0.1
Workers per household	1.4/<0.1	1.3/<0.1	1.3/<0.1
Licensed drivers per household	1.8/<0.1	1.8/<0.1	1.8/<0.1
Daily vehicle trips per household*	7.2/0.2	7.0/0.2	7.1/0.2
Vehicle driver trips per household	5.5/0.2	5.4/0.1	5.4/0.1
Vehicle passenger trips per household	1.7/0.1	1.6/0.1	1.7/0.1
Public transit (bus) trips per household	0.2/<0.1	0.1/<0.1	0.1/<0.1
Non-motorized trips per household	1.2/0.1	0.6/0.1	0.9/0.1

* Includes trips made by a personal vehicle (car, van, truck, motorcycle).

5. Travel Behavior

This chapter presents detailed analyses of weekday travel behavior by the household sample characteristics, such as county, vehicle ownership, household size, housing type, etc.

5.1 Overall Trip Rates

A trip rate is the average number of trips reported by either a household or person over the course of the assigned 24-hour travel day. The mean number of trips reported per person was 3.7 trips, while the mean number of trips reported by household was 8.5 trips.

**Table 5.1:
Study-Wide Trip Rates**

Type	Trip Rate
Person	3.7
Household	8.5

Base: 3,446 persons / 1,501 households

The average household trip rate varied between the two MPO areas, as shown in Table 5.2. The highest trip rate occurred in Whatcom County, where households traveled an average of 8.9 trips per day. In contrast, households in Skagit and Island Counties traveled an average of 8.0 trips per day.

**Table 5.2:
Household Trip Rates by MPO**

County	Percent	Trip Rate	St. Error
Whatcom (N=750)	50.0%	8.9	0.3
Skagit/Island (N=751)	50.0%	8.0	0.2
<i>Total</i>	100.0%	8.5	0.2

Base: 1,501 households

5.2 Household Trip Rates

Table 5.3 presents the mean household trip rates and standard error by household income in 2007 for each MPO. The table shows a general trend of an increase in trip rate with an increase in household income. Households in the lowest income category (less than \$25,000) traveled an average of 4.8 trips, while households making more than \$75,000 traveled more than twice that rate, 9.9 trips.

**Table 5.3:
Household Trip Rates/Standard Error by Annual Household Income and MPO**

Income	Whatcom		Skagit/Island		Total	
	Percent	Trip Rate	Percent	Trip Rate	Percent	Trip Rate
Less than \$25,000 (N=174)	12.0%	4.6/0.6	11.2%	5.0/0.6	11.6%	4.8/0.4
\$25,000-\$49,999 (N=423)	28.3%	7.9/0.4	28.1%	6.3/0.4	28.2%	7.1/0.3
\$50,000-\$74,999 (N=456)	28.7%	10.1/0.5	32.1%	9.5/0.4	30.4%	9.8/0.3
\$75,000 or higher (N=448)	31.1%	10.4/0.5	28.6%	9.3/0.5	29.8%	9.9/0.3
<i>Total</i>	100.0%	8.9/0.3	100.0%	8.0/0.2	100.0%	8.5/0.2

Base: 1,501 households' reported or imputed income

There is also a clear trend in household trip rates when compared to the number of household vehicles. Table 5.4 shows that as the number of household vehicles increases, the trip rate increases also. Households in the study area that own two vehicles traveled more than twice as much as households with no vehicles. The average number of vehicles per household is 2.2 vehicles.

**Table 5.4:
Household Trip Rates/Standard Error by Household Vehicles**

Number of HH Vehicles	Percent	Trip Rate
Zero (N=37)	2.5%	4.0/0.8
One (N=359)	23.9%	6.2/0.3
Two (N=628)	41.8%	8.8/0.3
Three+ (N=477)	31.8%	10.1/0.4
<i>Total</i>	100.0%	8.5/0.2
Vehicles per household	2.2	

Base: 1,501 households

Table 5.5 presents the average trip rate of households based on the number of household members. As expected, there is a clear positive relationship between these two variables: as the household size increases, so does the trip rate. Households with four or more members made more than twice as many trips as two-person households.

**Table 5.5:
Household Trip Rates by Household Size**

Household Size	Percent	Trip Rate
One Person (N=337)	22.5%	3.8/0.2
Two Persons (N=745)	49.6%	7.3/0.2
Three Persons (N=190)	12.7%	11.0/0.4
Four+ Persons (N=229)	15.3%	16.9/0.6
<i>Total</i>	100.0%	8.5/0.2
Persons per household	2.3	

Base: 1,501 Households

As presented in the previous two tables, average household trip rates varied according to household size and the number of vehicles available. Table 5.6 presents the trip rates and standard errors by household size and household vehicles. The standard deviation is a measure of how widely the trip values are dispersed. Therefore, a relatively small standard deviation indicates that households with the same characteristics (household size and household vehicles) made about the same number of trips.

Table 5.6:
Household Trip Rate/Standard Error by Household Size and Household Vehicles

Number HH Vehicles	Household Size				Total
	One-Person	Two-Person	Three-Person	Four + Persons	
Zero	3.4/0.7	6.0/3.4*	8.0/--*	--	4.0/0.8
One	4.0/0.2	7.5/0.5	11.2/1.4*	16.2/2.3*	6.2/0.3
Two	3.7/0.3	7.3/0.2	11.0/0.6	17.6/0.8	8.8/0.3
Three+	3.1/0.4*	7.4/0.3	11.0/0.6	16.5/0.9	10.1/0.4
<i>Total</i>	3.8/0.2	7.3/0.2	11.0/0.4	16.9/0.6	8.5/0.2

Base: 1,501 households
**Sample size is less than 30*

Table 5.7 presents household trip rates by residence type for each MPO in the study area. Of the households reporting residence type, 85.0% are living in a single-family home detached from any other house. These households reported making an average of 8.8 trips on their assigned travel day, about 0.3 trips above the average. Respondents living in multi-family housing, such as apartments or condos (7.1% of all households), and those living in mobile homes (3.5% of all households) reported the lowest trip rate, 6.1 trips. Between the two areas, more respondents from Skagit and Island Counties live in detached single-family homes (88.1%) than in Whatcom County (81.9%), yet they make fewer average trips.

Table 5.7:
Household Trip Rates by Residence Type and MPO

Residence Type	Whatcom		Skagit/Island		Total	
	Percent	Trip Rate	Percent	Trip Rate	Percent	Trip Rate
Single-family detached from any other house	81.9%	9.3	88.1%	8.4	85.0%	8.8
Single-family attached to one or more houses (duplex, row house, townhouse)	5.6%	8.1	2.9%	6.7*	4.3%	7.7
Mobile home	2.8%	7.6*	4.3%	5.1	3.5%	6.1
Building with two or more apartments or condo units	9.6%	6.4	4.7%	5.4	7.1%	6.1
Don't Know/Refused	0.1%	3.0*	--	--	0.1%	3.0*
<i>Total</i>	100.0%	8.9	100.0%	8.0	100.0%	8.5

Base: 1,500 households reporting residence type
**Sample size is less than 30*

The relationship between the numbers of employed household members, either full-time or part-time, and the trip rate of each MPO is shown in Table 5.8. The household trip rates clearly increase as the number of household workers increased for both areas, and overall. Zero-worker households reported making an average of 4.9 trips, while households with three or more workers traveled more than three times that amount, 15.2 trips.

**Table 5.8:
Household Trip Rates by Number of Household Workers and MPO**

Workers	Whatcom County		Skagit/Island Counties		Total	
	Percent	Trip Rate	Percent	Trip Rate	Percent	Trip Rate
No Workers	19.3%	4.8	22.1%	5.0	20.7%	4.9
One Worker	32.1%	7.5	34.1%	6.6	33.1%	7.1
Two Workers	42.0%	10.7	38.2%	10.1	40.1%	10.4
Three+ Workers	6.5%	16.1	5.6%	14.2	6.1%	15.2
<i>Total</i>	100.0%	8.9	100.0%	8.0	100.0%	8.5
Workers per Household	1.4		1.3		1.3	

Base: 1,501 households

The presence of students in the household has an even greater effect on household trip rates than the number of workers. As seen in Table 5.9, households with three or more students made an average of 19.5 trips on the assigned travel day, whereas households with no students averaged 6.5 trips per day.

**Table 5.9:
Household Trip Rates by Number of Students and MPO**

Students	Whatcom County		Skagit/Island Counties		Total	
	Percent	Trip Rate	Percent	Trip Rate	Percent	Trip Rate
No Students	72.4%	6.6	73.6%	6.4	73.0%	6.5
One Student	13.9%	12.0	14.0%	9.7	13.9%	10.8
Two Students	7.7%	16.0	7.5%	14.7	7.6%	15.4
Three+ Students	6.0%	20.6	4.9%	18.2	5.5%	19.5
<i>Total</i>	100.0%	8.9	100.0%	8.0	100.0%	8.5
Students per household	0.5		0.4		0.5	

Base: 1,501 households

5.3 Person Trip Rates

Table 5.10 presents the person trip rates by gender for each MPO area, and overall. Females reported a higher trip rate, 3.8 trips per day, than males, 3.6 trips per day. Whatcom County respondents reported slightly more trips, 3.8, than Skagit and Island County respondents, 3.6.

**Table 5.10:
Person Trip Rates by Gender and MPO**

Gender	Whatcom County		Skagit/Island Counties		Total	
	Percent	Trip Rate	Percent	Trip Rate	Percent	Trip Rate
Male	48.9%	3.7	47.3%	3.4	48.1%	3.6
Female	51.1%	3.9	52.3%	3.7	51.7%	3.8
Refused	--	--	<0.1%	2.6*	<0.1%	2.6*
<i>Total</i>	100.0%	3.8	100.0%	3.6	100.0%	3.7

*Base: 3,446 persons
Sample size is less than 30

The average person trip rate by age for each MPO is shown in Table 5.11. Persons between the ages of 35 and 44 traveled the most, 4.3 trips during their assigned travel day. After this category, the person trip rate declines steadily to 3.6 trips for persons 65 years and older. The age group that traveled the least amount was respondents between 18 and 24 years old, with only 3.1 trips per day.

**Table 5.11:
Person Trip Rates by Age and MPO**

Age	Whatcom County		Skagit/Island Counties		Total	
	Percent	Trip Rate	Percent	Trip Rate	Percent	Trip Rate
Under 5 years	3.8%	3.8	2.8%	2.6	3.3%	3.3
5 to 12 years old	9.2%	3.6	7.7%	3.0	8.4%	3.3
13 to 17 years old	5.8%	3.6	6.2%	3.2	6.0%	3.4
18 to 24 years old	3.5%	3.2	2.9%	2.9	3.2%	3.1
25 to 34 years old	6.1%	4.2	6.0%	3.1	6.1%	3.7
35 to 44 years old	9.8%	4.6	8.5%	3.9	9.2%	4.3
45 to 54 years old	16.3%	3.8	13.5%	4.1	14.9%	3.9
55 to 64 years old	21.4%	4.0	23.1%	3.8	22.3%	3.9
65 years and older	22.8%	3.6	27.0%	3.5	24.9%	3.5
Refused	1.3%	3.3*	2.2%	3.8	1.7%	3.6
<i>Total</i>	100.0%	3.8	100.0%	3.6	100.0%	3.7

Base: 3,446

**Sample size is less than 30*

Table 5.12 presents the person trip rates by age for respondents with a valid driver's license. As in Table 5.11, people between the ages of 35 and 44 made the highest number of trips, 4.4, and people between the ages of 18 and 34 had the lowest trip rates, 3.1. Overall, people with driver's licenses made slightly more trips than the overall population.

**Table 5.12:
Trip Rates for Persons with a Valid Driver's License by Age and MPO**

Age	Whatcom County		Skagit/Island Counties		Total	
	Percent	Trip Rate	Percent	Trip Rate	Percent	Trip Rate
16 to 17 years old	2.0%	4.3*	1.4%	3.7*	1.7%	4.0
18 to 24 years old	3.9%	3.4	3.1%	2.7	3.5%	3.1
25 to 34 years old	7.0%	4.3	7.1%	3.2	7.1%	3.8
35 to 44 years old	12.4%	4.6	10.2%	4.0	11.3%	4.4
45 to 54 years old	20.0%	3.9	16.5%	4.1	18.2%	4.0
55 to 64 years old	26.5%	4.0	28.3%	3.8	27.4%	3.9
65 years and older	27.0%	3.7	31.5%	3.5	29.2%	3.6
Refused	1.3%	3.4*	1.9%	3.8*	1.6%	3.6
<i>Total</i>	100.0%	4.0	100.0%	3.7	100.0%	3.8

Base: 2,747 persons with driver's license, ages 16 and up

**Sample size is less than 30*

Table 5.13 shows person trip rates by employment status for all persons 16 years and older by MPO. Employed respondents traveled more during their assigned travel day than those not employed in both MPO regions. Overall, people who work made an average of 4.1 trips per day, compared to 3.1 trips per day by people who do not work.

**Table 5.13:
Person Trip Rates by Employment Status and MPO**

Employment Status	Whatcom County		Skagit/Island Counties		Total	
	Percent	Trip Rate	Percent	Trip Rate	Percent	Trip Rate
Employed	71.2%	4.2	66.4%	4.0	68.8%	4.1
Not Employed	28.8%	3.1	33.6%	3.1	31.2%	3.1
<i>Total</i>	100.0%	3.9	100.0%	3.7	100.0%	3.8

Base: 2,901 persons ages 16 and up

Nearly 21% of all persons reported being enrolled in some type of school, either part-time or full-time. Overall, as shown in Table 5.14, non-students traveled slightly more than students during their travel day.

**Table 5.14:
Person Trip Rates by Student Status and MPO**

Student Status	Whatcom County		Skagit/Island Counties		Total	
	Percent	Trip Rate	Percent	Trip Rate	Percent	Trip Rate
Yes	21.3%	3.7	19.7%	3.2	20.6%	3.5
No	78.7%	3.9	80.2%	3.6	79.4%	3.7
<i>Total</i>	100.0%	3.9	100.0%	3.7	100.0%	3.7

Base: 3,446 persons

Table 5.15 presents person trip rates by the type of school attended for all students. Persons enrolled in 2-year colleges (community colleges) reported making more trips on average, 4.2, than those in any other type of school with at least 30 people reporting. Elementary, middle, and high school students traveled the least during their travel day.

**Table 5.15:
Person Trip Rates by Type of School Attended**

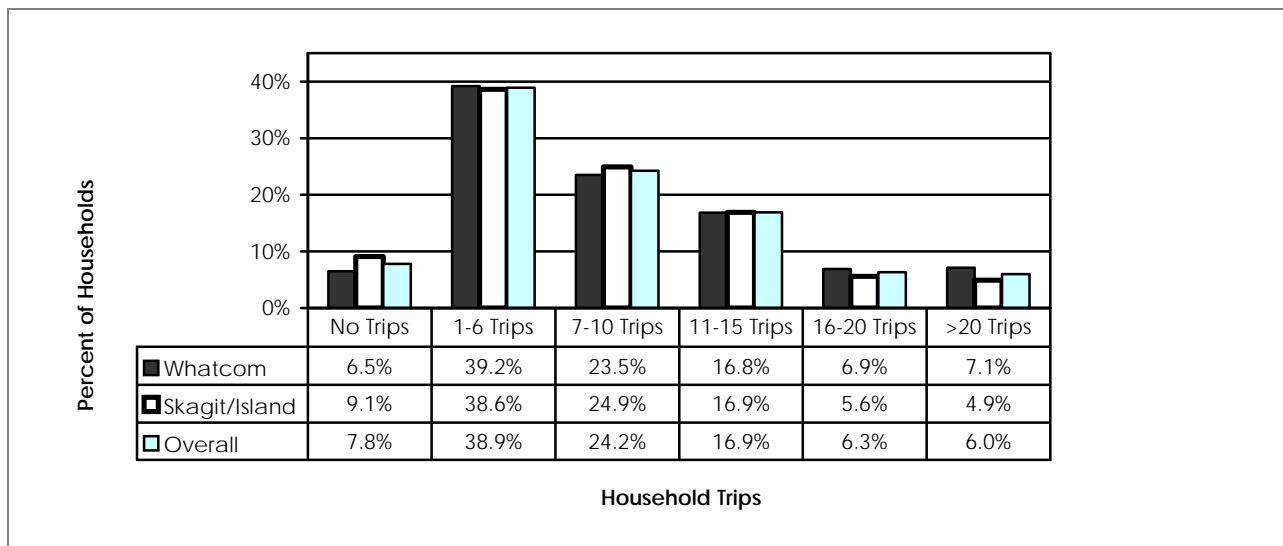
Type	Percent	Trip Rate
Daycare	2.8%	2.8*
Nursery School, Pre-School	3.8%	3.7*
Kindergarten to Grade 8	48.4%	3.3
Grade 9-12	23.0%	3.5
Technical/Vocational School	3.1%	3.0*
2-Year College (Community College)	8.3%	4.2
4-Year College or University	6.2%	3.9
Graduate School/Professional	3.2%	3.8*
Other	0.8%	4.8*
Don't know/Refused	0.1%	3.0*
<i>Total</i>	100.0%	3.5

*Base: 708 persons enrolled in school, *Sample size is less than 30*

5.4 Rates of Travel and Non-Travel

The distribution of the number of household trips for the 1,501 completed surveys is presented in Figure 5.16. Over one-third of all households (38.9%) reported making between one and six trips. Six percent of households made over twenty trips during their assigned travel day, while 6.3% made between 16 and 20 trips.

**Figure 5.16:
Distribution of Household Trips**



As shown in the preceding figure, 7.8% of all households reported zero trips during their travel day. A rigorous quality check was performed to ensure that households not traveling had valid reasons. The following two tables examine characteristics of all persons not making trips. Table 5.17 presents the age of persons reporting no trips. Over half of respondents who did not travel (57.0%) are age 55 or older, while only 8.5% are between the ages of 13 and 24.

**Table 5.17:
Age of Zero Trip Persons**

Age	Percent
0 to 12 years old	8.9%
13 to 17 years old	3.6%
18 to 24 years old	4.9%
25 to 34 years old	5.8%
35 to 44 years old	5.8%
45 to 54 years old	11.7%
55 to 64 years old	18.9%
65 and older	38.1%
Refused	2.3%
<i>Total</i>	100.0%

Base: 530 persons reporting zero trips

Table 5.18 presents the reasons why those making zero trips did not travel. Of all zero-trip persons, 11.5% reported they were personally sick, while 2.3% were taking care of someone else who was sick. About one-tenth (10.8%) were out of the area, and nearly one-half (48.5%) reported some other reason that they did not travel.

**Table 5.18:
Zero Trip Persons: Reason for Not Traveling**

Reason	Percent
Personally sick	11.5%
Caretaking sick kids	0.8%
Caretaking sick other	1.5%
Home-bound elderly or disabled	11.7%
Worked at home for pay	6.4%
Worked around home (not for pay)	8.9%
Out of area	10.8%
Other reason	48.5%
<i>Total</i>	100.0%

Base: 530 persons reporting zero trips.

6. Trip Characteristics

This chapter presents characteristics of 12,711 individual trips recorded during the household travel survey.

6.1 Total Trips

In total, 12,711 trips were reported by 3,446 persons from 1,501 households. Table 6.1 presents the number of total trips made by households residing in each MPO region included in the study.

Table 6.1:
Total Trips by MPO

MPO	Frequency	Percent
Whatcom County	6,670	52.5%
Skagit/Island Counties	6,041	47.5%
<i>Total</i>	12,711	100.0%

Base: 12,711 trips

Table 6.2 compares the region where the households and places of work are located for employed respondents. Overall, 50.6% of employed survey participants reported their work location to be in Whatcom County. Island County has the highest percentage of workers (17.5%) who work outside of the study area. For all home counties, the majority of workers do not cross county lines to get to work.

Table 6.2:
Cross-County Travel for Work

County Lives In	County Works In			
	Whatcom	Skagit	Island	Out of Area
Whatcom	95.7%	2.2%	--	2.2%
Skagit	3.3%	83.9%	2.3%	10.5%
Island	0.8%	5.3%	76.4%	17.5%
<i>Total</i>	50.6%	22.7%	18.9%	7.8%

Base: 1,975 work locations

Table 6.3 represents the counties to which respondents traveled for shopping trips versus their home county. Nearly half of all shopping trips (46.3%) were to destinations in Whatcom County, while 30.8% and 18.1% of all trips were to destinations in Skagit and Island Counties, respectively. As with the work locations, the majority of shopping trips reported did not cross county lines.

Table 6.3:
Cross-County Travel for Shopping Trips

County Lives In	County Shops In			
	Whatcom	Skagit	Island	Out of Area
Whatcom	96.6%	1.5%	0.3%	1.6%
Skagit	1.3%	95.5%	0.5%	2.7%
Island	--	10.2%	76.0%	13.8%
<i>Total</i>	46.3%	30.8%	18.1%	4.8%

Base: 1,299 geocoded shopping locations

An overwhelming majority of trips (83.6%) were made in a private vehicle (either as auto driver or auto passenger). Trips using public transportation comprised 1.6% of all trips. Non-motorized trips accounted for 10.6% of all trips. Table 6.4 shows the distribution of all travel modes by MPO region.

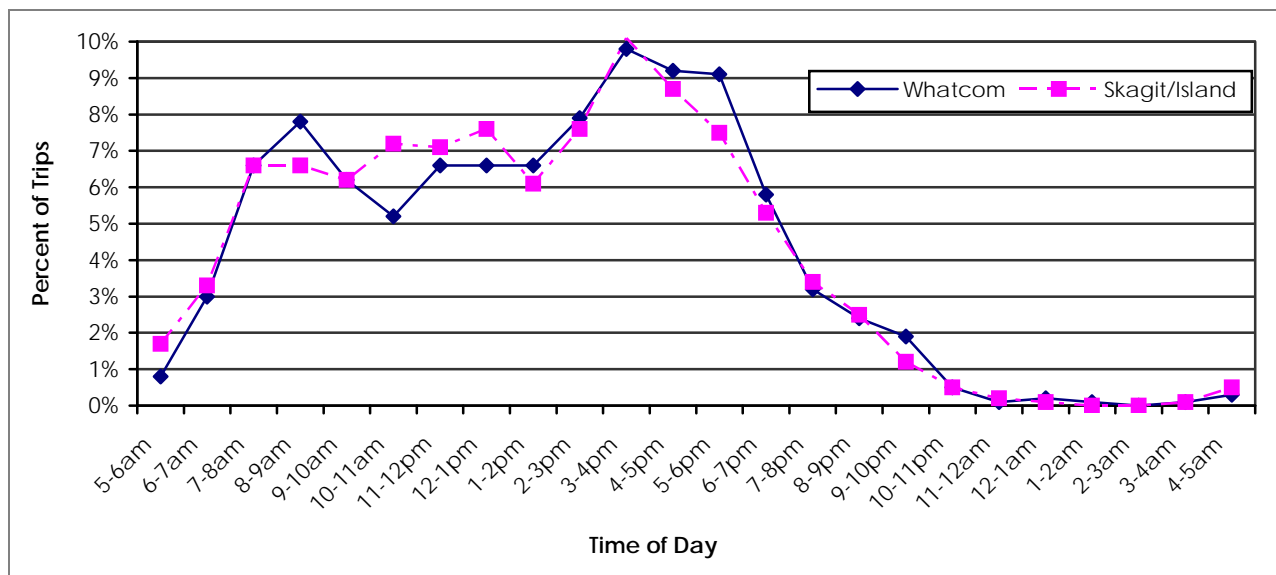
Table 6.4:
Travel Mode by MPO

Travel Mode	Whatcom	Skagit/Island	Total
Walk	10.7%	6.7%	8.8%
Bicycle	2.9%	0.6%	1.8%
Drive Auto/Van/Truck	61.4%	66.6%	63.9%
Passenger Auto/Van/Truck	19.6%	19.8%	19.7%
Transit	1.9%	1.3%	1.6%
School Bus	2.6%	3.3%	2.9%
Taxi/Shuttle	0.2%	0.1%	0.2%
Motorcycle/Scooter	0.3%	0.4%	0.3%
Ferry	0.1%	0.9%	0.5%
Vanpool	0.1%	0.1%	0.1%
Other Mode	0.2%	0.1%	0.1%
<i>Total</i>	100.0%	100.0%	100.0%

Base: 12,711 trips.

The hour when the highest percentage of overall trips took place was between 3:00 p.m. and 4:00 p.m., with 9.9% of all trips taking place during that hour. The morning peak of travel, between 7:00 a.m. and 10:00 a.m., accounted for 20% of all reported trips. Figure 6.5 shows the hour-by-hour distribution of the departure time of all trips reported throughout the day for each MPO.

Figure 6.5:
Time of Day of Travel by MPO



6.2 Trip Purpose

The primary trip activity is defined as the main reason a person was traveling from one place to another. For instance, if a person was traveling to their home to eat, sleep, watch television, etc., they would record “At Home Activities” as the primary trip activity. However, if a person was traveling to their home to pick up a passenger, then that person would record “Pick up/drop off passenger” as their primary activity.

Approximately one-third of all trip purposes (33.2%) were recorded as “personal activities at home,” as presented in Table 6.6. Work accounted for the next most frequent reason for travel (14.0%), followed by incidental shopping and personal business (10.2% and 8.2%, respectively). Comparing the trip purposes for residents of Whatcom County with Skagit and Island Counties, there are only slight differences. Whatcom County reported more at home and work activities, while Skagit and Island Counties reported more trips for shopping and personal business.

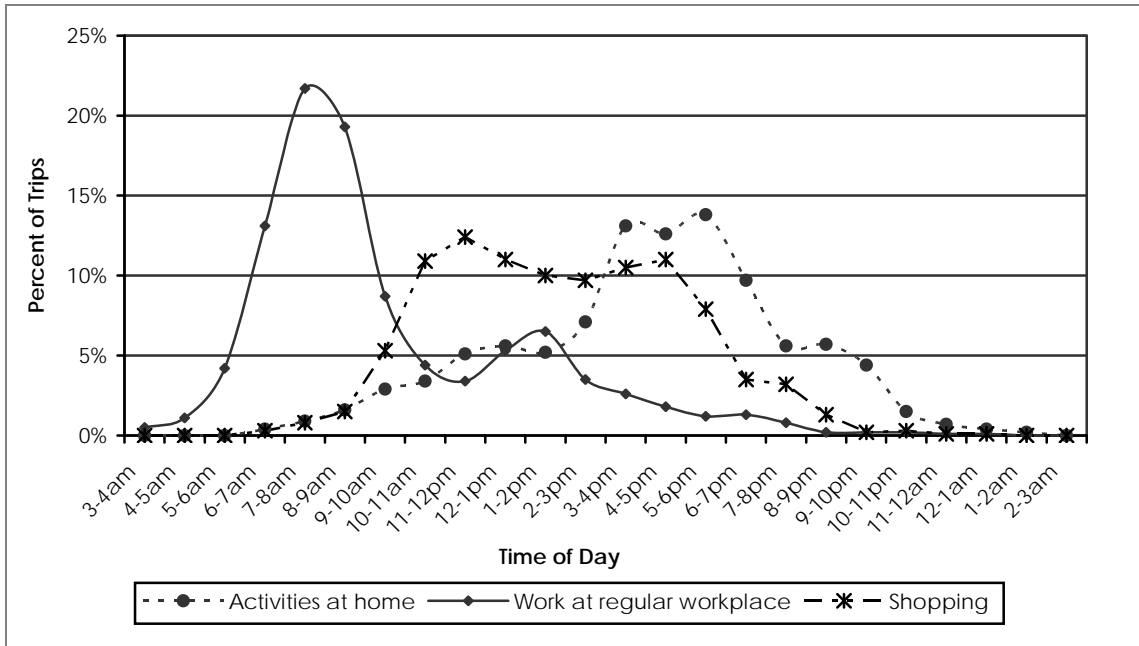
Table 6.6:
Primary Trip Purpose by MPO

Purpose	Whatcom	Skagit/Island	Total
Work at home (for pay)	0.8%	0.5%	0.7%
At home activities	33.8%	32.5%	33.2%
Work at regular workplace	10.9%	9.4%	10.2%
Work-related at regular workplace	4.1%	3.3%	3.8%
School-related activities (K-12)	4.1%	4.1%	4.1%
School-related activities (Post K-12)	0.8%	0.3%	0.5%
Quick stop for gas, ATM, coffee, etc.	2.5%	3.1%	2.8%
Shopping	9.3%	11.3%	10.2%
Visit friends/relatives	3.2%	3.2%	3.2%
Medical/dental	2.8%	2.6%	2.7%
Personal business	7.2%	9.4%	8.2%
Eat meal outside of home	3.4%	3.0%	3.2%
Entertainment	1.0%	1.1%	1.0%
Recreation/fitness	4.1%	3.5%	3.8%
Civic or religious activities	1.3%	1.4%	1.4%
Pick up/drop off passenger	6.4%	5.4%	6.0%
Change mode of transportation	4.1%	5.5%	4.8%
Loop trip	0.2%	0.3%	0.3%
<i>Total</i>	100.0%	100.0%	100.0%

Base: 12,711 trips (not including place of origin)

Figure 6.7 compares the start times for trips with the three most common trip purposes. Over 21% of all “work for pay” trips were made between 7:00 a.m. and 8:00 a.m. Trips with a primary purpose of “personal activities at home” peaked in the afternoon between 3:00 p.m. and 6:00 p.m., while “shopping” trips had a much smoother distribution from the morning to the early afternoon.

Figure 6.7:
Time of Day of Travel by Trip Purpose



7. Mode Choice

This chapter presents travel mode choices of person trips. Overall modal choices, mode choice by trip purpose, mode choice by household vehicle ownership, and mode choice by valid driver's license status, are all presented.

7.1 Travel Mode

The most popular mode of travel in the North Sound study region was the personal vehicle, with 63.9% of all trips made by auto drivers and 19.7% made by auto passengers. Roughly three percent of all trips were made via the school bus. Public transit accounted for just under 2% of all trips. Non-motorized modes, including walking and biking, accounted for 10.6% of all trips made. Figure 7.1 presents the distribution of travel modes among all trips.

**Figure 7.1:
Travel Mode by MPO**

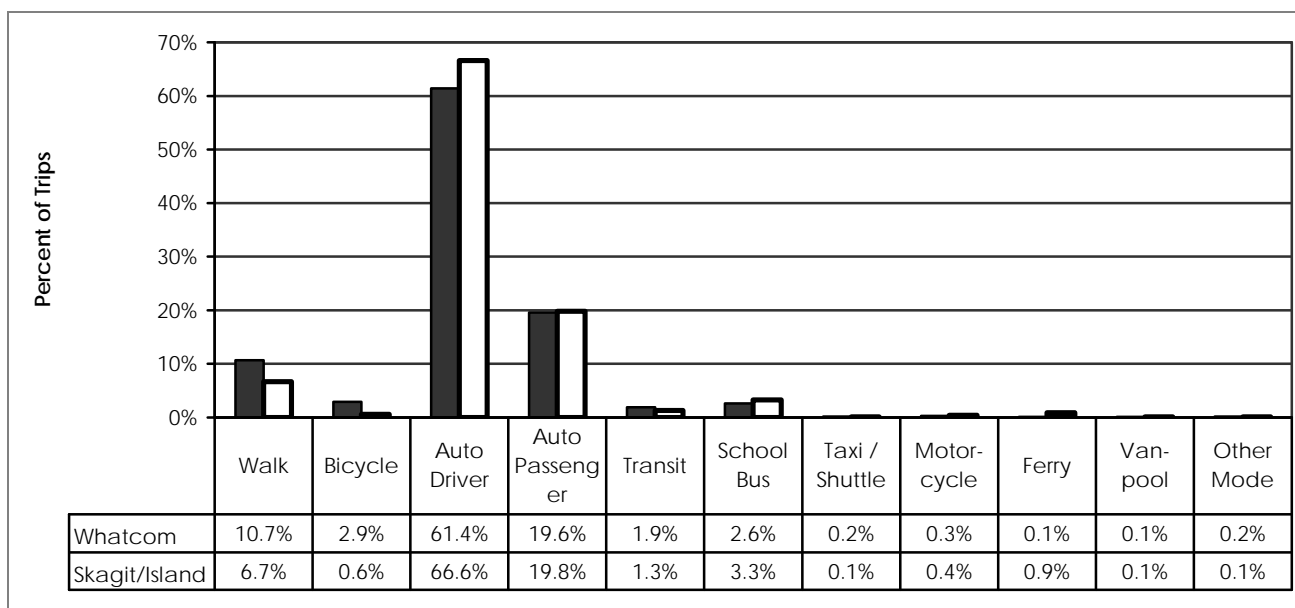


Table 7.1 presents travel mode by trip purpose, or the percentage of all trips made by a particular mode for each trip purpose. As was to be expected, those trips made by walking reported the highest instance of loop trips (round trips with no specific destination, usually for exercise), when compared to all other modes. Those conducting personal business were much more likely to be taking a taxi or shuttle, while a personal vehicle was much more likely to be used for shopping. See Table 7.1 for more information.

**Table 7.2:
Travel Mode by Trip Purpose (Travel To)**

	Travel Mode									
	Walk	Bicycle	Driver auto/van/truck	Passenger auto/van/truck	Transit	School Bus	Taxi/ Shuttle	Motor-cycle/ Scooter	Ferry	Van pool
Work at home (for pay)	1.2%	1.8%	0.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
At home activities	33.7%	39.9%	32.6%	33.8%	3.9%	41.3%	23.8%	33.3%	0.0%	24.9%
Work at regular workplace	7.7%	17.5%	13.4%	2.7%	3.4%	0.5%	0.0%	28.6%	0.0%	23.5%
Work-related at regular workplace	1.2%	3.5%	5.3%	0.9%	1.0%	0.0%	0.0%	0.0%	0.0%	11.8%
School-related activities, K-12	6.1%	4.8%	0.5%	8.9%	0.5%	48.5%	0.0%	0.0%	0.0%	11.8%
School-related activities, post grade 12	0.6%	2.6%	0.5%	0.4%	1.4%	0.0%	4.8%	0.0%	0.0%	0.0%
Quick stop for gas, ATM, coffee, etc.	0.5%	2.2%	3.4%	2.5%	0.0%	0.0%	4.8%	4.8%	0.0%	0.0%
Shopping	6.3%	7.0%	11.3%	11.4%	1.4%	0.0%	4.8%	4.8%	0.0%	0.0%
Visit friends/ relatives	3.4%	1.3%	3.1%	4.5%	0.0%	1.3%	4.8%	0.0%	0.0%	0.0%
Medical/dental	0.7%	0.9%	3.0%	3.7%	0.0%	0.0%	9.5%	0.0%	0.0%	0.0%
Personal business	6.7%	3.1%	9.1%	8.6%	2.4%	2.4%	19.0%	0.0%	0.0%	0.0%
Eat meal outside of home	2.0%	2.2%	3.1%	5.1%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%
Entertainment	0.9%	1.3%	0.9%	1.7%	0.0%	0.0%	14.3%	0.0%	3.1%	0.0%
Recreation/fitness	4.8%	4.8%	3.5%	5.0%	0.5%	0.8%	0.0%	4.8%	0.0%	0.0%
Civic or religious activities	0.6%	0.4%	1.2%	2.4%	2.4%	0.0%	0.0%	0.0%	0.0%	11.8%
Pick up/drop off passenger	3.0%	3.5%	7.0%	5.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Change mode of transportation	15.3%	0.9%	1.2%	2.6%	82.6%	5.1%	14.3%	23.8%	96.9%	11.8%
Loop trip	5.2%	2.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<i>Total</i>	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Base: 12,711 trips

Table 7.2 shows that there is a direct correlation between automobile ownership and the percentage of trips made by automobile. As the number of vehicles owned by a household increased, the percentage of trips made by an automobile increased. Conversely, as vehicle ownership increased, the use of other modes decreased. A similar relationship is seen in Table 7.3, where travel by automobile accounted for a higher percentage of trips made by those with a valid driver's license than it did for those who were unlicensed.

Table 7.3:
Travel Mode by Vehicle Ownership

Number HH Vehicles	Travel Mode									
	Walk	Bicycle	Driver auto/van/truck	Passenger auto/van/truck	Transit	School Bus	Taxi/ Shuttle	Motor-cycle/ Scooter	Ferry	Van pool
Zero (n=146)	45.9%	0.0%	0.0%	18.5%	21.9%	3.4%	6.8%	0.0%	0.0%	2.7%
One (n=2,228)	13.6%	3.5%	58.3%	19.2%	2.4%	2.2%	0.1%	0.0%	0.4%	0.0%
Two (n=5,505)	8.7%	1.9%	63.5%	20.9%	1.1%	3.1%	0.0%	0.0%	0.4%	0.1%
Three+ (n=4,832)	5.6%	1.0%	68.7%	18.5%	1.2%	3.1%	0.2%	0.7	0.7%	0.1%
<i>Overall</i>	8.8%	1.8%	63.9%	19.7%	1.6%	2.9%	0.2%	0.3%	0.5%	0.1%

Base: 12,711 trips.

**Table 7.4:
Travel Mode by Driver's License Status**

Has a Valid Driver's License Number HH Vehicles	Travel Mode									
	Walk	Bicycle	Driver auto/van/truck	Passenger auto/van/truck	Transit	School Bus	Taxi/ Shuttle	Motor-cycle/ Scooter	Ferry	Van pool
Yes (n=10,545)	7.8%	1.8%	77.0%	10.6%	1.4%	0.1%	0.1%	0.4%	0.6%	0.0%
No (n=379)	21.9%	2.4%	0.0%	27.8%	8.7%	6.1%	1.8%	0.0%	0.3%	0.5%
Refused (n=2)	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<i>Overall</i>	8.8%	1.8%	63.9%	19.7%	1.6%	2.9%	0.2%	0.3%	0.5%	0.1%

Base: 10,926 trips taken by persons aged 16 years or above

8. Vehicle Information

This chapter presents general vehicle characteristics, including occupancy levels, vehicle age, and popular vehicle makes and models.

8.1 Vehicle Occupancy

As presented in Table 8.1, the average vehicle occupancy for personal vehicles per trip was 1.7 persons. Of all trip purposes, trips to grade school had the highest vehicle occupancy, with 2.7 persons per vehicle. Trips to work at home (for pay) had the lowest average vehicle occupancy, with 1.1 persons per vehicle.

Table 8.1: Average Vehicle Occupancy by Trip Purpose (Travel To)

Travel To:	Whatcom	Skagit/Island	Total
Work at home (for pay)	1.1	1.1	1.1
At home activities	1.7	1.6	1.7
Work at regular workplace	1.2	1.2	1.2
Work-related at regular workplace	1.2	1.2	1.2
School-related activities, K-12	2.7	2.6	2.7
School-related activities, post grade 12	1.4	1.4	1.4
Quick stop for gas, ATM, coffee, etc.	1.4	1.5	1.5
Shopping	1.6	1.6	1.6
Visit friends/ relatives	2.0	1.6	1.8
Medical/dental	1.7	1.7	1.7
Personal business	1.6	1.5	1.6
Eat meal outside of home	1.9	2.0	2.0
Entertainment	2.2	2.2	2.2
Recreation/fitness	2.0	1.7	1.8
Civic or religious activities	2.4	1.9	2.1
Pick up/drop off passenger	2.2	2.1	2.2
Change mode of transportation	2.0	2.2	2.2
Loop trip	2.0	1.0	1.5
<i>Overall</i>	1.7	1.6	1.7

Base: 10,659 vehicle trips

8.2 Vehicle Age

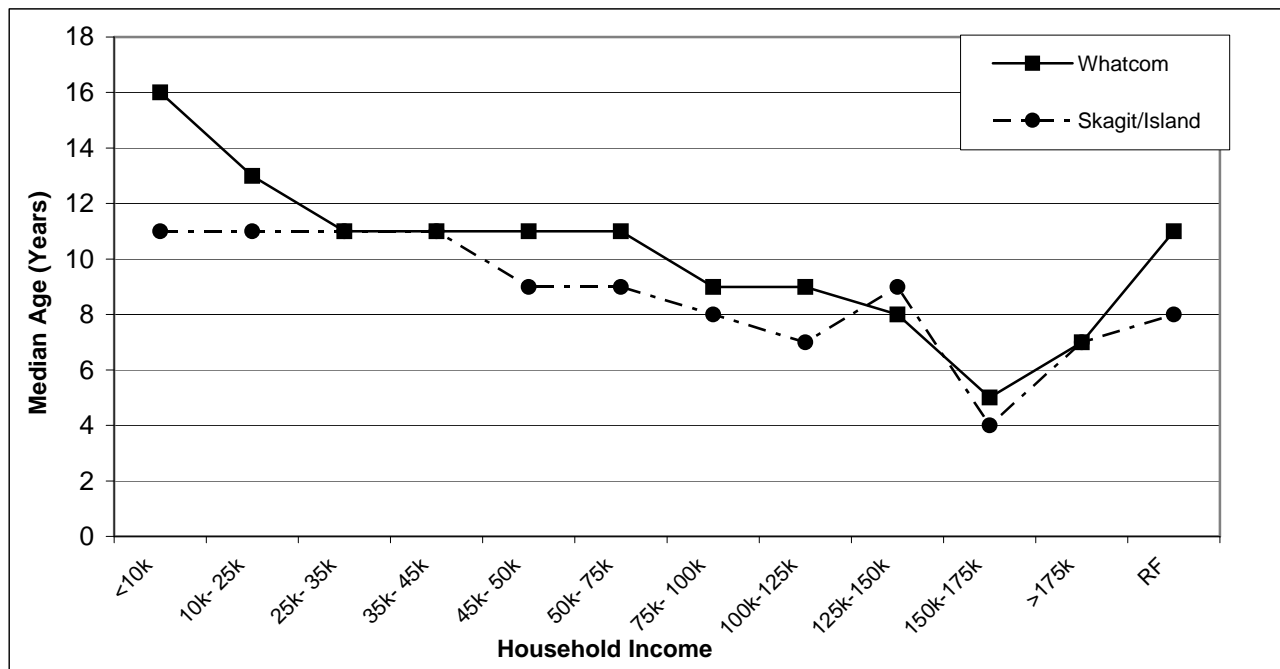
The median age of all vehicles reported in the survey was ten years, as presented in Table 8.2. Automobiles in Whatcom County are slightly older, with a median age of 10.0 years, when compared to automobiles in Skagit and Island Counties, which have a median age of 9.0 years. As Figure 8.3 shows, households with a higher income generally had newer automobiles.

Table 8.2: Median Vehicle Age by MPO

County	Age (Years)	St. Error
Whatcom (N=1,605)	10.0	0.1
Skagit/Island (N=1,700)	9.0	0.1
<i>Overall</i>	10.0	0.1

Base: 3,255 vehicles reporting model year

Figure 8.3: Median Vehicle Age by Household Income and MPO



8.3 Vehicle Makes and Models

Ford was the most popular vehicle make in the three-county study area, with 17.1% of the automobile share. Toyota was the second most popular make, with 13.0% of the automobile share. And Chevrolet was the third most popular at 10.9%.

**Table 8.4:
Top 10 Vehicle Makes by MPO**

Vehicle Make	Whatcom	Skagit/Island	Total
Ford	16.0%	18.2%	17.1%
Toyota	12.5%	13.5%	13.0%
Chevrolet	9.5%	12.2%	10.9%
Honda	11.0%	8.9%	9.9%
Dodge	6.0%	6.7%	6.4%
Subaru	5.9%	2.9%	4.4%
Volkswagen	3.7%	2.8%	3.2%
Nissan	3.4%	2.1%	2.7%
Chrysler	2.4%	2.8%	2.6%
Mazda	2.1%	2.4%	2.2%

Base: 3,305 vehicles

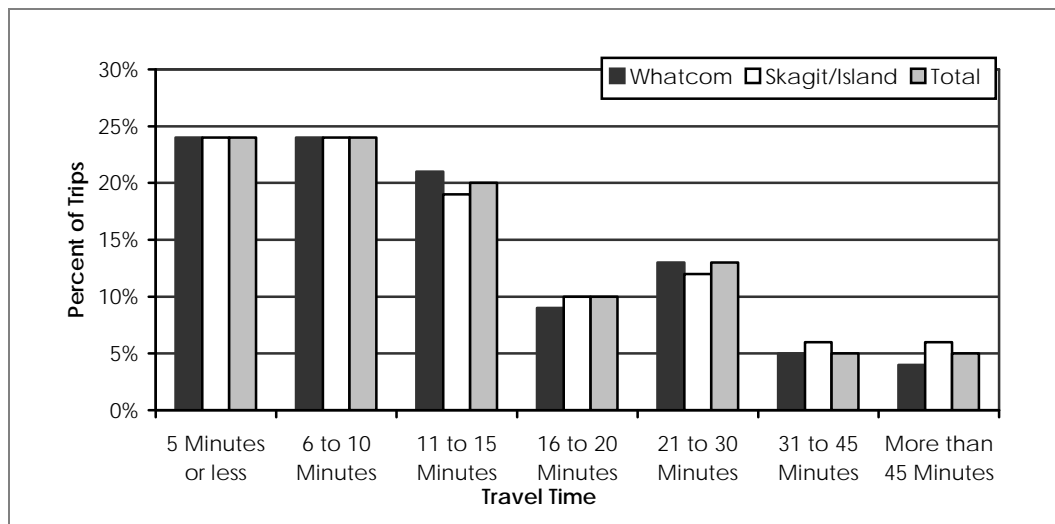
9. Travel Times

This chapter examines general characteristics of travel times and selected trip characteristics that impact trip duration.

9.1 Travel Time

On average, trips lasted 17.8 minutes from origin to destination. The travel times in the two different MPOs, along with the overall survey data, are presented in Figure 9.1. Sixty-eight percent of all trips had a travel time of 15 minutes or less, while 10% took more than 30 minutes. Households in Skagit and Island Counties reported a higher proportion of trips that lasted more than 30 minutes as compared to households in Whatcom County.

Figure 9.1:
Travel Time (in Minutes) by MPO



As Table 9.2 indicates, loop trips had the highest average reported travel time at 43.4 minutes per trip. Trips for entertainment, trips to visit friends or relatives, and trips for work-related at regular work place also averaged over 20 minutes. The shortest trips made were for shopping, work at home (for pay), eat meal outside of home, and pack up/drop off passenger, each taking under 15 minutes.

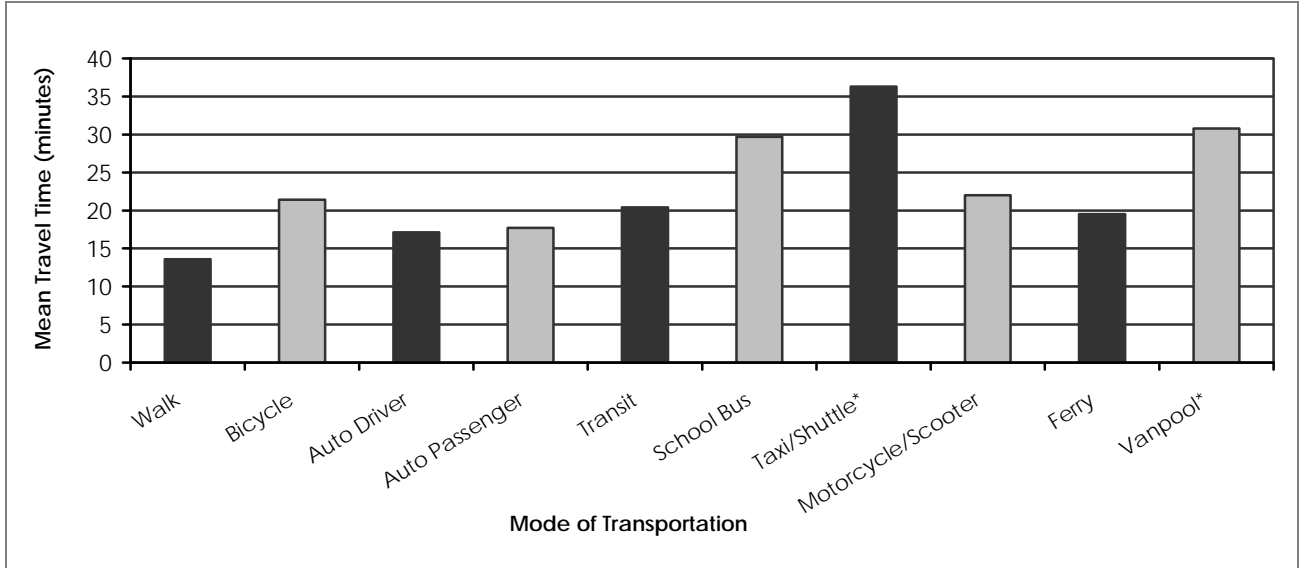
**Table 9.2:
Mean Travel Time (in Minutes) by Primary Trip Purpose and MPO**

Travel To:	Whatcom	Skagit/Island	Total
Work at home (for pay)	13.8	14.2	14.0
At home activities	17.8	19.7	18.7
Work at regular workplace	16.9	21.4	18.9
Work-related at regular workplace	22.0	22.1	22.1
School-related activities, K-12	16.6	19.9	18.2
School-related activities, post grade 12	20.7	18.4	20.1
Quick stop for gas, ATM, coffee, etc.	11.4	18.1	15.0
Shopping	13.5	13.1	13.3
Visit friends/ relatives	21.3	28.3	22.4
Medical/dental	19.7	20.6	20.1
Personal business	15.2	17.4	15.5
Eat meal outside of home	12.9	15.6	14.1
Entertainment	25.1	24.2	24.6
Recreation/fitness	15.6	16.3	15.9
Civic or religious activities	16.8	16.7	16.8
Pick up/drop off passenger	14.3	13.5	14.0
Change mode of transportation	16.9	20.5	18.9
Loop trip	46.2	41.2	43.4
<i>Overall</i>	16.9	18.8	17.8

Base: 12,709 trips (2 outliers were removed).

Trips taken by taxi or shuttle had the highest average travel time at 36.3 minutes per trip. However, because there were so few cases of taxi/shuttle trips, there is nothing conclusive about the results. On average, auto trips took just over 17 minutes per trip. Walking trips had the shortest average trip duration, 13.6 minutes. Figure 9.3 presents mean travel time by mode.

Figure 9.3:
Mean Travel Time (in Minutes) by Travel Mode

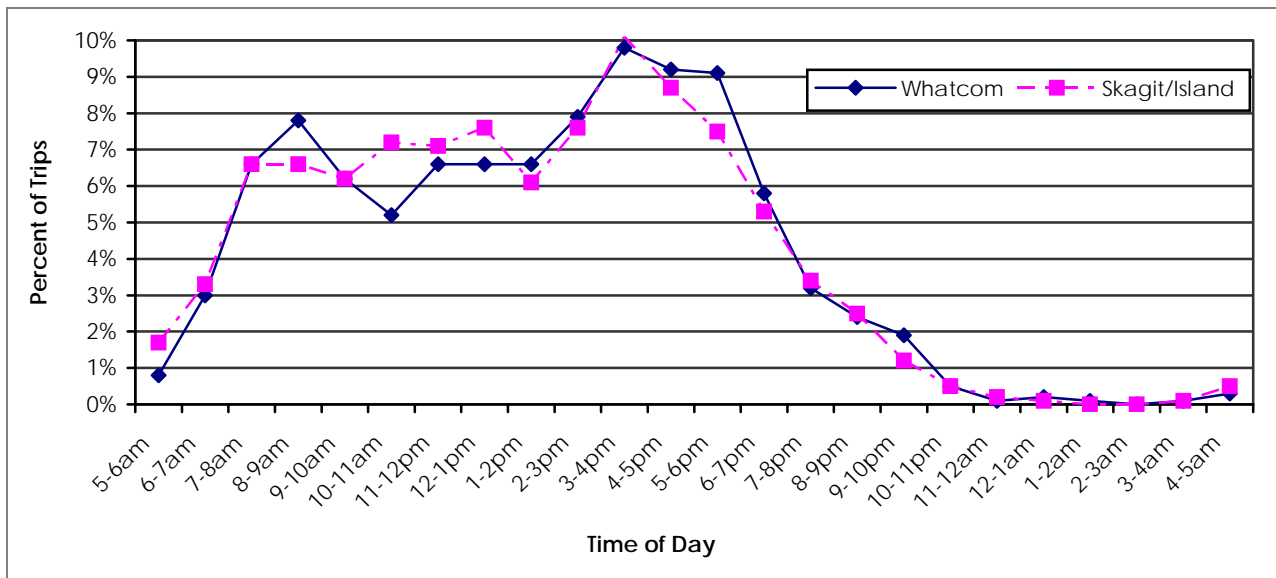


Base: 12,709 trips(2 outliers were removed). *Sample size is less than 30.

9.2 Trip Start Times

The overall data show three distinguishable trip start time peaks: 1) Morning Peak occurring between 8:00 a.m. and 9:00 a.m.; 2) Lunch Peak occurring between 12:00 p.m. and 1:00 p.m.; and 3) End of School Day Peak occurring between 3:00 p.m. and 4:00 p.m. Figure 9.4 shows the percentage of overall trips made by time of day.

Figure 9.4:
Trips by Time of Day and MPO



10. Multi-Lingual Effort

10.1 Recruitment Effort

Recruitment interviews were offered in English and Spanish. During the recruitment interviews, contact was made with 95 Spanish-speaking households. Table 10.1 summarizes the final dispositions of all of the Spanish-speaking households.

Table 10.1:
Final Recruitment Dispositions of Spanish-Speaking Households

Disposition	Frequency	Percent
Recruited Household	3	3.0%
Answering Machine	2	2.0%
Busy	1	1.0%
Disconnected	1	1.0%
No Answer	1	1.0%
First Refusal	8	8.0%
Hard, Final Refusal	1	1.0%
Hang Up	12	12.0%
Spanish Answering Machine	13	13.0%
Spanish Call Back Respondent	4	4.0%
Spanish Call Back Household	37	37.0%
Spanish Non-Answer	12	12.0%
<i>Total</i>	95	100.0%

Of the 95 Spanish-speaking households that were contacted during the recruitment interviews, and of the 2,159 total recruited households, only three Spanish-speaking households agreed to participate in the study. These households received their materials in Spanish. Household that were not successfully recruited into the study were dialed an average of 3.3 times, with some households being dialed between 10 and 15 times.

10.2 Retrieval Effort

Only one of the Spanish-speaking households completed the retrieval portion of the study, for an overall Spanish retrieval rate of 33%. The two Spanish households that were not retrieved were called an average of 14 times each for their travel information.

11. Results by County

11.1 Tables by County

**Table 11.1:
Summary Data by County**

Type	Whatcom County	Skagit County	Island County	Total
N	750	385	366	1,501
Persons per household	2.3	2.3	2.3	2.3
Vehicles per household	2.1	2.3	2.3	2.2
Workers per household	1.4	1.3	1.3	1.3
Licensed drivers per household	1.8	1.8	1.8	1.8
Daily vehicle trips per household*	7.2	7.0	7.0	7.1
Vehicle driver trips per household	5.5	5.4	5.3	5.4
Vehicle passenger trips per household	1.7	1.5	1.6	1.7
Public transit (bus) trips per household	0.2	<0.1	0.2	0.1
Non-motorized trips per household	1.2	0.5	0.7	0.9

* Includes trips made by a personal vehicle (car, van, truck, motorcycle).

**Table 11.2:
Travel Mode by County**

Travel Mode	Whatcom County	Skagit County	Island County	Total
Walk	10.7%	5.8%	7.6%	8.8%
Bicycle	2.9%	0.6%	0.6%	1.8%
Drive Auto/Van/Truck	61.4%	69.1%	64.0%	63.9%
Passenger Auto/Van/Truck	19.6%	19.6%	20.0%	19.7%
Transit	1.9%	0.3%	2.3%	1.6%
School Bus	2.6%	3.5%	3.1%	2.9%
Taxi/Shuttle	0.2%	0.2%	0.1%	0.2%
Motorcycle/Scooter	0.3%	0.3%	0.5%	0.3%
Ferry	0.1%	0.4%	1.4%	0.5%
Vanpool	0.1%	0.1%	0.2%	0.1%
Other Mode	0.2%	0.1%	0.1%	0.1%
<i>Total</i>	100.0%	100.0%	100.0%	100.0%

Base: 12,711 trips.

**Table 11.3:
Primary Trip Purpose by County**

Purpose	Whatcom County	Skagit County	Island County	Total
Work at home (for pay)	0.8%	0.7%	0.6%	0.7%
At home activities	33.3%	32.5%	31.4%	33.2%
Work at regular workplace	11.0%	10.5%	8.4%	10.2%
Work-related at regular workplace	4.2%	3.8%	2.9%	3.8%
School-related activities (K-12)	4.1%	4.1%	4.0%	4.1%
School-related activities (Post K-12)	0.8%	0.4%	0.2%	0.5%
Quick stop for gas, ATM, coffee, etc.	2.5%	3.2%	3.1%	2.8%
Shopping	9.3%	12.5%	10.1%	10.2%
Visit friends/relatives	3.3%	4.0%	2.4%	3.2%
Medical/dental	2.8%	2.2%	3.1%	2.7%
Personal business	7.3%	8.7%	10.1%	8.2%
Eat meal outside of home	3.4%	3.4%	2.6%	3.2%
Entertainment	1.0%	1.5%	0.7%	1.0%
Recreation/fitness	4.1%	3.7%	3.3%	3.8%
Civic or religious activities	1.3%	1.6%	1.3%	1.4%
Pick up/drop off passenger	6.4%	4.4%	6.4%	6.0%
Change mode of transportation	4.1%	1.9%	9.1%	4.8%
Loop trip	0.4%	0.9*%	0.4%	0.3%
<i>Total</i>	100.0%	100.0%	100.0%	100.0%

Base: 12,711 trips (not including place of origin)

**Table 11.4:
Mean Travel Time (in Minutes) by Primary Trip Purpose and County**

Travel To:	Whatcom County	Skagit County	Island County	Total
Work at home (for pay)	13.8	17.3	10.6	14.0
At home activities	17.8	18.8	20.6	18.7
Work at regular workplace	16.9	20.6	22.5	18.9
Work-related at regular workplace	22.0	22.8	21.3	22.1
School-related activities, K-12	16.6	19.2	20.6	18.2
School-related activities, post grade 12	20.7	17.8	19.5	20.1
Quick stop for gas, ATM, coffee, etc.	11.4	22.6	13.3	15.0
Shopping	13.5	14.0	12.1	13.3
Visit friends/ relatives	21.3	20.3	41.8	22.4
Medical/dental	19.7	21.4	20.1	20.1
Personal business	15.2	16.6	18.0	15.5
Eat meal outside of home	12.9	14.6	17.0	14.1

Entertainment	25.1	24.2	24.4	24.6
Recreation/fitness	15.6	15.1	17.7	15.9
Civic or religious activities	16.8	15.5	18.2	16.8
Pick up/drop off passenger	14.3	14.5	12.8	14.0
Change mode of transportation	16.9	20.8	20.4	18.9
Loop trip	46.2	36.5	52.7	43.4
<i>Overall</i>	16.9	18.4	19.3	17.8

Base: 12,709 trips (2 outliers were removed).

11.2 County-Specific Questions

Whatcom County

**Table 11.5:
Frequency of Preferences for Helping Shape Local Policies**

	Preference			Total
	First Preference	Second Preference	Third Preference	
Large Public Meetings in the Nearest City or Town	110	56	52	218
Small Meetings with Friends or Neighbors Held Nearby	172	122	58	352
Reading Materials and Surveys Delivered by US Mail	208	137	78	423
Materials and Surveys Delivered by Email	114	133	55	302
Web Sites on the Internet	58	80	67	205
Video Presentations on DVD followed by a Telephone Survey	23	52	66	141
Respondent is Just Not Interested	61	0	0	61
Other	4	1	5	10
<i>Overall</i>	750	581	381	1,712

Base: 750 Whatcom County Residents

**Table 11.6:
Distribution of Preferences for Helping Shape Local Policies**

	Preference			Total
	First Preference	Second Preference	Third Preference	
Large Public Meetings in the Nearest City or Town	14.7%	9.6%	13.6%	12.7%
Small Meetings with Friends or Neighbors Held Nearby	22.9%	21.0%	15.2%	20.6%
Reading Materials and Surveys Delivered by US Mail	27.7%	23.6%	20.5%	24.7%
Materials and Surveys Delivered by Email	15.2%	22.9%	14.4%	17.6%
Web Sites on the Internet	7.7%	13.8%	17.6%	12.0%
Video Presentations on DVD followed by a Telephone Survey	3.1%	9.0%	17.3%	8.2%
Respondent is Just Not Interested	8.1%	0.0%	0.0%	3.6%
Other	0.5%	0.2%	1.3%	0.6%
<i>Overall</i>	100.0%	100.0%	100.0%	100.0%

Base: 1,712 Responses from Whatcom County Residents

**Table 11.7:
Factors that Increase the Likelihood of Attending Public Meetings or Events**

	Frequency	Percent
On-Site Childcare	28	3.7%
Transportation Options	50	6.7%
Evening Meeting Times	377	50.3%
Weekend Meeting Times	111	14.8%
Daytime Meetings	12	1.6%
Nothing	42	5.6%
Other	60	8.0%
Don't Know/Refuse	70	9.3%
<i>Overall</i>	750	100.0%

Base: 750 Whatcom County Residents

Skagit County

**Table 11.8:
Condition of Public Roads Rating**

	Frequency	Percent
A – Excellent	21	5.5%
B – Good	194	50.4%
C – Fair	120	31.2%
D – Fair	41	10.6%
F – Failing	9	2.3%
<i>Overall</i>	385	100.0%

Base: 385 Skagit County Residents

**Table 11.9:
Frequency of Riding Public Transit**

	Frequency	Percent
Never	346	89.9%
Occasionally	32	8.3%
2-3 Times per Week	2	0.5%
Daily	5	1.3%
<i>Overall</i>	385	100.0%

Base: 385 Skagit County Residents

**Table 11.10:
Factors that Encourage Using County Transit More Often**

	Frequency	Percent
Closer to bus stop	76	19.7%
Earlier Bus Service	1	0.3%
Later Bus Service	2	0.5%
Increase Days of Operation	4	1.0%
Increase Frequency of Routes	64	16.3%
Better Route and Schedule Notification	3	0.8%
If Gas Prices Get Any Higher	3	0.8%
Other	64	16.6%
Don't Know/Refuse	168	43.6%
<i>Overall</i>	385	100.0%

Base: 385 Skagit County Residents

Island County

**Table 11.11:
Condition of Public Roads Rating**

	Frequency	Percent
A – Excellent	67	18.3%
B – Good	210	57.4%
C – Fair	49	13.4%
D – Fair	36	9.8%
F – Failing	3	0.8%
<i>Overall</i>	366	100.0%

Base: 366 Island County Residents

**Table 11.12:
Frequency of Riding Public Transit**

	Frequency	Percent
Never	251	68.6%
Occasionally	93	25.4%
2-3 Times per Week	11	3.0%
Daily	5	1.4%
<i>Overall</i>	366	100.0%

Base: 366 Island County Residents

**Table 11.13:
Factors that Encourage Using County Transit More Often**

	Frequency	Percent
Closer to bus stop	77	21.0%
Earlier Bus Service	7	1.9%
Later Bus Service	9	2.5%
Increase Days of Operation	15	4.1%
Increase Frequency of Routes	51	13.9%
Better Route and Schedule Notification	6	1.6%
If Gas Prices Get Any Higher	4	1.1%
Other	68	18.6%
Don't Know/Refuse	139	38.0%
<i>Overall</i>	366	100.0%

Base: 366 Island County Residents

Appendix A: CATI Recruitment Interview

North Sound Household Travel Survey Recruitment Interview, Version 4

All Travel Days (Mon through Thu) for All Household Members
25% +/- 3% for each day surveyed (Monday through Thursday)
Black out dates: Columbus Day (Oct 13), Election Day (Nov 4), and Veteran's Day (Nov 11)

Notes:

Items in ALL CAPS are programmer/interviewer notes or response codes that are not read to the respondent.

Items appearing in caps with brackets such as [HCNTY] denote merge fields where the actual information to be read may vary across respondents.

Items in upper and lower case (unless otherwise noted) are read to the respondent verbatim.

The numbering of the choice sets may sometimes not be continuous. This is because we use standard codes for response categories of "other – specify", don't know, and refused.

The completed recruitment interviews will be tracked by the same categories as identified for retrieval, with goals set assuming 70% of each respondent type will complete the retrieval process.

Both recruitment and retrieval will be offered in English and Spanish.

INTRODUCTION

Hi – my name is _____ and I'm calling on behalf of the [STRAT]. We're interviewing families in your region concerning their travel. The information collected through this study will benefit the region by helping transportation planners more accurately identify transportation needs.

May I speak with [NAME - IF LISTED SAMPLE] or an adult who lives in this household? (NAME PRESENT)
May I speak with an adult who lives in this household? (NO NAME PRESENT)

ADULT ON PHONE: We're conducting the North Sound Household Travel Survey to understand why and how people travel as part of planning for future transportation needs. The study is purely a research effort, your participation is voluntary, and your answers will be completely confidential.

Screeners

Before we get started I'd like to ask you a few quick questions about the kinds of telephone service you have.

S1 {IF CELL PHONE SAMPLE} Have I reached you on your cell phone? IF YES: Is this a safe time for you to talk? If you are driving I can call you back at another time {ASK ABOUT ALTERNATIVE TELEPHONE NUMBER AND SET APPOINTMENT}

S2 [IF RDD SAMPLE / LISTED ADDRESS-BASED SAMPLE] Not counting cell phones, how many different telephone lines, with separate telephone numbers, do you have in your home that you routinely answer for incoming calls?

ENTER NUMBER

S3 How many working cell phones do you and the people living in the home home with you have?

ENTER NUMBER

First I have some brief questions about your household.

S4 I show you live in [CTFIP]. Is this correct? IF NOT, What county do you live in?

TERMINATE IF NOT IN STUDY AREA

S5 [IF COG VARIABLE=SKAGIT] How long have you lived in [CTFIP]?

ENTER NUMBER

S6 How many people, including yourself, live in your home? [HHSIZ]

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

NOTE TO INTERVIEWER: INCLUDE IN THIS NUMBER ALL PERSONS WHO SLEEP THERE AT LEAST 3 NIGHTS PER WEEK. INCLUDE FOSTER CHILDREN, ROOMERS, HOUSEMATES, PEOPLE LIVING HERE MOST OF THE TIME WHILE WORKING, EVEN IF THEY HAVE ANOTHER PLACE TO LIVE, HOUSEHOLD MEMBERS ON ACTIVE DUTY.

DO NOT INCLUDE COLLEGE STUDENTS LIVING AWAY WHILE ATTENDING COLLEGE OR PEOPLE WHO LIVE AT ANOTHER PLACE MOST OF THE TIME.

S7 And how many motor vehicles are owned, leased, or available for regular use by the people who currently live in your household? [HHVEH] Please be sure to include motorcycles and mopeds. INTERVIEWER NOTE: THE NUMBER OF TRIPS MADE BY A HOUSEHOLD IS OFTEN DIRECTLY RELATED TO THE NUMBER OF VEHICLES.

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

S8 And to make sure your household properly represents others in the region, can you tell me which of the following categories represents your total household income for 2007? INTERVIEWER NOTE: HOUSEHOLD INCOME NOT ONLY ALLOWS US TO VERIFY THAT WE ARE INCLUDING ALL TYPES OF HOUSEHOLDS FROM THE REGION, BUT ALSO HAS BEEN FOUND TO BE RELATED TO THE TYPES OF TRIPS HOUSEHOLDS MAKE.

- 1 Less than \$25,000
- 2 \$25,000 but less than \$50,000
- 3 \$50,000 but less than \$75,000
- 4 \$75,000 or more
- 98 DON'T KNOW
- 99 REFUSED

S8a [S8=1] Is that...

- 1 Less than \$10,000
- 2 \$10,000 but less than \$25,000
- 99 REFUSED

S8b [IF S8=2] Is that...

- 1 \$25,000 but less than \$35,000
- 2 \$35,000 but less than \$45,000
- 3 \$45,000 but less than \$50,000
- 99 REFUSED

S8c [IF S8=4] Is that...

- 1 \$75,000 but less than \$100,000
- 2 \$100,000 but less than \$125,000
- 3 \$125,000 but less than \$150,000
- 4 \$150,000 but less than \$175,000
- 5 \$175,000 or more

99 REFUSED

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 Less than \$10,000
- 2 \$10,000 but less than \$25,000
- 3 \$25,000 but less than \$35,000
- 4 \$35,000 but less than \$45,000
- 5 \$45,000 but less than \$50,000
- 6 \$50,000 but less than \$75,000
- 7 \$75,000 but less than \$100,000
- 8 \$100,000 but less than \$125,000
- 9 \$125,000 but less than \$150,000
- 10 \$150,000 but less than \$175,000
- 11 \$175,000 or more
- 98 DK
- 99 RF

PROGRAMMER: COMPUTE INCOME

S9 {IF COG VARIABLE = SKAGIT} How would you rate the condition of {CTFIP} public roads?

- 1 A (excellent)
- 2 B (good)
- 3 C (acceptable)
- 4 D (fair)
- 5 F (failing)
- 9 Refused

S10{IF COG VARIABLE = SKAGIT} How often do you ride {CTFIP} transit?

- 1 Never
- 2 Occasionally
- 3 2-3 times/week
- 4 4-5 times/week
- 5 Daily
- 9 Refused

S11{IF COG VARIABLE = SKAGIT} What would encourage you to use {CTFIP} transit more often?

- 1 Closer bus stop
- 2 Earlier bus service
- 3 Later bus service
- 4 Increase days of operation
- 5 Increased frequency of routes
- 7 Other, Specify
- 9 Nothing

S12{IF COG VARIABLE = WHATCOM} If you had an opportunity to help shape local policies on transportation, land use, and other important issues in Whatcom County, in which of the following ways would you prefer to participate (Please list the top three with number one being your top choice)?

- Large public meetings in the nearest city or town
- Small meetings with my friends or neighbors held near by
- Reading materials and surveys delivered to me by US Mail
- Materials and surveys delivered to me by email
- Web sites on the Internet
- Video presentations on DVD followed by a telephone survey
- I'm just not interested
- Other, specify

S13{IF COG VARIABLE = WHATCOM} Which of the following would increase the likelihood of your attendance at a public meeting or event (regardless of the size)?

- On-site childcare
- Transportation options
- Evening meeting time
- Weekend meeting time
- Other, specify
- DK/RF

Recruit

This study will collect data to help local transportation planners understand why, when, and where people travel in the North Sound Region. To do this, we're asking people to record their travel for a 24-hour period. If you could help us with this study, we'd ask you some questions about your household today to make sure that all regional households are represented. Then we ask for some details about each person in your household in order to prepare personalized logs, which we'd mail to you. After you record your travel, we call back to collect your information. {IF HHSIZE>3: or you can mail your logs into us and we'll get back with you if we need to clarify anything} Everything asked is for research purposes only and will be held in strict confidence.

VEHICLE ROSTER

ZERO VEHICLE HOUSEHOLDS SKIP TO P1

Start Vehicle Roster

V1-V3 I have a few questions about each of your vehicles. Let's start with the vehicle that is driven the most. What is the make, model and year of this vehicle? INTERVIEWER NOTE: THESE DETAILS ABOUT THE HOUSEHOLD VEHICLES HELP TO MONITOR AIR QUALITY ISSUES.

PROGRAMMING NOTE: SHOW MATRIX ON SCREEN

VEH #	V1=MAKE [CODE]	V2=MODEL [CODE]	V3=YEAR [1900 – 2009]
-------	-------------------	--------------------	--------------------------

PERSON ROSTER

Now I need to get some information about each household member. 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?

[IF HHSIZE>2] Excluding you, what's the first name of the oldest person?
What's the name of the next oldest person in the household? [EXCLUDING REFERENCE PERSON]
What's the first name of the next oldest person? [EXCLUDING REFERENCE PERSON]

BEGIN SERIES OF QUESTIONS WITH REFERENCE PERSON, THEN COLLECT FOR OTHER HOUSEHOLD MEMBERS. IF UNCOMFORTABLE GIVING CHILDREN'S NAMES, OKAY TO DO "CHILD #1, CHILD #2," ETC OR USE INITIALS

P1 What is this person's gender? [RECORD BY OBSERVATION FOR RESPONDENT] [GENDER]
1 MALE
2 FEMALE
9 REFUSED

P2 What is [your/ this person's] age? [AGE]
_____ [enter in years]
98 98 or older
99 DON'T KNOW/ REFUSED

P2a IF AGE = DK/RF: Many of our questions about [you/ this person] are based on [his/her] age. Can you tell me if [you are/ NAME is] at least 16 years of age?

- 1 UNDER 16
- 2 AGE 16-64
- 3 Over 64
- 9 DK/RF

P3 Are you Hispanic, Latino, or Spanish? [ASK FOR REFERENCE PERSON ONLY]

- 1 Yes
- 2 No
- 9 REFUSED

P4 I'm going to read a list of race categories. Please choose the category you consider yourself to be: [ASK FOR REFERENCE PERSON ONLY]

PROGRAMMER NOTE: IF YES TO P3, ADD THIS PHRASE TO END OF P4 QUESTION "...in addition to being Hispanic, Latino, or Spanish."

- 1 White
- 2 Black or African-American
- 3 Asian
- 4 American Indian or Alaskan Native
- 7 OTHER, SPECIFY
- 9 RF

PROGRAMMER NOTE: IF UNDER AGE 16, SKIP TO S1

P5 [Do you/ Does NAME] have a valid driver's license? [LIC]

- 1 YES
- 2 NO
- 9 DK/RF

P6 [Are you/ is NAME] employed, either full-time or part-time? [EMPLY]

- 1 EMPLOYED FULL-TIME (30+ HOURS/WEEK)
- 2 EMPLOYED PART-TIME (<30 HOURS /WEEK)
- 3 NOT EMPLOYED
- 9 DK/RF

P7 [IF P6>2] [Do you/ Does NAME] do any type of volunteer work on a regular basis?

- 1 YES – **TREAT AS EMPLOYED**
- 2 NO
- 9 DK/RF

PROGRAMMING NOTE: Calculate WORKS – if EMPLY<3 OR P7=1, then WORKS=1, else WORKS=2

P8 [IF P6>2 and P7>1] Which of the following best describes [you/ NAME's] status?

- 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 REFUSED

**Work-Related Data - Age 16 and older AND WORKS=1
(REST SKIP TO SCHOOL SECTION)**

W1 Transportation planners are interested in workplace location because travel to work activity often affects other daily travel. What is the name of [your/ this person's] primary employer location]? IF SELF-EMPLOYED, OBTAIN NAME OF BUSINESS

- 1 SELF-EMPLOYED (SPECIFY BUSINESS / COMPANY NAME)
- 7 OTHER (SPECIFY BUSINESS / COMPANY)
- 9 DK/RF

W2 Which of the following industries would you classify your work?

- 1 Agriculture
- 2 Construction
- 3 Education
- 4 Finance, Insurance, Real Estate
- 5 Government
- 6 Manufacturing
- 7 Mining
- 8 Retail
- 9 Service
- 10 Transportation, Communications, Utilities
- 11 Wholesale
- 12 Hotel/Motel
- 13 Medical
- 14 Other, Specify

W3 How [do you/ does this person] normally get to work/their volunteer activity? IF NEEDED: THAT IS, THE ONE USED FOR MOST OF THE DISTANCE.

- 0 WORK AT HOME
- 1 WALK
- 2 BICYCLE
- 3 AUTO/VAN/TRUCK DRIVER
- 4 AUTO/VAN/TRUCK PASSENGER
- 5 TRANSIT
- 6 SCHOOL BUS
- 7 TAXI/SHUTTLE
- 8 MOTORCYCLE/SCOOTER
- 9 FERRY
- 10 VANPOOL
- 97 OTHER, SPECIFY
- 99 DK/RF

School-Related Data – Ask of all HH members

S1 What is the highest degree or level of school [you/ this person has] completed? [EDUCA]

- 1 Not a high school graduate, 12th grade or less (THIS INCLUDES VERY YOUNG CHILDREN TOO)
- 2 High school graduate (high school diploma or GED)
- 3 Some college credit but no degree
- 4 Associate or technical school degree
- 5 Bachelor's or undergraduate degree
- 6 Graduate degree (includes professional degree like MD, DDs, JD)
- 97 OTHER, SPECIFY
- 99 DK/RF

S2 [Are you/ Is this person] enrolled in any type of school, including [if age<6 daycare], technical school, or university? IF AGE 18+, FOLLOW UP WITH: Is that full-time or part-time?

- 1 YES – FULL TIME
- 2 YES – PART TIME
- 3 NO – GO TO NEXT SECTION
- 9 DK/RF– GO TO NEXT SECTION

S3 What school grade or level [do you/ does this person] attend? [SCHOL]

- 1 DAYCARE
- 2 NURSERY SCHOOL, PRE-SCHOOL
- 3 KINDERGARTEN TO GRADE 8
- 4 GRADE 9 TO 12
- 5 TECHNICAL/VOCATION SCHOOL
- 6 2-YEAR COLLEGE (COMMUNITY COLLEGE)
- 7 4-YEAR COLLEGE OR UNIVERSITY
- 8 GRADUATE SCHOOL/PROFESSIONAL
- 97 OTHER, SPECIFY
- 99 DK/RF

S4 What is the name of that school?

S5 How [do you/ does this person] normally get to school? IF NEEDED: THAT IS, THE ONE USED FOR MOST OF THE DISTANCE.

- 0 HOMESCHOOLED
- 1 WALK
- 2 BICYCLE
- 3 AUTO/VAN/TRUCK DRIVER
- 4 AUTO/VAN/TRUCK PASSENGER
- 5 TRANSIT
- 6 SCHOOL BUS
- 7 TAXI/SHUTTLE
- 8 MOTORCYCLE/SCOOTER
- 9 FERRY
- 10 VANPOOL
- 97 OTHER, SPECIFY
- 99 DK/RF

HOUSEHOLD CHARACTERISTICS

Now I just have a few more questions about your household.

H1 Which best describes your home? [RETY]

- 1 One-family house detached from any other house
- 2 One-family house attached to one or more houses [DUPLEX, ROW HOUSE, TOWNHOUSE]
- 3 Mobile home
- 4 Building with 2 or more apartments [CONDO, APARTMENT, etc.]
- 97 Or something else? SPECIFY
- 99 REFUSED

H2 Is your home...

- 1 Owned by you or someone in this household
- 2 Rented to you for cash rent or
- 3 Occupied by you without payment of cash rent,
- 97 Or something else? SPECIFY
- 99 REFUSED

PACKAGE DELIVERY

D1 Understanding your household's travel is very important for improving transportation in your area. We would like to send you a log for each member of your household to keep track of your travel for just one day [ASSN]. Is this okay?
1 Yes
2 No – Well, let's try a different time. How about [ASSN].
ENTER ASSIGNMENT NUMBER

D2 To whom should we address the envelope?

FIRST NAME

LAST NAME

9 REFUSED --> INDICATE THAT INFORMATION IS NECESSARY, IF STILL REFUSE, TERMINATE

D3 In order to mail the diaries to you, I need your address. [CONFIRM ADDRESS FROM SAMPLE] Is this your mailing address?

D4 We will mail the logs to you in a few days and will call you again on [REMIND DATE] to make sure you have received them and to answer any questions. Then we will call to ask about your travel on [BEGDATE]. When would be the best time to reach you?
OBTAIN DAY AND TIME

IF SPANISH INTERVIEW: Would you like the materials in English or Spanish?

D5A Let me verify I dialed the correct number, have I reached you at 999-999-9999?

- 1 Correct
- 2 Change number ___ - ___ - ____

D5B And should we call you at this telephone number or is there a daytime or different phone number where you would prefer to be called?

- 1 This number
- 2 Different number ___ - ___ - ____

PILOT QUESTIONS

To help aide transportation officials in making decisions about this study, I have a few questions about this interview we just conducted.

How much did the following motivate or convince you to complete the interview:

- Did not motivate you,
- Motivated you a little, or
- Motivated you a lot....

L1 - This study would benefit your community by identifying needed transportation improvements?

L2 - Your information would be confidential?

L3 - This study would benefit your community with better transportation planning?

L4 - That the survey was about transportation?

L5 – {IF COG VARIABLE = WHATCOM} That the study was sponsored by the Whatcom Council of Governments?

L6 – {IF COG VARIABLE = SKAGIT} The study was sponsored by the Skagit/Island Council of Governments?

L7 - What else could have been said or done to convince someone like yourself to participate in this survey?

- Nothing
- Open End _____

L8 - Was anything at all surprising about this interview?

- Yes (Open End) _____
- No

CONCLUSION

Thank you for participating in the North Sound Household Travel Survey. Please tell the other members of your household how important their participation is for the success of the study. We look forward to talking with you again. If you have any questions or comments, you can reach us at 1-877-261-4621. Thank you and have a good day/night.

L12 - [DO NOT READ INTERVIEWER SHOULD RATE RESPONDENT WILLINGNESS TO PARTICIPATE IN INTERVIEW] High, Medium, Low

Appendix B: Respondent Mailing Packet

Cover Letters

- 1) Skagit/Island County Households
- 2) Whatcom County Households

Cover Letter for Skagit/Island County Households



c/o PTV DataSource
133 West San Antonio Street
San Marcos, Texas 78666

Survey Sponsored by:

Skagit/Island Regional
Transportation Planning Organization

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

February 12, 2009
«SAMPN»

Dear «FIRSTNAME»,

Thank you for participating in the **North Sound Household Travel Survey!** As explained to you over the phone, the information collected through this study will help «COUNTY» officials more accurately identify transportation needs. The **North Sound Household Travel Survey** will collect information about your daily activities and travel. The survey results will be used to help plan for a future transportation system that will improve air quality, manage congestion, provide new access to jobs and improve the quality of life in our region.

Your participation in the study includes the following:

- **First, record your travel and activities for 24-hours.** This package contains personalized travel logs for each member of your household. Your family should use the logs to record their activities, the places they visit, and stops they make, whether around town or out of town on «DISPLAY_DATE». We ask your help in ensuring that everyone in your household age 12 or older fills out their travel logs completely and accurately. Parents should fill out the logs of children under 12.
- **Second, provide your travel information in a follow-up phone call.** An interviewer from NuStats/ DataSource will call after «END_DATE» to collect the information from each person's travel log. The interviewer will ask to speak directly with each person age 16 and older. Parents/guardians will provide information for children under age 16. Please have your completed log ready for the follow-up phone call and the interview will go fast!

Please track your travel and activities on:
«DISPLAY_DATE»

Protecting your privacy is critical to the success of our survey. We want you to feel secure in providing candid responses to our questions and in providing us your travel and activity information. All information will be held in strict confidence. If you want more information about participating in the survey, contact Julie Paasche of NuStats at 800-447-8287, ext 2241 or email her at jpaasche@nustats.com. To obtain more information about the North Sound Household Travel Survey, visit the survey website at www.nustats.com/northsound or call John Everett of Skagit Council of Governments at 360-416-6678.

Thank you for your time and consideration. Your participation will help us find solutions to our region's most pressing transportation problems!

Sincerely,


Kelley Moldstad, Executive Director
Skagit Council of Governments


John Dean, Co-Chair
Skagit/Island Regional Transportation Planning Organization

*Si usted habla Español y necesita ayuda, por favor comuníquese con
Juana Amieva de NuStats al 800-447-8287, ext. 2233.*

Cover Letter for Whatcom County Households



c/o PTV DataSource
133 West San Antonio Street
San Marcos, Texas 78666

Survey Sponsored by:



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

February 12, 2009
«SAMPN»

Dear «FIRSTNAME»,

Thank you for participating in the **North Sound Household Travel Survey**! As explained to you over the phone, the information collected through this study will help Whatcom county officials more accurately identify transportation needs. The **North Sound Household Travel Survey** will collect information about your daily activities and travel. The survey results will be used to help plan for a future transportation system that will improve air quality, manage congestion, provide new access to jobs and improve the quality of life in our region.

Your participation in the study includes the following:

- **First, record your travel and activities for 24-hours.** This package contains personalized travel logs for each member of your household. Your family should use the logs to record their activities, the places they visit, and stops they make, whether around town or out of town on «DISPLAY_DATE». We ask your help in ensuring that everyone in your household age 12 or older fills out their travel logs completely and accurately. Parents should fill out the logs of children under 12.
- **Second, provide your travel information in a follow-up phone call.** An interviewer from NuStats/ DataSource will call after «END_DATE» to collect the information from each person's travel log. The interviewer will ask to speak directly with each person age 16 and older. Parents/guardians will provide information for children under age 16. Please have your completed log ready for the follow-up phone call and the interview will go fast!

**Please track your travel and activities on:
«DISPLAY_DATE»**

Protecting your privacy is critical to the success of our survey. We want you to feel secure in providing candid responses to our questions and in providing us your travel and activity information. All information will be held in strict confidence. If you want more information about participating in the survey, contact Julie Paasche of NuStats at 800-447-8287, ext 2241 or email her at jpaasche@nustats.com. To obtain more information about Whatcom Council of Governments or the North Sound Household Travel Survey, visit the survey website at www.nustats.com/northsound or call Andres Gomez of the Whatcom Council of Governments at 360-676-6974 or send an email to survey@wcog.org.

Thank you for your time and consideration. Your participation will help us find solutions to our region's most pressing transportation problems!

Sincerely,

A handwritten signature in black ink, appearing to read "James G. Miller".

James G. Miller, *Executive Director*
Whatcom Council of Governments

*Si usted habla Español y necesita ayuda,
por favor comuníquese con Juana Amieva
de NuStats al 800-447-8287, ext. 2233.*

LOG INSTRUCTIONS

Record each PLACE you go to and the ACTIVITIES you do there beginning at 3 a.m. (or when you wake up) on your assigned survey day and ending at 2:59 a.m. the following day (or when you go to sleep on your travel day).



HINT! Carry this log with you on your assigned survey day and record your activities and trips as you go - this helps you record all the places you visit, the activities you do there, and to provide accurate arrival/ departure times and complete addresses.

WHAT DO I DO WITH MY COMPLETED LOGS?



Keep your completed logs by the phone – We will call you to collect the information. Or, you can call our toll-free survey hotline (877-261-4621) to provide your information.



Mail – After we collect your information by phone, return your completed logs in the postage paid envelope provided in your packet.

For assistance, call NuStats toll free at 877-261-4621

← **LISTS 1 & 2 are inside flap**

THANK YOU FOR YOUR PARTICIPATION!

If you need help filling out your Travel Log, please call toll free at:

877-261-4621

For more information about the survey, please call:

Julie Paasche, NuStats
800-447-8287, ext. 2241
jpaasche@nustats.com

or

Whatcom County contact:	Skagit/Island County contact:
Andres Gomez, Whatcom Council of Governments 360-676-6974 survey@wcog.org	John Everett Skagit Council of Governments 360-416-6678 survey@scog.net

or

visit the project web page at
www.nustats.com/northsound

Si usted habla Español y necesita ayuda, por favor comuníquese con Juana Amieva de NuStats al 800-447-8287, ext 2233

SURVEY CONDUCTED BY NuSTATS & PTV DATA SOURCE ON BEHALF OF:



Skagit/Island Regional
Transportation Planning Organization



PERSONAL ONE-DAY TRAVEL LOG FOR:

BEGIN HERE:

If you are employed: What is the address of your regular workplace?

Name: _____

Address: _____

City/State/Zip: _____

If you are a student: What is the address of your school?

Name: _____

Address: _____

City/State/Zip: _____

Instructions for recording your travel are on the flap! →



Record each PLACE you go to below, beginning with wherever you are at 3:00 a.m. on your survey day:

Most people are home asleep at 3 a.m. If so, check "My Home," write all the activities you did there and then record the exact time you leave for the first time. Please provide the name and address of each location. If you work as a driver (bus, taxi, commercial vehicle, ambulance, etc.) do not record trips made as part of your job.

	RECORD the following information about each place: <i>Place name: Address City/State/Zip Cross street/Landmark:</i>	What TIME did you ARRIVE? <i>(record exact times)</i>	HOW did you GET there? <i>(use LIST 1 CODES - list all modes)</i>	IF BY TRANSIT: Was PERSONAL VEHICLE available?	NUMBER of people in your travel party? <i>(including yourself)</i>	NUMBER of times per week you make this trip?	WHAT did you DO there? <i>(use LIST 2 CODES - list all activities)</i>	What TIME did you LEAVE? <i>(record exact times)</i>
PLACE 1	WHERE were you at 3:00 a.m.? <i>(tell us place name & address)</i> <input type="checkbox"/> My Home <input type="checkbox"/> My Work <input type="checkbox"/> My School <input type="checkbox"/> Other place <i>(specify)</i>							
	Next, please tell us "WHAT did you DO there?" & "What TIME did you LEAVE?"							
PLACE 2	WHERE did you go next? <i>(tell us the place name & address)</i> <input type="checkbox"/> My Home <input type="checkbox"/> My Work <input type="checkbox"/> My School <input type="checkbox"/> Other place <i>(specify)</i>	: am/pm		<input type="checkbox"/> Yes <input type="checkbox"/> No				: am/pm
PLACE 3	WHERE did you go next? <i>(tell us the place name & address)</i> <input type="checkbox"/> My Home <input type="checkbox"/> My Work <input type="checkbox"/> My School <input type="checkbox"/> Other place <i>(specify)</i>	: am/pm		<input type="checkbox"/> Yes <input type="checkbox"/> No				: am/pm
PLACE 4	WHERE did you go next? <i>(tell us the place name & address)</i> <input type="checkbox"/> My Home <input type="checkbox"/> My Work <input type="checkbox"/> My School <input type="checkbox"/> Other place <i>(specify)</i>	: am/pm		<input type="checkbox"/> Yes <input type="checkbox"/> No				: am/pm
PLACE 5	WHERE did you go next? <i>(tell us the place name & address)</i> <input type="checkbox"/> My Home <input type="checkbox"/> My Work <input type="checkbox"/> My School <input type="checkbox"/> Other place <i>(specify)</i>	: am/pm		<input type="checkbox"/> Yes <input type="checkbox"/> No				: am/pm
PLACE 6	WHERE did you go next? <i>(tell us the place name & address)</i> <input type="checkbox"/> My Home <input type="checkbox"/> My Work <input type="checkbox"/> My School <input type="checkbox"/> Other place <i>(specify)</i>	: am/pm		<input type="checkbox"/> Yes <input type="checkbox"/> No				: am/pm
PLACE 7	WHERE did you go next? <i>(tell us the place name & address)</i> <input type="checkbox"/> My Home <input type="checkbox"/> My Work <input type="checkbox"/> My School <input type="checkbox"/> Other place <i>(specify)</i>	: am/pm		<input type="checkbox"/> Yes <input type="checkbox"/> No				: am/pm
PLACE 8	WHERE did you go next? <i>(tell us the place name & address)</i> <input type="checkbox"/> My Home <input type="checkbox"/> My Work <input type="checkbox"/> My School <input type="checkbox"/> Other place <i>(specify)</i>	: am/pm		<input type="checkbox"/> Yes <input type="checkbox"/> No				: am/pm



Did you record EVERY PLACE you went, even short walks, quick stops, and any place you went after returning home from work? Did you record exact place names, complete addresses and all activities? Did you include your trip home if it was the last trip of the day? If you have more than eight PLACES on your survey day, record the additional PLACES on a separate piece of paper.

LIST 1 CODES: 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/Scooter
- 9 Ferry
- 10 Vanpool
- 97 Other: *(write code 97 and specify)*

LIST 2 CODES: WHAT did you DO there?

Home

- 1 Working at home *(job related-for pay)*
- 2 At home activities *(eatng, TV, sleeping, housework, etc.)*

Work

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

School

- 5 School related activities (K-12)
- 6 School related activities (Post Grade 12)

Personal

- 7 Quick stop for: gas, ATM, coffee, etc.
- 8 Shopping
- 9 Visit friends or relatives
- 10 Medical/Dental
- 11 Personal business *(dry cleaning, errands, pay bills, etc.)*

Social/Entertainment/Recreation

- 12 Eat meal outside of home
- 13 Entertainment
- 14 Recreation, fitness
- 15 Civic or religious activities

Other

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

RECORD the following information about each place:		What TIME did you ARRIVE? <i>(record exact times)</i>	HOW did you GET there? <i>(use LIST 1 CODES - list all modes)</i>	IF BY TRANSIT: Was PERSONAL VEHICLE available?	NUMBER of people in your travel party? <i>(including yourself)</i>	NUMBER of times per week you make this trip?	WHAT did you DO there? <i>(use LIST 2 CODES - list all activities)</i>	What TIME did you LEAVE? <i>(record exact times)</i>
PLACE 1 PLACE 2 PLACE 3 PLACE 4 PLACE 5 PLACE 6 PLACE 7 PLACE 8 PLACE 9	WHERE were you at 3:00 a.m. ? <i>(tell us place name & address)</i> <input checked="" type="checkbox"/> My Home <input type="checkbox"/> My Work <input type="checkbox"/> My School <input type="checkbox"/> Other place <i>(specify)</i> Address _____ City, State Zip _____						2	6:58 am/pm
	Next, please tell us "WHAT did you DO there?" & "What TIME did you LEAVE?"							
	WHERE did you go next? <i>(tell us the place name & address)</i> <input type="checkbox"/> My Home <input type="checkbox"/> My Work <input type="checkbox"/> My School <input checked="" type="checkbox"/> Other place <i>(specify)</i> Name of child's school _____ Address _____ City, State Zip _____	7:16 am/pm	3	<input type="checkbox"/> Yes <input type="checkbox"/> No	2	5	16	7:18 am/pm
	WHERE did you go next? <i>(tell us the place name & address)</i> <input type="checkbox"/> My Home <input checked="" type="checkbox"/> My Work <input type="checkbox"/> My School <input type="checkbox"/> Other place <i>(specify)</i> Name of your workplace _____ Address _____ City, State Zip _____	7:25 am/pm	3	<input type="checkbox"/> Yes <input type="checkbox"/> No	1	5	3	12:16 am/pm
	WHERE did you go next? <i>(tell us the place name & address)</i> <input type="checkbox"/> My Home <input type="checkbox"/> My Work <input type="checkbox"/> My School <input checked="" type="checkbox"/> Other place <i>(specify)</i> Name of restaurant _____ Address _____ City, State Zip _____	12:30 am/pm	3	<input type="checkbox"/> Yes <input type="checkbox"/> No	2	1	12	1:32 am/pm
	WHERE did you go next? <i>(tell us the place name & address)</i> <input type="checkbox"/> My Home <input checked="" type="checkbox"/> My Work <input type="checkbox"/> My School <input type="checkbox"/> Other place <i>(specify)</i> Name of your workplace _____ Address _____ City, State Zip _____	1:51 am/pm	3	<input type="checkbox"/> Yes <input type="checkbox"/> No	2	1	3	5:27 am/pm
	WHERE did you go next? <i>(tell us the place name & address)</i> <input type="checkbox"/> My Home <input type="checkbox"/> My Work <input type="checkbox"/> My School <input checked="" type="checkbox"/> Other place <i>(specify)</i> Name of child's school _____ Address _____ City, State Zip _____	5:46 am/pm	3	<input type="checkbox"/> Yes <input type="checkbox"/> No	1	5	16	5:51 am/pm
	WHERE did you go next? <i>(tell us the place name & address)</i> <input checked="" type="checkbox"/> My Home <input type="checkbox"/> My Work <input type="checkbox"/> My School <input type="checkbox"/> Other place <i>(specify)</i> Address _____ City, State Zip _____	6:02 am/pm	3	<input type="checkbox"/> Yes <input type="checkbox"/> No	2	5	2	7:05 am/pm
	WHERE did you go next? <i>(tell us the place name & address)</i> <input type="checkbox"/> My Home <input type="checkbox"/> My Work <input type="checkbox"/> My School <input checked="" type="checkbox"/> Other place <i>(specify)</i> Walk around neighborhood No address needed for walk/bike trips that start & end at the same place.	7:05 am/pm	1	<input type="checkbox"/> Yes <input type="checkbox"/> No	2	7	14	7:45 am/pm
WHERE did you go next? <i>(tell us the place name & address)</i> <input checked="" type="checkbox"/> My Home <input type="checkbox"/> My Work <input type="checkbox"/> My School <input type="checkbox"/> Other place <i>(specify)</i> Address _____ City, State Zip _____	7:45 am/pm	1	<input type="checkbox"/> Yes <input type="checkbox"/> No	2	7	2	-----	

1 Begin your Log at 3 a.m. on your travel day. Record every PLACE you go, even short walks and quick stops.

2 Record the exact place name & the complete address (including cross street & landmark).

3 Record the exact time you arrive.

4 Record codes from LIST 1 (on flap in Log)

5 If you traveled by transit, was your personal vehicle available to use?

6 How many people were traveling with you in your travel party.

7 How many times per week you make this exact same trip.

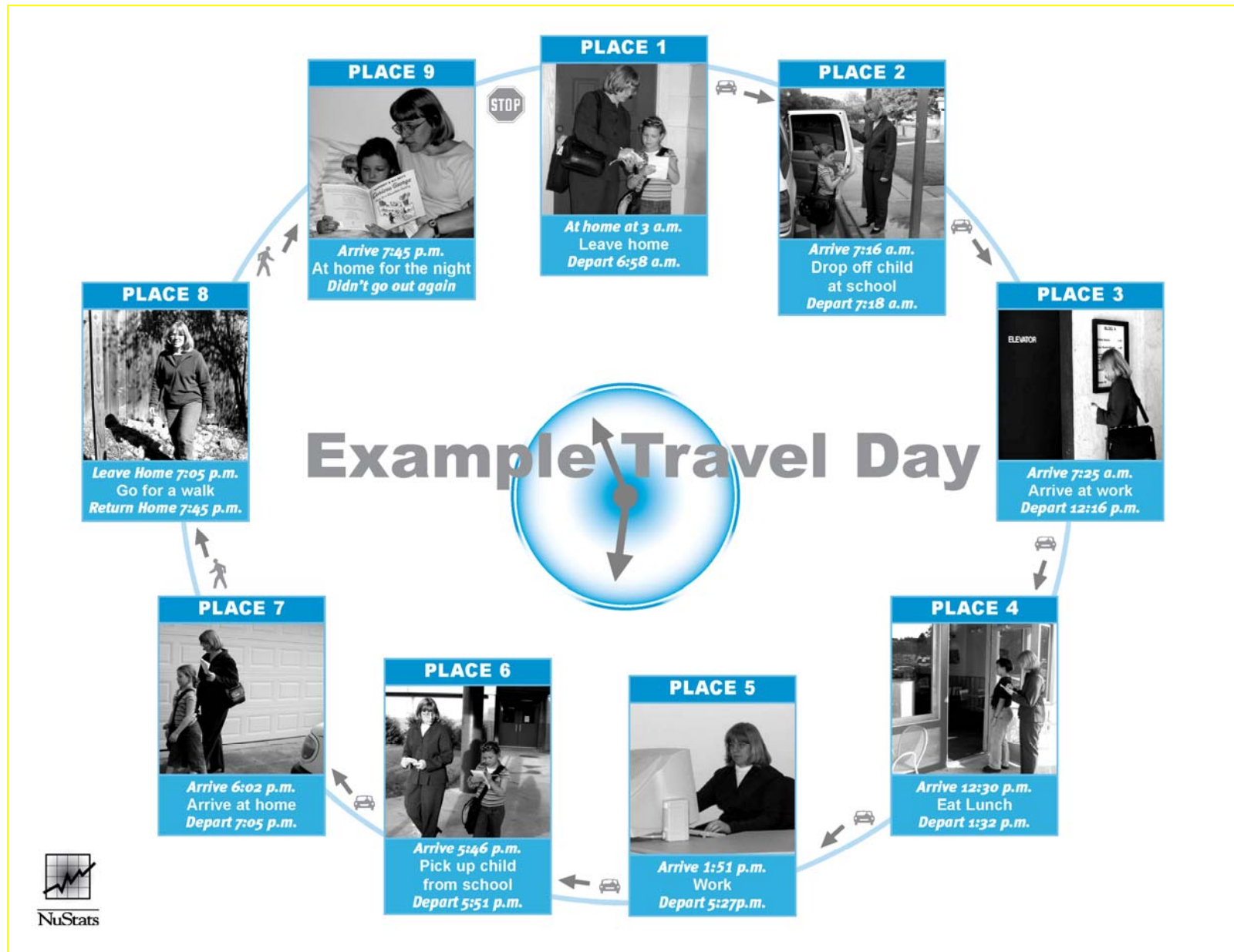
8 Record codes from LIST 2 (on flap in Log)

9 Record the exact time you leave.

10 Don't forget to record any PLACES you go in the evenings (such as the park, after-school activities, or the grocery store after returning home from work).

For assistance, call toll free at 877-261-4621

Photo example on back! →



Appendix C: CATI Retrieval Interview

North Sound Household Travel Survey Retrieval Questionnaire, version 5

All Travel Days (Mon through Thu) for All Household Members
25% +/- 3% for each day surveyed (Monday through Thursday)
Black out dates: Columbus Day (Oct 13), Election Day (Nov 4), and Veteran's Day (Nov 11)

Note #1 for Interviewers: Travel information has to be collected for all HH members. A proxy is required for persons age 11 and under. We must attempt to speak directly to persons age 16 and older, however, a proxy for these individuals is acceptable. All data collection must be completed within 10 days of the original travel date or the household is rescheduled/replaced.

Note #2 for Interviewers: A HH is considered complete if 50% of adult HH members completed retrieval interviews.

Note #3 for Interviewers: If ALL members of the household are unrelated college students, a valid complete is all travel for the main respondent who actually goes to college/univ class on the travel day AND as many of the other HH members as possible.

Introduction

Hi – this is _____ and I'm calling about the North Sound Household Travel Survey, sponsored by {COG VARIABLE}. We recently spoke with [informant] and are calling back now to complete the interview.

E1. [CONFIRM WHO YOU'RE SPEAKING WITH] You are [informant's name or initials]. [INDICATE IF TRIP INFORMATION IS BEING PROVIDED BY THE INFORMANT OR BY PROXY.

INFORMANT 1 -----→ IF INFORMANTS AGE IS GREATER THAN 15, GO TO E2, ELSE GO INTO AND RESCHEDULE FOR WHEN SOMEONE AGE 16+ WILL BE AVAILABLE.

PROXY 2 -----→ If Proxy, indicate the person number that is reporting the trip data.

E2. Last week, we spoke with you about the travel survey and sent you a log to record your travel and activities on [travel day]. I'd like to collect your information now.

First, demographic information (particularly household size, household member characteristics, and household vehicle info) is verified.

Process Data Questions

IF NOT PROXY REPORT, ASK:

E3 In general, would you say that ASSN was a typical day for you? Yes/No – if no, why not?

E4 Was most of your travel for this day planned in advance or did you change your travel plans as the day progressed? IF CHANGED TRAVEL, what happened that caused the change in plans?

Trip Data

T1. Now I'd like to talk about the trips [you/ this person] recorded in the travel log we sent. Did [you/ NAME] complete the travel log? [ASK OF EVERYONE REGARDLESS OF PROXY STATUS]

- 1 YES [COMPLETED]
- 2 NO [NOT COMPLETED] → GO TO T3
- 3 DID NOT RECEIVE MATERIALS → GO TO T3
- 8 DON'T KNOW → GO TO T3
- 9 REFUSED → GO TO T3

T2. [if T1=yes] Do you have [your/ this person's] completed log with you now? IF NEEDED: I can wait while you get it.

- 1 YES
- 2 NO
- 9 REFUSED

-----→SAY: Let's continue with the interview anyway. Please try to recall the information as best as you can.

T3 How many total places did [you/ NAME] visit over the course of the travel day?

T4 IF PLACE 1: Okay, where [were you/ was NAME] at 3 am on [ASSN].
OTHERWISE: Where did [you/ NAME] go next?

- 1 HOME
- 2 MY PRIMARY WORKPLACE PROVIDED IN RECRUITMENT
- 3 MY SCHOOL
- 4 NEW PLACE (IF OUT OF THE STUDY AREA, SELECT 5)
- 5 OUT OF THE TRAVEL STUDY AREA (outside the state)

ASK If PLACE > 1- ELSE SKIP

T5 Did [you/NAME] make any stops along your travel to [ptype] (this place), such as a quick errand, to stop for fuel, grab some food, or to pick up drop off a friend or family member?

- 1 Yes – Flag a counter variable ADDCHEK1 then take interviewer back to collect unreported trip info at the front of this roster.
- 2 No – CONTINUE COLLECTING CURRENT TRIP

T6. What time did [you/ NAME] get there? MILITARY TIME

T7 TRIP DURATION CALCULATED

T8. How did [you/ NAME] get there?

- 1 Walk
- 2 Bicycle
- 3 Auto/Van/Truck Driver
- 4 Auto/Van/Truck Passenger
- 5 Transit
- 6 School bus
- 7 Taxi/Shuttle
- 8 Motorcycle/Scooter
- 9 Ferry
- 10 Vanpool
- 97 Other, SPECIFY
- 99 DK/RF

FOR ALL TRIPS, ASK

T9 What was the number of other people traveling with you? DO NOT INCLUDE RESPONDENT

T10 [IF T9 >0] Of these, how many were household members? DO NOT INCLUDE RESPONDENT

T11 [IF T10>0] Who were the household members (enter PERNO)

T12 COMPUTE NON-HH MEMBERS

T13 How many times per week do you make this trip? RECORD RESPONSE

TRAVEL MODE FOLLOW-UPS

IF AUTO:

A1 Which vehicle did [you/ NAME] use?

ENTER HH VEH NUMBER OR 97 FOR NON-HH VEHICLE

IF MODE = (AUTO AND PARKED), OR PUBLIC BUS, OR WALK, OR BIKE:

R2 How far did [you/ NAME] [walk/ bike]? ANY WAY OF ANSWERING IS FINE – JUST OBTAIN QUANTITY

ALREADY AT DESTINATION SO NO WALKING NEEDED

___ blocks

___ miles

___ minutes

Other (specify)

IF TRANSIT:

R3 Did [you/ NAME] have a personal automobile available to you when you made this trip by bus?

1 YES

2 NO

9 REFUSED

TRIP DATA (CONT)

T14 What was [your/ NAME's] main purpose for traveling there?

- 1 Working at home (job related for pay)
- 2 At home activities (eating, TV, sleeping, housework, etc.)
- 3 Work (including regular volunteer work)
- 4 Work-related (meeting, errand, etc.)
- 5 School-related activities (K-12)
- 6 School-related activities (Post Grade 12)
- 7 Quick stop for: gas, ATM, coffee, etc.
- 8 Shopping
- 9 Visit friends or relatives
- 10 Medical/ Dental
- 11 Personal business (dry cleaning, errands, pay bills, etc.)
- 12 Eat meal outside of home
- 13 Entertainment
- 14 Recreation, fitness
- 15 Civic or religious activities
- 16 Pick-up/drop-off passenger
- 17 Change mode of transportation (board/deboard bus or ferry, etc.)
- 97 Other activity (SPECIFY)

T15. IF LAST PLACE OF THE DAY, ENTER 0259 OTHERWISE: What time did [you/ NAME] leave for the next place? ENTER IN MILITARY TIME

ASK If DEP_TIME = 259, ELSE SKIP

T16 Did [you/ NAME] make any additional trips after you were settled in for the evening, such as to run a quick errand, grocery shopping, video rental, grab a bite to eat, or to pick up drop off another person?

- 1 Yes – Flag a counter variable ADDCHEK2 - GO BACK TO CHANGE DEPARTURE TIME AND COLLECT UNREPORTED TRIPS
- 2 No – CONTINUE TO NEXT PERSON

VALIDATION DATA

IF REPORTED NO TRAVEL

T17. So, [you/ NAME] made no trips, including for work or school?

TRUE: Why not?

FALSE OBTAIN TRAVEL

AT END OF SURVEY, CHECK TO SEE IF ALL HH VEHICLES WERE USED, IF NOT:

V1 Did anyone drive the [VEHICLE YEAR, MAKE, MODEL] on TRAVEL DAY?

- 1 YES
- 2 NO
- 9 REFUSED

V2 [IF V1=2] Why not? (DO NOT READ LIST)

- 1 PERSONALLY SICK
- 2 CARETAKING SICK KIDS
- 3 CARETAKING SICK OTHER
- 4 HOME-BOUND ELDERLY OR DISABLED
- 5 WORKED AT HOME FOR PAY
- 6 WORKED AROUND HOME (NOT FOR PAY)
- 7 OUT OF AREA
- 97 OTHER, SPECIFY

PROGRAMMER: GO BUTTON FOR TRIPTRACER HERE

Thank you for providing me information about your travel. Next, using an interactive mapping tool I would like to collect the addresses for the trips you just described. To speed up the process I would first like to collect home, work, and school addresses that apply to your household.

COLLECTION AND VERIFICATION OF HABITUAL ADDRESSES (HOME, WORK, SCHOOL)

H1 We have the following address listed as your home address. READ ADDRESS Is this address correct?

W1 {IF WORKS=1} During the recruitment interview you stated that you worked. What is the address of the location where you normally work?

INTERVIEWER NOTE: IF THIS PERSON WORKED AT MORE THAN ONE LOCATION, OBTAIN WHERE HE OR SHE WORKED MOST (MAIN JOB).

IF WORKS BOTH AT HOME AND WORK, GET WORK ADDRESS

IF NEEDED: WE ARE NOT GOING TO CONTACT YOU THERE. TRANSPORTATION PLANNERS ARE INTERESTED IN WORKPLACE LOCATIONS BECAUSE TRAVEL TO WORK OFTEN AFFECTS OTHER DAILY TRAVEL.

IF VARIES, OBTAIN ADDRESS FOR LOCATION WORKED AT LAST WEEK

- 1 HOME
- 2 ADDRESS GIVEN – ENTER BELOW
- 3 VARIES – ENTER MOST RECENT LOCATION BELOW
- 4 NO SET WORK LOCATION – ENTER CENTRAL OFFICE IF APPLICABLE
- 8 DON'T KNOW
- 9 REFUSED

ENTER THE STREET ADDRESS OF THIS PERSON'S WORKPLACE (CANNOT ENTER 'VARIES')

Street Number _____
Street Name _____
City _____
County _____
ZIP: _____

W2 What is the name of the street or road that is nearest the workplace location?

Cross Street: _____
8 DON'T KNOW
9 REFUSED

S1 {IF SCHOL< 9} During the recruitment interview you stated that you attend school. Where is the school that you attend located?

- 1 HOME
- 2 ADDRESS GIVEN – ENTER BELOW
- 7 OTHER (SPECIFY SCHOOL NAME)
- 9 DK/RF

ENTER THE STREET ADDRESS OF THIS PERSON'S SCHOOL if not HOME

Street Number _____
Street Name _____
City _____
County _____
State _____
ZIP: _____

DETAILED TRIP INFORMATION – Respondent = Adult #1

Now I would like to begin collecting your trip information

COLLECT WAYPOINT INFORMATION

Waypoint Location: WLOC

T17 Now I need to get the details of this trip you just described. FIND LOCATION OF WAYPOINT 1. IF NOT HOME, ASK LOCATION INFORMATION BELOW. FOR WAYPOINT 2+ ASK: And, where did you go next?

GET Address, Cross-Streets, Station Name: _____
City _____
State _____

- 96 AT DESTINATION – START NEW TRIP AFTER ASKING 11
- 98 DON'T KNOW

**COLLECT INFORMATION FOR NEXT WAYPOINT UNTIL DESTINATION IS REACHED.
DESTINATION LOCATION IS LAST WAYPOINT LOCATION.**

AFTER ALL WAYPOINTS HAVE BEEN COLLECTED move onto next trip. Make sure to probe for lunch trips, trips after returning home in evening

PILOT QUESTIONS

AT THE CONCLUSION OF THE RETRIEVAL INTERVIEW, WE WILL ASK THE MAIN RESPONDENT FOR EACH HOUSEHOLD THE FOLLOWING QUESTIONS:

I have a few final questions about this interview we just conducted to aide transportation officials in making decisions about this study.

- 1. Did you use your travel log to record your travel?
- 2. If so, did you use it during the course of the travel day or after you had made all your trips for the day?
- 3. Did anything confuse you about the log?
- 4. What influenced you to participate in the study? Was it the details we provided at the start of the recruitment interview, a general concern about transportation in the county, or something else?
- 5. Because the travel times are so important to us, we'd like to know how you and your household recorded your times - did you always look at the same time source (watch or the car clock) or did you sit down at the end of the day and estimate times? Did you record times or just the fact that the trip took 5 min?

T21 In the future would you be interested in being contacted about important issues and survey efforts being conducted on behalf of the {COG VARIABLE}?

IF YES: Please provide me with an email address that we could use to contact you.
RECORD RESPONSE

Thank you again for your participation in this important study. Have a good day/evening.