

APPENDIX I

UNWEIGHTED SURVEY RESPONSE RATES

I-1. OVERVIEW

Chapter 4 presented weighted response rates for the 2001 NHTS. This appendix presents unweighted survey response rates and the details of how those rates were determined. Unweighted response rates may be useful for comparison to similar unweighted response rates presented in the user's documentation for the 1995 and earlier implementations of the Nationwide Personal Transportation Survey. A summary of the overall unweighted response rates, as well as the rates at key stages of the survey process are documented in this section.

For the 2001 NHTS, the overall CASRO unweighted response rate for useable households was 41 percent for the national sample. The CASRO response rate for the full sample which included the national sample and 9 add-on regions was 32 percent. This included all households considered useable (persons interviews were conducted for at least half of the household members 18 and older), which are the households (and people within those households) comprising the final data set. Note that the full sample's lower unweighted response rate is due to the impact of the lower response rates obtained in several of the add-on samples. This influence, explained in Chapter 4, underscores the importance of the need for weighted response rates.

I-2. CLASSIFICATION OF ALL TELEPHONE NUMBERS USED

The first step in the calculation of response rates is to classify all telephone numbers in the sample into residential (in-scope) and non-residential/non-working (out-of-scope) totals. Table I-1 displays the final classification of all telephone numbers in the 2001 NHTS full sample and national sample at the household level. The total number of telephone numbers used to achieve the 106,598 completed household interviews in the full sample was 568,796. For the national sample a total of 152,191 telephone numbers was used. These numbers fall into three main groups:

- Numbers that are in-scope. Telephone screening showed that 33.1 percent (188,395 numbers) of the full sample was residential. Interviewers completed household interviews with 106,598 households, yielding a household completion rate of 56.6 percent. For the national sample, 36,810 household interviews were completed resulting in a completion rate of 64.0 percent. Westat considered a household interview complete if the interviewer administered all questions in the household interview and was able to set an appointment to call back to complete person interviews in the household. The detailed breakdowns for refusals, households that reached the maximum call limit, language problems, and other non-interviews were not obtained for some of the add-on locations, thus these are shown as “not available” in the table for the full sample.
- Numbers that are out-of-scope. Over half the telephone numbers in the samples (full sample: 53.7 percent, national sample: 52.8 percent) were found to be either non-working or non-residential. The detailed breakdown of out-of-scope households was not obtained for some of the add-on locations, thus these are shown as “not available” in the table for the full sample.
- Numbers whose eligibility is unknown. At the end of data collection, the residency status of 13.2 percent of the full sample (9.4 percent of the national sample) was not determined.

Table I-1. Classification of Telephone Numbers in the Sample After Completion of the Household Interview

Household Interview Classification Result	Full Sample		National Sample	
	Number	Percent	Number	Percent
In-Scope - Total	188,395	33.1%	57,506	37.8%
Completed Household Interviews	106,598	18.7%	36,810	24.2%
<i>Refusals</i>	<i>Not Available</i>	<i>Not Available</i>	13,904	9.1%
<i>Maximum Call Attempts Reached</i>	<i>Not Available</i>	<i>Not Available</i>	5,392	3.5%
<i>Language or Communication Barrier</i>	<i>Not Available</i>	<i>Not Available</i>	1,309	0.9%
<i>Other Non-Interview</i>	<i>Not Available</i>	<i>Not Available</i>	98	0.1%
All Non-Interviews	81,797	14.4%	20,703	13.6%
Out-of-Scope - Total	305,354	53.7%	80,379	52.8%
Non-working	Not Available	Not Available	60,654	39.8%
Non-residential	Not Available	Not Available	19,814	13.0%
Group Quarters	Not Available	Not Available	1	0.0007%
Eligibility Unknown - Total	75,047	13.2%	14,306	9.4%
Answering Machines	Not Available	Not Available	4,071	2.7%
No Answer	Not Available	Not Available	10,235	6.7%
Total Telephone Numbers in Sample	568,796	100%	152,191	100%

I-3. HOUSEHOLD INTERVIEW UNWEIGHTED RESPONSE RATE

The overall survey response rate is a product of the response rate for the household interview and the response rate for the person interview. In this section we calculate the unweighted household interview response rates.

In order to calculate the household interview response rate, it is necessary to estimate the residency status of the telephone numbers in Table I-1 whose eligibility was unknown at the end of data collection. Westat used the Council of American

Survey Research Organizations (CASRO) method¹ to determine the residency rate for the telephone numbers coded as "answering machines" or "no answers." This method assumes that the residency rate for the numbers whose eligibility is unknown is similar to the rate for those numbers whose eligibility is known. Therefore, the residency rate was calculated as follows:

$$\frac{\text{Number of In-Scope Telephone Numbers}}{\text{Number with Scope Determined ((In-Scope Tel. Numbers) + (Out-of-Scope Tel. Numbers))}}$$

For the full sample, this analysis estimated that 38.2 percent of the 75,047 telephone numbers whose residency status was "unknown" at the end of data collection should be considered residential. Using this residency rate, the household interview response rate was calculated as follows:

$$\frac{(\text{Number of Completed Household Interviews}) * 100}{(\text{Number of In-Scope Telephone Numbers}) + (0.382) * (\text{Number of Telephones with Eligibility Unknown})}$$

The numerator includes the 106,598 completed household interviews. The denominator includes all 188,395 in-scope telephone numbers and 38.2 percent of the 75,047 telephone numbers whose eligibility was "unknown" at the end of data collection. Using this formula **the household interview response rate for the 2001 NHTS full sample was 49.1 percent.**

For the national sample, this analysis estimated that 41.7 percent of 14,306 telephone numbers whose residency status was "unknown" at the end of data collection should be considered residential. Despite this higher residency rate, the household interview response rate for the national sample was 58.0 percent, substantially higher than the 49.1 percent rate for the full sample.

I-4. PERSON INTERVIEW CLASSIFICATION

In this section the final classification result is shown for each household member for the full sample and national sample households in which a household interview was completed. The number of household members enumerated in these

¹ Frankel, 1983

completed households was 281,555 in the full sample and 97,314 in the national sample. Table 4-2 displays the final result classification after all call attempts to each household member had been exhausted or the six-day window to complete a person interview had expired whichever date came first.

As shown in Table I-2, person interviews were completed with 58.2 percent of the household members in the 106,598 households in the full sample.

Table I-2. Classification of Household Members in Households Where a Household Interview was Completed

Person Interview Classification Result	Full Sample		National Sample	
	Number	Percent	Number	Percent
Completed Person Interviews	163,856	58.2%	61,709	63.4%
Person Interviews Not Completed	117,698	41.8%	35,605	36.6%
Maximum Calls/Six-Day Window Reached	Not Available	Not Available	28,053	78.8%
Refusals	Not Available	Not Available	6,167	17.3%
Language or Communication Barrier	Not Available	Not Available	461	1.3%
Non-working	Not Available	Not Available	435	1.2%
Non-residential	Not Available	Not Available	63	0.2%
Not Available or Sick	Not Available	Not Available	401	1.1%
Other Non-Interview	Not Available	Not Available	25	0.1%
Total Person Interviews Attempted	281,555	100%	97,314	100%

I-5. PERSON INTERVIEW UNWEIGHTED RESPONSE RATE

The person interview response rate is calculated by dividing the number of person interviews that were completed by the total number of household members eligible for a person interview. Since all the 97,314 household members (national sample) enumerated in the 36,810 households were eligible for participation in the 2001 NHTS, the national sample person response rate for the survey, 63.4 percent, is

identical to the person interview completion rate reported in Table I-2. Similarly, **the full sample person response rate is 58.2 percent.**

I-6. OVERALL CASRO RESPONSE RATES

Unweighted response rates are provided as a basis of comparison to previous NPTS surveys. During the 2001 NHTS, household interviews were completed in 106,598 households (36,810 in the national sample) and person interviews were completed with 163,856 persons (61,709 in the national sample). A sample of 568,796 telephone numbers (152,191 in the national sample) was needed to obtain these completed interviews. Sections I-3 and I-5 presented the household and person interview response rates. The overall CASRO survey response rates are presented in Table I-3. The table shows that this response rate is 28.6 percent for the full sample and 36.8 percent for the national sample.

Table I-3. Overall CASRO Unweighted Response Rates Using Person Rates for All Households

	Full Sample		National Sample	
	Rate Calculation	Response Rate	Rate Calculation	Response Rate
Household Interview Response Rate	$106,598 / (188,395 + 188,395 / (188,395 + 305,354) * 75,047)$	49.1%	$36,810 / (57,506 + 57,506 / (57,506 + 80,379) * 14,306)$	58.0%
Person Interview Response Rate	$163,856 / 281,555$	58.2%	$61,709 / 97,314$	63.4%
Overall Survey Response Rate	$49.1 * 58.2$	28.6%	$58.0 * 63.4$	36.8%

I-7. USEABLE HOUSEHOLDS

I-7.1. HOUSEHOLD RESULTS: USEABLE VERSUS NON-USEABLE

The 2001 NHTS defined a "useable" household as one in which person interviews were completed with at least 50 percent of the household's adults. The 2001 NHTS public use dataset contains the information collected from these useable households.

Table I-4 shows the breakdown of the households with completed household interviews by the number of household members in these households that completed person interviews. The table shows that, for the full sample, 69,817 or 65.5 percent of the 106,598 households were considered useable households. In 60,520 (86.7 percent) of these useable households, person interviews were completed with all adult household members. For the national sample, 70.7 percent of the 36,810 households were considered useable households. In 85.2 percent of these useable households, person interviews were completed with all adult household members.

Table I-4. Classification of Households into Useable Households Based on Person Interview Results

Breakdown of Households into Useable and Non-Useable	Full Sample		National Sample	
	Number	Percent	Number	Percent
Useable Households - Total	69,817	65.5%	26,038	70.7%
Households with All Adult Household Members Completing a Person Interview	60,520	86.7%	22,178	85.2%
Households with 50 Percent or More but Less Than 100 Percent Adult Person Interviews Completed	9,297	13.3%	3,860	14.8%
Households with Less than 50 Percent of Adult Household Members Completing a Person Interview	36,781	34.5%	10,772	29.3%
Households with at least one Person Interview Completed	2,187	5.9%	957	8.9%
Households with Zero Person Interviews Completed	34,594	94.1%	9,815	91.1%
Total Household Interviews Completed	106,598	100%	36,810	100%

I-7.2. PERSON RESULTS IN USEABLE HOUSEHOLDS

Table I-5 shows the person response rate information within 2001 NHTS useable households. Data for each of the 160,758 responding persons for the full sample in useable households is included in the 2001 NHTS public use dataset, and accounts for nearly all of the 163,856 (see Table I-2) person interviews completed during the 2001 NHTS. The person interview response rate was 91.4 percent in useable households (90.6 percent for the national sample). As discussed in Section 2-B.4, proxy interviews were either required or preferred for subjects under age 16.

However, interviews with the subject were preferred for the 47,248 persons age 16 and older in the national sample. For these, 36,208 interviews were completed with the subject, representing 76.6 percent of interviews with persons age 16 and older. These numbers are not available for seven of the add-on areas and therefore provided only for the national sample.

Table I-5. Person Unweighted Response Rate Within Useable Households

Breakdown of Person Interviews in Useable Households	Full Sample		National Sample	
	Number	Percent	Number	Percent
Completed Person Interviews - Total	160,758	91.4%	60,282	90.6%
Subject 16 and Older: Person Interview with Subject	Not available	Not available	36,208	60.1%
Subject 16 and Older: Person Interview by Proxy	Not available	Not available	11,040	18.3%
Subject 16 and Older, Total	126,498	78.7%	47,248	78.4%
Subject less than 16: Person Interview with Subject	Not available	Not available	45	0.1%
Subject less than 16: Person Interview by Proxy	Not available	Not available	12,989	21.5%
Subject less than 16, Total	34,260	21.3%	13,034	21.6%
Person Interview Not Completed	15,056	8.6%	6,262	9.4%
Total Household Members in Useable Households	175,814	100%	66,544	100%

I-8. OVERALL UNWEIGHTED SURVEY RESPONSE RATES FOR USEABLE HOUSEHOLDS

In this section the overall unweighted response rate for useable households is calculated. Table I-6 shows that this overall response rate is 32.2 percent for the full sample and 41.0 percent for the national sample. Within the 69,817 full sample useable households, 91.4 percent of all household members were interviewed. This produces a

useable household person interview response rate of 29.4 percent. This calculation of the overall response rates mimics the method used during the 1995 NPTS. The method uses person response rates for useable households instead of all households. [Note: The overall unweighted survey response rate for all households, 28.6 percent, is calculated in Section I-6.]

For the national sample, 90.6 percent of all household members in useable households were interviewed. This results in a useable household person interview response rate of 37.1 percent.

Table I-6. Overall Unweighted Response Rates Using Person Rates for Useable Households

	Rate Calculation	Individual Rate	Rate Calculation	Composite Rate
Full Sample:				
Estimated In-Scope Telephone Numbers	$188,395 + (188,395 / (188,395 + 305,354) * 75,047) = 217,030$			
Telephone Number Screening Rate	$188,395 / 217,030$	86.8%		86.8%
Household Interview Rate	$106,598 / 188,395$	56.6%	$86.8 * 56.6$	49.1%
Useable Household Rate	69,817 / 106,598	65.5%	65.5 * 49.1	32.2%
Useable Household Person Interview Rate	$160,758 / 175,814$	91.4%	$91.4 * 32.2$	29.4%
National Sample:				
Estimated In-Scope Telephone Numbers	$57,506 + (57,506 / (57,506 + 80,379) * 14,306) = 63,471$			
Telephone Number Screening Rate	$57,506 / 63,471$	90.6%		90.6%
Household Interview Rate	$36,810 / 57,506$	64.0%	$90.6 * 64.0$	58.0%
Useable Household Rate	26,038 / 36,810	70.7%	70.7 * 58.0	41.0%
Useable Household Person Interview Rate	$60,282 / 66,544$	90.6%	$90.6 * 41.0$	37.1%

