



Pergamon

www.elsevier.com/locate/jsr

Journal of Safety Research 34 (2003) 461–470



www.nsc.org

Special Report: New Statistical Data Source

# The 2001 national household travel survey: A look into the travel patterns of older Americans

Demetra V. Collia\*, Joy Sharp, Lee Giesbrecht

Bureau of Transportation Statistics, U.S. Department of Transportation, 400 Seventh Street, S.W., Washington, D.C. 20590, USA

## Abstract

*Introduction:* The main objective of this paper is to highlight travel patterns of older adults living in the United States as depicted in the 2001 National Household Travel Survey (NHTS). The NHTS is a national data collection program sponsored by the Bureau of Transportation Statistics and the Federal Highway Administration. It is the first national comprehensive household survey of both daily and long-distance travel, allowing for analysis of the full continuum of personal travel by Americans. To better understand the transportation needs of older Americans, it is useful to examine how travel patterns differ across age groups. The intent is to present basic travel characteristics of older adults (age 65+) and allow for comparisons with younger adults (ages 19–64). *Travel-related characteristics of older adults in the United States:* Results of the 2001 survey showed that older Americans travel extensively and rely on personal vehicles as heavily as their younger counterparts. Older Americans conduct 89% of their travel in personal vehicles. *Characteristics of daily trips taken by older adults:* Older adults tend to be less mobile in that they take fewer trips, travel shorter distances, and have shorter travel times. This pattern is even more pronounced among older women. They are also more likely to suffer from self-reported medical conditions that further limit their travel. *Characteristics of long-distance travel by older adults:* Older men and women take long-distance trips at about the same rates and show a strong preference for using personal vehicles. And, while men and women take an equal percentage of their trips by air, older women show a strong preference for bus travel. *Conclusions:* Although older Americans travel extensively, they are less mobile than their younger counterparts. This pattern is more pronounced among older women and among those with self-reported medical conditions that affect their ability to travel outside their home. Older women consistently take the least number of trips per day, have the lowest driving rates, travel the shortest distances, and are more likely to report medical conditions that limit their travel. For men and women who have to give up driving, alternative means of transportation becomes a necessity. Yet, use of alternative transportation is relatively low; excluding personal vehicle and walking, all other means of transportation account for about 2% of daily travel. Further, of those with medical conditions that affect their travel, only about 12% use special transportation services such as dial-a-ride.

© 2003 National Safety Council and Elsevier Science Ltd. All rights reserved.

*Keywords:* Daily travel; Long-distance travel; elderly; older drivers; aging

## 1. Introduction

Almost every person in the United States is affected in some way by the quality of the nation's transportation system. An accessible, affordable, and reliable transportation system increases the mobility of Americans, thereby providing opportunities for work, education, shopping and personal errands, social interaction, medical access, rest and relaxation, and all other transportation needs. Transportation planners and policy makers are sure to face special challenges in the next few decades as the older population continues to increase at a rapid rate of growth. In the next

30 years, the number of older drivers on the road is expected to at least double ([Administration on Aging, 1998](#)). This increase is attributable to both the overall increase in the older population, as well as the anticipated trend for older women to drive in greater proportions than their previous cohorts.

In order to understand and improve the mobility of our nation's older population, policymakers and transportation planners require data that answer questions about current travel behavior, that is, who is traveling and how, why, when, where, and how far. The process of improving our transportation system also requires a deeper understanding of the unique travel behavior and challenges affecting the mobility of the older population.

One of the primary sources of data on current travel behavior and patterns of the U.S. population is the 2001

\* Corresponding author. Tel.: +1-202-366-1610; fax: +1-202-493-0568.

E-mail address: demetra.collia@bts.gov (D.V. Collia).

National Household Travel Survey (NHTS), sponsored jointly by the Bureau of Labor Statistics and the Federal Highway Administration in the Department of Transportation. In this paper, we highlight the travel characteristics of the older population, using results from the NHTS. In most instances, comparisons are made to younger adults aged 19 to 64 years old to illustrate how the travel behavior of older Americans compares to the travel behavior of younger adults.

### 1.1. Background on the National Household Travel Survey (NHTS)

For several decades, the Department of Transportation gathered information on travel characteristics through the Nationwide Personal Transportation Survey (NPTS) and the American Travel Survey (ATS). The NPTS was conducted in 1969, 1977, 1983, 1990, and 1995 and the ATS was conducted in 1977 and 1995. The NPTS, sponsored by the Federal Highway Administration, primarily focused on daily travel, with an abbreviated long-distance component. The 1995 ATS, sponsored by the Bureau of Transportation Statistics, provided a detailed look at long-distance travel defined as trips of 100 miles or more from home. In 2001, these two prior data collection series were joined and the 2001 NHTS was created to provide the full continuum of American travel, daily and long-distance. This national survey provides data about current traveler and trip-making characteristics and includes information on the following:

- travel-related household characteristics, such as the number of drivers and types of vehicles in U.S. households;
- demographic characteristics of U.S. travelers (e.g., age, gender, income);
- characteristics of daily trip-making, including mode of transportation used, travel times, purpose of trip, etc.; and
- characteristics of long-distance travel (i.e., trips of 50 miles or more away from home), including mode of transportation used, purpose of trip, trip duration in days, etc.

For each individual, data were collected on daily and long-distance trips taken during pre-assigned time frames. For daily trips, data were collected on the number of trips taken during a randomly assigned day (labeled the “travel day”), and associated trip times, means of transportation, which household vehicle was used, if any, trip purpose, and presence of household and non-household members on these trips. For long-distance trips of 50 miles or more away from home to the farthest destination, information was collected on the number of trips made during a specified four-week period (labeled the “travel period”), along with the dates of these trips, purpose and destination, type of lodging used at the destination, primary means of transportation, overnight stops, etc. This resulted in a sample of approxi-

Table 1

2001 National Household Travel Survey: Annualized daily and long distance trips<sup>a,b,c</sup>

Age groups	Daily travel				Long-distance travel			
	Number trips <sup>d</sup>	SE	Percent trips	SE	Number trips <sup>d</sup>	SE	Percent trips	SE
0–18	98,916	917	24.1	0.16	522	13	20.0	0.42
19–64	270,300	1158	65.7	0.16	1875	31	71.6	0.47
65+	41,997	539	10.2	0.12	220	7	8.4	0.25
Total	411,213	1888	100.0	–	2617	38	100.0	–

<sup>a</sup> Represents the number and percent of trips taken by each age group in the U.S. population.

<sup>b</sup> SE denotes standard error.

<sup>c</sup> Source: The 2001 National Household Travel Survey, Daily Trip File and Person File, U.S. Department of Transportation.

<sup>d</sup> Numbers rounded to the nearest million.

mately a quarter of a million daily trips and approximately 45,000 long-distance trips.

### 1.2. Survey methodology, source and accuracy

The 2001 NHTS is a household survey of nationally representative households in the United States and was conducted from March 2001 to May 2002. Data were collected through telephone interviews with approximately 60,000 individuals (approximately 9,000 of the respondents were at least 65 years old) from about 26,000 households. Attempts were made to include the travel of all household members either directly from the respondent or through a proxy.<sup>1</sup> A household where 50% of the adults completed the survey was considered a responding household and included in the data file.<sup>2</sup> Individuals from households were asked to complete a travel diary documenting their daily trips in order to aid in the recall process when responding to the interviewer. The overall response rate was 41%. (The household screener interview rate was 58%, and the useable household rate was 71%.)

To produce national estimates from the 2001 NHTS data, the sample data were weighted. Weighting the data adjusts for selection probabilities at the household level and adjusts for household and individual nonresponse. Trip weights also include a factor for annualizing both the daily and long-distance trips. All estimates in this report are weighted. In addition to properly weighting the responses, special procedures for estimating the statistical significance of the estimates were employed because the data were collected using a complex sample design. Comparisons made in the text were tested for statistical significance to ensure that the differences are larger than might be expected due to sampling variation. Testing for statistical significance was done using a two-sided test. All differences described

<sup>1</sup> Proxy interviews were conducted for 23.4% of the respondents 16 and older.

<sup>2</sup> All household members were interviewed in approximately 85% of the sample households.

Table 2  
Distribution of daily trips by mode of transportation<sup>a,b</sup>

Mode	Age: 19–64		Age: 65+	
	Percent	SE	Percent	SE
Personal vehicle (POV)	89.5	0.20	89.3	0.34
POV-single occupant	48.2	0.29	44.4	0.69
POV-multiple occupants	41.3	0.30	44.9	0.66
Transit	1.8	0.07	1.2	0.14
Walk	7.5	0.15	8.4	0.29
Other <sup>c</sup>	1.2	0.07	1.2	0.13
Total	100.0	–	100.0	–

<sup>a</sup> Source: The 2001 National Household Travel Survey, Daily Trip File, U.S. Department of Transportation.

<sup>b</sup> SE denotes standard error.

<sup>c</sup> “Other” includes riding a bike.

in the text were found to be statistically significant at a 0.05 alpha level.

## 2. Travel-related characteristics of older travelers in the United States

The main objective of this paper is to highlight travel patterns of older adults at the national level as depicted in the 2001 NHTS. The intent is to present basic travel characteristics of older Americans and allow for comparisons between older adults and younger adults. Older adults are defined to be individuals who are at least 65 years old and younger adults are individuals between the ages of 19 and 64. Comparisons between older and younger adults, as defined above, are most often made because daily travel patterns of children and teenagers (18 and younger) are considerably different. Therefore, including children and teenagers in the analysis pool can potentially confound the underlying contributing factors in the observed patterns among American adults.

Results from the 2001 National Household Travel Survey estimated that Americans took approximately 411 billion daily trips and 2.6 billion long-distance trips (Table 1). Proportionally, older adults take a lower percentage of trips than the rest of the U.S. population. In 2001, 12.6% of the U.S. population was 65 years old or older (U.S. Bureau of Census, 2003) and, yet, they took approximately 10% of all daily trips and 8% of the long-distance trips. Whereas, younger adults (19–64), comprising 62% of the U.S.

Table 3  
Daily travel: Percent drivers by age and sex<sup>a,b,c</sup>

Age	Male	SE	Female	SE	Total	SE
19–64	94.8	0.23	91.5	0.26	93.1	0.18
65+	90.0	0.61	72.4	0.68	79.8	0.49

<sup>a</sup> Source: The 2001 National Household Travel Survey, Person File, U.S. Department of Transportation.

<sup>b</sup> Based on responses to the survey question “Are you a driver?”

<sup>c</sup> SE denotes standard error.

Table 4  
Daily travel: Percent travelers by age and sex<sup>a,b,c</sup>

Age	Male	SE	Female	SE	Total	SE
19–64	92.3	0.25	89.9	0.26	91.1	0.20
65+	80.6	0.81	71.6	0.74	75.4	0.63

<sup>a</sup> Source: The 2001 National Household Travel Survey, Daily File, U.S. Department of Transportation.

<sup>b</sup> SE denotes standard error.

<sup>c</sup> Includes those who reported at least one trip during their randomly assigned “travel day.”

population, took 68% of all daily trips and 72% of long-distance trips.

As shown in Tables 2 and 16, travel by personal vehicle remains the dominant mode of transportation across age groups for both daily and long distance travel. Younger and older adults conduct about 90% of both their daily and long-distance travel in a personal vehicle. However, there are significant differences based on age and gender regarding the driver status of these groups. Overall, a significantly lower percentage of older adults report to be drivers as compared to adults younger than 65. Moreover, older women represent the lowest percentage of drivers among the groups. Table 3 shows that, overall, 93% of adults younger than 65 reported to be drivers, as compared to 80% among older adults. Although women, in general, report to be drivers at a lower percentage than men within each age group, the difference in driving rates between men and women is far greater between older adults as compared to their younger cohort. Younger women trail their male cohort by approximately 3% (95 vs. 92), whereas older women trail their cohort by 18% (90 vs. 72).

A similar pattern is revealed when examining the demographic characteristics of those who reported taking at least one trip on their “travel day” (for daily travel) or during their assigned four-week “travel period” (for long distance travel). Tables 4 and 5 show that, for daily trips and long-distance trips, a significantly lower percentage of older travelers report having traveled as compared to younger travelers. Participation in daily travel was 75% for older adults and 91% for younger adults. Participation in long distance travel was 35% for older adults and 48% for younger adults. Further, the percentage of older women taking at least one daily trip or at least one long-distance

Table 5  
Long-distance travel: Percent travelers by age and sex<sup>a,b,c</sup>

Age	Male	SE	Female	SE	Total	SE
19–64	49.8	0.49	46.1	0.38	47.9	0.36
65+	39.7	0.86	30.9	0.77	34.6	0.64

<sup>a</sup> Source: The 2001 National Household Travel Survey, Daily Person File, U.S. Department of Transportation.

<sup>b</sup> SE denotes standard error.

<sup>c</sup> Includes those who reported at least one long-distance trip during their assigned four week “travel period”.

Table 6  
Mean number of trips by age and sex<sup>a</sup>

Type of Travel	Age: 19–64			Age: 65+		
	Male	Female	All	Male	Female	All
Daily trips <sup>b</sup>	4.3	4.6	4.4	3.9	3.2	3.4
Std. error	0.03	0.03	0.02	0.06	0.05	0.04
Long distance trips <sup>c</sup>	1.3	0.9	0.1	0.8	0.5	0.6
Std. error	0.03	0.01	0.02	0.03	0.02	0.02

<sup>a</sup> Source: The 2001 National Household Travel Survey, Person File, Daily File, and Preliminary Long Distance Trip File, U.S. Department of Transportation.

<sup>b</sup> Estimated mean number of trips per day.

<sup>c</sup> Estimated mean number of trips per four-week reporting period.

trip was the lowest as compared to the other age-by-gender groups.

### 3. Characteristics of daily trips taken in the nation by older adults

Data collected on daily trips include topics such as the purpose of the trip, the means or mode of transportation used, the duration and length of the trip, the time of day and day of the week when the trip took place, and the number of people in the vehicle during the trip. In the 2001 NHTS, a daily trip is one that occurred on the randomly selected travel day regardless of mode or distance traveled, so long as the person went from one address to another.

#### 3.1. Who is traveling?

Frequency, length, and travel time for daily travel vary considerably across age and gender groups. Older adults take a significantly lower number of trips per day than younger adults. Older adults take an average of 3.4 trips per day and younger adults take an average of 4.4 trips per day (Table 6). Further analysis by gender within age groups also shows a significant difference in the number of trips taken. Older women take the least number of daily trips. Older

Table 7  
Mean time and distance traveled daily by age category and sex<sup>a,b</sup>

Age group	Male				Female			
	Mean daily travel time <sup>c</sup>	SE	Mean miles traveled <sup>c</sup>	SE	Mean daily travel time <sup>d</sup>	SE	Mean miles traveled	SE
19–64	73.4	0.73	42.1	0.62	50.1	0.51	25.0	0.35
65+	57.2	1.44	27.2	0.95	26.2	0.66	9.5	0.36
ALL	51.7	0.46	28.9	0.39	34.6	0.33	16.8	0.22

<sup>a</sup> Source: The 2001 National Household Travel Survey, Daily Trip File and Person File, U.S. Department of Transportation.

<sup>b</sup> SE denotes standard error.

<sup>c</sup> Mean travel distance is expressed in miles.

<sup>d</sup> Mean travel time is expressed in minutes.

Table 8  
Daily travel: Percent trips taken as drivers<sup>a,b,c</sup>

Age Group	Male	SE	Female	SE	All	SE
19–64	89.2	0.28	76.1	0.34	82.4	0.22
65+	87.5	0.60	62.0	1.06	74.1	0.54

<sup>a</sup> For Private Vehicle Trips only; respondents were asked to specify whether they were the driver; each table cell represents the percent drivers in that category.

<sup>b</sup> SE denotes standard error.

<sup>c</sup> Source: The 2001 National Household Travel Survey, Daily Trip File, U.S. Department of Transportation.

women take 3.2 trips as compared to older men who take 3.9 trips per day. In contrast, younger women take more trips per day than do younger men – 4.6 trips versus 4.3 trips, respectively.

Further, as shown in Table 7, there is a distinct pattern with respect to average distance traveled and average travel time with respect to age and gender. Older men travel shorter distances than younger men (27 miles vs. 42 miles), and older women travel shorter distances than younger women (10 miles vs. 25 miles). Also, when comparing daily travel between men and women within an age group, women consistently travel shorter distances than men. There is nearly a three-fold difference in distance traveled between older men and older women and an almost two-fold difference in distance traveled between younger men and younger women. It is worth noting that, on a daily basis, older women travel the shortest distance as compared to the other age-by-gender groups (about 10 miles per day).

#### 3.2. How do they travel?

As shown in Table 2, the majority of daily trips occur in personal vehicles such as a car, pickup truck, van, or sport utility vehicle (SUV; Table 2). Both age groups report using a personal vehicle for almost 9 out of 10 of their daily trips. Similarly, for both age groups, use of transit remains relatively low (less than 2% of trips), as is use of “other” means, including riding a bike. However, older Americans walk a higher percentage of

Table 9  
Percent daily trips by type of personal vehicle for drivers<sup>a,b</sup>

Personal vehicle	Age: 19–64		Age: 65+	
	Percent	SE	Percent	SE
Car	57.8	0.39	77.3	0.66
Van	12.2	0.25	8.2	0.51
SUV	13.7	0.30	4.4	0.34
Truck	16.0	0.29	10.2	0.42
RV or motorcycle	0.3	0.03	0.1	0.03
Total	100.0	–	100.0	–

<sup>a</sup> Source: The 2001 National Household Travel Survey, Daily Trip File, U.S. Department of Transportation.

<sup>b</sup> SE denotes standard error.

Table 10  
Daily travel: Distribution of trips by trip purpose<sup>a,b</sup>

Purpose	Age: 19–64		Age: 65+	
	Percent	SE	Percent	SE
Work/work-related	16.1	0.15	3.1	0.19
Shopping	13.2	0.14	18.3	0.38
Family/personal business	16.4	0.15	17.5	0.29
School	0.9	0.04	0.1	0.04
Religious	1.3	0.04	2.6	0.13
Medical/dental	1.3	0.04	2.9	0.11
Social/recreation	17.1	0.15	19.4	0.30
Return home	32.7	0.10	34.8	0.25
Other	1.0	0.04	1.2	0.10
Total	100.0	–	100.0	–

<sup>a</sup> Source: The 2001 National Household Travel Survey, Daily Trip File, U.S. Department of Transportation.

<sup>b</sup> SE denotes standard error.

their trips than younger adults; older adults walk for about 8.4% of their daily travel as compared to 7.5% for younger adults.

An interesting pattern emerges when one considers the percentage of personal vehicle trips older adults take as drivers as compared to younger adults. Table 8 shows that, overall, adults younger than 65 are the drivers in 82% of their daily trips, while older adults are the drivers in 74% of their trips. This indicates that older adults take a significantly higher percentage of their daily trips as passengers than do adults under 65. However, further analysis by gender indicates that the observed difference as driver among older adults is almost completely attributed to women. Men, both age groups (19–64 and 65+), drive about the same percentage of their trips (approximately 9 out of 10). Older women, however, are the drivers for a smaller percentage of their daily trips (younger women drive in about 76% of their daily trips whereas older women drive in about 62% of their trips).

While the percentage of personal vehicle use is similar among younger and older travelers, there are differences in the type of vehicle driven by each group. Table 9 shows the percent of trips taken by each vehicle type and highlights differences in vehicle type driven by the two age groups. Although cars rank as the top choice of personal vehicle for both groups, older adults demonstrate a stronger preference than younger adults. Specifically, older adults take a significantly larger percentage of their trips in cars, when they are the driver, as compared to adults under 65 (77% vs. 58%). Pick-up trucks are the second most popular type of personal vehicle for both age groups (16% of trips taken by younger adults and 10% for older adults). Vans are the third choice of personal vehicle type for older adults; older drivers use a van for 8% of daily trips and an SUV for only 4% of daily trips. Younger drivers, however, use SUVs for a higher percentage of their trips than vans (14% vs. 12%).

### 3.3. Why do they travel?

A large portion of daily trips are taken for family and personal reasons such as shopping, running errands, and recreational activities by both age groups (Table 10). Social and recreation trips, such as visiting friends, accounted for the largest percentage of older adults' trips (19%). Older adults take a significantly higher percentage of daily trips for shopping as compared to younger adults, 18% and 13%, respectively. Also, older adults take a higher percentage of trips for medical reasons as compared to younger adults, 3% and 1% respectively, and for religious reasons, 3% and 1% respectively. As would be expected, work and work-related travel constitutes a small percent of daily travel for older adults as compared to their younger counterparts, 3% versus 16%.

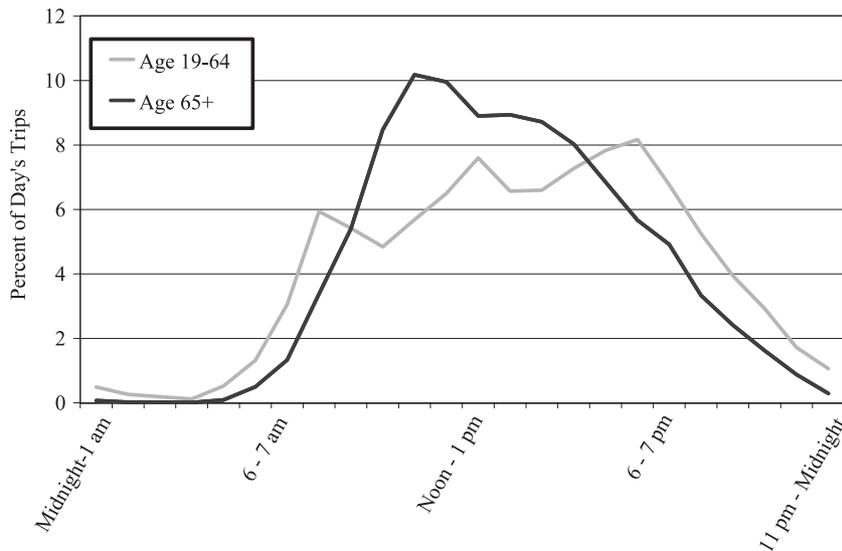


Fig. 1. Distribution of trips by time of day.

Table 11  
Average number of daily trips by day of week<sup>a,b</sup>

Day of week	Age: 19–64		Age: 65+	
	Average	SE	Average	SE
Sunday	3.8	0.05	2.9	0.09
Monday	4.3	0.05	3.5	0.10
Tuesday	4.4	0.05	3.5	0.12
Wednesday	4.6	0.05	3.5	0.12
Thursday	4.6	0.05	3.6	0.12
Friday	4.9	0.05	3.8	0.10
Saturday	4.5	0.06	3.3	0.11
All Days	4.4	0.02	3.4	0.04

<sup>a</sup> Source: The 2001 National Household Travel Survey, Daily Trip File, U.S. Department of Transportation.  
<sup>b</sup> SE denotes standard error.

3.4. When do they travel?

Daily trips (including non-personal vehicle trips) are not spread evenly across the time of day and older travelers show a different trip start time distribution than younger adults. As shown in Fig. 1, daily travel for older travelers peaks in late morning (10 a.m.–12 p.m.) indicating that older adults tend to do most of their daily travel in mid-day. In fact, over 60% of their daily travel is done between 9 a.m. and 4 p.m. Younger adults show three distinct time peaks: morning peak (7 a.m.–8 a.m.), lunch time (12 p.m.–1 p.m.), and after-work peak (5 p.m.–6 p.m.). With respect to average number of trips taken per day, both age groups exhibit similar travel patterns. Average daily trips are spread more evenly across the days of the week, with younger adults consistently taking about one trip more than older travelers (Table 11). Both groups take the fewest trips on Sunday and the most trips on Friday.

Congestion has become a common occurrence in most large cities and metropolitan areas and may be a factor in how and when people travel during the day. By doing most of their travel between 9 a.m. and 4 p.m., older adults tend to avoid morning and after-work peak traffic times. Concern about congestion was strongly expressed in this survey. Congestion is a concern for more than 60% of all adults, but it seems to be a more prevalent concern for older women.

Table 12  
Concern about congestion<sup>a,b,c</sup>

	Age: 19–64			Age: 65+			Total
	Male	Female	All	Male	Female	All	
Yes	57.7	61.4	59.8	60.2	69.8	66.0	60.5
No	42.4	38.6	40.2	39.8	30.2	34.0	39.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Std. error	0.69	0.63	0.43	1.41	1.03	0.82	0.40

<sup>a</sup> Source: The 2001 National Household Travel Survey, Person File, U.S. Department of Transportation.  
<sup>b</sup> Survey respondents were asked to express their level of concern regarding a number of travel-related factors. For this table, the percentages represent those saying they were either somewhat or very concerned about congestion.  
<sup>c</sup> SE denotes standard error.

Table 13  
Do you have a medical condition that makes it difficult to travel outside the home?<sup>a,b,c</sup>

	Age: 19–64			Age: 65+			Total
	Male	Female	All	Male	Female	All	
Yes	5.2	6.9	6.1	20.0	26.1	23.5	8.6
No	94.8	93.1	94.0	80.1	73.9	76.5	91.4
Std. error	0.20	0.19	0.13	0.71	0.69	0.52	0.14

*A: Because of this condition, have you reduced your day-to-day travel?*  
Yes 84.5 86.2 85.5 83.5 85.2 84.6 84.8  
No 15.5 13.8 14.5 16.5 14.8 15.4 15.3  
Std. error 1.34 1.08 0.92 1.49 1.14 0.92 0.73

*B: Because of this condition, have you asked others for rides?*  
Yes 52.7 65.6 60.2 43.3 57.2 52.3 56.9  
No 47.3 34.4 39.8 56.7 42.8 47.7 43.1  
Std. error 1.97 1.49 1.32 2.06 1.62 1.24 0.92

*C: Because of this condition, have you given up driving altogether?*  
Yes 15.9 18.2 17.2 30.3 38.9 35.8 25.3  
No 84.1 81.8 82.8 69.7 61.1 64.2 74.7  
Std. error 1.64 1.44 1.13 2.10 1.55 1.23 0.83

*D: Because of this condition, have you used special transportation services?*  
Yes 12.6 12.3 12.4 7.8 14.3 12.0 12.3  
No 87.4 87.7 87.6 92.2 85.7 88.0 87.7  
Std. error 1.25 1.08 0.84 1.56 1.31 1.06 0.59

*E: Because of this condition, have you limited your driving to daylight hours?*  
Yes 35.1 43.4 39.9 48.2 47.1 47.5 43.0  
No 64.9 56.7 60.1 51.8 53.0 52.5 57.0  
Std. error 1.97 1.77 1.42 2.07 1.80 1.53 0.95

<sup>a</sup> Source: The 2001 National Household Travel Survey, Person File, U.S. Department of Transportation.  
<sup>b</sup> Survey respondents 15 and older were asked if they had a medical condition that made it difficult to travel outside the home. It is important to note that this is a self-reported condition, and does not correspond to the Americans with Disabilities Act of 1990 or other formalized definitions of a person with a disability.  
<sup>c</sup> Table 16-A to E refer to questions asked only of the people who responded positively to the question in Table 16.

Overall, older adults have a greater concern about congestion than younger adults, as shown in Table 12. Approximately 66% of older adults view congestion as a problem, as

Table 14  
Mean number of trips for those with self-reported medical condition<sup>a,b</sup>

Self-reported condition	Age: 19–64			Age: 65+		
	Male	Female	All	Male	Female	All
Yes	3.4	3.3	3.4	2.2	1.9	2.0
Std. error	0.12	0.11	0.09	0.10	0.07	0.05
No	4.4	4.6	4.5	4.3	3.6	3.9
Std. error	0.03	0.03	0.02	0.06	0.06	0.05

<sup>a</sup> Source: The 2001 National Household Travel Survey, Person File, U.S. Department of Transportation.  
<sup>b</sup> Survey respondents 15 and older were asked if they had a medical condition that made it difficult to travel outside the home. It is important to note that this is a self-reported condition, and does not correspond to the Americans with Disabilities Act of 1990 or other formalized definitions of a person with a disability.

compared to 60% of younger adults. But, as the data in Table 12 indicate, a significantly higher percentage of older women view congestion as a problem than older men (70% vs. 60%), which accounts for the observed difference between the age groups.<sup>3</sup> Older men express concern about congestion at the same rate as younger men and younger women (60% for older men, 58% for younger men, and 61% for younger women<sup>4</sup>).

### 3.5. Older adults with self-reported medical condition(s) that impact their ability to travel

The 2001 NHTS also collected information on the travel behavior of persons 15 or older who have a self-reported medical condition that affects their ability to travel (Table 13). Specifically, individuals 15 and older were asked if they had a medical condition that made it difficult to travel outside the home<sup>5</sup>. Nearly 24% of older adults report having a medical condition that potentially limits their travel outside the home, compared with 6% for younger adults. This analysis indicates older adults have a four-fold greater likelihood to experience a medical condition that inhibits their travel than younger adults. Or, based on the 2001 Census Population figures, more than 8 million older adults (2.9 million older men and 5.3 million older women) can experience decreased mobility due to a self-reported medical condition. As would be expected, these older individuals take fewer trips than those who do not report such medical conditions. As shown in Table 14, the average number of trips drops to 2 per day for those with self-reported medical conditions, whereas older adults without self-reported medical conditions average 3.9 trips per day.

Further, when asked whether this condition has reduced their day-to-travel, a similar percentage of younger and older adults reported it did—approximately 85% for older adults and 86% for younger adults (Table 13-A). While both age groups report a reduction in travel in the presence of a self-reported medical condition (i.e., they reduce their day-to-day travel by the same percentage,) it has a greater impact on the elderly as a whole, due to the higher prevalence of disabilities among older adults. This is also evident by the observed reduction in the average number of daily trips.

Having a self-reported medical condition that makes it difficult to travel outside the home affects all the groups differently:

- A significantly lower percentage of older adults reported asking others for rides (Table 13-B). Overall, 52% of

<sup>3</sup> Survey respondents were asked to express their level of concern regarding a number of travel-related factors. For this particular item, the percentages represent those saying they were either somewhat or very concerned about congestion.

<sup>4</sup> These percentages are not statistically different at the .05 significance level.

<sup>5</sup> It is important to note that this is a self reported condition, and does not correspond to the Americans with Disabilities Act of 1990 or other formalized definitions of a person with a disability.

Table 15

Long distance: Percent of trips taken by age and gender<sup>a,b,c</sup>

Age group	Male	Female	SE	Total
19–64	59.2	40.8	0.59	100.0
65+	53.4	46.6	1.18	100.0
Total percent by gender	57.3	42.7	0.48	100.0

<sup>a</sup> Percents are estimated based on annualized population estimates of long-distance trips taken.

<sup>b</sup> SE denotes standard error.

<sup>c</sup> Source: The 2001 National Household Travel Survey, Daily Trip File, U.S. Department of Transportation.

older adults reported asking others for rides as compared to 60% for younger adults. Similarly, a significantly higher percent of women ask others for rides within each age group. Fifty-seven percent of older women ask others for rides as compared to 43% for older men.

- A significantly higher percentage of older adults have given up driving altogether. As shown in Table 13-C, twice as many older adults give up driving as a result of a self-reported medical condition. Further, older women are more likely to give up driving than older men. The percentage of older women having given up driving is 39 as compared to 30 for older men.
- Older women are twice as likely to use special transportation services than older men. As shown in Table 13-D, the same percentage of both age groups (12%) reported using special transportation services such as dial-a-ride. However, while there is not a significant difference between men and women among young adults, a significantly higher percentage of older women reported having used special transportation services as compared to older men, 14.3% and 7.8% respectively.
- Older drivers are more likely to limit their driving to daytime only than younger drivers. Of those with a self-reported medical condition, a significantly higher percentage of older adults reported limiting their driving to daytime only as compared to younger adults, 48% and 40% respectively (Table 13-E).

## 4. Characteristics of long-distance travel by older adults

Long-distance trips in the 2001 NHTS are defined as trips of 50 miles or more from home to the farthest destination traveled.<sup>6</sup> For a long-distance trip, this includes both the

<sup>6</sup> Although the definitions for daily trips and long-distance trips differ, it is important to note that trips made as part of daily travel are not mutually exclusive from long-distance travel. That is, daily trips- or combinations of daily trips into home-to-home journeys-can result in travel of more than 50 miles or more away from home. Therefore, these trips would be included in both the estimates for daily travel, as well as long-distance travel. Care should therefore be exercised when using estimates for daily and long-distance travel together. This is especially true of trip rates and trip miles since simply combining would provide an overestimation of total household travel. For this paper, data for daily travel and long-distance travel were analyzed separately.

Table 16  
Percent long distance trips: Mode by age by sex<sup>a,b</sup>

Mode	Age: 19–64						Age: 65 +					
	Male		Female		Total		Male		Female		Total	
	Percent	SE	Percent	SE	Percent	SE	Percent	SE	Percent	SE	Percent	SE
Personal vehicle	89.8	0.45	89.3	0.46	89.6	0.36	91.5	0.84	87.1	1.16	89.4	0.78
Air	8.2	0.37	8.2	0.39	8.2	0.31	5.1	0.65	5.4	0.62	5.3	0.46
Bus	0.9	0.12	1.3	0.17	1.1	0.10	2.6	0.47	6.3	1.17	4.3	0.68
Train	0.7	0.15	1.0	0.18	0.8	0.11	0.6	0.21	0.8	0.27	0.7	0.20
Other	0.3	0.12	0.2	0.04	0.3	0.08	0.3	0.10	0.4	0.14	0.3	0.09
Total	100.0		100.0		100.0		100.0		100.0		100.0	

<sup>a</sup> Source: The 2001 National Household Travel Survey, Preliminary Long Distance Trip File, U.S. Department of Transportation.

<sup>b</sup> SE denotes standard error.

portion of the trip to reach the farthest destination, as well as the return trip home and any overnight stops made along the way or stops to change transportation modes. Similar to daily trips, long-distance travel includes trips made by all modes, including personal vehicle, airplane, bus, train, and ship and for all purposes, such as commuting, business, pleasure, and personal or family business (Table 15).

4.1. Who is traveling?

There were approximately 2.6 billion long-distance trips taken in the United States in 2001. The majority of long-distance trips (72%) were taken by adults younger than 65 (male and female combined) and about 8% were taken by older adults (Table 1). Men take a significantly higher percentage of long-distance trips than women. Overall, men take 57% of long distance trips as compared to 43% for women. The same travel pattern holds within each age group; younger men take a higher percentage of long distance trips than younger women (59% vs. 41%) and older men take a higher percentage of long distance trips than older women (53% vs. 47%). Men consistently take a higher percentage of long distance trips than women within each age group, the difference in trip rates between men and women is far greater between younger adults as compared to older adults. Young women trail their male cohort by approximately 18%, whereas older women trail their cohort by only 6%.

Table 17  
Long distance: Percent trips by trip purpose<sup>a,b</sup>

Purpose	Age: 19–64		Age: 65 +		All	
	Percent	SE	Percent	SE	Percent	SE
Commute (work)	16.9	1.05	2.2	0.85	12.7	0.83
Business	20.3	0.67	8.5	1.27	15.9	0.50
Pleasure	48.5	0.85	64.8	1.58	55.5	0.79
Personal business	11.0	0.40	21.7	1.29	12.6	0.41
Other	3.4	0.18	2.8	0.41	3.4	0.20
Total	100.0		100.0			

<sup>a</sup> Source: The 2001 National Household Travel Survey, Preliminary Long Distance Trip File, U.S. Department of Transportation.

<sup>b</sup> SE denotes standard error.

4.2. How are they traveling on long-distance trips?

As with daily travel, a personal vehicle is the most popular mode of choice for long-distance travel. Nine out of 10 long-distance trips were taken in a personal vehicle, such as a car, pickup truck, or sport utility vehicle. This pattern holds true for both age groups (Table 16): young adults take 90% of their long-distance trips by personal vehicle; older travelers take approximately 89% of their long-distance trips by personal vehicle. While younger women take about the same percentage of their long-distance trips by personal vehicle as younger men do, there is a significant difference in the frequency with which older women travel by personal vehicle as compared to older men. Older men take about 92% of their trips by personal vehicle, where older women take 87% of their trips by personal vehicle.

Air travel was the second most used transportation mode for long-distance travel by younger adults. Overall, older adults tend to travel less frequently by air than younger adults (5% and 8%, respectively) and show an equal preference for travel by bus (5% vs. 4%). Gender within age group isn't a significant factor in air travel; men and women travel by air at similar rates within each age group.

Travel by bus was the third most popular mode choice overall for long-distance travel, accounting for about 2% of all long-distance trips (U.S. Department of Transportation, 2003). This ranking holds true for younger travelers (men and women) and older men, but not older women. Overall,

Table 18  
Long distance travel: Percent trips by destination<sup>a,b</sup>

Destination	Age: 19–64		Age: 65 +	
	Percent	SE	Percent	SE
Different region	12.9	0.42	13.2	0.96
Diff. state, diff. div., same region	7.7	0.32	7.1	0.57
Diff. state, same division	16.7	0.53	19.1	1.02
Same state	62.8	0.69	60.6	1.45
Total	100.0		100.0	

<sup>a</sup> Source: The 2001 National Household Travel Survey, Preliminary Long Distance Trip File, U.S. Department of Transportation.

<sup>b</sup> SE denotes standard error.

Table 19  
Average trip distance for trips taken by personal vehicle<sup>a,b</sup>

Trip characteristics	Age: 19–64			Age: 65+		
	Male	Female	All	Male	Female	All
All trips	308	328	316	376	364	370
Std. error	5.3	5.9	4.3	14.4	15.0	12.8
All non work-related trips	364	344	353	397	365	381
Std. error	6.1	5.9	4.9	16.1	15.5	14.1

<sup>a</sup> Source: The 2001 National Household Travel Survey, Preliminary Long Distance Trip File, U.S. Department of Transportation.

<sup>b</sup> Distance reported in miles.

older adults seem to take bus trips more frequently than younger adults (4% vs. 1%). Additional analysis by gender, however, reveals that while older men and older women take an equal percentage of their trips by air, older women show a significantly higher preference for bus travel than older men and their younger cohort. There is over a two-fold increase in percent trips taken by bus between older women and older men and a six-fold increase in percent trips taken by bus between older women and younger adults.

#### 4.3. Why are they traveling long distances?

Of all long-distance travel in 2001, over half of the trips were made primarily for pleasure purposes (Table 17). Pleasure trips consisted of vacations and sightseeing excursions, as well as trips taken for the purposes of rest and relaxation, visiting friends and family, and outdoor recreation. For older adults, traveling for pleasure accounted for almost 66% of their long-distance travel, as compared to 49% for adults younger than 65. The second most common reason for long-distance travel by older adults was for personal reasons or family business, such as shopping trips, medical visits, and providing rides for others. This purpose for travel accounted for a much larger percentage of trips among older adults as compared to younger adults (22% vs. 11%). The third most common reason for long-distance travel for older adults was for business purposes—that is, trips taken to attend conferences and meetings, or for any other business purpose excluding commuting to and from work.<sup>7</sup>

#### 4.4. Where do they travel

Overall, both age groups exhibit similar travel patterns with respect to trip destination for long-distance travel. Table 18 shows that travel within a state is the dominant type of travel for both age groups (i.e., most of their long-distance travel were trips within the traveler's state). More than 60% of long-distance travel by either age group is conducted within the same state. There are some differences

<sup>7</sup> Business trips also include those trips where business was cited as a primary purpose, but the traveler also included sightseeing, recreation, or other pleasure activities as part of the trip.

when comparing trip length. Although they take fewer long-distance trips than younger adults, older adults tend to take longer trips. Table 19 illustrates that the average roundtrip is 376 miles for older men (the highest among the four comparison groups) as compared to the 308 miles for younger men. Excluding work and business trips, men still travel longer distances than younger women; however, older women travel similar distances as men.

## 5. Conclusions

There are similarities in travel characteristics between younger and older adults, as well as some striking differences that warrant attention. Older Americans travel extensively, and they rely on personal vehicles as heavily as their younger counterparts. However, when compared to younger adults, they are less mobile. Older adults tend to take fewer trips, travel shorter distances, and have shorter travel times. This pattern is more pronounced among older women and among those with self-reported medical conditions that affect their ability to travel outside their home.

Older women consistently take the least number of trips per day, have the lowest driving rates, travel the shortest distances, and are more likely to report medical conditions that limit their travel. A national estimate of about 5.3 million women reported having difficulty traveling because of a medical condition and because of such condition: (a) about 4.5 million have reduced their day-to-day travel, (b) 2.5 million have limited their driving to daylight hours, and (c) about 2.1 million have given up driving altogether. The comparable figures for older men are significantly lower: (a) about 3 million older men reported having such a medical condition, (b) 2.4 million have reduced their day-to-day travel, (c) 1.4 million have limited their driving to daylight hours, and (d) slightly less than one million older men have given up driving.

For men and women who have to give up driving, alternative means of transportation become a necessity. Yet, use of alternative transportation is relatively low; excluding personal vehicle and walking, all other means of transportation account for about 2% of daily travel. Further, of those with medical conditions that affect their travel, only about 12% use special transportation services such as dial-a-ride.

## References

- Administration on Aging (1998). *Mobility and independence: Changes and challenges for older drivers*. Washington, DC: Author.
- U.S. Bureau of Census (2003). *Projections of the total resident population by 5-year age groups, and sex with special age categories: Middle series, 2001 to 2005* (Table NP-T3-B). Washington, DC: Department of Commerce.
- U.S. Department of Transportation, Bureau of Transportation Statistics (2003). *NHTS 2001 Highlights Report* (BTS03-05). Washington, DC: Author.

**Demetra V. Collia**, M.S., M.H.S. is a Mathematical Statistician in the Office of Advanced Studies at the Bureau of Transportation Statistics, U.S. Department of Transportation. Ms Collia's research interests are in the areas of transportation safety for special groups and injury epidemiology.

**Joy Sharp**, M.S. is a Statistician in the Office of Survey Programs at the Bureau of Transportation Statistics, U.S. Department of Transportation. Ms Sharp is the co-manager of the 2001 National Household Travel Survey. She has 15 years experience working on various health, housing, and income surveys in the private sector and the federal government.

**Lee Giesbrecht**, M.S., is a Statistician in the Office of Survey Programs at the Bureau of Transportation Statistics, U.S. Department of Transportation. Mr. Giesbrecht has 15 years of experience working on demographic surveys in both the private sector and federal government.