Aging Cars, Aging Drivers: Important Findings from the National Household Travel Survey

INTRODUCTION

Continuing a long-term trend seen since the first National Personal Travel Survey (NPTS) was conducted in 1969 (the National Personal Travel Survey/National Household Travel Survey data series), U.S. households today have fewer persons but more vehicles and more drivers, and they generate more miles than ever.

Overall, Americans spend more time traveling everyday, and they travel farther for each trip. The number of daily trips per person remained about the same in the 2001 as in 1995 (just more than four trips per person per day), but the average distance of daily trips increased. The data show that the average length of a vehicle trip increased from 8.8 miles in 1990 to 9.1 miles in 1995 to 9.8 miles in 2001.

Overall, people ages 16 and older are traveling for more than one and one-half hour (95 minutes) by all modes and for all reasons each day—about 10 minutes more per day than in 1995. For people who drove on the travel day, more than 81 minutes were spent behind the wheel in 2001, compared to 73 minutes in 1995.

In 2001, U.S. drivers were behind the wheel for nearly 14,000 miles per year, an increase of 60 percent since 1969. People ages 35 to 54 travel the most—the people most likely to be workers, drivers and householders.

MORE VEHICLES AND MORE MILES

The continuing increase in personal travel raises important and complex issues regarding air quality, global climate change and associated energy policies. The impact of transportation on the natural environment has been a topic of much public discussion and debate in recent years. The air quality issues associated with the use of private vehicles have been at the heart of the controversy.

The use of private vehicles has expanded over the last quarter-century, particularly for single-occupant trips. In addition, two trends may have an impact on safety, air pollution and energy consumption—the aging fleet and the substitution of vehicles classified as light-duty trucks (pick-up trucks, vans and sport/utility vehicles) for automobiles in household travel.

One of the most striking changes in the landscape of American travel over the last quarter-century has been the near doubling (181-percent increase) of household vehicles. The rate of increase in cars, vans and sport/utility vehicles for personal travel is six times the rate of population increase. In 1969, 72.5 million household vehicles served 197.2 million people. In 2001, 203.9 million household vehicles served 277.2 million people.

Much of this growth has been in households with multiple vehicles. Whereas the number of households with one car remained about the same over the last 30 years or so (30.3 million in 1969 and 33.7 million in 2001), the number of households with three or more vehicles increased nearly nine times (from 2.9 million in 1969 to 25.3 million in 2001).

In concert with the growth in vehicles is the growth in vehicle miles of travel. The average vehicle miles traveled per household grew from 12,400 miles per year in 1969 to 21,250 in 2001. Because vehicle travel by household members is spread over more vehicles, annual miles for each individual vehicle are declining slightly.

Households in the same income group that have a vehicle for each dri-
ver or more vehicles than drivers account for more trips and more miles of travel than households with fewer vehicles than drivers. However, in households with more vehicles than drivers, the annual mileage accumulation for each vehicle in the household is considerably less than those households with the same number of drivers but fewer vehicles. That is, within the same income group, the average miles per household vehicle are fewer when the vehicles in the household outnumber the drivers.

Overall, a vehicle in a household with fewer vehicles than drivers is driven 23 percent more miles than in a household where there are more vehicles than drivers (13,500 miles per year versus 11,000 miles per year).

Figure 1 shows the annual vehicle miles per driver for households with fewer vehicles than drivers, households with one vehicle per driver and households with more vehicles than drivers. Even within the same income class, people in households with more available vehicles than drivers travel substantially more miles per person than people in households with fewer vehicles than drivers.

Overall, individual drivers in high-income households ($100,000 or more in annual income) with more vehicles than drivers travel 47 percent more miles than people in households with fewer vehicles than drivers (see Figure 1)—an average of 18,500 annual miles per driver, versus just 12,600 for drivers in high-income households with fewer vehicles available.

AN AGING VEHICLE FLEET

Overall, the national survey shows that the vehicle fleet is aging. In 2001, the average household car was nearly 9 years old. The continued tendency to maintain older vehicles increases the time for market penetration by newer and cleaner cars. The average age of the vehicle fleet overall increased from 6.6 years in 1977 to 8.9 years in 2001 (see Table 1). Average ages for individual light truck classes (vans, sport/utility vehicles and pick-ups) were not available from earlier surveys.

The analysis of fleet composition and fleet age in conjunction with the demographics of the main driver of each household vehicle shows that older drivers may be driving older, less safety-equipped vehicles. The age of the vehicle may indicate the types of safety features available.

For example, automatic seatbelts were made standard equipment in 1988, but 26 percent of drivers over the age of 80 drive pre-1988 vehicles, compared to 16 percent of drivers under 60. In the 1990s, airbags were required as standard equipment and, in 1998, passenger-side airbags were made standard. According to the national data, 85 percent of drivers over the age of 80 drive pre-1998 vehicles. Women are more likely than men to keep older vehicles as they themselves become older or to drive newer vehicles when they are younger (see Figure 2).

Most of the vehicles driven by older drivers have at least one seatbelt available for use. Do older drivers use seatbelts? The 1995 NPTS posed a number of scenarios in which a seatbelt might not be used (when forgotten, when on a short trip, etc.). Older drivers were slightly more likely than drivers ages 15 to 65 to wear a seatbelt (see Figure 3). However, nearly one out of five older drivers sometimes did not wear a seatbelt. (The 2001 NHTS did not include this question.)

Older drivers are increasingly mobile, driving an average of 15.3 miles per day in 2001 compared to 12.7 miles daily in 1995. Most Americans also continue to drive as they age, with 75 percent of Americans ages 70 and older reporting that they still drove in 2001, up from 73 percent in 1995, according to the survey.

The aging of the population has profound implications for safety and travel. Most people retire in their own neighborhoods. Therefore, the majority of elderly people live in the suburbs and are more dependent on cars than previous generations. As driving skills decline with age, the vulnerability to injury in a collision increases.
OLDER DRIVERS AT RISK

Per mile driven, elderly drivers (those over 80 years old) are more likely to die in a crash than any other age group. Figure 4 shows highway fatalities per 100 million vehicle miles of travel by driver age. Calculating the crash rate by miles driven rather than by population or percent of licensed drivers puts accidents and fatalities into the context of the amount of driving done. Older drivers drive far fewer miles than younger drivers but, in a crash of the same severity, are more likely to be injured or to die because of their frailty.

Although many older drivers avoid peak-hour and night travel, improvements that help older drivers (those designed to reduce the consequences of driving mistakes, for example) would make roads safer for all drivers. Some suggested roadway improvements include wider lanes and shoulders, improved lighting, adding left-turn lanes at intersections and larger lettering on less complex signage.

The increase in older drivers killed in traffic accidents is occurring as older Americans form a greater portion of the overall population. The older segment of the population (those 65 and older) grew nearly twice as fast as the total population between 1990 and 2000, according to the U.S. Census Bureau. The number of older Americans only will increase as baby boomers start to turn 65 in 2011. Estimates show that one in five people will be 65 or older by 2030.

CONCLUSIONS

The data indicate tremendous growth in the number and percentage of households with more vehicles than drivers. The availability of extra vehicles is shown to add miles to the average household’s travel. In addition, Americans are keeping their cars longer and, as a result, the vehicle fleet is aging.

As all Americans have increased mobility, older people continue to drive well into their 70s and 80s. However, older drivers are more likely to be driving older cars than younger age groups, especially older men. Older drivers are at a greater risk of being involved in a fatal accident per mile driven than other age group.

Travel demand continues to grow at a time of little increase in road capacity. A key question for the future is the ability of intelligent transportation and telecommunication technologies and other demand management strategies to be the predominant factors of the next decade to preserve and enhance personal mobility and system performance. Safety concerns will be important because the driving public will include more and more older drivers.

The world is changing. Transportation researchers and policy-makers increasingly will be challenged to anticipate and meet public demands for efficient, equitable and safe transportation mobility and access. The ability to access good information about travel and the characteristics of the traveling public are key to understanding trends in travel behavior and anticipating future needs. The national travel survey is a source of critical information for transportation planners and policy-makers.
ABOUT THE NATIONAL PERSONAL TRAVEL SURVEY


Data from the survey are used to investigate topics in transportation safety; the mobility of various population groups; congestion; the relationship of personal travel to economic productivity; the impact of travel on the human and natural environment; and the use of each transportation mode by trip purpose, trip length and other characteristics.

NPTS is a significant resource for addressing issues arising in surface transportation reauthorization. The survey collects information on the full continuum of travel—from trips across the street to those across the country. Information on trip purpose; mode used; trip length; number on trip; time of day; day of week; and demographics such as income, race and gender are included in the national survey data.

In 2001, the national sample contained more than 26,000 U.S. households, with approximately 44,000 more households from states and metropolitan planning organizations participating in the "add-on" component.

States and metropolitan planning organizations have a unique opportunity to purchase samples in the next series, planned for 2008. These additional samples, along with the random national samples that fall in the local area, are processed and geocoded to provide a local travel dataset for application in local planning and travel demand forecasting.

The add-on program is like a turn-key project—FHWA staff centrally coordinate contracting, quality control, error-checking and compilation of the dataset. The high-quality data are low risk, SP&R and PL funds can be used and, traditionally, the federal match has been waived for this pooled fund project.

For more information on the survey methods and content, to access the online analysis tool and recent publications, or to find out more about the add-on program for the next survey, visit nhts.ornl.gov or contact Susan Liss at susan.liss@fhwa.dot.gov or 202-366-5060.