

Driving to Distractions, Recreational Trips in Private Vehicles

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ABSTRACT

An increasing amount of travel, both long and short distance trips, is made by private vehicles for recreation. Peak congestion around attractions and leisure spots can be worse than congestion in the city center at rush hour. Moreover, recreation travel within, to, and through metropolitan areas contributes to congestion problems, and points to the need for its incorporation into travel forecasting. The importance of leisure travel in State economies brings into question why this segment of travel is not more often studied. This paper uses the 1995 American Travel Survey and the 1995 Nationwide Personal Transportation Survey to examine the characteristics of recreational trips by private vehicle (PV). Recreational trips by other modes, such as transit and airplane are not included.

Data from the surveys show that PV-recreation trips make up about 14 percent of all local trips, 23 percent of all long distance, and about 15 percent of total vehicle miles traveled on America's roads. Recreation trips are not equally distributed among all groups of people, however. African Americans report about half the amount of recreation automobile trips and one-third the average miles as whites. Other differences by race/ethnicity indicate that Hispanic families tend to travel in larger groups when compared to African Americans or whites. Age, too, is a determining factor in the amount and type of recreational travel. Both the young and the old make more trips on a daily basis, but far fewer long-distance trips than those in the middle-age groups.

INTRODUCTION

A large and growing amount of automobile travel is for recreational purposes. Nearly 30 percent of long distance trips and nearly 20 percent of local trips by private vehicle in 1995 were for recreation (recreation and leisure are used interchangeably in this paper). The use of an automobile for recreational travel is affected by a number of factors. Local recreation trips often involve transporting a child or group of children, and may be made to places or at times not well served by other modes. For out of town trips, car vacations are a way to explore back-roads and new places, and to experience the great outdoors. The interstate highway system links the country with comfortable, fast facilities, and gasoline prices are low in the 1990s. Indeed, some travelers are not taking their cars on vacation for love, but for money. For families with children, the cost of air travel may be prohibitive. Moreover, car ownership is within the financial reach of all but the poorest families. The number of households without vehicles has fallen from 11.5 million in 1977 to 8 million in 1995 (1). Long distance travel by car also results from the fact that many people simply do not like to fly.

The impact on travel of such things as telecommuting, teleshopping, and telebanking remains unclear. Some researchers believe that computer technology and telecommunications will replace recreational trips, since interactive computer games and services and the vast array of television channels may encourage people to stay at home rather than recreate away from home. Historically, enhanced communication with distant people and information about distant places has generally led to more travel not less (2). A virtual tour of the Grand Canyon is likely to make someone more not less likely to visit this natural wonder. Furthermore, social, economic and demographic factors will undoubtedly increase highway travel for recreational purpose in the

future. As educated baby-boomers move toward their retirement years they will have more time for cross-country and foreign travel.

Understanding the characteristics of recreational travel and the variables which influence the choice of an automobile for recreational trips is useful in several areas, including understanding trade-offs for high speed rail demand modeling, and helping manage the seasonal congestion around attractions and recreational areas. Rodis, Richardson, and McPherson note that if planners are to respond to the growing environmental and social concerns about the impact vehicles have on our cities, we have to understand traffic flows across the entire road network (3). High levels of pollution are generally not attributed to just local traffic flows, but to the build-up of vehicles from all over the road system at a specific place and time. Previous research has included recreational trips as part of the >non-work= trips that are becoming a larger and larger share of total travel. Horowitz and Farmer (4) argue that since many state economies depend heavily on recreational activities, that recreational trips might be important enough to require a closer look than this trip type has received in the last three decades. Even with the increasing amounts of time and energy Americans, especially >baby boomers=, devote to recreation, recreational travel has not received its share of attention in planning.

Using the 1995 American Travel Survey (ATS) and the 1995 Nationwide Personal Transportation Survey (NPTS) this paper examines recreational trips taken by automobile and other types of private vehicles. Private vehicle (PV) recreational travel is examined by several different social and demographic variables including age, gender, and ethnic and racial composition of the traveler and the household. Data from the NPTS are from the travel day file, which includes trips of all lengths made by respondents on a single day, although about 95

percent of these trips are 30 miles or less. In this paper these trips are referred to as local travel. The American Travel Survey includes trips of 100 miles or more away from home and are referred to as long distance travel. Together these sources represent the best estimate of travel of all distances.

To make the trip purpose definitions more comparable, the NPTS trips used in this analysis include 'vacation' and 'other social/recreational' travel, excluding 'visiting friends and relatives.' We did not include 'going out to eat' as recreational travel, since there was no comparable purpose in the ATS. The ATS trips include 'sightseeing,' 'outdoor recreation,' 'rest or relaxation,' and 'entertainment' trips. Private vehicle in the NPTS comprises automobile, passenger van, sport-utility vehicle, pickup truck, other truck, recreational vehicle, motorcycle, and other personal vehicle. In the ATS private vehicle is made up of car, truck, or van, other truck, rental car, truck or van, motorcycle, and recreational vehicle. More details on the data used for this research are found at the end of this paper.

PRIVATE VEHICLE RECREATIONAL TRAVEL IN THE UNITED STATES

Recreation is the motivation for a large amount of local and long distance travel, and most recreation travel is accomplished by means of private vehicles (PV). Recreational trips make up about 17 percent of local trips by purpose, with about 85 percent of such trips made by PV. In total, then, about 14 percent of all local trips are PV-recreation. An average household in the U.S. generates almost 4.5 local PV-recreation trips per week. These trips include cultural and hobby activities, such as attending movies and concerts, sports events, and weekend outings.

PV-recreation trips are a bigger share of long distance trips. About 29 percent of long

distance trips by purpose in 1995 were for recreation, and 81 percent of recreation trips were taken by personal vehicle. Hence, nearly one quarter (23 percent) of all long distance trips were private vehicle trips for recreational purposes, second only to visiting friends and relatives as the most important purpose-mode combination. The largest number of PV-recreation trips were for rest or relaxation (41 percent), followed by outdoor recreation, skiing, fishing, and the like (25 percent), entertainment (19 percent), and sightseeing (14 percent). Local PV-recreation trips contributed about 277 billion vehicle miles traveled (VMT) and long distance trips another 85 billion VMT. Together local and long distance PV-recreation trips contributed about 15 percent of all vehicle miles traveled in 1995.

Since 1977 the number of long distance PV-recreation trips has doubled. PV-recreation trips grew the most of any purpose-mode combination in absolute terms, with 123 million more trips in 1995 than in 1977. Local household trips for recreation by private vehicle increased by 33 percent and local miles increased 45 percent over this period.

But just looking at the total amount of travel does not tell us the whole story. The desire and ability of people to travel for recreation by private vehicle varies quite dramatically across different groups of the population. The differences point to a mix of cultural preferences, inequalities in access to recreational resources and mobility, and ultimately to implications for future demand. The factors considered in this analysis include household income and education, race and ethnicity, age, and travel party size.

Income and Education

Trip making in general increases with increasing income and education and that is true

for recreational trips as well. Both the number of trips and miles traveled increase with higher income and education. Data from NPTS on trips per capita by income show the highest income groups taking nearly twice the number of trips as the lowest and traveling twice the miles (see Table 1). People in households earning \$75,000 or more made about 1.7 long distance PV-recreation trips each, more than 4 times the number made by people in households earning less than \$25,000 (0.4 trips per capita). However, people in low-income households are more dependent on private vehicles to make long distance recreational trips than people in high income households, and the gap widens as trip length increases (Figure 1). For people in households with an annual income over \$100,000 flying becomes a significant option for trips of 400 to 500 miles away from home. About 30 percent of all PV and air trips for recreation are taken by air at this distance. For households with income less than \$25,000, this 30 percent threshold is not approached until trips of 800 or 900 miles one-way. Table 2 shows the relationship between education level and local and long distance PV-recreation trip making.

TABLE 1 Private Vehicle Travel for Recreation Per Capita by Income, 1995

Household income	Local trips per day	Local miles per day	Long distance trips per year
Less than \$25,000	0.4	5	0.4
\$25,000-\$49,999	0.6	7	0.9
\$50,000-\$74,999	0.7	8	1.3
\$75,000 or more	0.8	10	1.7

SOURCE: U.S. Department of Transportation, Federal Highway Administration, Nationwide Personal Transportation Survey, 1995; U.S. Department of Transportation, Bureau of Transportation Statistics, American Travel Survey, 1995.

FIGURE 1 Private Vehicle Share of Total Private Vehicle/Airplane Recreation Long Distance Trips by Roundtrip Distance and Income, 1995

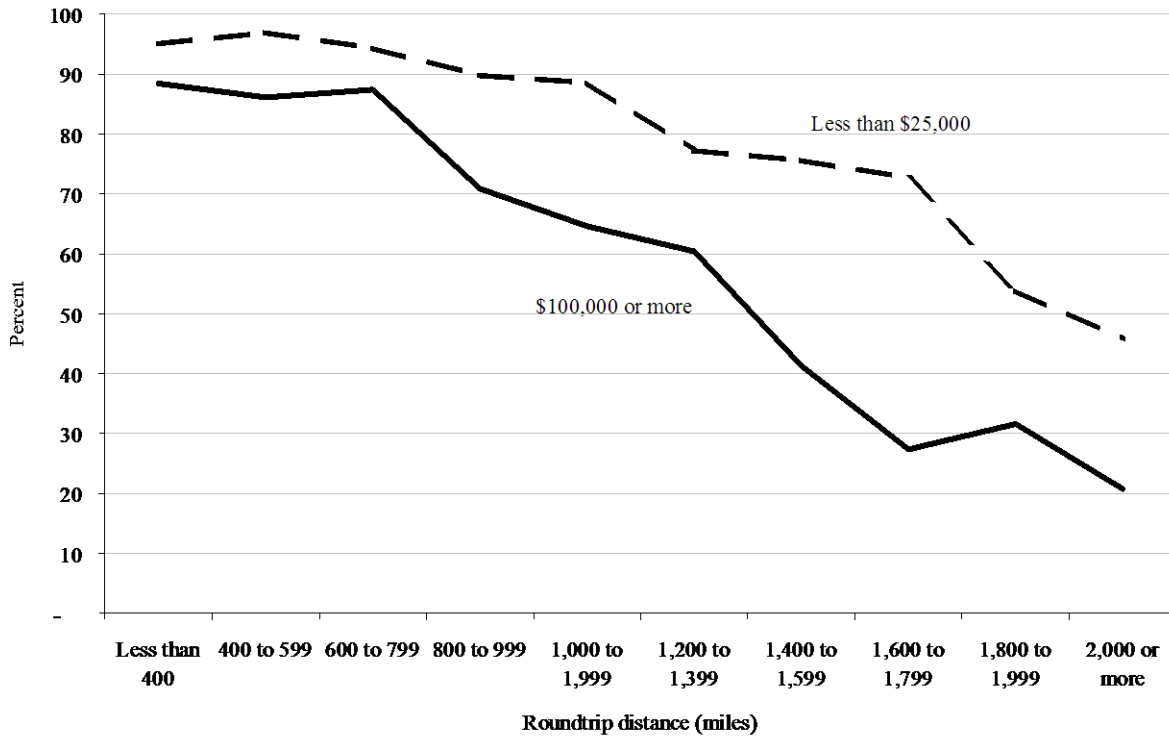


TABLE 2 Private Vehicle Recreational Travel by Education, 1995

Education	Trips		Miles	
	Local per day	Long distance per year	Local per day	Long distance per year
High school or less	0.5	0.7	6.0	n/a
Some college or college graduate	0.7	1.3	7.1	n/a
Some graduate school or more	0.8	1.7	8.7	n/a

n/a: not available

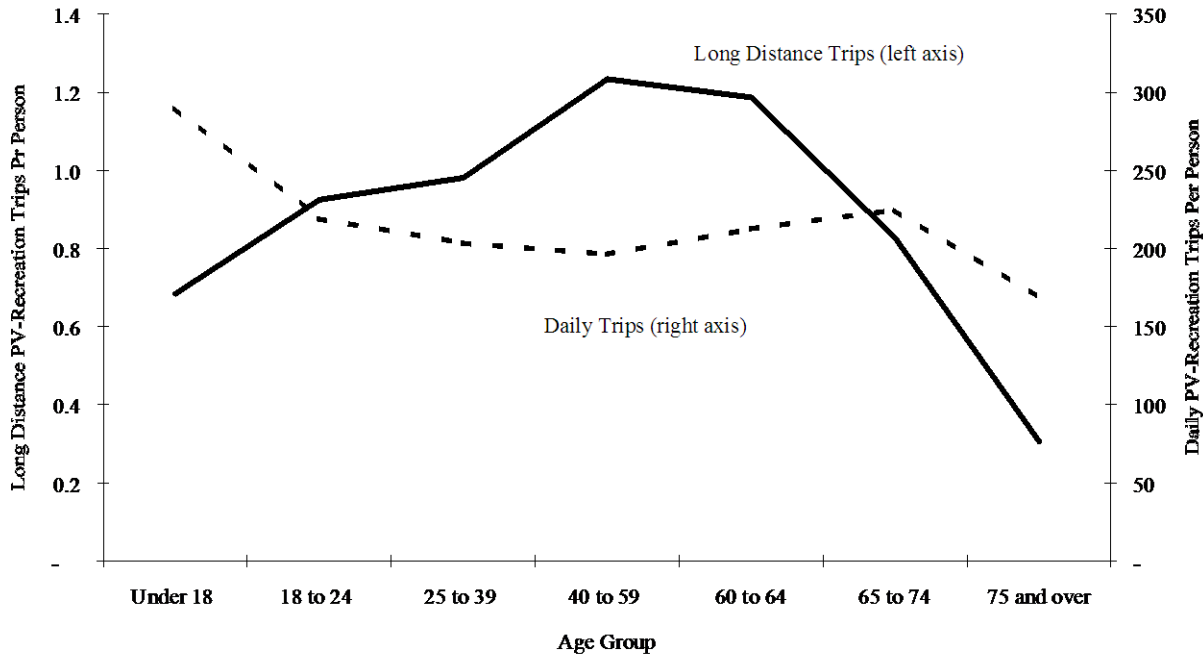
SOURCE: U.S. Department of Transportation, Federal Highway Administration, Nationwide Personal Transportation Survey, 1995; U.S. Department of Transportation, Bureau of Transportation Statistics, American Travel Survey, 1995.

Age

Age, too, is a determining factor in the amount and type of recreational travel. Both the young and the old make more trips locally, but fewer long-distance trips than those in the middle-ages groups (see Figure 2). With local recreation travel children under 18 are driving or being driven to 30 percent more destinations than the next most active group -- their grandparents (travelers over 65). Children account for 290 trips per year, or a recreational trip made every four out of five days. The opposite is true in terms of miles, these two age groups make shorter trips than the middle-aged groups. The longest trips are being made by the 60 to 64 year olds, followed by the 40 to 59 age group with 13.7 and 12.5 average miles per trip respectively.

The situation is reversed for long distance travel (Figure 2). PV-recreation trips per capita increase with age, peaking with those in their mid-40s to mid-50s, who took about 1.3 trips annually. People over 75 took the least trips. There appears to be no increase of PV-recreation travel when people reached 65, the traditional retirement age, although driving for leisure trips remains at a relatively high level until people reach 70. People between 65 and 69 made about 0.9 trips per person on average per year. Nevertheless, the doubling of PV-recreation trips between 1977 and 1995 has resulted to a large extent from the growth in leisure travel by people over the age of 45, including those 65 and older (5).

FIGURE 2 Daily and Long Distance Private Vehicle-Recreation Trips Per Person by Age, 1995



SOURCE: U.S. Department of Transportation, Federal Highway Administration, Nationwide Personal Transportation Survey, 1995; U.S. Department of Transportation, Bureau of Transportation Statistics, American Travel Survey, 1995.

Race/Ethnicity

Racial and ethnic minorities are considerably less mobile than whites in terms of PV-recreation trips. Recreational travel is to some extent like discretionary expenditure, it is only enjoyed after required travel is accomplished. Thus, non-Hispanic whites travel more than African-Americans and Hispanics for recreation because of higher income. One of the starkest findings of this research is the vast gap in the number of PV-recreation trips and miles traveled between the non-Hispanic white majority and African Americans and Hispanic minorities in the same income groups (see Table 3). Low income African Americans made half the number of local recreation trips as their low-income non-Hispanic white counterparts. The disparity between Hispanics and non-Hispanic whites is somewhat less, with Hispanics making about 70

percent of the trips that whites make in the lowest income category. Average trip length is less consistent, however, when comparing between groups in the same income class.

TABLE 3 Private Vehicle Travel for Recreation by Race and Income, 1995

Household Income	Race/ethnicity	Local trips per person per week	Local average trip length	Local miles per person per week	Long distance trips per person per year
Less than \$25,000	White	3.7	10.9	40.6	0.5
	African-American	1.8	7.8	13.8	0.1
	Hispanic	2.5	12.6	31.1	0.2
\$25,000 to \$49,999	White	4.7	11.4	53.5	1.0
	African-American	3.0	12.3	36.3	0.6
	Hispanic	4.1	12.1	49.9	0.5
\$50,000 to \$74,999	White	5.3	11.9	63.5	1.4
	African-American	2.6	8.8	22.7	0.4
	Hispanic	5.0	10.1	50.2	0.7
\$75,000 or more	White	6.0	13.0	78.3	1.9
	African-American	3.4	16.0	54.8	1.0
	Hispanic	4.3	12.1	52.6	1.1

SOURCE: U.S. Department of Transportation, Federal Highway Administration, Nationwide Personal Transportation Survey, 1995; U.S. Department of Transportation, Bureau of Transportation Statistics, American Travel Survey, 1995.

The disparities are even greater when we look at long distance travel. Low income African Americans made a quarter of the long distance PV-recreation trips as non-Hispanic whites in the same income category. Hispanics made about 40 percent the number of long distance trips as non-Hispanic whites. Not only do they make the most PV-recreation trips, but non-Hispanic whites along with Hispanics are the most dependent on personal vehicles to make their leisure trips. Indeed, both groups made about 8 out of 10 leisure trips by PV. African Americans made only about 3 out 4 leisure trips by PV, with a much greater proportion by

intercity bus than whites.

Hispanics, African Americans and non-Hispanic whites had the same share of overnight stays on PV-recreation trips in 1995 (about 80 percent). When they travel long distance for recreation by private vehicle African Americans were more likely than either Hispanics or non-Hispanic whites to stay with friends and relatives. African Americans stayed with friends and relatives on a quarter of all PV-recreation trips, twice the share of the other two groups. African Americans are also more likely to stay in a hotel or motel than non-Hispanic whites, 40 percent of the time compared with 34 percent, but less than Hispanics who stayed in a hotel or motel on nearly half of all PV-recreation trips. Non-Hispanic whites are more likely to stay in an owned cabin, condominium, or resort accommodation (12 percent of trips) compared with 5 and 2 percent for Hispanics and African Americans respectively.

Average Party Size

Average travel party size for recreation trips is higher than for other purposes, part of the fun is sharing the trip with other people. The average vehicle occupancy on local travel overall is 1.6, whereas on local recreation trips occupancy is about 2.2. Similarly with long distance travel party size is larger with leisure travel -- about 3.9 compared with the total average of 2.7. Only a quarter of PV-recreation long distance trips were taken alone compared with 68 percent of PV-business trips. Indeed, most PV-recreation long distance trips were taken by two adults together (32 percent) or by two adults and at least one child (28 percent).

There also appear to be cultural differences with party size. Hispanics travel in larger parties when traveling long distance compared with non-Hispanic whites and non-Hispanic

Blacks. Average party size on long distance trips in 1995 was 4.2 for Hispanics and about 3.5 for both blacks and whites (see Table 4). Hispanics of any race also report traveling in larger parties on local travel -- nearly 20 percent of local PV-recreation trips have five or more people together. In contrast, non-Hispanic whites are more likely to travel alone on local trips, almost a quarter of recreational trips made by whites are single-occupant trips. Nevertheless, 66 percent of local trips by non-Hispanic whites have two to four people on the trip, similar to the 66 percent of trips reported by African-American respondents. Hispanics also average more person miles of travel on recreational trips.

TABLE 4 Travel Party Size for Local and Long Distance PV-Recreation Trips, 1995

Race/Ethnicity	Local mean travel party size	Number of household members	Long distance mean travel party size
Total	2.57	2.07	3.9
White	2.54	2.06	3.5
African-American	2.61	1.96	3.6
Hispanic	2.99	2.41	4.2

SOURCE: U.S. Department of Transportation, Federal Highway Administration, Nationwide Personal Transportation Survey, 1995; U.S. Department of Transportation, Bureau of Transportation Statistics, American Travel Survey, 1995.

CONCLUSION

In this paper we have analyzed a wide-ranging set of trips -- recreational trips can be to the local soccer field or to a mountain ski resort, from a weekend jaunt with the family to an adventure of a lifetime. Leisure trips account for a quarter of long-distance travel and nearly one out of five local trips; in both cases surpassing the proportion of trips for business/commuting.

Trips in private vehicles are an important segment of this travel, necessitating a better understanding of travel to and around large attractions such as beaches, historic sites, and national parks. The data here show that there are significant differences in PV-recreation travel along the lines of age, race, and income.

As expected income and education are important drivers of recreational travel. As income rises people have more money to spend on recreational pursuits and the means of accessing them in terms of vehicles availability, air fare, etc. We obviously should expect, therefore, that if income rises in the future that PV-recreation trips will rise with it.

Income inequality explains to some degree differences between different racial and ethnic groups. African-Americans and Hispanics travel less than non-Hispanic whites partly because of lower income, and the related factor of lower vehicle ownership. When controlling for income, however, differences among different racial and ethnic groups still remain, suggesting that there are other factors at work.

It is possible minority groups travel less for recreation because many attractions do not cater to their cultural tastes, or possibly because traveling represents a more challenging and uncomfortable experience. It may be that as income and auto-ownership rates equalize between minorities and the white majority and as attractions become more diverse and welcoming to diverse visitors, the rate at which African-American and Hispanic families travel for recreation will increase. Certainly this represents a large potential future market.

Age is another important factor. For local recreation, children and those aged 60 to 64 years make the most trips, but middle-aged travelers drive farther. People in their middle ages also travel long distance the most for recreation. This raises the question will baby-boomers as

they age be looking for distractions closer to home or will they continue traveling longer distances for recreation into their golden years? The effects of the changes in our demographic make-up on recreational travel may already be seen in the higher travel rates of those people in their early sixties. As workers retire earlier, still active and interested in adventure, recreational travel in the 60-69 age group may increase.

On-line substitution may affect work travel, and even trips for shopping, but travel for recreation is aided by the Internet. Resort timeshares and cabins in the woods are advertised on-line with pictures and the ability to reserve a weekend getaway at bargain rates. Anecdotal evidence suggests that weekends away are becoming more popular for the over-35 set as career pressures make two weeks away from work seem like more trouble than it is worth. Time-use survey respondents report that they would rather have an increase in 3-day weekends (6). Local recreational trips may also be inspired by Internet-sites such as sidewalk.com that list local happenings.

Recreational travel is likely to be a significant part of travel growth in the coming years as a result of social, demographic, and technological change. And then, like now, a large part of that travel will be done in cars and other types of private vehicles. Consequently, trends in recreational travel bear watching as do the factors, especially social and cultural factors, that motivate people to travel across town or across country for such purposes.

ABOUT THE SURVEY DATA USED IN THIS RESEARCH

The Nationwide Personal Transportation Survey (NPTS) is a survey of typical daily travel performed by people in households all over the United States. The travel survey is conducted

every five to seven years by the United States Department of Transportation and collects information about trips by all modes of transportation. It is the only authoritative source of national data on the amount and nature of daily personal travel, and the only source that allows us to assess how travel has changed in the nation as a whole. The 1995 survey is the fifth in a series that began in 1969, and was continued in 1977, 1983, and 1990 (7). Trips in the NPTS Travel Day file are one-way segments of travel. Each stop made for a distinct purpose ends a trip, and >to home= was coded as a separate purpose. The 1995 trips were also post-coded into round trips for comparison with the 1990 NPTS -- the 'main' purpose of the trip became the to- and from- purpose. This is the trip definition used in this analysis.

The 1995 American Travel Survey (ATS) was conducted for the Bureau of Transportation Statistics by the U.S. Bureau of the Census. The precursor to the ATS was the 1977 National Travel Survey conducted as a component of the Census of Transportation. The American Travel Survey contains information on the origin, destination, volume, and characteristics of long distance trips (where the destination is 100 miles away from home or more) made by residents of the United States. The data provide insight into Americans long-distance transportation choices, including foreign and domestic travel. The information in this report uses person trip which is a roundtrip taken by an individual. The ATS also includes information on household trips which is a round trip on which one or members of the household traveled together. If three people from the same household traveled together, they would have taken one (household) trip and three person trips. If one individual took three different trips during the year, he or she would have taken three (household) trips and three person trips. A leg of a journey to- or from- a destination may be less than 100 miles. The round trips can be split

into two one-way trips (O-D, D-O) for one-way trip analysis.

Using these two data sources together to say something about the whole of personal travel is fraught with difficulties. Although the target populations are the same, ATS used an address-based sample frame and therefore represents more low-income households in the data set. The ATS imputed missing income information, and the NPTS did not. The analysis here uses >vehicle trips= as the mode under study. The NPTS defines a vehicle trip as a trip in a private vehicle for which the primary driver for the trip is a member of the sampled household. The ATS did not identify the primary driver for the long-distance vehicle trips. For analysis involving vehicle trips we must assume that all household trips made in a private vehicle qualify (8).

REFERENCES

1. U.S. Department of Transportation, Federal Highway Administration. *Our Nation=s Travel: 1995 NPTS Early Results Report*. Washington, DC, 1997.
2. U.S. Department of Transportation, Bureau of Transportation Statistics. Mobility and Access in the Information Age. In *Transportation Statistics Annual Report 1997*. Washington, DC, 1997.
3. Roddis, S.M., A.J. Richardson, and C.D. McPherson. Obtaining Travel Intensity Profiles from Household Travel Survey Data. Paper presented at the 77th Annual Meeting of the Transportation Research Board, 1998. Preprint CD-ROM.
4. Horowitz, A.J. and D. Farmer. A Critical Review of Statewide Travel Forecasting Practice. Paper presented at the 78th Annual Meeting of the Transportation Research Board. 1999 Preprint CD-ROM. p. 5.
5. U.S. Department of Transportation, Bureau of Transportation Statistics. Long Distance Travel in the United States. In *Transportation Statistics Annual Report 1998*. Washington, DC, 1998.
6. Robinson, J.P. and G. Godbey. *Time for Life: The Surprising Ways Americans Use Their Time*. Philadelphia, Pennsylvania University Press, 1997.
7. Hu, P. and J. Young. Using the NPTS and the ATS Together: A Case Study. Oak Ridge National Laboratory, TN, 1999.
8. U.S. Department of Transportation, Federal Highway Administration. Personal Travel The Long and Short of It--Issues Involved in Analysis Using the NPTS and the ATS. Office of Highway Information, Washington, DC, 1998.