



## **Our Nation's Travel 1995 NPTS Early Results Report**

### **CONTENTS**

|  |    |
|--|----|
| Introduction .....                           | 2  |
| Changes in the Population and Vehicles ..... | 3  |
| Household Vehicles and Their Use .....       | 6  |
| Personal Travel .....                        | 9  |
| Warning on Travel Data .....                 | 10 |
| Why We Travel - Trip Purpose .....           | 11 |
| How We Travel - Means of Transport .....     | 17 |
| Vehicle Trips .....                          | 22 |
| Vehicle Occupancy .....                      | 24 |
| Travel by:     Elderly .....                 | 26 |
| African-Americans .....                      | 27 |
| Hispanics .....                              | 28 |
| Children .....                               | 29 |
| Policy Implications .....                    | 30 |
| Terms Used in this Publication .....         | 35 |

**Source of data:** All of the data presented in this report is from the Nationwide Personal Transportation Survey (NPTS) series, unless otherwise indicated.

## INTRODUCTION

America remains the land of opportunity. An essential element of opportunity is mobility and access. . .to jobs, services, goods, recreation, and entertainment. The growth in opportunities has caused changes in travel patterns. And, more than the growth of opportunities is at work here. Technological advances, changing roles of men and women in society, increases in the elderly population, and our increased knowledge of human behavior have significantly impacted our lives in the last quarter of the 20th century. Our travel behavior also reflects many of these changes in our society. The Nationwide Personal Transportation Survey (NPTS) provides the data needed to quantify and analyze current travel and to study travel in the context of the demographics of the traveler and the travel choices available.

NPTS is the nation's inventory of daily passenger travel. It is the only authoritative source of national data on the amount and nature of daily personal travel in the U.S. and how travel has changed over time. The NPTS collects information on:

- all trips
- by all modes
- for all purposes
- in urban and rural areas

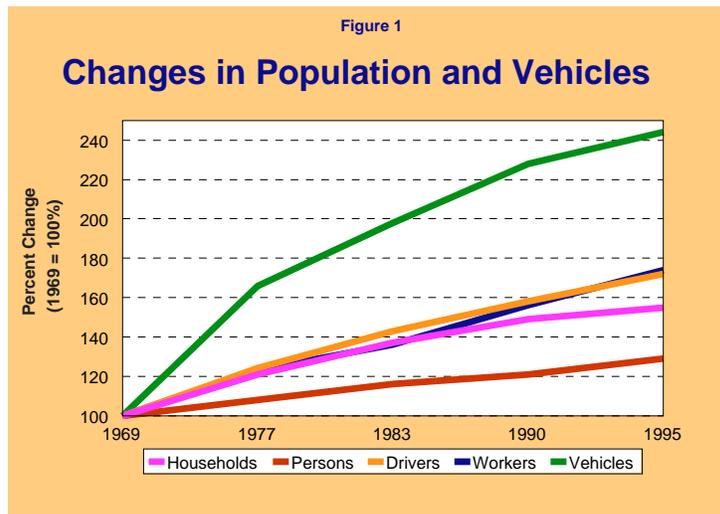
The Survey was collected from a sample of U.S. households. These data are expanded to provide annual, national estimates of trips and miles by travel mode, purpose, time of day, day of week, and a host of other characteristics that are used by transportation planners and others concerned with the mobility of the American public and the human, economic and environmental impacts of transportation. The 1995 survey is the fifth in a series that began in 1969, and was continued in 1977, 1983 and 1990.

## CHANGES IN POPULATION AND VEHICLES

- ▶ The rate of increase in drivers and workers is more than three times that of population growth.
- ▶ The rate of increase in household vehicles is six times the rate of the population increase.

Over the past twenty six years (1969-1995) there were relatively modest increases in the population (23 percent). The increases in households (58 percent), workers (74 percent), and drivers (72 percent) are much larger and striking in their similarity, but these data make sense in terms of the decrease in household size over this period. These new, smaller households will most likely have a person who is a worker and a driver.

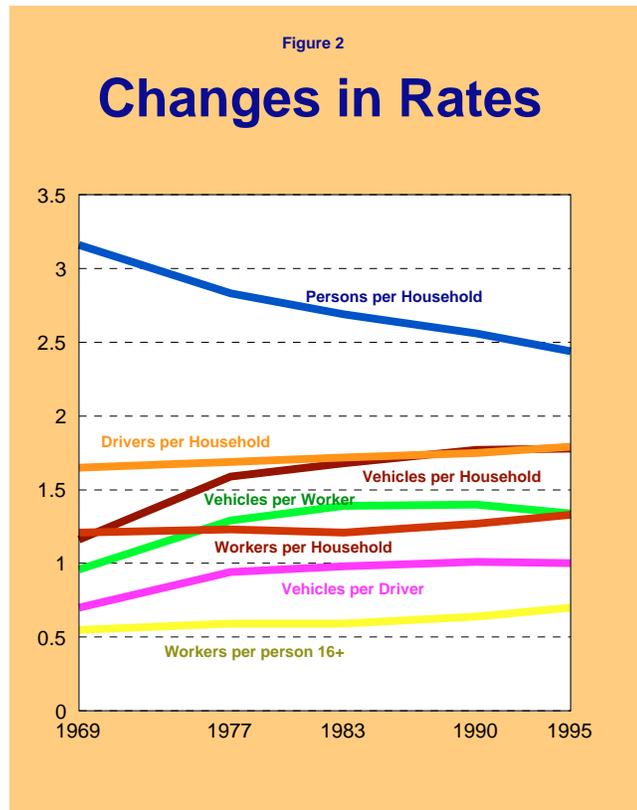
The most striking change in the data is the 143 percent increase in household vehicles since 1969. We went from a society of one car per household in 1969 to a society of close to two cars per household in 1995, in a time that household size declined by 17 percent. The dramatic growth in household vehicle ownership occurred between 1969 and 1977, with steady increases since then.



Recent data show that the trend in increases in vehicles per household, vehicles per worker and vehicles per driver are starting to stabilize.

► **Early signs of saturation in vehicle ownership**

Despite the significant growth in household vehicles over time, the data from the 1995 survey indicate that household vehicle ownership is beginning to stabilize. This is shown in the rates of vehicles per household, vehicles per driver and vehicles per worker. Note that workers per household and workers per person 16+ show modest increases since 1990.



▶ **Almost 60 percent of women are in the workforce**

The changing roles of women in our society between 1969 and 1995 are very evident. Women workers as a percent of women 16 or older grew from 37 percent to 59 percent. The corresponding increase for men was from 72 percent to 74 percent, however men 16 and older had been at near-saturation levels in employment throughout this time, with the exception of low-income, immigrant and African-American men.

Driver status for persons 16 years of age and older also shows considerable growth. Female drivers grew from 61 percent in 1969 to 85 percent in 1995. Male drivers started at 87 percent in 1969 and grew to 93 percent in 1995. As with male workers, it appears that the incidence of male drivers has reached saturation.



## HOUSEHOLD VEHICLES AND THEIR USE

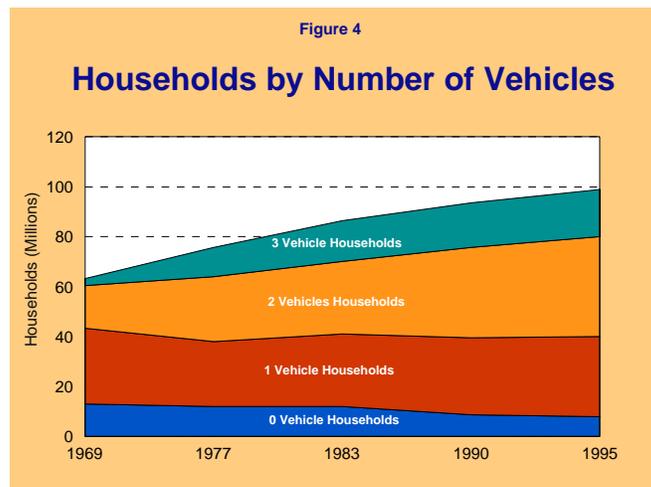
### ► Eight million U. S. households still have no vehicle

The number of households without a vehicle has decreased from almost thirteen million to eight million over the 26-year period from 1969 to 1995. The eight million households without vehicles in 1995 are predominantly in the lowest income categories, and the common perception is that the gap in economic status between them and households with vehicles is continuing to grow.

The number of one-vehicle households has remained almost stable over time, at approximately 30 million. But, in 1969, one-vehicle households represented 48 percent of all households. By 1995, this proportion had dropped to 32 percent of all households.

The most startling change in vehicle ownership has been in the number of households with three or more vehicles, which has grown from 3 million households in 1969 to 19 million in 1995, a six-fold increase.

The number of two-vehicle households has grown from 17 million in 1969 to 40 million in 1995. Forty percent of all U.S. households in 1995 were two-vehicle households.

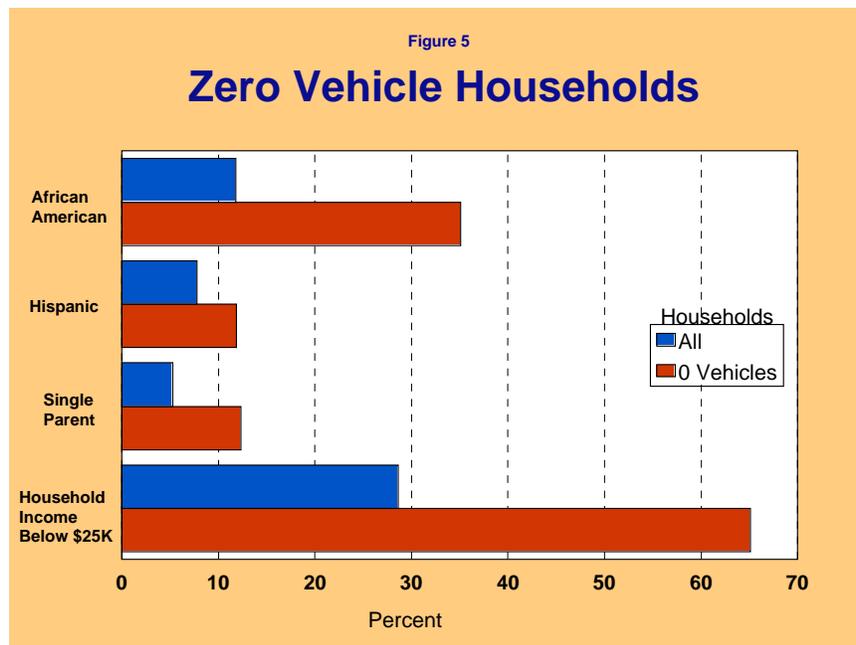


▶ **African-American households have the highest relative incidence of zero-vehicles**

African-Americans comprise 11.8 percent of all households, but account for 35.1 percent of households without a vehicle. No other group exhibits this three to one ratio of households without a vehicle as compared to percent of all households.

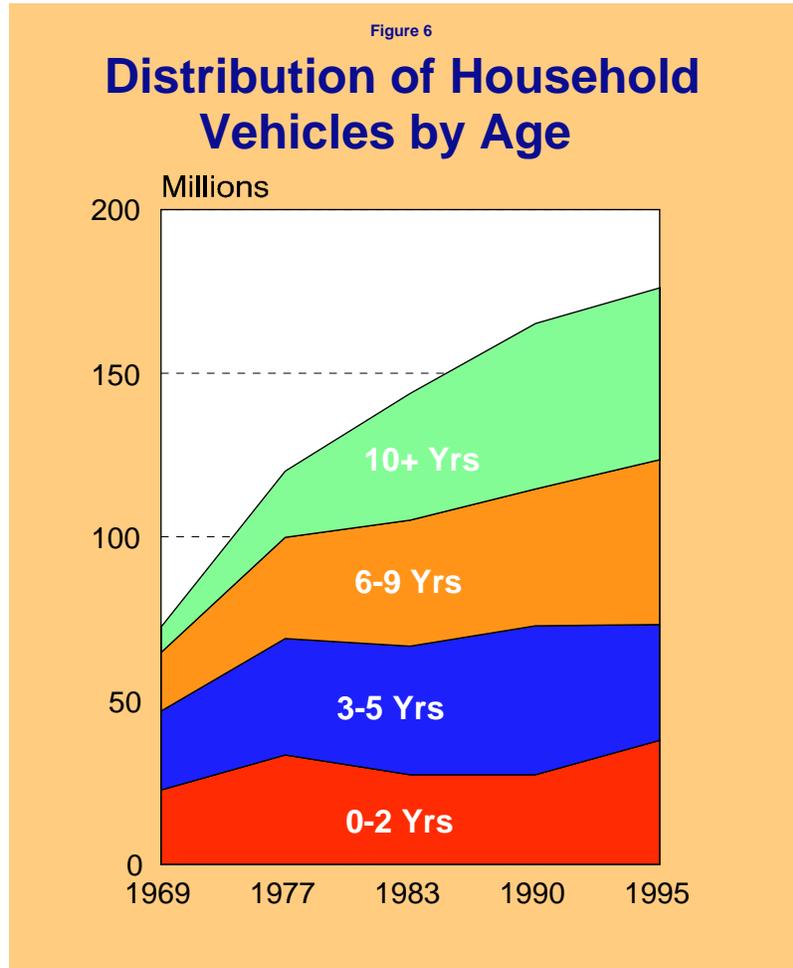
In examining vehicle ownership by household income, it is no surprise that the 29 percent of households in the lowest income tier account for 65 percent of households without vehicles.

Single parent households also show a disproportionately high rate of households without vehicles, 12 percent, compared to their incidence in the population, 5 percent.



► **A reversal of long standing trend toward older vehicles**

There is a slight reversal in the long-standing trend of increases in the ownership of older vehicles. Between 1990 and 1995, the number of household vehicles two years old or younger grew by 10 million, while the number 3-5 years old dropped by 10 million. This shift in the age pattern of the household vehicle fleet may be due to the popularity of vehicle leasing, which appears to have peaked in the early 1990's.



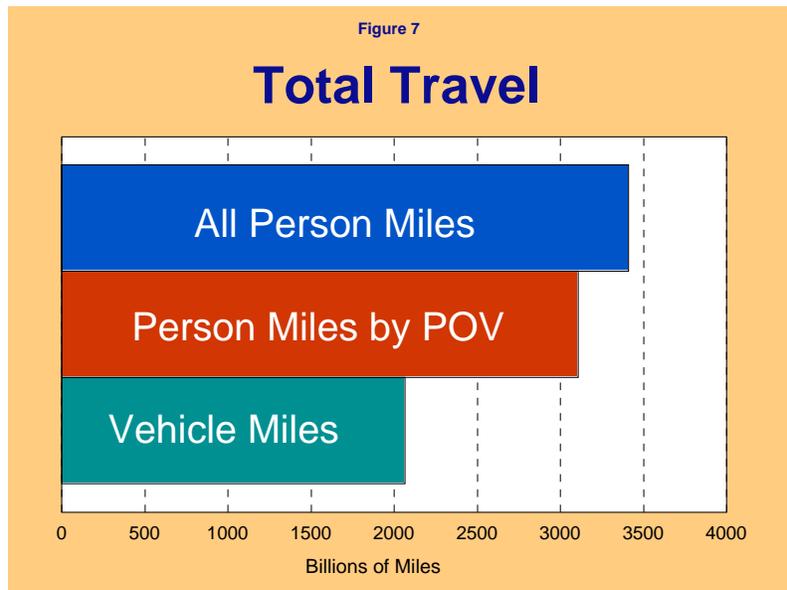
## PERSONAL TRAVEL

Travel may be expressed in several different ways. This report will use the concepts of:

person trips,  
person miles of travel (PMT),  
vehicle trips, and  
vehicle miles of travel (VMT),

as defined at the end of the report.

To set total travel in a context, the chart provides a comparison of person miles, person miles by private vehicle (POV), and vehicle miles of travel.



## WARNING ON TRAVEL DATA

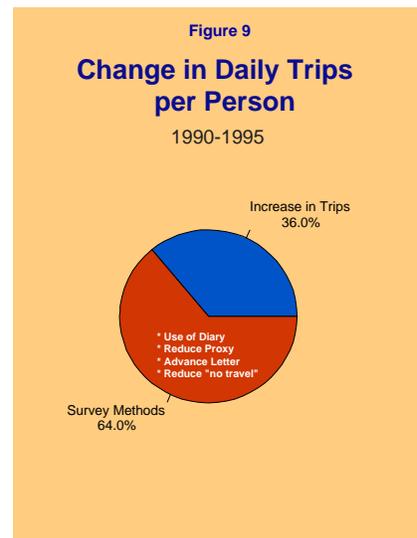
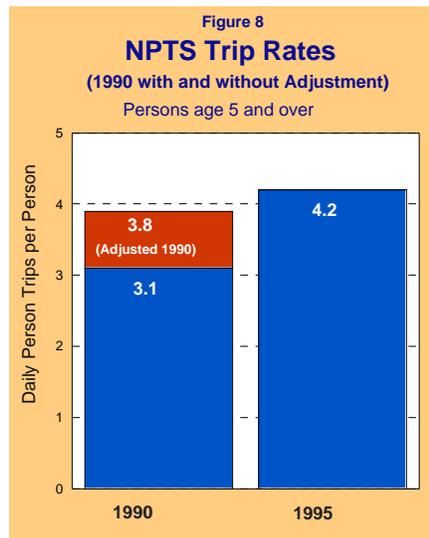
It is important that the NPTS data user not attempt to directly compare the data on daily travel from the 1995 survey with the 1990 or any of the earlier NPTSs. A number of changes were made in the 1995 survey that have made this fifth NPTS in the series the most realistic reflection of personal travel data. However, these changes also mean that **the 1995 data on daily travel are not directly comparable to the 1990 or earlier NPTSs.**

When the 1995 NPTS data are directly compared with the 1990 data, the following is shown:

- 4.2 - 1995 daily person trips/person
- 3.1 - 1990 daily person trips/person
- 1.1 - calculated "increase" in person trips/person

From preliminary analysis of the data, it appears that, when the 1990 data are adjusted to make up for differences in survey methods, the following rates are shown:

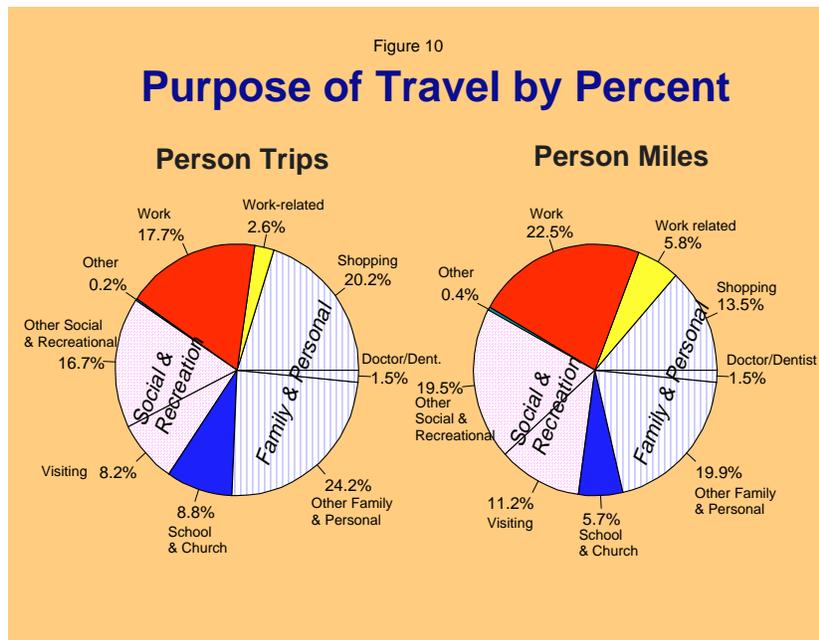
- 4.2 - 1995 daily person trips per person
- 3.8 - 1990 adjusted person trips per person
- 0.4 - true increase in person trips per person.



## WHY WE TRAVEL -- TRIP PURPOSE

- **Family and personal business dominates personal travel, followed by social & recreational travel, with the commute to work as the third most frequent purpose**

Because much of our travel is accomplished in trip chains, it is often difficult to sort out the reasons for our daily travel without a quantitative tool like a household travel survey. The most prevalent reason for travel is family and personal business, which includes shopping, running errands, and dropping off and picking up others. Close to one of every two trips and slightly more than one out of every three person miles are traveled for family and personal business. The next most common reason is social and recreational activities, which accounts for one out of every four trips and just under one out of every three miles. Travel to and from work is the third most frequent trip purpose, accounting for one out of every six trips and more than one out of every five miles traveled.



► **Commuting to work accounts for about one-fifth of person trips and person miles**

Commuting accounts for only 18 percent of person trips and 22 percent of person miles. However, when the topic of personal travel is discussed, it is often in terms of the commute to work. There are several reasons for this deserved emphasis on travel to work:

- employed adults travel about 6600 more miles per year than those without jobs
- the temporal and geographic concentration of work trips place the largest strain on all transportation systems, and
- for the individual worker, the trip to work often dictates when, where and how his/her other travel is accomplished.

► **Commute speeds increased by more than 20 percent over the past 12 years**

While the average commute to work has increased in length, the travel time to work has not shown corresponding increases. Between 1983 and 1995, commuting trips grew 37 percent longer in miles, while the travel time increased only 14 percent.<sup>1</sup> The speed of the average commute, including trips by all modes, went from 28 to 34 miles per hour. This trend seems to fly in the face of the reality of congested roads. There are three reasons most often cited for the increase in speed of travel time to work:

- the continued decentralization of metropolitan areas
- the expansion of the peak period, because of greater flexibility in hours of work, and
- the switch from carpool and transit to single occupant vehicle trips, which are usually more time-efficient for the individual worker, even though they may be less efficient for the overall transportation systems.

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<sup>1</sup>This is an exception to the general rule of not directly comparing 1995 data with earlier NPTSs. Work trip characteristics have not been impacted by the survey changes.

All three factors would contribute to workers being able to commute at higher speeds. The growth in the outer rim of suburbs in large metro areas may reflect the fact that people can now have a longer commute in miles with only a modest increase in travel time, at least for the short term.

Figure 11

## Commute Profile

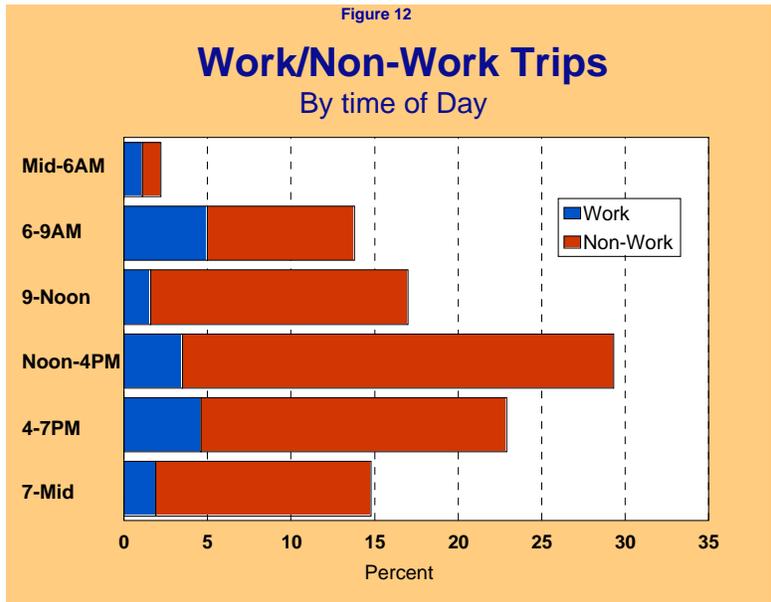


|                                    | 1983 | 1990 | 1995 | '83 - '95<br>% Change |
|------------------------------------|------|------|------|-----------------------|
| Average Work Trip Length (Miles)   | 8.5  | 10.6 | 11.6 | 36.5                  |
| Average Work Travel Time (Minutes) | 18.2 | 19.7 | 20.7 | 13.7                  |
| Average Work Trip Speed (MPH)      | 28   | 32.3 | 33.6 | 20                    |

**- Commute trips are in the minority, even during rush hour**

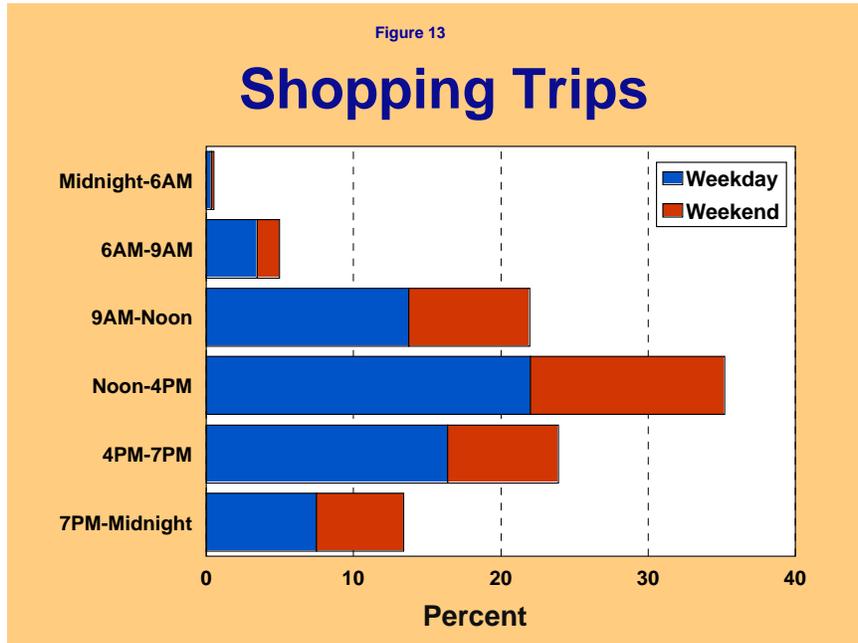
In examining the work trip as a component of total travel, it is useful to compare work trips by time of day with trips for all other purposes. There is a common perception that most of the trips made during the traditional “rush hour” are for commuting to work. The survey results show that the work trip share during these times is smaller than expected. Approximately 37 percent of trips for all purposes start during the two rush hour periods, defined here as 6am to 9am and 4pm to 7pm. Only 10 percent of trips for all purposes are work trips starting these two periods. Less than one out of three person trips starting during rush hour are trips to or from work.

This seemingly small share of work trips probably reflect trip chaining, where stops are made on the way to or from another destination, like the workplace. In NPTS, these stops are counted as separate trips, and labeled with the appropriate purpose. As steps are taken to improve the survey to capture more of these incidental trips, it is likely that the work share will continue to decline.



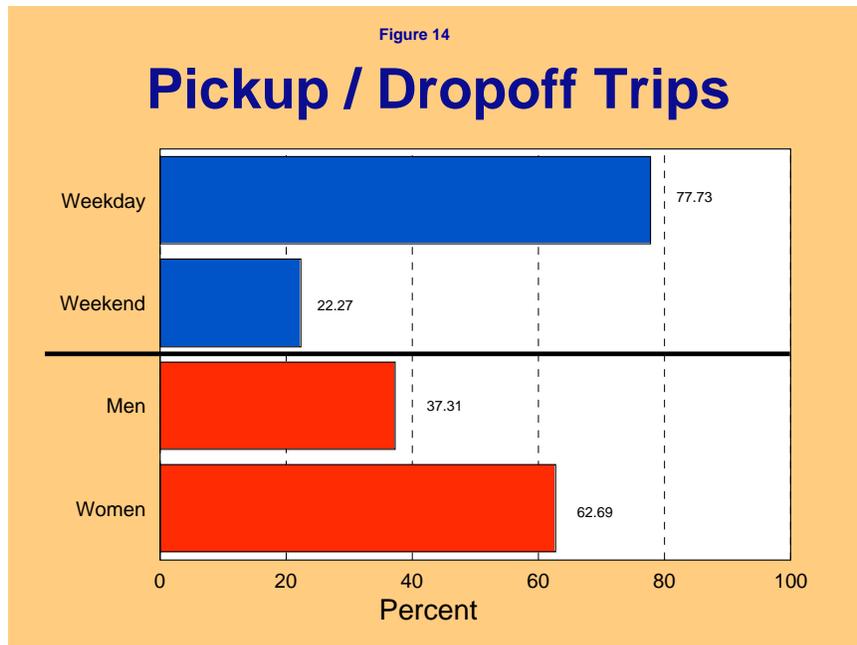
- Shopping trips are spread evenly throughout the week

Shopping is another trip purpose that commands much attention and is a continually growing segment of personal travel. Currently shopping comprises one out of every five person trips and one out of every seven person miles traveled. Those of us who work the traditional Monday through Friday work week tend to think of shopping as a weekend activity. However the data show that the vast majority of shopping trips, 77 percent, take place on weekdays, which make up 71 percent of the days of the week.



- **Women make two-thirds of the trips to take someone else someplace**

Like shopping, trips to take someone else someplace occur disproportionately during the week. This makes sense when you consider that the great majority of these trips probably involve getting children to school or to after-school activities. It is also no surprise women make two-thirds of all pickup and dropoff trips, as they are termed in the NPTS. Approximately 11 percent of all trips made by women and 7 percent of all trips made by men are for this purpose. Originally these trips were called “serve passenger”, but that wording implies travel in private vehicles. While the overwhelming majority of these trips, 95 percent, are by private vehicle, another 2 percent are by walking and 1 percent are by public transit, with the other modes making up the remaining 2 percent. In Western Europe these pickup and dropoff trips are called “escort” trips, which describes them more accurately.



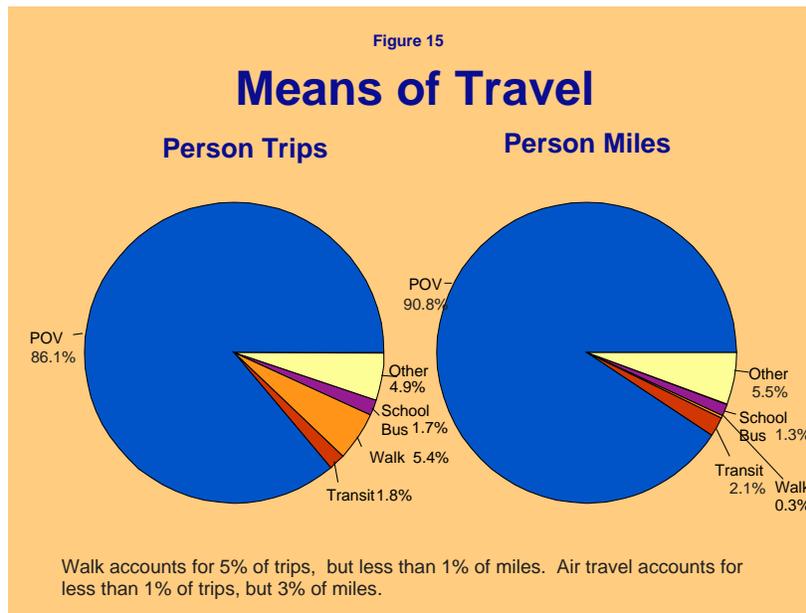
## HOW WE TRAVEL -- MEANS OF TRANSPORT

- **Ninety percent of all person miles are in privately owned vehicles (POV)**

Switching from *why* we travel to *how* we get around, travel by private vehicle accounts for 86 percent of all person trips and 91 percent of all person miles. Walking is the next most used mode, with 5.4 percent of all trips, but less than one percent of all person miles.

Transit use, which tends to be concentrated in the largest metro areas, accounts for 1.8 percent of all trips and 2.1 percent of all person miles. Transit use is highly dependent on route and time of day considerations. Approximately 44 percent of all transit trips take place in the traditional peak periods of 6am to 9 am and 4 pm to 7pm.

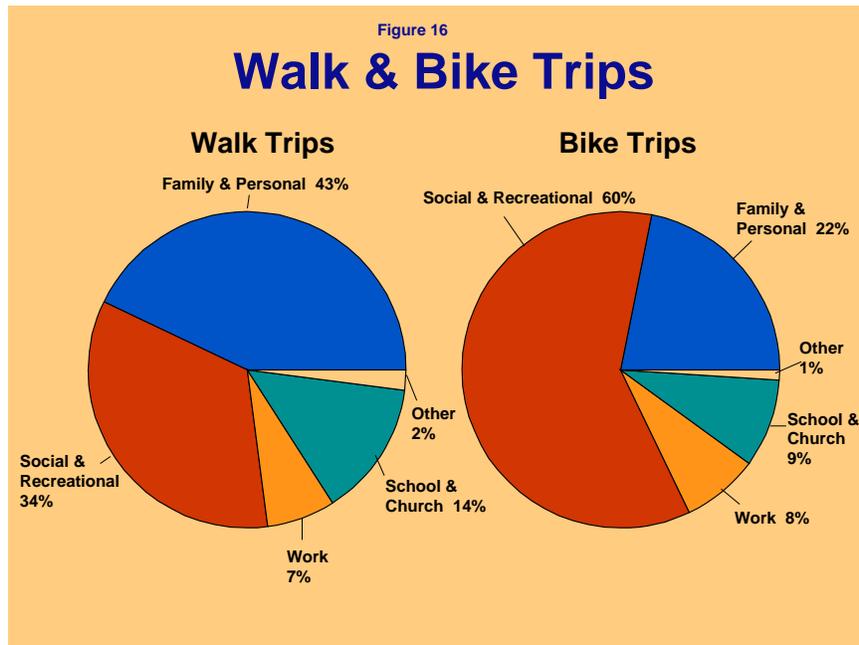
The school bus share of person trips at 1.7 percent is virtually the same as the transit, however the share of person miles is smaller than transit at 1.3 percent, probably reflecting the shorter distances of school bus trips.



**- We make 65 million walk and bike trips a day**

Pedestrian and bicycle trips are also of considerable interest. There are approximately 56 million daily walk trips in the U.S. Family and personal business accounts for 43 percent of all walk trips, with another 34 percent for social and recreational purposes, and 14 percent for going to school or church.

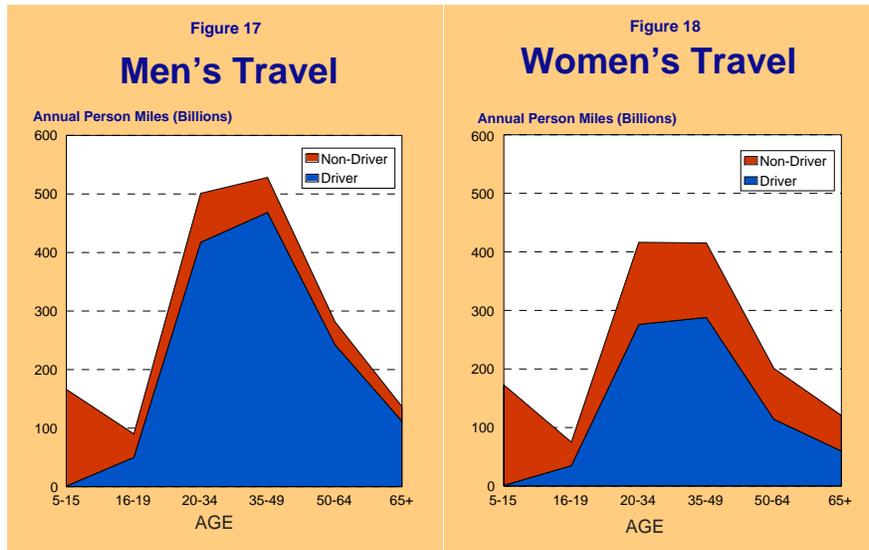
Sixty percent of the 9 million daily bicycle trips are for social and recreational purposes, another 22 percent are for family and personal business purposes, and 9 percent are for going to school or church. Only 8 percent of all bicycle trips are for commuting to work, which is not surprising, given increasing work trip lengths.



## - Driving accounts for two-thirds of all person miles in private vehicles

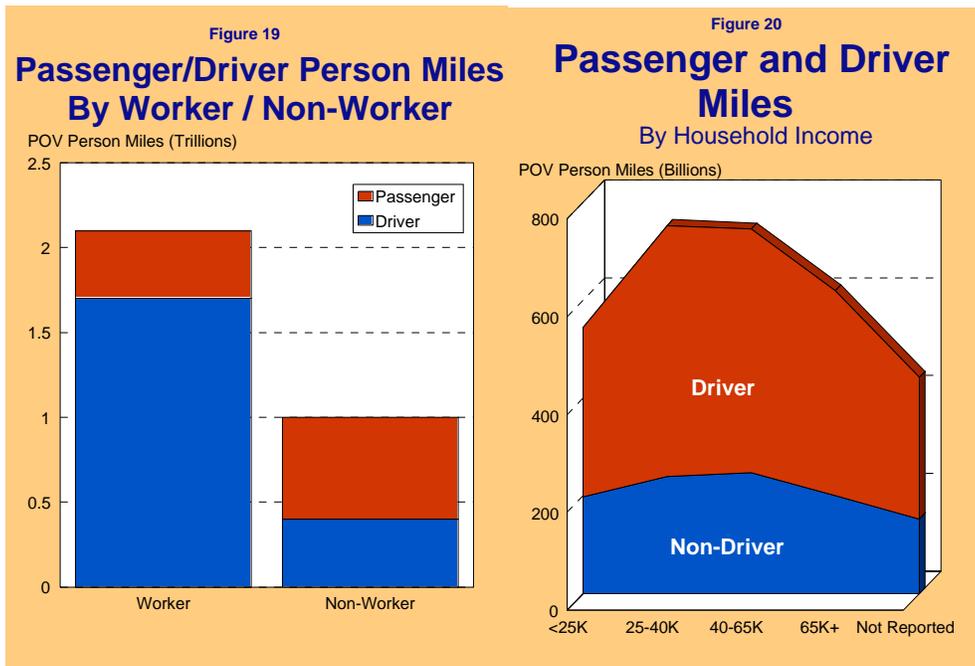
Although women are travelling more than in the recent past, the tendency for men to be behind the wheel continues. The ratio of total person miles by private vehicle to the driver miles are displayed in the accompanying figures. There are three things evident:

- men contribute more of the person miles by private vehicle than women, but not much more (1.7 trillion person miles, as compared to 1.4 for women.)
- when men travel by private vehicle their incidence of serving as the driver is greater than women's. Overall, two thirds of travel in private vehicles is as the driver, however adult men tend to be the driver almost three-fourths of the time they are in the vehicle, while adult women are the driver just over half the time they are in the vehicle.
- The difference between the genders in the percent of miles as a driver are less pronounced in the teenage group, 16-19. Once over the age of 20, the ratio of total private vehicle miles to driver miles is much wider for women than for men.



The share of private vehicle person miles as a driver is even more pronounced when comparing workers and non-workers. Workers contribute 68 percent of all person miles by private vehicle, while non-workers account for the other 32 percent (2.1 trillion person miles by workers versus 1 trillion by non-workers.) Again, while two-thirds of travel in private vehicles is as the driver, workers tend to be the driver 80 percent of the time they are in the vehicle, while non-workers are the driver only 40 percent of the time.

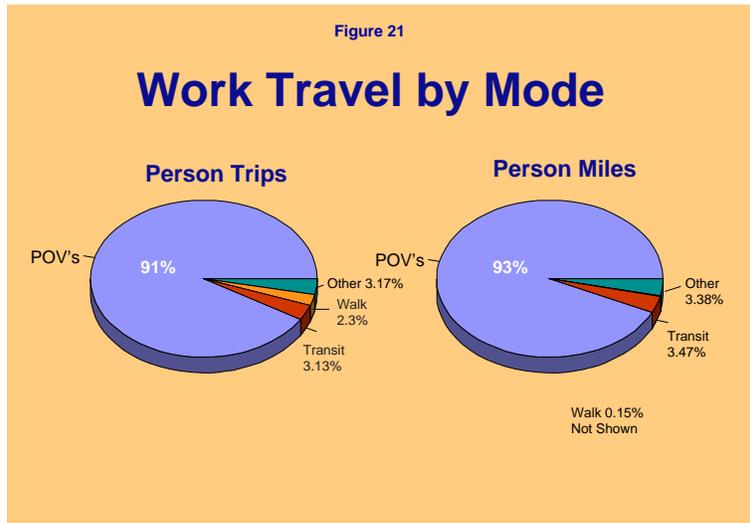
In viewing the percent of POV person miles as the driver for the various income groups, the similarity across income is striking. Most travel behavior exhibits considerable change with income, however, there are virtually no differences here. For each income group, approximately two-thirds of the person miles are as the driver.



**- Carpooling accounts for only 16 percent of all person work trips**

The commute to work reflects many of the same mode choices as the full spectrum of travel. Private vehicle accounts for 91 percent of all person commute trips and 93 percent of all person miles to work. Of the 91 percent in private vehicle commute trips, 75 percent are driver alone and 16 percent are by carpool. Work trips have historically had the lowest vehicle occupancy of all trip purposes. The 1995 rate of 1.14 is the same as found in 1990 and remains the lowest in the 26 years of the NPTS.

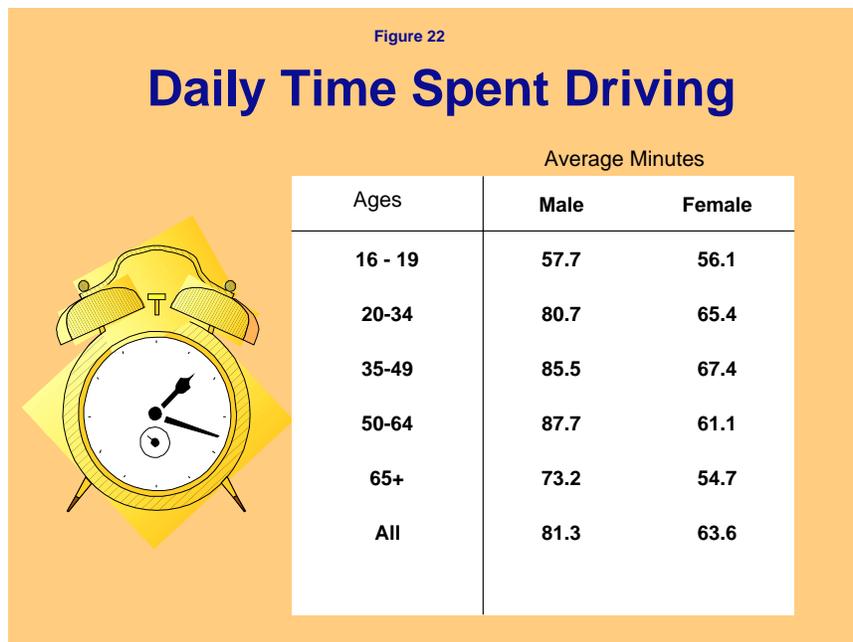
The transit share of work trips is 3.13 percent, as compared to transit's 1.8 share of all trips. Historically, transit has had higher usage rates for commuting to work than for other purposes. In the past, when jobs were in the central city and work hours were standard, transit was a more viable option. The current continued expansion of jobs to the suburbs and exurbs, staggered work hours, and the growth of the service economy create an environment with many challenges to providing transit service.



## VEHICLE TRIPS

- ▶ **Men drivers average 81 minutes a day behind the wheel, women average 64 minutes**

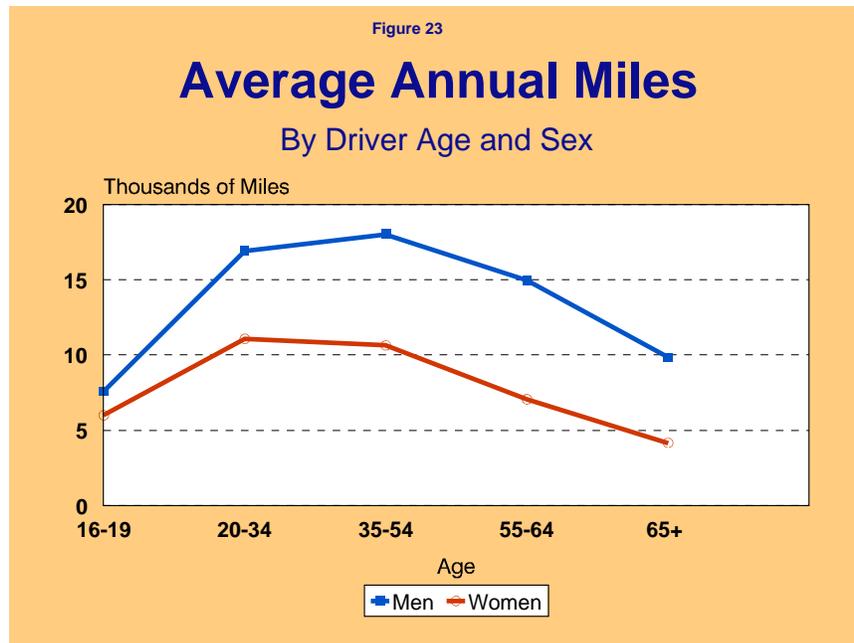
The predominance of the private vehicle in personal travel results in considerable attention for this mode . In our increasingly busy lives, there is concern over the amount of time spent behind the wheel. The average time per day for all drivers is 1 hour and 13 minutes. Overall, men spend about 17 minutes more per day than women.



- Depending on age, women drive 60 to 70 percent as many miles as men the same age

Between the ages of 20 through 54 years, men's driving is in the range of 17,000 to 18,000 annual miles. Women's driving during these same ages averages 11,000 miles per year.

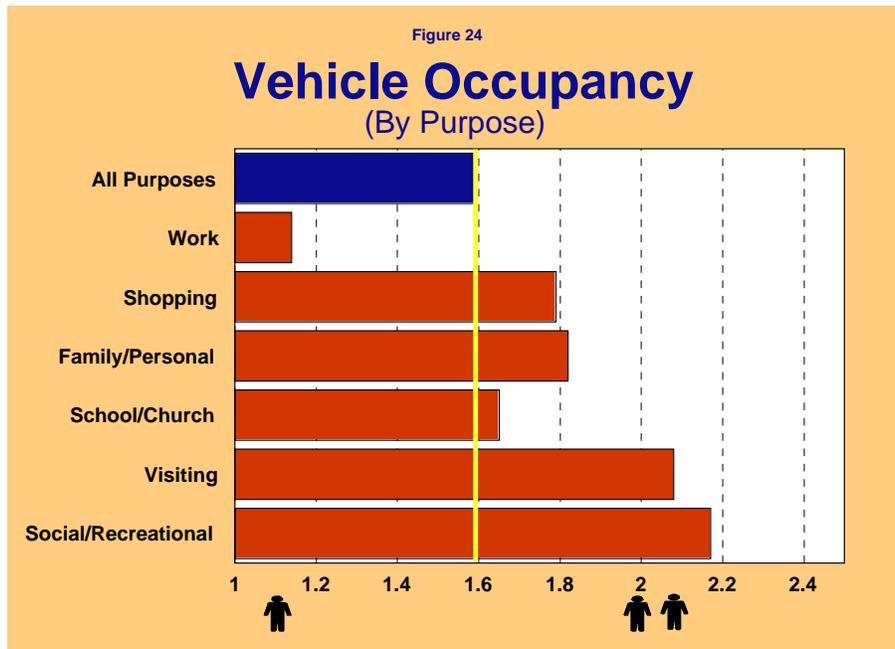
The gap between men's and women's driving continues to close as women's participation in the work force increases, not only in number of employed women, but in the nature of the jobs they hold, and the impact of their work on their family and household responsibilities.



## VEHICLE OCCUPANCY

### - Vehicle occupancy is 1.59 persons per vehicle

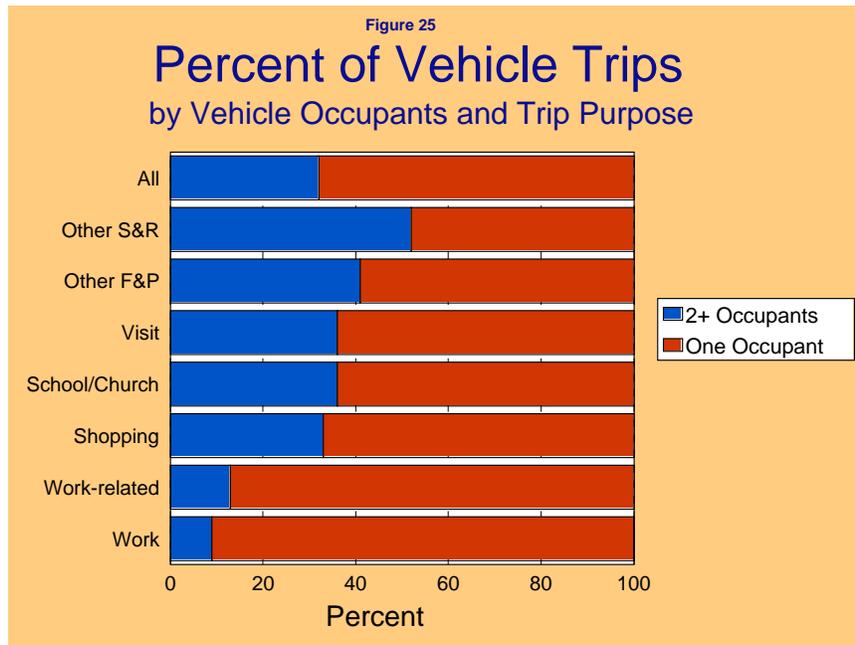
When occupancy rates are calculated from NPTS data, the preferred method is to weight the number of occupants by the trip length. Thus a trip of 12 miles has 6 times the value of a 2-mile trip. The results yield a rate of person miles over vehicle miles. The occupancy rates for all travel is 1.59 person miles per vehicle mile, ranging from a low of 1.14 for work to 2.17 for other social and recreational purposes. This is slightly lower than those from 1990, however, the 1995 data contain a more accurate representation of short, incidental trips which tend to have lower occupancies.



Many of our perceptions of travel focus on the commute to work, and vehicle occupancy is no exception. There is a general view that all vehicle occupancy is just over 1.0, but that comes from the relatively low occupancy on work trips.

**- About one-third of all vehicle trips are multi-occupant**

The ratio of multi-occupant to single occupant trips varies considerably by trip purpose. As expected, the other social and recreational purpose has the highest share of multi-occupant vehicle trips, 52 percent. The next highest share is other family and personal business, with 41 percent multi-occupant. Together these two purposes account for almost 40 percent of all vehicle trips. About one-third of the trips for shopping, to go to school or church, or to visit friends or relatives are multi-occupant. These three purposes account for another 33 percent of all vehicle trips. Trips for work-related travel and to or from work, which account for 27 percent of all vehicle trips, are the least likely to be multi-occupant, with rates of only 13 percent and 9 percent, respectively.

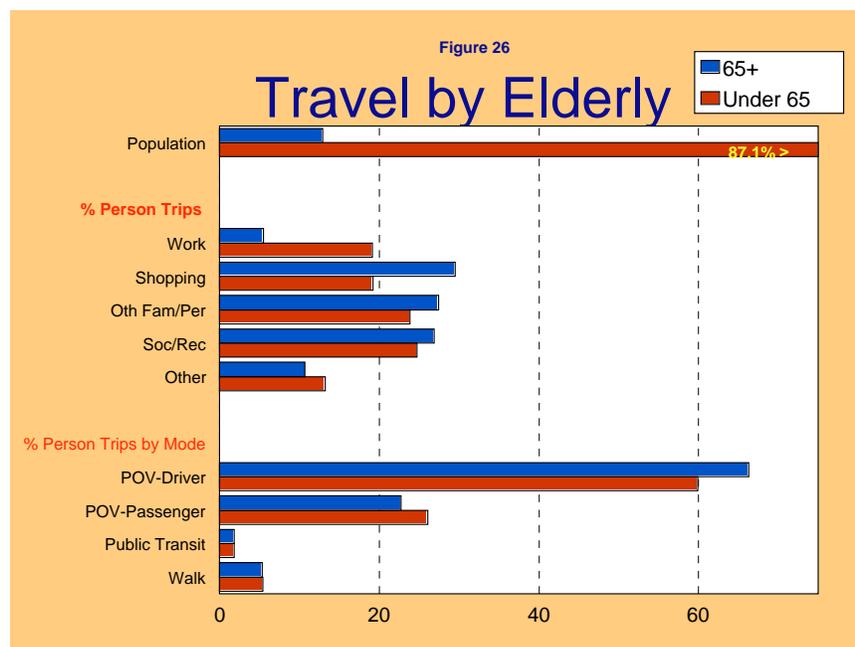


## TRAVEL BY THE ELDERLY

### - Average trip-making declines about 25 percent for seniors

Thirteen percent of the U.S. population is 65 years or older, and this group averages 1251 person trips per year or 3.43 trips a day. Those under the age of 65 make 1615 annual person trips, or 4.42 a day. Some of this reduction in mobility may be by choice, but some of it is commonly perceived to be the result of mobility and access issues.

The means of transport for seniors is surprisingly similar to the under 65 group. Some of the continued dominance of the private vehicle is probably due to household location, the capability to stay healthier and more active than previous generations of elderly, and the poor selection of alternatives to private vehicle travel.



## TRAVEL BY AFRICAN-AMERICANS

- **Transit trip rates for African-Americans are six times that of Caucasians**

On average, African-Americans make 95 annual transit trips per person, Caucasians average one-sixth that rate, at 15 annual transit trips per person. Much of this disparity is probably due to lower vehicle ownership rates and housing location patterns among African-Americans.

African-Americans make 76 percent of their trips by private vehicle, as compared to 88 percent for Caucasians. On average African-Americans make 1421 annual trips per person, or 3.9 trips a day, compared to 1602 annual and 4.4 daily trips per person by Caucasians.

Figure 27

### Annual Person Trips per Person For African-American and Caucasians

|               | African-Americans | Caucasians |
|---------------|-------------------|------------|
| All           | 1421              | 1602       |
| POV Driver    | 722               | 1006       |
| POV Passenger | 352               | 411        |
| Transit       | 95                | 15         |
| Walk          | 131               | 72         |
| Other         | 121               | 98         |

## TRAVEL BY HISPANICS

- **Among Hispanics, there is a higher incidence of transit, walking and private vehicle passenger trips than among Non-Hispanics**

When the data are arrayed differently to highlight the travel patterns of Hispanics, the differences are not as distinct as race. The differences in private vehicle use are slight, with Hispanics making 82 percent of their trips by private vehicle, versus 87 percent by non-Hispanics. Hispanics are twice as likely to use transit as non-Hispanics, and Hispanics make fifty percent more walking trips than their non-Hispanic counterparts. As with African-Americans, the lower vehicle ownership rate among Hispanics and the location of their households may contribute to these differences in travel behavior.

Figure 28

### Annual Person Trips per Person For Hispanics and Non-Hispanics

|               | Hispanics | Non-Hispanics |
|---------------|-----------|---------------|
| All           | 1535      | 1572          |
| POV Driver    | 820       | 965           |
| POV Passenger | 434       | 400           |
| Transit       | 48        | 25            |
| Walk          | 126       | 80            |
| Other         | 107       | 102           |

## TRAVEL BY CHILDREN

- Our children get to school primarily by private vehicle, school bus accounts for one-third of all school trips

About half of America's school children aged 5-15 go to school as passengers in private vehicles. Another third take the school bus and just over 10 percent walk. The prevalence of private vehicle use in trips to and from school is likely to be related to the two-income household. Dropping off or picking up a child at school may fit better into the daily routine of working parents than having the child take the school bus.

Trips to and from school account for just over one-fourth of the trips made by 5 to 15 year-olds. Social and recreational activities comprise forty percent of their trips, and another thirty percent are made for family and personal business.

For all trip purposes, traveling as a passenger in a private vehicle is by far the dominant mode, accounting for almost 74 percent of the trips made by those 5-9 years old, and 65 percent of the trips of those 10-15 years old.

**Figure 29**

### Travel by Children (5-15)

|                                | 5-9 Years | 10-15 Years |
|--------------------------------|-----------|-------------|
| <b>% Trips by Trip Purpose</b> |           |             |
| Social/Recreational            | 39.6      | 40.6        |
| Family/Personal                | 31.3      | 28.5        |
| School                         | 26.3      | 26.8        |
| Other                          | 2.8       | 4.1         |
| <b>Annual Trips/Person</b>     |           |             |
| POV passenger                  | 1334      | 1366        |
| School Bus                     | 982       | 890         |
| Walk                           | 120       | 143         |
| Transit                        | 107       | 157         |
| Other                          | 16        | 22          |
| <b>% School Trips by Mode</b>  |           |             |
| POV                            | 109       | 154         |
| School Bus                     | 52.8      | 43.5        |
| Walk                           | 30.2      | 36          |
| Other                          | 10.5      | 12.4        |
|                                | 6.5       | 8.1         |

## **POLICY IMPLICATIONS**

### **MOBILITY AND EQUITY**

- **Significant mobility issues still exist for certain population segments**

The mobility of the majority of the American population is greater than ever, and we remain the most mobile nation on earth. However, there are subgroups within the population that have significant mobility constraints, and the gap between these groups and the general population is growing. Unless these mobility issues are dealt with constructively, we will continue to have groups that are disenfranchised from the social, political and economic benefits of this society. NPTS and other data sources show that these groups are low-income, elderly, recent immigrants, physically handicapped, and, to some degree, people of color.

As we transition welfare recipients to work, we need to closely examine how these work force entrants will not only get to an increasingly suburbanized job market, but also how they will accomplish their family responsibilities and household maintenance activities. This issue goes much further than welfare recipients, it includes almost everyone whose household income is in the lowest third. There is much that can and will be mined from the NPTS data to guide us on how these groups currently accomplish their travel needs and the related cost in terms of travel time.

Remedial actions may not necessarily require large amounts of capital investment. It is possible that solutions may come from carefully crafted programs in which those at issue are involved in the decision-making process.

## **SOCIETAL CHANGE**

- **Women's roles continue to change and these changes have serious impact on household travel patterns**
- **New technology may allow for measurable substitution of telecommunications for travel**

There are many elements of societal change, but perhaps the most pervasive are the changing roles and activities of women—in the workplace, in the household unit, and in society at large. We are seeing a continuation of the trend that the typical woman is wearing at least three hats: worker, family nurturer, and household maintainer. And increasingly, many women also have responsibilities for aging parents or in-laws. Single parent homes headed by women have additional challenges. These issues have great impact for transportation demand and choice of mode. The NPTS data show, for example, that two-thirds of trips for dropping off or picking up someone are made by women. Further, most of these trips are, by necessity, in private vehicles.

Technology has also made a significant impact in our daily lives. The prevalence of personal computers at work and at home, e-mail, use of the Internet, cellphones, pagers, and other gadgets of the 1990's have resulted in drastic changes in the way many of us communicate with each other, the way we work, and how we spend our shrinking free time. For many people, the PC screen has become an alternative to the TV screen, as a form of entertainment. Intelligent transportation systems (ITS) have given us technology such as advanced traffic control systems, traveler information systems, and automatic toll collection to ease congestion and improve mobility on the highways. However, we must take care to keep this array of technological change in the proper perspective. For example, there are huge numbers of jobs for which telecommuting will never be an option. We must balance these forces to use technology to its best advantage, while insuring that our transportation systems meet the needs of all segments of the society, including the sizeable portion that may not substitute telecommunications for travel.

## **ECONOMIC AND ENVIRONMENTAL IMPACTS OF TRANSPORTATION**

- **Transportation is the ‘circulatory system’ of our service economy**
- **The trends in greater use of new vehicles may improve air quality**

The economic impacts of transportation are so central to our lives that they are almost transparent. Only in rare instances such as fires, floods and earthquakes, do we have such a total interruption of transportation that its absence can be felt by all. Transportation is the glue that keeps the economy together, at the individual, household, neighborhood, community, regional, and national levels.

For the individual, transportation allows access to jobs, goods and services. It allows us to live farther from work and not pay a comparable price in travel time, at least in the present. The efficiency of our transportation systems allows us the luxury of having more trips and travel for social and recreational activities than for going to and from work. At the household level, transportation is second on the list of household expenditures, following only housing.<sup>1</sup> Yes, at the household level, more is spent on transportation than food. The American household has a wide variety of choices in how it spends its time and money, and these choices are supported by our transportation network.

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<sup>1</sup>Monthly Labor Review, April 1996, Page 24

The impacts 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 has been at the heart of the controversy. The NPTS results showing expanding use of private vehicles, particularly in single-occupant trips, runs counter to most metropolitan area plans for increasing use of transit and carpooling. The shrinking portion of travel for work reduces the impact of air quality travel demand management strategies targeted at commuting. Further, increases in trip chaining, in which personal business trips are made on the way to and from work, often require use of a private vehicle.

Technological changes in the vehicle fleet, starting with the changeover to unleaded gas, have served to mitigate the environmental impacts of transportation. Other technological changes in newer vehicles have resulted in dramatic emissions reduction. The trends shown in the earlier NPTS surveys on the aging of the household vehicle fleet has implications for air quality issues. However, the 1995 data appear to signal a slowing of that trend. Despite our growing concern for the environment, much of our travel is related to where we have chosen to live and work.

## LAND USE AND TRANSPORTATION

- ▶ **The myth of Americans' love affair with our cars may actually be a marriage of convenience. Contemporary land use patterns require the use of private vehicles, whether or not we love those vehicles.**

The continued spatial expansion of our metropolitan areas creates a scenario that is increasingly auto-dependent. There are some exceptions to this, particularly in the initiatives for liveable communities. But, the reality is that much of today's travel is suburb to suburb, with widely dispersed origins and destinations. This is reflected in the substantial share of private vehicle travel--the predominant suburban and exurban mode. Most of this travel is for non-work purposes, mainly family and personal business and social/recreational, for which travel demand management offers little in terms of mobility improvement.

Alan Pisarski, a pivotal national transportation analyst, has said that "transportation is the collision of demography with geography." <sup>1</sup> If we are to continue to maintain our current levels of mobility, much more needs to be done in assessing the impacts of land use on transportation. The 1995 NPTS dataset, with the characteristics of the residence and workplace appended to the interview data, provide us with a rich source to use.

### SUMMARY

There is much more that we, the transportation research community, can analyze and present using the 1995 NPTS. To the degree that this paper has provided a framework of understanding of personal travel or has raised more questions on this topic, it has been a success.

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<sup>1</sup>Pisarski, Alan - "Recognizing, Creating & Marketing Survey Quality" presented at the conference on "Transport Surveys: Raising the Standard", Grainau, Germany, May 1997

## TERMS USED IN THIS PUBLICATION

*Means of Transportation* - Sometimes referred to as "mode," this term identifies the method used to make a trip. For purposes of presentation in the tables and charts used in this report, unless specifically identified, means of transportation will be group as "Other." The following transportation modes, grouped by major mode, are included in the transportation data:

**Privately Owned Vehicle (POV)** - The Privately Owned Vehicle refers to those motor vehicles owned or used by the surveyed household but does not include vehicles of persons visiting with the household. POV includes *Automobile, Van, Sport Utility Vehicle, Pickup Truck, Other Trucks, Recreational Vehicle, Motorcycle,* and *Other private vehicle.*

**Public Transportation** - Any form of transportation publicly used in *Bus, Commuter Train, Subway/Elevated Rail, Streetcar/Trolley,* and *Other* not specified.

**Other Modes** - Include *Amtrak, Airplane, Taxicab, Bicycle, Walking,* and *School Bus*

**Other** - Any form of transportation not specified.

**Person miles** - the number of miles traveled by each person on the trip. For example, two people making a five-mile trip by car would generate 10 person miles.

**Person trip** - a movement from one address to another by one person by any mode.

**Person trip by private vehicle** - a subset of all person trips, to include only those trips by private vehicle. There is still one person trip for each person on the trip, whether they are the driver or a passenger.

**Trip Chaining** - This refers to making stops on the way to or from a major destination, such as home or work. In the NPTS, these incidental trips are classified as their own purpose. An example of a trip chain would be taking a child to school and stopping at the bank, then continuing on to work. The first two would be counted as two separate trips, each for family and personal business.

**Trip Purpose** - A trip purpose is the main reason that motivates a trip. For purposes of this survey, there are basically 10 trip reasons within five major purposes as follows:

**Earning a Living** - Includes *To or From Work* travel, and *Work-Related Business*.

**Family and Personal Business** - Includes *Shopping, Doctor/Dentist*, and *Other Family and Personal Business* such as banking, haircuts, etc.

**School/Church** - This category includes trips to school, college or university for classes, or to PTA meetings, and religious activities.

**Social and Recreational**- This category includes *Vacation, Visiting Friends and Relatives*, and *Other Social or Recreational* trips taken for entertainment and recreation.

**Other**- For trips that do not fit any of the other categories.

**Vehicle miles of travel (VMT)** - each mile traveled by a private vehicle. In the example above, the two people making a five-mile car trip would generate five vehicle miles of travel.

**Vehicle Occupancy** - When occupancy rates are calculated from NPTS data, the preferred method is to weight the number of occupants by the trip length and divide the product by the vehicle miles. The results yield a rate of person miles over vehicle miles which is commonly referred to as persons per vehicle.

**Vehicle trip** - each time a private vehicle goes from one address to another for a purpose, a vehicle trip is counted, regardless of the number of the people in the vehicle.