1995 Nationwide Personal Transportation Survey

Powerpoint Slide Presentation

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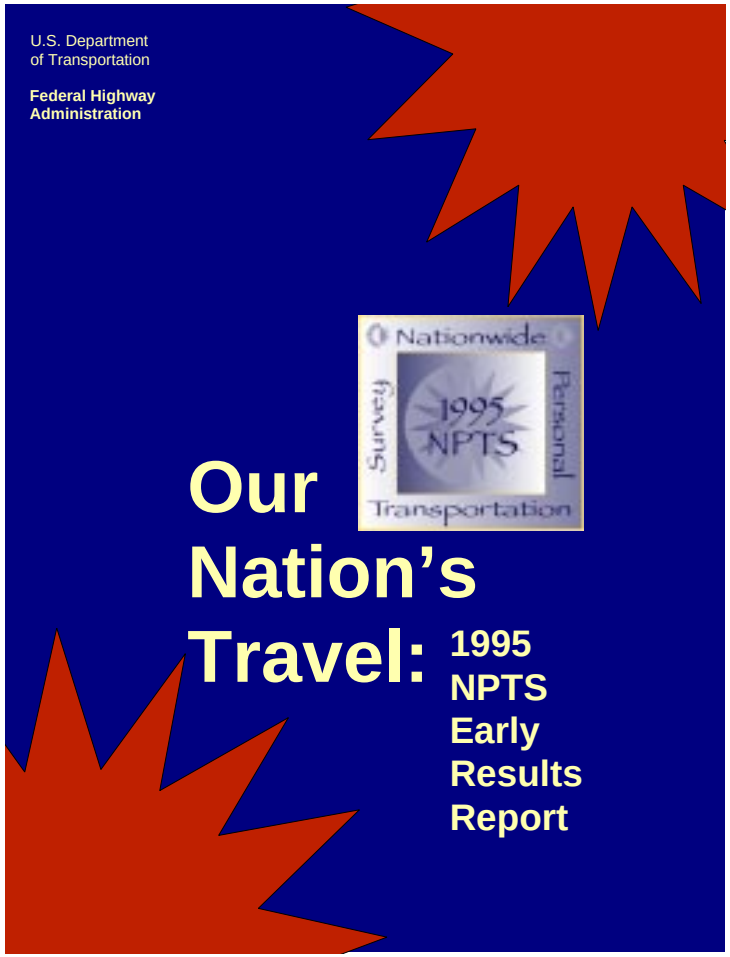
"Our Nation's Travel: 1995 NPTS Early Results Report"



Our Nation's Travel - 1995 NPTS Early Results Report

INTRODUCTION (Slide 1: "NPTS Logo")

- America remains the land of opportunity.

  An essential element of opportunity is mobility and access to jobs, to services, to goods, to recreation and entertainment. The growth in opportunities has caused changes in travel patterns. 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.

- 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. 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

  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 was co-sponsored by FHWA, BTS, FTA and NHTSA

- The 1995 survey is the fifth in a series that began in 1969, and was continued in 1977, 1983 and 1990.

- Most complete survey ever; used diary to get more complete account of daily trips. (Just over 4 trips a day per person. One billion per day for U.S. population.

NOTE: For longer distance trips of 100 miles or over, the American Travel Survey focuses on such trips. ATS trips represent less than 4 percent of person trips, the NPTS accurately typifies the rest.

CHANGES IN POPULATION AND VEHICLES

(Slide 2: “Changes in Population And Vehicles”)

- The rate of increase in drivers and workers is more than three times that of population growth.
- We went from a society of one car per household in 1969 to a society of close to two cars per household in 1995
- Over the past twenty six years (1969-1995) :
  - There were relatively modest increases in the population (23 percent).
  - There were larger increases in:
    - households (58 percent)
    - workers (74 percent) -Women workers grew dramatically from 37 percent to 59 percent of females 16 and over.
      -Men workers grew only from 72 percent to 74 percent of males 16 and over
    - drivers (72 percent) -Women drivers grew dramatically from 61 percent to 85 percent, of females 16 and over.
      -Men drivers grew only from 87 percent to 93 percent.
  - The most striking change in the data is the 143 percent increase in household vehicles .
  - These data make sense in terms of the 17 percent decrease in household size over this period. These new, smaller households most likely have a person who is a worker and a driver.
  - With leveling off of women’s entry into the labor force and driver licensing rates, we are likely to see lower growth in household vehicles in the future.

HOUSEHOLD BY NUMBER OF VEHICLES

(Slide 3: “Households by Number of Vehicles”)

- Zero vehicle households have decreased from almost thirteen million to eight million 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.
- 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.
- Two-vehicle households has grew from 17 million in 1969 to 40 million in 1995. Forty percent of all U.S. households in 1995 were two-vehicle households.
- Three or more vehicles households grew from 3 million households in 1969 to 19 million in 1995, a six-fold increase.
- And, amazingly there are now actually more personal vehicles available to U.S. households than there are drivers! Again this suggests potential saturation effects on household auto ownership.

PURPOSE OF TRAVEL BY PERCENT

(Slide 4: "Purpose of Travel by Percent")

- 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.

- 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 6,600 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.

MEANS OF TRAVEL

(Slide 5: "Means of Travel")

- 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.

VEHICLE OCCUPANCY BY PURPOSE

(Slide 6: “Vehicle Occupancy”)

- The occupancy rates for all travel is 1.59 person miles per vehicle mile, ranging from
  - 1.14 for work to
  - 2.17 for other social and recreational purposes.
- 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.

NOTE 1: Rates are slightly lower than those from 1990 because the 1995 data contain a more accurate representation of short, incidental trips which tend to have lower occupancies.

NOTE 2: 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 .

WORK TRAVEL BY MODE

(Slide 7: "Work Travel by Mode")

- **Private Vehicle** usage 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.

- **Transit's** share of ***work*** trips is 3.5 percent , as compared to transit's 1.8 percent share of ***all*** trips.
  - Historically, transit has had higher usage rates for commuting to work than for other trip 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.

WORK / NON-WORK TRIPS BY TIME OF DAY

(Slide 8: “Work/Non-Work Trips by Time of Day”)

Survey results show that commute trips are not the primary trip purpose even during peak periods.

- Approximately 37 percent of trips for all purposes start during the two rush hour periods (6am to 9 am and 4pm to 7 pm)
- 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.

NOTE: 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.

- Example, 4-7 PM peak 30% are to destinations other than home, e.g. pick up at school, shop, etc.
- Women tend to have more of these linked trips than do men.
- 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.

ANNUAL PERSON TRIPS PER PERSON BY THE ELDERLY

(Slide 9: “Annual Person Trips per Person: For Elderly and Others”)

- Thirteen percent of the U.S. population is 65 years or older,
  - Those under the age of 65 make 1615 annual person trips, or 4.42 a day.
  - The Elderly average 1251 person trips per year or 3.43 trips a day.
  - Even accounting for reduced work trips, the elderly are less mobile than other. 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.

ANNUAL PERSON TRIPS PER PERSON FOR AFRICAN AMERICANS AND CAUCASIANS

(Slide 10: "Annual Person Trips per Person: For African Americans and Caucasians")

- 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.

- African-Americans make 76 percent of their trips by private vehicle, as compared to 88 percent for Caucasians.

- On average, African American 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.*

ANNUAL PERSON TRIPS PER PERSON FOR HISPANICS AND NON-HISPANICS

(Slide 11: “Annual Person Trips per Person: For Hispanics and Non-Hispanics”)

- Differences in private vehicle use by ethnicity are slight
- 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.*

LOW INCOME VERSUS OTHER

(Slide 12: “Low Income & Other Households”)

- Low income households are nearly twice as likely to walk as people in other income groups.
  - For example, for work and work-related trips, low income households report 5 percent by walk, compared to 3 percent for other income groups.
- A quarter (26%) of low income households do not have a car, compared to 4% of other households.
  - Despite having fewer vehicles, people in low income households still make most of their trips in private vehicles.
  - These trips are much more likely to be made in a vehicle owned by someone else, like a friend or relative (9 percent for low income, compared to 1 percent for other income groups).
- Low income households conduct only 80 percent of the person trips and 60 percent of the person miles of travel compared to other households.
  - <u>This limited trip making works against these households having adequate access to employment opportunities.</u>

Transition Visual

(Slide 13: “Policy Implications”)

MOBILITY AND EQUITY

(Slide 14: "Mobility and Equity" *highlighted in Red*)

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

  "*The findings of the survey re-affirm that the United States remains the most mobile society in history but they also underline the fact that there is still much to be done to assure that all of our fellow citizens have full access to this mobility".* 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.

- **Transportation is important to the successful of Welfare Reform**

  "President Clinton and Transportation Secretary Rodney E. Slater have made transportation access to jobs a major priority". 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

(Slide 15: "Societal Change" *highlighted in Red*)

- **Women's roles continue to change leading to impacts on household travel patterns**

  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.

- **Changing travel patterns of the U.S. household largely reflect their mobility needs for social, recreational, and personal business purposes.**

  The 1995 NPTS results provide a context for policy development by quantifying the needs American household try to address through their travel activities. The dominance of non-work related trip purposes is striking and presents a significant challenge to any transportation program. The data also suggest that there is a need for transportation theorists and modelers to provide transportation planning techniques focused on these non-work purposes that are as robust as earlier methods that centered on the commute to work.

ECONOMIC AND ENVIRONMENTAL

(Slide 16: "Economic and Environmental" *highlighted in Red*)

- **Transportation is the 'circulatory system' of our service economy**

  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.[1] 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.

- **Changing personal travel and vehicle ownership patterns present complex issues for air quality planning**

  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.

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[1] Monthly Labor Review, April 1996, Page 24

LAND USE

(Slide 17: "Land Use" *highlighted in Red*)

- Contemporary land use patterns encourage the use of private 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." [2] 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.

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[2]Pisarski, Alan - "Recognizing, Creating & Marketing Survey Quality" presented at the conference on "Transport Surveys: Raising the Standard", Grainau, Germany, May 1997

SUGGESTED CLOSING COMMENTS:

(Slide 18: "1995 Nationwide Personal Transportation Survey" - *Last Slide*)

- The **Nationwide Personal Transportation Survey** Symposium was held October 29-31.
  This Symposium provide the first analysis of the '95 NPTS, and some lively discussion on the topics of:
  - Environmental and Economic Impacts
  - Land Use and Transportation Interaction
  - Societal Trends, and
  - Mobility and Equity
- We are developing the report ***Summary of Travel Trends*** that will provide a concise overview of the data series since 1969
- We have an NPTS Website that allows users to:
  - learn more about NPTS
  - generate tabulations
  - review Frequently Asked Questions on NPTS
  - check samples size for particular data
  - access the most commonly requested NPTS analyses
- We are also working on an ***NPTS Databook*** that will provide the most frequently requested tabulations.
- The full data set is available on CD-ROM and over the web.
- The NPTS collected customer satisfaction questions, which provided insight to the customer's perception of the transportation system. These questions are increasingly important to the goals of our Strategic Planning efforts.
  Overall, the results were suprisingly positive. (safety, congestion, etc. were issues that were addressed)

NPTS Website = http://www-cta.ornl.gov/npts/