SOCIETAL TRENDS:
THE AGING BABY BOOM AND WOMEN'S INCREASED INDEPENDENCE

by

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EXECUTIVE SUMMARY

Introduction

The two most important societal trends today are the aging baby boom and women's increased independence. This paper compares the travel profiles of women aged 40 to 49 (early baby boomers) with women aged 75 and over and with men aged 75 and over (parents of the baby boom) to estimate the impact of an aging population on vehicle ownership rates and Vehicle Miles Traveled. Although current gender differences are likely to persist as the baby boom ages, middle-aged women today probably will travel more like their fathers than like their mothers when they reach their parents' age.

The baby boom has been the demographic engine driving social change in the U.S. for the past fifty years. Within this large cohort, significant numbers of baby boom women earned college degrees, entered the labor force, and began to maintain their own households during the 1980s. Baby boom women also are more likely to have drivers' licenses than women who are elderly. Any of these trends alone has implications for transportation now, but together they raise important questions for the future: What will the transportation profile of baby boom women look like when they reach the oldest ages and when the majority have been employed, and have been drivers, throughout their lives? How will these women maintain the independence to which they have become accustomed?

Data from the 1995 Nationwide Personal Transportation Survey (NPTS) suggest that female baby boomers will be more likely to own cars and will make more trips and drive more miles when they reach ages 75 and over than older women do now. Given the current suburban distribution of population and jobs, women's greater mobility portends additional gridlock and pollution in coming years. Yet appropriate policies might avoid this scenario. More than twenty years of federal highway and housing subsidies unwittingly created the suburbs, and we now have twenty years to implement comparable tax incentives to intentionally encourage central city growth before the baby boom reaches retirement age.

This report analyzes travel behavior by age and sex with reference to licensing status, education, household headship, income, race, and ethnicity. Access to vehicles is examined in addition to four measures of mobility (person trips, person miles, vehicle trips, and vehicle miles per day). Weighted data from the 1995 NPTS person files are based on all trips (weekday and weekend) of 75 miles or less. Capping trips at 75 miles includes 98.8 percent of all cases and eliminates extremes.

Findings

Since baby boom women are more likely than today's older women to be licensed to drive, to be college-educated, to be affluent, and to be heads of households, older women in the future will have higher mobility than older women now. On the other hand, since the older population will be more ethnically and racially diverse in the future, and minorities have lower mobility than whites, collective mobility may decline below that for Americans who are older now. Specifically:

-Persons licensed to drive have higher mobility than those without licenses. If baby boom women who are *licensed* retain men's travel profiles as they age, one-half as many will live in households with no vehicles as women who are 75 and over now. Aging baby boom women who keep their licenses will make more trips per day and drive almost twice as many miles per day as older licensed women do now.

- College graduates have higher mobility than persons with only a high school degree. If *college-educated* baby boom women keep vehicles at the same rate as their fathers have, one-fifth as many will live in households with no vehicles as college-educated women who are 75 and over now. College-educated baby boom women will make more trips and drive more miles per day than college-educated women of their mothers' age do now.

- Higher-income persons have higher mobility than lower-income persons. If *affluent* baby boom women copy their fathers' travel behavior, they will live in households without vehicles less often than older affluent women do now. If affluent baby boom women adopt older affluent men's mobility patterns, they will make more trips and drive more miles per day than older affluent women do now.

- *Hispanics, blacks, and other minorities* are more likely than whites and non-Hispanics to live in households without vehicles. Minorities also make fewer trips and drive fewer miles per day than whites and non-Hispanics. Since the older population of the future will be more diverse than the current older population, the *lower* mobility of older minorities may offset older women's *higher* mobility.

Implications

Since land use and travel behavior are so closely linked, the most effective transportation planning strategy would facilitate central city residence among older Americans so that existing transit and nonmotorized options are more convenient and affordable than cars. As suburbanites age and worry less about the quality of schools and more about their ability to drive, the high density of cities may become more appealing. The baby boom led the first wave of gentrification in the 1970s and it could do so again in the next century given financial incentives and residential options that would enhance their independence by reducing their need to drive.

INTRODUCTION AND OVERVIEW

This report uses data from the 1995 Nationwide Personal Transportation Survey (NPTS) to examine two demographic trends of particular relevance for transportation planning in the twenty-first century: **an aging population and women's increased economic independence.** The baby boom has been the demographic engine driving social change in the U.S. for the past fifty years. Baby boomers were born in post-war suburbia and have put pressure on schools and housing markets as they aged. Now they are beginning to exert demands on health-care programs. Because women of the baby boom generation were the first to go to college like men, join the labor force, head their own households, and be licensed to drive like men, they will carry greater mobility into old age. This trend will produce future strains on transportation similar to those already experienced by schools, the housing market, and health care.

The effects of women's greater independence are already evident in travel statistics. Every year women make more trips and drive more miles. Not only are women commuting more than in the past, they are making increasing numbers of "non-work" trips that result in longer trip-chains. Cars are necessary for most people to travel between suburban homes, jobs, and shopping, and the density in most suburbs is too low to support efficient transit systems (Rosenbloom 1992; Wachs and Crawford 1992). Increased reliance on vehicles, therefore, is the result of land-use decisions made cumulatively over the last fifty years. Future transportation demands of the baby boom epitomize what Alan Pisarski calls the "collision of demography with geography" (Pisarski 1997).

The majority of the elderly now live in suburbs and are more dependent on cars than previous generations, a trend that will intensify as baby boom women age (Rosenbloom 1995b). Encouraging central city residence among the elderly, therefore, could reduce projected increases in gridlock and pollution. This is not as impossible as it seems. During the 1950s and 1960s the federal government promoted suburbanization through 1)urban renewal that depleted the central city housing stock; 2) FHA and VA mortgages for new construction that subsidized the suburban housing industry; and 3) interstate highways that facilitated the decentralization of people and jobs. Private business leveraged public subsidies to speed the exodus. If such a public-private partnership could unwittingly create vast suburbs, a deliberately coordinated attempt to encourage central city residence could have a comparable impact.

As the baby boom has aged, the demographic characteristics of women have changed in ways that will affect their future mobility. A significant number of baby boom women earned college degrees, entered the labor force, and began to maintain their own households during the 1980s. Baby boom women also are more likely to have drivers' licenses than women who are elderly now. Any of these trends alone has implications for transportation now, but together they raise important questions for the future as well: What will the transportation

profile of baby boomers look like when they reach the oldest ages and when the majority have been employed, and have been drivers, throughout their lives?

The purpose of this report is to examine the transportation issues associated with an aging baby boom, a generation in which women have become increasingly autonomous. I compare the travel profiles of women aged 40 to 49 (early baby boomers) with women aged 75 and over and with men aged 75 and over (parents of the baby boom). For every measure of travel behavior (licensing, access to vehicles, and number of trips and miles), baby boom women exhibit greater mobility than older men or women do now. It is unlikely, however, that baby boom women will retain all of that mobility once they are beyond childbearing and employment years.

If age alone accounts for mobility limitations among the old, the future transportation profile of baby boom women will resemble that of women now aged 75 and over (their mothers' generation). But if baby boom women's greater independence accompanies them into old age, their future transportation profiles should be closer to those of men now aged 75 and over (their fathers' generation). Since women are the majority of the older population (a group that will constitute almost one-tenth of the population within the next thirty years), older women's needs will become increasingly relevant to transportation planning. While gender differences in travel behavior exist at every age, they are especially pronounced now at the oldest ages. The *narrowing* of these differences among the oldest in the future is the focus of this paper.

Concern about the baby boom's potential impact on transportation is based on three assumptions: 1) reducing dependence on private vehicles is preferable to increasing it (Downs 1992; Holtz 1997); 2) baby boom women will travel more like today's older men than today's older women when they reach their mothers' age, which means they will own more cars and drive more; and 3) if that happens, older women's greater mobility combined with the higher mobility typical of younger cohorts in the family-formation and employment years will result in a significant increase in vehicle use within the next thirty years.

As the population ages, differences *among* the elderly will become as important as differences *between* the elderly and the non-elderly. The "elderly", those aged 65 and over, have become an increasingly diverse group and now consist of the young-old (or "wellderly") aged 65 to 74; the old-old (or "illderly") are aged 75 and over (referred to here as "older"); and those aged 85 and over, the oldest-old (Treas and Torrecilha 1995). The small NPTS sample size for those aged 85 and over prevents separate analyses of the oldest-old. (See Appendix Table 1 for unweighted and weighted sample sizes.)

I analyze travel behavior for three groups of people: middle-aged women (early baby boomers aged 40 to 49); older women aged 75 and over; and older men aged 75 and over (the baby boom's parents). I focus on the old-old, those aged 75 and over, because increasing longevity and the elimination of mandatory retirement laws have delayed many of the characteristics previously associated with turning 65. Further, licensing rates decline gradually for older women, from the 90 percent range for those in their fifties to 65 percent

for those in their seventies, but dramatic drops occur once women reach their eighties, so that only one-quarter of women aged 85 and over are still licensed to drive. Men stay mobile much longer. Almost all men under the age of 65 have a license and they retain them as they age: nearly three-quarters of men aged 85 and over were still licensed in 1995 (U.S. Department of Transportation 1995:Table DL-20).

Because my focus is on the travel profiles of persons aged 75 and over, presence of children in the household and labor force status are excluded from the current analysis. Although children and jobs generate significant amounts of travel, there are too few older Americans with children at home or in the labor force for meaningful analysis.

Methods

This report includes analysis of travel issues by age and sex with reference to licensing status, education, household headship, income, race, and ethnicity as they affect travel behavior. Emphasis is on women aged 75 and over, and men aged 75 and over; data are presented for women aged 40 to 49 (early baby boomers) to illustrate their greater current mobility. (Appendix Table 2 summarizes characteristics for the entire sample.)

Weighted data from the 1995 NPTS person files are based on all trips (weekday and weekend) of 75 miles or less (see U.S. Department of Transportation 1994). Capping trips at 75 miles includes 98.8 percent of all cases and eliminates extreme outlyers that would skew the results. Unless otherwise noted, data in the Introduction and Overview are taken from Bianchi and Spain (1996) or Spain and Bianchi (1996).

Significant methodological differences between the 1995 NPTS and previous versions prevent direct comparisons with earlier data. Sample size has grown from 6,500 households in 1983 to 22,000 in 1990 and to 42,000 in 1995. More important than sample size, however, are changes in the way data were collected. The method in 1990 and previous surveys consisted of retrospective recall of all travel on the designated day. The 1995 survey asked respondents to keep a diary of their travel day for later reporting to the telephone interviewer. Respondent recall also was enhanced by a trip rostering method in which the interviewer prompted household members about trips other household members had reported taking. Preliminary analysis suggests that travel increased significantly between 1990 and 1995, but as much as two-thirds of that increase is attributed to changes in survey methods (U.S. Department of Transportation 1997).

An Aging Population

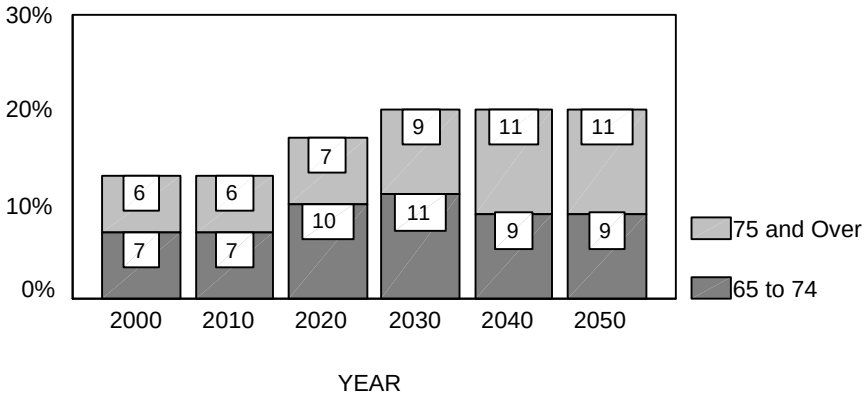
The proportion of the population aged 75 and over, now less than 6 percent, is projected to equal 9 percent by 2030. The median age of the American population rose from 28 in 1970 to 34 in 1995; by 2050 the median age is projected to be 38. The proportion of the population aged 65 and over is now approximately 13 percent and is projected to equal

20 percent by 2030. Those aged 85 and over, the “oldest-old”, are the fastest-growing group of elderly. The population aged 85 and over is expected to double (to 7 million) by the year 2020 and to equal 5 percent of the population by 2050 (DeVita 1996; Treas and Torrecilha 1995; U.S. Bureau of the Census 1996:Tables 14 & 17).

AGE DISTRIBUTION OF THE ELDERLY:

PROJECTIONS TO 2050

Figure 1



SOURCE: U.S. Bureau of the Census 1996: 17

An aging population is an issue for transportation planners because older persons experience travel limitations associated with declining health. In 1990, 16 percent of the elderly reported limited mobility outside the home resulting from chronic health problems. Ten percent of Americans aged 65 to 69 and 50 percent of those aged 85 and over report a “functional disability” within the home, or the need for assistance with meals, bathing, dressing, or walking (DeVita 1996). Poor health also can lead to institutionalization if there are no family members or friends available to help with personal care. About five percent of Americans aged 65 and over live in a nursing home or similar facility, and approximately 25 percent of those aged 85 and over live in institutions (Treas and Torrecilha 1995).

The elderly are a strong political force because they are more likely to vote than other age groups. For example, 70 percent of persons aged 65 and over voted in the 1992 presidential election compared with one-third to one-half of younger persons (U.S. Bureau of the Census 1996: Table 456). Public policy debates about tax and health care reforms will undoubtedly be supplemented by debates about appropriate transportation policy for the elderly. The baby boom has been an historically mobile population that is unlikely to settle down after retirement.

It is uncertain, of course, whether characteristics of those who are elderly now will apply to those who are elderly by the middle of the next century. Health care reforms, medical advances, safer workplaces, and healthier lifestyles may reduce the incidence of chronic

disabilities for the elderly in the future. The most likely scenario is that people will stay healthy longer, but will eventually succumb to functional limitations at later ages.

Three characteristics of the older population relevant for transportation planning are *increasing longevity, the predominance of women, and growing ethnic and racial heterogeneity.*

Increasing Longevity. Life spans in the U.S. have improved dramatically during the last century. A person born in 1900 was expected to live only 47 years, whereas **an American born in 1994 had a life expectancy of 76 years.** Projections are for continued longevity: Americans born in 2010 are expected to live to age 78 (U.S. Bureau of the Census 1975:55; 1996: 17,88). Life expectancies are averages, so many people live much longer than life tables predict.

Longer life does not necessarily insure a healthy life, however. Because the oldest-old are more frail and disabled than the young-old, they are likely to depend on public and private assistance for daily activities. Since one-quarter of persons aged 85 and over live in a nursing home, growth of this highly dependent population will begin to strain institutional facilities and the health care professions. The role of Medicare and Medicaid in long-term care will become increasingly important in the twenty-first century (Treas and Torrecilha 1995).

The needs of older Americans also will become critical to effective transportation planning. The oldest-old of the future will be more likely than today's elderly to have had a drivers' license, but licensing rates among today's older population begin to decline by age 75 and drop sharply at ages 85 and over. Loss of a drivers' license due to failing health is more than a blow to one's self-esteem; it is also a loss of independence. Unless home delivery of groceries, goods, and medical services is greatly expanded, or unless a substantially larger proportion of the oldest-old are institutionalized, the elderly who are aging in place in the suburbs will need alternatives to the car for many years (Howe et al. 1994; Rosenbloom 1995b).

Predominance of Women. Sixty-four percent of the population aged 75 and over is female. The skewed sex ratio results from women's longer life expectancy (currently 79 years compared with 72 years for men) (U.S. Bureau of the Census 1996: Tables 14 &118). Since women's longevity stabilized during the 1980s while men's improved, demographers Judith Treas and Ramon Torrecilha (1995:62) suggest that the historic excess of older women may be only a temporary shortage of older men. By 2030, 57 percent of the population aged 75 and over is projected to be female (U.S. Bureau of the Census 1996:Table 17).

Older women are more likely than older men to be widowed and to live alone. In 1996, for example, almost one-half of elderly women were widowed compared with only 15 percent of elderly men. Although elderly women are more likely than elderly men to live in a nursing home, a significant proportion live alone. **The percentage of women aged 75 and over who live alone rose from 37 to 53 percent between 1970 and 1996** (Bianchi and Spain 1996:13,14).

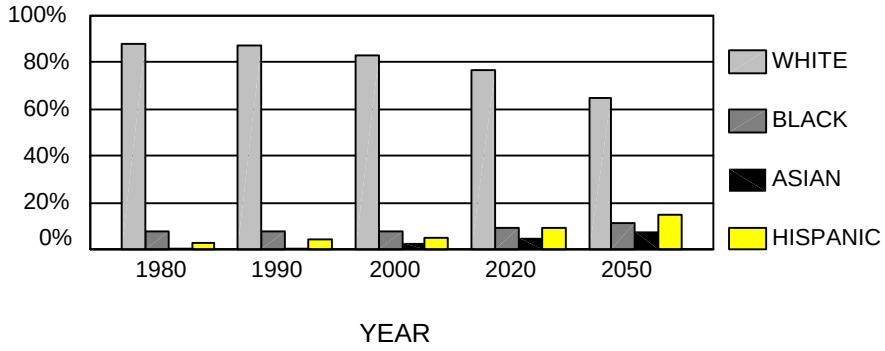
Feminization of the elderly has several implications for transportation planning. While most older men typically live with a wife, most older widows live alone or with kin. Both scenarios for women suggest dependence on others for transportation as physical health deteriorates. For older married women now, the husband is more likely to drive and the wife to travel as a passenger. If baby boom women keep their licenses, however, there may be an increase in number of vehicles, number of trips, and miles traveled.

Growing Ethnic and Racial Heterogeneity. The composition of the older population is becoming more diverse**. In 1990, 87 percent of the elderly were white; 8 percent black; 4 percent Hispanic; and 1 percent Asian. If current fertility differentials persist and immigration remains the same, projections for the year 2050 are that 65 percent of the elderly will be white; 11 percent black; 15 percent Hispanic; and 8 percent Asian** (Treas and Torrecilha 1995). The low projected growth rate of the black elderly compared with that of Hispanics and Asians is partially due to lower life expectancy: black men in 1994 had life expectancies of 68 compared with 73 for white men, and black women had life expectancies of 76 compared with 80 for white women (U.S. Bureau of the Census 1996: Table 118).

COMPOSITION OF THE ELDERLY POPULATION

1980 - 2050

Figure 2



NOTE: HISPANICS MAY BE OF ANY RACE

SOURCE: Treas and Torrecilha 1995

Minorities report more mobility limitations than elderly whites. In 1990, 21 percent of elderly black men reported difficulty going outside the house compared with 15 percent of Hispanic and 13 percent of elderly white men. Racial and ethnic minorities have been less likely than whites to use institutional care for the elderly, however (Treas and Torrecilha 1995).

Immigrants now make up approximately 10 percent of the elderly population, with the highest proportions of elderly foreign-born living in California, New York, and Florida. Forty-one percent of older immigrants who entered the U.S. during the 1980s speak no

English, contributing to a precarious economic status: Nearly one-quarter live in poverty compared with one-half that figure for the total elderly population. The economic well-being of elderly immigrant non-citizens may be further eroded by legislation limiting their ability to collect public assistance (Treas and Torrecilha 1995).

The transportation implications of growing racial and ethnic diversity among the elderly include differential dependence on public transit and differential access to transit due to residential segregation: the white elderly are likely to live in the suburbs and the minority elderly to live in urban enclaves (Massey and Denton 1993). If minorities are more dependent than whites on family members for personal care, they also may be more dependent on kin for transportation needs.

Women's Increased Independence

The baby boom generation came of age in a volatile political climate. The civil rights movement, the women's movement, and the Viet Nam War were all at their peak during the late 1960s and early 1970s. Legalized abortion and oral contraceptives also became available during that period. As women gained the ability to control the timing of their fertility, attitudes about appropriate roles for women became more liberal. It is understandable, then, that women of the baby boom had more options than their mothers.

Three trends contributing to women's expanded economic independence are *educational attainment, labor force participation, and primary responsibility for households and families.*

Educational Attainment. As the proportion of women enrolled in college has risen, so have their graduation rates. **Only 8 percent of women aged 25 to 34 obtained a college degree in 1960 compared with 15 percent of young men. In 1980 baby boomers signalled a major change, with 21 percent of young women and 27 percent of young men finishing college.** Graduation rates for women have risen only slightly since and have declined slightly for men: in 1994 nearly one-quarter of young women and men had college degrees. In 1990, baby boom women were twice as likely as older men to have college degrees (25 versus 12 percent) (Spain and Bianchi 1996:55).

Racial and ethnic differences among college graduates are pronounced. In 1990 Asian women had the highest college completion rates (32 percent) followed by white women (19 percent), black (12 percent) and Hispanic (8 percent).

The higher the educational attainment for women, the greater their labor force participation. In 1990 almost three-quarters of women with a college degree were in the labor force compared with one-half of women with a high school degree, and 40 percent of college-educated women worked full-time compared with 31 percent of high school graduates. (Bianchi and Spain 1996; Spain and Bianchi 1996:54,67-73).

Labor Force Participation . The story of women's labor force participation is fairly straightforward: it has continued to rise, virtually unchecked, since the Depression**. Almost 60 percent of all women aged 16 and over are now employed outside the home. The rate is 76 percent among women in the prime working ages of 25 to 54 (the majority of whom are baby boomers).**

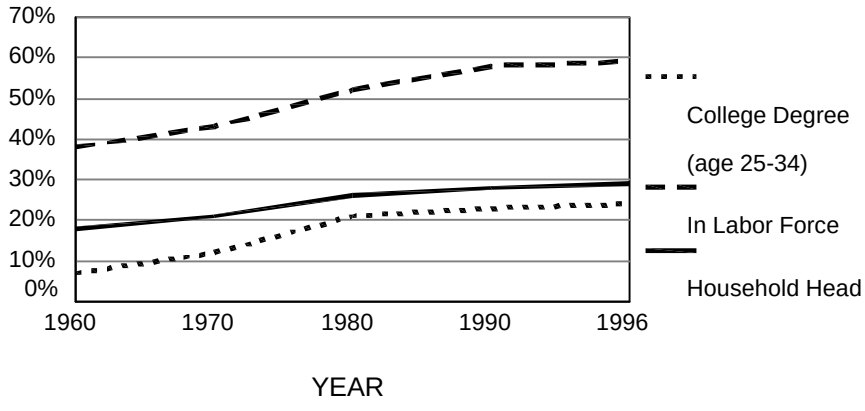
Significant changes in labor force behavior have occurred among *young* women. During the 1950s and 1960s working women typically dropped out of the labor force when they had children. But during the 1970s and 1980s women began working continuously through their childbearing years, and by 1990 there were almost imperceptible differences in women's labor force participation rates by age among those in their primary working years.Labor force participation increased most rapidly for the group with the lowest rates historically – married women with children. Between 1970 and 1996 the proportion of *married mothers* in the labor force increased from one-half to almost three-fourths; those who worked full-time, year-round increased from 16 to 38 percent.

Responsibility for Households and Families. Delayed marriage, high divorce rates, and high out-of-wedlock fertility mean that women are more likely now than in the past to maintain their own households**. Between 1960 and 1995 the proportion of all *households* headed by a woman rose from 18 to 29 percent and the proportion of all *families* headed by a woman rose from 10 to 18 percent.** Women who head a household typically live alone or with dependent children. **The proportion of all women living alone increased from 9 to 14 percent between 1970 and 1996, and the biggest change was among women aged 75 and over, for whom the proportion living alone rose from 37 to 53 percent between 1970 and 1996.**

INDICATORS OF WOMEN'S INDEPENDENCE:

1960 - 1996

Figure 3



SOURCE: Bianchi and Spain 1996; U.S. Bureau of the Census 1996, 1997

The combined effects of rising educational attainment, women's entry into the labor force, and the growth of households maintained by women have several implications for transportation planning. In terms of education and labor force activity, women are becoming more like men and their journey-to-work patterns may resemble those of men. On the other hand, as the baby boom reaches retirement age, proportionately fewer trips will be commutes to work and proportionately more will be made to take care of personal and family business.

TRAVEL PATTERNS

This section describes travel patterns for the population by age and sex, with emphasis on the baby boom cohort and those currently aged 75 and over (the old-old, also referred to as "older"). Variables include licensing rates, access to vehicles, and four measures of mobility.

Table 2.1

MEASURES OF MOBILITY FOR 1995 NPTS SAMPLE

Percent Aged 16+ Licensed to Drive	89%
Percent Living in Household Without a Vehicle	6%
Mean Person Trips per Day	3.88
Mean Person Miles per Day	29.3
Mean Vehicle Trips per Day	2.42
Mean Vehicle Miles per Day	19.3

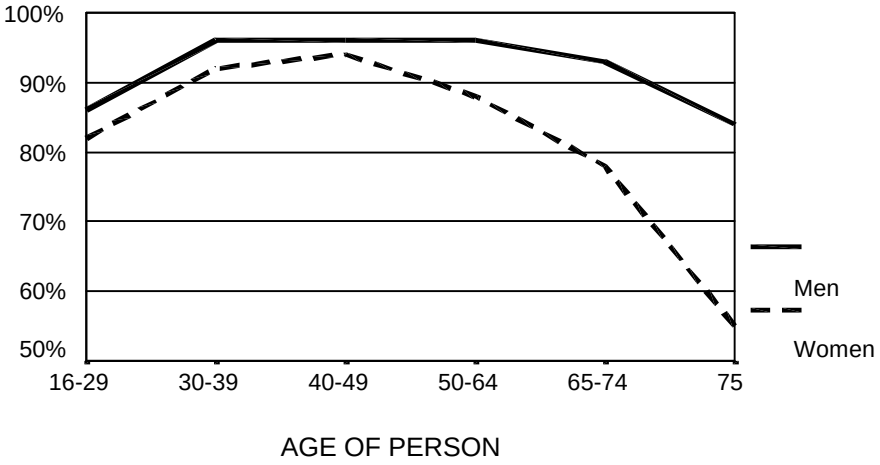
Source: 1995 NPTS Person File

Licensing Rates

In 1995, 55 percent of women and 84 percent of men aged 75 and over were licensed to drive compared with 94 percent of baby boom women. Licensing rates have risen dramatically for older women over the last several decades. Men, on the other hand, have had historically high licensing rates. Thus licensing differences by gender are still most pronounced at later ages. Baby boomers grew up in an automotive culture. Women of that generation also stayed in school longer and were more likely to enter the labor force than their predecessors. **If baby boom women keep their licenses at the same rate as men do now, 84 percent of women aged 75 and over will be licensed by 2030.**

PERCENTAGE OF AMERICANS LICENSED TO DRIVE

Figure 4



SOURCE: 1995 NPTS PERSON FILE

More women have licenses now because they need private vehicles to accomplish most tasks. When they become older, baby boom women will no longer be in the labor force and will no longer have young children at home, two factors that produce the most travel now (Al-Kazily 1995; Rosenbloom 1995a; Strathman and Dueker 1995). One way to reduce the projected increase in demand for licenses is to reduce the demand for cars by increasing population density. As admirers of Jane Jacobs (1961) have argued for years, higher densities (and mixed uses) are necessary ingredients for successful cities. Residential proximity to shopping and to health care facilities will become increasingly important, and the potential for both already exists in cities.

Access to Vehicles

In 1995, 25 percent of older women lived in households without vehicles compared with 6 percent of older men. By comparison, baby boomers have extremely high vehicle ownership rates and differences by sex are practically nonexistent. Only 4 percent of female baby boomers lived in households without a vehicle in 1995 compared with 3 percent of baby boom men. **If baby boom women keep their cars at the same rate as older men have, only 6 percent will live in households without a vehicle when they reach their parents' age.**

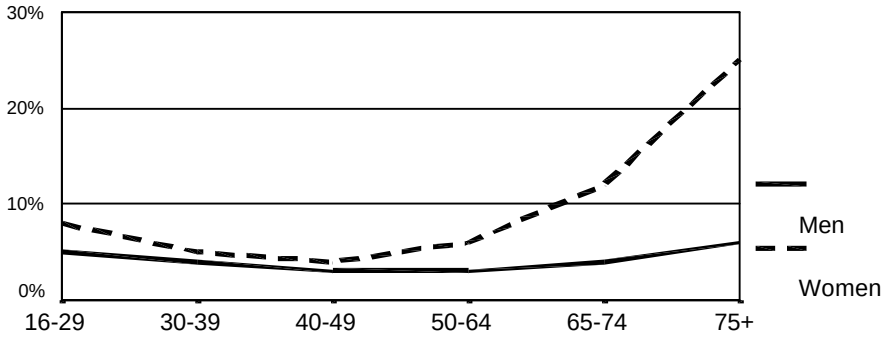
Vehicle ownership has become almost as universal as licensing. The proportion of households with no vehicle declined from approximately 21 percent in 1969 to 9 percent in 1990. Since households without vehicles tend to be smaller than average, only 6 percent of *persons* lived in households without vehicles in 1990 (Lave and Crepeau 1994). The 1995 NPTS also reports 6 percent of persons without vehicles.

Older women are less likely than older men to own a car partly because of women's lower licensing rates. In 1995, 25 percent of older women lived in households without a car compared with 6 percent of older men. The typical household without a vehicle has no one in the labor force, has a lower than average income, and lives in a central city. Most of these households are either retired older people or single adults without children, and most are likely to be headed by women (Cutler and Coward 1992;Lave and Crepeau 1994).

PERCENT OF AMERICANS IN HOUSEHOLDS

WITH NO VEHICLES

Figure 5



SOURCE: 1995 NPTS PERSON FILE

Mobility

The NPTS measures mobility by the average daily numbers of person trips, person miles, vehicle trips, and vehicle miles driven. A *person trip* is a trip by one person using *any mode of transportation*; person miles are the number of miles traveled by each person on a trip. Thus two people traveling together in one car are counted as two person trips and if they traveled three miles it would count as six person miles (2 persons x 3 miles). A *vehicle trip* is a trip by a single *privately operated vehicle (POV*), regardless of the number of persons in the vehicle. Vehicle miles of travel (VMT) refers to distance covered in a POV by a driver in the NPTS sample household (U.S. Department of Transportation 1994).

As described in the methods section, this report is limited to averages for all trips (weekday and weekend) of 75 miles or less, a decision that eliminated approximately 1 percent of the sample at the highest extreme. By these criteria, person trips averaged 4.0 per day and person miles averaged 31; vehicle trips averaged 3.0 per day and vehicle miles driven averaged 23 (see Appendix Table 3).

Table 2.2

AVERAGE NUMBER OF PERSON TRIPS ON TRIP DAY
BY AGE AND SEX

AGE	MALES	FEMALES
16-29	4.13	4.16
30-39	4.21	4.52
40-49	4.29	4.50
50-64	4.05	3.54
65-74	3.91	3.19
75+	2.93	2.11
Column Mean	4.09	3.95
For Entire Population	4.02	

Table 2.3

AVERAGE NUMBER OF PERSON MILES TRAVELED ON TRIP DAY
BY AGE AND SEX

AGE	MALES	FEMALES
16-29	34.9	30.6
30-39	38.7	33.1
40-49	39.7	32.4
50-64	34.9	24.5
65-74	26.3	19.4
75+	19.0	10.9
Column Mean	35.2	27.8
For Entire Population	31.4	

Older women make the fewest person trips per day (2.1) of any age-sex group (compared with 2.9 for older men), while baby boom women make the most person trips per day (4.5). Older women are less mobile than older men and are considerably less mobile than baby boom women. Part of this difference is due to baby boom women being in the prime working and family stages of the life-cycle. **Older women travel about one-half as many person miles per day as older men (11 versus 19 miles)** and only one-third as many person miles as baby boom women (32). (Baby boom women still travel fewer miles than baby boom men, who average 40 person miles per day.) **If baby boom women make as**

many trips and travel as many miles as older men do now, they will make 2.9 trips per day and travel 19 miles per day when they reach ages 75 and over.

Table 2.4
AVERAGE NUMBER OF VEHICLE TRIPS ON TRIP DAY
BY AGE AND SEX

AGE	MALES	FEMALES
16-29	2.89	2.55
30-39	3.45	3.26
40-49	3.63	3.36
50-64	3.41	2.34
65-74	3.20	1.90
75+	2.18	1.07
Column Mean	3.25	2.65
For Entire Population	2.94	

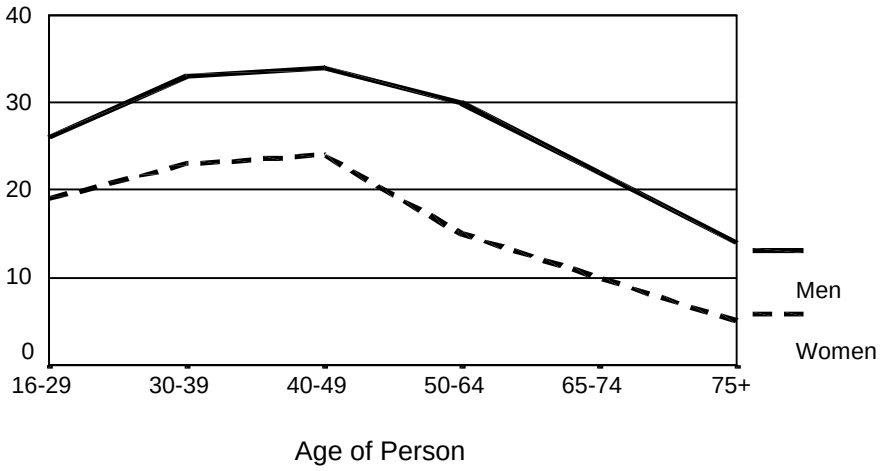
Table 2.5

AVERAGE NUMBER OF VEHICLE MILES DRIVEN ON TRIP DAY
BY AGE AND SEX

AGE	MALES	FEMALES
16-29	25.9	19.2
30-39	32.9	23.3
40-49	34.5	23.6
50-64	29.7	14.9
65-74	21.6	10.5
75+	13.7	4.9
Column Mean	28.9	18.3
For Entire Population	23.4	

MILES DRIVEN PER DAY

Figure 6



SOURCE: 1995 NPTS PERSON FILE

Older women make only 1.1 vehicle trip per day compared with 2.2 for older men and 3.4 for baby boom women. These differences reflect older women's greater use of transit and nonmotorized modes of transportation (Rosenbloom 1995b). **Older women drive only 5 vehicle miles per day compared with 14 for older men** and 24 for baby boom women. If baby boom women use cars as often and drive as many miles per day as older men do now, they will be making 2.2 vehicle trips and driving 14 miles per day when they are 75 and older, increases over current rates of 100 percent and 180 percent, respectively.

Table 2.6

MEASURES OF MOBILITY FOR BABY BOOM AND OLDER COHORTS

	Women Aged 40-49	Women Aged 75+	Men Aged 75+
Percent Licensed to Drive	94%	55%	84%
Percent Living in Households Without a Vehicle		25%	6%
Mean Person Trips per Day	4.5	2.1	2.9
Mean Person Miles per Day	32	11	19
Mean Vehicle Trips per Day	3.4	1.1	2.2
Mean Vehicle Miles per Day	24	5	14

Source: 1995 NPTS Person File

Table 2.6 summarizes differences in transportation access and mobility for baby boom women and for women and men of their parents' generation. If baby boom women adopt their father's travel profiles rather than their mothers', older women in the future will be 53 percent more likely to be licensed than older women now (84 versus 55 percent); and four times *less* likely to live in a household without a vehicle (6 versus 25 percent). Older women in the future will make more person trips per day (2.9 versus 2.1), travel almost twice as many person miles (19 versus 11), make twice as many vehicle trips (2.2 versus 1.1), and drive almost three times as many vehicle miles (14 versus 5) as older women do now.

CONTRIBUTING ELEMENTS

A number of factors affect differences in travel behavior among baby boomers and older Americans. For example, trip rates and miles traveled are highest in households with children and employed persons travel more than those not in the labor force (Rosenbloom 1995a). Because so few older Americans are either employed or living in households with children, however, household composition and labor force status are omitted from this analysis.

The elderly are now more likely to live in the suburbs than in central cities, and suburbs typically have residential densities too low to support efficient public transit (Howe et al. 1994; Rosenbloom 1995b). Since baby boomers grew up in the suburbs, they may be even more likely than the contemporary elderly to remain in the suburbs. On the other hand, baby boomers were the leading edge of gentrification in the 1970s and may be more sympathetic to urban living than their parents' generation when mobility becomes more important than the quality of public schools. This section summarizes the effects of licensing, education, household income, and race and ethnicity on travel patterns.

Licensing

Access to vehicles . The effect of holding a driver's license on travel behavior is predictable: women and men without drivers' licenses are less likely to own vehicles than people with a license.

Even when licensed, older women are less likely than older men to own a vehicle: 4 percent live in households with no vehicles compared with 2 percent of men. In contrast, less than 2 percent of baby boom women with licenses live in households with no vehicles.

Baby boomers with licenses show little difference by gender in their access to private vehicles. Although access to vehicles is affected by more than the legal ability to drive, vehicle ownership will be nearly universal among older Americans in the future if baby boom women keep their licenses as long as older men do now.

Mobility. Older women who are licensed make only 2.8 person trips per day compared with 3.2 for older licensed men and 4.6 for baby boom women.. Licensed older women travel fewer person miles (15) than older men (21). Licensed older women also make fewer vehicle trips and drive fewer miles (2.0 trips and 9 miles) than older men (2.6 trips and 16 miles). Licensed baby boom women travel twice as many person miles (34), make more vehicle trips (3.6), and drive more miles (25) than older women or men do now.

Table 3.1

AVERAGE NUMBER OF PERSON TRIPS ON TRIP DAY
BY AGE, SEX, AND DRIVER STATUS

AGE	MALES PERSON IS A DRIVER?		FEMALES PERSON IS A DRIVER?	
	YES	NO	YES	NO
16-29	4.30	2.99	4.43	2.87
30-39	4.28	2.60	4.65	2.92
40-49	4.35	2.81	4.64	2.42
50-64	4.12	2.52	3.75	1.96
65-74	4.07	1.87	3.59	1.76
75+	3.23	1.42	2.80	1.25
Column Mean	4.21	2.62	4.25	2.18
For Entire Population		4.02		

Table 3.2

AVERAGE NUMBER OF PERSON MILES TRAVELED ON TRIP DAY
BY AGE, SEX, AND DRIVER STATUS

	MALES		FEMALES	
	PERSON IS A DRIVER?		PERSON IS A DRIVER?	
AGE	YES	NO	YES	NO
16-29	37.8	16.5	33.9	15.1
30-39	39.7	16.3	34.3	17.2
40-49	40.5	18.7	33.7	12.5
50-64	35.7	17.5	26.5	10.1
65-74	27.6	10.8	22.5	8.4
75+	21.1	8.1	15.2	5.6
Column Mean	36.8	15.5	30.7	11.3
For Entire Population		31.4		

Table 3.3

AVERAGE NUMBER OF VEHICLE TRIPS ON TRIP DAY
BY AGE, SEX, AND DRIVER STATUS

	MALES		FEMALES	
	PERSON IS A DRIVER?		PERSON IS A DRIVER?	
AGE	YES	NO	YES	NO
16-29	3.33	N.A.	3.08	N.A.
30-39	3.59	N.A.	3.52	N.A.
40-49	3.77	N.A.	3.58	N.A.
50-64	3.56	N.A.	2.65	N.A.
65-74	3.45	N.A.	2.42	N.A.
75+	2.60	N.A.	1.95	N.A.
Column Mean	3.50	N.A.	3.10	N.A.
For Entire Population		2.94		

Table 3.4

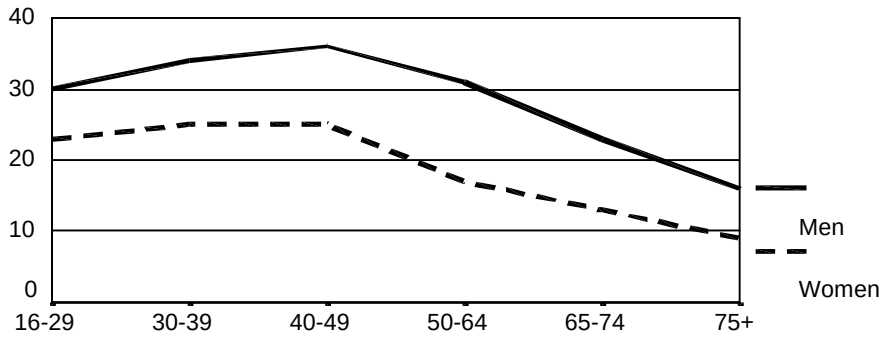
AVERAGE NUMBER OF VEHICLE MILES DRIVEN ON TRIP DAY
BY AGE, SEX, AND DRIVER STATUS

	MALES		FEMALES	
	PERSON IS A DRIVER?		PERSON IS A DRIVER?	
AGE	YES	NO	YES	NO
16-29	29.8	N.A.	23.2	N.A.
30-39	34.3	N.A.	25.2	N.A.
40-49	35.8	N.A.	25.1	N.A.
50-64	31.0	N.A.	16.9	N.A.
65-74	23.2	N.A.	13.4	N.A.
75+	16.4	N.A.	8.9	N.A.
Column Mean	31.2	N.A.	21.4	N.A.
For Entire Population		23.4		

MILES DRIVEN PER DAY

BY LICENSED DRIVERS

Figure 7



SOURCE: 1995 NPTS PERSON FILE

If baby boom women who are licensed retain men's travel profile as they age, one-half as many will live in households with no vehicles (2 percent) as women who are 75 and over now. Aging baby boom women with licenses also will make 0.4 more person trips per day, travel about 6 more person miles, make 0.6 more vehicle trips, and drive almost twice as many vehicle miles (16) as older women do now.

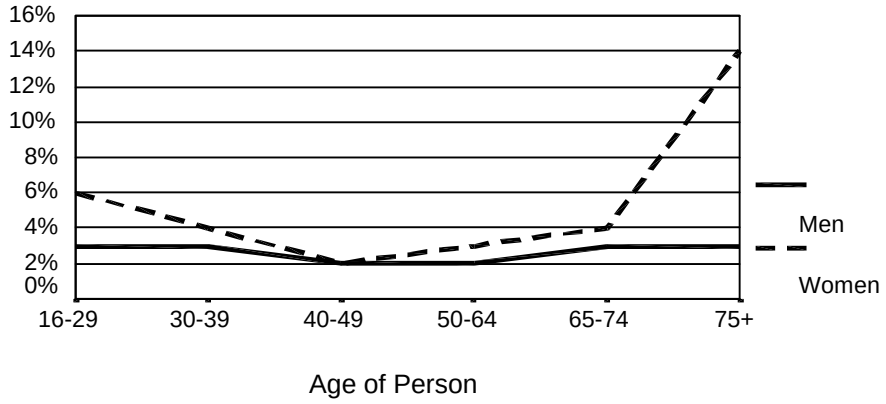
Educational Attainment

Access to vehicles . The more highly educated the woman, the more likely she is to live in a household with a vehicle. While educational attainment makes little difference in vehicle ownership for *men* until the oldest ages, it is quite important for women across all age groups.. In fact, the older the woman, the more pronounced the relationship. **By ages 75 and over, 14 percent of women with a college degree live in households with no vehicle compared with 30 percent of those with high school or less. Among older men, 3 percent with a college degree live in households with no vehicle compared with only 8 percent of those with a high school degree.**

COLLEGE-EDUCATED PERSONS

IN HOUSEHOLDS WITH NO VEHICLES

Figure 8



SOURCE: 1995 NPTS PERSON FILE

Mobility. Higher education is associated with greater mobility. **College-educated older women make 2.7 person trips per day (versus 2.0 for high school graduates) compared with 3.4 per day for older men with college degrees (versus 2.7 for high school graduates).** College-educated baby boom women make 4.9 person trips per day compared with 4.1 for female high school graduates. College-educated baby boom women travel 35 person miles, on average, compared with 28 for high school graduates. Older women with a college degree travel 14 person miles per day compared with 10 per day for high school graduates and 22 person miles per day for older men with a college degree (18 for high school graduates).

Table 3.5

AVERAGE NUMBER OF PERSON TRIPS ON TRIP DAY
BY AGE, SEX, AND EDUCATION

	MALES			FEMALES		
	EDUCATION			EDUCATION		
AGE	H.S. OR LESS	SOME COLLEGE	COLLEGE OR MORE	H.S. OR LESS	SOME COLLEGE	COLLEGE OR MORE
16-29	3.87	4.54	4.35	3.96	4.47	4.27
30-39	3.95	4.41	4.43	4.22	4.81	4.65
40-49	3.91	4.45	4.53	4.09	4.65	4.88
50-64	3.65	4.39	4.47	3.28	3.82	3.93
65-74	3.50	4.43	4.50	2.92	3.52	4.08
75+	2.68	3.64	3.36	1.96	2.50	2.70
Column Mean	3.74	4.44	4.42	3.56	4.33	4.41
For Entire Population			4.02			

Table 3.6

AVERAGE NUMBER OF PERSON MILES TRAVELED ON TRIP DAY
BY AGE, SEX, AND EDUCATION

	MALES			FEMALES		
	EDUCATION			EDUCATION		
AGE	H.S. OR LESS	SOME COLLEGE	COLLEGE OR MORE	H.S. OR LESS	SOME COLLEGE	COLLEGE OR MORE
16-29	31.6	38.7	40.2	26.4	34.7	36.1
30-39	37.0	40.8	39.6	30.6	35.3	34.3
40-49	36.5	41.0	41.8	28.4	34.7	35.2
50-64	31.9	39.2	36.9	23.1	26.5	26.5
65-74	24.1	29.1	29.8	18.3	19.1	26.0
75+	17.8	21.4	21.8	9.8	14.0	13.7
Column Mean	31.9	38.7	38.3	24.1	31.4	32.3
For Entire Population			31.4			

Table 3.7

AVERAGE NUMBER OF VEHICLE TRIPS ON TRIP DAY
BY AGE, SEX, AND EDUCATION

	MALES			FEMALES		
	EDUCATION			EDUCATION		
AGE	H.S. OR LESS	SOME COLLEGE	COLLEGE OR MORE	H.S. OR LESS	SOME COLLEGE	COLLEGE OR MORE
16-29	2.47	3.46	3.41	2.20	3.02	2.83
30-39	3.19	3.68	3.64	2.94	3.54	3.42
40-49	3.23	3.79	3.89	2.93	3.59	3.69
50-64	3.06	3.74	3.77	2.04	2.68	2.77
65-74	2.84	3.79	3.65	1.63	2.20	2.85
75+	1.92	3.04	2.51	0.89	1.55	1.58
Column Mean	2.84	3.64	3.66	2.21	3.06	2.95
For Entire Population			2.95			

Table 3.8

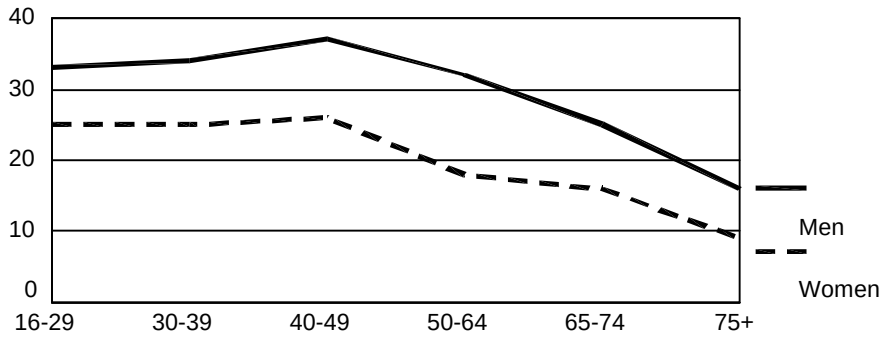
AVERAGE NUMBER OF VEHICLE MILES DRIVEN ON TRIP DAY
BY AGE, SEX, AND EDUCATION

	MALES EDUCATION			FEMALES EDUCATION		
AGE	H.S. OR LESS	SOME COLLEGE	COLLEGE OR MORE	H.S. OR LESS	SOME COLLEGE	COLLEGE OR MORE
16-29	21.3	31.5	32.6	14.6	23.9	25.1
30-39	30.6	35.3	34.4	20.2	25.3	25.4
40-49	31.2	35.7	36.9	19.8	25.9	26.2
50-64	26.6	33.6	31.9	12.8	17.3	17.9
65-74	19.1	25.2	25.0	9.4	11.2	15.6
75+	12.3	17.6	16.3	3.8	7.5	8.8
Column Mean	24.8	32.9	32.9	14.3	21.9	23.1
For Entire Population			23.5			

MILES DRIVEN PER DAY

BY COLLEGE-EDUCATED PERSONS

Figure 9



SOURCE: 1995 NPTS PERSON FILE

Older college-educated women make fewer vehicle trips than men with comparable educational attainment and drive fewer vehicle miles: 1.6 vehicle trips and 9 vehicle miles compared with 2.5 vehicle trips and 16 vehicle miles for older men. Baby boom

women with a college degree make more trips by POV (3.7) and drive more miles (26) than those with high school degrees (who average 2.9 person trips and 20 person miles).

If baby boom women with college degrees resemble older men with college degrees when they reach ages 75 and over, only 3 percent will live in households without vehicles and 10 percent will use transit. When baby boom women are older, they will make 3.4 person trips and 2.5 vehicle trips per day and they will travel 22 person miles and drive 16 vehicle miles per day. Older college-educated women, by 2030, will be nearly five times as likely to own cars and 28 percent less likely to use transit than women of their mothers' age. They will make 0.7 more person trips, travel 8 more person miles, make 0.9 more vehicle trips, and drive 7 more vehicle miles than older women do now.

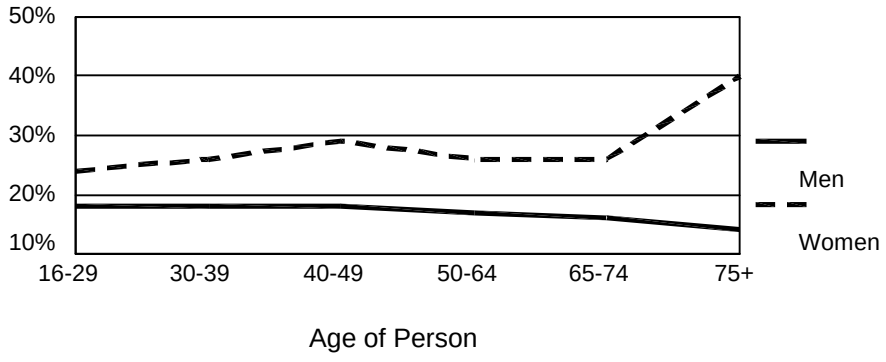
Household Income

Access to vehicles. Gender differences in access to vehicles by income are large among both the old-old and the baby boom generations**. Women aged 75 and over living in households with incomes less than $15,000 are almost three times as likely (40 percent) as low-income men that age (14 percent) to lack a vehicle**, while 29 percent of low-income baby boom women live in households without vehicles compared with about 18 percent of low-income baby boom men.

PERSONS IN LOW INCOME HOUSEHOLDS

WITH NO VEHICLES

Figure 10



NOTE: LOW INCOME = < $15,000

SOURCE: 1995 NPTS PERSON FILE

There are few surprises regarding the relationship between household income and travel behavior: money buys mobility. Affluent households are less likely than middle- and upper-income households to lack a vehicle; they also make more trips and travel more miles than low-income households.

Table 3.9

AVERAGE NUMBER OF PERSON TRIPS ON TRIP DAY
BY AGE, SEX, AND HOUSEHOLD INCOME

	MALES			FEMALES		
	HOUSEHOLD INCOME			HOUSEHOLD INCOME		
AGE	<$15,000	$15,000-$59,999	$60,000+	<$15,000	$15,000-$59,999	$60,000+
16-29	3.73	4.26	4.40	3.74	4.28	4.64
30-39	3.69	4.33	4.27	4.12	4.67	4.67
40-49	3.63	4.36	4.55	3.64	4.59	4.84
50-64	3.40	4.13	4.42	2.86	3.72	3.84
65-74	2.97	4.20	4.08	2.71	3.56	3.75
75+	2.55	3.17	3.56	1.93	2.60	2.08
Column Mean	3.44	4.23	4.39	3.15	4.19	4.49
For Entire Population			4.02			

Table 3.10

AVERAGE NUMBER OF PERSON MILES TRAVELED ON TRIP DAY
BY AGE, SEX, AND HOUSEHOLD INCOME

	MALES			FEMALES		
	HOUSEHOLD INCOME			HOUSEHOLD INCOME		
AGE	<$15,000	$15,000-$59,999	$60,000+	<$15,000	$15,000-$59,999	$60,000+
16-29	25.6	37.4	37.8	23.6	32.3	36.7
30-39	26.4	39.7	42.2	25.4	33.6	37.0
40-49	28.9	39.5	43.0	23.9	32.2	37.1
50-64	22.3	36.0	39.0	16.6	25.7	28.5
65-74	18.5	28.3	30.2	15.2	22.2	26.3
75+	15.4	20.4	21.6	8.8	14.4	11.9
Column Mean	23.7	37.7	40.0	18.8	29.7	34.6
For Entire Population			31.4			

Table 3.11

AVERAGE NUMBER OF VEHICLE TRIPS ON TRIP DAY
BY AGE, SEX, AND HOUSEHOLD INCOME

	MALES			FEMALES		
	HOUSEHOLD INCOME			HOUSEHOLD INCOME		
AGE	<$15,000	$15,000-$59,999	$60,000+	<$15,000	$15,000-$59,999	$60,000+
16-29	2.08	3.09	3.21	2.09	2.72	2.88
30-39	2.57	3.60	3.55	2.41	3.43	3.52
40-49	2.49	3.72	3.95	2.20	3.54	3.58
50-64	2.42	3.51	3.88	1.63	2.47	2.63
65-74	2.16	3.50	3.38	1.54	2.12	2.13
75+	1.62	2.44	2.68	0.89	1.41	1.24
Column Mean	2.24	3.42	3.64	1.77	2.89	3.16
For Entire Population			3.03			

Table 3.12

AVERAGE NUMBER OF VEHICLE MILES DRIVEN ON TRIP DAY
BY AGE, SEX, AND HOUSEHOLD INCOME

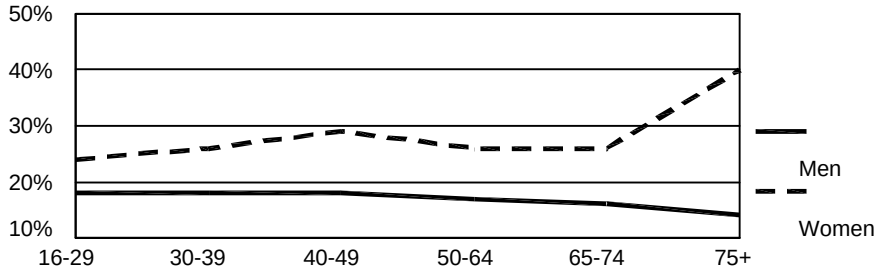
	MALES			FEMALES		
	HOUSEHOLD INCOME			HOUSEHOLD INCOME		
AGE	<$15,000	$15,000-$59,999	$60,000+	<$15,000	$15,000-$59,999	$60,000+
16-29	17.1	28.1	29.5	13.8	20.8	23.5
30-39	20.0	33.8	36.9	14.6	24.1	27.4
40-49	21.1	34.7	38.3	15.2	24.6	26.4
50-64	16.9	30.6	34.5	8.7	15.7	18.2
65-74	12.9	23.8	25.6	8.7	11.9	13.7
75+	9.9	15.1	17.6	3.6	7.0	7.3
Column Mean	16.8	30.3	34.5	10.6	20.0	23.9
For Entire Population			24.2			

Mobility. Number of person trips made per day, miles traveled, vehicle trips, and miles driven all increase with household income *except for older women.* **Although average number of person trips per day among those aged 75 and over rises with income for men (from 2.6 to 3.6), it is relatively stable for older women (1.9 and 2.1) and is actually highest for middle-income women (2.6). Person miles traveled per day rise with income for older men (from 15 to 22) and for older women (from 9 to 12), but person miles traveled for older women, like person trips, peak for the middle-income (at 14).** Affluent baby boom women make 4.8 person trips per day compared with 2.1 for older women and 3.6 for older men with high incomes.

PERSONS IN LOW INCOME HOUSEHOLDS

WITH NO VEHICLES

Figure 10



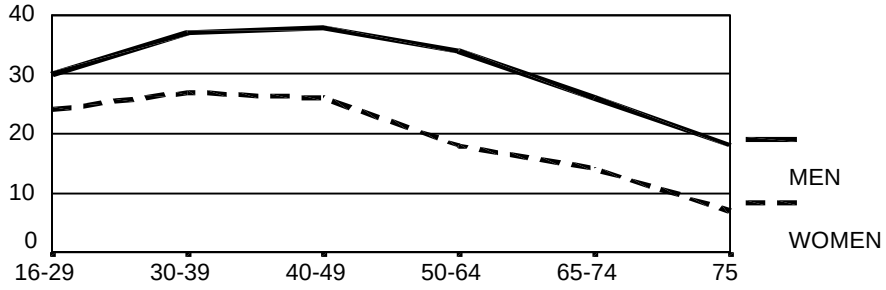
NOTE: LOW INCOME = < $15,000

SOURCE: 1995 NPTS PERSON FILE

MILES DRIVEN PER DAY

BY PERSONS IN HIGH-INCOME HOUSEHOLDS

Figure 12



NOTE: HIGH INCOME = $60,000 +

SOURCE: 1995 NPTS PERSON FILE

The same general relationship holds for use of POVs and miles driven per day. Higher income translates into progressively greater mobility for older men (from 1.6 to 2.7 vehicle trips per day and from 10 to 18 miles driven). Older women with middle incomes make the most vehicle trips per day (1.4), and, along with the wealthiest, drive the most miles per day (7).

If affluent baby boom women adopt older affluent men's mobility patterns, they will double their car ownership compared with older women now. Affluent older women in the future will take 3.6 person trips, travel 22 person miles, take 2.7 vehicle trips, and

drive approximately 18 miles per day when they reach 75. In other words, older wealthy women in the future will make 1.5 more person trips, travel 10 more person miles, make 1.5 more vehicle trips, and drive 11 more miles per day than older women do now if they age like men.

Changes are not as dramatic at the lower end of the income spectrum, but travel among older poor women may still increase over what it is today. Older women with household incomes less than $15,000 in the future will make 0.7 more person trips, travel 6 more person miles, take 0.7 more vehicle trips, and drive 6 more vehicle miles than older poor women do now if they resemble older men's travel profiles.

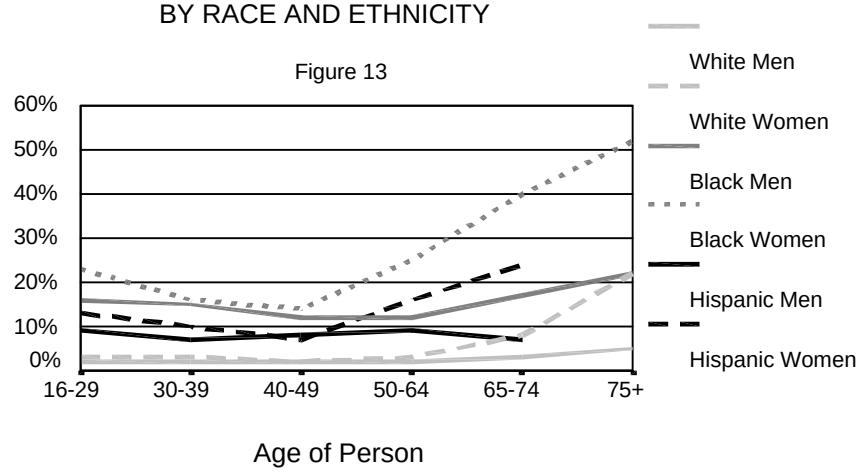
Race and Ethnicity

Access to vehicles. Blacks and other minorities face transportation inequalities that mirror their lower socio-economic status.. Differences between whites and minorities do not necessarily intensify with age, but travel inequalities by race and ethnicity are exacerbated by gender. For example, among white older Americans, 22 percent of women lacked access to a vehicle compared with 5 percent of men. Among black older Americans, one-half of women compared with one-quarter of men lacked vehicles. The pattern is similar for other minorities, and there were too few older Hispanics to make meaningful comparisons.

PERSONS IN HOUSEHOLDS WITH NO VEHICLES

BY RACE AND ETHNICITY

Figure 13



SOURCE: 1995 NPTS PERSON FILE

Among baby boom women, only 2 percent of white households lack vehicles compared with 14 percent of black households and about 9 percent of Hispanic and other minority households.

Mobility. Since the older population will be more racially and ethnically diverse in the future, their collective mobility may decline below that for Americans who are older now (87 percent of whom are white). Because minority women have lower mobility than

white women, average numbers of trips taken and miles traveled should decline because the older population will be proportionately more black, Asian, and Hispanic than it is now.

Table 3.13

AVERAGE NUMBER OF PERSON TRIPS ON TRIP DAY
BY AGE, SEX, AND RACE

	MALES			FEMALES		
	RACE			RACE		
AGE	WHITE	BLACK	OTHER	WHITE	BLACK	OTHER
16-29	4.21	3.79	3.95	4.34	3.81	3.57
30-39	4.23	3.91	4.29	4.60	4.39	4.17
40-49	4.35	3.98	4.08	4.60	4.21	3.96
50-64	4.11	3.38	4.10	3.67	2.83	3.09
65-74	4.05	2.97	3.23	3.40	1.98	2.44
75+	3.01	2.24	2.94	2.19	1.40	2.43
Column Mean	4.15	3.67	4.02	4.05	3.56	3.65
For Entire Population			4.02			

Table 3.14

AVERAGE NUMBER OF PERSON TRIPS ON TRIP DAY
BY AGE, SEX, AND HISPANIC STATUS

	MALES		FEMALES	
	HISPANIC STATUS		HISPANIC STATUS	
AGE	HISPANIC	NOT HISPANIC	HISPANIC	NOT HISPANIC
16-29	4.24	4.11	3.81	4.21
30-39	4.31	4.20	4.21	4.56
40-49	4.58	4.27	4.41	4.51
50-64	4.02	4.05	2.98	3.59
65-74	3.42	3.92	2.61	3.22
75+	------	------	------	------
Column Mean	4.21	4.08	3.95	3.97
For Entire Population		4.02		

Table 3.15

AVERAGE NUMBER OF PERSON MILES TRAVELED ON TRIP DAY
BY AGE, SEX, AND RACE

	MALES			FEMALES		
	RACE			RACE		
AGE	WHITE	BLACK	OTHER	WHITE	BLACK	OTHER
16-29	36.4	28.4	31.4	33.1	24.4	24.4
30-39	39.8	33.3	35.0	33.9	31.0	30.1
40-49	40.4	38.2	35.8	33.1	30.7	28.3
50-64	35.7	28.3	32.9	25.9	18.0	17.7
65-74	27.8	15.3	21.0	21.0	10.9	13.1
75+	19.9	13.6	13.3	11.6	4.8	10.8
Column Mean	36.2	29.8	32.3	28.9	23.7	24.8
For Entire Population			31.4			

Table 3.16

AVERAGE NUMBER OF PERSON MILES TRAVELED ON TRIP DAY
BY AGE, SEX, AND HISPANIC STATUS

	MALES		FEMALES	
	HISPANIC STATUS		HISPANIC STATUS	
AGE	HISPANIC	NOT HISPANIC	HISPANIC	NOT HISPANIC
16-29	31.5	35.4	25.3	31.4
30-39	37.1	38.9	27.2	33.8
40-49	45.5	39.3	35.9	32.1
50-64	29.3	35.4	18.2	25.0
65-74	26.8	26.3	15.6	19.6
75+	-------	-------	-------	-------
Column Mean	34.5	35.3	25.4	28.1
For Entire Population		31.4		

Table 3.17

AVERAGE NUMBER OF VEHICLE TRIPS ON TRIP DAY
BY AGE, SEX, AND RACE

	MALES			FEMALES		
	RACE			RACE		
AGE	WHITE	BLACK	OTHER	WHITE	BLACK	OTHER
16-29	3.06	2.18	2.69	2.78	2.02	1.85
30-39	3.54	2.78	3.36	3.44	2.87	2.54
40-49	3.73	3.12	3.32	3.49	2.94	2.84
50-64	3.50	2.60	3.37	2.48	1.74	1.51
65-74	3.35	2.12	2.64	2.10	0.83	1.18
75+	2.24	1.49	2.34	1.17	0.43	0.78
Column Mean	3.38	2.52	3.05	2.80	2.14	2.09
For Entire Population			2.94			

Table 3.18

AVERAGE NUMBER OF VEHICLE TRIPS ON TRIP DAY
BY AGE, SEX, AND HISPANIC STATUS

	MALES		FEMALES	
	HISPANIC STATUS		HISPANIC STATUS	
AGE	HISPANIC	NOT HISPANIC	HISPANIC	NOT HISPANIC
16-29	2.80	2.91	1.96	2.65
30-39	3.33	3.47	2.58	3.35
40-49	3.76	3.63	3.15	3.38
50-64	3.43	3.41	1.66	2.39
65-74	2.68	3.23	1.32	1.93
75+	------	------	------	------
Column Mean	3.17	3.27	2.21	2.70
For Entire Population		2.95		

Table 3.19

AVERAGE NUMBER OF VEHICLE MILES DRIVEN ON TRIP DAY
BY AGE, SEX, AND RACE

	MALES			FEMALES		
	RACE			RACE		
AGE	WHITE	BLACK	OTHER	WHITE	BLACK	OTHER
16-29	27.4	19.1	23.7	21.5	13.4	13.6
30-39	34.2	24.9	30.2	24.6	20.7	18.3
40-49	35.3	31.7	31.1	24.3	22.0	20.2
50-64	30.6	22.5	26.5	15.9	11.4	8.6
65-74	22.7	11.5	19.0	11.4	6.0	7.8
75+	14.4	8.7	10.9	5.4	2.0	2.9
Column Mean	30.1	22.2	26.5	18.3	19.3	15.0
For Entire Population			23.4			

Table 3.20

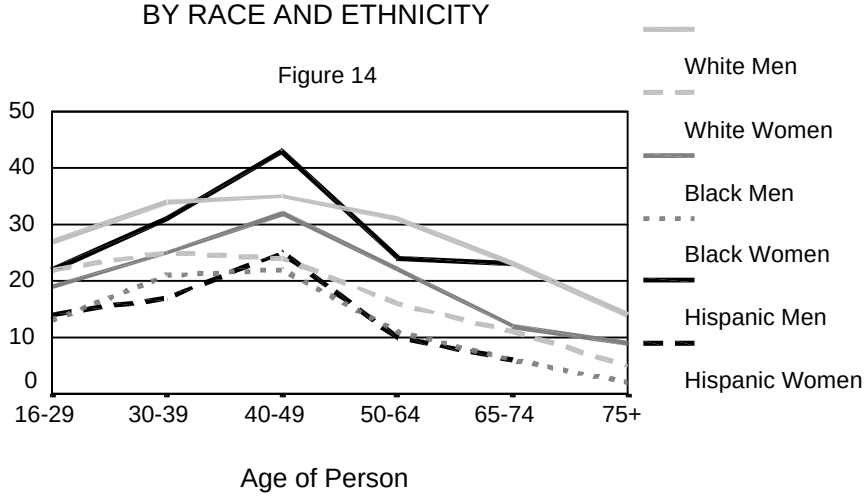
AVERAGE NUMBER OF VEHICLE MILES DRIVEN ON TRIP DAY
BY AGE, SEX, AND HISPANIC STATUS

	MALES		FEMALES	
	HISPANIC STATUS		HISPANIC STATUS	
AGE	HISPANIC	NOT HISPANIC	HISPANIC	NOT HISPANIC
16-29	22.4	26.4	14.2	20.0
30-39	30.5	33.3	16.8	24.2
40-49	42.6	34.0	24.8	23.5
50-64	24.1	30.2	9.5	15.3
65-74	22.8	21.5	5.7	10.8
75+	-------	-------	-------	-------
Column Mean	27.9	29.1	15.1	18.6
For Entire Population		23.5		

MILES DRIVEN PER DAY

BY RACE AND ETHNICITY

Figure 14



SOURCE: 1995 NPTS PERSON FILE

Mobility differences in vehicle access and transit use are replicated in person trips, person miles, vehicle trips and vehicle miles driven for older Americans. Black women aged 75 and over make fewer person trips than older black men (1.4 vs. 2.2), travel fewer person miles (5 vs. 14), make fewer vehicle trips (.4 vs. 1.5), and drive fewer miles (2 vs. 9). Whites and

other minorities exhibit similar gender differences, with white mobility higher than for blacks and others.

Among baby boom women, blacks and Hispanics make fewer person trips per day than whites and non-Hispanics (4.2 versus 4.6). Baby boom women who are black travel fewer person miles per day than white women (31 versus 33), make fewer vehicle trips (2.9 versus 3.5) and drive fewer vehicle miles (22 versus 24) than white baby boom women. Baby boom Hispanic women travel slightly more person miles, make fewer vehicle trips, and drive slightly fewer vehicle miles than non-Hispanics.

FINDINGS AND CONCLUSIONS

This report has summarized what we know about travel behavior for older Americans (persons aged 75 and over) and for women aged 40 to 49 in order to speculate about the transportation demands that may be generated by the aging baby boom. The working hypothesis is that baby boom women, as they age, are going to exhibit travel behavior closer to those of today's older men than today's older women. The first section described the demographic profile of the nation by age and by indicators of socioeconomic status for women. The second section described travel patterns for the older and baby boom cohorts, and the third section controlled for various factors that influence travel behavior independently of age and sex.

The Demographic Profile

The American population is aging as the baby boom matures. Nine percent of the population will be aged 75 and over by the year 2030, and a majority of these older Americans will be women. An aging baby boom will increase the relative proportions of the elderly and it will also affect the composition of the elderly. Ethnic and racial diversity of the elderly is increasing, so that by 2050 only 65 percent of the elderly will be white compared with 87 percent in 1990. Hispanics and Asians are the most rapidly growing minority groups.

Baby boom women have been decidedly more independent than previous generations of women and that independence may translate into a different travel profile as they age. Specifically, baby boom women were the first generation to approach men's college graduation rates, the first to make employment the norm for women (even mothers), and the first to maintain their own households in significant numbers.

The Transportation Profile

The most important point is that if baby boom women keep their licenses as long as men do now, over 80 percent will still be licensed to drive at ages 75 and over. Whether they continue to drive will depend on their economic ability to afford a vehicle and the absence of physical impairments.

Even when licensed to drive, older women now are more likely than older licensed men to live in a household without a vehicle (25 versus 5 percent). If baby boom women keep their cars as long as men do now, only 5 percent will live in a household with no vehicle when they reach age 75, a 20 percentage point decrease over current rates for older women.

The more highly educated the woman, the more likely she is to live in a household with a vehicle, and the older the woman, the stronger the relationship. This suggests that baby boom women, who are more than twice as likely as their mothers to be college-educated, will have greater access to vehicles than older women now. Not surprisingly, the lower the household income, the less likely the household owns a vehicle. Among older Americans, low-income women are more than twice as likely as low-income men to live in households

without a vehicle. Hispanics, blacks, and other minorities are more likely than whites and non-Hispanics to live in households without vehicles

Mobility of the population was measured by average number of person trips and person miles traveled per day, and by average number of vehicle trips and vehicle miles driven per day. If baby boom women adopt their father's travel profiles rather than their mothers', older women in the future will make more person trips per day (2.9 versus 2.1), travel almost twice as many person miles (19 versus 11), make twice as many vehicle trips (2.2 versus 1.1), and drive almost three times as many vehicle miles (14 versus 5) as older women do now.

Minority women and men of all ages lead more geographically constricted lives than white and non-Hispanic women and men. Since the older population will be more racially and ethnically diverse in the future than it is now, increases in travel associated with baby boom women's increased independence may be tempered by larger proportions of minorities.

Given an aging population and an increasingly autonomous generation of women, what might transportation planners do to meet the future needs of the baby boom?

Policy Suggestions

Women aged 75 and over in 2030 will be almost universally licensed to drive and few will live in households without vehicles if baby boom women maintain the independent travel profile currently exhibited by older men. Aging baby boom women also will generate more trips and drive more miles than older women now, increases that will be intensified by the size of the cohort.

The most promising transportation policies would facilitate central city residence among older Americans so they can maintain their independence longer by walking and using transit instead of driving. **The first step would be for federal agencies to agree that reducing vehicle dependency by encouraging central city residence is a national goal**. The timing is good because President Clinton has just declared a concerted effort to lower vehicle emissions to their 1990 levels. Reducing vehicle ownership is obviously one avenue toward this goal.

Although no single agency created a plan in the 1950s to implement urban renewal, construct highways, and build affordable homes in the suburbs that would attract business and industry, we know with the clarity of hindsight that these programs reinforced each other to create substantial suburban growth within a few decades. Given that we recognize the power of federal programs to collectively leverage private enterprise and influence personal choice, we can use history to inform current policies encouraging central city residence.

The baby boom might be leveraged as a resource to modify current land-use patterns, given the proper incentives and sufficient lead time. They will be retired from the labor force and will not have children in school, two factors that affect residential location for younger

households. Baby boomers also were the leading edge of gentrification in the 1970s and may be more sympathetic to urban living than their parents' generation.

The gentrification movement erroneously dubbed "back-to-the-city" during the 1970s was really a "stay-in-the-city" choice for large numbers of baby boomers. At that time, displacement of the elderly was a central concern among neighborhood activists (Laska and Spain 1978). Strategies devised to help the elderly "age in place" in cities included home equity conversions, property tax abatements, rent control, and expansion of Single Room Occupancy (SRO) hotels (Franck 1990; Myers 1982). Some of those same strategies might be targeted now to suburban seniors of all income levels who will soon be worrying about their ability to drive. Newer strategies include marketing central city housing to suburbanites with cosmopolitan lifestyles, promoting small businesses, and encouraging nontraditional households (Lang et al 1997; Moss 1997).

A package of transportation, housing, and service amenities created by public-private cooperation over the next twenty years could provide the same incentives for central city residence that they did for suburbanization in the 1950s and 1960s. For example, tax credits for the conversion of office space to residential space (similar to the original historic preservation tax credits) could increase the supply of affordable housing , especially in cities with higher than average office vacancy rates. Houston, Los Angeles, New Orleans, and Providence, R.I. all have office vacancy rates approaching 20 percent compared with the national average of 14 percent (U.S. Bureau of the Census 1996:725,726)). Cities have tried to entice businesses (including sports franchises) with tax incentives for over a decade. If the same policies were applied to residential development, some of the housing stock depleted during urban renewal could be restored.

This strategy would be accompanied by rewards for central city residence. Tax credits for households without vehicles would be one. Such tax credits could be supplemented by "Location-efficient" mortgages that reward high-density settlement by expanding the credit available to households with less than one car per worker (currently under consideration by Fannie Mae).

Tax credits for vehicle-free households might prompt private enterprise to develop paratransit alternatives to private cars (Cervero 1997). A public education campaign explaining the net gain after subtracting car, insurance, and personal property tax payments from the household budget might work as effectively as the anti-smoking campaign has reduced cigarette use. Few analysts would have predicted twenty years ago that large numbers of people would give up cigarettes, but information about the risk of cancer changed the climate sufficiently to influence public opinion. Similar health concerns are emerging now about air quality and groundwater pollution resulting from vehicle emissions. If Americans can give up addiction to cigarettes, they can give up addiction to their cars with the proper incentives.

A third component would be to tie Social Security and Medicare benefits (currently *not* place-specific) to location. Since one of the trends fueling suburban and exurban growth has been the mobility of retirement income, directing that income to central cities could help

redistribute the baby boom population over the next 30 years. For example, whenever cost of living adjustments to Social Security are made, seniors living in cities would receive more than those living in suburbs. Or seniors seeking medical care would qualify for coverage allowing choice of doctors in cities, while those in suburbs join the rest of the nation's shift to HMOs. Better health insurance and accessible medical care can be powerful incentives attracting seniors to the city.

A national "back to the city" campaign aimed at baby boomers would require the cooperation of several federal agencies. The Department of Transportation could take the lead by creating a team of middle-managers from the Departments of Transportation; Energy; Housing and Urban Development; Health and Human Services, and the NIH Institute on Aging to coordinate efforts to encourage central city residence. Like the Joint Agency Task Force on Fair Housing and Civil Rights formed by President Clinton, a Joint Agency Task Force on Cities for Seniors would be responsible for keeping the big picture in mind: how do decisions made by individual agencies collectively influence the national goal to reduce vehicle ownership by promoting central city residence?

The Task Force on Cities for Seniors could begin by directing Research and Development funds toward reducing vehicle ownership by recognizing the connections between transportation, aging, housing and community development, and energy conservation. Projects addressing these issues comprehensively would be given funding priority. Instead of more research on "smart roads", for example, the goal would be to generate more research on converting vacant buildings into a successful mix of residences and retail districts to encourage "smart cities".

What about safety and what about the economic impact of reducing the importance of the automobile industry? Starting in reverse order, if DOT reduced highway construction and invested in transit for the next 30 years, engineers and laborers who previously worked on highway construction would work on transit construction. Car manufacturers would re-tool for transit and paratransit production just like industries re-tooled for defense production during WWII.

Instead of targeting the ownership market, the automobile industry could concentrate on the leasing market so households could move in and out of car dependency more easily. When a spouse enters or leaves the labor force, for example, or when a child leaves home, the number of cars could be adjusted to changing household needs. This approach has the added attraction of creating higher turn-over in the vehicle fleet so that older, less fuel-efficient cars cycle out of use more quickly. It might also appeal to banks since leases cost more to finance, and turn over more often, than car loans for owners.

Fear of central city crime will be the most difficult component to address in a Cities for Seniors plan. Jane Jacobs (1961) promoted high density and mixed uses to multiply "eyes on the street" for enhanced safety. But how do you assemble the critical mass of places and people necessary to generate such safety? Relaxing zoning laws to encourage mixed uses

would be the first place to start, but then what? Gated communities and more police are *not* the answer to long-term neighborhood stability.

Instead, hospitals, newspaper offices, universities, and other places with round-the-clock activities should be promoted as magnets for high-density residential development. Federal agencies can provide the financial incentives, but private enterprise and individuals would have to implement much of the change. That should not be impossible. If the American Legion could successfully lobby for the G.I.Bill of Rights that provided unemployment, housing, and educational benefits for thousands of soldiers after WWII, the American Association of Retired Persons should be able to effectively mobilize the elderly for a comparable groundswell of social change.

In sum, the same issues that challenge transportation planners now – the relationship between land use and transportation needs – will be exacerbated as the baby boom ages. It will take the same level of public-private cooperation to centralize population in central cities during the next twenty years as it did to decentralize population during the 1950s and 1960s.

A "Cities for Seniors" campaign would meet all of the Department of Transportation's goals. *Mobility* of older Americans would be improved if walking and public transit were viable alternatives to driving, and roads will no doubt be *safer* with fewer older drivers. Reducing non-work trips by car *enhances productivity* for those employed by reducing traffic congestion. Fewer cars per household would also carry significant *environmental benefits*. Finally, to the extent that *national security* is connected to fuel consumption, fewer vehicles translate into less dependence on other nations for oil supplies. We know what the problems will be and we know we have time to address them. All we need now is consensus on the goal.

OTHER RESEARCH

Embedded in discussions of aging and women's greater economic autonomy is the **changing nature of work and its relationship to the home.** Transportation analyses typically differentiate between "work" and "nonwork" trips, but assessment of the categories for trip purpose suggest an underestimation of the actual amount of labor being performed. Shopping for groceries, attending to medical and dental needs, picking up or delivering children, and taking care of "other family or personal business" are reasons for trips that encompass a vast array of work necessary for households to function.

Recognition of this invisible work would make transportation planning more effective by removing such trips from the realm of supposedly discretionary travel. Modifying the analytical categories to reflect *paid versus unpaid labor* would be a step toward recognizing the work performed by all members of a household regardless of age or sex. The importance of journey-to-work trips also will diminish as the baby boom cohort ages into retirement.

The continuum along which work occurs may be expanding. At one end is part-time work and at the other end is the practice of multiple job-holding known as "moonlighting". Both of these alternatives to the forty-hour week are amenable to study with the NPTS. Approximately 20 percent of employed Americans worked part-time (i.e. less than 35 hours per week) in 1995, a proportion that may rise as the baby boom generation retires. The rate at which people work more than one job has increased only slightly since the 1970s, from about 5 to 6 percent, but women's rates now equal those of men's after being significantly lower for two decades. The higher than average rates for both women and men aged 25 to 54 is another indicator of women's greater economic responsibility for families. Moonlighters account for only a small proportion of all those employed, but their travel needs may differ from those of persons with only one job, just as the needs of part-time workers may differ from those of full-time employees. Part-time workers are predominantly female (68 percent) while moonlighters are about evenly divided by sex (46 percent female) (Jacobs 1997: 45-47,69).

The concept of work demands other revisions as we enter the twenty-first century. Telecommuting has captured the public imagination, but is still too rare to qualify as a trend. Approximately one-third of all employed Americans perform some paid work at home (the majority of whom are self-employed), but less than one percent work entirely at home as salaried or wage employees (Deming 1994). The 1995 NPTS corroborates these data from the Bureau of Labor Statistics: less than one percent of respondents chose the category of "telecommuting from home" as a workplace option. Nevertheless, it is useful to begin documenting telecommuting since it may eventually affect travel patterns (Gurstein 1996; Lund and Mokhtarian 1994; Nilles 1994; Pisarski 1992; Yen et al. 1994).

In addition to telecommuting, "edge cities" and "neo-traditional neighborhood design" (NTND) represent recent efforts to realign the jobs-housing balance and reduce automobile dependence. Debate exists, however, about whether these solutions have much effect on the use of cars (Bookout 1992; Crane 1996; Friedman et al 1992; Garreau 1991; Handy 1992; McNally and Ryan 1993).

One category of trip purposes conspicuously missing from the NPTS is volunteer work like delivering Meals on Wheels, attending PTA functions, coaching Little League, or sponsoring Girl Scouts. These are all activities that create a sense of community that typically fall between the private sphere of the family and the public spheres of the polity or workplace (Milroy and Wismer 1994). Neither does the NPTS address the travel implications of job-sharing (Negrey 1993), participation in the underground or informal economy (Hoyman 1987), or recently legislated welfare-to-work programs (Blumenberg and Ong 1997).

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