



# **Women's Travel: Consequences and Opportunities**

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## **WOMEN'S TRAVEL: CONSEQUENCES AND OPPORTUNITIES**

### **INTRODUCTION**

We have a transportation system for one reason: to serve our Nation's citizens. As the circulatory system of society, transportation is the means by which we not only move people, but by which we provide goods, services, programs, and materials. The bottom line is that transportation has a real impact on our quality of life and our standard of living.

Policy makers have a responsibility to deliver a system that is efficient, responsive to user requirements, and sensitive to nonuser concerns. The objective is clear and straightforward. Developing the game plan for achieving the goal, however, is an extraordinarily challenging endeavor.

The challenge arises from a number of different sources. One of the most noteworthy is increasing competition for limited fiscal resources in the public sector. Debts, deficits and restrained tax policies have shrunk the available public-sector spending pie, including that portion intended for transportation.

Further, within the transportation sector there is increased competition. For example, goods movement has not always been a part of transportation planning in the public sector. However, the U.S. economy of the next century will be more dependent than ever on the interstate and international movement of agricultural and industrial goods. There will be increasing pressure to commit funds to create and/or revitalize the Nation's port and internodal freight facilities as well as their highway connections. Funding for these activities will compete with funding for passenger services.

Another significant source of challenge comes from individuals not traditionally part of the transportation decision making process. They are becoming increasingly vocal, reminding us that transportation decisions impact environmental quality and neighborhood cohesiveness. Policy makers are also striving to be more sensitive to certain groups in our population, such as the elderly, the disabled, and the poor, that have special transportation requirements.

Despite the challenges, Americans enjoy one of the best transportation systems in the world. In fact, demand for transportation service is at an all time high: Between 1970 and 1990, trip making increased 40 percent for everyone, 25 percent for men, 58 percent for women and 46 percent for individuals more than 65 years old.<sup>1</sup> Projections indicate that demand will continue to increase well into the future.

The social, environmental and fiscal constraints highlighted above have made it increasingly difficult to respond to current and projected demand for transportation services. Congestion is a serious and growing problem in many cities throughout the country. Commuters facing congested conditions are not just inconvenienced, they also incur increased travel time and vehicle operating costs. In addition, firms find that they must pay more to receive inputs for production as well as to transport their finished product to market. The lack of system reliability characterizing severely congested facilities inhibits implementation of innovative and cost saving logistic practices. The bottom line is that productivity suffers, making U.S. firms less competitive internationally. This effect ripples through the economy and society. For example, the cost of consumer goods increases and the number of employment opportunities declines.

## Women's Travel Issues

Proceedings from the Second National Conference

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As policy makers and planners address the challenge of maintaining a vital transportation system, the importance of knowing the customer quickly comes to the forefront. On a pragmatic level, the reception of policy initiatives by certain population cohorts can often define overall success or failure. Also, some population groups tend to initiate important social trends which have significant transportation implications. Finally, certain groups, such as low-income community residents, minorities, and the elderly, may require special assistance to avail themselves of needed transportation services.

This paper presents the case for considering women's travel issues in transportation policy development. Examining women's travel requirements and patterns makes sense because women (1) are agents of change, (2) have different activities and travel requirements from men and (3) will account for significant increases in total future travel. Underscoring these reasons is the fact that women represent a large portion of the traveling public.

### WOMEN'S TRAVEL: PAST, CURRENT, AND FUTURE IMPACTS

#### WOMEN ARE AGENTS OF CHANGE

Women are agents of change not only in the context of transportation but also in the context of broader societal patterns. From the time of Ruth, women have been leaders. As we observed the 1996 National Presidential elections, we heard the pundits debating not how the candidates' wives would dress should they become first lady, but rather how and to what extent these women would influence National policy.

The nature and extent of women's participation in the labor force has profoundly changed the fabric of society. For example, the persistent trend of ever increasing suburbanization has been, in part, solidified because of working women.

#### Women in the workforce

Harry Truman's life ran parallel to a time of great change in the lives of many women. When Harry got his first car, not quite 20 percent of the workforce was female. Of these women, fully a quarter were teenagers and very few were married. By the time President Truman entered the White House in 1945, women, who had done more than bake cookies in support of the war effort, knew that not only were they capable of working for pay, they even enjoyed working outside the home.

Biographer David McCullough relates the following anecdote about Harry Truman. In 1914, Harry Truman's mother, who didn't drive, bought him a

big, black, five-passenger 1911-model Stafford, hand-built in Kansas City by a man named Terry Stafford. Only three hundred of the cars were ever made. It had a four-cylinder engine, right-handed drive, a high brass-framed windshield, and Presto-Lite lamps nearly the size of the lamps on locomotives. On a good road, Harry soon demonstrated it could do 60 miles an hour. It was a rich man's car. New, it sold for \$2,350. Harry paid \$650. He *could* come and go as he pleased now, and mostly it was go. In three months he drove 5,000 miles. Not since his first pair of eyeglasses had anything so changed his life.<sup>2</sup>

A women leading a man to new horizons! Four years after taking his first spin in the Stafford, Harry was on his way to France to fight in World War I. The war changed him in profound ways, opening many new personal horizons. Before the War, Harry was a farmer. After returning from Europe, he opened a haberdashery store and drifted into politics. By the time of World War II, Mr. Truman was an U.S. Senator.

World War II was in many aspects a watershed event in the Nation's history. The war caused women in particular to alter their expectations dramatically. Up until the second World War, the mores of the country ran strongly against women entering the for-pay labor force--especially married women with children. However, during the War attitudes toward female employment began changing when increasing numbers of workers were needed to support domestic war production requirements. Women who were employed as part of the war effort were never to be the same again; most of them loved working. "For some, the best part . . . was the sociability of the workplace versus the isolation of domestic responsibilities. For others, the best part was the financial independence . . . . Still others relished the mastery of new skills, the sense of industry, the pleasure of a job well done."<sup>3</sup>

Eleanor Roosevelt predicted the long-term participation of women in the labor force when she declared that ". . . women are fully as capable as men; men and women were meant to work together."<sup>4</sup> Indeed, by 1990, almost half of those in paid employment were women and almost half of all women working outside the home were married.<sup>5</sup> Further, about three-quarters of married women who worked in 1990 had children over five years of age and almost 60 percent had children under age six.<sup>6</sup>

### Women and suburbanization

While women began their slow, but persistent entry into the labor force following World War II, the country's landscape was changing in ways that would have dramatic consequences for the transportation system. Large numbers of people began to move their homes from the cities to the suburbs--to land that had once been used for farming. After a while, demand for alternatives to shopping in the city grew. Businesses in search of new markets, lower wages, and less expensive land rents responded. After the businesses moved, the demand for workers increased and employment also became suburbanized.

Edge Cities began sprouting up all over the country in the 1970s as developers began to build big office buildings in the suburbs. In the last half of that decade, over eight million women found work outside their homes. The Edge City offices--in automobile-accessible suburbia--were seen as convenient by women. "A decade later, developers viewed it as a truism that office buildings had an indisputable advantage if they were located near the best educated, most conscientious, most stable workers--underemployed females living in middle-class communities on the fringes of the old urban areas."<sup>7</sup>

Not coincidentally, between 1969 and 1990, the number of personal vehicles increased 128 percent. During the same period, the number of licensed drivers increased 60 percent, with 63 percent of the increase attributable to women's licensing.<sup>8</sup> Most of the increase in automobile ownership came as a result of women entering the work force.

The suburbanization trend continues with persistent increases in the number of single purpose neighborhoods and low density communities being established. Today, 50 percent of the Nation's commuters live in the suburbs and over 41 percent of all jobs are in the suburbs.<sup>9</sup> A sizeable portion of all trips now have both suburban origins and destinations. In general, there are fewer concentrated

## **Women's Travel Issues**

Proceedings from the Second National Conference

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origins and destinations and fewer corridors of high density demand. "These kinds of patterns require decentralized transportation facilities, programs and services; they are dependent on the automobile."<sup>10</sup>

### **WOMEN HAVE DIFFERENT ACTIVITIES AND TRAVEL REQUIREMENTS FROM MEN**

Women have different activities and travel requirements from men. Women travel fewer miles, on average, than do men. At the same time, women take more trips. Men typically travel more in the context of earning a living; women, on the other hand travel more for family and personal matters.<sup>11</sup>

#### **Household responsibilities**

Women typically have different (and more) household responsibilities than do men. As a result, women tend to be more dependent on Single Occupant Vehicles (SOVs). They juggle daycare responsibilities for their children with work responsibilities as well as with household management obligations, often "linking" trips together. For example, they might drop the children at daycare on the way to work or go to the bank on the way home.<sup>12</sup>

Trip chaining travel patterns influence the choice of mode, the hours traveled and routes taken. These patterns have important implications for transportation policy initiatives. For example, women with children often believe they must drive alone because they need a car immediately before and after work to satisfy their child care requirements. In addition, they feel more comfortable having quick access to a car during the day in the event a family emergency should arise.<sup>13</sup> In seeking viable air quality solutions, the impact of this circumstance is important. Reduction of SOV use by women is attainable only if flexible, immediately available alternatives are present.

#### **The "Twinners"**

Another factor influencing the way in which women travel is the aging of the population. The U.S. is rapidly growing older. In 1990, more than one-fourth of the entire population was over age 60. By 2010, almost half of the elderly population will be over age 75.<sup>14</sup> As a result, more and more women are becoming "twinners." That is they are looked at to take care of aging parents or aging in-laws while they continue to be responsible for their children:

In the next few decades our society will experience a situation without historical precedent; a substantial number of both middle age and younger elderly people will have very old and frail parents. . . . By 2010, the so-called sandwich generation ["twinners"] will be supporting both aging parents and kids in college; there will be 164 college kids or aging parents for every 100 people 45-49.<sup>15</sup>

Responsibility for taking care of the elderly--everything from helping with personal care to household tasks to transportation--generally falls to family members, usually daughters and daughters-in-law.<sup>16</sup>

### WOMEN WILL CONTINUE TO ACCOUNT FOR SIGNIFICANT INCREASES IN FUTURE TRAVEL

#### Immigration

Due to a sustained influx of immigrants from abroad, significant numbers of the U.S. population now have cultural, racial, or ethnicity that differ from the majority. For reasons ranging from variations in cultural norms to employment locations and income levels, these groups have distinct travel patterns. For example, there are significant differences in the proportion of women holding drivers' licenses when viewed by ethnic group. In 1990, over 90 percent of White women (aged 16 through 64) were licensed. However, only 71 percent of Black women and 66 percent of Hispanic women were licensed to drive. When a women obtains a drivers' license, total trip making increases greatly.<sup>17</sup>

It is not clear if these groups will adopt the travel patterns of the majority group or if they will retain their own culturally-based travel patterns. For example, some women come from cultures where females just don't drive; therefore, they may never choose to drive. In addition, there are cultures that are increasingly a part of the U.S. landscape in which cycling is a mode of doing principal business--not just recreation. Policy makers and planners need to think through what the impact of immigrants on transportation patterns will be. The question is not just, "How quickly are they going to adapt to our travel patterns?" but rather, "How might we change our travel patterns to adapt to their cultural expectations?"

#### The Changing American Household

Associated with each household is a baseline amount of travel. Therefore, trends that point toward increased numbers of households suggest increases in vehicle miles traveled (VMT). The number and composition of American households have also changed in important ways. Between 1969 and 1990, the number of households grew 49 percent and the number of persons per household decreased 20 percent. Most of the growth in the number of households was caused by single-person and single-parent households.<sup>18</sup>

The increase in the number of female heads of family households has been striking. In 1980, they comprised 8.7 million households; by 1995 that number had grown to 12.4 million. The trend holds when non-family households are examined: in 1980, 12.4 million households were headed by women; in 1994, there were 16.2 million such households.<sup>19</sup>

#### Service Based Economy

The U.S. economy has transitioned from being a production to a serviced based. It is projected that retail trade will soon replace manufacturing as the second largest source of total employment, accounting for over five million jobs by 2003.<sup>20</sup> Employees in service industries are generally referred to as "flexible" workers.<sup>21</sup> Large numbers of women are and will be represented in these flexible positions.

Flexible workers are generally considered temporary, they work variable work schedules, have multiple employers, and work less than 40 hours a week. As many as one-fourth of American workers are in the flexible labor force. Many Americans are now traveling at different hours, on different routes and on different days of the week than comparable individuals two decades ago. Commuter trips occur over a longer portion of the day, with many employees working late at night or starting early in the morning.<sup>22</sup>

In contrast to production industries, service companies do not need to be near one another or in a central area. They also tend to be smaller in size and are less likely to locate along heavily traveled corridors.<sup>23</sup> These characteristics have led to a deconcentration of employment sites and a wide variety of dispersed work destinations.

### LOOKING FORWARD: EMERGING TRAVEL TRENDS AND ISSUES

One of the first challenges faced in formulating policy is that of identifying not only the current issues but also predicting future trends. Effective policy has a temporal orientation: although appropriate for the present it reflects a view of potential future issues and objectives. Yet, the future outlook for women is far from clear and the future vision of the Nation's transportation system is equally difficult to define.

This section will approach the future from two directions. First, a "big picture" view of the major trends will be presented. Second, alternative views of the nature of women's participation in the future are explored. The section concludes with some thoughts on how women might respond to or even influence future trends.

### THE "BIG" PICTURE

Toward the end of 1995, Federal Highway Administration (FHWA) staff developed alternative future scenarios to describe transportation in the 21st century.<sup>24</sup> Three scenarios were evaluated: "Most desirable," "least desirable," and "most likely to occur." Each scenario spans a time horizon of 25 years, from 1995 to 2020. Varying assumptions were made regarding technological, economic, social and political trends that could impact the future demand for surface transportation services.

A set of assumptions were considered "given" and formed the core of all scenarios<sup>25</sup>:

- Computer and information technology will continue to advance.
- The population will age.
- The population will increasingly become drivers.
- International trade will grow in importance.
- The role of the Federal government in transportation, although still influential, will diminish. The private sector and State and local governments will assume larger roles.
- Demand for personal mobility will persist. Americans will still want to go where they want, when they want.
- Commercial traffic will grow as "just-in-time" inventory and production systems come on-line, in part because of the global nature of economics.
- Demand for alternative fuels will increase to avoid continued dependence on the gasoline-powered vehicle and its companion pollution problems.
- Constraints on transportation funding will persist.

As an example of broad-based scenario development, the “most desirable future” scenario is outlined below. This scenario is characterized by a strong National economy, largely the result of the re-engineering of American industry. Firms are more efficient and are globally competitive. Companies are willing to reinvest their profits in research and development. U.S. citizens share in the prosperity. Therefore, the public is willing to commit the long-term investment required to enhance quality of life and foster future economic expansion.

Under the “Most Desirable Future” scenario, workers use their home computers and video-phone to communicate with clients and coworkers. They go to the office only for an occasional meeting. Real-time, multimodal travel information is readily available and is used for both commuting and long-distance travel. In addition to the acceptance of telecommuting, new technologies providing for automatic billing based on weight/distance and peak period use contribute to reductions in SOV travel. The elderly have access to personalized public transit systems which provide door-to-door transportation to services they cannot access through home computers.

### FUTURE WOMEN'S TRENDS

The way women go will influence the way transportation goes. When considering future policy alternatives, it is only prudent to think about what women might be doing in the future and how their actions might influence transportation system requirements. In other words, broad National scenarios should include a women's issues component.

An excellent new book, The Futures of Women, Scenarios for the 21st Century<sup>26</sup>, by Pamela McCorduck and Nancy Ramsey, provides some interesting speculation. The authors offer a number of future scenarios. Three are appropriate for our consideration:

- Golden Age of Equality
- Two Steps Forward, Two Steps Back
- Separate--and Doing Fine, Thanks

These alternative views of the future represent extremes; the future will probably not be exactly in accordance with any one scenario. Select elements of each however, will most likely evolve over the next 20 years. Each scenario assumes (1) sustained increases in population growth, (2) an aging population and (3) significant advances in technology.

McCorduck and Ramsey describe, in the “Golden Age of Equality” scenario, a world where grinding work hours are a thing of the past. Men and women work smart instead of working long. Telecommuting is the usual mode of work. Individuals are able to control their time, set their own priorities, and in general, achieve balance in their lives. Efficient use of the new information technology leads to higher wages and families can manage on two half-time salaries or even prosper on two full-time paychecks.<sup>27</sup>

In contrast, the “Two Steps Forward, Two Steps Back” scenario describes women, even professional women, as continuing to have prime responsibility for child care and household maintenance responsibilities. The persistent demands of balancing family, house and work lead to burnout and women workers begin to retire earlier.<sup>28</sup>



Under the “Separate--and Doing Fine, Thanks” scenario women’s rights are viewed as relatively unimportant. Women are treated as less than equals. Out of frustration and impatience, many women construct lives for themselves that are distinctly apart from men’s. Women begin to establish their own households, often choosing not to marry. In fact, women see, under this scenario, the combination of children and a husband as problematic because men fail to share power or responsibility at home.<sup>29</sup>

### WOMEN AND FUTURE TRAVEL TRENDS

The women’s future scenarios as well as the general FHWA “most desirable” scenario suggest many interesting questions that planners and policy makers should at least consider as they formulate strategies for improving the transportation system. The following “top ten” list provides a sample.

1. What will **future technology** look like; will it be responsive to women as well as men? How will we integrate it into our lives and how will our everyday lives change? Will new technology reduce or eliminate the requirement for trip-chaining by allowing women to raise their families while they work at home? Is telecommuting a trend that should be encouraged through incentive policies?
2. Will the wave of **immigration** continue? Will female immigrants assimilate into the majority culture? Will their travel patterns begin to approach those of women in the majority culture or will they influence U.S. travel choices to reflect their national patterns?
3. Will **household responsibilities** be shared equally by the men, women and children in a family? If women continue pulling the “second shift,” what impact will this have on their long-term career aspirations? What about the willingness of younger women to marry? What impact will changes in womens’ societal roles have on **mode choice decisions**? If responsibilities for household management are more equally shared between all family members, will women be more likely to take transit, to carpool?
4. Will the role of husbands and wives continue to move toward parity? What impact might this have on **housing and job choice decisions**? Will the husband’s job continue to be considered the “primary” support of the family? What impact would real equality have on miles traveled and trips made by women? What about the persistent trend toward even more **suburbanization**? Will there be a continued shift of jobs and population to the suburbs? Will land use and development patterns change?
5. Will **family friendly work rules** become more extensive leading to wide spread acceptance of flextime schedules? Will providing childcare become a responsibility of the employer?
6. Will the trend toward **smaller households** continue? Will larger numbers of women become the main or sole support for their families? How might this trend impact housing location decisions given that families headed by one parent place an even higher value on time and convenience. Will greater numbers of young women simply choose not to marry?

7. If women's participation in the political process expands, will transportation decision making become more sensitive to **preservation, environmental and community concerns**? How will these concerns be balanced, in a constrained funding environment, against the requirement for increased transportation services?
8. In the future, will **equity** issues be an important part of the transportation policy agenda? Will the Nation be able and willing to afford targeted transportation programs for disadvantaged groups? Will the increasing number of single mothers and aging women benefit from special programs that provide them access when a private automobile is not available?
9. Will the government have sufficient funds to cope with **aging of the population**? Will pension funds be available for the elderly? Will increasing numbers of women be required to care for their children, aging parents and possibly grandparents as well? What impact will this have on the number of women in the for-pay labor force? Will highway fatalities surge upward as a result of increases in the number of elderly drivers?
10. How will potential **policy changes** such as welfare reform, restructuring of social security, and point of delivery for health (e.g., more out patient care, preventative actions, and managed care clinics) impact transportation system user requirements? What impact might non-response to these new transportation requirements have on delivery of these social programs?

### POLICY DEVELOPMENT BACKDROP

Americans look for immediate responses to their needs, wants and desires. They place a very high value on freedom of choice, and they view transportation as an entitlement. Consequently, people generally choose to travel alone in a private automobile, especially when commuting to work. The motor vehicle is the indisputable method of choice, in large part because of its flexibility and immediateness.

Policy options designed to be consistent with public sentiment have a much higher likelihood of success than those that are contrary to these firmly held values, beliefs and preferences. However, being responsive to the transportation user and the policy environment does not suggest that decision makers should respond blindly to public demands. Rather the proposed strategy calls for leadership, public dialogue and creativity. The challenge is to fully understand current user requirements and devise alternative strategies to address those requirements.

Transportation's sphere of influence is not understood by Americans. Education campaigns should be waged to inform the public of (1) the distinction between transportation "needs" and "requirements," (2) the appropriate means for satisfying their "needs," and (3) the impact of a safe, efficient, customer responsive transportation system on their standard of living and quality of life.

Transportation policy should also have an element which is unexpected by the consumer. The case of 3M's "Post-It Notes" provides a great example: The consumer didn't know they needed the product and now the typical office can't survive without them.

### EFFICIENCY

There are two dimensions to efficiency. The first involves identifying the proper objective, that is doing the "right" thing. The second is crafting a workable policy.

The fiscal, social and environmental constraints facing all levels of government generally inhibits expansion of the highway network via the addition of new lane-miles. In response to these constraints, many are exploring policies to discourage use of the private automobile, improve system throughput, and/or address mobility via non-transportation alternatives.

Reducing the incidence of driving alone is extraordinarily difficult because of (1) the economic, demographic and geographic trends presented earlier and (2) the realities of today's policy context. Despite attempts to the contrary, the private vehicle continues to dominate travel. In 1990 it was used by 100 million of the Nation's 115 million commuters.<sup>30</sup> For women it is difficult to move from the SOV due to personal safety concerns, household responsibilities, parenting duties, and needs of older parents.

Policy makers are faced with the challenge of responding to the trends. However, as outlined in the previous section, the current policy framework is limited by a strong public will to protect their freedom to choose. Alternatives which provide the same range of freedom or that changes the location of needs must be found.

Therefore, alternatives to the SOV must include comparable elements of time, convenience and flexibility. In addition, safety and security are critical factors when individuals decide on a mode of transportation. These rating factors must compare favorably to the automobile before a substitution will be willingly made. Much research needs to be done to define the motivation behind women's mode choice preferences.

### EQUITY

The reality of constrained public resources tends to emphasize efficiency in the policy development process. In general, equity considerations are seldom an integral part of the project evaluation process and equity issues related specifically to women are never part of the decision making process. Many women's issues tend to be succumbed under the constituencies of larger social problems and women's groups have not focused on transportation issues.

A number of social issues have been exacerbated by transportation decisions. For example, the increased suburbanization of jobs, facilitated by decisions to expand the highway network, tends to perpetuate the large concentrations of inner city poor by restricting their access to employment. To the extent feasible, transportation policies should be designed to ameliorate these impacts, or at least not to exacerbate them.

Further, there are social service policies that depend on the adequate provision of transportation for their success. For example, the efficacy of recent legislation to move welfare mothers from dependency on the government to self-sufficiency will work only if jobs are found, childcare made affordable, available and accessible, and the transportation to travel to the employment site is available.

The unintended consequences of potential policies can impact certain groups in negative ways. For example, women with young children may not have the option of forming a carpool or using transit given the

requirements imposed by daycare as well as the need for access to a car during the middle of the day should an emergency arise. Policies designed to reduce SOV usage must be sensitive to the practical constraints on mode choice experienced by some user groups.

### SAFETY

Fatalities are rising. While our goal is to reduce fatalities, these increases may be due to increased demand for personal and commercial travel, increased incidence of "aggressive" driving, and rising numbers of very elderly drivers.

Women and men drive differently and it is important that our laws and policies recognize the differences. We have not, however, adequately researched the differences in male/female driving behavior. For example, are the safety features in our cars and our highways designed with men in mind? Certainly most women will say that the most prevalent safety feature--the seat belt--seems to be designed for a 6-foot man, not a 5-foot 4-inch woman. Is the same true for sight-distance lines in highway alignments, the first step on transit buses, access to subway and light rail systems or lighting and access facilities (e.g., sidewalks) between residential communities and shopping sites?

### POLICY IMPLICATIONS

Understanding current and future women's travel requirements will help policy makers shape a transportation system which is (1) efficient (that is, works well), (2) equitable and responsive to its societal role (that is, fair to users, want-to-be-users and non-users), and (3) safe.

Since World War II, women have had a dramatic impact on our transportation system. Current evidence suggests that women, in large part owing to their sheer numbers and the increasing number of women with drivers' licenses, will continue to influence the ability of the system to respond to current and future demands.

The fact that women behave differently than men has important policy implications. For example, while much attention is focused on getting people out of their SOVs and into other modes of transportation, the strategies advanced often fail to account for the multiple and significant array of responsibilities with which many women must cope. Women need the flexibility that will allow them to drop the children at school in the morning, run their elderly parent to a doctor's appointment in the middle of the workday and pickup the dry cleaning before returning home from work. At present, the only way many women perceive that they can have the necessary flexibility is by use of the SOV. These differing kinds of behaviors need to be reflected as potential transportation management strategies are considered.

Increases in travel demand are projected for the future. It is important that we be able to predict the magnitude of that increase as well as understand the components. For a number of reasons, women travelers will be a significant source of growth in future travel demand. First, sustained immigration trends will result in notable numbers of female immigrants, increasing their VMT as their licensing patterns and utilization of the transportation system change. Second, increases in the number of households will result in increases in VMT as each household has a minimum amount of travel associated with household management requirements. Third, the change to a service based economy tends to change travel patterns, to include increasing VMT.

### CONCLUSION

As we enter the 21st century, we find many challenges and opportunities in coping with transportation issues. Success in finding the answers will be strongly influenced by consideration of the demands imposed by women on the transportation system as well as the impact of the transportation system on women, especially subpopulation groups of women.

The transportation community needs to think about re-tooling its models. Models that don't consider household characteristics will miss many of the important trends. We need to know:

- Is it a single-person household or a household composed of unrelated people?
- Is it a female-or male-headed household?
- Are there children in the household? Are they male or female? How old are they?

Differences in travel patterns, in travel behavior and travel requirements will not allow us to effectively use the ubiquitous "household" as a flat surrogate for modeling.

In addition, policy makers and planners need to make the analytical tools consistent with emerging employment trends. In the past, it was appropriate for the planning models to assume that workers would stay with their employers for the next 20 years. Now individuals may be fully employed--but have three different employers in a two-year time period. Origin and destination points will change significantly. This will be a significant issue for women in particular.

The future transportation system must be customer responsive and our analysis tools should reflect both current and future requirements. One of the system's biggest customers will be women; we need to understand the nature of their requirements. Further, we need to get the message out about the importance of transportation to all of our various publics. Women will be an integral part of the decision-making process as we enter the 21st century.

NOTES

- <sup>1</sup>U.S. Federal Highway Administration, 1990 Nationwide Personal Transportation Survey Databook, by Patricia S. Hu and Jennifer Young, 2 vols. (Washington, D.C.: U.S. Government Printing Office), p. 4-I.
- <sup>2</sup>David McCullough, Truman (New York, NY: Touchstone, 1992), pgs. 92-3.
- <sup>3</sup>Doris Kearns Goodwin, No Ordinary Time (New York, NY: Touchstone, 1995), p. 555.
- <sup>4</sup>Ibid., 557.
- <sup>5</sup>Sandra Rosenbloom, A Vision of Emerging Transportation Service Requirements Twenty Years in the Future, prepared for the U.S. Federal Highway Administration (Tucson, AZ: The Drachman Institute for Land and Regional Developmental Studies, The University of Arizona, 1995), pgs. 44-5.
- <sup>6</sup>Eno Transportation Foundation, Inc., Commuting in America II: The Second National Report on Commuting Patterns and Trends, by Alan Pisarski (Lansdowne, VA: Eno Transportation Foundation, Inc., 1996), pg. 17.
- <sup>7</sup>Joel Garreau, Edge City: Life on the New Frontier (New York, NY: Doubleday, 1991), pgs. 111-13.
- <sup>8</sup>US FHWA, Databook, pg. 3-1. Also Garreau, Edge City, pg. 113.
- <sup>9</sup>Eno Foundation, Commuting in America, pg. 25.
- <sup>10</sup>U.S. Department of Transportation, 1995 Status of the Nation's Surface Transportation System: Conditions and Performance Report to Congress--A Summary (Washington, D.C.: U.S. Government Printing Office, 1996), pg. 11.
- <sup>11</sup>US FHWA, Databook, pgs. 4-10 and 5-10.
- <sup>12</sup>U.S. DOT, C&P Report-Summary, pg. 11.
- <sup>13</sup>Ibid.
- <sup>14</sup>U.S. Department of Transportation, 1995 Status of the Nation's Surface Transportation System: Conditions and Performance Report to Congress (Washington, D.C.: U.S. Government Printing Office, 1996), pg. 23.
- <sup>15</sup>Rosenbloom, A Vision of Transportation Service Requirements, pg. 9.
- <sup>16</sup>Ibid.
- <sup>17</sup>Eno Foundation, Commuting in America, pg. 36.
- <sup>18</sup>U.S. DOT, C&P Report, pg. 12.
- <sup>19</sup>U.S. Department of Commerce, Statistical Abstract of the United States: 1995, 155th ed. (Washington, D.C.: U.S. Government Printing Office, 1995), pg. 58.
- <sup>20</sup>U.S. DOT, C&P Report--A Summary, pg. 10.
- <sup>21</sup>Ibid.
- <sup>22</sup>U.S. DOT, C&P Report, pg. 39.
- <sup>23</sup>U.S. DOT, C&P Report--Summary, pg. 10.
- <sup>24</sup>U.S. Federal Highway Administration, Preparing for the 21st Century (unpublished, 1996).
- <sup>25</sup>Ibid., A-1.
- <sup>26</sup>Pamela McCorduck and Nancy Ramsey, The Futures of Women: Scenarios for the 21st Century (Reading, MA: Addison-Wesley Publishing Company, 1996), pg. 15.
- <sup>27</sup>Ibid., pgs. 80-1.
- <sup>28</sup>Ibid., pg. 147.
- <sup>29</sup>Ibid., pgs. 189-90.
- <sup>30</sup>Eno Foundation, Commuting in America, pg. 60.