



RESEARCH AGENDA

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BACKGROUND

The Conference was designed to identify:

- ➔ the additional research required to better understand the travel patterns of various women and their families,
- ➔ the information needed to formulate equitable and effective transport policies which take women's constraints and needs into account, and,
- ➔ the methods and approaches most likely to develop or elicit the required data on the travel behavior of women and their children and their parents.

On the last day of the Conference the Steering Committee invited all interested participants to attend a half day work session structured to develop a series of research statements, projects, and approaches addressing the wide range of substantive areas discussed at the Conference. Participants who could not be present were asked to submit written research or project statements.

In all, 32 separate research issues and topics were identified. For the sake of convenience these topics have been grouped into ten complementary categories:

- Women's Travel Constraints, Preferences, and Patterns
- Understanding the Travel Patterns of Women of Color
- Understanding the Travel Patterns of Aging Women
- Women's Safety and Security Issues
- Women and Technology
- Land Use Patterns and Community Interaction
- Travel Patterns of Children
- Developing Appropriate Research Design and Methods
- Policy Research and Issues
- Women in the Transportation Industries

These categories, while convenient, are artificial even if defensible. Most of the important research questions in each of these categories overlap or are raised in several other categories. We cannot examine the accident rates of women, for example, without looking at the growing dependence on the private car by so many women. We cannot analyze the impact of land use on women's travel patterns without evaluating the travel patterns of suburban or urban women.

Rather than viewing an important topic from only one perspective, we have elected to include a variety of perspectives on the same topic. In the category focused on older women, for example, we question the impact of suburbanization and of personal fears about safety and security on older women's travel—even those such topics are raised in the Land Use and Safety/Security discussions as well.

WOMEN'S TRAVEL CONSTRAINTS, PREFERENCES, AND PATTERNS

- 1) **We must better understand how women make the trade-offs between and among transportation, housing, and employment choices.**

Current research shows that women often have shorter commutes than men; these patterns are often explained in terms of income or by differences in labor markets. But existing transportation and labor market models rarely account for the multiple spatial or geographic constraints under which many women operate. While occupational segregation may limit the actual location of jobs which some women can take, residential development patterns may constrain the effective employment opportunities of other women—even in the absence of discrimination in either housing or employment markets. And we know that some women do face discrimination in both markets.

We must understand to what extent the travel patterns of women overall, or subgroups of women characterized by residential geography or occupational status or household income or race and ethnicity or immigration status, etc., are affected by housing and employment locations overall and in individual communities. For example, research shows that rural and urban women may have different responses to such constraints; at the same time, other research shows that comparable women in different metropolitan areas may demonstrate great variability in their work trip commutes. We must have a better understand of the underlying dynamics of these patterns and choices.

We also need very community-specific research with a disaggregate focus; that is studies of women's travel patterns from specific neighborhoods or to specific employment locations (i.e., downtown or suburban malls, etc.) or to certain types of firms.

- 2) **We must better understand how household roles and domestic responsibilities constrain or structure the travel patterns of women first alone and then in conjunction with employment and residential patterns and constraints.**

A growing body of research shows that women have different travel patterns than comparable men; many researchers have argued these differences arise because women retain a disproportionate share of domestic responsibilities when they join the labor force. We need more detailed studies of the short and long term impacts of these constraints and whether they have the same force and direction for different sub-groups of women.

For example, some researchers have argued that women have shorter commutes because they wish to be closer to home to more easily carry out their obligations to young children. However, research presented at this Conference suggests that Black women have much longer commutes than comparable white women. We must understand if household constraints are less confining to these women or if other forces take precedence.

Moreover, most research which focuses on spatial and geographic barriers to women's travel rarely considers these issues of household role—and vice versa. We need research which simultaneously, but comprehensively, examines the overlapping or conflicting impacts of household role and employment and housing patterns on women's travel patterns, for women overall and then for various subgroups of women—again characterized by residential geography or occupational status or household income or race and ethnicity or immigration status, etc.,

3) **We must understand the full implications of trip-linking behavior on women's total travel patterns.**

Substantial research indicates that salaried women are much more likely to link multiple trips together than comparable men; women are more likely to drop children at daycare or to go grocery shopping on their way to or from work. But many studies either do not collect or do not fully analyze data on trip-linking thus failing to understand the magnitude and complexity of this phenomenon.

We need research which examines the behavioral underpinnings of trip-linking in order to understand how important a determinant it is of schedule, mode, and route choice. Can such behavior be changed and under which circumstances? For example, will providing childcare facilities at transit stations make any difference in the travel patterns of working mothers with young children?

4) **What are the implications for policymakers of differences in the attitudes, preferences, and values of women travelers today?**

Research presented as early as the first national conference on Women's Travel Issues found that women had different perceptions of a variety of transportation related variables, from safety and security to environmental pollution. We must understand if these differences between men and women have continued and, if so, what they imply for those trying to predict or change travel choices.

For example, many studies show that women report themselves more concerned about environmental degradation than men. Can or do such attitudes lead to changes in travel behavior—less driving alone, more use of transit and shared-ride options, for example? And under what circumstances?

At the same time, employed women with children may be more concerned with time and they may have greater fears for their personal safety. Even if many women are genuinely more concerned about the environment, will that lead to desired differences in their travel patterns? And if we wished to address safety and security issues, what would we have to do to convince women that certain choices were safe (from parking in lots at night to using transit in low density communities).

UNDERSTANDING THE TRAVEL PATTERNS OF WOMEN OF COLOR

- 5) **We must have a comprehensive understanding of differences in the travel patterns of women by race, ethnicity, country of origin, and years in the US, as well as by patterns of residential segregation along racial or ethnic lines (etc.), whether voluntary or not.**

Research presented at this Conference, and elsewhere, clearly shows that there are sometimes major differences in the travel patterns of comparable women of different races and ethnic backgrounds. Hispanic women are far less likely, for example, to be licensed or to drive but Black women are more likely to take transit. Most of this research, however, has a) not isolated the behavioral underpinnings of such differences, nor, b) evaluated these patterns in light of disaggregate differences in residential location within metropolitan areas.

Research has shown, for example, that among women living in the same size and density metropolitan area, black women are substantially more likely to use transit, even controlling for income, than comparable White, Hispanic, or Asian women. However, within those metropolitan areas black women may be living in very different areas, traveling to very different locations for work. In short, these variations in travel may simply reflect other, more fundamental, differences affecting commute patterns and choices.

- 6) **We must understand which differences in travel patterns among groups of women are linked to cultural norms about trip-making or to different experiences in the country of origin among immigrants; moreover we must determine which of these patterns are likely to persist.**

There is a growing body of research which suggests that people from different ethnic and racial backgrounds have different lifestyles—that is differences in the way they use their time and interact with friends and families. Not surprisingly, these lifestyle choices affect their travel patterns. If such decisions explain some or all of the differences seen among women from diverse backgrounds, we must understand if these patterns are likely to persist. If immigrant women are much more likely to use transit than comparable native born women—will they lower their transit use as they become acculturated?

Overall, we need a better understanding of why people of color and immigrants display such variations in their travel choices and what those variations should and could mean to policymakers and researchers in both the short and long run.

- 7) **What are the real travel patterns and needs of women on public assistance; what transportation barriers and problems do they face as they attempt to enter the labor force?**

The role of transportation, or lack thereof, in explaining high inner city unemployment—especially among minority women—has been hotly debated for decades. Can better transit provide the welfare-to-job link which policymakers seek or is the car the only feasible answer?

Much will depend not only on the location of jobs open to women with low skills levels, but also on the hours of employment, the regularity of the work schedule, the location and availability of childcare, and regulations about car ownership. For example, car use may be limited among low income women seeking jobs by public policies which refuse to allow a welfare recipient to own or operate a car.

To properly assess these issues in each community, we must know where affected women actually live, where it is realistic to expect they can find jobs appropriate for their skill levels, and which potential transportation resources are available to them. To be relevant in policymaking, this kind of work must be done in individual metropolitan areas, often at a relatively disaggregate level.

UNDERSTANDING THE TRAVEL PATTERNS OF OLDER WOMEN

- 8) **It is crucial to develop longitudinal data on the travel patterns of older women, so that we can see the impact of increasing income, automobility, suburbanization, etc. on their transportation choices.**

Substantial research shows that older women and men have different travel patterns—from one another and from younger travelers. Older women are much less active than comparable men, curtailing their driving at early ages. But we do not know if newer generations of older women will behave in the same way, since their life experiences will be so different. Moreover retirement will likely be later among both men and women in the coming decades.

It is crucial to follow the travel patterns of women as they age, not just upon reaching retirement but in each 2-5 year period after retirement or reaching 65 or 70. The role of the auto in their lives, as well as travel implications of the presence and assistance of children and family, should be studied.

- 9) **We must also understand the travel patterns of older women who have fewer resources as they age, including poor women, those living alone, and those of color.**

Being poor and/or living in certain areas of a metropolitan area may pose barriers or just create differences in the travel patterns of sub-groups of older women. We must identify the travel patterns of groups of older women characterized by where they live or their marital status or household income or race and ethnicity or immigration status, etc.

- 10) **We must develop longitudinal data on the accident rates and profiles of older women**

Most women reaching 65 in the next three decades will have been licensed drivers for most of their lives. However, while older women are less likely to have accidents than comparable men on a per capita basis they may be more likely to have accidents on an exposure basis (that is, per trip or mile driven). They are also more likely to be seriously injured when involved in an accident.

We must fully understand the conditions under which older women are more likely to have an accident or be injured, as well as changes in those patterns over time. It may be, for example, that “new” generations of older women may be more competent or more experienced drivers than those currently driving.

- 11) **All aspects of the traffic safety hazards facing older women must be studied—from the design of cars, roads, and signage to differences in the physical skills necessary to safely operate a car.**

We must understand which of the differences in accident rates and severity among older drivers are due to inherent differences in the way the sexes perceive, react, and respond to vehicle, road, and traffic conditions. Older women are, on average, smaller than comparable men so some of the problems they face in accidents, for example, may be the result of stature. Or older women may react to visual stimuli and traffic safety messages in different ways than older men—and than younger drivers of either sex.

These research findings may have important policy implications given the preponderance of older women among older people. Changes may be needed in the way cars and safety devices (air bags, for example) are designed or roads are signed or safety messages are conveyed.

UNDERSTANDING WOMEN'S SAFETY AND SECURITY ISSUES

- 12) **We must develop better and more comprehensive data on pedestrian, transit, and auto crime affecting women.**

Crime statistics are rarely kept in a way that allows policymakers to understand how women travelers are constrained or disadvantaged by actual crime or by the threat of crime. We must develop statistics which link incidents to travel choices by mode and time of day and severity of crime.

- 13) **What impact on travel mode or route or schedule does the fear of crime have on various groups of women travelers? What is the relationship between attitudes and behavior?**

Women generally report themselves more concerned about their personal security than comparable men—but we have little idea of how these concerns actually affect their travel patterns in the short and long run. Women may respond by abandoning transit and refusing to walk, or they may “simply” wait for a bus at more crowded stop or travel a stop further in order to get off with other people. We need to understand exactly how fear for personal security affects different women; for example, older women may be more responsive and younger women less (or not).

This research is crucial not only in helping to develop ways to make the widest possible set of travel options open to most women, but also in marketing and promoting security changes to affected women. We would like to know, for example, if surveillance systems (for example, at highway rest stops or transit transfer points) make women feel safer, and if they do, what changes are seen in their travel behavior.

- 14) **We must develop comprehensive traffic accident data on women in general, and on specific sub-groups of women.**

Men and women have different patterns of accidents—rates, times, severity—but women’s accidents seem to be worsening. Women are facing, for example, increasing involvement in fatal crashes as they drive more miles more often. Given almost universal licensing among women under 40, we need mechanisms to obtain extensive information on the type of accidents in which women drivers are overrepresented—by time of day, road conditions, road type, vehicle design, the number of occupants, etc.

Data collection and analysis must be longitudinal as more women become workers and drivers.

- 15) **How important is the growing problem of alcohol and drug abuse among women drivers—and what role does drinking and drug abuse play in women’s crashes?**

Are women becoming more reckless and less concerned about drinking and driving? Unfortunately some research presented at this Conference suggests that younger women may be becoming more like younger men in using and abusing substances which impair driving performance and which are demonstrably related to accident rates and severity. We must understand what is happening and why. Is it possible or desirable, for instance, to target anti-drinking/driving campaigns to young women?

- 16) **We understand the role of vehicle and restraint design on women’s crash involvement and injury.**

Motor vehicles and the safety devices they contain—especially airbags and seat belts—are designed, built, and installed to benefit the 50th percentile male—and not smaller or more frail women, children, or men. As a result we continue to unnecessarily harm anyone who is not midsize male with ill fitting restraint devices and inappropriately designed vehicles.

We must define the real world performance characteristics of interior design dimensions, vehicle controls, and restraints (belts and airbags) and their role in causing or preventing harm to women in a crash. We must also understand the role of seat and passenger position, crash avoidance and protection systems, and vision enhancements in facilitating the driving task, and increasing or reducing accidents and harm to various sub-groups of women drivers. Older people, for example, may have more difficulty with night vision while children face important seat positioning issues.

WOMEN AND TECHNOLOGY

- 17) **Are there gender differences in perceptions and use of in-vehicle navigation systems? What changes are observed in traveler behavior?**

In-vehicle navigation systems are being widely installed in rental vehicles and in selected luxury cars, often marketed as a way for travelers to feel more secure and to avoid congestion, accidents, etc. by suggesting alternative routes. Such systems typically route users along the path which will take the shortest time to complete, generally along interstates and major arterials. But there may be gender differences in response to such systems; for example, do women want or use shortest-path information if it takes them away from their childcare center or into neighborhoods they do not know?

We must investigate whether men and women seek the same kind of information from such systems, if they value that information in the same way, and if it leads to the same changes in travel behavior. For example, will women deviate off their route to avoid an accident or are they more willing to tolerate the resulting congestion? Since we rarely want **all** drivers to deviate to alternative roads/streets, this may be useful information for system designers.

We must also understand if women want different kinds of cues or displays of information or if they perceive them differently than comparable men.

- 18) **How will improvements in telecommunications affect women overall, and sub-groups of women in particular?**

Are there differences in how men and women will react to and use various telecommunications options? If so, what are the causes of those differences and what are their ultimate implications for occupational segregation, the location of firms and industries, and the way people organize their households?

For example, the applicability of telecommuting, etc., may be industry and even job specific; to what extent are women represented in the kind of jobs likely to use or involve such technology? And if large groups of women are not able to use such technology, will that increase the wage gap between men and women and/or increase the relative amount of resources certain women are forced to spend on travel?

And if some or many women do make use of such options, what will the impact be on their total travel patterns and choices in the short and long run? Will women move farther from work if they do not have to travel there as frequently? Will they give up the car without the need to commute daily or will they be more likely to drive since they do so less frequently?

19) What role will improvements in highway and transit surveillance play in women's travel patterns; will women be more or less willing to give up privacy for security?

While women often report the importance of personal security concerns, privacy issues have forced the removal of surveillance cameras on highways and other locations. In which transportation situations are surveillance devices likely to increase both actual and perceived security sufficiently to overcome privacy objections? For example, are these devices more warranted/accepted in transit situations than along highways?

It would also be important to learn if men and women have different perceptions of the trade-offs between these two societal objectives. Are women more likely to be willing to give up one to gain the other than comparable men? Do different groups of women have different views of this issue; for example, are elderly women more likely to favor surveillance-based security systems?

Moreover we need to know if these devices actually make a difference in the travel choices of various groups of women. Do women use one mode or route because they feel confident that they will be seen if their car breaks down or if they are accosted? Or are these systems seen as a last ditch option, help probably arriving too late to matter or not at all?

LAND USE PATTERNS AND COMMUNITY INTERACTION

20) There is a need to expand our understanding of the spatial mismatch between the homes and potential employment locations of various groups of women, at the neighborhood and community level, as well as at the metropolitan or aggregate level.

The term spatial mismatch is generally used to describe the plight of low skilled inner city, largely female, workers who are increasingly distanced from appropriate jobs in the suburbs. While a vigorous debate still rages over whether the distance between home and growing suburban employment concentrations really explains unemployment, it is clear that some groups of women are substantially more disadvantaged than others by these distances, and/or the lack of appropriate transportation options.

It is also clear that these disparities are very community-specific. Some workers living in the inner city might have an easy and rapid transit connection to suburban jobs while other inner city workers may have to transfer twice or three times to reach a job not five miles from their homes. It is important to understand these discontinuities within individual metropolitan areas at the neighborhood and even large employer/firm level and among women with different educational, occupational, income, and racial and ethnic backgrounds.

21) How has the suburbanization of homes affected the travel patterns of various sub-groups of women?

Suburban women had different travel patterns than other women—they travel longer distances, more often in the car. But we do not understand the extent to which certain kinds of travelers have self-selected the kinds of residential communities which facilitate more travel or offer a greater number of possible destinations. For some, suburbanization may equal greater, not lesser, mobility.

We also do not know the extent to which women have willingly traded greater distances and dependance on the car for other suburban attributes—from larger homes to better schools to backyard gardens. At the same time, women at different life stages may have different perceptions of what they are losing and gaining in suburban areas; older women in suburban areas may feel less mobile as they lose agility or the ability to drive.

22) Can we untangle the behavioral underpinnings of sometimes major differences in the travel patterns of rural, suburban, and urban women?

Research presented at this Conference showed that rural and urban women have different work commute patterns; however, we do not have a clear idea of the extent to which these patterns represent constraints rather than choices. And while we have strong theoretical models we have little empirical data to indicate exactly which variables play the strongest role in shaping urban and rural travel—household roles, employment locations, transportation resources, etc.

CHILDREN'S TRAVEL PATTERNS

23) How has the growing magnet school and school choice movement (whether formal or informal) affected the travel patterns of mothers?

Many communities have attempted to voluntarily desegregate their K-12 system by designating various schools as math or science or art magnets, allowing parents to choose where in a community their children attend school. Other parents have opted for private schools for which they pay or they have taken advantage of voucher programs offered by local school districts. All of these trends have sharply reduced the importance of the neighborhood school—a place where many children could walk or bike or use transit.

Most parents gain an additional transportation chore by choosing schooling options outside their own neighborhood. Mothers seem particularly constrained by such decisions. But we have very little idea of the overall impact on their travel patterns and choices now, and conceivably in the future. At the same time, there is tremendous pressure on families in these situations to allow teenagers to drive at the earliest possible moment in order to relieve those burdens; we do not know the full implications of these patterns either.

- 24) **What has been the impact on children's and ultimately parents' travel patterns of the growing inability of school districts to provide school bus service?**

Some transit systems have seen dramatic increases in bus ridership as school districts phase out bus service in response to spiraling costs. Are children become transit users in greater proportions? And if they are, are there long term implications; do children used to buses ride transit more as they grow up? And what are the impacts on more traditional riders? For example, many systems have found that young children on-board transit vehicles often frighten older travelers, even if the children are not behaving in a menacing way.

On the other hand, transit services are not always available for all students who lose school bus service. To what extent are parents forced to change their travel patterns—from dropping out of carpools to buying second cars—in order to respond to these new but long term needs of their offspring? Are mothers, as commonly thought, the parent most affected by their children's school trip needs?

- 25) **We need a better understanding of how the imposition of stronger safety and auto restraint requirements affects the travel patterns of various groups of mothers.**

It is well accepted among safety experts that children should be placed in the back seat, belted and in appropriate child safety devices. Most of these requirements effectively reduce the child-carrying capacity of each individual car as well as reducing the number of adults who can ride. Do mothers drop out of carpools or drive alone where they once packed several children into a car?

Conversely, do mothers fail to comply because to do so would create substantial transportation problems (for example, a mother with three children under 5) What is the level of compliance among mothers in different groups; do otherwise comparable men and women have different rates of compliance? And exactly why do more parents not comply with regulations or accepted safety practices?

- 26) **Does carrying children interfere with women's driving? Do data indicate greater accident rates among women chauffeuring children?**

Data show that women are more likely to be accompanied by children when they travel than comparable men. We know, however, very little about how the presence of even properly belted and restrained children affects the driving behavior of mothers and fathers. Are women more distracted because they have such passengers? And if they are, does that translate into greater accident or citation rates?

DEVELOPING APPROPRIATE RESEARCH DESIGN AND METHODS

- 27) **We must have a better way to bridge the gap between research and practice, between scholars addressing these issues and policymakers establishing programs and projects.**

Many scholars present at this Conference have been documenting and analyzing important travel differences between comparable men and women, and among groups of women, for almost two decades. Yet little of that work is represented in commonly used planning tools and approaches. It is crucial to develop a way to incorporate a range of important societal variables into planning models and evaluation tools.

For too long concerns about the transportation needs of women in general, or under-served or underrepresented women in particular, have been relegated to a few paragraphs in a final report or transportation plan which results from a massive process which never once considered those needs in any systematic way.

- 28) **We must change and reorganize the way in which travel data are collected, synthesized, and evaluated so that they better capture both the profound and subtle attributes of women's travel.**

It is crucial to provide policymakers and planners with timely and accurate information on the travel patterns of women in a variety of circumstances. We know that women's patterns are often more complex than men's but research studies and planning projects often fail to collect or use that information. For example, women often link many trips together with their home-to-work commute; many studies collapse all those links into the category "home to work." This may explain why several studies show that women take longer to make a work trip of comparable length even controlling for mode—the data treat a women's trip home from work via the childcare center and the grocery store the same as a man's trip directly home. (And if men do link trips, those links are equally ignored).

We also know that women are more constrained by their children's travel needs than comparable men. To understand the travel patterns of many women we understand their children's schedules and constraints. Yet these kind of data are rarely collected in a useful way.

We must develop and implement data collection methods which respect and measure the intricacies of women's travel. If data collection and processing are done correctly initially, this kind of approach may be no more expensive than current methods.

- 29) **What evaluation measures and performance criteria can be developed to measure the impacts on women of various transportation projects and policies?**

If women have different needs, perceptions, and preferences, it is unlikely that all policies and programs affect them equally. While research presented at this Conference has suggested that women may be differentially impacted by various programs and projects, etc., the magnitude and even the direction of the implications are not clear.

For example, some analysts have asserted that increased gas or road prices will be doubly unfair to working women with modest incomes; yet research presented at this conference has suggested that some women would rather pay the higher prices and get home faster perhaps because the time spent in traffic, etc. has a very high value to them. We must explore these implications and develop a way to recognize and measure how a variety of governmental and private actions actually impact various sub-groups of women.

In addition, women may value some potential outcomes more than others—they may value safety more than congestion relief, or time more than money, or money more than time. Performance measures and evaluation criteria must be structured to recognize that different groups of people place different value on different results.

- 30) **We must structure ways in which qualitative and quantitative research approaches can be blended to provide better information on women's travel.**

Much of the detailed data needed on women's travel patterns, particularly at the disaggregate or small group level, may be difficult to collect, organize, and synthesize. Yet more qualitative data are often not collected in a way which allows their incorporation in planning models or tools. We must find a way to use various approaches to understanding women's travel to complement and strengthen one another.

POLICY RESEARCH AND ANALYSIS

- 31) **To what extent are women involved in the variety of neighborhood, city-wide, local, regional, and state-wide transportation planning processes and projects which affect their lives? How can we expand their participation in projects of importance to them, to their children, and to their aging parents?**

Many transportation and other planning processes which receive Federal aid require active citizen participation at various stages. But we do not know the extent to which various groups of women participate, or whether the concerns of many different kinds of women are voiced in these forums.

We must understand exactly who is and is not "at the table" in a variety of important policy discussions and attempt to gauge the impact on the ultimate decisions taken.

- 32) **What are the comprehensive transportation implications for women of welfare reform efforts?**

We must understand not only how different groups of women may be affected by various policy options but also what transportation alternatives might respond to their needs. Do current transportation options structure or restrict the jobs available to the women most likely to be affected? What traditional and nontraditional transit options might allow different groups of women to seek, find, and maintain jobs? What role could jitneys, community buses, restructured transit services, vanpools play?

We also need to understand the role of access to private cars in welfare reform efforts. Given the long commutes and poor transit options to suburban jobs, women seeking employment may only get to a job interview let alone to the job by using private vehicles. Yet many state welfare programs will not allow recipients to own a car—making it difficult for them to work their way out poverty. There are some demonstration projects in which women on public assistance are helped to buy or share cars; these efforts should be closely monitored.

33) What are the transportation and other implications of the housing and employment choices open to women receiving public assistance?

The transportation needs of different groups of welfare recipients are as much a product of where they live and the location of jobs open to them as they are to the availability of cars or public transit. We must comprehensively examine the network of choices and constraints facing these women as we attempt to stake out a role for transportation efforts in moving people from welfare to work.

34) To what extent are the lives of women affected—either positively or negatively—by Federal transportation and environmental mandates which require metropolitan areas to plan congestion mitigation and environmental controls?

We know that not all travelers are equally impacted by policies and programs which restrict the car, or mandate work schedule changes, or which increase the cost of driving, directly or indirectly. Some analysts feel that women may face a double burden in responding to the kinds of measures which might be adopted in areas struggling with air quality or congestion problems, largely because even very poor women depend so heavily on the private car to balance their lives. At the same time, recent research suggests that women might be more willing to use more expensive options—like toll roads, for example—because it saves them so much time, the thing they lack more than money.

While very restrictive options (like banning free parking) have been made voluntary in most Federal and State programs, most areas not in conformity with clean air and other standards will still be spending considerable effort trying to find ways to encourage people to not drive, or not drive during congested periods. But the incentives they offer—while perhaps less harmful than sanctions—may not be appropriate for the real needs of working women and their families.

We must understand how various incentives and programs actually impact the lives of working women, what programs and policies would best allow them to balance their many obligations without driving, and if these options differentially impact different groups of women.

35) How can we better link equity issues, particularly those focused on the needs of various groups of women, to actual performance measures?

There is a great deal of lip service given to the needs of disadvantaged groups and to those with disproportionate obligations, like working women; communities are often required to develop special plans or planning processes for such travelers. But it rare for existing or planned systems to be evaluated in terms of how well they *actually* provide services to women and others. Most performance measures assume that system attributes a) equally affect all travelers and b) are equally valued by all travelers—for example, that men and women want the same level of safety and security or are equally well served by a given level of crime prevention or surveillance.

Perhaps women value time savings more than men with comparable incomes; perhaps they desire transit services—like being delivered to their door at night—more than men.

If system performance is not explicitly measured in terms of its impact on various groups of women, it is extremely unlikely that highway or transit or other services will be built, financed, or operated in a way responsive to their needs. In addition, unless these needs are made explicit, it is equally likely that well-intentioned public policies may have serious unintended but very negative consequences for women. We must, therefore, **both** develop ways to calculate and measure the attributes desired by various groups of women in different transport systems, and, to structure the evaluation process to include those measures.

There are a host of new transit and highway services being implemented in the US from transit route restructuring to HOV lanes. We need to do before-and-after studies which focus explicitly on how women are impacted by these services; services which *on-average* are successful or well-liked may not, in fact, be very useful for women travelers, or those with children, or those who are elderly, etc. Certainly not all services need be geared to all needs, but aggregating averages should not be allowed to obscure differential impacts on women.

WOMEN IN THE TRANSPORTATION INDUSTRIES

36) Have women been as successful as comparable men in a) being accepted in various aspects of transport, and b) rising to managerial positions?

What opportunities and what constraints to the employment and advancement of women, particularly those from traditionally disadvantaged groups, are found in various transportation industries? Are women and disadvantaged minorities more likely to do well in public enterprises or those with a non-engineering focus? We should develop databases which allow us to keep track of women's careers over time, to identify areas of greatest opportunities, and to attempt to overcome barriers in the areas with the least evidence of advancement.