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Public Transportation Travel Needs of Women: A Subgroup Approach to Transportation Planning

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PUBLIC TRANSPORTATION TRAVEL NEEDS OF WOMEN:
A SUBGROUP APPROACH TO TRANSPORTATION PLANNING

by

VERONICA A. DIORIO

A THESIS PROJECT SUBMITTED IN PARTIAL FULLFILLMENT
OF THE
REQUIREMENTS FOR THE DEGREE
OF
MASTER OF COMMUNITY DEVELOPMENT

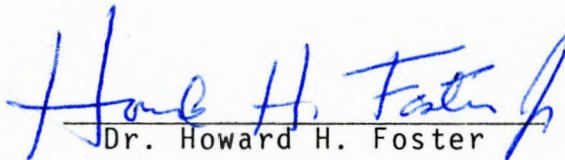
UNIVERSITY OF RHODE ISLAND

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Part I

Introduction

Urban Transportation Planning and Policy

Transportation policy concerns may be described as existing within either of two sets of ruberics. In the first, a problem is percieved by many people, who demand that it be fixed. Transportation issues in this catagory include, for example, noise pollution, environmental damage from network construction, inefficient use of fuel, time, and other resources - the problem makes itself evident and an immediate remedy is demanded. The remedy may utilize either hardware, or a "softer fix" such as planning or legal control.¹

Policy issues may additionally be viewed as opportunities - opportunities for making fundamental changes within a particular sector that will coincide with fundamental changes evolving in society. Transportation policy in this light is seen as one way in which the environment can be shaped to be responsive to emerging social needs.

There is little question that insufficient emphasis

has been placed on social elements in the study of transportation, thus lessening the pool of knowledge of general travel theory which forms the basis of transportation planning.

Evident in policy formed in the 1970's, however, is a broadening of concerns, in which social policy issues are encompassed. The strictly engineering-oriented economic and quantitative studies of network flow and analysis can now be coupled with more humanistic approaches.

Developments in social aspects of transportation which have thus far received attention include: 1) enhancing environmental quality through more comprehensive approaches to transportation planning; 2) mitigating negative transportation impacts on communities and neighborhoods; and 3) increasing transportation service to socially deprived or otherwise disadvantaged groups within the city.² Aspects of this third concern are addressed by this paper.

Why Study Women?

A study of transportation needs or demands of women is explicitly a subgroup approach to transportation planning. Not all transportation planners are proponents of such an approach, although the U.S. Department of Transportation has acknowledged that the failure of many trans-

portation-poverty programs of the 1960's made evident "the need for disaggregating the population into homogeneous segments, and considering each group's particular travel desires and requirements."³

Much research, funding, and many innovative transportation programs have been directed towards attracting and increasing the mobility of certain population subgroups - most notable the elderly and physically handicapped. Little such attention has been focused on women, although it is women who make up the largest percentage of the population, and account for a substantial portion of travellers who use publicly-provided transportation.

Just as other previously ignored subgroups have begun to articulate their needs through countless organized coalitions rather than rely on the intercession of well-meaning agents, so it is women as a social group who must bring about an awareness of their needs. The implication of this concept is that an affected group can only improve its situation by being in control, or having input into, the process by which improvements or advancements are made.

Statement of Purpose

It is the purpose of this paper to explore aspects of the transportation needs of women, a population subgroup that has received little previous attention from

transportation planners and policy makers.

Many factors enter into public transportation planning decisions. One factor in particular which in the past has been inadequately considered for women is access to employment opportunity. Ample documentation exists illustrating the economically disadvantageous position of women in the work force. The suggestion is made here that transportation programs - along with more rigorous job recruitment, reducing discriminatory hiring practices, providing adequate child-care arrangements, etc., can and should be utilized to help ameliorate the occupational segregation and low-earning structure which characterizes the female labor force.

The major goals of this paper are to focus on the above-outlined problems by:

- 1). illustrating the comparatively segregated nature of the labor market and examining the results of this, in terms of earnings, for women;
- 2). illustrating the dependence of many women on public transportation or other special arrangements to meet their travel needs, including travel to work; and
- 3). examining the ways in which improvements in urban mobility have and can be made through changes in existing services and facilities, the use of alternative transportation modes, increasing the role of women at decision making levels within the transportation industry, and changing the nature of transportation policy in general.

Certainly there is no one best system which would provide a universal panacea for all transportation pro-

blems. The best system makes use of, simply, the right approach in the appropriate situation.

Perhaps an ideal to be conceptualized, made possible with sufficient funds and public commitment, would be people starting their days liberated of transportation concerns. With the initiation of more effective, harmonious theories of mass transit, "there would be no deadening struggles to the office, no chilly early morning waits for the bus, no one left at home for lack of a car."⁴

Part II

Women in the Labor Force

The economically disadvantageous position of working women should serve as one justification for a reassessment of transportation policy concerns. Policies aimed at reducing employment related inequalities must respond to the self-evident fact that travel inconvenience is a barrier to employment.

An Historic Overview

"The Lord spoke to Moses saying: Speak to the Isrealite people and say to them: When a man explicitly vows to the Lord the equivalent for a human being, the following scale shall apply; If it is a male from 20 to 60 years of age, the equivalent is fifty shekels of silver by statutory weight; if it is a female, the equivalent is thirty shekels."

Leviticus 27: 1-4⁵

Women have always engaged in economically productive work. Blau (1975) describes three types - the production of goods and services for consumption by one's own family; the household production of those goods and services for sale outside the home; and work for pay outside the home.⁶

In pre-industrialized America, there was no doubt as to the essential nature of work performed by women. The goods and services they produced (spinning, weaving, candle-making, forming soaps, and so on) could not be obtained outside the home. Women contributed actively and equally to the economic life of the community. Gradually, as family needs were met adequately, part of the output could be sold either to individuals, or to shopkeepers, in exchange for wages or credit. Assemblages of women-powered looms were eventually set up - America's first "factories."⁷

Industrialization, as is well known, allowed the entire process of converting raw materials into useable goods to be carried on in factories utilizing power-driven machinery. The home became separated from the place of work, but women and children, as before the introduction of the factory system, were virtually the sole labor sources for the manufacturing industry. Men, for the most part, engaged in agricultural and farming types of work until the end of the century. Thus, occupational segregation existed in the early work force, but all workers contributed to overall economic production on a fairly equal basis. It was only with the steadily decreasing availability of farm land, coupled with massive immigration, that employment of men specifically became a more primary concern than total employment for all persons.⁸

Despite the attitudinal barriers and lack of concern for the employment of women since the emergence of industrialization, women have been entering the labor force in continually increasing numbers (Table 1).

In 1940 the work force was one-quarter female, with less than 29 percent of the female working-age population employed. By 1977 nearly forty million women were working, with the entire labor market 41 percent female.

T A B L E I

WOMEN IN THE CIVILIAN LABOR FORCE, SELECTED YEARS, 1890-1977

<u>Year</u>	<u>Number (in thousands)</u>	<u>As Percentage of all Workers</u>	<u>As Percentage of Female Population</u>
1890	3,704	17.0	18.2
1900	4,999	18.1	20.0
1920	8,229	20.4	22.7
1930	10,396	21.9	23.6
1940	13,783	25.4	28.6
1945	19,290	36.1	38.1
1947	16,664	27.9	30.8
1950	18,398	29.6	33.9
1955	20,548	31.6	35.7
1960	23,240	33.4	37.7
1965	26,200	35.2	39.2
1970	31,520	38.1	43.3
1975	36, 998	39.9	46.3
1977	39,952	41.0	48.4

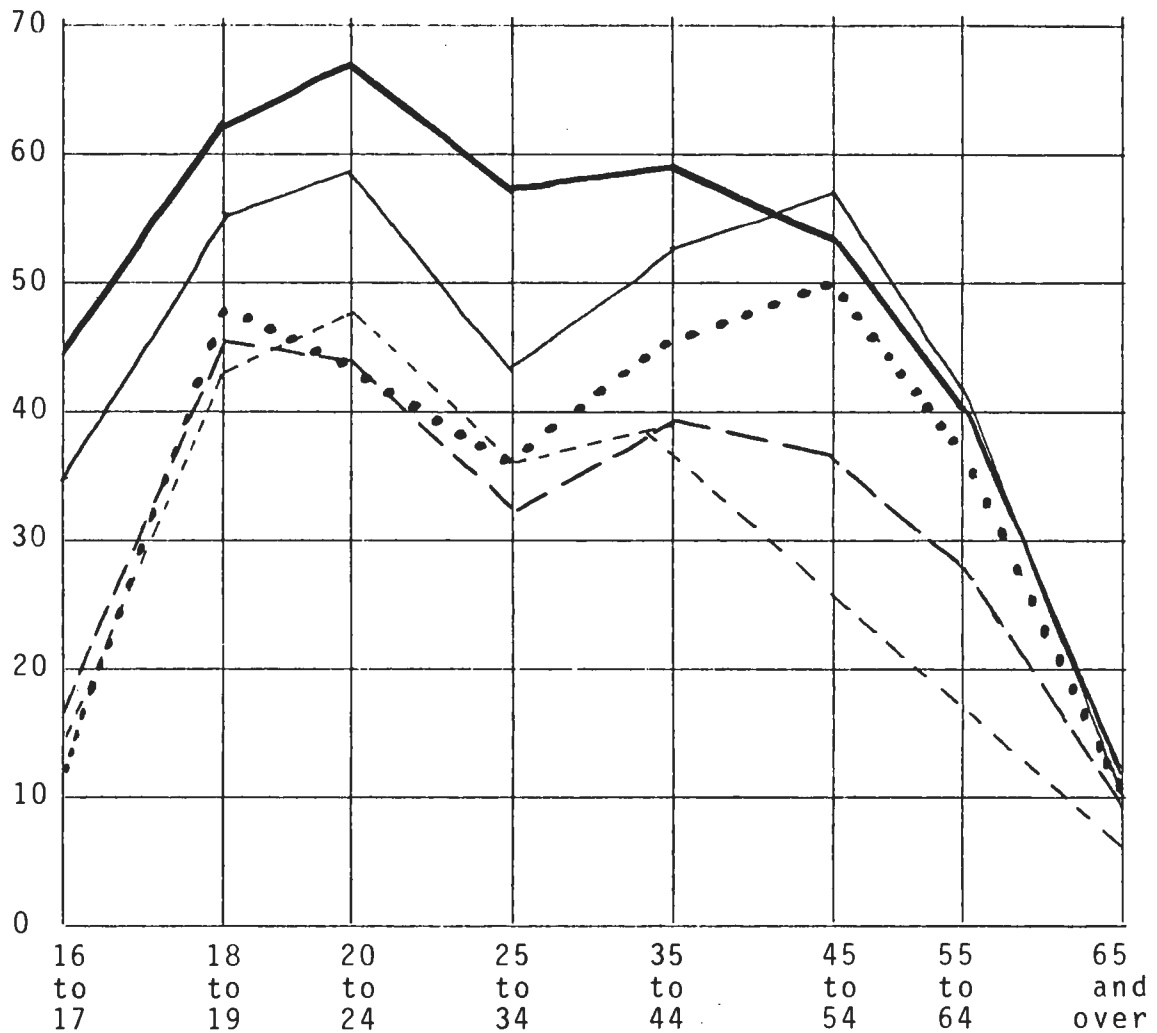
Note: Pre-1940 figures include women fourteen years of age and over; figures for 1940 and after include women sixteen years of age and over.

Sources: U.S. Department of Labor, Women's Bureau, 1969 Handbook on Women Workers, p. 10; U.S. Department of Labor, Bureau of Labor Statistics, U.S. Working Women - A Data Book, Bulletin 1977 (Washington, D.C.: U.S. Government Printing Office, 1977), p. 5; and Employment Earnings, January 1978, Tables A-1, A-2.

It is important to realize that this entry into the job market has been sequential - the overall growth of the female labor force has been the result of progressive entry by different groups of women. Blau describes the pre-1940 female worker as typically young and single. Between 1940 and 1960 the labor force participation rates of young women between the ages of 20 and 34 years of age remained relatively constant, but older married women increasingly entered or re-entered the work force as well. Since 1960 the participation rates of all women under the age of sixty-five have increased (see Figure 1), with the fastest increase occurring among young married women. The labor force participation of young mothers with preschool-age children has risen from 18.6 percent in 1960 to 39.3 percent in 1977. In short, "the female labor force has come to resemble much more closely the total female population."⁹

The increased size of the female labor force is directly related to one of the chief trends of the 20th century labor market: the shift of labor into the service sector. Employment opportunities for women have in fact expanded, but only in certain areas, and only within the context of a sexually segregated labor market.¹⁰

FIGURE I LABOR FORCE PARTICIPATION RATES OF WOMEN
BY AGE, 1940 - 1977



----- 1940
 - - - - - 1950
 1960
 _____ 1970
 _____ 1977

Sources: Employment and Earnings, January 1978, p.141, and
U.S. Department of Labor, Women's Bureau, 1975
 Handbook on Women Workers, p. 12, as cited by
 Blau, op. cit., p. 273.

The expansion has also been characterized by a responsive nature. When the huge growth of the female-dominated service sector began, employers were forced to hire older, married women. Since 1960 a similar process has operated to the benefit of young married women. Employers who may have been reluctant to hire women with young children (either because of fear of absenteeism, or moralizing about the proper place of women with preschool children) may have been forced to disregard those concerns in order to meet their labor demands.¹¹

This historic trend of responsiveness on the part of women to demands extraneously created - by, for example, the emerging conditions of World War II, upswings in the business cycle, the growth of the service sector, etc. - has placed women in a tenuous position of dependency. In combination with factors such as the narrow range of open jobs, limited accessibility, and inadequate provision of child-care facilities, "it becomes difficult to regard the decision whether or not to seek paid employment solely as a matter of free choice or personal preference for many women."¹²

Occupational Distribution

"When sex differentials across occupations are examined, one of the most striking findings is how few occupations employ large numbers of both sexes. Most men work in occupations that employ very few women, and a significant fraction of women work in occupations that employ very few men."¹³

Occupational distribution of workers in the United States is shown in Table 2. Employment patterns for women and men are obviously quite different. Within the white collar group, the large majority of workers - 70 percent of this group, or 29 percent of all working men - were in either the professional and technical, or management category; only about 34 percent of female white-collar workers, or 22 percent of all working women, were in either of these categories. The largest segment of white-collar workers - 35 percent of the entire female work force - is employed in clerical jobs.

For blue-collar workers, note the larger share of highest-status, highest-paying jobs - craftsmen and foremen - held by men (20.9 percent) as compared with women (1.6 percent).

Note also the division of the generally low-paying service sector, dominated by women; less than 9 percent of all working men hold this type of job. For non-white women especially, employment is concentrated

T A B L E 2

OCCUPATION DISTRIBUTION OF THE LABOR FORCE BY SEX AND RACE

1977

Major Occupation Group	Percentage of Employed Labor Force		
	Males Total	Females Total	Non-White
White collar workers ¹	40.9	63.2	5.8
Professional and Technical	14.6	15.9	14.3
Manager, Officials and Proprietors	13.9	5.9	2.9
Clerical	6.3	34.7	26.0
Sales	6.0	6.8	2.6
Blue collar workers ¹	46.1	14.6	18.4
Craftsmen and Foremen	20.9	1.6	1.3
Transportation Equipment Operators	6.0	0.6	0.4
Non-Farm Laborers	7.6	1.2	1.2
Service workers ¹	8.8	20.9	34.9
Private Household	0.1	3.1	8.9
Other	8.7	17.9	26.0
Farm workers ¹	4.2	1.3	0.9
Farmers and Farm Managers	2.5	0.3	(2)
Farm Laborers and Foremen	1.7	1.0	0.9

¹Figures may not add to totals because of rounding.

²Less than 0.05 percent

Source: Employment and Earnings, January 1978, as cited by Blau, p. 152.

disproportionately in low-status occupations.

Thus, not only are there occupational differentials for the broad categories of work, but women tend to occupy the lowest rungs of each occupational group. This frustrating realization has prompted the contemplative statement by feminist Cynthia Epstein, that, "no matter what sphere of work women are hired for or selected, like sediment in a wine bottle they seem to sink to the bottom."¹⁴

The sex-stereotyping of job lines results in defacto segregation of women workers. It should be noted that where women have moved into male intensive occupations (those employing over 75 percent men) it has been the result of enormous growth in that occupation, rather than strictly increased opportunity or demand for women workers. In the area of management, for example, as measured by job titles, women have moved from a participation rate of 9 percent to 21 percent in the 1960 - 1974 time period; but growth in this area during the same time period was 2000 percent.¹⁵

Earnings

"Simply stated, the earnings gap amounts to this: Fully employed women earn only about \$6 for every \$10 earned by men, and the gap has widened somewhat recently, even in the midst of feminist activity."¹⁶

The female/male earnings differential is demonstrated generally in Table 3. In 1955 women earned about 64 percent of what men earned, but in 1972 fully employed women earned only 58 percent of what men earned, median incomes being \$5,903 and \$10,202 respectively. And in 1972 also, as shown in Table 3, 51 percent of employed males earned \$10,000 or over, as compared with 11 percent of the women.

The earnings gap is found to be present even among women with the same amount of education (Table 4), and within every major occupational group (Table 5): in both cases the earnings of fully employed women lag significantly behind those of men.

T A B L E 3

EARNINGS OF FULL-TIME, YEAR-ROUND WORKERS ¹ BY SEX, 1972

<u>Earnings</u>	<u>Women</u>	<u>Men</u>
Number with Earnings (in thousands)	\$ 16,675	\$ 38,184
Percent	100.0	100.00
Less than \$3,000	9.4	4.6
\$3,000 to \$4,999	26.2	6.6
\$5,000 to \$6,999	29.2	12.6
\$7,000 to \$9,999	23.9	24.9
\$10,000 to \$14,999	9.7	31.2
\$15,000 and over	1.7	20.0

1 Persons 14 years of age and over

Source: Prepared by the Women's Bureau from data published by the U.S. Department of Commerce, Bureau of the Census, Current Population Reports, Series P-60 No. 90, 1973

T A B L E 4

MEDIAN INCOME OF FULL-TIME, YEAR-ROUND WORKERS ¹ BY SEX AND
YEARS OF SCHOOL COMPLETED, 1972

Years of School Completed	Median Income		Women's Median Income as % of Men's
	Women	Men	
Elementary School:			
Less than 8 years	\$ 4,221	\$ 7,042	59.9
8 years	4,784	8,636	55.4
High School:			
1 to 3 years	5,253	9,462	55.5
4 years	6,166	11,073	55.7
College:			
1 to 3 years	7,020	12,428	56.5
4 years	8,736	14,879	58.7
5 years or more	11,036	16,877	65.4

¹ Persons 25 years of age and over

Source: Prepared by the Women's Bureau from data published by the U.S. Department of Commerce, Bureau of the Census, Current Population Reports, Series P-60 No. 90, 1973

Women & Work p.3

T A B L E 5

MEDIAN WAGE OR SALARY INCOME OF FULL-TIME, YEAR-ROUND WORKERS¹
BY SEX AND NON-FARM OCCUPATIONAL GROUP, 1972

Occupational Group	Median Wage of Salary Income		Women's Median Income as % of Men's
	Women	Men	
Professional and Technical Workers	\$ 8,796	\$ 13,029	67.5
Managers and Administrators (except farm)	7,306	13,741	53.2
Sales Workers	4,575	11,356	40.3
Clerical Workers	6,039	9,656	62.5
Craftsmen and Kindred Workers	5,731	10,429	55.0
Operators (including transport)	5,021	8,702	57.7
Service Workers (except private household)	4,606	7,762	59.3
Private Household Workers	2,365	2	-
Non-Farm Laborers	4,755	7,535	63.1

1 Persons 14 years of age and over

2 Fewer than 75,000 men

Source: Prepared by the Women's Bureau from data published by the U.S. Department of Commerce, Bureau of the Census, Current Population Reports, Series P-60, No. 90, 1973

Why the Earnings Gap?

"The fact that men earn more than women is one of the best established and least satisfactorily explained aspects of American labor market behavior."¹⁷

Any number of hypotheses have been offered to explain the female/male earnings gap - differences in work experiences, reluctance on the part of employers to invest in on-the-job training for women, institutional and individual discrimination, etc. In most studies where personal differences (such as schooling, age, race, absenteeism) were controlled, the earnings gap was only fractionally explained at best. Where detailed occupations for women and men were also controlled, the gap closed somewhat, suggesting that occupational segregation and concentration of women in low-paying jobs with little upward mobility is a primary cause of the earnings disparity.¹⁸

As to why this occupational segregation exists, Blau presents an explanation in terms of supply and demand. Demand for female workers is restricted to a relatively small number of occupations. At the same time, the supply of women who are available for work is very dependent, often, on changes in the labor market (employ-

ers can attract women to jobs by offering small changes in wages, or increasing the flexibility of working hours, for example). Therefore, in most of the predominantly female jobs, "there exists a reserve pool of qualified women outside the labor market who would be willing to enter if the price or job were right."¹⁹ The abundance of supply relative to demand, or what has been termed the "overcrowding" of female occupations, results in lower earnings for women's jobs.

Interestingly, job location has been found to be a major contributor to job segregation and female/male earnings differences. For any number of reasons, women are more likely than men to find employment near their homes. Not surprisingly Fuchs (1971) has found that persons whose places of work are short distances from their homes earn about 26 percent less than do people who travel longer distances to work (other things being equal). About 18 percent of employed women and only 9 percent of employed men were found to have a short trip to work. At the same time, 17 percent of females and 26 percent of males had a long trip. As women typically have more responsibilities at home, they are more likely to seek work near the home, and consequently may earn less.²⁰

Summary

An historical review of the position of women in the labor force, and a detailing of occupational distribution and earnings differentials reveals the following:

1. Increasingly large numbers of women are working - the labor force at present is over 41 percent female.
2. The female labor force has been characterized by a responsiveness to increases in opportunity and reductions of attitudinal and other barriers, as exemplified by:
 - the entrance of young, single women into the work force as labor demand increased during the war;
 - older, married women taking jobs in the 1960's in response to the expansion of the service sector; and
 - increasing participation of young women with children in the 1970's, as the ability of mothers to work has become facilitated and accepted.
3. Women workers, despite their large numbers, are heavily concentrated in a very small number of occupations. Few occupations employ large numbers of both sexes.
4. Those occupations in which the greatest number of females are employed tend to be low-paying, with little opportunity for upward mobility.
5. For the same type of work, women are still, by and large, paid less than men.

As demonstrated, the options for economic independence through equal participation in the labor market are,

at best, limited for women at the present time. The occupational segregation which characterizes the work force restricts employment opportunities for women, results in lower earnings, and reinforces the low societal status awarded to women, since the predominantly "female" occupations are typically regarded as less important or prestigious than other occupations.

It is important that social policy be directed towards facilitating opportunities for women to achieve economic advancement. Obviously, a wide variety of changes across many societal sectors are necessary; fundamental attitudinal, emotional, and behavioral changes will have to occur on a large scale basis. Accompanying these macro-level transformations, or perhaps preceding them, are hundreds of micro-level innovations crucial to a more equal distribution of choice between women and men about their activities.

It is not a contention of this paper that the transportation sector holds the key to the economic independence of women. However, changes in transportation policy, for many transit-dependent women, could improve mobility and directly impact the decision to enter the job market, as well as affect job selection.

The following section examines the role of mass transit in providing accessibility and independence to women.

Part III

Women as Captive Users of Public Transportation

Not only do women suffer employment discrimination; they are often handicapped in the transportation market as well. One group particularly impacted by inadequate transportation service is that of families headed by women.

Women as Captive Riders

"...just as a women's decision to seek employment may depend on the availability of adequate childcare facilities, it also depends on the existence of a reliable means of transportation to get to and from the job."²¹

Guliano (1979) brings to light the following statistics concerning the travel behavior of women in general:

- A 1969-1970 federal survey of persons 16 years or older shows that 87 percent of the males owned a driver's licence, compared with 61.5 percent of the females.
- About 73 percent of the total miles driven annually in the United States are driven by males.
- Male drivers average 11,352 miles per driver per year; the average female drives 5,411 miles per year.
- In 61 percent of all automobile trips made by males, he is the driver, and in 22 percent he is the passenger; females are drivers in 41 percent of all their auto trips, and passengers in 47 percent.
- Women use public transportation more than men by a ratio of at least 2 to 1.²²

Also mentioned by Guliano are the few studies of specific areas and transit agencies which have differentiated between female/male ridership patterns.

Seattle

The Seattle METRO transit agency, in 1973, sur-

veyed the origin and destination of transit users as part of a general transit system performance evaluation. While women and men were found to be equilly distributed throughout the metropolitan area population, it was women who accounted for 67 percent of all transit trips made within the city, and 61 percent of the transit trips made in suburban areas. As transit ridership was found to be a function of variables such as income level, auto availability, householdsize, age, and possession of a driver's license, it is presumed that women and men scored differently on these variables.

Davenport, Iowa and Hicksville, New York

In these two small cities, an analysis was done in 1975 of the demand for bus and shared-ride taxi service. (The shared-ride systems utilize public funding, and have fares comparable to a regular bus service.) The results were as follows:²³

	Percent bus trips made by women	Percent shared-ride made by women
Davenport, Iowa	82	67
Hicksville, New York	63	72

Obviously, in both these cities women make significantly more transit trips than men. Guliano notes:

"The most significant factors influencing the demand for transit were found to be possession of a driver's license, income level, and employment status. As in the Seattle METRO study, this implies that more women do not possess a driver's license, and have lower income levels and employment status than men."²⁴

New York State

In 1974, New York's Department of Transportation conducted a statewide transit user survey. New York City was surveyed separately because of its exceptionally heavy use of transit - about 40 percent of all transit use in the nation is accounted for by ridership in New York City.

Within the rest of the state, transit use for both work and non-work trips is overwhelmingly female. For work trips, 94 percent of all bus passengers were women. The most significant factors for these results include:

1. In one-car households, males are more likely to drive the family car to work than females.
2. The office and retail jobs - in which women tend to be concentrated - are located in central cities, while the larger industries which employ more men are found typically in suburban locations.

Thus, not only are jobs in the central city typically more accessible by public transit than jobs in the suburbs, but the low pay of these jobs often makes public transit the only affordable alternative. Obviously, then, if

women have relatively less access to private transportation, they have less opportunity to seek better paying jobs outside the central city area.

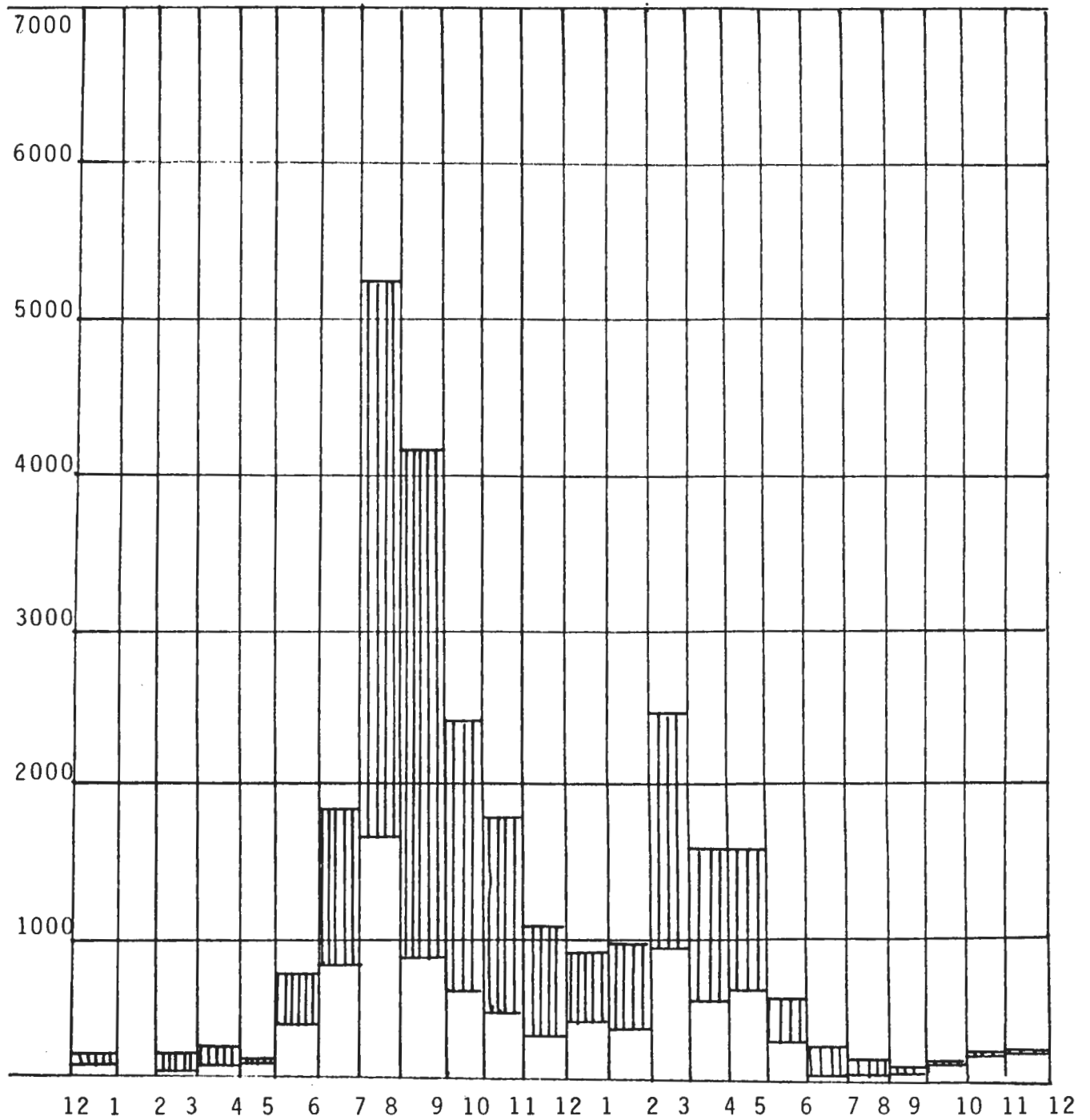
Rhode Island

Survey data for Rhode Island yield similar results. Figure 2 plots inbound (to the city) transit ridership stratified by sex and time of day, as determined in an origin-destination update study done by the Rhode Island Statewide Planning Program in 1974. The A.M. peak - persons commuting to work in the morning - is clearly the critical period of transit usage.

This figure shows significantly greater use of public transportation in the state by females as compared with males. Of the approximately 24,000 daily inbound transit patrons, some 16,700 (about two-thirds) were female.²⁵ And, as shown in Table 6, most transit trips are work-related.

Note also Table 7 "Transit Riders Stratified by Auto Ownership and Number of Licensed Drivers in the Family." Ownership of only one automobile characterizes the largest portion of families in the state (48.9 percent), as do families with only one licensed driver (31.6 percent). If, as Guliano contends, males are more likely to use the family car to

Figure 2. INBOUND TRANSIT RIDERSHIP BY SEX AND TIME OF DAY



Source: Rhode Island Statewide Planning Program, Technical Paper Number 42, January 1974, p.27.



T A B L E 6

PERCENTAGE DISTRIBUTION OF TRANSIT TRIPS BY PURPOSE

<u>Trip Purpose</u>	<u>Percent of Transit Trips</u>
Home	18.4
Work	45.6
Shopping	11.6
Social	2.0
Recreation	1.2
School	11.0
Personal Affairs	9.4
Other	<u>0.7</u>
TOTAL	100 %

Source: Rhode Island Statewide Planning Program, Technical Paper No. 42, "Massachusetts Transit Survey Report for the 1971-1972 Rhode Island Origin-Destination Update Study", January 1974, p. 31

T A B L E 7

TRANSIT RIDERS STRATIFIED BY AUTO OWNERSHIP AND NUMBER OF
LICENSED DRIVERS IN THE FAMILY ¹

<u>No. of Licensed Drivers</u>	<u>Autos Owned</u>							<u>Total</u>
	<u>0</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6 & over</u>	
								30.1
0	25.2	4.8	.1	.0	.0	.0	.0	31.6
1	2.2	25.6	2.8	.1	.0	.0	.0	22.5
2	.5	10.0	10.8	1.1	.1	.0	.0	9.3
3	.1	2.1	4.8	2.1	.2	.0	.0	4.0
4	.0	.4	1.5	1.2	.7	.1	.1	1.7
5	.0	.2	.6	.4	.3	.2	.0	0.5
6	.0	.1	.1	.1	.1	.1	.0	0.5
7 & over	.0	.0	.0	.1	.0	.2	.0	0.3
Total	28.0	44.1	20.7	5.1	1.4	.6	.1	100.0
	(15.8)	(48.9)	(30.0)		(5.3)			(100.0)

1 Numbers in parenthesis are 1970 census figures for the total state population

Source: Rhode Island Statewide Planning Program, Technical Paper No. 42, "Massachusetts Transit Survey Report for the 1971-1972 Rhode Island Origin-Destination Study", January 1974, p. 34.

get to work than females, the woman is forced to either utilize public transportation or make other special arrangements for her trip to work. In suburban areas especially, in which public transportation is often inadequate or non-existent, the plight of the adult left at home without a car - even if that adult is not working outside the home - is particularly distressing.

As to the number of suburban residents who may be carless, a study was done in 1971 in suburban areas of San Francisco not served by that city's rapid transit system:

"...fully 35 percent of household members of age sixteen and over whose 'primary activity' was 'other than working' lacked direct personal access to motor vehicles. This percentage rose to 45 percent for those with family incomes of less than \$10,000."²⁶

The opportunities for those in such a situation are obviously limited. Those persons with virtually no access to transportation have probably the greatest numbers of leisure hours and yet little opportunity to invest leisure time in personal fulfillment.

The importance of access to job opportunity, be it by automobile or other means, becomes apparent when occu-

pational distribution within central cities, suburbs, and non-metropolitan areas is compared with a distribution of where employees live, by occupational group.

For example, Table 8 shows that 41.3 percent of all clerical workers live in suburban areas. Table 9, however, demonstrates that only 18.3 percent of all clerical workers work in suburban areas. For sales workers, another occupational group employing large numbers of women, 44.2 percent of those employed live in suburban areas, yet only 7.1 work in those areas.

While this same trend is true, although to a lesser extent, for other occupational groups, including those categorized as traditionally male dominated, Table 10, "Mean Earnings by Major Occupation Group for Employed Persons Sixteen Years Old and Over," dramatically illustrates that males are far more likely to be able to afford commuting costs than are females.

Interestingly, suburban men employed in virtually every occupational group earned significantly more than their central city counterparts. For men, the mean earnings for professionals living in suburbs was about \$16,800, compared with about \$14,900 for those in the city; for sales workers also, suburban residents made about \$14,000 compared with \$12,700 for those in the cities.

T A B L E 8

PERCENT DISTRIBUTION OF EMPLOYED PERSONS SIXTEEN YEARS AND OVER BY PLACE OF RESIDENCE
1974

Major Occupation and Industry Groups	United States Total	Central Cities	Suburban Rings	Non-Metropolitan Areas
Employed, Total	100.0	29.8	39.7	30.6
Professional, Technical	100.0	30.2	45.9	23.8
Managers, Administrators	100.0	28.3	45.3	26.4
Sales Workers	100.0	30.8	44.2	25.0
Clerical Workers	100.0	36.1	41.3	22.6
Craft Workers	100.0	26.5	41.4	32.2
Operatives, Except Transport	100.0	28.5	34.4	37.1
Transport Equipment Operatives	100.0	28.9	36.4	34.8
Laborers, Except Farm	100.0	29.0	34.6	36.4
Farmers and Farm Managers	100.0	0.7	15.7	83.7
Farm Laborers	100.0	4.0	21.2	74.8
Service Workers, Except Private Household	100.0	33.9	36.3	29.8
Private Household Workers	100.0	32.7	28.5	38.7

Source: "Social and Economic Characteristics of the Metropolitan and Non-Metropolitan Population: 1974 and 1970", U.S. Department of Commerce, Bureau of the Census, Current Population Reports: Series P-23, No. 55, 1975, p. 23.

T A B L E 9

PERCENT DISTRIBUTION OF EMPLOYED PERSONS SIXTEEN YEARS OLD AND OVER BY OCCUPATION WITHIN
PLACE OF RESIDENCE: 1974

<u>Major Occupation and Industry Groups</u>	<u>United States Total</u>	<u>Central Cities</u>	<u>Suburban Rings</u>	<u>Non-Metropolitan Areas</u>
Employed, Total	100.0	100.0	100.0	100.0
Professional, Technical	14.5	14.8	16.8	11.3
Managers, Administrators	10.4	9.9	11.9	9.0
Sales Workers	6.4	6.6	7.1	5.2
Clerical Workers	17.6	21.3	18.3	13.0
Craft Workers	13.5	12.0	14.1	14.2
Operators, Except Transport	12.3	11.7	10.6	14.9
Transport Equipment Operators	3.8	3.6	3.4	4.3
Laborers, Except Farm	4.8	4.7	4.2	5.8
Farmers and Farm Managers	1.9	-	0.8	5.2
Farm Laborers	1.5	0.2	0.8	3.7
Service Workers, Except Private Household	11.8	13.5	10.8	11.5
Private Household Workers	1.5	1.6	1.1	1.9

T A B L E 10

MEAN EARNINGS IN 1973 BY MAJOR OCCUPATION GROUP FOR EMPLOYED PERSONS SIXTEEN YEARS OLD AND OVER WHO WORKED 50 to 52 WEEKS IN 1973 BY SEX AND TYPE OF RESIDENCE: 1974

<u>Major Occupation Group and Sex</u>	<u>Central Cities</u>	<u>Suburban Rings</u>	<u>Non-Metropolitan Areas</u>
<u>MALE</u>			
Employed with Earnings	\$11,488	\$13,179	\$ 9,884
Professional, Technical and Kindred Workers	14,946	16,788	13,812
Managers and Administrators, Except Farm	15,716	17,711	13,339
Sales Workers	12,165	14,018	10,646
Clerical Workers	9,552	10,726	9,484
Craft and Kindred Workers	11,014	11,827	10,013
Operatives, Except Transport Equipment	8,874	9,843	8,543
Transport Equipment Operatives	9,562	11,062	8,904
Laborers, Except Farm	8,179	8,277	6,313
Farmers and Farm Managers	(B)	9,393	8,858
Farm Laborers	(B)	5,795	4,025
Service Workers, Except Private Household	7,774	8,453	6,934
Private Household Workers	(B)	(B)	(B)
<u>FEMALE</u>			
Employed with Earnings	\$6,258	\$6,369	\$5,062
Professional, Technical and Kindred Workers	8,921	9,216	7,484

T A B L E 10 (continued)

MEAN EARNINGS IN 1973 BY MAJOR OCCUPATION GROUP FOR EMPLOYED PERSONS SIXTEEN YEARS OLD AND OVER WHO WORKED 50 to 52 WEEKS IN 1973 BY SEX AND TYPE OF RESIDENCE: 1974

<u>Major Occupation Group and Sex</u>	<u>Central Cities</u>	<u>Suburban Rings</u>	<u>Non-Metropolitan Areas</u>
<u>FEMALE</u> (continued)			
Employed with Earnings			
Managers and Administrators, Except Farm	\$ 8,280	\$ 7,904	\$ 5,928
Sales Workers	4,099	4,636	3,823
Clerical Workers	6,320	6,154	5,299
Craft and Kindred Workers	6,329	6,566	5,493
Operatives, Except Transport Equipment	5,502	5,653	4,898
Transport Equipment Operatives	(B)	(B)	(B)
Laborers, Except Farm	(B)	(B)	(B)
Farmers and Farm Managers	(B)	(B)	(B)
Farm Laborers	(B)	(B)	(B)
Service Workers, Except Private Household	4,515	4,201	3,521
Private Household Workers	2,240	2,360	1,654

(B) Base less than 75,000

Source: "Social and Economic Characteristics of the Metropolitan and Non-Metropolitan Population: 1974 and 1970", United States Department of Commerce, Bureau of the Census, Current Population Reports, Series P-23, No. 55, 1975, p. 14.

Earnings for women, however, were about the same for both city and suburban residents for all major occupation groups - and all groups earned much less than their male counterparts.

It is frequently argued that commuting can overcome the access problem; however, the major mode of transportation is the automobile, and private ownership is a necessity that many simply cannot afford. A particularly impacted group are families in which women have the major economic and social responsibilities.

Women Who Head Families

In March, 1977, the number of families headed by women reached 7.7 million, the highest level ever recorded. Nearly one of every seven families was headed by a woman, and well over half of these women were in the labor force.²⁷

Families headed by women are of special concern because they are more likely than either husband-wife families, or families headed by men alone, to have very low incomes. In 1976, one of every three female-headed families was living below officially defined poverty levels, compared with one of nine families headed by a man, and one of eighteen husband-wife families.²⁸

T A B L E 11

LABOR FORCE STATUS OF WIVES AND WOMEN WHO HEAD FAMILIES,
BY MARITAL STATUS AND RACE, MARCH 1977 (Numbers in Thousands)

Labor Force Status and Race	Total	Never Married, Married	Husband Absent	Divorced	Widowed	Married Women, Husband Present
<u>ALL RACES</u>						
Population	7,713	1,033	1,734	2,564	2,382	47,984
Labor Force	4,305	508	965	1,965	867	22,377
Participation Rate	55.8	49.2	55.7	76.6	36.4	46.6
Employed	3,860	416	829	1,809	805	20,854
Unemployed	445	92	136	156	62	1,523
Unemployment Rate	10.3	18.1	14.1	7.9	7.2	6.8
<u>WHITE</u>						
Population	5,464	528	1,007	2,078	1,850	43,775
Labor Force	3,134	270	563	1,619	684	20,045
Participation Rate	57.4	51.1	55.9	77.9	37.0	45.8
Employed	2,880	245	492	1,508	636	18,721
Unemployed	254	25	71	111	48	1,324
Unemployment Rate	8.1	9.3	12.6	6.9	7.0	6.6
<u>BLACK</u>						
Population	2,150	485	705	459	502	3,383
Labor Force	1,114	229	390	327	167	1,917
Participation rate	51.8	47.2	55.3	71.2	33.3	56.7
Employed	931	163	328	285	154	1,738
Unemployed	183	66	62	42	13	180
Unemployment Rate	16.4	28.8	15.9	12.8	7.8	9.4

Source: Beverly L. Johnson, "Women Who Head Families," Monthly Labor Review, February 1978, p. 34.

Part of the reason for the relatively high unemployment rates and low average income of women heading families, as with employed women in general, is their concentration in low-skill, low-paying occupations; the economic status of families headed by women is particularly low.

Between 1970 and 1976, the median income in families headed by women has remained less than half that of husband-wife families. In 1976, at \$7,211, it was only 44 percent of the income of husband-wife families. Among families with children, the income difference was even more pronounced; the median of \$5,942 for families headed by women was only one-third of the median income of husband-wife families.²⁹

Transportation needs which are not met can severely affect this group of women. The low income level results in automobile ownership rates that tend also to be low, and increasing public transit fares represent an additional financial burden.

Falcocchio et. al. (1972) studied the non-work travel characteristics (shopping, medical, recreational, etc.) of model cities residents in Brooklyn, New York, and found travel requirements and preferences to be much the

same as for the general population. However, most of the poor did not own automobiles, and were forced to use the local mass transit system. In several specific findings of the study, the poor of these model cities areas were found to:

- travel less because of economic constraints, with extra charges for additional zones being a particular burden;
- rely almost entirely on public transit;
- make longer shopping, medical, and recreational journeys than other residents in the city on the average; and
- have a substantially reduced choice on where to travel for most non-work activities.

Several studies have been done aimed at linking, through transportation provisions, low income central city areas with suburban employment areas. Goering and Kalacheck (1973) suggest that among the reasons for the failure of reverse commuting (from the city to the suburbs) program in St. Louis was that for Blacks, suburban salaries were not apparently better than those in central cities. As we have seen, this is particularly true for women.

Personal Mobility as an Equity Issue

Given that many women, for a variety of reasons ranging from personal preference in some cases to lower income levels in others, are dependent upon public transportation, an equity question arises having to do with the level of mobility provided by most public transit systems compared with that provided by automobiles.

For the purposes of this paper, it is accepted as a given that such a discrepancy exists. Certainly the time, inconvenience, infrequency of service, total lack of service at some hours, discomfort, and other negative factors associated with mass transit at present are realized by both users and non-users. The discrepancy in quality of service must obviously correlate with the degree to which transit dependent persons may be characterized as "handicapped," in terms of employment and other opportunity, within the transportation market.

One illustration of the difficult nature of transportation trips is demonstrated by problems experienced by the elderly population in San Francisco (Table 12).

For women, certainly, problems such as "fear of falling while getting off," and "keeping footing on vehicle" may be non-existent, but other, such as "lack of shelter while waiting" and "afraid to walk home" may act

T A B L E 12

PROBLEMS WITH BUS TRIPS

Problem	Percent
Walk to transit	38
Tiring wait for vehicle	80
Lack of shelter while waiting	88
Afraid at bus stop	66
Fear of falling while boarding	65
Fear of being late	63
Fear of doors	59
Keeping footing on vehicle	70
Missing the right stop	58
Drivers rude, unhelpful	39
Transferring	36
Fear of falling while getting off	77
Too tired to walk home	52
Afraid to walk home	72

Source: Carp, Frances M., Transportation and the Elderly; Problems and Progress (Washington D.C.: US. Government Printing Office, 1974), as cited by Stutz, p.40.

as deterrants to use of public transportation, especially during early morning or late night hours, and in severely cold weather.

Summary

The major points of the preceding pages are these:

1. Women in general are captive users of mass transit; they are dependent on publically provided transportation to a much greater extent than are men.
2. As transit ridership is largely a function of variables such as income level, auto availability, and possession of a driver's license, it is presumed that women and men score differently on these variables.
3. In households where only one car is available - a situation which characterizes Rhode Island at least - males are more likely to drive the family car to work than females, thus virtually assuring the dependence of women on other arrangements for their work and other trips.
4. Distributions of occupations and residences among central city, suburban, and non-metropolitan areas largely do not correlate, suggesting that for most people commuting to work is an inevitability. This is true for both women and men, although earnings differentials make the burden of commuting costs greater for women.
5. Unmet transportation needs affect in particular the large group of women who head families - a group characterized by poverty and limited access to job opportunities to a greater extent than other societal subgroups.
6. The lower level of personal mobility provided by public transportation as compared with that of the privately owned automobile places those dependent on public transportation at a disadvantage in terms of access to employment and other opportunity.

Part III

Improving Mobility

One way in which policy and programs can be directed towards improving mobility for women is to pattern changes after the manner in which improvements for other special groups have been made.

Introduction

There are ways in which to improve the mobility of women who are dependent on publicly provided transportation, just as mobility for other groups of special users has been improved. Recommendations enumerated here vary, ranging from small, immediate actions, to changes in policy and attitude which tend to take longer to enact, but which may have more far-reaching implications.

Areas in which significant alterations and transformations could occur include: 1) improvements to existing services and facilities; 2) utilization of alternative or additional transportation modes; 3) increasing the participation of women at decision-making levels within the transportation industry; and 4) general changes in the nature of transportation policy nationwide.

Improvements to existing services and facilities

There are several relatively low-cost improvements to existing public transportation systems which can be implemented with comparative ease, but which would contribute to the increased personal mobility of women

(and others) who are dependent on these systems. Service improvements include reducing travel time, and increasing the frequency with which buses run, for example, and/or offering express bus service would require minimal monetary expenditure, but would make transit travel time more competitive with automobiles.

Utilizing forms of market research which more accurately reflect the nature and need of the client group could be used as a basis for changing in-city routing to more closely correspond to the travellers' needs.

New York City, for example, rerouted portions of two existing routes to facilitate cross-town passenger movement both to and from the centrally located Port Authority Bus Terminal.³⁰

Another easily implementable improvement concerns the route information system. Although not directly related to actual bus movement, many potential riders are passively discouraged from travelling on buses by a lack of easily obtainable information. Route information improvements might include easily readable and useable maps, route stops and schedule cards, and locating route information displays in high activity centers such as office buildings, shopping centers, schools, etc.

Cities such as Chicago, Erie, Pennsylvania, and the Boston and Los Angeles Metropolitan regions are lead-

ers in the area of bus stop information signs. In an attempt to encourage transit riding, signs have been designed to show route stops, schematic maps, times, fares, and other useful information. Golden Gate Bus Transit also provides route information on its bus stop signs in Braille for the information of its blind passengers.³¹

Adequate design and maintenance of bus shelters can also contribute to improved service by making the waiting period more pleasant. These techniques can compliment efforts to improve the frequency and reliability of transit so that more people are encouraged to utilize public transportation.

Chartered bus service can also positively affect transit service. Employers of significant numbers of transit riders may often arrange for special bus service directly to the workplace. In Boston, the John Hancock Mutual Life Insurance Company and other employers are participating in the Massachusetts Bay Transportation Authority's prepaid pass program by permitting the passess to be conveniently purchased through a payroll deduction.³² It is not only the employee who benefits from such an arrangement. The employer is relieved of increasing demands to provide parking areas, and the accessibility of the employment location is improved.

Alternative and Additional Transportation Modes

The recognition that one kind of service cannot serve all markets, and that services must be designed to meet the needs of particular market segments has led to the development of transportation innovations which are more demand-responsive in nature than traditional fixed-route systems.

Often these services utilize existing transportation resources in both the public and private sectors. The term "paratransit services" has been introduced to distinguish those forms of demand-responsive service from scheduled fixed-route transit service.

Forms of paratransit include dial-a-ride, transvan, telebus, taxi-bus, etc. As alternative types of transit they concentrate on increasing the options available to those dependent on public transportation by supplying more efficient services in low density areas and to special groups.

As shown in Table 13, use of conventional public transit services has declined steadily throughout the post-World War II period. It has been suggested that the first significant reversal of this trend may occur in 1980.³³ Up to the present time, trip patterns in the

T A B L E I 3

RAPID TRANSIT/STREET TRANSIT 1935-1970

Year	Number of Passengers (millions)		
	Rapid Transit	Street Transit	Total
1935	2,252	7,530	9,782
1945	2,555	16,427	18,982
1950	2,113	11,732	13,845
1960	1,670	5,851	7,521
1970	1,574	4,358	5,932

Source: Office of State Planning, Rhode Island State-wide Planning Program, Technical Paper Number 86, "Paratransit Operations in Rhode Island; Update and Analysis, p.4.

outlying portions of metropolitan areas have become simply too diffuse and too scattered to be served conveniently and efficiently by regularly scheduled busses operating on fixed routes. Consequently, service has often had to be curtailed or abandoned in those areas. Suburban communities, often built entirely around the automobile, have rarely generated sufficient demand to justify extension of scheduled transportation service or creation of a local internal circulation transit system.³⁴

The result, of course, has been to leave millions of Americans, those who are too young, too old, too incapacitated to drive, or too poor to own a car, and the countless persons whose spouses preempt the use of the family car, stranded in their own neighborhoods. One reason behind the interest in paratransit is the hope that this new type of service will offer some relief to those transit dependent persons in the population.

The Urban Mass Transit Administration is currently testing paratransit as supplementary and complementary to regular transit service. For employees, significant innovations include route-rationalization (providing fixed or demand-responsive service where and when each is most efficient or effective), and coordinating transfers between the two services.³⁵

The basic service - dial-a-ride - permits people to telephone for door-to-door transportation to a location within the specified service area, closely resembling taxi service. The vehicle collects a number of people, however, and carries them at the same time to their destinations.

In Madison, Wisconsin, a Women's Transit Authority has been formed, the basis of which is dial-a-ride service. Formed as a rape-prevention service, the WTA offers free night-time rides within a four-mile radius of the city center. In this way, safe, reliable transportation is provided for women - when city buses have made their last trips - without private transportation or taxi fare.³⁶ The system exemplifies an active, positive response on the part of women to a city transportation system which was meeting their needs inadequately.

Over forty-five cities in twenty-two states have implemented demand-responsive programs. System design and operation may vary, but all share the characteristics of flexible routing and scheduling, relatively small vehicle size, and personalized (door-to-door) service.

Conventional public transportation cannot provide immediate door-to-door service. But it is precisely this type of transit that is needed in areas which, on the whole, do not generate enough riders to warrant

fixed-route service, though there may be individuals within these areas in need of transportation. The economics of operations which determine the fixed-route service of most transit companies is such that these companies cannot adequately service to any but the highest-density areas.

Paratransit service, utilizing smaller, more fuel-efficient vehicles, offers an alternative to no service at all, or service the cost of which is inaffordable to many. Demand-responsive service can perform certain potentially crucial roles, including the provision of specialized door-to-door service for handicapped and/or elderly persons; a substitute for or alternative to the private automobile for those for whom automobile ownership is not economically feasible; a service in low-density urban areas without transit; and a feeder service to major transit systems.

Women in the Transportation Industry

Although transportation policy is clearly of crucial concern to women, as they constitute the large portion of users of most public transportation systems, there exists a dearth of women in transportation and

physical distribution in general, especially at policy-making levels.

A recent Equal Employment Opportunity Commission report indicated, for example, that in local and inter-urban transportation 65.5 percent of the women employed were office and clerical workers, while only .008 percent were officials and managers.³⁷ These percentages are typical of those found throughout the country for all categories listed under the general heading "Transportation, Communications and Utilities" (see page 13, Table 2, "Occupational Distribution of the Labor Force by Sex and Race, 1977").

Table 14 presents the distribution of women and minorities employed in transportation firms surveyed at random from membership rosters of the National Council of Physical Distribution Management, the American Society of Traffic and Transportation, and the National Industrial Traffic League.

The vast majority of women are employed in some form of warehousing position (81 percent), with the next largest subgroup employed in general clerical work (13 percent). Only one percent were employed in managerial positions, and virtually none in planning and control.

Thus women (and minority workers) are dramatically underrepresented at policy-making levels. One implica-

T A B L E 14

JOB CATEGORIES FOR EMPLOYEES

Minority Group

<u>Job Description</u>	<u>American Indian</u>	<u>Black</u>	<u>Oriental</u>	<u>Spanish Speaking</u>	<u>Women</u>	<u>All Groups Combined</u>
Warehousing	56%	48%	64%	75%	81%	72%
Drivers	-	35%	-	07%	-	09%
General Clerical	14%	04%	12%	03%	13%	10%
Warehouse Mgt.	-	05%	06%	10%	-	02%
Rates & Audit	-	04%	03%	-	01%	02%
Secretarial	-	-	03%	-	02%	01%
General Mgt.	-	02%	-	01%	01%	01%
Traffic Clerks	-	01%	-	-	-	01%
Customer Service	-	-	-	-	01%	00% ^o
Inventory Control	-	-	-	02%	0	00% ^o
Planning & Control	-	-	06%	02%	-	00% ^o
Order Processing	14%	-	03%	-	-	00% ^o
Shipping & Receiving	16%	01%	03%	-	-	00% ^o
Claims	-	-	-	-	01%	00% ^o
	100%	100%	100%	100%	100%	100%

^o Indicates less than 1%

tion of this underrepresentation is that travel needs and demands unique to women are far from likely to be taken into account in the planning and decision-making processes impacting factors such as scheduling, routing, and frequency of service.

Transportation Policy and Decision-Making

The most far-reaching improvements in transit mobility can be achieved through the redefinition of transportation policy and decision-making criteria in light of the emergent role of public transportation as a public service.

The past two decades have been characterized by a rapid growth of public sector involvement in transportation. In fiscal year 1970, for example, federal aid to public transportation amounted to \$108 million; the Surface Transportation Act of 1978 allocated \$3.17 billion for transit assistance in fiscal year 1979, representing a thirty-fold increase over the past nine years.³⁸ Government at all levels, in fact, now plays a clearly prominent role in public transportation, in terms of assets, employees, and output.

The shift in emphasis of transit from a private profit-making orientation to a public service has wide and diverse implications for transit officials and

public policy makers concerned with mobility as it effects opportunities and alternatives available in society.

As the objectives of transit acquire a more social emphasis, criteria underlying decision-making in both the planning and operation of transit must be made applicable to the achievement of community and social objectives. Profit maximization in a strictly monetary sense may have to be replaced as the priority in managerial decision-making by "social profit" maximization criteria.

As with most broad social goals and/or policy, however, the problem is less one of stating the goals than of translating those goals into operationally definable objectives, specified in such a manner as to be measurable whenever possible.

For women, virtually no definitions of, and criteria for, needs have been identified for use in transportation programs. Of decision-making criteria used by most publicly-funded transit operations, it has been stated that:

"It is not unusual to discover, for instance, that route decisions are still made according to political costs and benefits rather than social costs and benefits although the latter are sometimes referred to by a few of the more sophisticated transit spokesmen to justify the former."³⁹

If transportation is regarded as a public service, the expression of needs of dependent groups should be

facilitated, so that those needs may be addressed. For most transit agencies, the type and frequency of data collected and used in system performance and evaluation should reflect a concern for special user groups, yet this is not the case.

A 1977 study of Canadian and U.S. transit agencies brought to light data deficiencies which were especially apparant with respect to determinig ridership levels by income (that is, utilization of routes and services by the poor); choice, as opposed to captive, riders; and accessibility of various parts of the urban area via public transportation.

All three areas in which data is lacking pertain to, and are crucial to the understanding of, travel needs of women. Studies need to be designed to enlarge the knowledge of women's specific demands on transit and the transportation alternatives available to them.

Finally, the only way in which to evaluate the behavioral equivalent of expressed needs, as well as to test the possibility of additional latent needs, is to improve transportation in relevant ways and then observe the effects on mobility rates and on the quality of life of women.

As Guliano states:

"...to plan for the future, more must be learned about how current transportation policies affect women, but perhaps more importantly, about how future policy decisions in transportation might help to achieve a higher level of equality in society."⁴⁰

Summary

Improving mobility for women will require both short- and long-term changes, ranging from the physical (facilities and services) to the attitudinal (policy). Such changes might include:

1. Improvements to existing services and facilities, in the form of increased frequency and reliability; availability of user information; re-routing to better meet travelers' needs, etc.
2. Utilizing additional modes of transportation, especially paratransit systems, which provide an alternative to no service or to fixed-route systems in areas of comparatively low density for individuals for whom private automobile ownership may be unfeasible.
3. Increasing the role of women at managerial levels within the transportation industry in order to increase the possibility that travel needs unique to women will be factored into policy and decision-making.
4. Implementing the social goals espoused by transit agencies as public service operations by at least redefining the nature of the basic data to be collected in order to make transit decisions which will significantly improve life quality in terms of access to opportunity.

Conclusion

Mobility is clearly essential to those individuals who wish to actively participate and pursue opportunities available in society; transportation, obviously, is a key to personal mobility.

Within the next decade, public transportation is likely to assume a crucial role in providing mobility in a country which in the past has been virtually devoted to the automobile. Reasons for this new role include the increasing costs of fuel, a need to protect the environment from further damage, and an increasing awareness of the potential of mass transit to do more than transport captive riders to and from the central city areas.

For women, in addition to providing access to employment opportunity, public transportation could be a major contributor to travel safety, for example, in light of the fact that women have essentially been deprived of their right to walk alone at certain hours in some areas.

For those women who, for whatever reason, choose not to drive, as well as for those who cannot afford automobiles, public transportation is a viable alternative only insofar as it is a reliable, convenient travel mode, able to provide a level of personal mobility which is at least adequate in terms of meeting travel needs and desires.

Footnotes

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6. Francine D. Blau, "Women in the Labor Force," in Women: A Feminist Perspective ed. Jo Freeman (Palo Alto: Mayfield Publishing Co., 1979), p. 211.
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