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Urban Transit and the Working Poor: The Geography of Welfare Reform

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To the Graduate Council:

I am submitting herewith a dissertation written by Jennifer Lynn Rogalsky entitled "Urban Transit and the Working Poor: The Geography of Welfare Reform." I have examined the final electronic copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Geography.

Ronald Foresta, Major Professor

We have read this dissertation and recommend its acceptance:

Thomas L. Bell, Shih-Lung Shaw, Stan Bowie

Accepted for the Council:

Carolyn R. Hodges

Vice Provost and Dean of the Graduate School

(Original signatures are on file with official student records.)

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Stan Bowie

Accepted for the Council:

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Vice Chancellor and
Dean of Graduate Studies

(Original signatures are on file with official student records)

**URBAN TRANSIT AND THE WORKING POOR:
THE GEOGRAPHY OF WELFARE REFORM**

A Dissertation
Presented for the
Doctor of Philosophy Degree
The University of Tennessee, Knoxville

Jennifer Lynn Rogalsky
August 2006

DEDICATION

This dissertation is dedicated to the women in this study who allowed me into their homes and into their lives. Their value cannot be underestimated, as they openly shared their experiences in hopes of bettering the lives of others. I am confident that this research is in the interests of those making the transition off of welfare, as these women had significant influence over the data collected for this study.

I would also like to dedicate this dissertation to all those who believed in me, encouraged me, and had patience with me to finally achieve this goal – most of all James Looney and Ron Foresta.

ABSTRACT

American cities have changed from older high-density urban neighborhoods to sprawling automobile-oriented suburbs. Many of the urban poor find themselves distant from jobs and services on this landscape. For poor single mothers, the problems are exacerbated by child-rearing responsibilities. In addition, most of the jobs that are accessible to the working poor are low paying and have non-traditional hours, making the challenges of this new urban landscape even more formidable.

Welfare reform initiatives have established time limits for assistance; the aim is to remove millions from welfare and make them self-sufficient. However, the immediate result was to push many into the ranks of the working poor. In cities, that means throwing them onto landscapes that are ill-suited to their needs. Consequently, a range of programs have been instituted to help them organize their lives, including many that improve access to public transportation.

However, given the geography of the contemporary American city, it is not clear that such programs are effective in helping women make the transition to work. Thus, I examine whether public transportation in medium-sized American cities does, or can be made to, serve the needs of working poor women. Individual-level data, collected through ethnographies and travel diaries, is analyzed to create a picture of their movement paths, alternatives, and coping mechanisms.

Geographic Information Systems (GIS) can be used to analyze concerns relating to changes in welfare programs. Data were acquired through travel diaries and were used to create routes to examine patterns of travel, and identify the constraints of using public transportation. I then used the data to recreate each woman's travel as if she did not have the use of a car to identify costs and inconveniences if she had to rely solely on public transportation.

This research is intended to better the lives of those struggling to move from welfare to work, as well as improve policy makers' decisions in light of impending welfare reform renewal. Assuming that public transportation will not solve the problems of the working poor, a number of policy alternatives, including private automobile ownership, are discussed and evaluated.

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CHAPTER 1

INTRODUCTION

“Tracking the impacts of welfare reform as they are played out across the nation’s cities and neighborhoods, urban institutions, and the lifespaces of city residents is now one of the most critical tasks facing decision-makers, policy analysts, and advocates – and will be for some time to come. Urban geographers can make crucial contributions to this task” (Wolch and Dinh 2001, 488).

PROBLEM STATEMENT

America’s wealth has increased immeasurably in the last half-century, and Americans have taken much of that wealth in the form of a radically new urban landscape, one that gave them room to consume all the goods and services now available to them. American cities have changed from older high-density urban neighborhoods to sprawling new suburbs on the periphery of older cities. Shopping and work places have followed residents to the suburbs, altering the morphology of the city. Shopping is now done in malls, power centers, and highway-oriented strip development. Many of America’s jobs are also found in the suburbs as well, in edge cities, in industrial or office parks, or scattered in a low-density, seemingly random pattern that Lang (2003) calls the “edgeless city.” This is a landscape of wealth. It insures – indeed demands – a life of high material consumption. It is designed to be inhabited by a population wealthy enough to afford a house, a large lot, and a family car, perhaps even two or three cars. It is now the city for the wealthy and for a middle class that is far more affluent than the elites of most past societies.

All Americans are not wealthy, however – far from it. Income and asset inequality, as measured by the Gini coefficient, has been increasing for several decades now. We have become one of the least equal nations of the developed world; however, the poor have to make their way in the same cities as the rich and the middle class, even though they were not designed with their far more modest resources in mind. To make matters worse, many of the poor are not well situated within this urban landscape. They often find themselves in older, high-density neighborhoods in central cities or in older, inner-ring suburbs where they are distant from most jobs and services. For poor single mothers, the problems are exacerbated by their child-rearing responsibilities, which often involve getting children to schools, childcare, medical services, all added to the responsibilities of work and shopping for a family. Most of the jobs that are accessible to the working poor are low paying, low upward mobility, and have non-traditional hours, making the challenges of this new urban landscape even more formidable for them. In fact,

it is hard to imagine a more difficult settlement pattern for such women to negotiate than the modern American city.

Welfare reform initiatives have swept across American states in the wake of the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) of 1996. They establish time limits for receiving assistance and benefits policies have been modified with the aim of making people more financially independent than when they were receiving assistance (United States General Accounting Office 1998b). All states have moved away from a system of entitlements to one emphasizing employment and self-sufficiency. Tennessee's "Families First" welfare reform program, which replaced Aid to Families with Dependent Children (AFDC) in 1996, is an example of a state program that attempts to move people from welfare to work. In this program, each client (also referred to in the literature as a "recipient" or "customer") must draw up a Personal Responsibility Plan that requires up to 40 hours per week of activities designed to promote economic independence. The plans may include continuing parenting classes, nutrition education, financial planning, educational betterment, employment searches, and work until a permanent job is acquired. The intent is that transitional benefits, along with time limits, will allow a welfare consumer to take a low-paying job, continue to receive benefits, upgrade her skills, and in doing so, hopefully getting herself out of a low-paying job (Thomas 1996).

The aim is to remove millions of women from the ranks of welfare recipients and make them responsible working citizens. Whatever the ultimate aim, however, the immediate result was to push many of these women into the ranks of the working poor. And, in cities, that means throwing them onto landscapes that are already ill-suited to their needs.

Those behind welfare reform at both the state and federal level are somewhat sensitive to this problem faced by the new working poor. They recognize that recipients' hold on a job or the benefits of a working life are fragile; an illness, job layoff, school problem with a child, or even a car repair can have significant consequences for their self-sufficiency and well-being (Acs, Phillips, and McKenzie 2000). They also recognize that low-income mothers face many transportation-related financial, geographic, and time constraints that prevent them from getting and keeping jobs, as well as carrying out the other chores that self-sufficiency entails for them. Consequently, those in charge of welfare reform have instituted or supported a range of plans and programs to help the newly working organize their lives, including many that improve their access to transportation. These programs are often imaginative and together they take advantage of the full range of transportation options available in contemporary America. Most of the thinking and effort, however, seems devoted to public transportation. Considerable amounts of

money are going into public transportation programs to make it an instrument of self-sufficiency for the working poor, and especially those newly arriving from the welfare rolls. Routes are being added and extended, hours of service are being extended, and frequencies are being increased.

However, given the geography of the average contemporary American city, it is not at all clear that such programs can be effective. Public transportation has been rejected by the overwhelming majority of urban Americans; it is inconvenient for most of them. It squanders the time of busy people. In addition, fixed schedules do not make provisions for emergencies – or even for spontaneity – nor are they set up to move the bulky consumer goods that a modern American life entails. In short, public transportation simply does not fit into the lives most of us choose to live. In light of this, is not clear that it can be made to work for women making the transition from welfare to job life. A question even arises as to whether plans to improve public transportation will be counter-productive by creating false hopes or by absorbing resources that could go to more effective programs. Perhaps obstacles that women must face when making the transition from welfare *and* being expected to rely on public transportation will be overwhelming, even if public transportation is improved through increased frequency and greater hours of operation. This brings us directly to my core research question. I intend to examine whether public transportation in medium-size American cities does, or can be made to, serve the needs working poor women, and especially those making the “forced march” from welfare to work.

RESEARCH QUESTION

Studies suggest that poverty did decline in the first years after welfare reform, but they also find that more people moved off welfare than have left poverty (Blank 2001). This means that the number of “working poor” is increasing, that is, those who hold jobs but continue to live in poverty. This research will examine the impact of modern urban morphology on the working poor, and the degree to which it places constraints on their journeys to work and their capacity to accomplish other necessary tasks. Thus, this is also, by logical extension, a study of the capacity of welfare reform to truly improve the lives of the urban poor by simply forcing them into working lives. This is a timely issue; welfare reform legislation is up for reauthorization and the battle lines have been drawn.

My research takes place in Knoxville, Tennessee, a medium-size American city. I will try to determine how well public transportation serves the poor in Knoxville, and how it might better serve them. I will begin with the assumption, grounded in both my knowledge of the medium-size American city and the limits of public transportation, that public transportation will fall far short

of what is frequently expected of it. The city is an exceptionally sprawling one; its residential densities are very low, presenting an especially formidable challenge to a public transit system. On the other hand, Knoxville's low densities and seemingly chaotic sprawl seem to point the way toward the future of the American city, so if it is not exactly a typical city in the challenges it offers to public transportation today, it likely will be tomorrow.

I expect to find that an automobile-oriented city like Knoxville will need something other than public transportation to help the working poor negotiate its landscape. Because of the densities and distribution of the poor and jobs in Knoxville, which are laid out according to the possibilities of an automobile city, it seems unlikely that fixed-route public transportation will work at the level of the individual; and that only the kind of flexible, on-demand transportation offered by an automobile will permit adults – of any income – to lead *reasonable* – and reasonably self-sufficient – lives. This research tests whether or not public transportation can take most of the working poor to their jobs, services, education, childcare, friends, and back home, and everywhere else within a *reasonable* period of time. If not, then to force the poor to rely on it will be a foolish and destructive social policy, whatever the virtues of public transportation as a shaper of urban form or a solution to urban pollution.

METHODS AND RESEARCH DESIGN

The diversity and complexity of welfare reform make it a perfect subject for geographers. Cope and Gilbert (2001) note that in the growing body of literature on welfare reform, there has been little consideration of place context; there might be a recognition that places are different, but little explanation of why or how this impacts analysis and solutions. Context includes history (local, regional, or state), layers of spatial/social divisions of labor, politics (local, regional, or state), and the unique characteristics of places, including race, gender, social, and class histories. Welfare reform plays out differently in a place-specific context (Kodras 2001). Thus, geographers can bring a “spatial perspective to critical research and debate on welfare reform, social policy, and poverty... Geographers are particularly well positioned to examine the impacts of welfare reform on different groups of people, in different places” (Cope and Gilbert 2001, 385). This study focuses on the individual level; however, from an urban geography perspective, this study becomes not just about the individual, but the individual in a specific place.

There is a difference between how things look at the aggregate level compared to the individual level, which welfare reform programs do not often take into account. Aggregate data are important in assessing the current situation of the working poor; however, they do not provide

a complete picture. Thus, individual-level data, collected through interviews and travel diaries, will be analyzed to create a picture of the lifeways, movement paths, alternatives, and coping mechanisms of the working poor. These individual-level data will also be used to analyze and critique existing welfare reform policy in order to make new transportation-related policy recommendations.

Use of Geographic Information Systems (GIS)

Geographic Information Systems (GIS) can be used to analyze the issues of adequacy of transportation, childcare, and employment opportunities, as well as other concerns relating to changes in welfare programs. GIS can also be used to improve the understanding of people and neighborhoods, as well as display and analyze changes in public transportation systems to improve the lives of the working poor.

Tennessee's Families First welfare reform program focuses on getting single mothers back to work, by, among other things, providing funding for transportation and childcare. However, the working poor and mothers on welfare face many financial, geographic, and time constraints compared to other groups. The constraints facing these women include work shift schedules, commuting time, childcare schedules, and time required to take children to activities, as well as required travel (such as training and meetings with case workers). The working poor must deal with these time-space constraints with a limited monetary budget. GIS analysis of these constraints can aid in policy changes that will be crucial in getting single mothers back to work and off welfare.

Data for this GIS analysis were acquired through travel diaries maintained by the women who were interviewed. The women recorded the name and address of each origin and destination, start and arrival time, purpose, and mode of travel among other variables. These data were entered into a GIS to create routes in order to be able to examine their spatial and temporal patterns of travel and identify the constraints of using public transportation.

I then used the data set to recreate each woman's travel as if she did not have the use of a car. This was done to identify costs in terms of time, money, deferred opportunities, and inconvenience if they had to rely solely on public transportation. This analysis was used to help determine whether or not public transportation is a reasonable option for the working poor on the new, sprawling urban landscape.

Ethnography

GIS, however, can only take us so far. Ethnographic research is crucial to not only help frame public policy, but also to allow for the participation and input of the people involved. It was important to gather first-person accounts to help with the evaluation of welfare reform and transportation initiatives in Knoxville. Thus, I interviewed and observed 19 women multiple times in their own environment to provide them with a voice regarding this critical issue. Interviews were conducted with open-ended, yet directed questions, in order to gather detailed information. This type of research allowed me to build relationships with the women and gain a close understanding of their problems (Ansley and Gaventa 1997). In this case the public is not only the recipient of the knowledge, but also the source of the data needed for analysis. There is a great deal of information that came only from being involved in human exchange, both verbal and non-verbal, with those affected most by welfare reform (Mathews 1997).

Options to ease these potential transportation constraints will then be identified. The time-space constraints could easily be alleviated with an automobile; however, many families do not enjoy this "luxury." Alternate solutions could include acquiring the *use* of a car, ride-sharing, improving public transportation routes and schedules, moving to comparable housing closer to the workplace, or changing work schedules or locations (although this is the least likely option). To aid in identifying these solutions, GIS can be used to link salient information, such as: location of public housing, characteristics of residents, actual and potential employment of residents, the location, hours, and cost of childcare services, and routes and times of public transportation.

Research on social issues such as these is integral in framing public policy. It is important that research be linked to action for less powerful people, who often have a limited voice (Ansley and Gaventa 1997). This research is intended to better the lives of those struggling to move from welfare to work, as well as improve policy makers' decisions in light of impending welfare reform renewal and subsequent years of managing caseloads and funding. Policy makers need to understand the relationship between transportation, and welfare recipients and work before they can begin to plan for it.

Responsible policy development requires an understanding of women's transportation problems in order to improve connections between the residences of the working poor and jobs. Assuming that public transportation will not solve the problems of the working poor, a number of policy alternatives, including private automobile ownership, reducing spatial mismatch, urban

planning policies, as well as economic policies will be discussed and evaluated to determine which solutions are better for whom.

CHAPTER 2

RESEARCH CONTEXT: THE CITY AND TRANSPORTATION

“Welfare reform policies are, in important respects, urban policies likely to inscribe deep imprints on many aspects of urban organization and everyday life” (Wolch and Dinh 2001, 487).

URBAN MORPHOLOGY AND DECENTRALIZATION

The working poor are negatively affected by the degree of change that has taken place in U.S. cities in the decades since the welfare system began. A larger share of welfare recipients reside in cities today than before welfare reform, many urban centers are more segregated by race and class, jobs are growing quicker in the suburbs than in the central city, and cities are decentralizing, losing both people and jobs to their outlying areas and suburbs (Allard 2002). These changes in urban morphology make transportation a serious constraint for women making the transition from welfare to work.

The centralized nature of cities and subsequent decentralization

Early U.S. cities functioned primarily as centers of culture, commerce, and industry. Land uses were quite mixed, allowing people to live and work in the same area, even within the same building. In addition to land uses, people were quite mixed; people of all classes lived together. These early cities were just a few square miles in area, making them “walking cities.” At this time, there was little alternative but for cities to be compact, because of the lack of alternative modes of transportation. Central cities were so accessible to people that they became the centers of all types of activities: residential, retail, economic, social, and administrative.

Residential decentralization

In the late 1800s, however, as cities began to expand, more specialization of land uses appeared. This era also marked the beginnings of decentralization, as cities could now be built outward instead of just up. Cities remained dense, but streetcar suburbs began to develop. In the early 1900s, land uses began to be more segregated and housing moved further away from industry. Central cities had become centers of industry, commerce, and service, but also centers for disease, unhygienic conditions, contaminated water, and air pollution. Eventually, the wealthy residents, who had the means to leave, moved outward to escape the problems of the city. Downtowns have often been called the “heart of the city,” but they are also personified as “diseased,” or like a “cancer spreading outward.” This residential dispersion occurred first,

making central cities primarily work centers, except for those renters, transients, or the elderly who were left behind.

Significant changes occurred after World War II when the Federal Housing Administration and Veterans Administration developed loan programs that provided mortgages for new homes that were often less expensive than renting. These programs discouraged renovation of older structures and encouraged new home building in the suburbs. Housing gradually decentralized from the central city. Currently, fewer than half of the people living in urban areas live in central cities; more than half live in suburbs (World Resources Institute 2004). For example, between 1970 and 1990, the population of the Los Angeles metropolitan area grew by 45 percent, while 200 percent more land was developed; the population of the Cleveland metropolitan area actually fell 11 percent while it physically grew 33 percent (American Planning Association 1998).

Recognizing these trends, a comprehensive and rigorous 3-year study of sprawl in 83 metropolitan areas was completed in 2002 by professors at Rutgers and Cornell Universities. The study used 22 variables to rank metropolitan areas on: the dispersion of residences, decentralization of populations, the segregation of homes from the activities of daily life, the strength of downtown centers, and accessibility/connections of the street network. It was concluded that sprawl has a direct and negative effect on every day life; metropolitan areas that sprawl have more driving, heavier traffic, more traffic-related delays, higher traffic fatality rates, poorer air quality, and most important to this research – fewer alternatives in travel mode and travel routes (Goldberg, McCann, and Bailey 2002).

As a result of this sprawl, Duany, Plater-Zyberk, and Speck (2000) claim that we are creating a landscape that is devoid of places worth caring about: a lack of community life, strip shopping centers, and clogged roads – all in the name of growth. Unfortunately, sprawl is now the standard pattern of growth in the United States. Sprawl does not tend to pay for itself in monetary terms; it consumes land at an alarming rate, while producing traffic and social problems (Duany, Plater-Zyberk, and Speck 2000) that are directly related to the failure of transportation services and job access for the working poor. These landscapes are designed for the automobile; thus, people are completely dependent on private automobiles and have very little access to public transportation.

Retail decentralization

Retail soon followed residential uses out of the central city, as a decline in residents meant a decline in purchasing power (Kaplan, Wheeler, and Holloway 2003). Central city retail began

eroding rapidly. Lower order services also began leaving, including commercial uses, grocery stores, and schools. Many higher order service functions remained for a time, including theaters, department stores, and banks; however, in the 1960s, malls began to develop and these higher order functions also began leaving the central city. Currently, central cities tend to offer specialty goods for tourists and business people (e.g., restaurants, flowers, and travel agents), convenience goods (e.g., cigarettes, soda, and newspapers), and mass appeal goods for low-income residents (e.g., (used) clothing, cosmetics, household goods, and beer/liquor stores) (Kaplan, Wheeler, and Holloway 2003).

Employment decentralization

Employment also began to decline in central cities, which have traditionally been places of work. They began losing to suburbs because of increasing competition, lower suburban land costs, the shift from rail to truck transportation (which favors suburban locations), and advanced communication, enabling businesses to set up without concern for location. Many businesses now prefer the suburbs for lower taxes, more space to expand, and newer, more modern buildings. At the beginning of the twentieth century, virtually all of America's office space was downtown (Lang 2003); however, suburbs now have accessible, quality office space, and strong markets because of the already decentralized residences and retail functions. Suburban economies reached unprecedented diversity in the 1980s; they can no longer be called "bedroom communities," as they now contain most of the elements of a city (Lang 2003). Central city employment has also declined because of a decrease in the intensity of uses of space, as well as increased requirements for equipment and office space (Kaplan, Wheeler, and Holloway 2003).

This loss of entry-level jobs to the suburbs is critical to welfare reform and the lives of the working poor. As these jobs move out of the central city, they are being transferred from low-income minority women to suburban, middle-class workers. These low-wage clerical jobs do not support long commutes from central cities to the suburbs. This creates many difficulties for working poor central city women, as they are likely supporting their families on a single income.

Downtowns do, however, often retain a significant portion of information-intensive employment, such as legal and business services (Lang 2003). In addition, some service and high-tech jobs have moved *into* the central cities. Improvements in transportation, communication, and technology have changed cities from centers of manufacturing and distribution to centers of technology, service provision, and information exchange (Kasarda 1990). As a result, blue collar

and other low-skill jobs are often replaced by these knowledge-intensive white-collar jobs, which are not available to disadvantaged urban residents – even though they might be close spatially.

The flight of jobs out of the central city can be illustrated with a few statistics. Although the average proportion of people living in poverty in cities is approximately 17 percent, in some U.S. cities, such as Cleveland, Ohio, Newark, New Jersey, and Detroit, Michigan, nearly one-third are living in poverty. In 1959, less than one-third of the country's impoverished lived in central cities; by 2003, close to 40 percent of all in poverty lived in central cities, compared to 29 percent of the country's total population. In the country's 100 largest cities, nearly 14 percent of census tracts are at least 40 percent poor; this has doubled since 1970 (Community Transportation Association of America 1996; Proctor and Dalaker 2003; Catholic Campaign for Human Development 2006). This concentration has often resulted in high unemployment rates among central city residents, who are increasingly impoverished and in need of welfare benefits.

Decentralization has been occurring for over 150 years. People left the cities first, followed by retail, employment, and even some of the highest-order services. Lang (2003) questions what role remains for the central city. I question what job and transportation opportunities exist for the working poor who remain in the city.

Effects of decentralization on the central city and its residents

Naturally, because of this decentralization, the tax base of central cities dropped sharply and a disproportionate share of the poor have been left behind, as the wealthy moved out of central cities, while the poor do not often have the means. In the past few decades, many central cities have lost population and physically deteriorated. Housing in central cities and even near-in suburbs has subsequently filtered downward as middle- and upper-class residents have moved further out to the next ring of suburbs, leaving their old home for a new household to occupy. The neighborhood filters downward in terms of the income and class of the people living there (Allard 2002; Kaplan, Wheeler, and Holloway 2003). This filtering-down process is the most typical method by which lower income households gain access to improved housing in the city.

As these homes are left to age and decay, the deterioration process is difficult to stop. As a result, central city residential areas are aging and have increased vacancies and poor infrastructure. Unfortunately, because of the smaller tax base, there is often not enough money or incentive for governments to improve these areas (Kaplan, Wheeler, and Holloway 2003). As many of these areas deteriorated and became blighted, cities began to clear this land rather than renovate it. Private developers, hospitals, universities, and freeway engineers eyed this land for

development, while many cities supported public housing developments to house the displaced populations, and eventually the long-term poor (Kaplan, Wheeler, and Holloway 2003).

Effect on urban transportation

There has been a major shift from the pedestrian-oriented city of the 1800s to the automobile-dependent city of today and the future. Automobile-oriented cities are growing, while cities designed for pedestrians and public transit are shrinking. The flight to the suburbs reflects a movement toward dependency on automobiles, and as most new office and retail space is built in areas without public transportation, automobile reliance will only grow (Katz and Lang 2003; Lang 2003). As a result of this sprawl and decentralization, traffic, travel distances, and travel time have increased dramatically.

Between 1970 and 1990, the population of the United States increased by 22.5 percent, but the number of vehicle miles traveled increased 98.4 percent (Handy 2003). In 2001, the average number of miles a vehicle traveled in the United States was over 11,000, while the Tennessee average was even higher at approximately 14,000 miles (United States Bureau of Transportation Statistics 2001).

The average work trip has also increased over time: in the 1980s it was approximately 10 miles each way, by 1990, it was almost 11 miles, and by 2001, it had increased to 12 miles (Johnston-Anumonwo, McLafferty, and Preston 1995; United States Bureau of Transportation Statistics 2003). In examining the Nationwide Household Transportation Survey, Handy (2003) states that in 2001, the typical 35- to 44-year-old spent close to an hour and a half in a car each day and the average household drove over 31,000 miles per year. Handy (2003) argues that people are driving more than they actually have to, because they enjoy driving, desire variety, are lazy, or plan poorly.

While automobile access and number of miles have both increased, access to alternative forms of transportation has decreased. In 2002, 93 percent of all work trips were made by automobile. Only five percent of workers use public transportation to get to work, and over one-third of those lived in New York City; excluding New York City, just over three percent of all workers in the United States use public transit. Despite significant increases in public transit investment, usage continues to decline as a percentage of urban travel. Overall, 77 percent of all workers drive alone, while only two percent walk to work (Buckner 2004; Waller 2005).

Naturally, commute length (time) depends on this mode of travel. The average travel time to work was approximately 26 minutes in 2000, up from 22 minutes in 1990 (United States Census

Bureau 1990; United States Census Bureau 2000). Those who rely on public transit will have longer commute *times*, while those in private automobiles may have longer *distance* commutes. Thus, lower-income public transit-reliant workers would be expected to work closer to home; however, the jobs they are likely qualified for are moving away from central cities.

Not only are miles traveled and commute times increasing, but the share of non-work trips is also increasing. Non-work trips account for over 80 percent of all trips, while commuting (15 percent) and work-related trips (three percent) account for just 18 percent of all trips (United States Bureau of Transportation Statistics 2003). Traditional public transportation will not likely meet the needs of welfare mothers given their need to make frequent and intermediate trips during their commute (Lacombe 1998).

As a result of this increase in miles traveled, increase in travel time, and increase in number of trips, the average American family spends close to one-fifth of its income on transportation, which is more than is spent on food, clothing, or health care – more than on anything but housing (American Planning Association 1998; Pratt, M. 1999). This dual decentralization of people and jobs, and the increase in travel it necessitates, is clearly problematic, as many urban poor who rely on public transportation do not have access to jobs in the suburbs or elsewhere in central cities. As regional commuting patterns become more and more complex, it is unlikely that public transportation can solve everyone's needs even if it was available (Lang 2003).

Spatial mismatch

Clearly the problem arises that jobs and people may not be in the same place, as many central city residents cannot afford to live in the suburbs or even travel there on low wages. The growing suburbanization of low-skill jobs, particularly those located away from transit stops, makes it difficult for central city residents to access these jobs (Allard 2002). The resulting spread of the city has increased the journey-to-work and made multi-purpose trips less tenable via public transportation, cutting into the income of the low-wage worker. The working poor now have a seemingly impossible daily geography in leading their individual lives. Even if they were willing to work farther from home to find a better job, it is unlikely that public transportation will be available to make the commute (Lang 2003).

Because of these changes in urban morphology, Ottensmann (1980) found that as outlying employment centers emerge, poor, disadvantaged areas experience the greatest decline in employment accessibility. Johnston-Anumonwo (1997) argues that spatial mismatch is generated not only by the quantity of jobs, but also the type of jobs. Service jobs are now decentralizing;

women are affected much like the decentralization of manufacturing jobs negatively affected men. Johnston-Anumonwo (1997) found that women are disproportionately affected by spatial mismatch; more women work in the suburbs than do men, and so must work for low wages while traveling longer distances on average.

Most low-income people, however, are located in central cities with limited private transportation, as more than one-third does not own cars (Blumenberg 2003); these lower status areas have suffered the greatest decline in employment accessibility because of urban decentralization. Currently almost three-fourths of welfare recipients live in central cities or rural areas while three-fourths of jobs are in the suburbs (Waller 2005). This problem of spatial mismatch is increasing because welfare reform is pushing more and more people off of welfare; without assistance, they are left to find work close-by or not at all. Because of changes in urban morphology and welfare reform, there is an increasing mismatch between where welfare recipients live and the location of entry-level jobs for which they are qualified. These skill and spatial mismatches are caused by the fact that the educational levels of jobs have increased faster than the educational levels of the urban underclass, resulting in an exceptionally high jobless rate and a lack of highly skilled workers in central cities; Kasarda (1990) calls this phenomenon "demographic disequilibrium." The underclass remains in the central city because of racial discrimination, the lack of low-income housing in the areas where jobs are located, and a dependence on public transportation. The new urban underclass, those left behind in central cities, is characterized by isolation, joblessness, unwed mothers, welfare dependency, and illicit activities (Kasarda 1990).

This lack of accessibility to employment is a source of poverty; unemployment and underemployment could be alleviated simply by improving the accessibility of transportation for workers to get to jobs (Kain 1968). During the 1970s in Atlanta, however, it was found that transportation projects that connected low-income areas with areas with high concentrations of jobs were complete failures (Bederman and Adams 1974). Bederman and Adams (1974) also found that the closer these centers of employment to residences, the higher the underemployment rate; Census tracts with high job accessibility actually had low incomes. Although these results are dated, they can still be accounted for by the fact that many workers only had access to public transportation, rather than personal automobiles that would have allowed them to carry on with their daily lives with convenience and ease.

Spatial mismatch is greater where the largest share of entry-level jobs is in the suburbs and where public transportation for poor households is weak (Sawicki and Moody 2000). Thus

solutions to this mismatch need to be evaluated for the working poor to be successful under welfare reform.

FIXED-ROUTE PUBLIC TRANSPORTATION

Stages of urban transportation and the decline in public transit

The automobile gives people freedom of travel, as it is personal and flexible and can take us anywhere there is a road. This has not always been the case; what has not changed, however, is the relationship between land use and transportation: urban form has always been closely related to the dominant form of transportation. When transportation lines were fixed (e.g., railroad or streetcar) urban development tended to expand outward along these transportation lines. Kaplan, Wheeler, and Holloway (2003) argue that no single force was more important to the evolution of cities and their spatial arrangement than transportation.

Walking cities were initially expanded by urban stagecoaches and horsecars (horse-drawn passenger rail cars), which traveled less than five miles per hour. The resulting urban form was a high density, compact city where the rich and poor lived side-by-side, and people lived very near their workplace. The lack of alternative modes of transportation resulted in a very small urban spatial structure.

In the early 1900s, the electric streetcar revolutionized transportation, as “fast” (10 miles per hour) public transportation became available (Hartshorn 1992). They were faster and cheaper than horse-drawn vehicles and greatly expanded the size of the city (Kaplan, Wheeler, and Holloway 2003). The compact, walking city was replaced with a star-shaped pattern, as development occurred along these streetcar lines. Streetcar suburbs even developed at the location of streetcar stations. The poor, however, remained in the central city as the wealthy, and even middle class, were moving out of the central city (Hartshorn 1992). For at that time, this new form of public transportation was only affordable to the wealthy (Kaplan, Wheeler, and Holloway 2003).

Although automobiles became widely available to consumers in the 1920s, they were primarily used for recreation, while buses were used for commuting purposes, replacing the streetcar. Fixed-route buses were widely used and were more affordable than streetcars, because they no longer had to follow a fixed track. This significantly increased flexibility in public transportation.

The automobile, which became widely used for commuting after World War II, has had the most significant impact on urban development. As usage increased, tremendous urban growth

occurred outward, as well as filled in the spaces between fixed transportation lines. At this time, cities began to invest less and less in public transportation, investing more in the physical infrastructure needed to accommodate the automobile. Kaplan, Wheeler, and Holloway (2003) note that most cities chose to invest in automobile infrastructure over public transportation, abandoning public transit in favor of building roads. Housing, offices, and industries could now be built in areas that were previously inaccessible to public transportation, making it better for developers, but more difficult for those reliant on public transportation. Buses became less competitive as the automobile both encouraged and supported low population densities, which cannot support public transportation.

Adding to this phenomenon of the personal automobile was the development of the interstate highway system and even further neglect of public transportation. Limited access freeways were developed to reduce congestion, increase safety, and decrease travel times. This allowed cities to grow even more rapidly, as suburbanization began occurring rapidly because of increased access.

Problems with fixed-route public transportation

Public transportation has simply not kept pace with these changes in urban America. Commuting patterns have changed in the last several decades, leaving behind inflexible public transportation systems. Transit-dependent workers are thus isolated and roads are filled with single-occupant vehicles (Community Transportation Association of America 1996).

An Urban Institute study found that employers' attitudes toward hiring welfare recipients included concern for reliability. Reliability depends on the availability of social services and infrastructure, such as childcare and transportation, which are often outside the control of the recipient. In a survey of 500 businesses in industries that are likely to have a higher-than average number of entry-level employees, 39 percent of employers said their entry-level jobs were not accessible by public transportation. Transportation barriers create obstacles to employment for even the most motivated welfare recipients (Regenstein, Meyer, and Hicks 1998). Welfare recipients who have cars, however, are twice as likely to work compared to those without cars (United States Federal Transit Administration 2000).

Thus, the numerous problems with using fixed-route public transportation in getting welfare recipients back to work need to be addressed. While 35 percent of welfare recipients do not have drivers' licenses (Blumenberg, Moga, and Ong 1998), and thus will likely rely on public transportation, Blumenberg, Moga, and Ong (1998) report that the speed of using a private automobile is twice as fast as using transit. In addition, public transportation often does not meet

the needs of reverse commutes (traveling from one's residence in the central city to a job in the suburbs), as service is often confined to central cities, while the jobs are in the suburbs.

An additional challenge of public transportation is that 45 percent of former welfare recipients have non-traditional work schedules, leaving for work outside of the traditional morning commute time of 6 AM to 9 AM (Bania, *et al.* 2001). This temporal mismatch naturally results in transportation problems, as many public transit systems are designed for the standard 9-5 work day, with more routes and increased frequency during these standard commute times. Bania, *et al.* (2001) also state that 29 percent of former welfare recipients have to stop at childcare on their way to work, making the journey-to-work even more complicated, especially for those who have to rely on someone else for transportation. Facing the current trends of more trips and increasing non-work-related trips, public transit service cannot provide access to all non-work activities such as shopping and human services simultaneously with access to work.

Another constraint of fixed-route bus service is that many medium-size American cities simply lack the population density necessary to support well-developed systems of public transportation; this also limits the variety of available destinations. The resulting limited routes, limited times of service, inflexible scheduling, times of service (which can alternate based on time of day or day of week) can be significant constraints for the working poor.

In addition, fixed schedules and long waiting times between transfers make public transit less feasible to use efficiently, if at all. Commuting to work takes more than twice as long on public transit as using a private automobile (42 minutes compared to 20 minutes). As a result, researchers found that in California, welfare recipients with cars were more likely to have worked in the past month, worked more hours, and had higher mean monthly earnings (Blumenberg, Moga, and Ong 1998). In addition, relying on transit makes it difficult to conduct daily responsibilities beyond the typical home-to work-back home travel. Public transportation is simply not suited to this kind of trip chaining because it takes much more time than driving (Waller 2005).

Public transportation and the working poor

In 2001, only 65 percent of low-income households (only 55 percent of welfare recipients) had at least one vehicle. However, for those with an annual income of less than \$20,000, cars are used for 76 percent of all trips. Even those welfare recipients who do not *own* cars make 35 percent of their trips by private automobile. Thus, even for low-income people, the vast majority of transportation costs are related to cars; in 2001, the average amount spent on transportation by

poor households was \$3,200, including only \$405 (just over five percent) on public transportation (Figure 2-1) (Blumenberg 2003; Ong and Houston 2002). The question is whether or not public transportation can be made to serve the majority of the working poor.

WOMEN AND TRANSPORTATION

Feminist and time geography perspectives

Rose (1993) examines everyday spaces and women's travel as they pursue life across space and through time. She argues that according to feminist theory, women's spaces and everyday activities are limited by what society expects of them. These limitations affect what women do and maintain social structure and societal expectations.

In addition, feminists argue that, historically, women were separated into private spaces; home is where they were supposed to stay, which certainly constrained their roles, actions, movements, and access to power. Many feminist geographers will argue that this separation of public and private space is still debilitating for women, as everyday space is "bound into various and diverse social and psychic dynamics of subjectivity and power" (Rose 1993, 37). However, these pressures are increasing because more and more women are now working.

In addition to feminist geography, time geography is also useful to analyze women's transportation patterns and constraints, as it reveals the everyday lives of women and the effects of a patriarchal society in which women have been historically confined to private, domestic, spaces. The challenges of living in a masculine society are becoming more relevant as more women enter the workforce, and as welfare recipients are expected to enter the workforce as well. Time geography can expose the spatial consequences of this masculinist society, especially through examination of the time-space interactions in home and neighborhood of women's activities. Feminist geographers' use of time geography also exposes the mobility restrictions women face. Time geography can help us understand how women negotiate their complex roles and travel patterns. It can also expose the differences among women and observe social life in order to understand it and identify patterns (Rose 1993).

Although time geography has many uses for understanding some of the constraints on women's mobility, time geography (thus time-space constraints) cannot take into account personal issues that relate to mobility, as accessibility and travel choices, issues, and experiences are too complex to be represented by conventional measures (Rose 1993; Kwan 1999); thus ethnographic methods data are necessary in the study of female travel constraints. Ethnographies

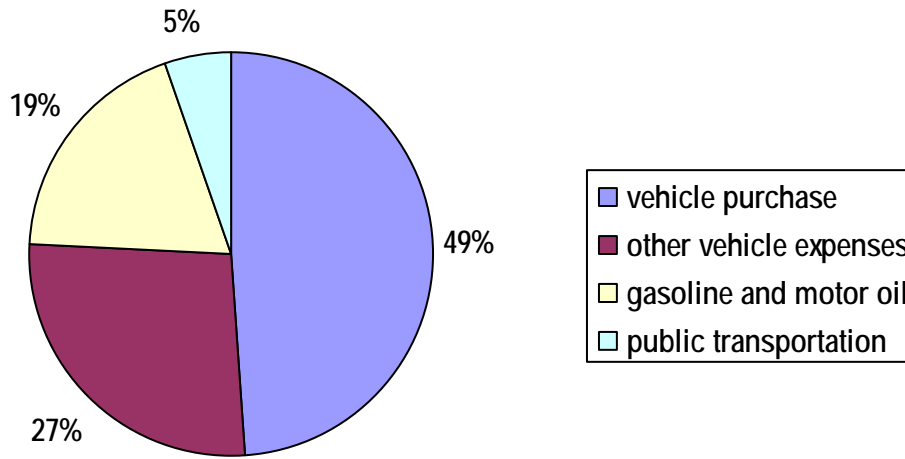


Figure 2-1. Transportation expenditures in the lowest-income quintile.

Source: Blumenberg (2003)

can supply individual-level data and illustrate the structures of women's everyday lives as they begin to participate in both public and private spheres.

Women's commuting characteristics

Making the situation, as it is related to welfare reform and the working poor, even more complex, Holcomb (1984) found that women are transportationally disadvantaged compared to men. Women have less spatial mobility, which can be attributed to their greater reliance on public transportation, as well as the time-space constraints of the multiple roles they fill. It is thus important to analyze the social, economic, and spatial characteristics that affect a woman's journey-to-work.

The decentralization of manufacturing employment was especially a problem for males, but because of the increase of women in the workforce, the decentralization of jobs is now affecting more and more women. Women, however, are at a *greater* disadvantage because of the long distances required to travel to typically low-paying service jobs (Johnston-Anumonwo 1997). When low-skilled jobs are not available in the central city, women are forced to make long commutes to the suburbs – this is made even more difficult to manage because women tend to rely more often on public transportation. Their other option is to take one of the few lower paying jobs remaining in the central city. Neither option is desirable.

Most researchers agree that women's work trips are shorter than men's even though the reasons for this are often debated and conflicting (Madden 1981; Hanson and Johnston 1985; Hanson and Pratt 1988; Preston, McLafferty, and Hamilton 1993; Blumen 1994; Johnston-Anumonwo 1995; Johnston-Anumonwo 1997; MacDonald 1999). There is no consistent explanation for the fact that women have shorter work trips (Giuliano 1988). After reviewing recent literature, however, MacDonald (1999) attempts to summarize the main reasons for women's shorter work trips. First, she argues that because women have lower wages, they are less likely to justify longer commutes. Also, many women need to manage dual roles as workers and mothers, resulting in commuting constraints; shorter commutes may allow better management of these dual roles. Women's shorter work trips can also be explained by a more even distribution of female-oriented jobs; while male-dominated jobs might be centralized in downtowns or industrial zones, women are more likely to try to find employment closer to home. Finally, MacDonald (1999) argues that spatial mismatch is a problem because women's residential locations are often constrained by race and income (located in lower cost, inner-city neighborhoods). The question

she poses is whether or not these shorter trips are by choice (allowing women to better manage their dual roles as wage earners and mothers) or if they are indicative of mobility constraints.

The reason initially proposed by researchers for these shorter work trips was the need to balance the competing demands of home and work (Madden 1981; Hanson and Johnston 1985; Preston, McLafferty, and Hamilton 1993; Blumen 1994). Madden (1981) claims that employed women have more responsibilities at home than do men, and so they are more likely to choose their residence based on the proximity to their husband's job. It is proposed that women have to spend more time on childcare and domestic work; therefore, they will choose to work closer to home in case of emergency, even if they can get a better-paying job further away.

Many researchers make the initial assumption that women would be willing to travel further to work if they had fewer domestic responsibilities. Hanson (1992), however, argues that home and work are "completely intermingled and interdependent" (582), causing a very complex relationship between work and transportation. This relationship has become even more complicated in recent years because of the break-up of the traditional family. The lives of single mothers have, therefore, become more complex as they have to deal with their children's lives as well as their own, with little help from others.

Women's mobility is even more constrained because they tend to perform multi-purpose commuting, combining both work and household needs; women make more stops than men for childcare, shopping, doctor, and school visits. Although women have shorter trips than men, they make more trips: 3.8 per day compared to 3.3 per day. Employed women make 31 percent more trips than women who are unemployed. Miles driven by women increased 76 percent between 1969 and 1990 (Lacombe 1998; MacDonald 1999). Women with young children make even more trips. Because of long wait times and bus transfers, this large number of short trips is made even more difficult because of women's relative dependence on public transportation.

Although they agree that family and household obligations do cause women to minimize the time they spend away from home, Hanson and Johnston (1985) argue that women are more sensitive to distance because of other factors, including mobility, rather than due to this "dual role." Women tend to travel more on foot or by public transportation than men, restricting their job search space (Hanson and Johnston 1985; Rutherford and Wekerle 1988; Preston, McLafferty, and Hamilton 1993; Blumen 1994).

Shorter commutes can also be attributed to lower job mobility, as women tend to earn less than men, work part-time more often, and work shorter hours, making them less likely to want to, or be able to, travel long distances (Madden 1981; Hanson and Johnston 1985; Preston,

McLafferty, and Hamilton 1993; Blumen 1994; MacDonald 1999). This is evidence for spatial entrapment, which argues that women's shorter work trips are the result of the segmentation of the labor market (MacDonald 1999). Madden (1981) argues that as women increase their wages and hours, they will increase their work trip length. Also, workers with higher levels of education and skills can search over a much wider area. These longer commutes may not be possible, however, without the use of private automobiles.

To compensate for disproportionately restrictive constraints, women tend to negotiate their days with more dense travel patterns (Kwan 1999). However, this is not easy without a car. Transportation is difficult for women as they have more constraints and less access to opportunities in the city; the situation is even more difficult for working poor women.

Spatial mismatch and women

Although women's trips are typically shorter than are men's, this is only beneficial for those women who have *access* to jobs. Unfortunately, as Johnston-Anumonwo (1997) found, women disproportionately experience spatial mismatch, which can cause much longer commutes for women. There is increasing evidence that the decentralization of low-wage service jobs, which traditionally employ inner-city residents, results in a greater spatial mismatch for women than men.

Women still tend to be concentrated in female-dominated jobs, such as teaching, nursing, and clerical jobs; although these types of jobs have decentralized, allowing suburban residents to work close to home, it has increased the commutes of many central city women. In addition, women also have some of the lowest paying and least secure jobs.

Blackley (1990) argues that this evidence of spatial mismatch for women supports the conclusion that policy efforts should be targeted at increasing *job accessibility* for central-city women. Johnston-Anumonwo (1997) agrees, stating that because of the gender wage gap, women have more *compromised* (short commutes to low-wage jobs) and *constrained* (long commutes to low-wage jobs) work trips than men. It is important to examine local conditions and job locations in order to make judgments about a metropolitan area's degree of spatial mismatch. This can be done effectively with GIS analysis of aggregate and individual-level data, which will be examined later.

Differences and similarities among women

In the last decade, researchers have begun to examine travel pattern differences *among* women, as not all women face the same constraints or follow the same patterns of shorter work trips than men. Although most researchers agree that women work closer to home, it is important to look at differences among groups of women, in terms of how intersections of race, ethnicity, social status, spatial location, and history affect individual access to jobs. In addition, it is imperative to examine differences among women in a *local* context.

Race

Johnston-Anumonwo (1995) found that African American and white women *with private automobiles* face similar commutes; however, African American women are at a disadvantage, for fewer African Americans actually *have* private vehicles. African American women earn less and are more likely to be unemployed, and these disadvantages in the workforce affect their access to transportation; they rely much more on public transportation, and so have much longer commute times (Johnston-Anumonwo, McLafferty, and Preston 1995). In addition, Johnston-Anumonwo, McLafferty, and Preston (1995) argue that distance traveled by non-whites is often shorter than for whites – but time is longer, most likely because of their reliance on public transportation. Although women use public transit less than men do, this is *not* the case for African American and Hispanic women, who make 8.5 percent and 7.4 percent (respectively) of these trips with public transportation, while white women make only 1.5 percent of their trips with public transportation and white men make 1.9 percent of their trips with public transportation (Rosenbloom 1995).

African American women face additional constraints; Kain (1968) proposed that the suburbanization of employment and residential segregation would contribute to a spatial mismatch by which inner-city residents (primarily African Americans) have difficulty accessing work in the suburbs. Occupations requiring less education, such as those in the service industry, are indeed more often located in the suburbs. Although African Americans are more likely than whites to be central city residents, jobs are more abundant in suburbs. Thus, African Americans face more job constraints than do white women, as they are more dependent on public transportation. While increasing numbers of African American women are commuting to the suburbs for work, because of racial segregation in central residential areas, African American women live in less desirable neighborhoods that are distant from jobs, especially those in growing suburban areas (Johnston-Anumonwo, McLafferty, and Preston 1995). It is likely that this

situation will only be made worse by the fact that many low-income women work non-traditional hours.

African American women thus have the longest and most difficult commutes because of their lack of access to private automobiles *and* poorer spatial access to jobs (Johnston-Anumonwo 1997; Johnston-Anumonwo, McLafferty, and Preston 1995). Johnston-Anumonwo (1988) also found that unlike white women, non-white women do *not* have shorter work trips if they have children. Because of their concentration in segregated residential areas, which are often isolated from centers of growth and employment (Johnston-Anumonwo, McLafferty, and Preston 1995), African Americans are suffering more from suburbanization; African Americans continue to be situated further from their jobs. In addition, African American women are more likely to work different shifts, reducing the likelihood that they can use public transportation. These longer distances are unusual, as women overall have shorter commutes than men; this can be explained by the fact that social and historical forces, such as race, family, and domestic responsibilities, are more important than spatial factors. Female-dominated occupations, lower earnings, and more domestic duties (more female-headed households) would indicate that women should have *shorter* commutes (Johnston-Anumonwo, McLafferty, and Preston 1995).

Family status

Another significant difference among women is that single mothers travel further and make more and longer trips than do married mothers (Lacombe 1998). This is especially significant in that the majority of welfare recipients are single mothers. The general assumption is that women with greater family responsibilities have shorter commutes. Preston, McLafferty, and Hamilton (1993) explore this claim and find that single women generally make decisions on the same basis as men in that they will trade off time, cost, and inconvenience of a long commute for the economic advantages of a job at a more distant location. Married women tend to minimize their commuting time, commuting less than single women, as they often base their residential decisions on their husband's work trips (assuming the husband has a higher-paying job). Women with no husbands or children tend to live and work in centralized residences, while married women with children tend to live in suburbs (Blumen 1994; Hanson and Johnston 1985; Madden 1981). Women with children tend to work closer to home, but may need to commute longer to a better paying job, depending on total household income. If they are able, single parents, burdened with responsibilities, may give up convenience to work at a distant location for more pay. Clearly, working women struggle to cope based on their economic and domestic burdens. These

challenges draw attention to the need for additional research on how working low-income mothers can manage the responsibilities of both family and work (Preston, McLafferty, and Hamilton 1993).

Economic status

In addition to family status, economic status can also have an impact on commutes and illustrate differences among women. Low-wage, part-time jobs offer little incentive for long commutes, while higher earnings offer more incentive and ability to commute longer distances. African American women earn less than white women on average, thus they should have shorter work trips, but they do have longer trips in both time and distance, indicating that spatial mismatch is stronger for African American women, as African American women have poorer access to jobs (Johnston-Anumonwo, McLafferty, and Preston 1995).

There is a key silence in previous research – that is, few have used qualitative, disaggregated data to address the complex intersections that determine the conditions under which women negotiate structural (i.e., transportation) constraints (i.e., spatial and temporal mismatch). Thus, this study will attempt to analyze how race, residential location, and family and marital status affect the individual transportation patterns of single low-income working mothers and their use of public transportation.

Analysis with GIS

Kwan (1999) agrees that women have lower levels of accessibility; however, she argues that *accessibility* has no relationship with the length of the commute, arguing that conventional measures evaluating accessibility, such as the journey-to-work, are not appropriate measures of access to jobs. Kwan argues for adding *local context* to determine accessibility, including detailed personal and travel data and GIS analysis in order to evaluate complex travel behavior. However, she also notes that few studies have used this type of analysis because of operational difficulties like data collection and geoprocessing.

Conventional measures of accessibility include origins (often home), destinations, and the effect of physical separation, or impedance. Kwan (1999) notes a significant problem with this type of analysis, as it assumes that all trips are based on a single origin, usually home. However, travel behavior is much more complex than this, as a significant amount of travel involves multiple stops, which may change how accessible a certain destination appears to be.

Conventional measures of accessibility do not usually take into account unique characteristics of individuals' lives. Space and time constraints, not only mobility and relative location, must also be factored in; journey-to-work is an interactive outcome of constraint, choice, and access (Kwan 1999). Kwan (1999) notes that women are indeed affected more by time-space constraints than are men because of the greater frequency of such constraints in their non-work hours (e.g., domestic and childcare activities).

When analyzing space-time measures, Kwan (1999) also notes that some daily activities are fixed in time or space (such as work) with only a certain amount of flexible time in between. Other trips can be accomplished at different times and places (such as shopping). Once the fixed trips and time between them are known, a potential path area (the area one can possibly travel in one's given situation) can be calculated for that individual. Not only is individual-level, travel diary-type data necessary to analyze using this method, but it also requires extensive GIS analysis.

Summary of women and transportation constraints

Gender roles have changed over time; as a result, social institutions and the allocation of resources in the city have also changed. Women once possessed quite sharply defined gender roles within their homes and communities; however, the rise in divorce and single-mother headed households has led to a shift in gender roles in the city. There are a growing number of women in the workforce; women's emerging dual roles force them to fulfill both domestic and economic responsibilities. However, affordable and accessible transportation is difficult to find and public transit routes are geared to traditional business hours.

These changes in women's roles require new urban services, as women have created new urban spatial and mobility patterns, demands for services, and work schedules. The traditional association women have with their home has been a major obstacle to accessing urban opportunities. As a result, women's earning power was reduced because of their limited mobility, only reinforcing their poverty. As women move between home and work more, however, they began to bridge public and private spaces, thus changing the nature of urban spaces and the relationships among them. As women take on dual roles and change their patterns of space and time, gender definitions are redefined (Mackenzie 1989). These new needs of transportation and urban design can no longer be ignored if working poor women are going to achieve self-sufficiency.

Transportation is not nearly the constraint for middle- and upper-class women as it is for low-income working mothers. Commuting will not be such a barrier for these groups – not only can they more likely afford the extra time and money, but they also have more job opportunities available to them. Many women, however, have no choice but to commute long distances to get to a place of (marginal) employment. MacDonald (1999) concludes that based on wages, responsibilities, and choices, women make different commuting choices than men, and low-income women make different choices than middle- or upper-income women. These constraints need to be understood in order to design welfare reform programs that will connect workers to jobs (MacDonald 1999).

It is clear that working poor women face a number of barriers and challenges. The question is whether public transportation can serve this group based on the issues of spatial mismatch, temporal mismatch (working evening/weekend hours in retail, service, and health care industries), and multiple-destination trips. Thus, these constraints, barriers, and opportunities need to be examined at the local level to see if their lives can be made self-sufficient given what their lives are like as well as the state of the city and public transportation.

CHAPTER 3

RESEARCH CONTEXT: WOMEN, WELFARE, AND THE WORKING POOR

“Transportation policies must now heed the complex and diverse travel needs of both current and former welfare recipients who use both private and public transportation. Moreover, as travel patterns of welfare recipients and working poor converge, policy makers must confront the difficulties that job-seekers and carless job-holders face, by facilitating car ownership and by promoting new transit modes that are affordable, auto-like, and likely to help families that are struggling toward self-sufficiency” (Ong and Houston 2002, 40).

ECONOMIC TRENDS

Trends in poverty

Poverty is increasing in the United States, making welfare reform and programs helping people make the transition to work significant and timely. Poverty declined every year from 1993 to 2000 (Haskins 2001); unfortunately, in 2002, the number of people living in poverty increased by 1.7 million (to 12.1 percent of the population – almost 35 million people – from 11.7 percent in 2001) and median household income declined 1.1 percent. African Americans suffered the most, as their poverty rose to 24.1 percent and median income fell three percent (Clemetson 2003). Further, in 2004, median income was at its lowest point since 1997 and the poverty rate rose from 12.5 in 2003 to 12.7 percent in 2004 (Leonhardt 2005). Although welfare cases declined 1.8 percent in 2003, poverty again increased overall, and 43 percent of all poor people were living in “deep” poverty (income below half of the poverty level) (Waller 2004a). Cities also disproportionately suffer from poverty; the urban underclass is growing as a result of the increasing urbanization of poverty.

Also, as the economy has declined in recent years, the number of African American children living in *extreme* poverty has risen sharply and is at its highest level since data collection began in 1980. A Children’s Defense Fund study indicates that black children, who have the fewest protections, are falling into *extreme* poverty (Dillon 2003). In addition, the median income among African American families *decreased* from nearly \$31,000 in 2000 to approximately \$29,000 in 2001 (The Associated Press 2003). As safety nets like Temporary Assistance for Needy Families (TANF) are reduced, this is an indication that families will be led into deeper poverty.

The working poor

According to Acs, Phillips, and McKenzie’s (2000) analysis of National Survey of America’s Families data, typically working poor families are working full time, often at more

than one job, but they have difficulty maintaining an adequate standard of living. They tend to have several disadvantages in the workforce: they are typically younger and single, have more children, are less educated, and are minorities. Their jobs are often low paying (the United States Census Bureau defines “poor” families as those making less than \$14,680 for a family of three), offer few benefits such as health care, require non-traditional working hours, and have less room for advancement. Just less than 20 percent of non-elderly Americans are part of a working low-income family (Acs, Phillips, and McKenzie 2000, Catholic Campaign for Human Development 2006). This population is currently growing because of welfare-to-work requirements and time limits.

Although poverty guidelines issued each year by the Department of Health and Human Services (Table 3-1) are used to determine eligibility for a variety of Federal programs, they are often inadequate to measure the true hardships people face in meeting the basic necessities of life (Weller, Scott, and Hersh 2001). These values indicate that, for a mother of three (family of four) to earn enough to even reach the poverty level, she has to earn over \$9.00 per hour at a full-time job (52 weeks at 40 hours/week), while a mother of two needs to make over \$7.50 per hour. It is difficult for women who enter the workforce just off of welfare to find full time jobs, as many can only work part time, and “full time” is often less than 40 hours.

Thus, as women leave welfare and enter the workforce, they may have higher incomes, but they also have more expenses and fewer benefits. Edin and Lein (1997) find that in order to manage, the women will “make ends meet” through unreported income, borrowing money from friends and relatives, or trading resources, rather than paying cash for goods or services. They may trade services, such as transportation, childcare, and even food stamps.

These recent trends in poverty statistics and the growing number of working poor indicate that safety nets and transitional services like TANF are even more important than previously assumed and should not be sacrificed to Federal budget cuts. Problems will continue to arise, as fewer people are eligible for TANF because of participation requirements and time limits. One way to combat this is to get people working again, but in a sluggish economy the benefits of working often do not outweigh the costs.

Changes in the laborforce: Employment structure and women in the workforce

Until recently, women functioned as wives and mothers and were “employed” as homemakers. In recent decades, however, women’s access to jobs and their presence in the

Table 3-1. U.S. Department of Health and Human Services poverty guidelines.

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
First person	\$7740	\$7890	\$8050	\$8240	\$8350	\$8590	\$8860	\$8980	\$9310	\$9570	\$9800
Each additional person	\$2620	\$2720	\$2800	\$2820	\$2900	\$3020	\$3080	\$3140	\$3180	\$3260	\$3400
Three person family	\$12980	\$13330	\$13650	\$13880	\$14150	\$14630	\$15020	\$15260	\$15670	\$16090	\$16600
Hourly wage (full time) for family of three	\$6.24	\$6.41	\$6.56	\$6.67	\$6.80	\$7.03	\$7.22	\$7.34	\$7.53	\$7.74	\$7.98

Source: United States Department of Health and Human Services (2006)

workforce have increased dramatically. Women made up only 29 percent of the workforce in 1950; this increased to 35 percent in 1965 and to 40 percent by 1975 (Kessler-Harris 1982). Since 1980, this increase has slowed, but women currently make up 47 percent of the laborforce (O'Farrell 2004). Until recently, few urban researchers have studied how activity within cities differs between men and women, perhaps because they shared the same households (Holcomb 1984). But now, employment structure is changing as women are achieving higher levels of education, delaying or not getting married, delaying or having fewer children, and generally working more; it is thus important to examine women's differences from men.

One-third of all women worked in the formal economy in 1950; by 1975, almost half worked in it (Kessler-Harris 1982). Figure 3-1 illustrates that currently over 60 percent of all women in the United States are employed, while over 75 percent of men are employed. Women have recently entered the workforce as either single working mothers or as members of dual-income households in order to fulfill their professional goals or support a family (Nelson 1986). With the home no longer the center of their daily lives, women began to attend college more, marry men who would help care for children, have fewer children, and find other ways to cope with new and multiple roles.

Most of the growth in female employment, however, has been in the clerical and service sector (Kessler-Harris 1982). Women now make up nearly 80 percent of administrative and clerical jobs and 60 percent of service jobs (United States Census Bureau 2000; United States Bureau of Labor Statistics 2003); women make up 99 percent of secretaries, 98 percent of childcare workers, 97 percent of receptionists, and 90 percent of bank tellers (O'Farrell 2004). Although the number of women in the workforce has increased, many women find that they can only qualify for these low-paying jobs in female-dominated sectors.

The service sector often pays less, has less room for advancement, and offers fewer benefits. For example, nearly half of all women do not have paid sick leave (Marks 2004). Improvements in technology and increases in globalization have divided workers into two tiers: a low-skilled, unemployed or underpaid underclass and a well-paid technologically-advanced elite (Gallagher 1992). Women typically have access primarily to the former. As manufacturing employment has passed its peak, less educated and skilled workers have not fared well, while many of the fastest-growing occupations require higher skill and education.

In addition to the constraints of mostly low-paying, low-mobility jobs, many new jobs are temporary or part-time; only 41 percent of full-time workers are female (Spraggins 2003). Although the proportion of women working full time has increased steadily in recent decades,

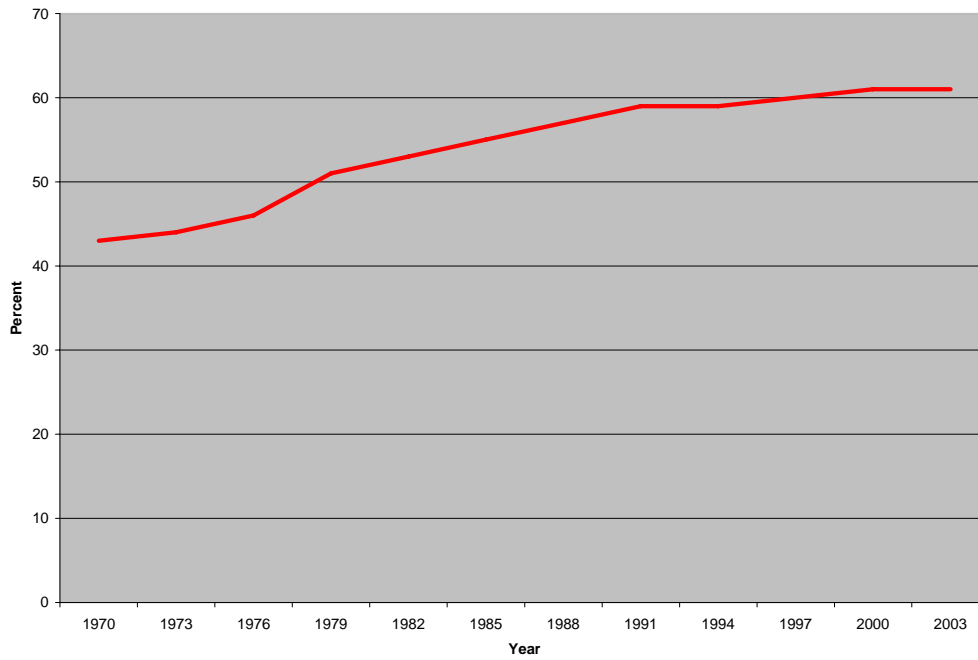


Figure 3-1. Women's laborforce participation (1970-2003).

Source: United States Bureau of Labor Statistics (2003)

still less than 60 percent work full time, compared to nearly 75 percent of men (United States Bureau of Labor Statistics 2003). This makes it difficult for women to find transportation and other support services, as many of these jobs are also temporary and require non-traditional working hours.

Feminization of poverty

Although equal pay has been the law since 1963, women with similar education and experience are still paid less than men. In 1960, women's median annual income was only 60 percent of men's (Kessler-Harris 1982). Today, women earn 77 percent of what men earn; African American women earn only 70 percent of what men earn; Latinas earn just 58 percent of what men earn (AFL-CIO 2004). Typically, lower incomes and female poverty were masked and offset by their working husbands' income (Kessler-Harris 1982). However, with improvements in equal rights, and as more women attend college and fewer enter traditional low-paying fields, they are closing the wage gap. However, welfare reform may have put a damper on this improvement, as there has been a surge in the number of women seeking work – often low-paid work.

In addition, the situation for women in the workforce is increasingly difficult, as job insecurity is also a growing phenomenon among women. In the recent economic downturn, more women left the workforce than entered in for the first time in over four decades (Marks 2004).

Clearly gender roles have changed over time, and so have social institutions and personal relationships. The growing number of women in the workforce, as well as the growth in divorce that results in female-headed households, has led to the need for women to fill both public economic roles and home duties. As the female rate of laborforce participation increases, women's relations change with their families and the economy.

Thus, women are more likely to live in poverty than men (Spraggins 2003). Jones and Kodras (1990) discuss the causes of this feminization of poverty. One of the causes they identify is the breakdown of the traditional nuclear family because of divorce and out-of-wedlock births. There has been a continuous rise in the number of female-headed households. In 1982, female-headed households constituted 15 percent of all families in the United States; this number has risen to 17.6 percent. Today, although 9.3 percent of all families are below the poverty level, nearly 28 percent of all female-headed households are below the poverty level (Holcomb 1984; United States Census Bureau 2000). In 2000, over 57 percent of all people in poverty were female; over 13 percent of women were in poverty, while just over 10 percent of men were in

poverty (United States Census Bureau 2000). In 2001, approximately five percent of all families had an income below \$10,000; however, 17 percent of female-headed households had an income below \$10,000. Over 50 percent of all families living in poverty were headed by women (Spraggins 2003).

Another cause of the feminization of poverty is economic restructuring and the differential status of women's work. Women are clearly entering a segmented labor market; after a decline in industrial production, wages in other sectors have not been able to compete and provide a "family wage" anymore. Most growth has been in the low-paying service industry, where women's work is often undervalued. Such "women's work" has historically only been complementary to the family's income instead of the main source; now that such jobs are more frequently becoming the main source of income (Jones and Kodras 1990), they are inadequate as sole sources of income.

Poverty is increasing disproportionately among women as a result of such inequalities in society. Changes in the welfare system may further reduce women's incomes, and the resulting instability will worsen their access to jobs, education, and childcare. Even without welfare reform, women often have difficulty seeking work because they do not have access to the resources necessary to support their employment. There are clearly many constraints facing women and, although welfare reform promises new jobs, it does not mean that all women have access to the services necessary to enable them to maintain employment.

Childcare issues

Creative strategies to deal with childcare and other domestic responsibilities are also a necessary component of effective welfare policy. For many, the cost of childcare is the biggest obstacle to work. Simply putting women to work is not the answer, as there are not enough providers, nor enough money for these women to pay for care.

Employment of women outside the home has become the norm and demand for childcare in the United States is growing. For example: in 1965, only 35 percent of mothers with children under 18 were in the workforce, compared to 47 percent in 1975, 62 percent in 1985, and 70 percent in 1995. Today, over 72 percent of women with children under 18 are working and over 64 percent of all mothers with children under the age of six are working (*Women by the Numbers* 2005).

Unfortunately, the cost of childcare is beyond many low-income families' means and it is often not accessible. Typically, when welfare mothers enter the laborforce, they earn low wages, and therefore need below-average cost childcare. Thus, affordable or subsidized childcare could

ease a low-income woman's struggle to balance work, education, or training as she raises her children. Despite its importance, however, childcare is a marginal economic activity, as it does not generate a great deal of income; therefore, in low-income communities, childcare must be supplemented by substantial subsidies from governmental and charitable sources. Without sufficient subsidies, trade-offs become necessary, undermining the stability and quality of care even when available. Childcare subsidies are often meager, forcing many welfare mothers to use unlicensed providers.

Besides prohibitive costs, another important constraint on working mothers is the fact that childcare centers may not be in operation during the hours of their employment. Service occupations, "traditionally held by women, have the highest percentage of shift workers (43 percent)." More than seven million mothers work non-standard hours in the United States (Knox County Department of Human Services 1997). Therefore, just because a mother has access to transportation and affordable childcare does not mean that either will be available.

WELFARE REFORM

Welfare theory

Many citizens and policy makers hold what is known as a deficit perspective on welfare; they believe that welfare recipients lack positive attitudes, especially toward work. They feel that people are responsible for their own poverty because of a lack of ability, effort, or thrift (Rank 1994). However, of the subjects in Rank's pre-welfare reform study, 82 percent of recipients felt that they were on welfare because of circumstances they could not control and that they were not solely responsible for their situation. He also found that their attitudes toward work were strong and positive. Working is seen as an important source of fulfillment, and they believe that *not* working is wrong; they do not actually *enjoy* life on welfare (Rank 1994). In fact, he found that a majority of welfare recipients (under age 65) were working or actively looking for employment, but were unable to find full-time jobs. This is a result of a lack of human capital and skill in a highly competitive workforce, as well as the number of constraints that welfare recipients face when making the transition from welfare to work. The current welfare reform bill was thus written with a non-deficit perspective, as it makes the assumption that people do want to get back to work and make a better life for themselves and their families.

In order to achieve compliance with welfare reform, it is imperative that welfare reform have this non-deficit perspective, as a program ideology of human capital and environmental deficits that emphasizes work and education will be more likely to have high rates of compliance

(Hasenfeld and Weaver 1996). However, this reform is difficult to achieve, as mandatory programs can often make clients feel powerless. Mandatory welfare-to-work programs often emphasize work as the only option and may push clients into taking the first job they find even if they do not have enough education and training to achieve self-sufficiency after welfare.

Political base

Conservative Republicans believe that the government is not obligated to help poor people, and that the current welfare system only encourages dependency (Jansson 1994). Most Republicans are skeptical of welfare and would prefer work and self-sufficiency to monetary benefits. They would also argue that social problems and poverty are overstated and that employment is available for those who want to work. Conservative Republicans view poverty and social problems as the result of and responsibility of the individual. Solutions revolve around getting people to work and changing the values of those on assistance (Sherraden 1991).

Although Republicans were the ones to initially push for the current version of welfare reform, interestingly, Democratic and liberal citizens and politicians overwhelmingly support it. The liberal perspective on the welfare state advocates setting minimum standards for the poor for income, nutrition, housing, health, and education. Public assistance is seen as a political right rather than as charity, and there is a great concern for equality and justice; the state is expected to compensate for the denial of rights, discrimination, and blocked opportunities. Liberals argue that society is obligated to help poor people and the government should expand social welfare because the reason for expanding welfare dependence is the ubiquity of low-paying jobs, and not the size of existing welfare grants (Jansson 1994). The liberal perspective on welfare reform also supports incorporating women into mainstream society. The liberal stance is that the welfare system is a public, not a personal, issue that should actively rectify gross inequalities in society and should remove barriers that constrain equal opportunity (Sherraden 1991).

Although both liberals and conservatives supported the existing welfare reform bill, these very different viewpoints will have a significant impact on upcoming reauthorization. The debate over reauthorization is quite divided, as the two parties differ in what they believe are the real *causes* for the apparent success of welfare reform, as well as what services should be offered to those still receiving benefits and/or making the transition to work.

What is welfare reform?

To help poor families improve their status and enter the workforce, the federal government has mandated welfare reform, but has left a majority of the planning up to state and local governments. Most programs fall under the description of "welfare-to-work" programs. The Personal Responsibility and Work Opportunity Reconciliation Act of 1996 (PRWORA), specifically Public Law 104-193 (1996), was an attempt to reform the welfare system to make it more efficient for the government and effective for recipients. Numerous attempts at welfare reform have been made in the past; however, the current welfare reform bill is comprehensive, in that although it sets time limits for receiving benefits, it recommends provisions for job training, childcare, and transitional benefits. Block grants (grants to states where the states have discretion over how funds are used with little Federal restriction) are awarded for Temporary Assistance for Needy Families (TANF), Supplemental Security Income, child support, restricting welfare and public benefits for aliens, child protection, childcare, child nutrition programs, and food stamp distribution (PRWORA 1996). On October 1, 1996, TANF block grants combined and replaced two Federal welfare programs: Aid to Families with Dependent Children (AFDC) and Job Opportunities and Basic Skills Training (JOBS). AFDC is the former name of the welfare program, which gave financial support to families with children in need of assistance. JOBS was a welfare-to-work program for those receiving AFDC, providing job training, education-related activities, and work, as well as support services such as childcare and transportation (United States Department of Health and Human Services 2005).

States are now encouraging welfare recipients to assume greater personal responsibility; states' programs are moving away from a system of entitlements to one emphasizing employment and self-sufficiency. In order to reinforce that assistance is *temporary*, time limits were established and programs were modified to make people financially better off than if they were still receiving assistance (United States General Accounting Office 1998b). The overall goals are to develop job opportunities, meet basic human needs, and reduce poverty.

Eligibility requirements and program provisions

Welfare reform requires state TANF programs to have mandatory work-activity requirements for clients, including employment, job searches, on-the-job training, community service, education related to employment, or attendance at a secondary school or its equivalent. These requirements are intended to limit families' dependency on government programs while they achieve self-sufficiency (PRWORA 1996).

In order for states to use TANF block grants, caseworkers are required to track and assess the client's skills, work experience, and employability in order to gauge the level of support they will need to achieve self-sufficiency. The recipient must then agree to certain obligations, such as immunizing their children or attending parenting and money management classes. The recipient must also develop an individual responsibility plan (IRP) with their caseworker in order to help them become (and remain) employed. The IRP must include what the client will do to prepare and look for work, as well as what services they will be provided with to meet these goals. If a recipient fails to create or maintain their IRP, they can lose benefits (PRWORA 1996).

Work-related activities of welfare recipients follow strict guidelines. Single parents of children under six must be engaged in work for at least twenty hours per week (30 hours for two-parent families), although there is the option of not working for parents of children under twelve months of age. Education programs must be *directly* related to employment to count as "work-related activity." The number of weeks that a person can be searching for employment, and have it count as work-related activity, is also limited. In addition, recipients may not receive TANF-funded employment training for more than twelve months before they find employment. Additional activities that enable clients to receive assistance can include community service, vocational education, refurbishing public housing, or providing childcare. States can refuse assistance, however, to individual family members who refuse to engage in these required activities or will not cooperate in establishing paternity or obtaining child support. If adults fail to participate in specified activities, states may not only reduce *their* assistance, but also terminate assistance for the entire family (PRWORA 1996; United States General Accounting Office 1998b; Wolch and Dinh 2001).

The federal lifetime limit that families are eligible for benefits is no longer than sixty months, with certain exceptions for hardship situations, minor children, or individuals subject to battery or cruelty. "Child-only" cases, where there is no adult recipient, are *not* subject to this limit; however, families are denied assistance if an individual is a fugitive felon or violator of parole. In addition, unmarried teenage parents of children over twelve weeks of age are denied assistance if they are not attending school. Teenage parents are also required to meet certain adult-supervised living arrangements. Families can also be denied aid if an individual has fraudulently misrepresented residence to obtain benefits in more than one state (PRWORA 1996; United States General Accounting Office 1998b).

The states themselves also have a number of reporting and caseload requirements to meet in order to continue receiving TANF block grants. While welfare reform gives states the flexibility

to design their own programs, they are still required to meet a number of federal requirements. Initially, a state needed to have 25 percent of all its TANF families and 75 percent of its two-parent families engaged in work activities. These rates increased each year to the current required levels: 50 percent of all TANF families and 90 percent of two-parent families must be engaged in work activities (Table 3-2). No more than 20 percent of a state's caseload can be count toward this "work" requirement if clients are involved in employment *preparation*. However, states do have flexibility to manage individual cases, as up to 20 percent of the caseload may be exempted from the work requirement for a variety of reasons. Currently, states are having a difficult time achieving these rates of participation, averaging just over 30 percent participation. Although states had high success rates in the first years after welfare reform took place, as of 2003, only 10 states (including Kansas with 88 percent participation) meet the requirement of 50 percent of families working. Maryland and Pennsylvania are the lowest at 9.1 percent and 9.9 percent respectively (United States General Accounting Office 1998b; Wolch and Dinh 2001; Congress look to make states... 2006).

Under TANF, states must also enforce child support, prevent fraud and abuse of the system, and identify recipients with a history of domestic violence. Individual states must also require parents to work once they are determined to be ready or have been on assistance for a total of 24 months (PRWORA 1996). Individual state plans must describe the program's goals, the involvement of the public in designing the program, measures of accountability, and definitions of eligibility (United States General Accounting Office 1998a).

In addition to cash support payments, state TANF block grants can be used to provide pre-pregnancy family planning, to pay for heating and cooling costs for low-income families, to carry out state childcare and social services programs, to fund the start up of bank accounts for eligible families to help them acquire funds to purchase a home, or to make payments to job placement agencies that provide placement services to TANF recipients (PRWORA 1996).

The Council of State Governments has presented a variety of policy and management options to guide individual states in developing their own programs in addition to these federal requirements. The Council of State Governments recommends that states provide support services, including childcare, transportation, and health services to help families get off of welfare. The Council also encourages states to support education and employment training through community colleges (Chi 1997). States can also use block grant funding to offer job counseling, training, financial support during temporary setbacks, and educational incentives. Eight states have even allowed localities to design their own programs (Wolch and Dinh 2001).

Table 3-2. TANF work participation requirements for one-parent and two-parent families.

	1997	1998	1999	2000	2001	2002	2003	2004	2005
Minimum weekly average work participation requirement (hours)									
One-Parent Families	20	20	25	30	30	30	30	30	30
Two-Parent Families	35	35	35	35	35	35	35	35	35
Minimum mandated work participation rates (percentage)									
All Families	25	30	35	40	45	50	50	50	50
Two-Parent Families	75	75	90	90	90	90	90	90	90

Sources: United States General Accounting Office (1998b); Wolch and Dinh (2001); Congress look to make states... (2006)

As a result of the federal government leaving a considerable amount of reform up to the states, some states have chosen the option of incentives and mandatory work requirements to give aid to those who *are* employed, yet still do not earn sufficient wages to meet their family's needs. Many states are joining with the private sector to help increase the earning power of these low-income workers. These transitional benefits are designed to give people the incentive to work while still receiving some assistance, thus ensuring that working is more lucrative than welfare (Chi 1997).

States, however can also set more *restrictive* time limits and work requirements (Table 3-3), and even reduce benefits to those having children while receiving benefits. Nineteen states chose to terminate assistance sooner than five years, including Massachusetts, whose benefits only last 24 months (Newcombe 1998). However, most states have adopted policies to make time-limit exceptions for individual clients in special cases. Some states have even decided to reduce the amount of monthly provisions by providing what are called "diversions;" these can include one-time, lump sums of money, support services (such as transportation and childcare), and assistance in job searches (United States General Accounting Office 1998b).

Currently, up to 20 percent of caseloads can be exempted from time limits and time limits can be extended beyond five years as long as the states pay the benefits. However, only two states (Michigan and Vermont) have no time limits and 17 have time limits of less than five years (Zedlewski and Holland 2003a). This flexibility gives states more power to control their own programs, but it results in an uneven landscape of welfare reform.

Financing

Welfare reform made sweeping changes to the economics of the country's low-income assistance program when Title I of PRWORA replaced Aid to Families with Dependent Children (AFDC) and Job Opportunities and Basic Skills Training (JOBS) with block grants to states. In fiscal year 1996, AFDC paid out over \$20 billion in state and federal funds. Federal TANF block grants now range from \$21.8 million in Wyoming to \$3.7 billion in California based on their previous federal expenditures, totaling nearly \$17 billion nationwide. Although this is a \$3 billion decrease from AFDC and JOBS, the Childcare and Development Fund authorized an additional \$3 billion for childcare (United States General Accounting Office 1998b). In addition, PRWORA awarded \$1 billion over five years as bonuses to states that performed well. Measures of performance and improvement emphasize work and self-sufficiency, including employment, job retention, and wage progression (United States General Accounting Office 1998a). The Balanced

Table 3-3. State variations in welfare reform provisions.

Program Feature	Explanation	State Variation
Monthly Benefit	For single parent with two children	\$120-923
Assets		
Asset limits	Resources recipient can retain	\$1,000-10,000
Vehicle exemption	Value of vehicles exempt	\$1,000-12,000
Savings account limit	Limit of savings account accumulation	\$2,000-no limit
Income		
Earnings allowed	Maximum earnings in 1 st and 13 th month	\$400-no limit and \$210-\$1,560
Time Limits		
Months on aid	Lifetime months on aid allowed	21-none
Sanction	Action if time limit exceeded	Termination-reduction
Exemptions	Due to age or disability of caretaker	None-five categories
Work Rules		
Work requirements	When employment/unpaid work is required	Immediately-24 months
Age-of-child rule	Age of youngest child before work required	12 weeks-6 years
Earnings Disregard	Earnings disregarded before benefit reduced	20%/\$90-100%/\$1,020

Source: Wolch and Dinh (2001) (citing Gallagher, *et al.* 1998)

Budget Act of 1997 also amended TANF to establish an additional \$3 billion in block grants to states (Balanced Budget Act of 1997).

EFFECTS OF WELFARE REFORM

Although states are showing some successes, it is uncertain how states will perform as more recipients leave welfare for work and when the economy undergoes a major downturn. In addition, not enough is known about the effects that programs will have on families, and much remains to be seen regarding recidivism. Because states have begun experimenting with changing their programs, they are at different stages in implementing reform.

However, former Department of Health and Human Services (HHS) Secretary Tommy Thompson recently stated, “welfare reform is a remarkable success story for millions of American families. Welfare reform is working because former welfare recipients are working. Families who once were dependent upon a welfare check now look forward to the independence of a paycheck” (United States Department of Health and Human Services 2004b). Although case numbers have declined, it remains to be seen how “successful” this new group of working poor, who have transitioned off of welfare, will be in achieving self-sufficiency in a medium-size city with inadequate public transportation.

Caseloads: Do decreasing numbers indicate “success”?

Caseloads grew from one percent of the population (147,000 families) in 1936 to about 15 percent of all families (five million) in 1994 because of liberalization of benefits, destigmatization of being on welfare, increased out-of-wedlock births, increased immigration, and a weak economy at times (Besharov and Germanis 2000). However, the 1990s were a decade of low unemployment, decreasing poverty, rising wages, and increasing laborforce participation, which helped the case for welfare reform. Even without welfare reform, caseloads would have naturally been reduced; it is unknown, however, how much case reduction is the result of a healthy economy versus welfare reform policy. Blank (2001) argues that they are likely reinforcing each other. The reality of welfare reform is more complex than these caseload numbers would indicate.

Caseloads have declined from about 4.4 million families in September 1996 when TANF was enacted, to under two million (Freking 2005). Figure 3-2 illustrates that declines were as high as 91 percent in Wyoming and over 80 percent in Illinois and Virginia. However, in Tennessee, caseloads decreased less than 25 percent (United States Department of Health and Human Services 2003). This downward trend in caseloads raises the issues of how the resulting growing

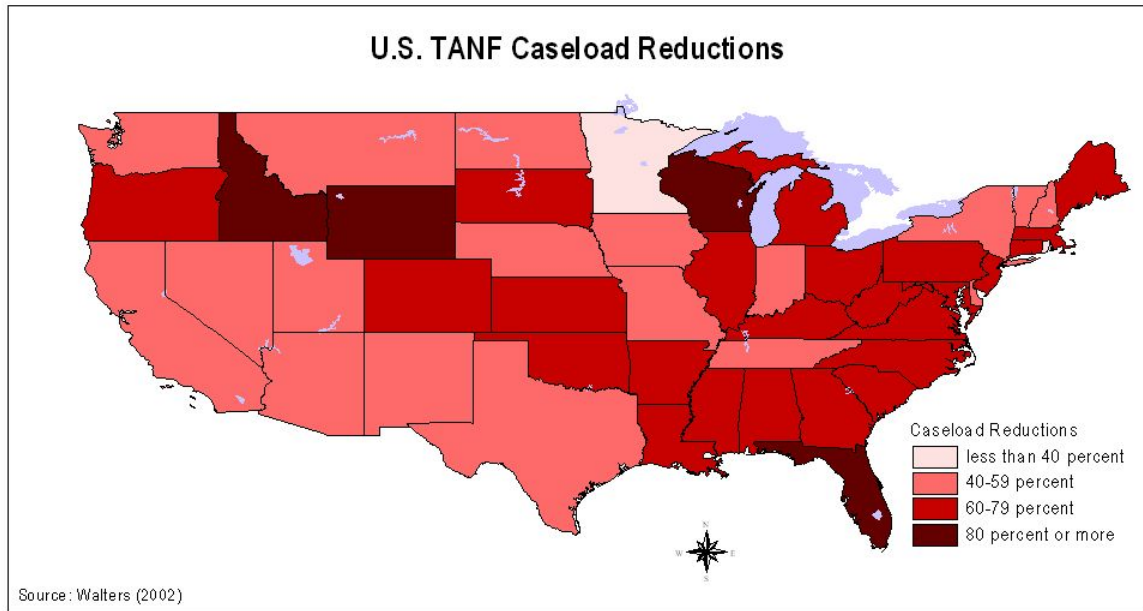


Figure 3-2. U.S. TANF caseload reductions by state.

Source: Walters (2002)

number of working poor will find and maintain employment. It is likely that many who are making the transition off of welfare are finding low-wage, low-mobility jobs.

Indicating that welfare reform may not have been as successful as first thought, caseloads in most states increased in 2001 and 2002; some cities are also experiencing increased caseloads (Waller 2003). In 2002, caseloads actually increased in three-quarters of the states and increased approximately one percent overall; this was the first reported rise since welfare rolls began falling in 1994, two years before welfare reform legislation was enacted. This is in striking contrast to the large declines in the mid to late 1990s after welfare reform was enacted and the economy was booming (The Associated Press 2002). It is not surprising that welfare caseloads will rise in a weaker economy, especially as a majority of cases are single mothers: although employment of single mothers (age 20-65) with children under 18 rose from 69 percent to 78 percent in the 1990s (Blank 2001), they tend to have low-skill, unstable jobs and will likely be the first let go in an economic downturn.

Although the strong economy of the late 1990s cannot be the only cause for decline, as there have been as strong and stronger economic conditions that were not associated with caseload reductions, because the reason for the decline in welfare rolls is unclear, it is difficult to assess the true impact of welfare reform and what should be done next (Besharov and Germanis 2000). Welfare reform and its effects need to be understood in order to make appropriate policy changes. Emphasis also needs to be placed on employment outcomes and transitional benefits, such as transportation, for the working poor, not upon simple caseload reductions.

Effects on jobs and employment

Positive consequences

Single mothers on welfare have recently gone to work in unprecedented numbers (Gueron and Hamilton 2002); their employment rates rose from 60 percent in 1994 to 72 percent in 1999 (Moffitt 2002). Welfare reform, work incentive programs, and a strong economy have all contributed to this increase. When welfare reform was enacted, there were numerous predictions that work requirements, sanctions, and time limits would reduce income and actually *increase* poverty. Whether or not this is the case is still hotly debated. Some would argue that aided by a strong economy, welfare reform increased single mothers' work rates and earnings and that even in a low-paying job, they are better off than they would be on welfare (Haskins 2001). Many researchers, including Haskins and Primus (2001), argue that progress against poverty is simply

the result of a combination of increased earnings from employment and public subsidies, occurring in a strong economy.

Wages have increased, and approximately 39 percent of adults receiving welfare benefits in 2002 reported that they had worked in the previous 12 months. This is a significant increase over the 1997 level of 31 percent, but a decrease from 44 percent in 1999, indicating a weakened economy (Zedlewski and Holland 2003b). In general, welfare recipients' standard of living has improved; however, these improvements are not equal among all former recipients. In addition, getting off of welfare does not mean getting out of poverty (Bania, *et al.* 2001). Table 3-4 illustrates that although hourly wages are increasing for former TANF recipients, more of them are working part time in irregular or night shifts. In addition, more are working multiple jobs and fewer are receiving health insurance from their employers. Thus, clearly the situation of many of the working poor is not improving.

Negative consequences

Regardless of the potential benefits, national welfare reform was predicted to negatively affect over 20 percent of families in the United States (Women & Housing Task Force 1996). In 2002, only 42 percent of welfare leavers were employed, falling from 50 percent in 1999. Fourteen percent of leavers had no source of income in 2002, increasing from 10 percent in 1999 (Loprest 2003). Analyzing the National Survey of America's Families (NSAF) data, Loprest (2003) found that over 25 percent of recent leavers returned to TANF, compared to approximately 20 percent of early leavers. These lower rates of employment and increasing returns to TANF are indicative of a weaker economy. As much of the increase in employment since welfare reform was enacted is because of the booming economy in the late 1990s, employment is not the only measure of success of welfare reform. Loprest (2003) concludes that the employment success of welfare reform is slowing; thus, more needs to be done to connect welfare recipients to and help them keep jobs.

Other problems associated with employment after welfare include the fact that tens of thousands of recipients have lost their benefits by failing to meet new welfare reform employment guidelines. Many are also sanctioned off of welfare (denied further benefits for not following requirements or guidelines) and thus have no jobs, job skills, or assistance. In addition, advancing technology is dividing workers into two tiers: an unskilled, underpaid one and a technically skilled, well-paid elite. Service sector jobs are growing, but such jobs pay less and offer less opportunity for advancement.

Table 3-4. Employment characteristics of former TANF recipients.

	1999	2002	Change 1999-2002
Median hourly wage	\$7.72	\$8.06	+ \$0.34
Working part time	32.4%	33.4%	+ 1.0%
Irregular/night schedule	26.6%	27.4%	+ 0.8%
Working multiple jobs	9.9%	11.5%	+ 1.6%
Employer health insurance	33.1%	32.6%	- 0.5%

Source: Loprest (2003) (citing 1999 and 2002 *National Survey of America's Families*)

Although single mothers on welfare have gone to work in unprecedented numbers, most have limited work experience and skills, thus they find low-paying, low-mobility jobs and remain in poverty, not earning enough to live on (Gueron and Hamilton 2002; Walters 2002). Thus, it is less about the numbers of people getting to work, and more about getting them good-paying jobs. Although welfare reform is increasing the number of people seeking jobs, the same number of *living-wage* jobs is not available (A Living Wage... 1997). For those who are forced to accept employment, they are often low-paying, temporary, irregular jobs with no hope for advancement. This can result in depression, family breakdown, illegal forms of income, and recidivism.

Despite high employment levels, half the women leaving welfare made only slight gains in income, while the other half experienced a decline (Moffitt 2002). Walters (2002) argues that \$8.50 per hour is the best a woman leaving welfare can realistically hope to earn – just barely over the poverty level (*if*, in the unlikely event, she works full time) and a long way from self-sufficiency. It seems as though too much is expected too soon of recipients who trade their welfare benefits for low-paying jobs. More attention needs to be paid to the *type* of employment these women are able to get to, rather than just falling caseloads and increasing numbers of workers.

Earnings are determined not only by wage rate, however, but also the number of hours worked per week, as well as a woman's ability to work continuously month after month. Even if women are paid decent wages, there are problems with retention and stability; most leavers do not work the full year, only slightly over one-third do. Incomes are often only slightly above what they were when they were on welfare (Moffitt 2002).

It is ambitious to try to get welfare recipients back to work; however, realistically, there are only so many good-paying jobs with possibilities for advancement. As long as people are expected to take low-paying, low-advancement jobs, there are going to be families that cannot make it without assistance. Although welfare reform might be breaking the cycle of poverty and joblessness, Walters (2002) argues that people need more than just a job.

Is welfare reform increasing self-sufficiency?

When reliance on welfare is seen as a result of deficits in society, rather than as the problem of the individual, more resources are committed to programs such as education, transportation, and training to make welfare recipients more competitive in labor markets. Thus, high rates of compliance can be expected (Hasenfeld and Weaver 1996). Increasing the resources devoted to maintaining self-sufficiency lessens dependence on the welfare system and reduces recidivism.

Consequently, with fewer families returning to welfare, resources can theoretically be used even more effectively in assisting the *remaining* welfare recipients.

This poses the question: are these women actually becoming more self-sufficient, or are they simply finding other ways, besides welfare or work, to make ends meet? Besharov and Germanis (2000) found that up to 40 percent of single mothers who have left welfare depend on support from boyfriends, family, and friends, as well as other government or private programs. Methods of making ends meet include: Social Security, Supplemental Security Income (SSI), Food Stamps, housing assistance, housing from friends or relatives, trading services such as childcare and transportation with friends and family, and bringing in other adults to the household to help pay bills. Besharov and Germanis (2000) report that only about half of welfare exits were for work or a rise in earnings, while about one-third were the result of increased earnings of another adult in the household, indicating how important shared living arrangements are. Edin and Lein (1997) also found that welfare mothers find a number of other ways to supplement their income, with off-the-books employment or receiving money from friend and relatives. These factors may allow women to “get by,” but they do not necessarily result in self-sufficiency. It is clear that many women are not becoming self-sufficient in the way that proponents of welfare reform propose, rather, they are increasing their social skills, networks, and reliance on others in a more informal social economy.

As a result of welfare reform, Walters (2002) reports that nearly one-third of welfare leavers had to cut the size of a meal or skip meals because they did not have enough food; one-fourth worried that food would run out before they got money to buy more. Over 46 percent did not have money to pay the mortgage, rent, or utility bills; close to 10 percent moved in with someone else because they could not afford their mortgage, rent, or utility bills.

After leaving welfare, many women are not better off when their increasing work-related expenses, including transportation costs, childcare, clothing, decreased supplemental assistance (Food Stamps and housing assistance), are factored in. Besharov and Germanis (2000) report that a large percentage (between 20 and 40 percent) say life was actually *better* on welfare. For many, workfare was seen as the solution; however, in many cases, reform has done little more than force recipients in to the bottom of the labor market.

Impacts on cities

Much has been written regarding welfare reform’s impacts on the poor; more recently, its impact on cities has been discussed. Because states, and even some municipalities, are

responsible for enforcing their welfare laws, this trend toward localization has created an uneven geography of welfare reform. Cities are disproportionately affected by welfare reform; they are home to more concentrated poverty and now have a larger share of caseloads than before the passage of welfare reform (Leonard and Kennedy 2002). Urban caseloads only dropped 40.6 percent from 1994 to 1999, while national caseloads dropped 51.5 percent (Allen and Kirby 2000). In 1994, 47 percent of all cases were in the 100 largest cities; in 2000, nearly 60 percent were in the country's 100 largest cities (Goldstein 2000); however, only 20 percent of the country's population resides in these 100 largest cities (United States Census 2000). Thus, cities face unique challenges in overcoming poverty; the debate over welfare reform reauthorization is particularly important for cities (Leonard and Kennedy 2002). Welfare recipients differ in urban areas, and thus need to be treated differently; policy modifications need to be made accordingly.

Compared to welfare recipients in non-urban areas, welfare recipients in cities are most likely to lack the literacy, work history, education, job skills, etc. necessary to keep jobs (Leonard and Kennedy 2002). There is clearly a spatial mismatch between skills and available jobs, as low-wage workers typically want to keep their job searches close to home. The lack of jobs and higher rates of unemployment in central cities poses great problems for welfare-to-work initiatives in urban areas. From 1992 to 1997, the number of jobs in cities grew 8.5 percent, while growth in the suburbs was 17.8 percent (Leonard and Kennedy 2002); therefore, cities will be burdened by a larger number of displaced workers who are making the transition off of welfare.

Cities are also home to a disproportionate number of clients who will reach the 5-year limit on benefits, as there are more *hard-to-serve* cases with multiple barriers to employment located in central cities (Leonard and Kennedy 2002). Urban welfare recipients have more and more significant structural barriers to work, including transportation. Many cities offer few public transportation routes to areas of strong employment; thus, some states have lifted the \$1,500 vehicle asset limit making it easier to own a car; other states, including Tennessee, have created programs to assist recipients in buying cars. However, car ownership remains low in central cities (Leonard and Kennedy 2002). Welfare reform is at risk of actually *concentrating* poverty in cities, which already struggle with inadequate and inaccessible jobs and lack of services, further hollowing out inner cities (Wolch and Dinh 2001).

CASE STUDY: THE FOCUS ON SINGLE MOTHERS

Low-income women are the most vulnerable of the working poor in cities. Ninety percent of adult welfare recipients are women with children (Waller 2004a) and they face more problems

than other groups while attempting to achieve economic self-sufficiency. In addition, Wong, Garfinkel, and McLanahan (1993) state that single-mother families have higher poverty rates and face greater economic insecurity than do other families; they also found that single mothers in the United States are worse off than in those in most other Western industrialized countries. They attribute this to the fact that single mothers in the United States are younger, have more children, and have the youngest children compared to their counterparts in other countries, including Australia, Canada, France, Germany, Norway, Sweden, and the United Kingdom.

The poverty rate for female-headed households is approximately 30 percent (Haskins and Primus 2001). Two-thirds of poor adults are women. Seventy percent of poor female-headed families pay more than 30 percent of their income for housing; 35 percent pay more than 70 percent (United States Census Bureau 1995). This leaves little available spending money for other necessary goods and services, jeopardizing the quality of life for mothers and their children. Additionally, women maintain 76 percent of all households in public housing. The unemployment rate for women in public housing is almost twice the national average. These women lack basic academic skills, occupational skills, and work experience, as they have often been denied access to basic human services (Women & Housing Task Force 1996). Changes in the welfare system may *further* reduce women's incomes, and the resulting instability will worsen their access to childcare, jobs, and education. There are clearly many constraints facing women and, although welfare reform promises new jobs, it does not mean that all women have access to transportation and affordable childcare necessary to maintain employment. Thus, it is crucial to understand the individual lives of single mothers to increase the well-being of female-headed households by providing a new source of information for policy reform and identifying “new” needs generated by welfare reform.

TRANSPORTATION, WOMEN, AND WELFARE REFORM

The new work requirements of welfare reform are inextricably linked to access and mobility. Employment necessitates transportation to jobs, as well as childcare and other services; therefore, adequate transportation must exist for employment as well as welfare reform. However, the working poor face tremendous mobility challenges, as they are disproportionately concentrated in cities and often do not own a personal automobile, thus must rely on public transportation (Lacombe 1998).

Although a large reduction in welfare cases has occurred, inadequate transportation has kept many from finding and keeping jobs. Haskins and Primus (2001) report that 44 percent of TANF

recipients report at least two barriers to work, including lack of transportation and childcare, low education, little work experience, and physical or mental health problems. Naturally, work opportunities decrease as the number of obstacles increases. This is critical because many jobs that TANF recipients will get require evening/night or weekend hours, and many jobs are in the suburbs (an estimated two-thirds), while three-fourths of welfare recipients live in rural areas or central cities (Kaplan 1998). Transportation is thus a serious barrier to employment for many. Issues including not having a car, reverse commuting, an increasing number of trips, trip-chaining, non-traditional and weekend work hours, and fragmented systems of providers, result in missing work, and perhaps losing a job. Thus it is critical to address these problems and provide additional services in order to have the working poor succeed in the workforce.

Welfare recipients have to get to training, education, interviews with potential employers, and the jobs themselves. Unfortunately, Lacombe (1998) reported that less than six percent of welfare families reported owning a car in 1995. More recently, Blumenberg (2003) found that more than one-third of low-income households do not own cars. Thus, the assumption is that welfare recipients and the working poor must walk or rely on public transit, which is often not accessible, not reliable, and certainly less flexible than owning a car. Currently, however, as the value of allowable assets has increased, fewer families are concealing the fact that they own cars. Today, although only a reported 55 percent of welfare recipients own a private vehicle, and even those who do *not* own cars make 35 percent of their trips by private vehicle, most transportation programs focus on public transportation. Only one-fifth even *use* public transportation (Ong and Houston 2002). Edin and Lein (1997) found that regardless of the mode of travel used, poor working mothers spend more than twice as much on transportation as female welfare recipients. Thus, it is clear that transportation is a vital link between welfare recipients and jobs.

Summary of current transportation programs

A number of federal transportation programs aim to aid welfare initiatives. Using the Catalog of Federal Domestic Assistance (CFDA), which lists every federal grant program, the Community Transportation Association of America (2001) compiled a guide of 90 transportation programs in 17 federal agencies, including the Departments of Agriculture, Commerce, Defense, Education, Health and Human Services, Housing and Urban Development, Interior, Justice, Labor, and, of course, Transportation. A number of examples are given below; however, the following discussion is meant only to address a sample of programs that are (or can be) related to welfare reform.

Federal programs

TANF block grants can be used to provide transportation for those making the transition from welfare to work in a variety of ways. Block grants can be used to match funds for the Job Access and Reverse Commute transportation program. In addition, funds can be provided to states to reimburse clients for work-related expenses such as mileage, fuel, and public transit fares. Also, rider passes or vouchers can be purchased for clients to use existing public or private transportation systems. Funds can also be used to purchase vans, shuttles, or minibuses to provide transportation to TANF recipients; this can include start-up or operating costs for new transportation services, often run by current or former TANF recipients to provide transportation to others who are making the transition off of welfare, while making a living for themselves. In this example, block grant funds can be used to establish an individual development account (IDA) that TANF recipients can use to establish a transportation service (van, shuttle, or door-to-door service). IDAs can also be established for clients to purchase cars. In addition to purchasing cars, TANF funds can be used to facilitate the donation and repair of pre-owned vehicles for those making the transition to work. Loans or grants can also be given to eligible families to purchase and repair pre-owned vehicles, as well as obtain insurance (United States Federal Transit Administration 2000; Jeskey 2001).

There are numerous programs that have supplemented TANF funding. The Department of Labor's Welfare-to-Work (WtW) competitive grants were announced in 1998, but recently ceased in 2004. Grants were used for transitional assistance (including transportation) in job readiness and job placement services to move hard-to-employ or long-term welfare recipients to long-term employment. These funds could be used much like TANF funds, but with some exceptions: funds could only be used for transportation if it was otherwise not available to the recipient, funds could only be used on individuals participating in WtW activities, and financial assistance to lease or purchase a car was not allowed (United States Federal Transit Administration 2000).

The Transportation Equity Act for the 21st century (TEA-21) was also signed into law in 1998, setting spending levels until 2003. It was renewed five times and finally reauthorized as SAFETEA (Surface Transportation Policy Project 2004; Canby 2005). TEA-21 resulted in the Job Access and Reverse Commute (JARC) program, an up-to-\$150 million per year program that offers competitive grants to states, local governments, and nonprofit organizations to make suburban jobs accessible, accommodate non-traditional work schedules, accommodate trip chaining, and reduce travel times (Downey 1998). JARC includes providing transportation to welfare recipients for employment and related activities. Money can also be used for equipment,

vouchers, the use of transit by workers with non-standard work hours, and the use of employer-provided transportation. Money must be used for families that are at or below 150 percent of the poverty line and at least \$10 million has to be spent on Reverse Commute projects (Kaplan 1998). Reverse Commute projects provide access to jobs in the suburbs, while Job Access projects aim to develop new or expanded transportation services, employer-provided transportation, and guaranteed ride home programs (United States Federal Transit Administration 2000).

Created by the Federal Transit Administration in 1995, even before welfare reform was enacted, JOBLINKS still provides technical assistance and funding to projects that demonstrate a strong likelihood of success in providing transportation to employment (Kaplan 1998). This program, administered by the Community Transportation Association of America, attempts to incorporate transportation and human services together (Kaplan 1997), as it recognizes the fundamental relationship between transportation and employability.

A number of innovative programs have been developed with JOBLINKS funding. For example, the Southeastern Arkansas Transportation system utilized unused senior citizen service buses in Jefferson County to transport welfare recipients to training and jobs during off hours (Kaplan 1997; Downey 1998). Another JOBLINKS project in Pine Bluff, Arkansas transports unemployed residents to and from jobs and expands the hours of a subscription-based transit service. Also through JOBLINKS, the Kansas City, Kansas Department of Public Works transports central-city residents to jobs in the suburbs. In a partnership between JOBLINKS *and* the Livable Communities program, the local transit system (TARC) has developed a reverse program in Louisville, Kentucky from areas of high unemployment in the central city to suburban jobs. In Anne Arundel County, Maryland, the JOBLINKS AdVANtage program is using transportation as a microenterprise, in which welfare recipients are trained to own van companies to provide transportation to other low-income people. This program successfully connects welfare recipients to jobs and creates entrepreneurial opportunities for welfare recipients (Kaplan 1998; United States Federal Transit Administration 1999). JOBLINKS also supports Detroit's Suburban Mobility Authority for Regional Transportation (SMART), which uses computer technology to book clients on paratransit buses and to coordinate schedule and route information for main bus lines. SMART also redesigned services and routes, issued free ride passes, and sponsored radio commercials to advertise their services (Kaplan 1997; United States Federal Transit Administration 1999). JOBLINKS also matches Oregon participants who need temporary or emergency rides with volunteer drivers who are reimbursed on a per mile basis (Kaplan 1998).

Another Federal Transit Administration program, Livable Communities, encourages job training, health care, and other services to be located at transit stations (United States Federal Transit Administration 1999). For example, Oakland, Chicago, and Los Angeles now have childcare services at transit facilities (Kaplan 1998). Livable Communities intends to integrate transportation planning with jobs, school, housing, and childcare locations (Downey 1998).

The Federal Transit Administration's Bridges to Work (BTW) program, administered by HUD, connects inner-city, low-income residents with employers in Baltimore, Chicago, Denver, Milwaukee, and St. Louis. The program includes guaranteed rides home, transportation to the job site, and linking poor but job-ready inner-city residents to jobs in the suburbs (Kaplan 1997; Blumenberg, Moga, and Ong 1998). For examples, central city residents working at Baltimore-Washington International Airport are linked by vanpools (Kaplan 1997; Downey 1998). BTW addresses spatial mismatch by integrating transportation and job needs with other services that help workers retain their jobs.

Also through Bridges to Work, Chicago has developed Suburban Joblinks, a program of reverse commuting strategies offering riders training and employment, and transporting residents from housing projects to jobs in the suburbs. Chicago has also developed reverse commutes with old city and school buses. The program also develops routes then passes them on to the public transit system (Kaplan 1997; United States Federal Transit Administration 1999). Also with BTW funding, Wisconsin welfare recipients are provided transportation to interviews and jobs for up to six months or until they can purchase a car or arrange carpooling (Kaplan 1997).

State and local programs

A number of state and local agencies also use donations and Federal funds to give welfare recipients cars, or no/low-interest loans to purchase used cars. In California, social service agencies give loans, assembled from donations, for buying cars, and paying for insurance and repairs (Kaplan 1998). In Ventura County, California, CalWORKS recipients can buy used cars from the county; donated cars can also be leased long-term through a county credit union. Ventura County is also pursuing a Smart Car Sharing program where county-owned cars would be assigned during certain parts of the day, checked out for a few hours, then delivered to another person (Blumenberg, Moga, and Ong 1998; United States Federal Transit Administration 2000). The Big Sandy Area Development District in Kentucky is also working with state agencies and charities to secure donated cars for welfare recipients' carpools. They will also help people move closer to sites of employment by providing up to \$900 for a moving van, security deposit, or

utilities (Kaplan 1997). Chautauqua County, New York has implemented the EARNA CAR program where TANF recipients who have a driver's license and demonstrate employment reliability can learn basic car maintenance and purchase donated cars (United States Federal Transit Administration 2000). The Texas Workforce Commission (with private employers) also has a system where companies donate and repair cars to be given to welfare recipients (Kaplan 1998)

Because of this number and diversity of programs, there is a clear need for collaboration among agencies to appropriately serve welfare recipients to increase efficiency and reduce redundancy. A problem with this variety of services, as well as the number of services often offered at the *local* level, is that people are often unaware of the existence of some of these services, or how to use them. This results in people not getting the help they need simply because they are unfamiliar with their options. In an attempt to solve these problems, in Detroit job openings are listed according to the bus route they are along (Jeskey 1999). Other states and localities are hiring transportation managers to coordinate these programs, as it is difficult to train every case worker to provide information about all the options available, including: organizations, days and hours, who can ride each program's vehicles, their service areas, and costs. For example, the Tennessee Department of Human Services has a mobility manager for each of 14 Service Delivery Areas, covering all 95 counties. They attempt to assess the needs of each client and arrange for appropriate transportation services (Jeskey and Dickson 1999).

SUMMARY OF THE PROBLEM

Because the landscape of American cities has exploded outward, there are serious problems associated with job accessibility and current systems of public transportation. Although many of the transportation programs listed above are innovative in their attempts to address the constraints women face when making the transition from welfare to work, many are still in the model stages, the programs will not serve everyone, and not all states are funded because Job Access and other programs are competitive. The question is whether or not working poor women can become self-sufficient given their constraints and given the state of public transportation in a medium-size city like Knoxville. To shed light on this problem, Knoxville will be used as the setting for the analysis of individual women's experiences as they make the transition from welfare to work. There is uncertainty about whether public transportation and other transit programs are going to help these and other working poor women succeed after welfare.

CHAPTER 4

CASE STUDY: KNOXVILLE, TENNESSEE

“People need to understand that when you have good public transportation, your city becomes cosmopolitan. In a big city, do you think only the poor ride the buses? The wealthy ride the buses too. Here they think it's demeaning to ride the bus” (Tarr 1998, 23).

BACKGROUND AND DESCRIPTION

Located in the south central region of the United States, Knoxville is situated in the Tennessee River Valley just west of the Smoky Mountains (Figure 4-1). Interstates 40, 75, and 81 converge in Knoxville, a city of 170,000 people. Knox County has over 400,000, while the metropolitan area has over 700,000 residents. Knoxville is an affordable city with low property taxes and an average home value of just over \$127,000 (*About Knoxville* 2005; Tennessee Department of Labor & Workforce Development 2006).

Employment

Although the top two employers in Knoxville are related to education – the University of Tennessee and the Knox County Public School System – the largest industry sector is health care and social assistance with 15 percent of total employment. Thus, rounding out the top five employers are Covenant Health, St. Mary’s Medical Center, and the University of Tennessee Medical Center. The second largest industry sector in Knoxville is retail trade with 14 percent of employment, followed by Accommodation and Food Services with 10 percent. Knoxville also has close ties and a number of employees at nearby Oak Ridge National Lab, the Tennessee Valley Authority, and ALCOA (Aluminum Company of America). Although much large-scale manufacturing has left Knoxville in recent years, a number of smaller manufacturers remain (*About Knoxville* 2005; Tennessee Department of Labor & Workforce Development 2006). The unemployment rate is only 3.7 percent and the average weekly wage in Knox County is \$638, equivalent to \$15.95 per hour or \$33,176 per year (Tennessee Department of Labor & Workforce Development 2006).

Retail trade

With such a large sector of employment in retail trade, it is not surprising that Knoxville has thousands of acres zoned for retail space. Knoxville boasts three regional malls including West Town Mall, Knoxville Center (formerly East Towne Mall), and the recently developed Turkey



Figure 4-1. Knoxville, Tennessee situated in the Tennessee River valley.

Creek in western Knox County. Each mall has major department stores, a food court, restaurants, and a movie theater. In addition, there are a number of retail strips lining Kingston Pike (east-west artery) and Broadway (north-south artery), with new developments spreading further and further from the central city.

DECENTRALIZATION AND SPRAWL

Knoxville is an appropriate case for examination, as it represents the future of the medium-size American city. It is characteristic of a sprawling medium-size American city – which is clearly the trend in urban development. In Knoxville, approximately 170,000 people live in over 97 square miles (1747 per square mile) (United States Census Bureau 2000); Knoxville is consistently sprawling as its population grows. Compared to other medium-size cities in the South – such as: Baton Rouge with 227,000 people (2,078 per square mile), Garland, Texas with 194,000 people (3,389 per square mile), Richmond, Virginia with 201,000 people (3,346 per square mile), and Shreveport, Louisiana with 197,000 people (1,998 per square mile) (*World Almanac and Book of Facts* 1998) – Knoxville has relatively low density, resulting in significant public transportation constraints.

Not only does Knoxville rank high in terms of sprawl for medium-size American cities, but also for metropolitan areas overall. Several studies have ranked Knoxville in the top ten worst sprawling metropolitan areas in the United States. In 2001, *USA Today* ranked the Knoxville metropolitan area as the sixth most sprawling metropolitan area with a population between 250,000 and 1,000,000. Sprawl was calculated based upon the percentage of the population living in urbanized areas, as well as upon the change from 1990 to 1999. Cities with lower percentages living in urbanized areas were ranked higher. In 1999, less than 50 percent of the population lived in urbanized areas in the Knoxville metropolitan area, a 5.3 percent decrease from 1990 to 1999 (Index of 271 sprawling... 2001).

A more notable study involves an index calculated by Smart Growth America, which uses 22 variables to rate metropolitan areas. The index includes factors such as residential density, the mix of homes, jobs, and services in a neighborhood, the strength of downtowns and other activity centers, and street network accessibility. This 2002 study ranks Knoxville as the eighth most sprawling metropolitan region overall, behind only Riverside-San Bernardino, CA, Greensboro-Winston-Salem-Highpoint, NC, Raleigh-Durham, NC, Atlanta, GA, Greenville-Spartanburg, SC, West Palm Beach-Boca Raton-Delray Beach, FL, and Bridgeport-Stamford-Norwalk-Danbury, CT. Further, Smart Growth America ranks Knoxville the *most* sprawling metropolitan area, in

terms of residential density, in the entire country. Researchers argue that this high degree of sprawl undeniably results in more traffic and more driving (Ewing, Pendall, and Chen 2002).

From 1990 to 2000, Knoxville's population grew just 5.2 percent, while Knox County grew 13.8 percent (United States Census Bureau 2000). This growth has been primarily in the west and north sections of the county, where 64 percent of all building permits were issued. The *county* shows the largest gains, while the *city* shows less development activity (Figure 4-2). In contrast, 80 percent of the buildings demolished in 1999 were residential properties in the central city sector (as defined by the Knoxville-Knox County Metropolitan Planning Commission), as the city sectors just cannot keep pace with growth in the outlying areas (Brewer 2000). According to the 2000 Census, population in western Knox County increased about 68 percent, while the rest of the county averaged just 62 percent (Davis 2003).

As farms and fields are turned into shopping centers and houses, much of the county's recent development is characterized by sprawling subdivisions with large lots and little mixed use (Brass 2003). In 1969, approximately 82 percent of the county was rural; in 1979, 72 percent was rural; in 1990, 61 percent was rural; by 2000, just 52 percent was rural (Brass 2003).

TRANSPORTATION

As a result of this decentralization, the average Knoxvilleian drives over 35 miles per day (Ewing, Pendall, and Chen 2002). This is less than the Tennessee average, but higher than the national average of approximately 30 miles per day (United States Bureau of Transportation Statistics 2001). In addition, the proportion of commuters using public transportation in Knoxville is only 0.5 percent, much less than the national average of five percent (or three percent excluding New York City) (Buckner 2004). The proportion that walks to work in Knoxville is also under the national average of two percent. This leaves over 97 percent of the population using personal automobiles to get to work, with an average commute time of over 23 minutes (Ewing, Pendall, and Chen 2002), under the national average of 26 minutes (United States Census Bureau 2000).

Knoxville Area Transit (KAT)

However, "Knoxville once had perhaps the best public transportation system in the South" (Tarr 1998, 7) and public transportation was very progressive. Today, KAT operates 80 buses, paratransit lift vehicles, and trolleys on 28 routes (Figures 4-3 and 4-4), carrying 3.2 million passengers a year; fiscal year 2004 saw the highest number of riders in 20 years. Riding KAT

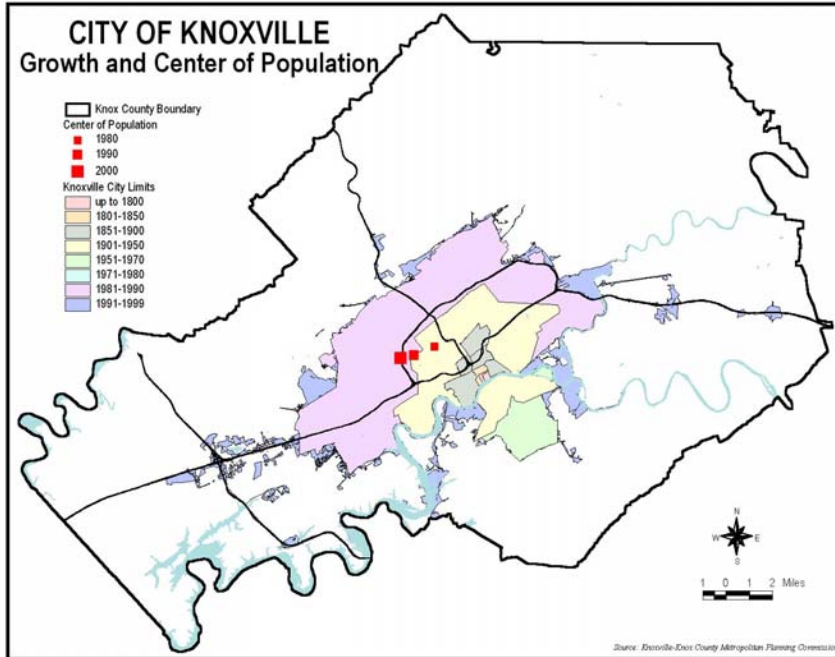


Figure 4-2. City of Knoxville: Growth and center of population.

Source: Knoxville-Knox County Metropolitan Planning Commission (2002)

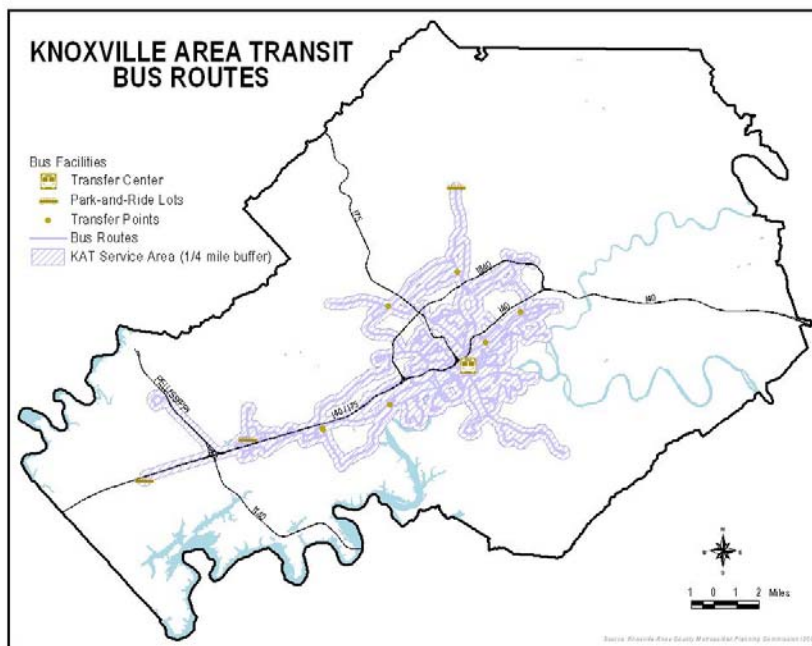


Figure 4-3. Knoxville Area Transit (KAT) route map.

Source: Knoxville-Knox County Metropolitan Planning Commission (2002)



Figure 4-4. KAT bus riders on Broadway.

buses can be simple – by calling KAT’s information number, a “travel agent” will plan a customer’s trip. Fares are inexpensive – just \$1.00 for adults (\$0.20 transfers) and \$30 for a monthly pass. In addition, through KAT’s “Main Connection Downtown Pass Program,” anyone who works downtown can receive a free monthly pass. The program’s goal is to reduce traffic and improve air quality (Knoxville Area Transit 2005).

Another innovative program KAT has sustained for 15 years is “Shop & Ride;” grocery shoppers at any of 28 stores on transit lines can spend just \$10 and receive a free bus pass. Approximately 25,000 patrons take advantage of this program each year. Customers are drawn to the stores where prices are lower than neighborhood convenience stores, while the grocery stores gain additional business and are allowed to advertise on the buses (Ivry 2000).

Because of KAT’s recent efforts to extend service into the evenings and weekends, it recently received one of ten American Public Transportation Association (APTA) “welfare-to-work awards” (Aggazio 2002). KAT more recently received APTA’s Public Transportation System Outstanding Achievement Award, one of the highest honors in the industry. The award is based on achievement and efficiency in programs, safety, operations, customer service, and financial management. KAT was recognized for its record ridership, Clean Fuels Program, and KAT Action Plan 2010 (Knoxville Area Transit 2005).

One of KAT’s biggest challenges is that, like most other public transit services, it has not made a profit since 1970. It works with an approximately \$8 million budget, yet only 20 percent is funded by fares (Tarr 1998). Thus, KAT is constrained by its limited budget, and is only able to offer bus service every 30 to 90 minutes. Tarr (1998) argues that even people who *like* to ride the bus wish it ran later and more often than it does. Some routes end at 5 PM and only a few run past 8 PM; there is very limited service on weekends. KAT’s marketing manager stated that the ability to run service later has always been a big issue for KAT (Tarr 1998). Another challenge that KAT, like many other transit providers, faces is the stigma attached to riding the bus in Knoxville (Figure 4-5). A 78 year old woman who moved to Knoxville from Chicago 25 years ago stated, “people need to understand that when you have good public transportation, your city becomes cosmopolitan. In a big city, do you think only the poor ride the buses? The wealthy ride the buses too. Here they think it's demeaning to ride the bus” (Tarr 1998, 23).

Ridership is, however, increasing. Ridership was up 39 percent for January 2001; the first half of fiscal year 2001 was 10 percent higher than the first half of fiscal year 2000. Ridership rose by 130,000 (six percent) from July 2000-July 2001 (Knoxville Area Transit 2002) and KAT achieved its highest ridership numbers in 2004 with 3.2 million riders (Knoxville Area Transit



Figure 4-5. An empty KAT bus stop: An all too familiar sight.

2005). These riders are quite diverse in terms of race, gender, and education (Figure 4-6). African Americans make up 42 percent of the riders, but only 8.6 percent of Knox County's population (16.2 percent of the city of Knoxville's population). Women are also slightly overrepresented, as they make up 56 percent of the riders, but just 51.7 percent of the county's population (52.6 percent of the city of Knoxville's population). Unlike many other medium-size cities, KAT serves a higher than average number of students and college-educated riders, as the University of Tennessee's presence in Knoxville certainly increases the number of riders in these categories. The number of students riding the bus also decreases the average income (United States Census Bureau 2000; Knoxville Area Transit 2002).

Although KAT seems to be successful, programs like the "Main Connection" do not serve the working poor who need it most – those who live in the central city and need to reach *outlying* areas, where many jobs are located. Thus, in 1998, the City of Knoxville competed for, and was awarded, a \$500,000 Job Access and Reverse Commute (JARC) grant. Part of the \$1,000,000 (including matching funds from Families First, Welfare-to-Work, and the Tennessee Department of Transportation) was used to increase KAT's late-night/weekend bus service (Figure 4-7) and demand-response service. Of the \$85,000,000 awarded in the United States, \$750,000 was again awarded to Knoxville in 2004. An additional \$500,000 was awarded to Knoxville's Community Action Committee's Transit Program discussed below (*Job Access and Reverse Commute Grants* 2004).

Although KAT advertises that buses run from 5:30 AM to 12:30 AM on weekdays, 6:30 AM to 12:30 AM on Saturdays, and 11:00 AM to 7:00 PM on Sundays, much of its late night and weekend service is on only *four* routes (Knoxville Area Transit 2005). KAT's "Night Rider" and "Sunday Rider," which serve close to 70,000 passengers per year (McCoy 2002), are the result of the JARC grant. The grant also sponsors the "Call-A-KAT" demand-response shuttle service, which also runs at night and on Sundays. Although this program services otherwise inaccessible areas, it requires that a reservation be made between 8:00 AM-5:00 PM the day *before* the ride is needed (Knoxville Area Transit 2005).

KAT is, however, attempting to make its service more flexible, diverse, and customer-driven. The "KAT Action Plan 2010" is an effort to examine the entire operation and establish long-range goals (Hickman 2001). The goal is to increase ridership and give the public the service they want (Hickman 2002). The plan was developed over a nearly one-year period through public meetings, on-the-bus surveys, phone surveys (of both users and non-users) and focus groups (actually skewed to those who did *not* normally ride the bus). The plan was not intended to

Race:	White	50%
	African American	42%
	Hispanic	2.5%
	Other	2.5%
Gender:	Male	44%
	Female	56%
College education or beyond:		40%
Employed or students:		77%
Income \$25,000 or less:		80%

Figure 4-6. Current ridership on Knoxville Area Transit (KAT).

Source: Knoxville Area Transit (2002)

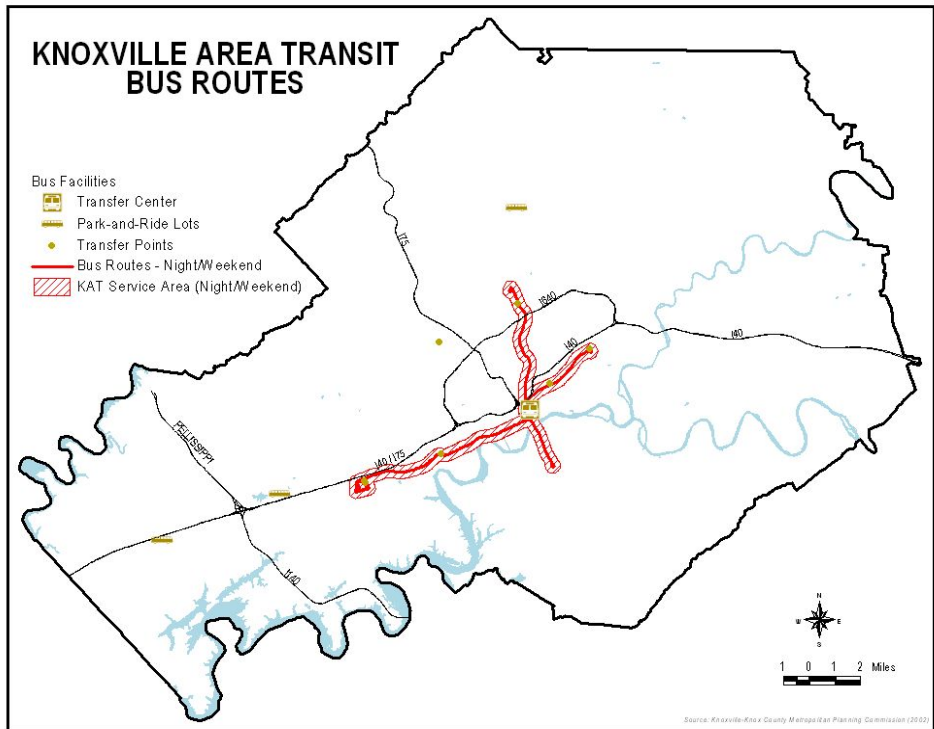


Figure 4-7. Knoxville Area Transit (KAT) night and weekend routes.

Source: Knoxville-Knox County Metropolitan Planning Commission (2002)

address a comprehensive realignment of routes, but rather to improve the *existing* system through expansion of services and increased efficiency (Knoxville Area Transit 2001). Riders asked for more frequency and access to services (Hickman 2002). As a result, some of the new services proposed include the following: increased frequencies on core routes, service extension along major routes, neighborhood connector routes and shuttles, city-wide Call-A-KAT service during the daytime, and additional Sunday service (Knoxville Area Transit 2005).

However, other services have actually been *reduced*: segments or entire routes were converted to the demand-response service, Call-A-KAT (Knoxville Area Transit 2005). This is beneficial for those who are working fixed-time jobs; however, as more and more trips are non-work related (and thus less fixed in time), and a number of jobs have varying or non-traditional hour shifts, transportation is now even less flexible and more difficult in these areas.

Other transit programs

The Knoxville-Knox County Community Action Committee (CAC) Transit program provides mostly healthcare-related demand-response trips, but can also be used for shopping, employment and other services. With a sliding-scale fee (\$0.50 - \$1.25), it services all Knox County residents who have no other means of transportation. Unfortunately, services are only available from 8:00 AM to 4:45 PM Monday through Friday, and reservations are required no later than 11:00 AM the day *before* service is needed (Knoxville-Knox County Community Action Committee 2005), making it very difficult or impossible to fit one's work schedule into these time constraints. An additional inconvenience results from the fact that passengers are required to be ready at least "one hour plus drive time" before service is scheduled, while the driver will wait no longer than five minutes at a given pick-up location. To accommodate those who cannot be served by the Transit Program, CAC also offers Job Access Transportation as part of the Knox County JARC grant. Service is available 24-hours a day, 7-days a week for transportation to jobs and training for those who live outside of the KAT service area. Travel is provided to neighboring counties, and side trips for childcare are allowed. CAC also offers an emergency ride home program for employment and training-related service (Knoxville-Knox County Community Action Committee 2005).

The East Tennessee Community Transport System is an association of private transportation businesses that works with the University of Tennessee Transportation Center and the Knoxville Community Development Corporation's (KCDC) Microloan program (City of Knoxville 1998). Participating businesses have access to vehicles through the program to provide transportation

services where existing services are unavailable (Knoxville Regional Transportation Planning Organization 2005).

Additional programs funded through KCDC's Microloan program include several projects that are part of the Community Microloan Passenger Transportation Business Project. A-1 Transportation is a female-owned company that provides transportation for \$6 per day within a 10-mile radius to anyone who cannot supply his or her own transportation. Also for \$30 per week, KidTrans provides transportation within a 20-mile radius to childcare, including home pick-ups, trips to school, and trips to special events (Community Microloan Program 2001).

CAC, KCDC, KidTrans, and the Knoxville Commuter Pool all use vans supplied by the Tennessee Vans program, which provides vehicles, insurance, and maintenance to agencies that need assistance in arranging car and vanpools for transporting individuals to job or training sites. Knoxville Commuter Pool residents are also eligible for three emergency rides per year (Knoxville Regional Transportation Planning Organization 2005).

In order to coordinate these and other transportation programs in Knoxville, the City of Knoxville is constructing a new transit center that will house waiting and transfer facilities for a variety of transportation modes: buses, trolleys, taxis, cars, bicycles, and pedestrians. Additional parking and mixed-use development will also be part of the project, including office and retail space, and childcare facilities. The \$17 million project has been delayed several times, but is scheduled to break ground in spring 2006 (Knoxville-Knox County Public Building Authority 2005; Knoxville-Knox County Public Building Authority 2006). While Knoxville Central Station and the variety of transportation programs available in Knoxville are all steps in the right direction, many women's problems will remain unaddressed – it seems as though more will be needed to help women make the transition from welfare to work.

DOES KNOXVILLE HAVE A SPATIAL MISMATCH PROBLEM?

The first step in evaluating spatial mismatch is to determine where the available jobs are (Figures 4-8, 4-9, and 4-10) compared to where the residents live (Figure 4-11). Sawicki and Moody (2000) summarize the top ten industries in which welfare recipients find employment: eating/drinking establishments, nursing/personal care services, private household services, hotels/motels, grocery stores, elementary and secondary schools, department stores, personnel supply services, hospitals, and services to dwellings and buildings.

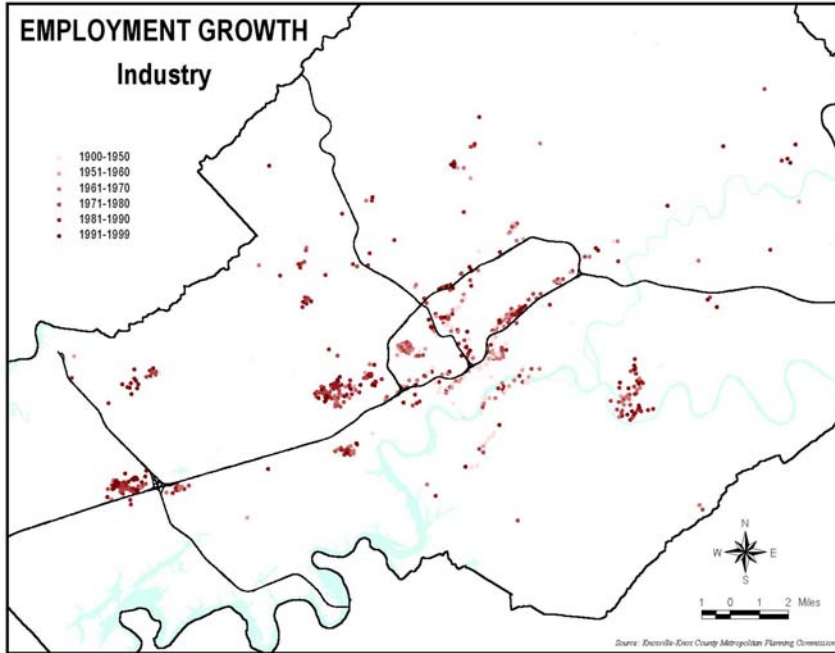


Figure 4-8: Knox County industrial growth (1900-1999).

Source: Knoxville-Knox County Metropolitan Planning Commission (2002)

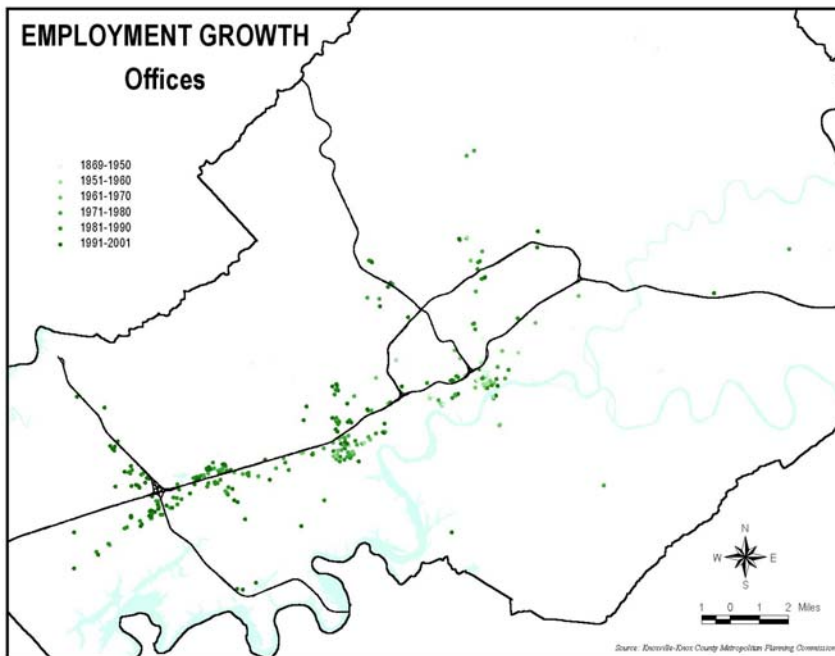


Figure 4-9: Knox County office growth (1869-2001).

Source: Knoxville-Knox County Metropolitan Planning Commission (2002)

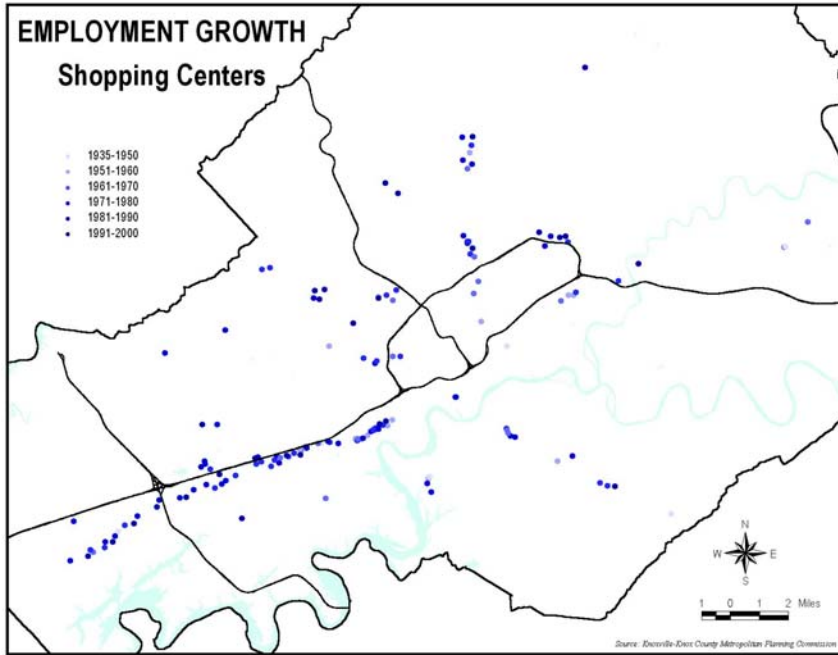


Figure 4-10: Knox County shopping center growth (1935-2000).

Source: Knoxville-Knox County Metropolitan Planning Commission (2002)

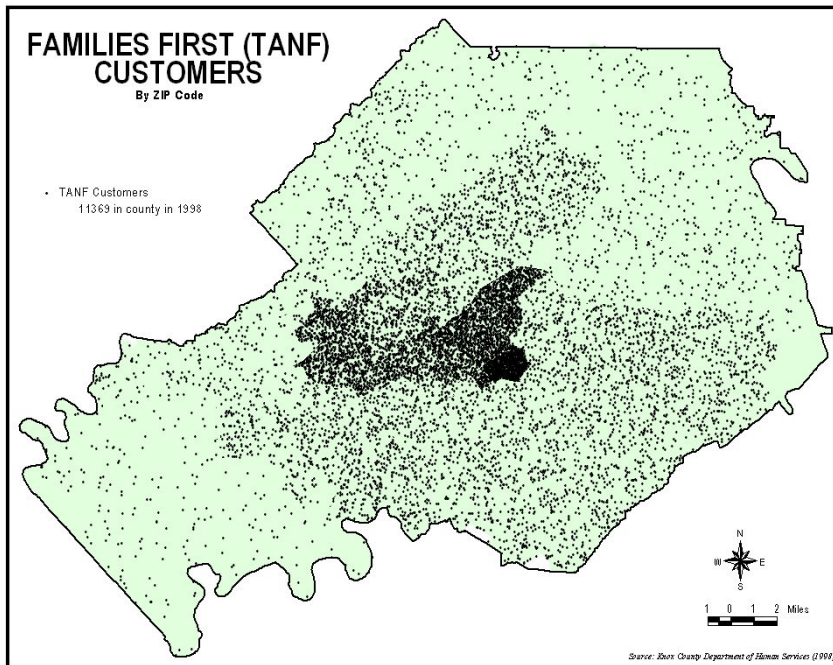


Figure 4-11: Knox County Families First (TANF) customers.

Source: Knox County Department of Human Services (1998)

Using Geographic Information Systems (GIS) to analyze the location of public housing (Figures 4-12 and 4-13) (used as a surrogate for welfare recipients, as their specific addresses are confidential and the most recent data that I was able to obtain – provided only by ZIP Code – is from 1996), entry-level jobs (locations of shopping centers, office buildings, industry, hospitals, and schools are used), and the public transportation system (KAT considers ¼ mile to be a reasonable walking distance), generalizations can be made about spatial mismatch in Knoxville. From the following table (Table 4-1), it appears that significant percentages of homes, and employment opportunities are within walking distance of bus routes.

However, these data need to be examined more closely, for even if jobs and residences are within a reasonable distance of bus routes, it might take an unacceptable amount of time to get to even a low-paying job after adding bus transfers (as most trips to work require a time-consuming trip downtown to transfer buses) and waiting time. In addition, percentages would also decrease considerably when examining night and weekend routes. Finally, although there may be a large percentage of people within a reasonable distance from the buses, the buses may not reach their destination: suburban jobs. Thus spatial mismatch is a significant and multidimensional problem in Knoxville that requires further interrogation at the individual level.

WELFARE REFORM AND THE WORKING POOR IN KNOXVILLE

“Families First” program requirements

An example of a state welfare reform program designed to get people off of welfare and into the workforce is Tennessee's Families First program. Tennessee's TANF waiver was approved in July 1996, allowing stricter work requirements, time limits, and sanctions than those outlined by the accepted welfare reform bill (Mayshark 1998; Tennessee Department of Human Services 2004). Families First clients are eligible for benefits for no more than 18 months at a time (with at least three months in between) for a total of no more than 60 months (Tennessee Department of Human Services 2005). In addition, each "customer" (also referred to as “recipient” or “client”) must commit to a Personal Responsibilities Plan, which details how she will achieve self-sufficiency, and requires an agreement to work or attend approved work preparation activities for up to 40 hours a week, including job-skill training, adult basic education, and job searches. Additional requirements include the following: teen parents are required to attend school or its equivalent; customers who quit their jobs without good cause will become ineligible for three months; and all school-aged children must attend school and have immunizations and health check ups (Holmes 1999; Tennessee Department of Human Services 2005).



Figure 4-12. Austin Homes public housing project.

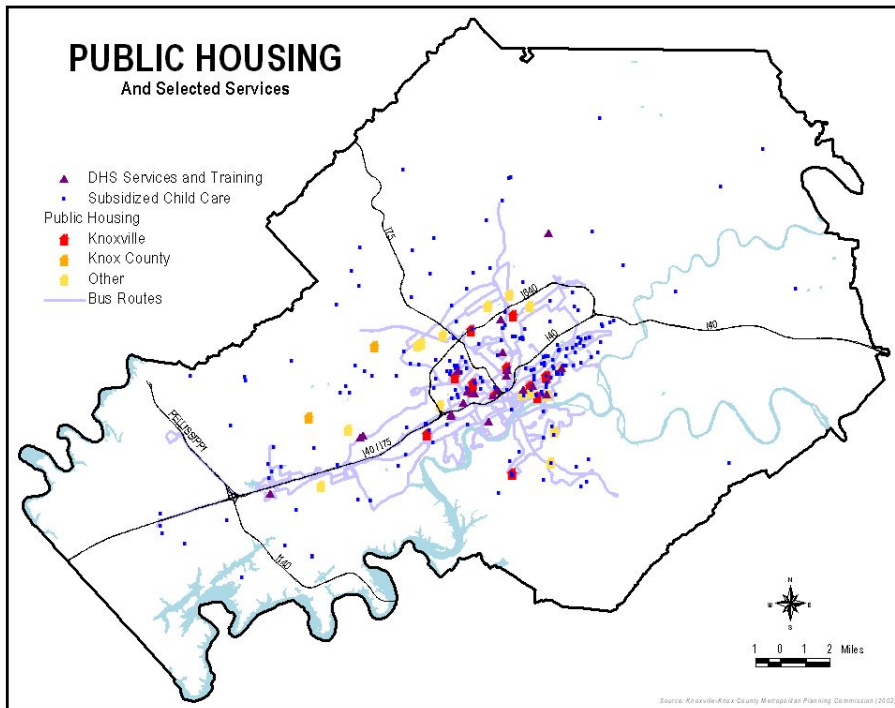


Figure 4-13. Knox County public housing.

Source: Knoxville-Knox County Metropolitan Planning Commission (2002)

Table 4-1. Housing, employment, and services located within KAT's service area.

	Total	Within 1/4 mile of bus route	Percent	Within 1/4 mile of night/weekend bus route	Percent
Public Housing (incl. Mechanicsville)	34	28	82.4%	2	5.9%
Subsidized Child Care	203	141	69.5%	30	14.8%
DHS Services/Training	24	23	95.8%	4	16.7%
Shopping Centers	150	110	73.3%	52	34.7%
Offices	432	300	69.4%	153	35.4%
Industry	706	387	54.8%	66	9.3%
Churches	425	194	45.6%	52	12.2%
Hospitals	6	6	100.0%	3	50.0%
Libraries	19	12	63.2%	6	31.6%
Public Schools	88	39	44.3%	10	11.4%
Private Schools	36	21	58.3%	7	19.4%
Higher Education	8	7	87.5%	3	37.5%
Recreation Centers	25	23	92.0%	3	12.0%
Parks	215	111	51.6%	29	13.5%

Source: Knoxville-Knox County Metropolitan Planning Commission (2002)

Benefits

Cash payments average approximately \$169 for all recipient families and amount to just \$142 for a mother with one child. An additional \$224 a month for food stamps and \$5 a day for transportation and childcare gives the family a total annual income of \$6,217 (Mayshark 1998; Tennessee Department of Human Services 2005). Families First participants also have access to services that address structural barriers to employment, such as childcare and transportation assistance. However, approximately 25 percent of all recipients receive no transportation assistance (Tennessee Department of Human Services 2005) and close to 20 percent reported not having childcare for the hours they needed it (Holmes 1999).

Over 200 subsidized childcare facilities are available in Knox County (Figure 4-14); however, less than half (93 of 203) provide transportation (Figure 4-15). For an average fee of \$14 per week, only 22 percent (45 of 203) of the providers offer transportation to and from *school* and less than 24 percent (48 of 203) provide transportation to and from *home and school*. Even fewer provide nighttime childcare: only 27 percent (55 of 203) are open until at least 10:00 PM (Figure 4-16), just eight (3.9 percent) are open for third shift/overnight care (Figure 4-17), and only five providers (2.5 percent) are open 24 hours a day (Figure 4-18). Weekend care is even less likely to be available, as only seven of the 203 subsidized childcare facilities (3.4 percent) are open on weekends (Figure 4-19) (Knox County Community Action Committee Child Care Connection 2000).

Activities and support services for TANF clients also include *Fresh Start*, a 4-week class to learn job readiness skills. Only 70 percent claim to be satisfied with their classes, but more than 80 percent say it helps motivate them to go to work or school. *Job Club* also gives recipients employment information and assistance in a job search (Holmes 1999).

It is important to note that Families First clients do not lose all their benefits at once when they get a job. There is an 18-month transition period, when a family may receive a rent freeze in public housing, food stamps, childcare vouchers, car repairs, and TennCare medical coverage. These transitional benefits allow a mother to take a low-paying job, continue to receive benefits, and continue to upgrade her skills, hopefully increasing her chances of advancement and long-term employability (Thomas 1996).

Caseloads: Trends and characteristics

The number of welfare cases in Tennessee (Figure 4-20) is approximately 74,000, down from 91,000 when welfare reform began in 1996 – cases peaked in 1994 at 111,000. In the first year of

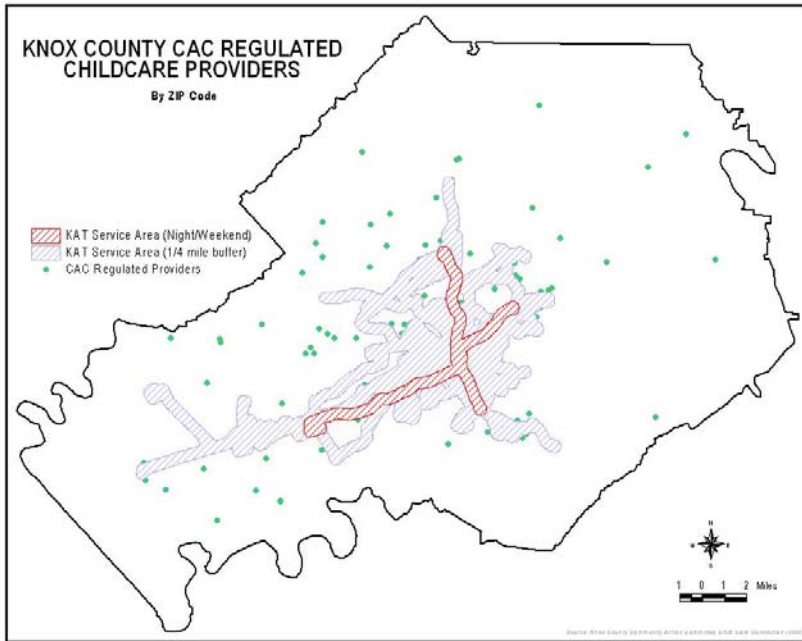


Figure 4-14. Subsidized childcare providers.

Source: Knox County Community Action Committee Child Care Connection (2000)

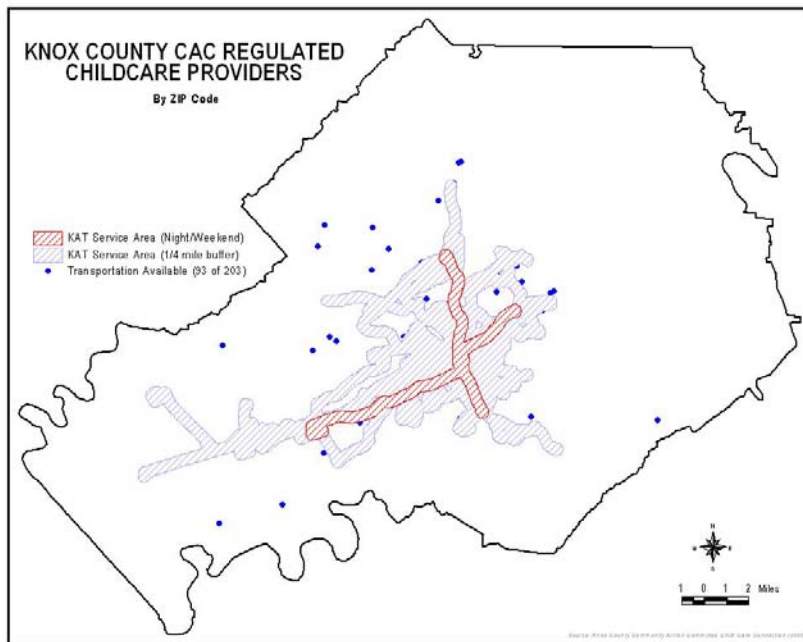


Figure 4-15. Subsidized childcare providers: With transportation available.

Source: Knox County Community Action Committee Child Care Connection (2000)

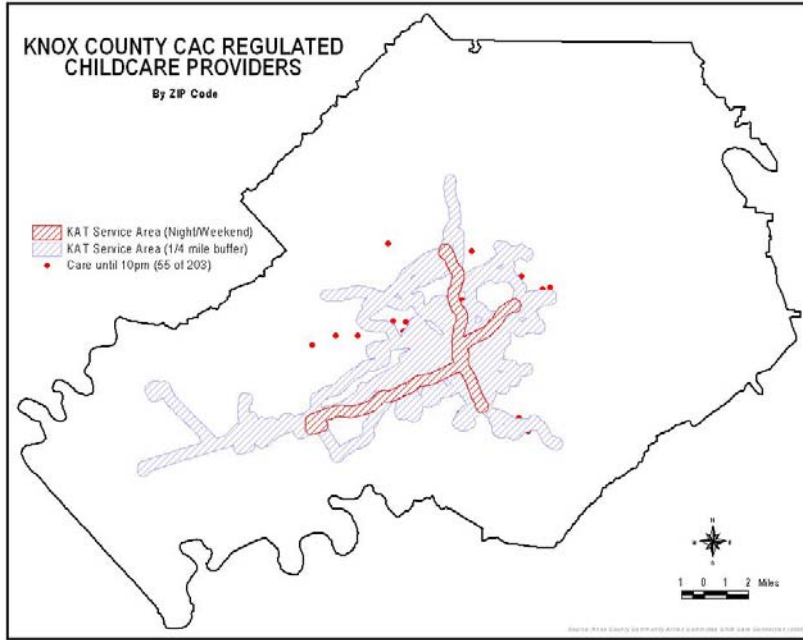


Figure 4-16. Subsidized childcare providers: With care until 10pm.

Source: Knox County Community Action Committee Child Care Connection (2000)

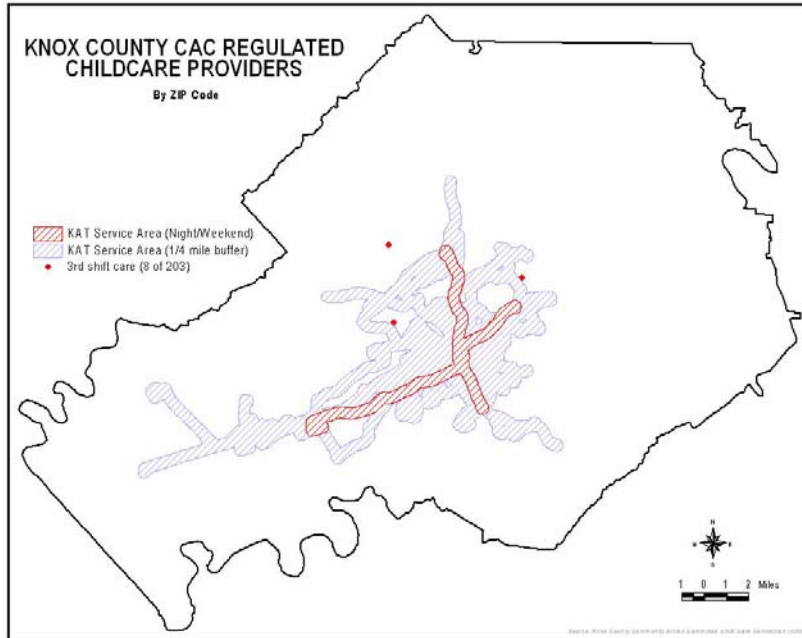


Figure 4-17. Subsidized childcare providers: With care from 11pm-7am (3rd shift).

Source: Knox County Community Action Committee Child Care Connection (2000)

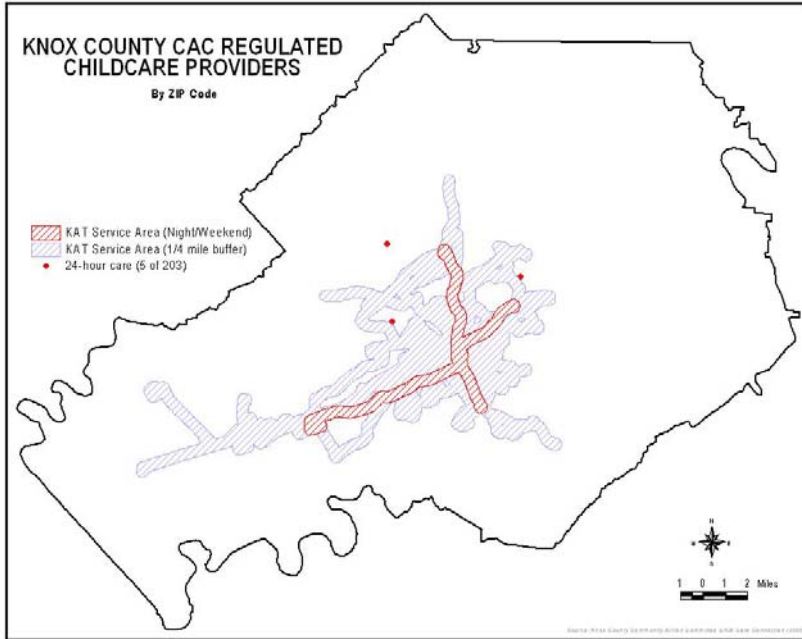


Figure 4-18. Subsidized childcare providers: With 24-hour care.

Source: Knox County Community Action Committee Child Care Connection (2000)

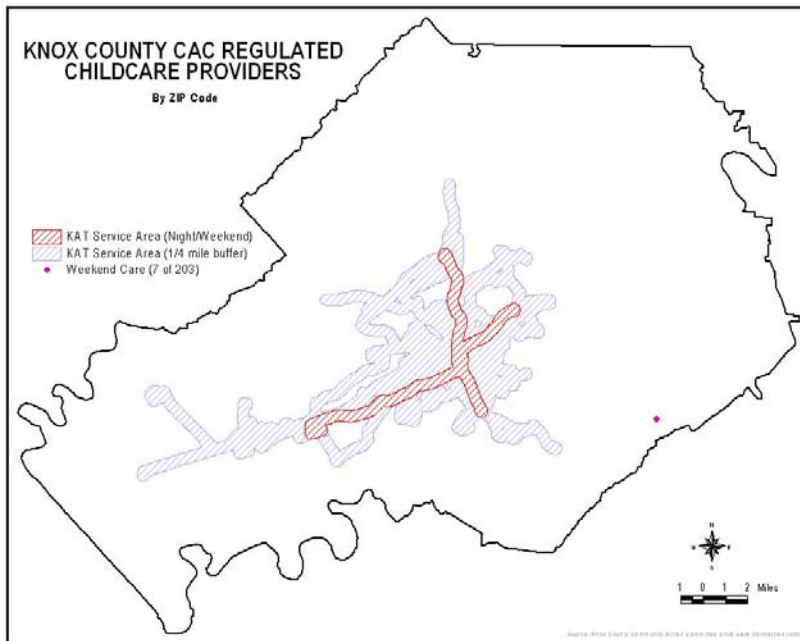


Figure 4-19. Subsidized childcare providers: With weekend care.

Source: Knox County Community Action Committee Child Care Connection (2000)

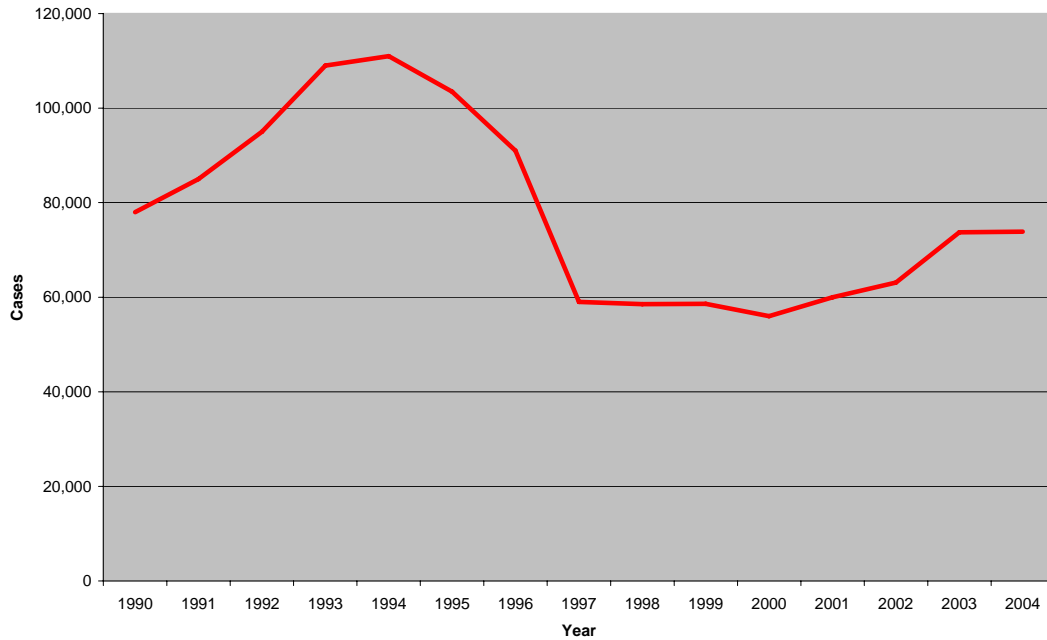


Figure 4-20. Tennessee Families First caseloads (families).

Source: Tennessee Department of Human Services (2005)

welfare reform, cases decreased a dramatic 38 percent from 91,499 cases to 56,611 cases, while Knox County declined even more from 5,222 to 3,117 cases (40.3 percent). Cases were at an all-time low in 2000 at just over 56,000, but they have been steadily rising (Mayshark 1998; Center for Business and Economic Research 2003; Tennessee Department of Human Services 2005).

The re-entry rate is close to 33 percent (Tennessee Department of Human Services 2005). Less than 30 percent leave because they get jobs; less than half of those who do get jobs are working full time, and their average pay is just \$6.78 per hour, far from the amount required for true self-sufficiency. The average number of hours worked per week is less than 29. The current average monthly wage of employed participants in Tennessee is just over \$650. These wages are unlikely to rise dramatically, as less than 60 percent of recipients have a high school diploma or equivalent (Ward and Embry 2000; Tennessee Department of Human Services 2004; Tennessee Department of Human Services 2005).

Approximately three-fourths of these caseloads are one-adult families, and the average family size is 2.7 persons, including 1.9 children. Most are single, as over 87 percent are classified as single, divorced, or widowed; 57 percent have never been married. Close to 96 percent are female and over 58 percent are black. Over 60 percent of all cases are urban, yet only 42 percent of Tennessee welfare households have cars (Tennessee Department of Human Services 2004).

Knox County's cases are comparable to state averages (Table 4-2). There are fewer one-parent cases in Knox County with 70.6 percent, compared to 74 percent in the state, yet there are more child-only cases in Knox County with 28.4 percent compared to 24.3 percent in the state. There are also fewer black and Hispanic cases with 46 percent black recipients, compared to 58.3 percent in the state, and only 0.9% Hispanic, compared to 1.7 percent in the state (Tennessee Department of Human Services 2004; Knox County Department of Human Services 2001)

Self-sufficiency

Families First benefits of \$1,704 per year, \$2,688 per year in food stamps, and \$1,300 per year for transportation costs is far from what a single mother needs to be self-sufficient. Some benefits can continue for up to 18 months after employment; however, food stamps are immediately reevaluated based on income, and an 18 month rent freeze only applies to public housing residents (Mayshark 1998). A 22-year-old single mother, Sherry Williams, sees it as deceptive: "It's all a big hoax, every bit of it... because you don't get nothin' that you're told you're going to get" (Mayshark 1998, 9). Williams felt that Families First expected too much of its customers too soon, and found that making \$5.46/hour for 30 hours a week (\$8,518 per year)

Table 4-2. Knox County Families First caseload demographics.

	TOTAL	Percent
Total amount of Families First Grants	\$566,663	NA
Eligible Individuals	8385	NA
Total Cases	3379	NA
Total Child Only Cases	961	28.4%
Total One Parent Cases	2387	70.6%
Total Two Parent Cases	31	0.9%
Cases Receiving Food Stamps	3087	91.4%
Cases Receiving Medicaid	3379	100%
Cases Receiving Rent Subsidy	89	2.6%
Individuals by Race	9384	NA
White	5000	53.3%
Black	4321	46.0%
Other	63	0.7%
Hispanic/Latino	86	0.9%
Participation		
Average Monthly Wage for Working Adults	\$619.65	NA
Total Number of Individuals Employed	595	24.6%
Activities	2422	NA
Unsubsidized Employment	480	19.8%
Job Search & Readiness Assistance	337	13.9%
Community Service Programs	2	0.1%
Vocational Education	242	10.0%
Job Skill Training	104	4.3%
School Attendance	186	7.7%
Additional/Other Work Activities	1071	44.2%

Source: Knox County Department of Human Services (2001)

was over the limit to receive a Families First check (Mayshark 1998).

Thus, the DHS administrative director for East Tennessee cautioned against calling Families First a success just because case numbers were down (Mayshark 1998). In 2004, former recipients were averaging just \$6.78 per hour, at an average of 29 hours per week, while the full-time wage required for a family of three to live above the poverty level was \$7.53 per hour (Tennessee Department of Human Services 2004; United States Department of Health and Human Services 2004a). Vaughn Smith, former director of the Knoxville-Knox County Private Industry Council stated that the way to self-sufficiency "is to take the \$6.00 or \$6.50 an hour job now, continue to provide the subsidies for the person who is working at that level as long as it is necessary, while they continue to upgrade their skills... and they'll eventually get themselves out of the low-wage job" (Thomas 1996, 10).

Tennessee ranks high – third in the country – in placing and retaining jobs; however, it ranks 49th on overall wage increases. Clearly, Families First is successful in helping recipients find employment, but it fails in promoting opportunities for career advancement. Currently, the average monthly wage is \$654 per month (\$7,848 per year), less than half of what is needed to reach the federal poverty level for a family of three – \$16,600 per year (Tennessee Department of Human Services 2004; United States Department of Health and Human Services 2006). Unfortunately, Families First is going to face even greater difficulties when serving its clients during this time of economic difficulties, decreasing funding (Figure 4-21), and rising caseloads.

Families First transportation assistance

Families First does, however, provide transportation assistance to aid in the transition from welfare to work. They provide public transportation passes, transportation reimbursement, no-interest car loans, and van services (Tennessee Department of Human Services 2005). The Tennessee Department of Human Services has identified transportation as a significant factor in whether or not welfare reform is a success for its clients. However, even though 74 percent of Families First participants receive transportation assistance, more programs are being cut than expanded. For example, the gas reimbursement amount has been reduced from \$6 per day to \$5 per day even though gas prices have soared recently. Transitional transportation assistance for those who leave the program because of employment has also been cut (Tennessee Department of Human Services 2004).

Even caseworkers have found that transportation services were not always available when their clients needed them. Initially, transportation benefits stopped as soon as customers received

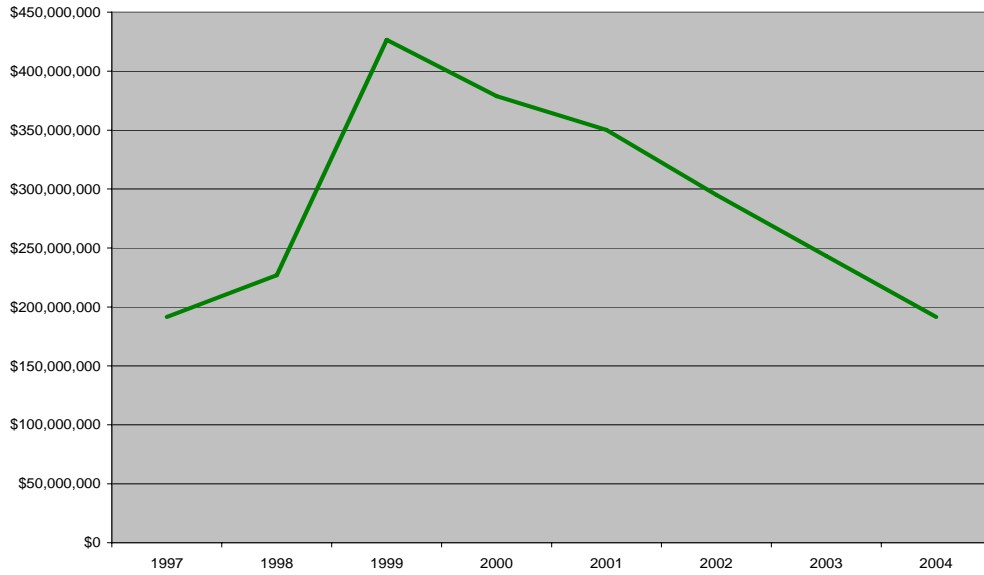


Figure 4-21. Federal funding for Tennessee's Families First program.

Source: Tennessee Department of Human Services (2005)

their first paycheck; this has been revised, but only to extend transportation benefits until the first “full-time” check is received. Holmes (1999) found that less than 65 percent of customers said they were satisfied with transportation assistance. And in Knoxville, for example, although Families First provides money for car repair, Sherry Williams, a single mother on welfare, found that she could not qualify for the aid until she attended job training classes. But, ironically, she could not get to training without having her car repaired (Mayshark 1998).

A program that *has* been expanded, however, is First Wheels (Tennessee Department of Human Services 2004). First Wheels, which began in April 2000, is a car loan program that provides up to approximately \$5000 toward a vehicle, with no required down payments, no interest, and low monthly payments that may include liability insurance. Payments are no less than \$50 per month, but no more than \$100 for those on cash assistance, or 30 percent of gross family income for those off cash assistance. The loan committee can award additional money for repairs. First Wheels staff will help a woman find a car, or she can find one on her own based on the amount awarded to her by the loan committee. Loans are awarded after all documentation is provided and paperwork is filled out (Figure 4-22), recommendation letters and any other supporting material are submitted, and an interview is conducted by the First Wheels loan committee. The program is available to Families First customers who have been working or going to school for at least one month, as well as to those who were in Families First, but whose cases were closed because of increased earnings (Tennessee Department of Human Services 2000).

SETTING THE STAGE

Knoxville, Tennessee clearly fits the model of a medium-size American city struggling to provide public transit to a growing population of working poor. In addition, Knoxville is a classic example of a sprawling city, which is the urban landscape of the future. In this context, Knoxville provides an excellent setting to examine the daily lives of working poor women to evaluate whether or not public transportation can provide the means to self-sufficiency. Urban growth, public transportation, work and residential location, poverty, and welfare reform all express themselves in this one particular place, making Knoxville a representative case study.

FAMILIES FIRST
First Wheels Revolving Loan

For All Applicants:

- _____ Verification of Current Resident of Tennessee
- _____ Personal Information Sheet Submitted
- _____ Copy of Valid TN Driver's License Submitted to DHS
- _____ Signed Release Form to Obtain Driving Record
- _____ Participant's Current Monthly Budget Sheet Submitted
- _____ Verification: Attended Financial Management Class
- _____ Verification: Attended Vehicle Maintenance Class
- _____ Case Manager Information for First Wheels Loan Committee

For Caretakers Receiving Cash Assistance:

- _____ Current Families First Eligibility for three months
- _____ Minimum One Month Participation in PRP Work/Education Component

For Caretakers off Cash Assistance:

- _____ Date when FF Benefits ended (within last 12 months)
- _____ Verification of Employment (35 or more hrs/wk past 3 months or,
- _____ Working 20 hrs/wk and in full-time post-secondary education

Figure 4-22. DHS checklist for application to the Families First loan committee.

Source: Knox County Department of Human Services (2002)

CHAPTER 5

RESEARCH DESIGN AND THE RESEARCH PROCESS

“Large national databases do not necessarily provide the best information for investigations of differences in the way women and men negotiate space...” It is important to base findings on local data that “reflect variations in the local context” (MacDonald 1999, 270).

THE NEED FOR AN INDIVIDUAL-LEVEL DATA SET

A primary individual-level data set is needed to test whether or not public transportation, even if substantially “overhauled,” will actually take the bulk of TANF customers to jobs, back home, and everywhere else within a reasonable period of time without having to sacrifice childcare, shopping, safety, and more in a medium-size American city like Knoxville, Tennessee. Individual-level data should be acquired to compare it to job location, support networks, and transportation availability in order to test whether *individuals’* patterns follow those predicted by theory.

There is a common bias toward aggregate data (individuals are examined as a *group*), however, because it is easier and less expensive to both gather and analyze. However, Shaw and Wang (2000) state that using aggregate models limits our understanding of individuals’ travel behavior. They argue that a *disaggregate* model can be used to better understand travel behavior rather than an aggregate model. They also state that travel should be examined in the context of time, space, and other constraints, rather than just trying to understand the trip itself. Individuals have to make choices within a time and space budget. Travel behavior results from temporal, spatial, and other qualitative decisions, thus travel studies, especially those involving multiple trips or trip chaining, require that the trips be examined as interrelated events. Travel data from multiple days is also important because of the variation of an individual’s day-to-day travel (Shaw and Wang 2000).

MacDonald (1999) agrees that aggregate analyses of commuting patterns may not provide definitive answers even though they help identify general trends and raise important questions about spatial mismatch, commuting length, and employment opportunities. Because of the difference between how things appear at the aggregate level compared to the individual level, this study requires that I examine people as individuals and, thus, disaggregate (examine the *individual*) travel behavior data in order to test assumptions. Welfare reform is based on aggregate data and trends and does not take individual-level data into account; aggregate data simply does not give a complete picture of the individual cases and patterns needed to determine

welfare recipients' coping strategies given their real-world alternatives. The complexity of everyday life will likely disprove the assumptions of aggregate-level data because aggregate-level data do not draw a complete picture of the poor, as they are too general and do not explore the temporal and spatial constraints the working poor face.

The first perspective I had on welfare reform came from sitting in the office reading and writing about welfare policy and programs. The second, more important perspective came while sitting in the living room of a woman who has been on welfare and is trying to make the transition to work under the new laws. Welfare appears to be a success in terms of caseloads, but the women need to be heard from in order to determine whether it really is a success. Important questions – what do they need access to? where specifically do they need to go and when? how much access do they already have? and is it effective or not? – can be answered through interviews and the acquisition of individual-level data. The success of welfare reform is difficult to evaluate because every locality – let alone every state – is different. However, by speaking with individuals, a clearer picture can be developed. The complex differences in women's transportation access, and the resulting effects on travel to work call attention to how important it is to examine the individual-level context where single, working poor mothers link their home and work lives (Johnston-Anumonwo, McLafferty, and Preston 1995).

Ethnographic research and examining differences among women

Ethnography is a research method that involves observing, studying, and learning about people or a social phenomenon. As interviews are conducted with specific, yet open-ended questions, ethnographers attempt to gather detailed information about a small set of respondents, rather than a small number of quantitative variables about a large number of respondents; subjective information is often more important objective data. Because ethnography does not involve statistical analysis, it involves not only description, but also interpretation, as the researcher needs to determine what is significant about what is observed and discussed in interviews. Thus, ethnography typically involves fieldwork in the respondent's own environment. Subjects are typically interviewed and observed multiple times to develop a deep understanding and clear picture of the respondent and issue being studied.

Ethnography is an important method of creating a data set – one that tells us what welfare reform policy and GIS do not; aggregate data tell us one thing while ethnography tells us another. These multiple one-on-one interviews can reveal how women's choices are influenced by welfare

policy, as well as by transportation and employment opportunities. Expressing interest in their everyday lives can evoke both ordinary and unexpected information.

Ethnographic research is closely linked to traditions in feminist geography, as an important strength of the feminist geography theory used in this research is a concern for the interactions of everyday life – a concern with the concrete and the mundane through space and time (Hanson 1992). There is a sharp focus on *context* in feminist geography, for as Hanson (1992) argues, one's context shapes one's view of the world and what is important. Thus, the one-on-one interviews with the women in this study were an attempt to bring out small details about their situations and more fully explain the constraints they face.

The interviews in this study will also be used to examine differences *among* women, based on factors such as race, ethnicity, family status, and life stage. Hanson (1992) recognizes that the relationship between the demands of work and home changes with life stage; people with the same responsibilities will use different strategies to combine the challenges of home and work. An important point brought out in feminist geography literature is the recognition that there is too great a difference *among* various groups of women to categorize them all together (Hanson 1992). Johnston-Anumonwo (1995) posits that researchers need to focus on differences among women to understand the diversity of their spatial behavior so that we avoid the assumption that all women act the same.

Thus, through in-depth interviews, this study will allow examination of the differences among women, including race, residential location, and marital and family status, as Pratt (1992) argues that we need to include more categories in policy-making than just men and women; we need to use multiple categories to include more sensitivity to differences among women, if we are to avoid the shortcomings and unintended consequences that characterize previous attempts at welfare reform that remained constrained by assumptions of universality.

CREATING THE DATA SET

In order to address the issues of whether or not public transportation will work for low-income single mothers in a medium-size American city, the data set for this study was developed through interviews with working, poor, single mothers in Knoxville, who are on welfare or making the transition off of welfare. The reason for focusing on this group is that they clearly face more challenges than other groups do as they attempt to achieve economic self-sufficiency for their families. Changes in the welfare system may *further* reduce their incomes, and the resulting instability will worsen their access to transportation and employment. Although welfare

reform promises new jobs, it does not mean that all women have access to transportation or affordable childcare to enable them to maintain employment.

Thus, the primary criteria for the respondents in this research initially included single women who are or have recently been welfare reliant, have children, are currently working/have recently worked/are currently seeking employment, have a private mode of transportation, and are living in subsidized housing. A secondary set of respondents was also selected, including women who do *not* have a private mode of transportation. The purpose was to examine how these women cope with their transportation constraints: do they take the bus or do they get rides from friends or relatives? What other means are available to them? The intent was also to assemble a sample of women who *do* ride the bus to find out why they do so (do they live in a particular place that makes it easy, or are they just lucky that their job is on the route?). Interviews and individual-level travel data were then analyzed to examine how the working poor cope and overcome barriers to work and self-sufficiency with the use of a private automobile.

Finding such respondents was not an easy task. I initially hoped to interview 30-50 women; in order to find respondents, I made contacts through the local human services offices and their related services, including the Knox County Department of Human Services (Families First clients), the Knoxville Community Development Corporation (public and subsidized housing residents), the Career Investment Academy (education and job search skills students), and a variety of subsidized childcare programs. Knowing that this process would be difficult, and that I would have to cope with issues of missed meetings, lack of phones to contact the women, I intended to take on as many respondents as possible.

Once I made it clear that a full human subjects review was completed to ensure the anonymity of the women (Appendix A), each of the organizations was receptive to my request to contact the women. To add credibility to the study in the eyes of the respondents, I first drafted a letter (Appendix B) that was then signed and mailed by a KCDC organizational representative, including a self-addressed stamped postcard to reply directly to me. I had no contact information for these women unless the respondent provided it to me; thus, they were only part of the study if they gave me their information – I did not contact them until they contacted me first. Having respondents ask their friends to participate also gave the study credibility among a population who is naturally suspicious of outsiders asking for personal information about their lives on welfare.

I received tremendous support from Knoxville's Community Development Corporation (KCDC) in finding respondents. Initially, graduates of the Career Investment Academy (CIA), a

training program that counts towards one's Personal Responsibilities Plan, were contacted. Only 12 of 149 responded, but because I was not able to contact them again (because of their lack of phone or lack of response to my subsequent mailings) or because of missed meetings, only eight were interviewed. I then attended an ongoing CIA class and interviewed another four respondents (out of 15 in attendance) and two of their friends. Needing more than just 14 respondents, I contacted KCDC's childcare/after school care director for assistance and another five respondents (out of 80 notified) were interviewed, for a total of 19 respondents. I received 29 positive responses out of the 247 I attempted to contact; however, because of unknown forwarding addresses, communication difficulties, or repeated missed meetings, only 19 were interviewed (Figure 5-1).

After an initial screening in the form of a brief telephone interview (when possible) to make sure that potential respondents met all of the criteria, I then set up interviews at their homes. At our first meeting, I provided respondents with a \$15 incentive for the approximately 60 to 90 minute interview; this incentive was in recognition of their participation, and for taking time out of their already busy and constrained lives. Each woman signed a consent statement (Appendix A) and was told that nothing she said would be associated with her real identity, but rather a pseudonym she chose. Photos were taken with the understanding that her name would not be associated with it, but that her photo does indicate that she is part of a study on working poor single mothers making the transition from welfare to work. To ensure confidentiality, all sessions were tape recorded, reviewed, and transcribed only by the author, with the permission of the respondent.

Structured, yet open-ended interview questions (Appendix C) were used to ensure consistency in how the questions were asked of each woman. Each respondent was interviewed for qualitative information, including her life history, life on welfare, work history, community interactions, budget information, and, most importantly, transportation patterns.

Each respondent was then asked to maintain a travel and activity diary (Appendix D) for at least five days to include a sample of work and off days as well as weekdays and weekend days. After giving a detailed explanation (Appendix D) of this travel and activity diary, including an example of my own travel day (Appendix D), I left each woman with 20 pages to record transportation information. She was asked to record the street address or closest intersection of her daily origin and destination location, as well as the start and end time, mileage, purpose, mode, various costs, and other information in the travel and activity diary. Respondents

Career Investment Academy – Graduates: 8/149

- 12 positive responses (3 no phone; 1 canceled 4 times and never rescheduled) = 8 respondents
- 43/149 letters were returned with no forwarding address; 1 requested to be removed from list

Career Investment Academy – Current students: 4/15

- 6 positive responses (2 were not reachable because they had no phone) = 4 respondents

Friends of Career Investment Academy respondents: 2/3

- 3 positive responses (1 no phone) = 2 respondents

KCDC subsidized childcare (Kid Base) and after school care (My Place): 5/80

- 8 positive responses (2 no phone; 1 canceled 2 times and never rescheduled) = 5 respondents

Summary

19 of 247 (7.7 percent) contacted were actually interviewed

19 of 29 (65.5 percent) who responded positively accepted an interview (the other 10 declined because of time constraints, no phone, or multiple cancellations)

Figure 5-1. Summary of how respondents were acquired for this study.

completed between one and 10 days (averaging six days), for a total of 107 days; only one person was uncomfortable with the task, and refused to complete the travel diary.

After the diaries were complete, I then met with each respondent for another approximately 30 minutes to collect and discuss her diary, address any gaps in her data, survey her about her travel that week, find out how she did (or would) deal with “exceptional trips” (a call into school, doctor visit, etc.), and ask any other questions that came up after reviewing their travel diary and first interview (Appendix E). Respondents received another \$15 incentive at this final meeting.

Data considerations and limitations

All interviews but one were held in the respondents’ homes, most of which were in public housing projects. Care was taken to meet the women at very specific times both for my safety and to ensure an on-time meeting, as many women did not have phones to make contact if we missed each other. In addition, many waited for me outside and then later walked me to my car after the interviews were over to ensure my safety in their communities. The main difficulties I experienced with the interviews were because of distraction in their homes (children playing and screaming, one child locking us out of the house as we conducted the interview on the front porch, or friends or neighbors stopping by). In addition, it was important, and difficult at times, to develop and maintain a sense of trust from the women, as many of the questions were personal and revealing about their economic situation. Most were comfortable, however, in knowing that I was not going to share their information with anyone for any purpose besides this research.

Although the intention was to obtain a large sample size, representative of the local welfare population, the difficulty in obtaining contact information for potential respondents proved to be a very limiting factor. Although I attempted to acquire more than the 19 respondents in this study, it was quite difficult because of agency confidentiality rules. In addition, privacy and suspicion of the respondents, as well as logistics related to the ability to contact the women via the telephone (close to one-third, nine of 29, of the initial respondents did not have phones) were limiting factors to finding more respondents. However, I feel that the sample is quite representative spatially, socially, and economically (Figure 5-2).

THE NEED FOR GIS IN EXAMINING WELFARE REFORM

Geographic Information Systems (GIS) is an effective tool to handle the data collected in this study for a number of reasons. The combination of temporal, spatial, and ethnographic data challenges transportation analysis (Shaw and Wang 2000). This study involves a tremendous

- **Location:** Residences span 11 miles east-to-west and 6 miles north-to-south;
- **Born/raised in Knoxville:** 68 percent (13 of 19); 3 were born/raised in other cities in Tennessee; 1 in Kentucky; 1 in New York, and 1 in Liberia (Africa)
- **Race:** 3 respondents are white (16 percent) and 16 are African American (84 percent)
- **Age:** Range 19-55 years; Average 30.5 years; Most in 20s and 30s (84 percent)
- **Marital Status:** None in an ongoing marriage; 17 (89.5 percent) single; 2 (10.5 percent) legally separated – of these single women, two admitted to being divorced, one is engaged (to a man who is incarcerated)
- **Children:** 89.5 percent (17 of 19) have children at home (including two legal guardianships); average less than 2 children per woman; 1 woman is 9 months pregnant; 1 woman has 4 children (only 3 are at home); 5 women have 3 children; children at home range from 7 months to 16 years
- **Education level:** 3 (16 percent) have a 2-year associate's degree; 5 (26 percent) are currently in a 2 or 4 year college program; 5 (26 percent) have graduated high school or equivalent (GED); 6 (32 percent) have not graduated high school or equivalent (GED)
- **Access to personal automobiles:** 10 have working automobiles; 3 borrow cars from friends/family; 2 have broken-down cars; 4 have no direct access to a vehicle
- **Employed/work-related activity:** 9 are employed (temp, part-time, or full-time); 7 are in school (college or through DHS); 3 were searching for work at the time of the interview
- **Common employment:** 3 have internships at Dollar General (clerk); 2 work in food service (Taco Bell; hospital); 2 work for temp services (office work); 1 is a pharmacy technician at a drug store; 1 works in customer service
- **Income outside of welfare/working:** 3 receive help from their family or their children's fathers; 4 "do hair"; 1 does "stuff"; 3 receive student loans/grants/work study

Figure 5-2. Characteristics of respondents' backgrounds and current situations.

volume of data, as a great deal of information was collected about the women's travel patterns and individual lives. GIS is necessary to examine these data and relationships among variables, which are complex because of the number of trips recorded. GIS is also useful for its database design capabilities, which is important for data query and analysis (Shaw and Wang 2000).

Mapping and analyzing individual women's situations will reveal numerous individual transportation constraints, uncovering patterns and difficulties that aggregate data sets do not address. Comparing women from different socio-economic backgrounds and with differential accessibility to employment will illustrate the differences in their constraints in getting to back and forth to work, training, childcare, and various service centers.

GIS allows for analysis of the adequacy of public transportation related to the location of childcare centers, employment opportunities, and other services relating to changes in welfare programs, for it is clear that welfare recipients who are making the transition to work face significant mobility challenges. Many of these working poor women do not have cars, but they do have complex travel patterns. Thus, GIS, along with the ethnographic research, can be a powerful tool to understand these mobility problems (Transportation Research Board 2000), as qualitative and quantitative data can be integrated.

The goal is to assess transportation needs and develop transportation strategies to help welfare recipients (and those making the transition to work) find and get to jobs efficiently. Shaw and Wang (2000) argue that mapping travel patterns of individuals or groups of individuals is useful for transportation planners, as they can examine spatial patterns and the spatial and temporal constraints of accessibility. This analysis can assist transportation planners identify and understand underserved populations and identify gaps in transit service.

Following the respondents: The use of Geographic Information Systems (GIS)

GIS is used in this research to incorporate many different types of information; it is used to both display and analyze data. For example, recipients' residences, job locations, and support services can be mapped in an attempt to measure welfare recipients' access to transportation and to assess their needs. GIS can also be used to identify how well the existing public transit system connects people to jobs.

I will also use GIS to visualize the spatial relationships and patterns of TANF clients with the many layers of support services, training facilities, childcare providers, employment opportunities, and of course, transportation. For example, bus routes were buffered to identify how many TANF clients, support services, and jobs fall within one-quarter mile (walking)

distance. In examining gaps in transit service, GIS can be used to illustrate spatial mismatch. Spatial mismatch can also be examined at different times of day based on the availability of night and weekend routes, as well as night and weekend childcare opportunities. The temporal component of GIS is becoming more important and can play a significant role in welfare to work planning.

The data collected from travel diaries were entered into a GIS to analyze the spatial characteristics of respondents' travel. This data set was then used to reconstruct their daily lives and transportation patterns as if they *did not* own or have the use of a car. Their costs in time, money, miles walked, deferred opportunities, and inconvenience were calculated to see what these women would have to change or sacrifice if they did not have the use of a car. The overall question is whether or not public transportation will take the bulk of the working poor to their jobs, back home, and everywhere else they need to go within a reasonable time without having to sacrifice things such as childcare, shopping, and other necessities. The results will illustrate how single, working, poor mothers would have to change their daily lives in order to use public transportation. GIS is a useful tool to allow the manipulation of data sets to identify important temporal and spatial patterns.

The effects of changing bus service can also be determined with GIS. The effect of adding new routes or even doubling existing routes can be predicted. Most importantly, the effects that access to a car would have on daily life patterns can be illustrated with GIS. The problem of daily travel is robust, and thus it is unlikely that one transportation scenario will solve transportation problems; however, GIS can clearly be of great assistance in planning.

Base layers and data sources

Although the focus of this analysis is the individual-level dataset collected from travel diaries, aggregate data sets are included in this analysis in order to visualize general spatial relationships. These data sets include the locations of public housing (where the poor are densely concentrated), characteristics of public housing residents, actual and potential employers, support services, such as training and human services offices, and the location, hours, and cost of childcare services. Additionally, public transportation routes are included to illustrate networks between these sites. These data sets create a partial picture of the people, their communities, and the constraints they face in getting back to work.

Some data sources were entered into databases from hard copy text files, and then address matched to a base street layer containing address ranges; some existing GIS files needed to be

edited to add additional information; other GIS or data files were simply converted to be useable in the ArcView GIS program. When dealing with human issues such as welfare, one has to be concerned with data quality, as well as accessibility of data; data considerations included formatting, dates of acquisition, reliability of sources, confidentiality restrictions, completeness, and accuracy.

A number of base files were acquired from the Knoxville-Knox County Metropolitan Planning Commission (MPC) (2002) for basic location purposes. These files include the county boundary and the city's boundaries from 1792 to 1999 to show the outward growth of the city. A road centerline file, complete with street names and accurate address ranges, also provided by MPC, was integral in accurately mapping all data in this research. This file is much more accurate than TIGER files provided by the United States Census.

The United States Census Bureau (1990 and 2000), however, is an excellent source to provide data at the tract, block group, and block level in order to establish a general profile of the economic and social conditions of the area, including variables such as: population, poverty, female headed households, access to automobile, and commute time. Data from both 1990 and 2000 are used to demonstrate changes in select variables over time.

Families First clients' locations are, of course, critical to any analysis of transportation issues and the working poor. However, it is often difficult to obtain this information because it is confidential (as it *should* be), and is thus not easy to obtain. The Knox County Department of Human Services (2001) provided this data; however, it had to be aggregated and mapped by ZIP code to ensure confidentiality. Another method of displaying the location of the working poor is to display public housing. A number of hours were spent with Billie Spicuzza, the Vice President of Housing at the local public housing authority reconciling the data provided by the United States Department of Housing and Urban Development (HUD) (Burke 1998). Surprisingly, many of the records were incomplete, contained incorrect addresses, and did not differentiate public housing projects from scattered Section 8 housing units or senior citizen apartment complexes subsidized by HUD. Spicuzza was quite interested in the data and resulting maps, and thus was motivated to assist in reconciling and removing flaws from the database.

To provide a complete picture of the life of the working poor in Knoxville, a variety of services locations, including schools, childcare, welfare support offices, health care, and shopping centers were acquired from a variety of sources, including MPC, human service agencies, and even the phone book. Addresses were reconciled and then geocoded to the MPC digital street map. Childcare providers were also mapped from a database provided by the Knox County

Community Action Committee Childcare Connection, including hours of operation, program costs, funding sources accepted, range of ages, as well as those that provide transportation and at what cost (most do not provide transportation).

In addition to services, when examining the daily life of the working poor in Knoxville, naturally employer and employment-related activities also need to be mapped. The Metropolitan Planning Commission had already mapped employers by type (office, industry, and shopping). In addition, large employers (ranked by number of jobs) were entered into a new database, then geocoded from a text file provided by the Chamber of Commerce (Knoxville Area Chamber Partnership 2000). These data sets do not represent employment opportunities specifically for the working poor, but they do, however, provide a picture of the location of employment centers in Knoxville and Knox County. In addition, employment-related sites, including job training and other educational opportunities, as well as their hours of operation, were also mapped from text files provided by the Department of Human Services (2000). Acquiring the names and addresses of sites from the phone book completed this data set.

Finally, public transportation must be mapped in order to complete this research. Every fixed route, including days and hours of operation were acquired from the Knoxville-Knox County Metropolitan Planning Commission (2002).

The GIS process: Travel and activity diaries

The data collected from travel diaries were entered into a GIS to map the travel of each respondent in order to illustrate specific origin-destination patterns, as well as the constraints that different types of households face. In an attempt to integrate qualitative and quantitative data, information about the individual and household was also collected and integrated into the GIS analysis. Thus, each of the 607 stops and all corresponding data were entered into a database in ArcView (Figure 5-3). Each origin site was then geocoded to its correct street address. Ten stops were not geocoded, however, because the respondent had moved out of Knoxville to Anderson County, Tennessee; these 10 stops were entered into the database and analyzed, but not included in the *spatial* analysis that follows in subsequent chapters. Many of the data had to be reconciled (e.g., looking up and correcting street addresses or filling in obvious missed information) then geocoded with ArcView onto the road centerline file provided by the Metropolitan Planning Commission (2002). An “end of route” record was added to each “home-based” trip in order to add a stop in the GIS for the final destination; thus an origin and a destination point define each

Knox County -- Background Maps

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Attributes of Stops.shp

Shape	ID	Stops	Label	Route/addr	Date	Day	Weekend	Length/mi	Time/bk	O_time	D_time	O_place	O_address	D_place	D
Point	SH	1	SH01	SH1	20010919	Wednesday	False	5	0	0715	0720	HOME	1609 Henrietta Ave	Green Magnet School	800 T
Point	SH	3	SH03	SH1	20010919	Wednesday	False	5	1	0725	0730	Kid Base	400 Harriet Tubman St	HOME	1609
Point	SH	4	SH04	SH1	20010919	Wednesday	False	0	0	0730		HOME	1609 Henrietta Ave	END OF ROUTE RECORD	
Point	SH	5	SH05	SH2	20010919	Wednesday	False	20	75	0845	0905	HOME	1609 Henrietta Ave	Pellissippi State Comm. College	3435
Point	SH	6	SH06	SH2	20010919	Wednesday	False	15	295	1400	1415	Pellissippi State Comm. College	3435 Division St	Knox Post Office Credit Union	1237
Point	SH	8	SH08	SH2	20010919	Wednesday	False	0	0	1445		HOME	1609 Henrietta Ave	END OF ROUTE RECORD	
Point	SH	9	SH09	SH3	20010919	Wednesday	False	10	120	1645	1655	HOME	1609 Henrietta Ave	Boys & Girls Club	317 N
Point	SH	10	SH10	SH3	20010919	Wednesday	False	10	5	1700	1710	Boys & Girls Club	317 McConnell St	Kid Base	400 T
Point	SH	11	SH11	SH3	20010919	Wednesday	False	5	1	1710	1715	Kid Base	400 Harriet Tubman St	HOME	1609
Point	SH	12	SH12	SH3	20010919	Wednesday	False	0	0	1715		HOME	1609 Henrietta Ave	END OF ROUTE RECORD	
Point	SH	13	SH13	SH4	20010920	Thursday	False	5	0	0705	0710	HOME	1609 Henrietta Ave	Green Magnet School	800 T
Point	SH	15	SH15	SH4	20010920	Thursday	False	5	1	0715	0720	Kid Base	400 Harriet Tubman St	HOME	1609
Point	SH	16	SH16	SH4	20010920	Thursday	False	0	0	0720		HOME	1609 Henrietta Ave	END OF ROUTE RECORD	
Point	SH	17	SH17	SH5	20010920	Thursday	False	15	25	0745	0800	HOME	1609 Henrietta Ave	Health Department	140 C
Point	SH	18	SH18	SH5	20010920	Thursday	False	15	70	0910	0925	Health Department	140 Dameron Ave	Kid Base	400 T
Point	SH	19	SH19	SH5	20010920	Thursday	False	28	1	0925	0953	Kid Base	400 Harriet Tubman St	Pellissippi State Comm. College	3435
Point	SH	20	SH20	SH5	20010920	Thursday	False	25	247	1400	1425	Pellissippi State Comm. College	3435 Division St	HOME	1609
Point	SH	21	SH21	SH5	20010920	Thursday	False	0	0	1420		HOME	1609 Henrietta Ave	END OF ROUTE RECORD	
Point	SH	22	SH22	SH6	20010920	Thursday	False	5	115	1620	1625	HOME	1609 Henrietta Ave	Kid Base	400 T
Point	SH	23	SH23	SH6	20010920	Thursday	False	15	5	1630	1645	Kid Base	400 Harriet Tubman St	Boys & Girls Club	317 N
Point	SH	24	SH24	SH6	20010920	Thursday	False	5	1	1645	1650	Boys & Girls Club	317 McConnell St	HOME	1609
Point	SH	25	SH25	SH6	20010920	Thursday	False	0	0	1650		HOME	1609 Henrietta Ave	END OF ROUTE RECORD	
Point	SH	26	SH26	SH7	20010921	Friday	False	5	0	0745	0750	HOME	1609 Henrietta Ave	Green Magnet School	800 T
Point	SH	28	SH28	SH7	20010921	Friday	False	3	2	0805	0808	Kid Base	400 Harriet Tubman St	HOME	1609
Point	SH	29	SH29	SH7	20010921	Friday	False	0	0	0808		HOME	1609 Henrietta Ave	END OF ROUTE RECORD	
Point	SH	30	SH30	SH8	20010921	Friday	False	12	30	0838	0850	HOME	1609 Henrietta Ave	DHS	2700
Point	SH	31	SH31	SH8	20010921	Friday	False	10	1	0850	0900	DHS	2700 Middlebrook Pike	Pellissippi State Comm. College	3435
Point	SH	32	SH32	SH8	20010921	Friday	False	30	300	1400	1430	Pellissippi State Comm. College	3435 Division St	HOME	1609
Point	SH	33	SH33	SH8	20010921	Friday	False	0	0	1430		HOME	1609 Henrietta Ave	END OF ROUTE RECORD	
Point	SH	34	SH34	SH9	20010921	Friday	False	10	1	1430	1440	HOME	1609 Henrietta Ave	Kroger	2217
Point	SH	35	SH35	SH9	20010921	Friday	False	15	50	1530	1545	Kroger	2217 N Broadway	HOME	1609
Point	SH	36	SH36	SH9	20010921	Friday	False	0	0	1545		HOME	1609 Henrietta Ave	END OF ROUTE RECORD	
Point	SH	37	SH37	SH10	20010922	Saturday	True	15	0	1800	1815	HOME	1609 Henrietta Ave	Friend's home	3400
Point	SH	38	SH38	SH10	20010922	Saturday	True	30	225	2200	2230	Friend's home	3400 Ashland Ave	HOME	1609
Point	SH	39	SH39	SH10	20010922	Saturday	True	0	0	2230		HOME	1609 Henrietta Ave	END OF ROUTE RECORD	

Knox County -- Background Maps

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Attributes of Stops.shp

O_address	D_place	D_address	Desttype	Purpose	Work_offcd	Means	Modeas	Nonvehicl	Accepts	Self	Notes
1609 Henrietta Ave	Green Magnet School	800 Town View Dr	school	drop child(ren)	work day	car	driver	3	False	self	\$20 gas
400 Harriet Tubman St	HOME	1609 Henrietta Ave	residence	home	work day	car	driver	1	False	self	
1609 Henrietta Ave	END OF ROUTE RECORD								False	self	
1609 Henrietta Ave	Pellissippi State Comm. College	3435 Division St	school (adult)	school	work day	car	driver	1	False	self	
3435 Division St	Knox Post Office Credit Union	1237 E Weisgarber Rd	bank/finance	banking	work day	car	driver	1	False	self	
1609 Henrietta Ave	END OF ROUTE RECORD								False	self	
1609 Henrietta Ave	Boys & Girls Club	317 McConnell St	school	pick up child(ren)	work day	car	driver	1	False	self	
317 McConnell St	Kid Base	400 Harriet Tubman St	day care	pick up child(ren)	work day	car	driver	2	False	self	
400 Harriet Tubman St	HOME	1609 Henrietta Ave	residence	home	work day	car	driver	3	False	self	
1609 Henrietta Ave	END OF ROUTE RECORD								False	self	
1609 Henrietta Ave	Green Magnet School	800 Town View Dr	school	drop child(ren)	work day	car	driver	4	False	self	
400 Harriet Tubman St	HOME	1609 Henrietta Ave	residence	home	work day	car	driver	2	False	self	
1609 Henrietta Ave	END OF ROUTE RECORD								False	self	
1609 Henrietta Ave	Health Department	140 Dameron Ave	office	recert. appointme	work day	car	driver	2	False	self	
140 Dameron Ave	Kid Base	400 Harriet Tubman St	day care	drop child(ren)	work day	car	driver	2	False	self	
400 Harriet Tubman St	Pellissippi State Comm. College	3435 Division St	school (adult)	school	work day	car	driver	1	False	self	
3435 Division St	HOME	1609 Henrietta Ave	residence	home	work day	car	driver	1	False	self	
1609 Henrietta Ave	END OF ROUTE RECORD								False	self	
1609 Henrietta Ave	Kid Base	400 Harriet Tubman St	day care	pick up child(ren)	work day	car	driver	1	False	self	
400 Harriet Tubman St	Boys & Girls Club	317 McConnell St	school	pick up child(ren)	work day	car	driver	2	False	self	
317 McConnell St	HOME	1609 Henrietta Ave	residence	home	work day	car	driver	3	False	self	
1609 Henrietta Ave	END OF ROUTE RECORD								False	self	
1609 Henrietta Ave	Green Magnet School	800 Town View Dr	school	drop child(ren)	work day	car	driver	3	False	self	
400 Harriet Tubman St	HOME	1609 Henrietta Ave	residence	home	work day	car	driver	1	False	self	
1609 Henrietta Ave	END OF ROUTE RECORD								False	self	
1609 Henrietta Ave	DHS	2700 Middlebrook Pike	office	drop forms	work day	car	driver	1	False	self	
2700 Middlebrook Pike	Pellissippi State Comm. College	3435 Division St	school (adult)	school	work day	car	driver	1	False	self	
3435 Division St	HOME	1609 Henrietta Ave	residence	home	work day	car	driver	1	False	self	
1609 Henrietta Ave	END OF ROUTE RECORD								False	self	
1609 Henrietta Ave	Kroger	2217 N Broadway	store	shopping	work day	car	driver	1	False	self	
2217 N Broadway	HOME	1609 Henrietta Ave	residence	home	work day	car	driver	1	False	self	kids got rides home
1609 Henrietta Ave	END OF ROUTE RECORD								False	self	
1609 Henrietta Ave	Friend's home	3400 Ashland Ave	residence	visit friend	off day	car	driver	2	False	self	other son spend day with dad
3400 Ashland Ave	HOME	1609 Henrietta Ave	residence	home	off day	car	driver	2	False	self	other son spend day with dad
1609 Henrietta Ave	END OF ROUTE RECORD								False	self	

Figure 5-3. ArcView GIS database design for all stops.

trip. Each stop was assigned a unique identifier using the respondents' initials and the stop number it was for that respondent. See Appendix F for a summary of respondents' trips.

One hundred and seventy four home-based routes were created from these stops (Figure 5-4) with Network Analyst in ArcView (there were a total of 177 routes; however, three were "riding" around town, so both origin and destination were "Home," with no clear destinations in between). Because I did not collect data on the actual trip *paths*, the shortest paths between each pair of trip origin and destination sites were derived from Network Analyst; therefore these shortest paths may not match exactly with the actual trip paths taken by the respondents. Each of these routes was then assigned a unique identification code using the respondents' initials and the route number. See Appendix F for a summary of respondents' routes.

In addition, a generalized travel area was created for each woman's travel over the days she kept the travel and activity diary. This can be used for further work in activity-based travel, as Kwan (1999) argues that keeping a travel area small is a coping mechanism for dealing with mobility constraints (Figure 5-5). See Appendix F for a summary of respondents' travel areas.

All of these tables were then related (i.e., or linked to each other based on their unique identifiers) in order to perform queries and analysis on the stops database, trips/routes database, and travel area. Stops and routes were then queried for numerous patterns. The data were queried in a number of ways, including whether there were different patterns on different days; this includes days of the week, as well as "work days" compared to "off days." Patterns within a travel day were also identified by examining trip chaining events compared to single-stop trips. In addition, simple journey-to-work days were compared to multiple-trip days.

Individual trips were also examined by comparing work and non-work trips. The purpose and destination type of each trip were also examined. These purposes and destinations were then analyzed at different times of days to see how they correspond with fixed-route bus service. Trip length was measured and examined, including both the distance and time of the trip. Trip length was then compared, examining short trip days and long trip days. Although some geographers (Kwan 2001) researching activity-based travel argue that only *distance* should be measured, because people often round their time or roughly estimate it when they fill out their travel diary at the end of the day, I argue, however, that although these constraints do exist, it is absolutely necessary to examine *time* as well, especially when comparing public transit to personal automobile travel. Thus, duration and frequency of trips were also examined. Modes of travel (personal automobile, bus, walking, taxi, etc.) were analyzed, as was whether each trip was made with the respondent as the driver or passenger (and if she was the driver, did she make an

Shape	Path_id	F_label	T_label	F_cost	T_cost	Length	Miles	Initials	Routeid	Minibus	Mindriving
PolyLine	1	WD01	WD02	0.000	2693.486	2693.486	0.51	WD	WD1	2.22	5
PolyLine	1	WD02	WD03	2693.486	5386.972	2693.486	0.51	WD	WD1	2.22	5
PolyLine	2	WD04	WD05	5386.972	30860.070	25473.098	4.82	WD	WD2	20.96	15
PolyLine	2	WD05	WD06	30860.070	88339.984	57479.914	10.89	WD	WD2	47.35	30
PolyLine	2	WD06	WD07	88339.984	169536.266	81196.282	15.38	WD	WD2	66.87	45
PolyLine	3	WD08	WD09	169536.266	250732.563	81196.297	15.38	WD	WD3	66.87	40
PolyLine	3	WD09	WD10	250732.563	308212.500	57479.937	10.89	WD	WD3	47.35	35
PolyLine	3	WD10	WD11	308212.500	333685.594	25473.094	4.82	WD	WD3	20.96	15
PolyLine	4	WD12	WD13	333685.594	334580.500	894.906	0.17	WD	WD4	0.74	5
PolyLine	4	WD13	WD14	334580.500	335475.406	894.906	0.17	WD	WD4	0.74	5
PolyLine	5	WD15	WD16	335475.406	416671.688	81196.282	15.38	WD	WD5	66.87	30
PolyLine	5	WD16	WD17	416671.688	497867.969	81196.281	15.38	WD	WD5	66.87	40
PolyLine	6	WD18	WD19	497867.969	522389.063	24521.094	4.64	WD	WD6	20.17	15
PolyLine	6	WD19	WD20	522389.063	546910.188	24521.125	4.64	WD	WD6	20.17	15
PolyLine	7	WD21	WD22	546910.188	628106.500	81196.312	15.38	WD	WD7	66.87	30
PolyLine	7	WD22	WD23	628106.500	709302.750	81196.250	15.38	WD	WD7	66.87	40
PolyLine	8	WD24	WD25	709302.750	713494.438	4191.688	0.79	WD	WD8	3.43	5
PolyLine	8	WD25	WD26	713494.438	717686.125	4191.687	0.79	WD	WD8	3.43	5
PolyLine	1	TP01	TP02	0.000	23260.639	23260.639	4.41	TP	TP1	19.17	10
PolyLine	1	TP02	TP03	23260.639	27584.211	4323.572	0.82	TP	TP1	3.57	10
PolyLine	1	TP03	TP04	27584.211	57702.680	30118.469	5.70	TP	TP1	24.78	35
PolyLine	1	TP04	TP05	57702.680	79196.117	21493.437	4.07	TP	TP1	17.70	20
PolyLine	2	TP06	TP07	79196.117	92662.844	13466.727	2.55	TP	TP2	11.09	10
PolyLine	2	TP07	TP08	92662.844	106129.578	13466.734	2.55	TP	TP2	11.09	10
PolyLine	3	TP09	TP10	106129.578	163737.234	57607.656	10.91	TP	TP3	47.43	30
PolyLine	3	TP10	TP11	163737.234	221344.906	57607.672	10.91	TP	TP3	47.43	30
PolyLine	4	TP12	TP13	221344.906	248177.828	26832.922	5.08	TP	TP4	22.09	15
PolyLine	4	TP13	TP14	248177.828	268220.531	20042.703	3.80	TP	TP4	16.52	15
PolyLine	4	TP14	TP15	268220.531	276790.344	8569.813	1.62	TP	TP4	7.04	15
PolyLine	5	TP16	TP17	276790.344	308793.969	32003.625	6.06	TP	TP5	26.35	30
PolyLine	5	TP17	TP18	308793.969	340797.594	32003.625	6.06	TP	TP5	26.35	30
PolyLine	6	TP19	TP20	340797.594	364058.219	23260.625	4.41	TP	TP6	19.17	10
PolyLine	6	TP20	TP21	364058.219	368381.781	4323.562	0.82	TP	TP6	3.57	20
PolyLine	6	TP21	TP22	368381.781	395214.719	26832.938	5.08	TP	TP6	22.09	25
PolyLine	7	TP23	TP24	395214.719	420103.938	24889.219	4.71	TP	TP7	20.48	13

Figure 5-4. ArcView GIS database design for all routes.

Shape	Initials	Area	Perimeter	Sqmiles
Polygon	SJ	64468623.152	33158.169	2.31
Polygon	BE	1060291854.462	175058.968	38.03
Polygon	WD	239893257.585	160303.798	8.60
Polygon	MW	396370749.975	122903.957	14.22
Polygon	FN	132769576.753	123677.886	4.76
Polygon	MK	754163706.047	164335.422	27.05
Polygon	LW	85418279.457	54782.024	3.06
Polygon	TP	732189501.322	145299.008	26.26
Polygon	DY	606219652.821	112491.772	21.75
Polygon	MZ	271176818.920	70634.282	9.73
Polygon	GR	389906826.718	100820.471	13.99
Polygon	MF	1820090310.145	206718.267	65.29
Polygon	MP	318994024.543	134866.410	11.44
Polygon	MS	102082062.970	83880.831	3.66
Polygon	SG	272904109.604	104349.319	9.79
Polygon	SH	362536250.573	122885.215	13.00
Polygon	TJ	257720023.407	165339.049	9.24

Figure 5-5. ArcView GIS database design for travel area.

“unnecessary” trip for a passenger). Planned trips were also compared to emergency or unexpected trips based on time of day and correspondence with fixed-route public transportation service. Finally, the time that lapsed between consecutive trips was examined.

The GIS process: Recreating the respondents’ trips without the use of a car

After the routes were created and analyzed in ArcView, I reconstructed the women’s daily lives and transportation patterns as if they did not own or have the use of a car. This was done for more than one-third of the trips (218/607 trips or 32/107 days), to include a representative variety of “work days,” “off days,” weekdays and weekend days. The intent was to examine costs and constraints in terms of time, money, miles walked, deferred opportunities, and inconvenience to see what these women would have to change or sacrifice if they did not have the use of a car.

When selecting which days to recreate, I chose one “work day” and one “off day” for each woman. If she was unemployed, I recreated two off days. I attempted to choose days that were not the most or least traveled days, but the most typical for each woman. I also chose odd samples: someone who worked on Saturday instead of a weekday, because buses run less frequently (or not at all) on Saturdays. Infrequently, there was no choice involved, because the woman may have had only one work day or one off day in the sample, so there was no choice but to recreate that day.

I proceeded to recalculate the day’s travel in terms of cost and time without the use of a car. The new travel scenarios include walking, riding the bus, using Call-A-KAT, and sometimes using a taxi. I used KAT’s paper bus route maps, as well as these same routes entered in a GIS, to recreate their trips as if they did not have the use of a car. I examined options for all routes that were within walking distance (20 minutes walk, or one mile), not just those that passed directly in front of the origin or destination point, as it may be easier to walk several minutes to a bus, rather than having to walk, transfer, and wait for a bus that comes to the nearest corner. It is important to note that this assumption (walking 20 minutes) is a much greater area that KAT’s assumed ¼ mile (five minute walk) service area. This analysis also makes the assumption that these women *can* walk; it does not consider overall health, pregnancy, weather conditions, carrying packages or children, whether or not there are sidewalks, or if the area is safe. I chose the walking or bus option when possible (based on available routes, day of the week, and time of day); if taking the bus was not possible, the next option I chose for the women was the Call-A-KAT service if available at that particular day and time. Excluding “exceptional” or emergency trips, I gave the

women the benefit of the doubt in these ideal situations and assumed that they had planned their trips 24 hours in advance and would be able to use Call-A-KAT. If these options were not possible, and the trip was deemed “necessary,” (e.g., a trip to work), I chose the taxi option as a last resort.

Another constraint of the travel diary data is that it was often difficult to determine whether or not trips were flexible. For example, if someone spent 60 minutes at Wal-Mart, I recreated her trip on the bus with 60 minutes at Wal-Mart. If they were at home or a friend’s house for two, three, or four hours, I had them *depart* at the actual time they recorded (assuming they left at a certain time to arrive at the next place at a set time) instead of having them *stay* exactly the amount of time they recorded (assuming that time at home or at a friend’s house was flexible). I had to simply use my best judgment in these cases, and had to cut a number of these stays shorter in order for them to make the next necessary bus connection. In hindsight, adding a “flexible or scheduled” field on the data sheet would have provided me with more information to better recreate their trips. Because of the rules I used in recreating the trips, an ideal traveler would sometimes miss a bus by only minutes; however, if I knew that certain trips were somewhat flexible, I could, for example, assume that she could leave three minutes early to get to her bus on time.

To determine the *cost* of the trip, I had to examine the number of riders and their ages (fares are \$1.00 for adults (\$0.20 for transfers), \$0.50 for school age children; children under five are free). I assumed the woman would only pay for herself and her children, not others who might have been riding in a car with her. For taxi fares, I split the cost between friends and relatives that were riding with her. Cost was often difficult to compare because many women were passengers and did not record that they paid their friend or family member anything on *that* particular day; they may have paid them later, so it may have cost them more (or less) than it appears on the recreated trips spreadsheet (Appendix G and Appendix H). It was also difficult at times to accurately figure the cost *with* a car. I assumed an operating cost of \$0.33 per mile (the rate for Knox County and the University of Tennessee reimbursement at the time). However, many women were borrowing cars or getting rides; thus, I recorded the cost as zero if she was a passenger, but also recorded when they bought gas or gave money to a friend.

Determining *time* was also difficult, as the women estimated their own travel time and I had no choice but to trust their accuracy. This was a problem when recreating their trips on the bus, as they could have apparently missed the bus by just one minute, when they may have actually *made it* because they were simply rounding their time when they recorded it. Another important

consideration regarding time is the fact that paths driven are different on the bus compared to in a car. ArcView creates the shortest route, while the buses seldom use the shortest route.

The GIS process: Changing bus service to reduce the constraints and inconvenience

If these new public transportation-reliant scenarios were found to be unsatisfactory, I examined the changes, if any, that might decrease the constraints of using public transportation. For example, what if bus frequency was doubled and service hours were extended: how would that change the time budget? I made these changes to a sample of cases and then calculated the costs again to see how it would change the time, cost, and convenience involved.

My assumption before this analysis was that it would not matter if KAT invested *much more* money into service provision; it still would not bring the time budget within reasonable constraints, and there will still be places these women could not go. I expected to find that, because of the urban morphology of a medium-size city, as well as the constraints single, poor, working mothers face, public transportation could not be made to work for this population in a city like Knoxville within any reasonable constraints.

CHAPTER 6

THE LIVES AND DAILY MOVEMENTS OF INDIVIDUAL WORKING POOR WOMEN

“What’s standing in the way the most is my transportation. I need to get my car fixed. That’s the only thing I really, really need. If I get my car fixed I know I can get to and from. That’s what I need is my car. I need my car to be fixed. Then I can make things happen.” (Diamond Young)

ETHNOGRAPHIES OF THE WORKING POOR

Introduction to the women’s lives

A diverse group of 19 women were interviewed for this study (Table 6-1). While their lives vary in terms of employment, access to automobiles, number and age of children, family networks, and expectations for self-sufficiency, they all face the same basic challenges of mobility. These women lead very active lives and face similar transportation constraints while keeping up with their busy lives.

Betty Elliott

Betty Elliott is a 38-year-old, white, divorced mother of two (ages seven and 16). She is currently attending college at both Pellissippi State and the University of Tennessee, after she chose to quit work to be a full time student. “I was working, but \$12,000 for three people is not a lot of money.” She currently receives financial aid for school, as well as welfare benefits, including \$185 per month for Families First and HUD assistance for her apartment rent. She has been on welfare since 1994, and has only received “maybe \$300 in child support” for both children.

In order to get herself and her children to school, as well as get them to after school activities, she feels lucky to have a reliable car; her mother bought it for her, but kept it in her name so it would not adversely affect Betty’s receipt of benefits. “I’m lucky. My parents have provided me with a car. I have a car and a lot don’t. But even if you have one, you need tires and an oil change ends up being \$168!” To make ends meet, her mother gives her a lot of support, including paying for such car repairs.

Betty wants to go to work even while she is currently attending school, “but I go in and tell them I can’t work nights and I don’t want to work weekends. And they just say ‘you don’t have a job,’ but I just can’t compromise. I have to have time with my kids. I am the responsible parent here.” So “I try to work my schedule to where I drop them off, then I go to class, then I can pick them up. And then to have to try to work on top of that...”

Table 6-1. Summary of respondents' general characteristics

Pseudonym	Race	Age	Marital Status	Children At Home	Work or School	Own Car
Betty Elliott	W	38	Single	2	school	Y
Diamond Young	B	19	Single	1	work	Broken
Faye Nicks	B	26	Single	NO	work	Y
Grace Randolph	B	55	Single	1	work	N
Lisa White	B	34	Single	3	NA	N
Malika Felton	W	37	Single	2	NA	Broken
Michelle Kelly	B	22	Single	3	school	Y
Monique Pride	B	21	Single	2	work	Y
Mary Stevens	B	26	Single	3	work	N
Monica Williams	B	31	Single	3	school	Y
Mahogany Zaire	B	27	Separated	Pregnant	work	N
Sharon Griffen	W	28	Separated	3	school	N
Sabrina Henkins	B	33	Single	2	school	Y
Summer Hunt	B	29	Single	2	work	Y
Sheena Jordan	B	22	Single	2	school	Y
Sally Malone	B	48	Single	1	NA	N
Tracy Jones	B	24	Single	1	school	Y
Tracy Pruett	B	21	Single	1	work	N
Whitney Davis	B	39	Single	2	work	Y
SUMMARY	16 black 3 white	average: 30.5 range: 19-55	17 single 2 separated	average: 1.8 range: 0-3	9 work 7 school 3 NA	10 yes 7 no 2 broken

Diamond Young

Diamond Young is the youngest respondent at 19 years of age. This single, black woman with a 5-year-old son lives with her mother, sister, and niece. She recently began receiving a monthly \$142 Families First check and approximately \$65 for transportation every two weeks. Diamond, however, was recently sanctioned off welfare benefits because “I walked out of school last week because she wasn’t talking to me right. I went back Monday and they gave me a letter and they was discharging me from the program. Since they done put me out of the Academy, I got to start all over again. I’ve got to hurry up before they cut my checks out. I don’t even know who my caseworker is. I didn’t even want to fool with it, but I need it.”

The reason she says she is on welfare in the first place is because her 1983 Oldsmobile Delta 88 is currently “in da’ shop.” This makes getting to her 20 hours per week internship at the Dollar General store difficult without her family’s help. Her mother drops her son off at school, but Diamond feels she needs her car fixed to get to work. Even though she does not want to receive benefits because “they need to know too much information and they need to be in your business,” she signed up for benefits “because the only way they could fix my car is if I was on Families First. They sent me a referral last month, but I had to let it expire because I couldn’t find no shop to come tow it from my house... I locked the motor up in it. CAC, they pay for the towing and everything, but they didn’t never come tow it. They were always like they were going to send somebody.” Diamond sees herself with her GED and in hair school in a year and eventually wants to become a nurse; however, with her car broken down for over three months, it is unclear if borrowing her mother’s car to drive to school and work will be enough in the long run. After talking about her broken down car for over five minutes, she summarized, “what’s standing in the way the most is my transportation. I need to get my car fixed. That’s the only thing I really, really need. If I get my car fixed I know I can get to and from. That’s what I need is my car. I need my car to be fixed. Then I can make things happen.”

Faye Nicks

Faye Nicks is a shy, 26-year-old, single, black woman who would not let us meet at her home because her father was there (the details of this situation were never explained). She is one of two women in the study who does not have a child in her care (the other woman is nine months pregnant). She graduated from high school in Knoxville and attended Pellissippi State off-and-on for six years. Although she was not working at the time of the initial interview, she began a customer service jobs that week at Ed South.

Through the interview, I could tell that Faye clearly has some deep-seated emotional and depression problems, as a majority of the first thirty minutes of the interview was about her troubles (the victim of verbal and physical pain) in school, as she “was one of the nerds, the freaks, and the weirdos.” Her focus at that time, however, was on “going to school and finishing.” Even with her high school diploma and a number of college-level courses, she has problems keeping a job. “It seems like employers are telling me I’m not good enough. Why don’t you go back for more training? I’m getting this crap left and right, and God, I just want to work. Some people are scared of black people and are skeptical of me because of where I live. They were scared I might steal something from them... I get tired of going through every single training there is to get a job. They say that black people don’t want to work... all they want to get drunk and lay up and sleep and do all this other stuff. With me, it’s not true.” Thus, she is “just scattered around with jobs right now” and currently doing temp work. Luckily, she has a reliable car that she purchased just over a year ago and her travel patterns include little more than going to work. Although she is not settled in her life or her career, she does not face many transportation constraints, as she has her own car and no one else relying on her for transportation.

Grace Randolph

Grace Randolph is the oldest respondent in the study. At 55 she has lived in the Lonsdale “projects” all her life; however, she recently received a \$500 Section 8 voucher to find a private house to rent. This single, black woman has no children of her own at home, but has had legal custody of her 13-year-old grandson for nine years. She receives a Families First check for \$143 a month, \$225 per month in Food Stamps, Knoxville Utilities Board (KUB) assistance up to \$100, and pays no rent on her apartment. She began receiving Families First after her aunt died; Grace quit working in 1986 in order to care for her aunt who was bedridden and needed 24-hour care. Now that her grandson is a teenager, Grace is working toward her GED, and has been able to find temporary employment in an office setting.

Getting herself to work and her grandson to school has posed a significant challenge for Grace, however. She no longer has a car, but is able to borrow one occasionally; she takes the bus one or two times a week when she cannot borrow a car. Her grandson is often picked up and dropped off at school and activities by friends and family, but she has to pay \$2-3 each time. Recently a friend gave her a car “to get back and forth to work because I had the internship at the Dollar Store and I really needed transportation. It needed some work done on it. CAC gave me \$800 to get work done on it. Then this guy hits me. Tore up my car, tore up my glasses, now I’ve

got nothing. I had all that work done in January and he hit me on February 25th. I have been without a car for a month... So I'm catching the bus now going back and forth to school. I had to let the internship go because of transportation." Grace's role as a family caretaker has taken her out of the workforce for some time, but now that she is ready to go back to work, transportation has proven to be a significant barrier.

Lisa White

Lisa White is a 34-year-old, single, black mother of four. Three of her children live at home, two of whom are disabled. She receives \$980 in Supplemental Security Income (SSI), a federal supplement for the disabled children, as well as \$212 per month in food stamps, \$40 per week in child support, and rent assistance for her public housing apartment, for which she only pays approximately \$70 per month. She has been on welfare for "eight or nine years," beginning when her son had severe behavioral problems in school "I couldn't keep a job because they kept calling me from school. But now he's doing better." She has worked at McDonalds and cleaning hotel rooms, but "I ain't worked in a while. Maybe a year or two."

Lisa only completed 9th grade, which has made obtaining employment difficult. Her lack of transportation is also a barrier to employment. She has access to her daughter's car, but no driver's license. "She lets me borrow it whenever I need it, four or five times a week. I get it maybe half... She'll bring it an hour or maybe later. Unless it's a big emergency, she'll be here no doubt. Sometimes I can't get it – like when I missed my [DHS] appointment. Or I would have got on the bus." Lisa's prospects are not bright. She is not working, recently missed her appointment at DHS's Job Search, has little formal education, no driver's license, and no car. It seems that the only one helping her at this point is her daughter who recently dropped out of school and left home.

Malika Felton

Malika Felton is a 37-year-old, white woman with three children. Her oldest daughter (14 years old) lives with Malika's mother, while the two younger children (ages five and nine) live with her. She receives \$185 per month from Families First, \$277 per month for Food Stamps, and \$530 per month SSI (this is for the child who no longer lives with her); she receives no rental assistance for her \$350 per month single family home. She dropped out of high school in 11th grade, but later earned her GED with the highest score in her class, and even attended Pellissippi State for a year, earning a 4.0 grade point average. Currently, however, she is not working, nor

taking classes, but is receiving counseling from DHS. She is currently engaged to a man in Illinois with whom she is “trying to work it out. He’s incarcerated. I actually got his address off an Internet site. I love writing. I figured if you write an inmate, they not going anywhere, they’re going to write you back. But I wasn’t expecting this... it’s real... it’s extremely real and very serious.” They will get married “anywhere between one and a half to four years unfortunately. It’s going to be a while, but that’s what you endure if it’s worth it.”

She has received assistance for 13 years and did not get her first “real job” until age 30. She has worked a number of temporary and short-term jobs since then, but currently she suffers “from emotional problems and depression and that messes everything up for me. My nerves are shot, the depression, anxiety. Right now I don’t feel like I can handle a job.” Even if she does get a job, it is unclear how she would get there and back with all she does to maintain her children’s very active lives. Because the buses do not go where their activities are, she gets rides with her friend’s husband, the football coach, the children’s father, or her mother.

Michelle Kelly

Michelle Kelly is a 22-year-old, single, black woman. She has three children and is still in a relationship with the youngest two children’s father: “yes, he lives here, but not really...” She is on “zero rent” in a Section 8 subsidized house that would cost nearly \$600 per month otherwise. She also receives \$142 per month from Families First, \$334 per month in Food Stamps, \$207 from Social Security for her first son’s deceased father, \$56 per month for her KUB utilities bill, and \$66 twice a month for transportation. She graduated from high school as well as “hair school” at Tennessee State and is currently in school full time at Pellissippi State. She is clearly on the path to self-sufficiency and although her household seemed full of crying and yelling children, she has a very rigid schedule that she and her children maintain – all with the help of her own personal automobile.

She has worked doing hair, at fast food restaurants, and customer service jobs. “It seemed like every time I started a job, I got pregnant. So with me having my tubes tied, that’s a plus. Hopefully by the time I get my degree, I won’t be on assistance anymore.”

Monique Pride

Monique Pride is a 21-year-old, single, black woman with a 3-year-old son and 8-month-old daughter. She graduated from high school and has been working full time since, mainly at fast food restaurants: first at Hardee’s for \$6.50 an hour, then Long John Silver, Mrs. Winner’s, and

McDonalds. She currently works in customer service at a collection agency (GC Services) for \$7.50 an hour. She also receives \$198 in Food Stamps each month, a \$23 per month allowance from KUB for utilities, and approximately \$65 every two weeks for transportation reimbursement. In addition, the children's father gives her \$30 per week for childcare and "buys them clothes and stuff. He has been a good daddy." To make ends meet, she is "doing hair and stuff" for \$30-50 a week. She would not clarify what "stuff" entails.

In order to get to work and drop her children off at childcare each day, she is lucky to have a very reliable car. Her only complaint is that "it's a little small and it gets junky from my kids." Monique is on her way to self-sufficiency and she argues that her car makes this much easier for her. "I'm comfortable. But I'm not where I want to be."

Mary Stevens

Mary Stevens is a 26-year-old, single, black woman with three children from three different fathers – the oldest two children's fathers are both incarcerated, thus, she receives no child support. She does, however, receive \$204 per month from Families First, \$434 in Food Stamps, and she pays no rent on a single-family home that would normally rent for \$513 per month. Although she dropped out of high school when she was pregnant, because she had no one to watch her daughter, she has had a lengthy work history, working at Wendy's, McDonald's, Taco Bell, a hotel, and Dollar General. She is currently working part-time at Taco Bell more than eight miles from her home, although "I haven't told them [DHS] I'm working yet." She has been on assistance since she was 18, but "now it's time for me to do it on my own. I was being selfish." Thus, she now works five or six hours a day, making \$6.25 an hour. Although she would like to go back to school, "I had to go back to work to pay my bills. I had to do what I had to do to give my kids better living, you know."

Getting to this job is quite a challenge though. "I don't have the nerve enough to drive a car, so that's why I don't have a license. Plus, they say my license will be revoked or suspended or something when you drop out of school. I tried to drive one time and I got a ticket. I ain't had no tickets or something. So I don't know." As a result, Mary takes the bus, which stops in front of her house, to work each day. This involves more than an hour of riding and transferring buses – all for a 20-hour-a-week job making \$6.25 an hour. Facing these mobility constraints, she is clearly dedicated to her job and getting off of welfare.

Monica Williams

Monica Williams is a 31-year-old, single, black woman with a 12-year-old son and 5-year-old twins. She grew up in the College Homes public housing project and now lives rent free in a single-family home in Mechanicsville, the HOPE VI neighborhood (subsidized single- and multi-family homes) that replaced College Homes after the projects were torn down. Through the constant noise of the children and massive television in the living room, Monica revealed to me that after growing up on assistance, she now *has* to get a job. She has had a recent shift in her mentality about being on welfare, and now completes the requirements because she *wants* to, not because she *has* to.

As a result, she is currently in classes through DHS, in the Job Search program, and is interviewing for jobs; she even had to cancel one of our meetings for a job interview. She meets with her caseworkers for Families First and her house subsidy monthly; in between these meetings, she is busy with Career Investment Academy classes, computer lab training, and job interviews. To maintain this busy schedule, she relies on one of her two cars (the other is inoperable). In contrast to many other women in the study who are searching for rides from family and friends, in addition to supporting her own busy life, Monica drives her mother and grandmother everywhere they need to go.

Mahogany Zaire

Mahogany Zaire is a 27-year-old, 9-months-pregnant, black woman who has been legally separated for four years. She received her GED and has been taking classes through DHS and interning at the Dollar General store part time. To supplement her income from the internship, she receives \$95 each month from Families First, \$130 in Food Stamps, and a \$65 KUB allowance for utilities. She has a very strong work history, including advanced Job Corps in Washington, DC. Because she completed the program so swiftly, however, she was too young for many of the jobs they could offer her. She left with the readjustment they saved for her, moved in with relatives in Ohio and began college at Youngstown State. She also began working, but “got fed up in Ohio trying to get transportation. The taxi driver was cheating me every way he could. The money I made didn’t do anything. It didn’t make sense for the money I was making.” She consequently moved to Knoxville with her mother and worked until she met her husband. Major surgery and a failed, abusive, marriage “really brought things down” for her and she has been on assistance ever since.

Because she has no car, she relies on public transportation for approximately half of her trips. Many other trips are made as a passenger in other people's vehicles. She is also willing to take the bus (including a transfer) to go to her brother's place of work to use his car while he is working, leaving the car when she is done, and taking the bus back home again. Her mobility will only become more constrained when her child is born.

Sharon Griffen

Sharon Griffen is a 28-year-old, white woman who has been separated almost two years. She has three children, ages seven, three, and two. After dropping out of school when she was pregnant with her first child, she earned her GED and graduated from Tennessee Tech's Licensed Practical Nurse (LPN) program in the middle of our interview process. Helping her through school were Pell Grants (often borrowing money from her father until the grants came in), \$185 per month from Families First, \$412 in Food Stamps, an \$85 KUB utility allowance, "zero rent," and she was receiving transportation reimbursement checks until recently; "they've changed how they do that and you have to turn in a calendar and I haven't had a way [transportation] to turn in the calendar." Although she does not have access to a car, because she was meeting all the work and education requirements established by DHS, she received the transportation reimbursement check to use as needed, ostensibly to ride the bus. In her case, however, she paid friends to pick her up and drive her to school and work.

Sharon began receiving Families First when her youngest daughter had health problems, less than two years ago. She realized however, that this was a meager way to live: "I mean who wants to live off \$185 a month. It's not fun. I can't wait to go to work." Getting to work will be a challenge for her, however, as she has no car. "I have a friend, bless her heart, who picks me up on Tuesday, Wednesday, and Thursday and takes them to daycare because their bus does not pick them up until 7:00 in the morning. The daycare is close to Baptist Hospital, so we take them and then go to the hospital... On Fridays and Mondays, I'm here to put them on the bus... Usually friends just come and get me. At first I was riding the bus, but a lot of my friends are in classes with me, so I'm able to catch a ride with them." It is uncertain if Sharon will be as lucky to have friends at her new job that will pick her up and take her home. She was recently made aware of DHS's First Wheels program, however, which she was interested in applying for: "they have a program that can help you get a car. I didn't even know they did that."

Sabrina Henkins

Sabrina Henkins is a 33-year-old, single, black woman with two sons, ages two and seven. She graduated from high school in Knoxville and is currently enrolled full time at Pellissippi State in Office Systems Technology, with a health care concentration. She is one of the only women in the study receiving child support, ranging from \$214-285 a month. She also receives \$339 in SSI, \$167 per month from Families First, \$295 per month in Food Stamps, and a KUB utility allowance.

Sabrina went to work right after high school; she claims that she has worked so many places she has lost count. She began college a number of years ago, but “went back to work when my first child was three months old. When I had the second child, I was working, but that’s when I went on state assistance.” She recently decided she “wanted to go back to school and take up some type of training, get some more skills or something.” She wants to work in a doctor’s office. And in five years, “I really hope I’m on the ball then. I hope I have a fabulous job. I’d like to work for the FBI [laughs]. Clerical work. I’m not interested in kicking down doors and tapping phones or nothing like that. 9-5 day job. Weekends off. That would be nice. I would say somewhere in the lines of \$40,000-75,000.” Thinking about her future, this was the first time during the interview that she smiled.

Sabrina has her own car to transport herself to and from school and get her oldest son, who is active in sports and activities, where he needs to be. “I’m the only one that can take him. I don’t really have anybody to help me. I really have to do mainly everything myself.”

Summer Hunt

Summer Hunt is a 29-year-old, single, black woman with two children, ages 11 and 13. She claims to have been kicked out of school when she was pregnant, and although promised, she never was given a “homebound teacher” to finish high school. She has since tried “just about every GED school in Knoxville” and she cannot make the required score in math. She is, however, currently working as a pharmacy technician in a drug store.

She began receiving benefits 13 years ago with the birth of her first child. Then at 19, after she became pregnant for the second time, her parents told her “don’t come back here after you have the baby” and gave her a list of missions to stay in. She unfortunately lost one of her newborn twins after just 10 days because of poor pre-natal care. She quickly got back on her feet, however, and began working part time. Just before the interview, however, Summer’s benefits were cut off because she forgot about an appointment with her caseworker. She was told “you

don't really have an excuse, so we'll have to cut you off again." Summer did not seem too concerned about this, but when pressed, she stated, "they just don't care about the children. Now if I was sitting at home doing nothing, like some people I know. I mean, me myself, I'm out there working."

To get to and from work, when asked if she has a car, Summer responded, "not really." When asked for clarification, she admitted that, in fact, she owns a 1992 Dodge, but does not have a driver's license. She drives anyway. She was thankful to be receiving transportation reimbursement from DHS. "They try to help you a lot more. Like the transportation check. I didn't know you could get the transportation check. Unfortunately, they cut me off of that too."

Sheena Jordan

Sheena Jordan is a 22-year-old, single, black mother of two children, ages two and six. She dropped out of school in 9th grade because she was pregnant, but she is currently taking classes at Pellissippi State working toward her GED. She seems very driven to change her life, but to her, "things just seem so hard." She wishes she had not dropped out of school because "I've been on assistance for six years and I haven't worked since." Even though she went to the Job Search program for six months, "nobody called me for a job. I had one interview for six months." When asked about her future, she said "I want to take up psychology, but I was wondering if you need a GED for that. I just want to get up out of the projects."

Until recently, she had no transportation, so perhaps things will change for her in the near future, as she will have better access to employment after she earns her GED. "My daddy bought me a car on Thanksgiving. He drives for KTrans [KAT's previous name] and he would see me walking to school every morning." However, her car broke down recently, but CAC is helping her get it fixed. "It was hard without transportation. It's been hard ever since my car's been in the shop. I had to spend \$30 of my Families First check having people take me places and I pay them to take my daughter to school in the morning."

Sally Malone

Sally Malone, or "Dirty Sally" as she first wanted me to call her, is a 48-year-old, divorced, black woman who serves as the legal guardian of her 9-year-old nephew. She currently receives a \$142 per month Families First check, \$98 per month in Food Stamps, and pays no rent on her apartment. Although she is currently unemployed (she was laid off from Sears just before our first interview), Sally graduated from high school and earned a degree from Knoxville Business

College. She was a secretary at the University of Tennessee, among other jobs, and although she thinks, “it would be nice to have a job, even part time,” she considers the fact that “if I can hold out until I’m 50 they won’t make me get a job. That’s a bad attitude, but that’s one way to look at it... but he’s got to have clothes and have this and this – and he wants to play football. He’s got to have shoes for school.” So work is certainly in her future.

Unfortunately, she does not have a car or driver’s license to get to work. In addition, she lives in Oak Ridge and thus has no access to public transportation. She claims, “they don’t have transportation. Well, they do. It’s \$1.50 each way, but you have to call 2-3 days in advance.” It is thus unclear how Sally will get to work if she does find a job.

Tracy Jones

Tracy Jones is a 24-year-old, single black mother of a 5-year-old son. She began receiving assistance to go back to school; she is currently attending Pellissippi State for nursing. Because of the 18-month time limit, which she claims to not understand, she was sanctioned off welfare, but just got recertified (four months later) before our first meeting. She will be receiving \$142 per month from Families First, \$238 per month in Food Stamps, and between \$50-65 every two weeks for transportation. She grew up in and until recently lived in College Homes, but when the housing project was demolished, she “ended up with a voucher out of it, which pays a majority of my rent” – only \$39 of what should be \$450 rent on her single-family home. She also has a work-study job through Financial Aid at Pellissippi State. “My work study is basically a teacher’s assistant. Help them with their homework, their reading, help the teacher grade papers.”

To get her to and from school and her work-study job, she drives her 12-year-old Oldsmobile; however, because she was sanctioned off welfare, her transportation reimbursement checks have stopped also, making it difficult to keep gas in the car. “She said that I should be approved, but right now I haven’t gotten anything since May... I just feel like I’m getting the run around. ‘We have so many other cases.’ ‘The computers are shut down.’ And they gave me a new caseworker.” She is thus finding other ways to make ends meet, since “the work study pays, but it’s not enough... When I was getting benefits I could manage. It could be better, but at some points I can’t complain. My son is doing alright, I’m doing alright.”

Tracy Pruett

Tracy Pruett is a 21-year-old, single (engaged), black mother of a 4-year-old girl. She quit high school in 12th grade, but earned her GED shortly thereafter. She is currently working at the

Dollar Store through the Career Investment Academy's (CIA) internship program. As an added benefit, "the pay doesn't affect us for the AFDC [TANF or Families First] money." In addition to her internship income, she receives a \$128 per month Families First check, \$230 per month in Food Stamps, a rent subsidy (she only pays \$25-30 per month) in public housing, and an approximately \$50 KUB utility allowance. She has been off assistance "two or three times" in the last few years, as she has already had an extensive work history. "I've worked at fast food restaurants or K-Mart, things like that... I went to temp agencies and got clerical-type jobs"

Although she does not have a car to get her to work, her fiancée does. However, she claims that transportation is her biggest obstacle to getting back and forth to work. "Right now, my boyfriend has one [a car]. Before, I didn't have any type transportation, so it was really hard for me because the buses are on a time schedule, of course, so if I ever got a night job or a morning job sometimes it would be hard for me to get back and forth." Her aspirations for five years from now are "I want to work in an office and have my own car." Clearly transportation is a significant barrier to her self-sufficiency; however, she is able to rely on her fiancée to make ends meet.

Whitney Davis

Whitney Davis is the mother of two children, ages seven and 12. She is a fascinating, 39-year-old, single, black woman from Liberia (western Africa) who came to the United States in 1981, after their civil war, to go to college. She started at Knoxville Business College, but "had to stop school to pay for the bills that I got while in school." She was later able to finish her degree, and find work, but eventually had to leave work because of a high-risk pregnancy with her second child. "Then he started having seizures at about three months old and I was put in the position where I had to choose between him and my job. That's when I had to get on AFDC." She worked at Knoxville Healthcare for 12 years, but they let her go because of these health-related absences, forcing her "to go into my 401K plan because the AFDC was only \$185 a month. I lost everything."

Although she is currently making the transition off benefits (she *was* receiving \$185 per month from Families First), she still receives Food Stamps and KCDC rent assistance; she currently pays \$360 of \$565 rent for her apartment. She does not feel very comfortable on Families First, however. "I don't like staying on it too long." As she makes the transition off welfare, she is working at Park West Hospital in food service, cooking for the patients; however, she wants "to learn more about accounting."

Whitney is the closest to self-sufficiency of any of the women in the study. This is not only because of her education and desire to work, but also her access to transportation. She is able to drive approximately 45 minutes from Holston Hills in East Knoxville to Park West Hospital in western Knox County. This job and her transition to self-sufficiency would not be as accessible, if at all, without her own car.

Similarities and differences among the respondents

All of the women in this study are receiving some kind of assistance in the form of: a Families First check, Food Stamps, SSI, housing subsidy, and/or a KUB utility allowance. Most are making strides toward self-sufficiency to break their dependence on this assistance. A majority of the women fell on hard times because of family hardship, medical issues (their own or their children's), or early pregnancy/child-rearing responsibilities. Most want to work; however, those who are working find themselves as part of the growing class of working poor.

Like many of the working poor, all but two of these women (10.5 percent) are living in either public (42 percent) or subsidized (47.5 percent) housing. They are all, however, doing what they have to do to make ends meet. All of the women are just trying to get to where they need to go, with or without cars, and with or without help from family, friends, or children's fathers. If they are not struggling with transportation to work or school, which many of them are, they seem to be struggling with balancing their home life, work, and improving their education; many find it difficult to get an education to acquire better employment, all while supporting their children and trying to achieve self-sufficiency.

The road to self-sufficiency

The goal of welfare reform is self-sufficiency. Many of the women in this study seem somewhat settled in their lives, while none are self-sufficient yet. Although they may all claim to be making the transition from welfare to work, some are more "together" than others. Betty Elliott has a very stable family life, lives in a warmly decorated home, with a rather structured schedule and active children who attend her church's Catholic school (at no cost). She is "not goofing off. I'm doing what I'm supposed to be doing" and even plans to get her Master's in psychology when her children are older. In addition, her mother is willing to help as much as she can financially and otherwise. She is clearly on the right track to self-sufficiency, and just takes "it one day at a time."

Michelle Kelly also claims to have “a pretty normal life.” She graduated from high school, is going to college, lives in a nice home, and has financial and other support from the children’s father. Her plans are to become a “medical transcriptionist. I want to go back to school once I get my degree. I want to go back to be a medical assistant... I’ll be back on track.”

Monica Williams also seems to be realistic in her expectations for self-sufficiency, as her goal is to find a job “that will keep us off of welfare. I don’t want to get off welfare and then have to go back on welfare. When I’m looking for a job, I’m looking for a job with benefits.” At 31 (the average age for the women in this study), she is focused on her future: “I need something more permanent where I know I’m going to be.”

Living in a cozy, well-furnished, what would be a nearly \$500 per month apartment, Monique Pride seems to be successfully making the transition from welfare to work and appears to be quite settled. “Now I’m making \$7.50 and sitting on my behind. So it’s much better.” But “I want to go back to school... I’m going back this year. I want to do something with my life. I don’t want to be sitting around. I want to get me a better car and a house.”

Whitney Davis is the closest to a successful transition off of welfare. After her own health problems, followed by her son’s health problems, which forced her on to assistance in the first place, she finished a business degree and secured permanent employment. She lives in a beautiful neighborhood and is slowly coping with a reduction in benefits as she fully makes the transition from welfare to work.

On the other hand, a number of women are not nearly as settled or directed in their current lives or future plans. Diamond Young, for example, who became pregnant at 13, has no employment income, no high school degree, and no working automobile. She has trouble with DHS “wanting too much information” from her and does not really understand “how that works out yet.” At only 19 years of age, she seems ready to move ahead with her life, but has a long way to go. “I’m ready to take my GED now. And I’m ready to get me a job. I wouldn’t mind me an office job... on the computer.” When asked about her ideal job, she stated, “ About \$10, \$15. I want to save, save, save. When he get older and I’m out on my own. I don’t want to be in a jam, have no late bills and stuff. I don’t want none of that. That’s why I’m still with my momma right now, so I can like take \$100 or \$200 out of each check and just put it up and save it.”

Mary Stevens also faces instability in her life, which she attributes to her lack of education. “I want to get a real job. I want to keep going to school... My goal is to get my GED by January. Hopefully I can find a secretarial job. I’m tired of fast food jobs. Sit down at a computer, take messages, file. \$8.00 would do me just right. Full-time. 8:00-5:00 I can be ready for them and

homework, whatever.” However, she is concerned with going to school and not having income from work, feeling trapped in her situation. “How am I going to pay for childcare, how am I get around, how am I going to get food... That’s going to be hard for me when I don’t have no education.” She is using Families First, however, to help her make the transition to work. Although she commutes on the bus an hour each way to Taco Bell, she is doing what she has “to do to give my kids a better living.”

Faye Nicks, however, claims to have “so many problems” and argues that life is “so hard for me.” She doubts that she will graduate from Pellissippi and is only able to find jobs with temporary agencies. “Employers are saying my skills are not good. I don’t think it’s so much my skills as it is my color. They are so skeptical.” Faye admits to many emotional and employment-related barriers to overcome before she can achieve self-sufficiency.

Although Grace Randolph has had a rather stable work history, having worked for the City of Knoxville among others, she has been on assistance since she became the legal guardian for her grandson. She wants to find “a decent salary to take care of me and my grandson. I don’t know. \$9 an hour... that is some pretty good money. So I would like to make \$8 an hour. From 9-5, no weekends.” As the oldest respondent in this study at 55, however, she is still working toward her GED and stable employment. She finds it very difficult to move on with her life because she has no access to transportation.

Summer Hunt also seems to be at a very unstable point in her life. After a young pregnancy, being kicked out of her parents’ house because of her second pregnancy, then losing one of her twins at just 10 days old because of her lack of pre-natal care, she was getting back on her feet, and working part time. However, she recently lost her benefits for not attending a meeting with her caseworker and when asked about where she saw herself in five years, she said, “I never really thought about it.”

Extent of travel

Regardless of their status in working toward self-sufficiency, some of the women have very hectic lives with extensive travel, while others are more limited. Betty Elliott’s routine is full of activity, mostly pertaining to her children. Although she is below the study’s average in the number of trips per day (Appendix F), she is above average in trip length, and has the second largest travel area at nearly 40 square miles. Although she also makes fewer than the average number of trips in this study, Malika Felton also has a very busy travel schedule because of her children; her trip length is longer than the average, and her travel area is by far the largest at over

65 square miles. This is surprising because she is not working or attending school, her children take the bus to school and their childcare service brings them home, and she does not have a working car. She does have very active children and very kind friends and family, however, who take them to practices and games among other destinations.

Although her trips are very short, averaging just over one mile each, Monica Williams has a very full life of travel, making an average of nearly 10 trips per day. This is to be expected, as she is currently taking classes, participating in DHS's Job Search, and interviewing for jobs. In addition, although her son is bused to school, she drops her twin daughters off each morning. Also, because she is living rent-free in a single-family home in a HOPE VI housing project, she has special meetings to attend in order to keep her house. Monica has a very full schedule that she is only able to maintain because she has her own car. Monique Pride also has very full travel days because of work and her children; she makes over eight trips per day on average. This is to be expected, as she is working six days a week and has to pick up and drop off her two children at childcare.

It appears that Whitney Davis has very limited travel, averaging just three trips per day; both of her children are bused to school and she is just working, not attending classes and Job Search. However, her trips are quite *long*, averaging approximately 7.5 miles per trip; her work trip alone is approximately 20 miles each way.

Even though her car is being repaired, Diamond Young also has a very busy travel schedule, making over 11 trips per day on average. She does not even have to drive her son to school; her mother does. Most of her trips are social, such as visiting friends, going out to eat, or shopping. Sheena Jordan also travels extensively, also for mostly social reasons; both of her children ride with others in a van to school or childcare and she is only in school, not working or interviewing for jobs. Although she only recorded her travel for one day, she made 10 trips that day. These trips, however, are very short, averaging just over 1.5 miles each. She discontinued maintaining her travel diary after the first day because she "thought it was too noseey."

On the other hand, there are also many women in the study who have very limited travel. Faye Nicks travels very little, averaging just two trips per day. During a typical week, she only takes herself to work and back home with very few other stops, perhaps because she does not have any children to care for. Although she has very few trips, her trips are quite long, averaging over 12 miles per trip, the highest average in this study.

Several other women's travel is quite limited because they do not have cars. Lisa White, who averages less than four trips per day, does very little traveling. In addition, her trips are quite short

averaging just 1.3 miles each. This is the case because she is currently not working or in school, and her children are able to take the bus or walk to school. She has to borrow her daughter's car if she wants to travel. Mary Stevens also does very little traveling because she does not have a car. She averages just over three trips per day. Luckily her school-age daughter is able to walk to school. She also has no childcare transportation to arrange, as her mother or the children's father often watches her two youngest children at home.

Sharon Griffen, who also does not have a car, does not have a very full life of travel either, averaging just over two trips per day. In order to get to school and to work, she is picked up and dropped off by friends. Her children are also picked up for school or childcare, reducing the number of trips she needs to make. And because she does not have her own car, she did not travel at all on her off days during the eight days she kept a travel diary.

Finally, Sally Malone's travel is also quite limited, since she too does not have a car, driver's license, or access to public transportation. In addition, her nephew (legal guardian) is bused to school. Thus, she averages just over one trip per day. Of the five days she kept a travel diary, she walked to her destinations three of the days and stayed home the others. She does, however, have friends to call on for help in exceptional situations, such as the day of our follow-up interview, when she left me a note canceling our meetings, since she had to go to Knoxville because her "sister was picked up by the police."

Age of respondents

Younger welfare recipients are expected to have less work experience than older recipients; however, the only three women in this study who were *not* working were older than the average age of 30.5: Lisa White (34), Malika Felton (37), and Sally Malone (48). As the second oldest in this study, when asked about her thoughts on the future, Sally Malone, "I don't know, I just can't even see it." These women still have very active travel lives, yet all make below the average number of trips per day. The trips they did take were divided evenly between typical daily errands (the bank, grocery store, visiting family, etc.) and trips for their children (sports practice, pick up from school, etc.).

When age is examined further, *all* of the women over 35 (five of 18 or 28%) made fewer than the average number of trips per day, while all of the women under 25 (six of 18 or 33%) made more than the average trips. At just 22 years old, Michelle Kelly has just as early and complicated of days as other working mothers: "I usually get up at about 6:30 and I comb her hair and get them ready until they get picked up. Then I lay back down until about 8:45 until I have to get her

ready. Her daycare is just two minutes from school, right on my way. Then I go to school. Then my classes go from 10-12, then I have a break until 1:00. Class goes to 1:50. Then I usually come and pick her up from daycare. Then I may go run errands, then I come home. They get brought home at 25 or 30 til 6:00. Then I'll go walking for an hour or so then come home and get them ready for bed."

From this analysis, these women's travel patterns seem not to be about age, but rather family situation, work/school responsibilities, and access to automobiles.

Use of public transit

Few women in this study actually use public transportation; only four women used public transit during the days the travel diaries were maintained. Not including transfer stops, Sabrina Henkins used the bus twice, Mahogany Zaire used it four times, Grace Randolph only used it for six trips, and Mary Stevens rode the bus 11 times. All but two of these women's trips were made between home and work or school. The other two trips were made to doctor's appoints. None of the trips were chained together. Tracy Jones, who no longer chooses to ride the bus, stated, "I'm not going to say I like riding the bus, because I don't think nobody likes it, but I had to do what I had to do."

Grace Randolph is able to use the bus to get to work, although not by choice. She stated, "I have never been without a car. I have always had a car. So when I lost my car it was just like I lost my right arm cause it was all I had to get around to do all the things I had to do." She now has to plan her day carefully to avoid missing the bus and dealing with transfers, increasing her time. "If I miss the bus up there, I have to go uptown and transfer. Thing is I try to be on time and catch the bus that goes straight over there. If not, I'm an hour late, 'cause they only run every hour. If I have to go to the store, I just go uptown and get a transfer." Unfortunately, the use of the bus constrains even her grocery shopping, as she can only "go in to only get a little bit, and always end up getting more than I can carry. When I do a big shopping, I pay somebody to take me."

Although she does not like it, Mary Stevens rode the bus the most in this study. "I've been riding the bus for a long time... it's my only means of transportation... Now I get up at 6:15. I'll go there and wait for her [Mary's daughter] little cousin to come and they'll walk to school. I stand out there and wait on the bus uptown. Sit up there and wait for another bus to go to work. When I get off work I do the same thing. I come uptown and wait for another bus then I come home. It takes me an hour. If I had a car... 15 minutes. I get off work at 3:00, catch the 3:15 bus

from West Town Mall. I get uptown at 3:45 and take the 4:00 bus. I get home at like 4:10. They know that I'm on a bus schedule, so they'll [Taco Bell] work around the bus schedule." Mary finds however, that when her days are too complex to ride the bus, she tries to find rides from others. "I'd have to call up my auntie and beg to come get me and listen to her mouth fussing... I hate it."

Number of children

Allard (2002) found that households with a large number of dependents face more challenges in finding and retaining jobs. In addition, because larger families receive higher TANF grants, they need to earn more than smaller families in order to make the transition from welfare to work. Welfare recipients with large households are also more likely to live in the central city, making it more difficult to search for jobs and access support services (Allard 2002).

In this study, women with more children (the maximum was three children living at home) tended to have a below average number of trips per day, perhaps because they are more constrained by having to care for a number of children at home. For example, Mary Stevens maintains a very busy and "normal" life with her children. "I get up at 6:15 to get my daughter ready for school. I catch the bus to take her to school then I get back on the bus to come home and get myself together. Then I get back on the bus to get to school. I would usually sit at school and have breakfast with her for like 15 minutes, then at like 7:35 I'd come back out and wait for the bus and get home and get dressed and wait for that bus to come around and get back on the bus to take it to school. I got to school about 9:00 or 9:15." However, with three children, she makes fewer than average trips per day. In the 10 days she maintained her travel diary, she only went to four places besides her place of employment.

On the other hand, Diamond Young only has one child, yet made the most trips per day in this study. She finds that she faces the same constraints any other working mother does in finding work that gets her to work by eight and home by five when her child needs to be picked up from school.

The reason that women with more children have fewer than the average number of trips is likely due, in part, to the complexity of traveling with children on a bus. As Sharon Griffen stated about her past experiences riding the bus with her children, "It sucks. Oh, it's awful. It's not like it's right here... and keeping up with three kids kicking and screaming. And if it's raining, you've got to stand out in the rain with them. Which, my children... he has asthma." Whitney Davis also experienced problems traveling on the bus when she had to take her children to childcare before

work: “sometimes it would get to the point where I would just ring the doorbell and hand her... and catch the bus. It’s rough. Then I’d come back, I’d be so tired... get off the bus... the bus driver knew my route, he’d wake me up... then I’d have to do it all over again. Stand there and get her coat on, then wait for the next bus. Then we’d have to walk home from the bus stop... we had to walk.” Whitney looked exhausted just talking about these experiences.

Living in areas with higher poverty

Allard (2002) found that families living in areas of higher poverty face more obstacles to work than those living in areas with less poverty. One-third of the women live within Census tracts that have over one-third of all persons below the poverty level (Figure 6-1); all but four women live in Census tracts with over 20 percent of all people living in poverty. Of these four women, only one does not have a car.

Diamond Young finds the poverty and violence in her neighborhood quite difficult to manage as a single working poor mother. “There’s too much wanted and expected out of a person for us to be living where we are. To me this is like Hell. We don’t deal with nothing here but death. I wish I could just change it all... I don’t know how. Everybody done tried everything. I would change the death of my fiancée. Not nothing ever gone my way.”

Availability and importance of networks of family and friends

Although she has her own car (in her mother’s name), Betty Elliott still relies a great deal on her mother and grandmother, making many of her trips with them. Because there is no school bus service for her children, “in the morning we kind of round everyone up and put them in Mom’s van.” Her mother even takes her, or drives with her, to school: “She walked the halls. It was only a 50 minute class, so mother hung out in the hallway.” Because of her busy school schedule, Tracy Jones also relies on family and friends to help with her children even though she too has her own car. “I didn’t get off until 5:30, sometimes 6:00. My son’s day care closed at 5:30, so my daddy would go pick him up every day for me and he would keep him until I got off from work... Now, Tuesday-Thursday my boyfriend helps me out and picks him up.”

Sheena Jordan has her own car also, but is currently reliant on others until her car is repaired. “I ain’t gotta walk no more. I ain’t gotta pay nobody to take me anywhere anymore. I don’t have to sit around and wait on nobody. I can just get up and go. I can go where I want to. I don’t have to worry about getting on nobody’s nerves.” At this point, she has to “pay someone to take them to school. My brother lives right up the street and I pay him to take me somewhere, like to the

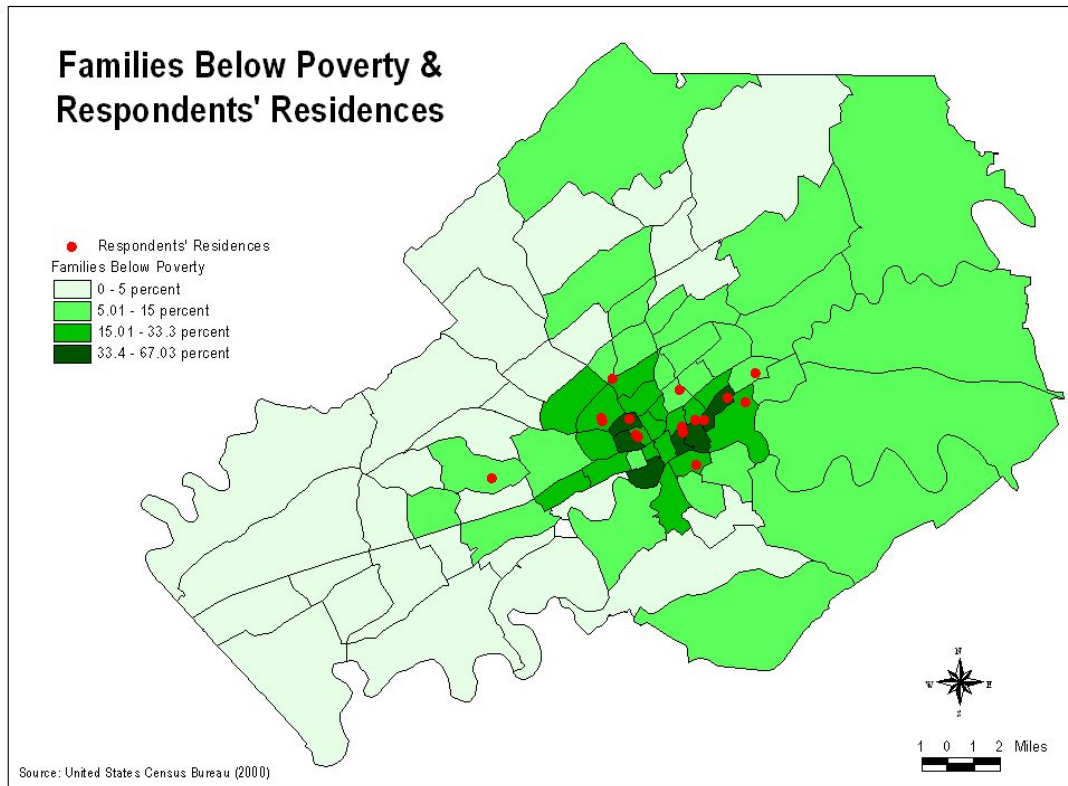


Figure 6-1. Families below poverty and respondents' residences.

Source: United States Census Bureau (2000)

grocery store, to the dollar store. I pay him to take me...It just kills me to give somebody money... about \$3-5 dollars.”

Half of the women in this study, however, do not have their own cars. Thus, Sharon Griffen feels “very blessed that I have friends and family around to help me... When I started this [work], Kristy always pick me up. Because there’s NO WAY that I would have been able to get them on the bus, get them there, and get to Baptist Hospital by the time I’m supposed to be there. There’s no way.” However, she notes that, “a lot of times when you get rides with people and they have something to do, you have to do it with them whether you feel like doing it or not. A lot of times she’ll have to run somewhere and it’s really inconvenient and a waste of gas to come all the way over here, so she’ll do what she needs to do then come back through here.”

Diamond Young also feels lucky to have her mother provide transportation for her and her son, as she drives Diamond’s son to and from school and drives Diamond to school as well. Lisa White, who does not have a car or a driver’s license also relies on family: “If there’s something I have to do, I call my daughter.” Not having a car certainly constrains her travel, as she has “to wait... until 3:00 when my boyfriend gets off. If my daughter doesn’t bring the car by 3:00, then I get him to take me. Like to the store.”

Grace Randolph also calls on her daughter often for help to take her grandson to school or take her to work and elsewhere. “She’s a housewife. She takes care of her granddaughter every day... Family... family is what I rely on. I have a good friend who’s reliable. He takes him to school every day. Having the bus fare would be a problem... but my two daughters is usually who I depend on.”

Although she is comfortable on the bus, Tracy Pruetz only occasionally (two or three times a month) uses the bus to get to school and work. She still relies on others to help at times: “My boyfriend will pick me up and I take my daughter to my mom’s house. Then if I have to work, he’ll come pick me up and take me to work. And come back at 6:30 or whenever to take me home... If he had to work, I’d have to take the bus or whatever.”

Explanations of travel behavior: Family responsibilities and lack of transportation

Many of these women’s lives and travel patterns, and thus their stage in achieving self-sufficiency, are most often dictated by meeting the demands of child-rearing or transportation constraints. Betty Elliott is severely constrained by trying to get herself and her children to and from school and activities, while being able to be home with them as a responsible parent. Her children have no school bus service, so she needs to drive them to school each morning.

Michelle Kelly faces similar controls on her behavior, as she juggles her education and child-rearing responsibilities. She takes her 7-month-old daughter to childcare on her way to class, then picks her up after class because she's still breast feeding. Her other two children are taken from the same childcare to Head Start and then taken home. Luckily, she has few transportation constraints because she has her own vehicle, but the children and their childcare certainly affect her daily travel.

In addition to child-rearing responsibilities, many of the women's lives are dictated by their access to transportation. Diamond Young, whose car is inoperable, states that "I depend on other people. At night I have to get my walk on. I don't know how to catch the bus. I've caught a bus before, but I ain't never had to catch a bus because I've always had a car." She feels that the only way to "make things happen" is to have her car back.

Mary Stevens has a very small travel area, less than four square miles, which is her way of coping with her lack of access to transportation. She travels to few places other than her place of employment, which she can only access via an hour-and-fifteen-minute ride on the bus. "For me, it's kind of hard without transportation."

Mahogany Zaire's daily travel is also severely constrained and controlled by her access to transportation. She has no car, and thus borrows a car or gets rides with family and friends. She is one of the few in the study who use public transportation for a significant number of daily trips; however when she has the choice, she is willing to travel for close to an hour and a half on the bus to gain access to her brother's car for the day.

As mentioned earlier, Sharon Griffen's travel behavior is quite limited; this is the result of her lack of access to transportation. Instead of riding the bus, she gets rides to and from work or school from friends, and basically does not travel otherwise. It is a simple, yet severely constrained life of travel because she does not have her own automobile.

Both child-rearing *and* transportation control Grace Randolph's life. She does not have a car, but is trying to work, go to classes, and take care of her grandson. She had to temporarily let her internship go because of her lack of transportation and her grandson is "one of those you have to watch constantly. He's always getting into something. He wouldn't make it to school. You can't trust him. You cannot trust him. So I make sure he gets there and back. He's into everything here in the projects." As a result, she spends much of her income on rides with friends; although she relies on the bus for some of her transportation, she has to "pay someone to pick up my grandson. Buy them some gas. Everyday. I just buy them gas."

Lisa White's behavior is also severely constrained by both child-rearing and transportation. Lisa, who dropped out of high school in 10th grade, wants to get her GED, and she may also look for work at a nursing home: "you don't need a GED for that and you get paid training." Unfortunately, she has two disabled children to care for, no driver's license, and no car.

Malika Felton also spends a great deal of her time and effort on her children's numerous activities and trying to find rides for them. "My son plays football, so three times a week he has practice. If it's not practice, it's a game." It is difficult for him to get there however, and sometimes is unable to. "Sometimes my girlfriend's husband. Sometimes the coach will come get him. Their father lives within a mile and he takes us to games and practices sometimes. Last night we didn't make it – we didn't have a way. The bus does not go to where our practices are. If we have to go shopping or something like that, I have a friend of mine who takes us to the store. Sometimes my mother might take me somewhere I have to go."

Clearly, these women face many constraints in getting off of welfare and back to work. Some of their lives are so full with children's activities, education requirements, and jobs with odd hours, that using public transportation is extremely difficult.

PATTERNS OF DAILY TRAVEL ACTIVITIES

The individual-level travel diary data were analyzed to examine these constraints, based on a number of factors such as: purpose, destination type, mode of travel, days of the week, time of day, distance, duration, and time between trips.

Purpose of trip

The women in this study average approximately six trips per day, compared to the Knox County average of just 3.6 trips (Knoxville Urban Area Metropolitan Planning Organization 2001). The highest proportions of these trips' purposes are to: pick up/drop off children (11.2 percent), shopping (10.9 percent), work/school (10.1 percent), and pick up/drop off friends/relatives (9.5 percent). Close to one-quarter of all trips are made simply to drop off or pick up children, friends, or relatives (Figure 6-2).

Work-related and non-work-related trips

In the United States, only 18 percent of work-related trips are work related (Figure 6-3). Further, 45 percent of trips are made to shop, visit doctors, and for other family/personal business; most of these trips are short (seven miles) compared to the average work-related trip (12

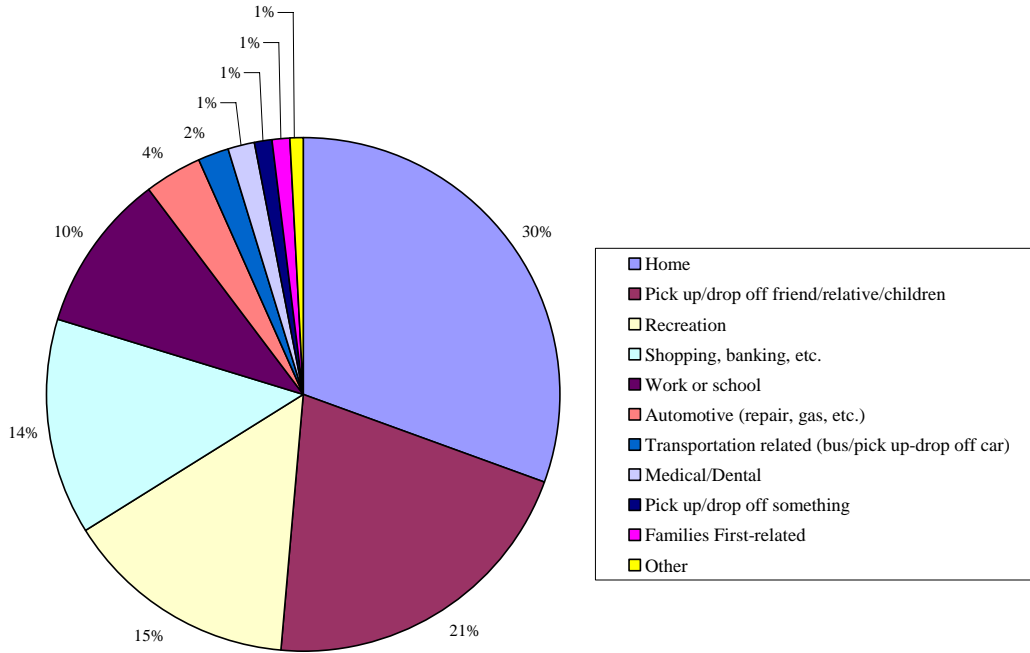


Figure 6-2. Trip purpose (in this study) including “home”.

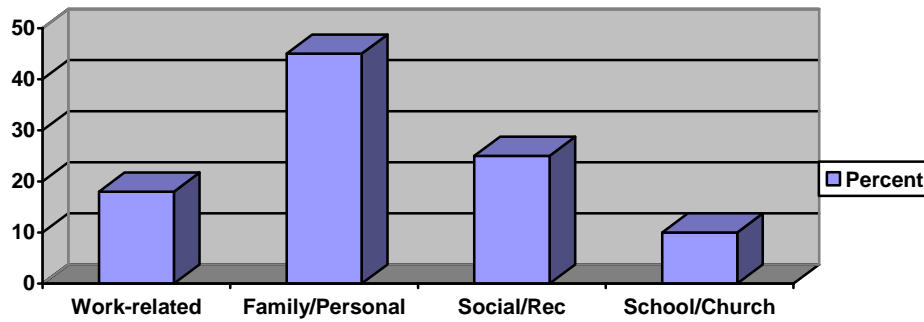


Figure 6-3. U.S. work-related and non-work-related trips.

United States Bureau of Transportation Statistics (2003)

miles). Social and recreation trips make up approximately 25 percent of trips, averaging a distance of eight miles. Trips to school and church make up 10 percent of trips, averaging a distance of six miles (United States Bureau of Transportation Statistics 2003). For example, Malika Felton, whose son plays football and daughter is a cheerleader, and Sabrina Henkins whose son “is in sports and activities and things” find themselves making a large number of trips for their families.

In this study, “work-related” includes: job, school, meetings, and any other activities that fit into their Personal Responsibilities Plan. Almost 85 percent (15 out of 18) of the respondents completing the travel diary actually had a job or performed work-related activity (Figure 6-4), yet *even excluding the return trip “home,”* less than 16 percent (66 out of 421) of their trips were related to work. This is a very low proportion of work-related trips: lower than the U.S. average of 18 percent, and much lower than Knox County as a whole, whose Origin-Destination Study indicates that 50 percent of trips were work-related (Knoxville Urban Area Metropolitan Planning Organization 2001; United States Bureau of Transportation Statistics 2003).

Exceptional trips

Exceptional or emergency trips, such as a sick child requiring medical attention, car trouble, or trouble with a child at school, are very hard to make with public transportation because they are, by nature, unscheduled and so most likely will not match up with bus schedules. Although there were very few of these unpredicted trips in this study (only eight of the 607 trips), *none* were made on a bus: five women made trips with their own car and three women borrowed a car or got a ride from a friend.

Destination type

It is impossible for fixed-route service to connect to every residence in a community. In this study, 45.5 percent of the destinations are residences (their own or a friend or family member’s); this is part of what makes it so difficult for these women to ride the bus, as fixed bus routes cannot feasibly drop off/pick up at every residence efficiently.

However, the other top destination types (Figure 6-5) – stores (12.9 percent), schools (12.2 percent), bar/restaurants (5.3 percent), offices (4.6 percent) – *should* all be relatively easy to get to on a bus, especially given the high concentration of essential services within the ¼ mile service area for KAT’s routes (Table 4-1).

- Employment (47 percent – 8 of 17)
- Diamond Young (DY), Mahogany Zaire (MZ), and Tracy Pruett (TP): Dollar General internship through the Career Investment Academy (clerk)
 - Fay Nicks (FN): EdSouth (customer service)
 - Grace Randolph (GR): Temporary services (office)
 - Monique Pride (MP): GC Services (customer service)
 - Mary Stevens (MS): Taco Bell (food service)
 - Whitney Davis (WD): Park West Hospital (food service)
- Work-related activities (41 percent – 7 of 17)
- Betty Elliott (BE), Michelle Kelly (MK), Sabrina Henkins (SH), Sheena Jordan (SJ), and Tracy Jones (TJ): Pellissippi State (technical school)
 - Sharon Griffen (SG): Tennessee Tech (technical school)
 - Monica Williams (MW): Career Investment Academy (job training skills)
- No current employment or related activities (12 percent – 2 of 17)
- Lisa White (LW) and Malika Felton (MF)

Figure 6-4. Work-related activities of the 17 respondents completing travel diaries.

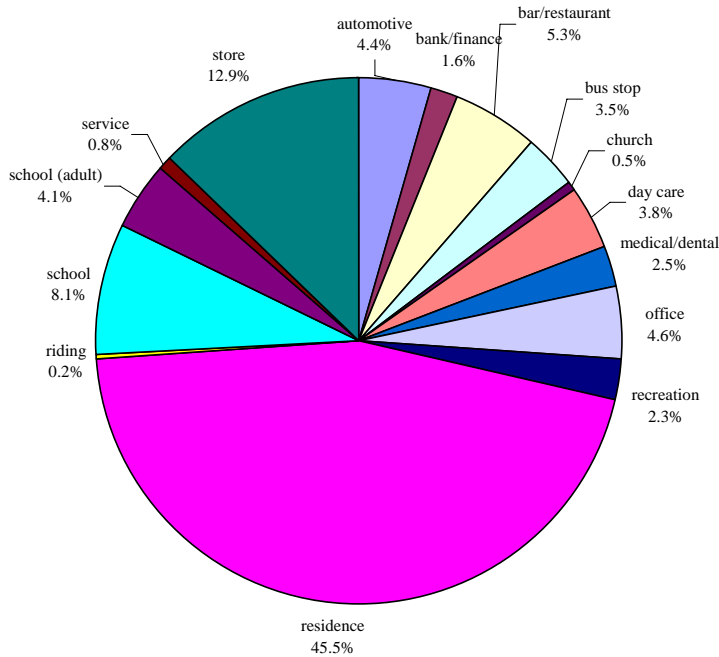


Figure 6-5. Destination type of trips made by respondents

Mode of travel

The initial question to interrogate was: how many are actually using the bus for each trip in this sample of women? I found that almost 90 percent of all trips were made in a car, approximately four percent were made on foot, and just over six percent (38/607) of the trips were made on a bus; only four women rode the bus at all:

- Sabrina Henkins (SH): two times
- Mahogany Zaire (MZ): four times (and an additional four transfers)
- Mary Stevens (MS): 11 times (and an additional 11 transfers)
- Grace Randolph (GR): six times

When compared to Knox County and the United States, the percentage riding the bus in this sample is actually higher than average. *Knox County's* recent Origin-Destination survey (Knoxville Urban Area Metropolitan Planning Organization 2001) showed that only one percent of all trips in Knox County are made with public transit. The national average of all commuting with public transit is five percent (only three percent outside of New York City) (Buckner 2004). The proportion in this sample is higher than the local and national average, but still lower than one might expect for a group of women making the transition off of welfare – half of whom do not have a car. Diamond Young, whose car is in the shop, summarizes how these women make their lives work, “I depend on other people. At night I have to get my walk on. I don’t know how to catch the bus.”

KAT Service Area in Knox County

Perhaps these women are not riding the bus because of routing problems; the goods and services they need may not be available on a bus line. With that in mind, I referred back to the aggregate data for Knox County to see what types of services and employment centers are in KAT’s Service Area, within ¼ mile (Table 4-1). There are quite large percentages of services and employment centers within the KAT Service Area.

Upon examination of the individual-level data collected from respondents, extraordinarily high percentages of respondents’ origin and destination points are also within KAT’s ¼-mile Service Area:

- 93 percent (565/607) of all respondents’ destinations are within ¼ mile of regular fixed routes, and
- 29 percent (177/607) are within ¼ mile of night/weekend routes.

These are astonishingly large percentages compared to the percentage who are actually riding the bus; it appears that these women *could* be riding the bus, but they simply are not. The question is *why* not? Because of the flexibility and freedom personal automobiles offer, it is safe to assume that most people with their own automobiles will choose to drive rather than rely on the bus. However, nearly half of the women in this study *do not* have their own cars – and five don't even have a driver's license:

- Have car: 10 (median age was 1992, with vehicle ages ranging from 1983 to 1996)
- No car: nine (seven have no car; two have a car that is broken down)

At this level of analysis, it does *not* appear to be a route problem; there must be other factors keeping people from riding the bus. Ethnographic research becomes significant at this point to analyze these results.

Trips for self or for someone else?

Nearly two-thirds (65.9 percent or 400/607) of all trips were made as a car driver. Although many did not have their own car, they often borrowed a friend's car. Because many of the trips in this survey were still made as car passengers (23.5 percent or 143/607), I wanted to examine how many trips were not of the women's choosing; in other words, were these trips for the drivers, and thus unnecessary because the respondent was riding with others? I thought that riding with others was a measure of convenience, for most, if not all, of the women in this study think that the bus is not very convenient; however, how convenient is it to wait around for friends to pick you up or to make trips that you do not need to make?

After examining the data, I found that these women are actually *not* wasting very many trips. Rather, they are quite efficiently grouping trips with friends: only 23/143 (16 percent) of trips were made solely for someone else. Although some of the women claimed that "it's a pain" to wait for someone to pick them up, they would rather do that than ride the bus. When asked how often she rides the bus, Malika Felton responded, "rarely, but I will if need be. Two or three times a month maybe. It comes right in front of the house if I don't have any other way, if I do have money for the bus. But last resort. Last resort."

It was interesting to also find that of those trips that were made with the respondent as a *driver*, almost the same proportion of their trips (17 percent) were made for someone else. Those women who are able to drive their own vehicles are giving rides to other women who do not have cars of their own. Monica Williams, for example, drives her mother and grandmother everywhere they need to go.

Days of the week

Because bus schedules vary on weekends compared to weekdays, it is important to examine whether or not people have different patterns on different days of the week. In this study, the incidence of weekend travel is very high for some and very low for others, even if they do have a car. This is significant because KAT bus routes are much less frequent, are often combined, or do not run at all on weekends, especially on Sundays, when only four partial routes run.

This sample includes 107 days. In a perfect sample, data should have been collected for 31 weekend days (two out of seven or 28.6 percent). Only 24 days (22.4 percent) sampled, however, were weekends, but 103/607 trips (21.4 percent) were on the weekends, indicating that weekend travel was proportional to weekday travel.

Time of day

Because buses run at different times and have different frequencies at different times of the day, it is important to examine when people are making trips in order to determine if these trips could be managed on a bus. Night routes are available until midnight in a limited area, and Call-A-KAT is available to and from anywhere in the service area, also until midnight; however, 24-hour notice is required. Unfortunately, it is my assumption that *many* of the trips made in this sample are not ones that are planned 24 hours in advance.

Results of time of day analysis are as follows:

- 6:01 AM to 9:00 AM: 116/607 trips (19.1 percent)
- 9:01 AM to 3:00 PM: 193/607 trips (31.8 percent)
- 3:01 PM to 7:00 PM: 192/607 trips (31.6 percent)
- 7:01 PM to 11:00 PM: 70/607 trips (11.5 percent)
- 11:01 PM to 6:00 AM: 36/607 trips (5.9 percent)

Almost one-third of the trips (31.8 percent) were made in the middle of the day (between 9:00 AM and 3:00 PM) when bus route frequency often declines under the assumption that most people travel during “rush hour” to get to and from work. Another 17.4 percent of trips were made between 7:01 PM and 6:00 AM, during times when buses are not running, or when only the four Night Rider buses are running. These conditions are a challenge for public transportation planners to overcome; the times of day these trips are made suggests a serious constraint to riding the bus given present scheduling.

One-stop trips and trip chaining

Overall, respondents averaged approximately six trips per day, with a maximum of over 11 a day (Appendix F). However, the average for females in Knox County's Origin-Destination Study is just 3.6 trips per day (Knoxville Urban Area Metropolitan Planning Organization 2001). MacDonald (1999) also found that, although women in the United States have shorter trips than men, they make more trips: 3.5 per day compared to 3.3 per day for men. The women in this study are making significantly more than average trips – often with no cars or older unreliable cars.

Besides the *number* of trips, it is also significant to examine whether trips are made individually (one-stop trips), or if they are chained together, as it is more difficult to manage multiple trips on a bus compared to a one-stop trip. Nearly 60 percent of all trips (104/177) were chained together, while just 41 percent (73/177) were one-stop trips. The women traveled to 2.5 places per trip, on average, before returning home. The maximum is 12 places before returning home. Making this number of trips would be very inefficient, if not impossible, on a bus.

Distance traveled

Distance was also analyzed; in order to examine distance traveled, I did not count the three “riding” trips, in which respondents had no destination, and thus no distance to measure. The overall average distance of the trips (excluding “riding”) in this study is 2.9 miles. However, this average is quite misleading, because there are *many* short trips (over 31 percent are one mile or less). The minimum distance was just 0.04 miles, while the maximum distance traveled was 15.4 miles. Only 18 percent (107/597) of the trips were longer than five miles. This large number of short trips calls into question the feasibility of using a bus: while making individual short trips might be somewhat inconvenient on a bus, many of these short trips chained together would be quite difficult; and, as previously stated, nearly 60 percent of all trips in this study were chained together, rather than single trips.

Analyzing the distance traveled with different *modes* of travel revealed that of the 1715 miles traveled in this survey, only 145 miles (8.5 percent) were on the bus, for an average of 6.3 miles per bus trip. Although the total number of miles traveled on the bus is quite low, the average distance traveled on the bus is more than double the average distance of all trips, indicating that people who do ride the bus are using it for longer trips.

Although less than five percent (26/607) of all the trips in this study were to *jobs*, the average distance to a job was 7.9 miles (the maximum distance to a job was 14.6 miles). This relatively

long distance is surprising for these low-paying, low-mobility jobs. And although this distance indicates that it might be feasible and efficient for these women to use the bus to work, only one woman took the bus to work – riding over eight miles (and up to 71 minutes) to work at Taco Bell.

Duration of trips

The overall average duration per trip in this study was 14 minutes; the minimum was one minute; the maximum was 120 minutes. This maximum time includes “riding” trips, thus the actual longest trip (with a specified origin and destination) was 71 minutes.

Knox County’s Origin-Destination Survey indicates that the overall average trip time is approximately 18 minutes (Knoxville Urban Area Metropolitan Planning Organization 2001). Therefore, not only are the women in this study making *more trips*, but they are also making *shorter trips* (duration) than Knox County’s average. Waller (2005) argues that shorter trips are “another example of the high transportation costs of being poor.” Because low-income riders travel shorter distances, they pay more per mile, subsidizing the commute of higher income riders.

After examining travel time by mode of transportation (eliminating the three “riding” trips), it was not surprising to find that bus trips took longer on average: bus speeds are slower because of frequent stopping, and there is more walking and waiting involved.

- Walk: 26/604 (4.3 percent) trips – Mean 11 minutes; Minimum five minutes; Maximum 20 minutes
- Car: 540/604 (89.4 percent) trips – Mean 13 minutes; Minimum one minute; Maximum 60 minutes
- Bus: 38/604 (6.2 percent) trips – Mean 30 minutes; Minimum five minutes; Maximum 69 minutes. Many of these trips involved transfers, so the actual travel time was much higher – when considering transfers, only 23 trips were actually made, making the average travel time over 49 minutes. This does *not* include the time waiting in between buses.

Duration of job trips

Although there were very few trips made to jobs (4.3 percent or 26 out of 607), it was surprising to find that people are willing to travel an average of 32 minutes (minimum eight minutes; maximum 71 minutes) to low-paying, low-mobility jobs. This travel time may actually be higher than 32 minutes, because many of the women made one or more stops before they went

to work (e.g., day care, gas station, or friend's house), rather than going directly from home to work.

Examining travel time to jobs by *mode of travel*, only one woman commuted to a job on the bus. Her travel made up 15.3 percent of the job trips (four of 26 trips). She was willing to ride the bus on average 55 minutes each way (including a transfer) to work at Taco Bell. More than three-quarters of the trips to jobs were made by car (20 of 26, or 76.9 percent). The average time was 28 minutes (minimum eight minutes; maximum 60 minutes), less than half the average time commuting on the bus. The remaining two trips (7.7 percent) to work were made on foot. One trip was made by a woman who walked to pick up a job application; the other trip was made by a woman who walked to work from school at the Career Investment Academy (to which she had gotten a ride that morning). Both walking trips took 20 minutes.

Duration of trips with bus

KAT reports an average bus speed of 13.8 miles per hour (Hairr 2002); however, the average *driving* speed in this study is just 13.3 miles per hour (excluding "riding" trips). This indicates that it would actually be slightly faster to ride the bus than to drive one's own car. Based on the 1715 total miles traveled in this survey, at the average car speed of 13.3 miles per hour, it would take 129 hours. At the average bus speed of 13.8 miles per hour, it would take just 124 hours if all trips were made by bus.

However, many of the shorter trips would probably not be made on the bus, as people would be more likely to walk or not make the trips at all; thus trips that were one mile or less (over 31 percent) were removed for analysis. Of the 1625 miles traveled in the remaining trips over one mile, it would take approximately 122 hours in a car (at the average speed of 13.3 miles per hour) or about 118 hours on a bus (at the average speed of 13.8 miles per hour). Thus, even with just the longer trips, it would still be slightly faster to ride the bus.

Also, even though KAT reports a bus speed of 13.8 miles per hour, there can be a significant amount of time spent waiting for, or between, buses. Grace Randolph summarizes, "the waiting... it's so much time consuming. I go there, they only run every hour. So you have a whole 'nother hour to wait. It's too much time consuming. They say there's not enough people to ride them to run them more regular. Sheena Jordan agrees that buses are "frustrating. I used to take it every day to school... I'd have to transfer. It took me like an hour and a half or more just to get home. After 12, they run like every hour or hour and 15. You just standing there til the bus comes. It

would be hard... I'd take four different buses each day... It's a long ride... just looking out the window.

Lapse time between trips

Another measure that can be used to see if riding the bus is feasible is the amount of time respondents spent at a given place (*not* counting overnight hours). The overall average was 81 minutes, making women's access to the bus somewhat flexible, as buses run every 30 minutes (at best); thus, they would supposedly have multiple buses to choose from with such a long lapse time. However, this does not present a clear picture since it is skewed by very long durations at jobs or at home in between trips. The minimum time spent at a particular destination was just one minute, while the maximum was 630 minutes, or 10.5 hours.

To get a clearer picture of the length of time spent at places, work-related activities and time spent at home were eliminated. The average time spent at a particular place is then reduced to just 30 minutes. Thus, it appears that most people could efficiently ride buses that run at 30-minute intervals. However, not all routes actually run every 30 minutes, and there is more to consider than just the *average* time spent at a place. Examining trips with short lapse times (time spent at a place), indicates that nearly 50 percent (252/509) of all trips have a lapse time of 15 minutes or less (i.e., *many* in-and-out trips); thus over half of the rides would be inconvenient on a bus, as people would be forced to wait for buses that run only every 30, 45, 60 minutes, or more. Sabrina Henkins takes these factors into account when planning for her bus use: "usually if I knew I would be somewhere for a while, I would catch the bus... but like trips to the grocery store and stuff like that I would rely on my sister. It was a pain."

Travel area

Travel area is also important in activity-based travel studies in order to examine transportation and time constraints. Kwan (1999) argues that in order to compensate for disproportionately restrictive mobility constraints, women tend to negotiate their days with more dense travel patterns.

Using GIS, the generalized travel area was created for each woman (Figure 6-6). The average travel area was 16.6 square miles; travel areas ranged from 2.3 to 65.3 square miles. Nearly half of the women who completed travel diaries in Knox County kept their travel area under 10 square miles, while less than one-quarter had a travel area of over 25 square miles, indicating that these women are indeed keeping their travel areas dense to cope with mobility constraints.

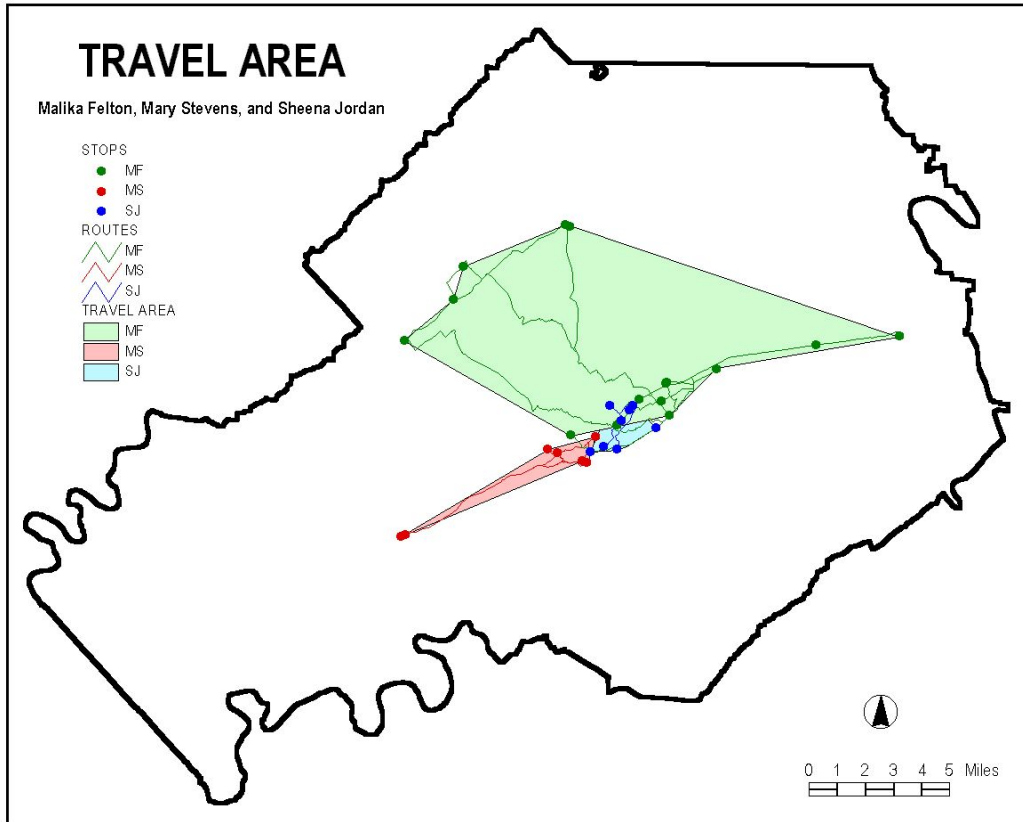


Figure 6-6. Generalized travel area for selected respondents.

Sheena Jordan (Figure 6-6) had the smallest travel area; however, she only completed one day of her travel diary, so this is not a very representative sample. The next smallest travel area was that of Mary Stevens (Figure 6-6) whose travel area was only 3.7 square miles; although she travels more than eight miles to her job, her travel patterns are very *linear* along that and few other routes, making the travel area seem quite small. Malika Felton (Figure 6-6), on the other hand, had the largest travel area of 65.3 square miles. This is surprisingly large for a woman who does not have a job or a car; however, her daughter plays sports after school, and thus Malika has to take her to other schools for practice and games.

ANALYSIS AND DISCUSSION: COPING WITH TRANSPORTATION CONSTRAINTS

The results of these travel diaries clearly indicate that working poor single mothers, and those making the transition from welfare to work face numerous transportation constraints. Reliance on public transportation is difficult for them for a number of reasons. For example, picking up and dropping off children, one of the most common trip purposes in this study would be extremely difficult to manage on a bus, as buses run at intervals of 30, 45, 60 minutes, or more.

Non-work trips

Based on the assumptions that non-work-related trips are shorter and that less time is spent at these destinations than at work, it will be extremely difficult for working poor mothers to ride buses. In addition, as the number of non-work trips increase as a proportion of travel, it becomes more difficult to manage these trips on a bus. Grace Randolph, who is in the process of looking for a house, as she recently received Section 8 housing assistance says, “it’s been so hard to find one [a house] not having any transportation to get around and look. My friend, he works, so I have to look on his off days, but you know you’ve got a lot of running around to do on your off days.” These types of “survey trips,” such as looking for a house or looking for a job are extremely difficult on a bus.

Exceptional trips

The question also arises if these women could cope with exceptional trips (e.g., caring for or picking up a sick child) if they had to ride a bus. Using the bus simply would not be feasible in situations such as these, making it harder for these women to have public transit as their only mode of transportation. For example, Betty Elliott, who says, “I’m lucky. My parents have

provided me with a car,” finds that having her own car has been crucial in dealing with her daughter’s health care. “I would have a lot of middle in the night episodes. She’d wake up vomiting or an earache. She had to have her tonsils out at three. You wake up at two in the morning; we just hop in the car and go to the hospital. My gosh, imagine having to flag down a bus, and if it’s cold weather. How do you do that?” Even something as minor as waking up late is managed well with a car, as during the study Monica Williams was able to drive her son to school after she failed to get him up and ready for school on time. Lisa White, however, has to depend on her daughter to attend classes and pick up another of her (disabled) children who “acts up” often: “I’ve had to go get him and bring him home when he’s acting up because they couldn’t handle him. If it’s real bad, she’ll come.”

Days of the week

It is possible, however, that many of the trips that are made on weekends in this sample could be flexible and undertaken during the week when buses run more frequently; however, this would be a significant sacrifice of convenience, and nearly one-quarter of the women in this sample (four out of 18 or 22.2 percent) needed to get to jobs on weekends. Although buses run on schedules, jobs may not be on those same schedules, which would make it very difficult to get to work on such limited weekend bus schedules.

The incidence of travel on the weekend (21.4 percent of trips) indicates that KAT’s weekend routes could, however, be very important to this group of women. However, none of them chose to use this service; they drove their own cars or decided that it was more convenient to get rides with others. Diamond Young, for example, has a best friend who will “come get me every day she get off from work and take me wherever I need to go – or just ride around or something.”

Time of day

Because many of the jobs the working poor can acquire have non-traditional hours, using public transportation will be difficult. For example, Grace Randolph, who is able to take the bus back and forth to school, says that unfortunately, “I had to let the internship go because of transportation. The buses stop running at 5:30 over there and we had to work the evening shift from 1:30 to 6:30 and I didn’t have no transportation. She [the boss] said she would wait and I could come back when I have transportation. I only have two weeks left.” Also, Tracy Pruett who is interning at Dollar General and will soon be looking for a full-time job, stated that transportation is her biggest constraint in getting back to work; however, she is currently able to

rely on her boyfriend to take her to and from work: “Before, I didn’t have any type of transportation, so it was really hard for me because the buses are on a time schedule, of course, so if I ever got a night job or a morning job sometimes it would be hard for me to get back and forth.”

Distance traveled

Perhaps short trips, however, would be easier to manage on a bus, as one could just “hop on” and “hop off” the bus. I initially assumed that longer trips would be more difficult to negotiate, because there would be more transferring buses and waiting in between. After recreating the trips as if the women did not have the use of a car (discussed in greater detail in the next chapter), I actually found that the opposite is true: short trips are *less* inconvenient on the bus, as there is just as much transferring involved in short trips as in long ones, and the women would often spend more time walking and waiting than actually riding the bus. Thus, several questions arise regarding this large number of short trips. Would these women ride the bus, walk, or simply not make these trips if they did not have a car to use?

Coping: Trading for rides

These results and preliminary analysis raise the question of why the women in this study are choosing *not* to ride the bus. They are willing to pay friends and in some ways inconvenience themselves to borrow cars or wait for others, rather than ride the bus; in a makeshift transportation-bartering system, they are often trading Food Stamps, or giving gas money to their friends for rides. Although she doesn’t always get the car every time or when she needs it, Lisa White is able to borrow a family member’s car. Her daughter “lets me borrow it whenever I need it, four or five times a week. I get it maybe half. She’ll bring it an hour or maybe later.” Grace Randolph also feels lucky to have family support: “My daughter, she’s been helping me, my daughter-in-law, his dad helps. But all of them work, so none of them can commit to it every day.” Although she “used to be a taxi cab driver... You taking people back and forth to the store. People out here don’t have any transportation. Give them rides to the store, to the doctor. I used to do a lot of that to make some extra change. Even last month when I had a car. Pay for my gas and extra little things that I needed.” However, she now pays a friend or neighbor \$3 or \$5 for a ride to the grocery store, for example, or “I can buy you a pack of meat. Usually that’s what they want because it’s expensive.” Although the bus runs in front of her house, Malika Felton also relies on others, “Sometimes my girlfriend’s husband. Sometimes the coach will come get him.

Their father lives within a mile and he takes us to games and practices sometimes. Last night we didn't make it – we didn't have a way. The bus does not go to where our practices are.” She finds that buying people a gallon of milk or a loaf of bread is satisfactory payment to have friends drive her places. A frustrated Sheena Jordan, however, whose car is currently being fixed, states, “I had to spend \$30 of my Families First check having people take me places and I pay them to take my daughter to school.” Sally Malone also finds it “difficult because you've gotta pay for everything you do. Even if you go to the store, they've got to be paid... in some kind of way.”

The explanation for these scenarios is simple. These women have complex lives and make a large number of trips on average. As a result, they would have to sacrifice a great deal of convenience to ride the bus, for in addition to the time spent riding the bus, there is a considerable amount of walking, waiting, and transferring involved. The data will be disaggregated further in the following chapter, to explain just why these women are not riding the bus.

CHAPTER 7

ANALYSIS: THE WORKING POOR AND THE POSSIBILITIES OF PUBLIC TRANSIT

“With the exception of a few cities, the mass transit solution has many shortcomings and personal transportation vehicles are clearly the most cost-effective means for the disadvantaged to access the job market in a qualitative way” (Charity Cars International 2005).

ANALYSIS OF RESPONDENTS' PATHS

The question that needs to be addressed is can Knoxville make public transportation a feasible option for the working poor, and if so, what kind of improvements would be required? To examine how trips made with personal automobiles would translate into trips made with public transportation, I used GIS to reconstruct the respondents travel patterns as if they did *not* have the use of a car, and instead had to use the bus, walk, or take a taxi. The overall question is whether or not public transportation will take the bulk of the working poor to their jobs, back home, and everywhere else they need to go within a reasonable time – without having to sacrifice childcare, shopping, and other necessities. If not, their costs in time, money, miles walked, deferred opportunities, and inconvenience were calculated to see how these women would have to change their lives if they did not have the use of a car. I assumed that these trip reconstructions would be unsatisfactory: respondents would either not be able to get to their destination, the trips would take an unreasonable amount of time, or the trips would be dangerous (walking in the cold, on highways, or alone late at night). If these trips are unsatisfactory, we cannot expect these women to ride the bus; from what we know about women and the medium-size American city, the buses will not work for this group. It is necessary to test this by examining just how unsatisfactory these bus trips are.

A study by the Public Policy Institute of California found that employers have significant problems with absenteeism among former welfare recipients, most commonly attributed to childcare and transportation. The study found that 43 percent rely on others for transportation to work, including public transit, carpools, or borrowing a car, thus reducing the control they have over their own schedule (Bania, *et al.* 2001). Thus, I wanted to discover if changes could be made to decrease the constraints of using public transportation. To test the value of increasing investment aimed at enhancing public transportation, I analyzed what the respondents' routes would be like, and recalculated costs, after increasing the frequency (doubling routes) and hours buses are available. I assumed it would change the time budget, but it does not make new places

accessible. I wanted to analyze whether these scenarios would reduce the inconvenience and help bring these transportation scenarios to an acceptable level.

Recreated trips with public transit

Weekday “off day”

Sheena Jordan traveled 16.6 miles in 50 minutes in her own car (averaging 20 miles per hour) on her weekday “off day.” After recreating this day without the use of a car, and even eliminating one trip (to get gas), her travel time would have been nearly six times greater with 291 minutes (86 minutes walking, 121 minutes waiting, and 84 minutes riding the bus). The total travel time is 3.5 times the time she actually spent on the bus; 3.5 hours are spent walking and waiting, making her overall average speed just 3.3 miles per hour (Appendix H).

Weekend “off day”

Weekends were expected to be more difficult to negotiate with a bus, as routes are less frequent and often combined or do not run at all. Betty Elliott’s weekend “off day” consists of only two trips: from home to church, and from church to home. Although she would not have to cancel these trips if she did not have the use of car, it would take her nearly six times as long without a car. She only had to travel 1.4 miles each way for a total of 10 minutes, but her speed would decrease from 20.3 miles per hour to just 3.6 miles per hour without a car. Because the Sunday Rider bus does not start running until 11:15, she would have to take a taxi to church. Her return trip could be made with the bus, however, it would require walking eight minutes to the bus, waiting 16 minutes, riding just four minutes, and walking 12 minutes home. As a result, her cost would increase by five times, as her cost with a car would be just \$0.89, yet without a car, it would cost her \$4.25. Because a taxi would only cost \$2.25 each way and the bus would cost \$2.00 (for her child and her), she would be better off using a taxi both ways, increasing her overall cost by just \$0.25, but saving considerable time.

Tracy Jones’ weekend “off day” consisted of more trips (5) and a total of just over 11 miles. Without a car, these trips would take 1.8 times longer (from 75 minutes to 137 minutes) and her speed would decrease from 8.9 miles per hours to 4.9 miles per hour. Her day included typical activities for an “off day”: visiting two friend’s houses, grocery shopping, and eating dinner out. A great deal of her time increase (33 minutes) was spent waiting for buses. In addition, transferring buses and walking to and from bus stops increased her time. Her time would have been even greater if she had missed one of the buses, as there was not a minute to spare in one of

her transfers. Tracy has experienced these constraints while using the bus in the past: “you didn’t know what time the bus was coming, so you’d have to walk... and go uptown and transfer, wait another 15-20 minutes...” Also, I assumed she could rely on Call-A-KAT for two of her rides; these two Call-A-KAT rides would only be possible, however, if she had planned a trip to her friend’s house and out for dinner 24 hours in advance.

Weekday “work day”

A weekday “work day” was assumed to be the most efficient on the bus, as more routes run, and they run more frequently. Whitney Davis’ weekday “work day” consisted of 40 miles traveled in just 100 minutes in her own car (averaging 24 miles per hour). After recreating this day without the use of a car, her travel time was 2.7 times greater, totaling 265 minutes (21 minutes walking, 59 minutes waiting, 155 minutes riding the bus, and 30 minutes in a taxi). Her actual time on the bus and in the taxi is only 185 minutes, but the total time is 1.4 times the time she actually spent in a vehicle. Although she did not have to eliminate any trips, this scenario is not realistic for her, as she could simply not afford the \$20 taxi ride required to get to work (Appendix H).

Weekend “work day”

Monique Pride’s weekend “work day” was expected to be difficult without a car, as routes are less frequent and her work schedule is fixed, rather than flexible with the bus schedule. After recreating her six trips without the use of a car, four of them would have to be cancelled. She would not need to or be able to pick up her friend to take her to work and back home again. In addition, her trip to and from eating lunch out would not be possible because the buses only run every hour on the available route, and walking would have taken 36 minutes; this is not tenable either, as she only has 30 minutes for lunch. Even with four of her trips cancelled, resulting in a seemingly simple day of traveling from home to work and then back home, it would take her nearly three times longer without a car: from 55 minutes to 146 minutes because of walking 11 minutes, waiting 24 minutes, and riding on the bus 111 minutes because of transfers and inefficient route paths for her travels. In addition to the time increase, although she is lucky that her connections are perfect (thus reducing waiting time), she would not have a minute to spare in making the transfer required to and from work; if she were to miss either bus because *she* was late, or the *bus* ran late to the transfer stop, her time would increase significantly. Her trip would

be somewhat easier on a weekday, however, as the Saturday schedule is only one-third of the weekday routes.

Large number of trips

Because trip chaining and the proportion of non-work related trips are increasing, it is important to analyze the travel of women who make many trips with a car. People typically will run their “errands” and make recreational trips on a weekend “off day,” as Diamond Young did with 16 trips in one day. Close to half were visiting and picking up/dropping off friends; other trips were for recreation, eating out, and “picking up something.” In a car, she drove over 32 miles in nearly four hours (219 minutes). After recreating her trips without the use of a car, although two trips had to be canceled, as they were for someone else, her time did not actually increase very much (1.3 times). However, the cost increased dramatically – 9.3 times from just over \$2 to \$21. The reason for the little time increase was because many of her trips would have to be made with a taxi, as many were made after midnight when no buses or Call-A-KAT vehicles run; however, the taxi rides significantly increased her overall cost. Also, even if Call-A-KAT was available at these times, it is unlikely she would have known about her trips to a bar, restaurant, or visiting a friend 24 hours in advance in order to make a reservation with Call-A-KAT. It is likely that without a car, she would have actually made few of these trips, because of both the cost increase, and the foresight needed to call a taxi or Call-A-KAT.

On a more typical weekday “work day,” Monica Williams also made many trips – 13 – many of which were essential to her family and work life. This day included taking her children to school, going to her classes, picking up her children, then going to the bank, grocery store, her mother’s house, and finally taking her family out for some recreation time in the evening. It was expected that this day would become quite difficult and inconvenient without the use of a car. She only traveled 18.3 miles this day in 108 minutes, averaging 10.2 miles per hour. After recreating her trips without the use of a car, she did not have to eliminate any trips, however, her time almost doubled to 207 minutes (3.5 hours of travel), averaging just 5.3 miles per hour. Because many of her trips were short (less than ¼ mile), she was able to walk to six of her destinations in the recreated scenario. This took little or no more time than her car trips did. Two of her trips could also be made with no time increase if she planned her trips in advance to use Call-A-KAT; the bus she would need to take stops running at 7 PM, yet she had to be at Sarah Moore Greene School from 7:30-10:30 PM. Of the five trips that would be made on the bus, the time increase was significant, however. The bus caused a majority of the increased time in the recreated

scenario. Instead of driving her car 50 minutes, using the bus for these five trips would take 142 minutes, including walking just 10 minutes, but waiting for 66 minutes, and riding the bus for 66 minutes. Although her time spent on the bus is not much more than her driving time of 50 minutes, the time required to use the bus was nearly triple the time it took in a car. While she could make a perfect connection (her bus arrived at the same time the transfer bus was leaving), she missed another bus by just three minutes, forcing her to stand and wait 27 minutes in the January cold for the next bus with her two 5-year-old children. In addition, her cost more than doubled from just over \$6 to almost \$14 without the use of a car.

Few trips

If days with many trips are this inconvenient, it seems important to examine travel days with very few trips. On a weekday “work day,” Sharon Griffen made only two trips – from home to school and from school to home. She traveled just 2.8 miles that day in 25 minutes. Her speed with a car averaged just 6.8 miles per hour, but it dropped dramatically to just 1.8 miles per hour without the use of a car. As a result, it took nearly four times the amount of time (94 minutes) to use the bus just to get to and from work. The increase in time came from walking 14 minutes, waiting 46 minutes, and transferring and riding the bus just 34 minutes. Sharon experienced these constraints in the past when she was reliant on the bus: “You have to get up at day break to catch the bus. And you’re never going to get where you going on time because you get off the bus and walk them [her children] down there. By the time I get them in there, another bus would’ve done come, so I’ve got to wait on the next bus.”

Whitney Davis also made just two trips on a weekday “off day,” traveling only to the grocery store and back home. Because it was on a weekday when buses run more frequently, and because this trip could most likely be flexible in terms of time of day, I expected this to be an easy trip to manage on the bus. The grocery store is just ½ mile from her house; thus, she could probably just walk, however, it would be difficult to return with armloads of heavy groceries in mid-January. The bus, however, does seem to be adequate for her on this trip, as it took her five minutes in a car, but would only take her nine minutes on the bus. However, the return bus takes a different route, thus there would be no bus to take her home from the grocery store. Although she would have to sacrifice little in terms of time or money to accommodate the bus trip to the grocery store, she would have no way home but walking or taking a taxi, and would have to sacrifice convenience (i.e., walking with heavy groceries). Overall, time would double without a car, as it took her 10 minutes in a car, but would take 19 minutes to ride the bus there and walk home.

Although this is not a large time increase (just nine minutes), it is still, in fact, nearly double the time with a car.

A final example of a short travel day is Sabrina Henkin's weekend "off day," when her only travel was driving 5.4 miles from home to Wal-Mart and back home again. I chose to examine this trip to compare it to the previous example, as they are both flexible shopping trips; however Sabrina's trip is much longer and is on a Sunday when bus routes are quite limited. I was surprised to find that public transportation would actually work quite well for her. After recreating the trip without the use of a car, I found that there is no difference in time (18 minutes each way in either scenario), and it actually would cost less (\$3.53 with a car compared to \$3.00 on the bus) to use public transportation. Because this is a Sunday when only four routes run, however, she would have had to plan this trip 24 hours in advance to use Call-A-KAT. Assuming she really planned this trip 24 hours in advance, *public transit* would work quite well for her. It is important to note however, that the *bus* would not work.

Summary of all re-created trips

Using these scenarios as examples, it is clear that riding the bus is much more inconvenient than it first appears; much more is involved than just the actual time spent on the bus, which alone is actually faster than the average speed of car travel in this study. As stated previously, of the 1625 miles traveled in trips over one mile in this study, it would take about 122 hours in a car (at the average speed of 13.3 miles per hour). On a bus, these trips would take only 118 hours (at the average speed of 13.8 miles per hour) (Hairr 2002). However, based on recreating the routes in this study, the actual speed when relying on public transportation is actually only 7.3 miles per hour, and would take 223 hours, approximately double the amount of time it would take in a car. For comparison, traffic crosses midtown Manhattan at close to five miles per hour (*The Week* 2005). As low as it already is, this average speed assumes (very liberally) that buses and respondents were never late; some schedules were so tight that if any of the connections or the rider were even one minute late, there would be up to an hour wait. This evidence indicates that buses are much more inconvenient than they first appear because of the amount walking, waiting, and transferring. Lisa White summarizes: "It's the route and the wait... you gotta wait, wait... wait on it."

I also found it to be 2.4 times more expensive to rely on public transportation than to use one's own car. This cost is based on comparing standard bus fares to a driving cost of \$0.33 per mile (for gas, maintenance, insurance, etc.) when using one's own car. Although this does not

include the purchase price of a car, it is much cheaper on a daily basis to drive one's own car than to rely on public transportation. On average, it would cost these women about \$5 per day to drive their own, car, or over \$8 per day without a car; it would cost nearly \$100 per month more to rely on public transportation! This high average cost is mostly attributed to the fact that participants would have to use taxis, as buses were not running during the times or to the places they needed to go.

In addition to slower speeds and higher expenses, one must also sacrifice a great deal of convenience when she does not have her own mode of transportation. Approximately 20 percent of all trips were eliminated from analysis: trips that were unnecessary with no car (e.g., getting gas or picking up a friend), trips that were made for friends or family (the women would not make these trips if others could do them on their own), or trips that simply would not be possible without a car (e.g., a 36 minute bus ride to lunch on a 30 minute break). In reality, reliance on public transportation will require that a great number of trips be sacrificed, as it seems unlikely that someone will ride a bus more than an hour to stay somewhere for 10 minutes. Would these women really make these trips? Would someone really walk 20 minutes to Taco Bell, or try to figure out the bus routes, or would she just stay in and eat something at home? There would be a drastic change in available opportunities if these women did not have the use of a car.

These public transportation-reliant scenarios were found to be unsatisfactory: the women either could not get to certain destinations on the existing bus routes, the time increase is unreasonable, or they could not make trips because of time or money constraints. Very few trips were "better" in terms of time, money, or convenience. The additional time, cost, and inconvenience of relying on public transportation is overwhelming. This analysis illustrates the impossibility of pulling together a normal life, let alone coping with contingencies and emergencies, even with access to greatly expanded transportation services.

Solutions? Increasing route frequency and hours/days served

Because these situations were so inconvenient in terms of time and money, I next examined what changes could be made to these bus scenarios to decrease the constraints associated with public transportation. Increasing route frequency and hours of service resulted in the following examples:

Doubling route frequency for Sheena Jordan's sample "off day" resulted in 189 minutes of travel without the use of a car. This is reduced from the 291 minutes it would take without a car, at present route frequencies. This is a considerable decrease; however, it is still nearly four times

her travel time with a car (only 50 minutes) because of the walking, waiting, and transferring involved in taking the bus. Making routes 24 hours a day, seven days a week has no effect on her travel, as all of her trips were made on a weekday between the hours of 7:30 AM and 5:06 PM, when buses are actually running.

Doubling route frequency for Whitney Davis' sample "work day" resulted in 235 minutes of travel without the use of a car. This is slightly reduced from the 265 minutes it would take her without a car, with route frequency as it is today. This is still considerably more time than the 100 minutes it took her with her own car. Making routes 24 hours a day, seven days a week actually dramatically *increased* her travel time to 368 minutes. This increase is attributed to the fact that she could now use the bus for all her trips, rather than have to rely on a taxi. Although this is a considerable time increase, the cost is now feasible for her, without the expense of a \$20 taxi ride. By doubling route frequency *and* making routes 24 hours a day, seven days a week, the best possible scenario for her is 323 minutes. This is, however, still more than three times the time it took in her car.

Even after doubling route frequency and making routes 24 hours a day, seven days a week, the travel time for these two scenarios averages 3.4 times longer than times associated with using their own cars. As I initially assumed, riding the bus would *still* be too inconvenient, even with these enhancements. The public transportation problem is robust; simply adding routes and hours will not solve it. Not only is this unacceptable in terms of convenience, but it is unlikely that KAT could afford to invest this much money in public transportation, especially when it is already 80 percent subsidized.

Regardless of the improvements that are made to public transportation, it appears that they would not be enough, as there are still many special trips or multi-purpose trips that would have to be sacrificed with public transportation. Clearly, more than public transportation improvements are needed, no matter how we analyze the data.

THE REALITY OF THE RESULTS

To assess the accuracy of my trip recreations, I even "recreated" routes on the bus (according to my established parameters) for respondents who actually *did* use the bus. I found that my results were actually *shorter* than what respondents recorded on their travel diaries (e.g., Grace Randolph's actual recorded bus trips were nine and 25 minutes longer than what they should have been according to the bus schedules). Thus, my estimates of recreated trips are probably much shorter than in reality, making bus travel an even less attractive alternative.

Based on the assumptions I made when recreating their trips, there are a number of factors that would actually make their trips longer (or not feasible) in reality. Issues that relate to KAT's service, include the fact that I assumed that every bus was on time, at times giving the woman just a minute or two to catch the next bus. Had the first bus been late (causing her to miss the next bus), times would have increased dramatically. Many women in this study commented on the unreliability of KAT buses, however. Tracy Pruett states, "they aren't reliable... they might be late or the bus might break down or something like that. You might be late getting to work or where you need to be." Summer Hunt is also "sick of the buses. They're too slow and they change the schedule. Everything's haywire..."

Another issue that affects the reality of these recreations is that where I have identified (from a travel diary) that a woman would have caught the bus with just a minute to spare, it may be that she would have actually missed it if she was simply rounding her time on the travel diary. These recreations also assume a number of Call-A-KAT rides, meaning the women would have to know about their trips and call for a ride 24 hours in advance.

I also assumed that each woman had access to, and time to examine, every route map and timetable. There were cases when it took me up to 20 minutes to recreate and evaluate the options for one trip (origin-destination). How would these women be able to do this efficiently? I had access to every paper route map with timetables, and all routes in a GIS so that I could compare routes, arrival and destination times, and connections efficiently. I often carefully compared route maps and timetables to identify street corners (rather than the downtown transfer station) where she could get off one bus to catch a bus on another route. However, many of these women simply stand outside and wait until a bus comes (perhaps they know a route or two) or perhaps call KAT for information. The question is, however, would KAT take the 20 minutes as I did in order to give them the best times or the easiest routes? The complexity of learning the schedules and organizing your life around them is certainly prohibitive to efficient daily travel.

Lisa White has experienced such difficulties in trying to negotiate bus schedules: "Sometimes you really don't know what you're doing and you can get stranded for hours. Sometimes if you miss your bus and if you don't know what route or time and you can miss it. Last time I rode the bus, I ended up waiting a whole hour because I missed it. It makes you pretty frustrated by the time you get where you're going." By using the bus, these women would be inconvenienced in almost every case, and possibly even more so than what my recreations indicate.

CHAPTER 8

DISCUSSION AND CONCLUSION

“Millions of people cannot be moved from welfare to work simply by decree... Not without training and education. Not without transportation... Just cutting benefits will not enable people to get jobs – no matter how much they want to work” (Nieves 1996).

THE NEW URBAN LANDSCAPE AND ITS EFFECTS ON THE URBAN POOR

The decentralized urban landscape is a significant barrier to the success of traditionally conceived welfare-to-work initiatives. This landscape forces the poor, especially working poor women into very spatially difficult lives, and into absolute auto dependence, as public transportation has not kept up with the decentralization of populations and jobs. These are not landscapes laid out for poor people, and certainly not for poor working single parents. No one could effectively negotiate the medium-size decentralized American city without a car, let alone the working poor.

The working poor face many transportation complications based on low levels of car ownership and the constraints of public transportation. As a result of all these constraints, reliance on public transportation is a significant barrier to participation in the laborforce (MacDonald 1999). Job accessibility does seem to be improving for many, however, as the number of people using private automobiles to get to work has risen over time. Unfortunately, low-income populations often cannot afford automobiles or the related costs of upkeep, insurance, and fuel. Thus, they are more likely to commute by bus. However, as cities have decentralized, jobs are often not found where the working poor reside. Today approximately 75 percent of all jobs are in the suburbs, yet over 50 percent of the metropolitan poor live in central cities (Waller 2005). The reality of public transportation and its inconveniences make it difficult to resolve this spatial mismatch. In addition, public transit is not a viable option unless most buses also run on nights and weekends, which they often do not. This results of this study indicate that it takes more than twice as long to make trips without a car as it does with a car, it is more expensive, and over 20 percent of trips would just not be feasible without a private automobile.

Based on the changing geography of cities, including decentralization of jobs and residences, and decreased availability of public transportation, there is clearly a serious problem with public transportation in medium-size cities. The obstacles to getting off of welfare *while* using public transportation seem overwhelming, including: spatial mismatch (jobs and residences are not near each other), temporal mismatch (many people work odd hours or weekends), and trip chaining

(which is difficult if relying on a bus). Transportation is critical in getting people back to work and increasing self-sufficiency (Waller 2003).

Thus, perhaps programs such as vanpooling and accessible on-demand transit could improve the situation of the working poor. Improving public transportation might also be able to help working poor women to some extent. However, an incredible investment would be required to make it feasible to create a system of public transportation in accord with daily life in a medium-size city like Knoxville. Such a system would not be cost effective. This study has shown that public transportation is not useful for many people. It will only work in few situations, perhaps for those for whom time is not important. But time *is* important for the working poor, just like it is for everyone else. Only four women in this study used public transit; an overwhelming percentage of those few trips were simply to get to and from work. However, people's lives are increasingly complicated and involve much more than just getting to and from work. Public transit and other programs are nothing compared to giving people access to automobiles. In fact, there is no alternative in a city like Knoxville for a working poor woman with children.

POTENTIAL SOLUTIONS AND POLICY IMPLICATIONS

Simply improving public transit is a non-answer to the problem, and a number of different policies and alternatives are needed to fill the gaps. Policy alternatives include encouraging employers to change work schedules or even their locations, encouraging employers to provide transportation, moving women to comparable housing closer to the workplace, providing services at transit stations, providing ride-sharing, providing automobile subsidies, providing access to vehicles, and reducing sprawl. But in the end, it is personal automobiles that are needed.

Modifications to public transportation

Through the use of GIS it is clear that even if public transportation service were *doubled* in Knoxville, it would not provide acceptable levels of convenience and self-sufficiency. The problem will not be solved with extended hours and a few new routes, which is what many current plans suggest. Many modifications can be made to existing public transit systems; however, it is important to note that this is just one of many piecemeal solutions, and transit improvements are often expensive and can take years to implement.

New feeder or circulator routes, which feed from neighborhoods into existing routes, could be used to connect residents to more employers and services. These smaller buses could be used to offer flexibility of routing and potential for stops other than traditional collection stops (e.g.,

stopping at childcare, medical care, and other human services locations). In addition, services could be provided at transit stops or centers. Innovative strategies could also be used to make transit more accessible on nights and weekends. For example, evening bus schedules were altered in Hartford, Connecticut to accommodate workers at the local shopping mall (Transportation Research Board 2000). However, it is unlikely this will solve the transit problems of the working poor.

Deviated-fixed routes are another flexible public transit option. Buses operate on fixed routes and maintain timed stops; however, they can deviate from their routes to go to specific locations, such as childcare or a job location, and then return to their regular routes. Point-deviated routes also maintain timed stops, but do not have specified routes. Buses will stop at certain places at certain times, but can pick up and drop off passengers (with reservations) over a dispersed area. Jitney services are another innovative modification of public transportation, operating on fixed routes with no timed or fixed stops (Jeskey 2001). This type of public transportation may be increasing flexibility as it tries to resemble private transportation; however, the rider is still dependent on a service they do not have complete control over.

Other ways to link welfare recipients to potential employers involves creating direct routes from areas of high residential density of welfare recipients to jobs in the suburbs. Examples of current strategies include subscription routes between central city residents and suburban job sites in Chicago and Seattle. In addition, Louisville, Kentucky has a late-night subscription van service for workers (Transportation Research Board 2000). Another solution would be to attempt to create direct partnerships between employers and transit systems to get working poor women to places of employment efficiently. Again, however, the working poor would still not have control over their own transportation alternatives.

To make the cost of public transportation less prohibitive for those just beginning to work, passes and free transfers could be given to welfare recipients to enable multiple stops on their way to and from work. For example, Detroit offers a free month of bus rides when eligible new employees get jobs; Delaware offers three weeks of free rides, but requires letters from employers (Jeskey 1999), which would likely deter a number of people from accepting this service because of the stigma of admitting one's status to her employer. This may be an improvement in public transit for the working poor, but it is still public transit, which significantly constrains riders.

Paratransit

Paratransit is a method of facilitating mobility that blends public transportation and personal automobiles and is useful for individuals who cannot use fixed-route public transportation. For example, in Portland, Oregon, low cost on-demand 24-hour-a-day 7-days-a-week door-to-door service is provided for seniors. Preference is given to volunteer drivers over paid drivers. Customers can choose to pay by the hour or by the mile and their pre-paid accounts are charged; ridesharing and advance-scheduled trips are discounted. This encourages riders to spend money on their accounts rather than on personal automobiles (Pratt 1999). This program could easily be extended to low-income workers making the transition from welfare to work.

In addition, ridesharing and on-demand vanpools could be utilized and combined with volunteer driving programs, using welfare recipients as drivers. This would not only get people to work, but also create employment opportunities. An innovative program in Maryland allows welfare recipients to operate their own vanpools to earn a living while providing transportation for others (Transportation Research Board 2000). Vanpools can be public operations or individually owned. They are inexpensive to operate, as the driver is often a rider in the vanpool. Similarly, taxi-sharing could be encouraged, so that employees making the transition off of welfare could share fares with those who have similar points of origin and destination. These programs would improve the ease of transportation for the working poor, but they would still face many constraints without access to their own private automobile.

Public transportation systems could also provide on-demand guaranteed rides home for emergencies or overtime work. For example, this would serve clients who need to pick up a sick child or have to stay at work late. A program such as this could be limited to a certain number of free trips with a taxi service, so that it is not abused.

Other transportation solutions

Other transportation solutions include promoting bike use and walking, through better transportation planning and provision of free bicycles and bicycle repair. Although it would be a costly program to pay someone to drive them, public school buses – otherwise mostly unused at night and on weekends – could also be used during off-peak hours. Transportation planners could develop congestion pricing plans to shift optional driving away from peak traffic times (Handy 2003), decreasing people's reliance on automobiles, and thus forcing public transportation improvements. People could also pay higher prices at the pump or emissions taxes to internalize typically external costs of pollution, and thus encourage the use of public transit. This would still

require, however, significant improvements in public transportation in order to make the constraints the working poor face, manageable. Waller (2005) argues that it would be prohibitively expensive, however to expand public transit to meet the needs of the working poor.

ACCESS TO PERSONAL AUTOMOBILES

Therefore, the most important and feasible solution is to help these women acquire automobiles as well as necessary skills and behaviors. Blumenberg, Moga, and Ong (1998) agree that private automobiles are the best alternative for welfare recipients and transportation planners should pursue this as a strategy. There are many ways this can be achieved.

Recipients could be provided with assistance to buy, lease, or repair cars through programs that facilitate donation and repair of older vehicles or low- or no-interest loans to purchase or lease vehicles. In addition, individual development accounts (IDAs) should be allowed for automobile purchases. Once cars are acquired, funding should also be in place for gas vouchers, insurance assistance, and car repair to make sure these cars remain affordable for the working poor.

Charity Cars International (2005) is an example of an agency that gives used cars to welfare recipients; this program also provides the recipient with enough money for an insurance down payment, registration, and a service warranty. It also includes a one-year lien so that the car cannot be sold. If recipients do not find work within 30 days, the car is repossessed. The agency has found that giving recipients cars has given them a new outlook on life, as well as a heightened sense of self-esteem and ambition. This type of program also helps the working poor get beyond the initial, overwhelming up front cost of acquiring an automobile.

Knoxville's Community Action Committee (CAC) is an example of an organization that has helped several women in this study pay for car repairs. Although she has had difficulties finding someone to tow and repair her car, Diamond Young signed up for Families First only so she could receive an \$800 car repair voucher. Grace Randolph and Sheena Jordan have found more success, however, as CAC has helped them repair their cars in order to get back and forth to work. A number of the women in this study, however, still have the desire for a reliable or even repairable car. Whitney Davis experienced trouble with her car: "I couldn't drive it when it rained because the wipers wouldn't work. I got another car... too many problems... it was just problem after problem after problem."

Potential results: Improving income and chances of getting a job

Although it may be expensive, owning a car is a worthwhile investment for low-income families. Although public transit is often argued to be less expensive than owning a car, workers without a car may not be able to search for a job or accept a better job if public transit does not take them where they need to go. Thus, they lose out on income or benefits. The typical welfare leaver earns about \$8 per hour; although transportation can make up over 20 percent of a household's expenditures, most poor households will seek access to a car to reduce commute time, increase flexibility in trip planning, increase safety, and improve job opportunities. Waller (2005) reports that 27 percent of households making under \$20,000 do not have a car, compared to eight percent of all urban households (Waller 2005).

Waller (2005) cites studies that indicate that access to public transportation has little or no effect on employment outcomes for welfare recipients without cars, while car ownership is positively related to higher earnings and more hours worked. Owning a car improves one's chances of getting and keeping a job, and improves access to better jobs. Research in Vermont shows an increase of about \$220 per month. The car would quickly pay for itself with these increased earnings.

Although Monica Williams used to be able to walk to where she worked, "they moved it and I couldn't go where they moved to" without a car. If Grace Randolph had her own car, she feels she would "be able to make some more money and I'd be able to save some cause I wouldn't have to pay so much out on transportation and bus fare... It's \$10 for me a week and pretty close to \$15 or 20 for him [her grandson]. One tank of gas would take me all week." Lisa White also has trouble finding a job without a car: "I do have time to go job hunting, but I just don't have the bus fare, you know, transportation right now to go. I asked them down at Job Search, ask could they put me in something else, something that's on the bus line, you know. It's right across the way, right out the door." Sally Malone also feels constrained by not having a car to get to work: "I'm not working, I can't get a car. Unless I can get something around here in walking distance... I've got a good education. When it comes to jobs applications and resumes, I know what to do. It's just the transportation thing. Transportation is the factor to find a job."

Potential problems of car ownership

Higher prices

However, Katz (2005) and Waller (2005) also find that compared to higher-income households, poor people tend to pay higher prices for cars, interest rates, and insurance, including hundreds more to buy a car, hundreds more to borrow the same amount of money for a car loan, and hundreds, sometimes thousands, more to insure the same car. This is because businesses charge higher prices to cover the higher risk when they sell to the poor, who are more likely to miss payments or default on loans. Also, predatory businesses often take advantage of poor families, charging unnecessarily high prices. Interest rates can be higher because some low-income households may not qualify for mainstream financing. Some may purchase from dealers who offer “interest-free” car loans, but charge much higher purchase prices. Finally, low-income households often lack market information, making them less likely to shop for lower prices or detect marked-up prices (Katz 2005; Waller 2005).

To assist with these additional constraints, there are currently over 160 state and local programs in the country that support car ownership for low-income households (Waller 2005); however, programs such as Charity Cars International and Knoxville’s CAC car repair program would be prohibitively costly for entire populations making the transition off of welfare, and so it is clear that other programs are also necessary. Unfortunately, the federal government has not taken great strides in encouraging research or funding on transportation, car ownership, and employment (Waller 2005).

Necessary skills and behaviors

Another important issue to consider is that using an automobile, although liberating, requires a variety of skills, attitudes, and behaviors, the lack of which often lock women into their poverty and welfare dependency in the first place. Welfare recipients could first be given free driver’s education courses and driver’s licenses, as well as assistance in paying off any outstanding parking tickets or fines, which often restrict the working poor from acquiring a driver’s license in the first place.

Two of the women in this study found this particularly challenging. Mary Stevens needs to get her license to “do what I want to do... It’s like \$60 some dollars to get my license. And there’s some insurance you’ve got to have. Some kind of classes.” Summer Hunt also feels constrained by the high price of car ownership, yet even without a license, she is driving herself to work. “I’m really not supposed to be driving... I got in trouble some years ago. I’ve never had

a license. It's hard to get a license... I went out there and they said I owed \$200 and something dollars. I got pulled over on the way to work... and he gave me a nice little chat and said I had to go uptown. I went uptown and found out that my fine was \$480. Now I gotta pay that... and I have to pay the \$219 to get my license. I'm just driving myself to work... I don't want to go nowhere else."

REDUCING SKILL AND SPATIAL MISMATCHES

Policy efforts should also be targeted at increasing job accessibility for central-city women. For example, Delaware's Department of Labor Web site brings together social services information to allow residents to enter their address and find jobs, childcare, and educational institutions within three-mile radii of their homes. The intent is to bring transportation and services data together to help welfare recipients overcome obstacles to employment (Anderson and Ayres 2000). Web sites such as these can improve service and opportunities for welfare recipients by providing interactive mapping abilities in order to allow residents to find close-by jobs, childcare facilities, services, and bus stops. However, just because people have access to information about jobs and services, does not mean they can access them, especially if they are dependent on public transit.

Job opportunity networks, relocation and rental assistance, housing vouchers, and a complete review of public assistance programs can also improve the lives of those making the transition from welfare to work (Kasarda 1990). In addition, to get people to jobs, central cities need to be made more attractive to industries. To further address the problem of spatial mismatch, other programs could be developed to create central city jobs, move low-income residents to the jobs (suburbs) with relocation assistance, or improve transportation to increase access to jobs. However, all of these improvements would be made more accessible through the use of a personal automobile.

The United States Department of Housing and Urban Development (2000) suggests that housing assistance targeted to high poverty areas could also be used to link welfare recipients to jobs by restoring communities and creating jobs that will be *available* to welfare recipients. HUD could identify potential housing locations that are accessible to jobs and support services. People need to live in stable housing *and* have access to jobs if they are to succeed after welfare. The problem with this plan, however, is that *jobs are not enough*. In addition, jobs are seldom interchangeable; although jobs might be created, they may not be ones this group of working poor can or wants to acquire.

Suchman (1993) also argues for improving the income and upward mobility of residents of low-income neighborhoods. She argues that cities should develop programs to help low-income neighborhood residents start their own businesses and encourage local entrepreneurs through training and financing program. She also argues for local economic development, job creation efforts, and employment skill training to connect people to accessible jobs.

Changing the spatial structure of the city: New Urbanism

Although what is really needed in a medium-size city like Knoxville are cars for the working poor, the only way to change the situation described above (the spatial structure of cities creating absolute automobile dependence) is to change the spatial structure of the city. The urban landscape could be intentionally altered through new economic and urban planning policies. As long as gasoline is inexpensive and we continue to build more roads and parking lots to accommodate commuters, people will not choose alternative modes of transportation. Only when it is expensive and inconvenient to drive your car, and cheap and convenient to use public transportation will we see things change. America's love affair with their automobiles is not going away anytime soon, but that does not mean we should not be making long-term plans now to provide those alternatives.

In addition to improving mobility, planners and developers need to reduce decentralization and sprawl to get at the root of the spatial mismatch problem; simply put, destinations need to be closer to origins. This requires more compact, pedestrian friendly cities with mixed use, where some destinations are even within walking distance. This could reduce the need for improvements in public transportation and access to private automobiles.

An alternative to sprawl is Andres Duany and Elizabeth Plater-Zyberk's ideal of New Urbanism (and, similarly, traditional neighborhood development (TND), transit-oriented development (TOD), or neotraditional planning). New Urbanism developments have the following characteristics: a clear center, a five minute walk from home to the ordinary needs of daily life, a grid-like or continuous web street network to provide mobility choices and reduce traffic, narrow, versatile streets to slow down traffic and increase safety, and mixed use (Duany, Plater-Zyberk, and Speck 2000). These characteristics work together to create a place where jobs and people are spatially matched. However, at this time, most New Urbanism developments are for the wealthy, further marginalizing the poor.

As states and localities begin to require growth management plans, perhaps there will be more equality between the location of jobs and that of residences. The trend toward

decentralization may soon change in Knoxville, for example, as it becomes more constrained by state Growth Plan regulations. In order to address its problem of sprawl, Knoxville has recognized the need to plan more wisely, encourage growth in existing neighborhoods, and offer more transportation alternatives to its residents. Policies that increase access to jobs, increase mobility, and reduce the burden of commutes are necessary to achieve future welfare reform goals. Jobs need to be linked systematically with the working poor (Allard 2002).

ECONOMIC POLICIES TO IMPROVE THE SITUATION OF THE WORKING POOR

There are also a number of economic policies that could be enacted to improve the mobility and self-sufficiency of the working poor. Employers could be given incentives to locate in central cities or to hire welfare recipients with barriers (including transportation) to work. Employers should also be encouraged to be flexible with work schedules to accommodate public transportation-reliant employees. Employers could also receive incentives to provide transportation for their own employees. This still does not solve the problem, however, of access to private automobiles.

The female-dominated sectors of the economy continue to grow; thus, location analysis for these industries is also very important. If industries are located efficiently, there will be lower costs in terms of reduced turnover, reduced training time, increased productivity, and longer working days.

Microcredit

An innovative method of building assets (including automobiles) and savings is through microcredit. Acquiring a loan can be an important step in preparing for the transition to employment, as it enables a woman to purchase a car, further her education, or start a business. The emerging presence of microcredit can help solve two pressing problems: the inability of low-income women to get loans, and their lack of knowledge regarding how to handle them (United States Agency for International Development 1997). Not surprisingly, many microcredit programs address the issues low-income women face, including transportation and childcare. For example, microcredit programs recognize the importance of home-based work and can facilitate alternatives to seeking childcare, as women can work, and even *provide*, childcare at home. Microcredit can facilitate entrepreneurship for women to meet their basic needs through self-employment.

Although there is limited support for microcredit and the loans are often risky, there are several programs that serve the Knoxville area. The Community Microloan program awards loans from \$500 to \$10,000 involving business consulting and business workshops. The United States Small Business Development Administration also sponsors a microloan program that finances projects up to \$35,000. In addition, businesses in the 20 Census tracts that make up Knoxville's Empowerment Zone can receive financing up to \$50,000 (SCORE 2005). Examples of programs that have been funded in Knoxville directly relate to transportation for the working poor, including Kid Trans, a \$3000 microloan-funded business to use a van to transport children between homes, schools, and childcare. Another woman began A-1 Transportation with a microloan, also providing transportation services (Dean 1997).

Asset accumulation strategies: Individual development accounts (IDAs)

Individual development accounts (IDAs) are also available to low-income Knoxville residents who meet qualifying matching guidelines (SCORE 2005). In Sherraden's (1991) seminal work, he argues for a welfare theory that incorporates asset accumulation instead of just cash assistance. Encouraging savings and asset accumulation is necessary to help the poor escape poverty (Tinker 2000) and can be used to purchase cars. However, welfare policy limits assets, including personal automobiles. Currently 30 states include IDAs in their TANF plans and they exclude counting the value of IDAs as assets when qualifying for benefits (Center for Social Development 2005). This would allow the working poor to own a reliable personal automobile and not be penalized with lower benefits.

Because they have something to fall back on, people think and behave differently if they have assets, as they may feel that they have more stability, have more promising futures, feel more comfortable taking risks, and have greater potential to develop their human capital. Using an IDA to purchase a car allows this orientation toward the *future*, which is lacking in many welfare families, as the poor are often oriented only to the present and their daily survival. Assets, including automobiles, provide the ability to predict and control life situations, as they reduce helplessness and vulnerability (Sherraden 1991).

Sally Malone expresses frustration at the inability to have assets such as a car: "They take away benefits, check or stamps if they see you have anything of value... They [welfare recipients] drive nice cars and stuff, but it's not in their names. But you can't blame them. If you get a halfway decent car to run, you can't put it in your name. If it's a nice car, they'll take away

your benefits. If your momma gives you a car, then they say why can't your momma do this or do that for you."

Luckily, Families First customers in Knoxville have access to an individual development account program operated by the Knoxville Community Development Corporation. The program requires six weeks of classes on saving and managing money. For every dollar a participant saves, the program pays \$2 to pay for transportation, buy a home, pay for schooling, or start a small business. Selina Sparks, the first graduate of the program, bought a car with her account and claimed that it would enable her to find a "permanent job with benefits" (Satterfield 2000, A3). Programs such as this can be used to increase the personal freedom, self-sufficiency and mobility of the working poor

WELFARE REFORM REAUTHORIZATION TRANSPORTATION CONSIDERATIONS

Welfare reform has been more successful than most people expected since its enactment in 1996, but not all families are better off. Regardless, more flexibility is needed, however, to allow *poverty* to be reduced along with caseloads; this includes encouraging transitional services, including transportation, to increase the mobility of the growing class of working poor.

Current legislation

Current reauthorization legislation is in a state of turmoil. The existing welfare reform bill was to be reauthorized in September 2002 and it has been temporarily extended 11 times since, most recently through March 2006 (Freking 2005). The \$16.5 billion per year entitlement has been renewed, but after the 2004 presidential election many worry that it will be cut (Pear and Hernandez 2004). This has serious implications for the working poor, as TANF funds are commonly used to help welfare recipients make the transition into the workforce and provide transitional benefits for working, including transportation assistance.

The Bush administration and a Republican Congress are proposing that 70 percent of adults work at least 40 hours per week (up from 30 hours per week). Although overall spending will be maintained (as it was issued in 1996), inflation and increased requirements will actually *reduce* the amount spent per recipient. In addition, the "costly proposal would force states to cut work-supporting and poverty-reducing services like transportation" (Waller 2004b). Any increases in requirements will likely exhaust the funding used to administer these programs. Cuts will thus have to be made to work-support services, including transportation. Waller (2003) found that 93 percent of mayors say funds are not sufficient to meet the increased costs resulting from the

proposed work requirements; thus, supports for the working poor would have to be reduced or eliminated. To achieve its goal of self-sufficiency, welfare reform reauthorization requires more careful transportation arrangements to support the working poor as they make the transition from welfare to work.

Suggestions for reauthorization

A suggestion for welfare reform reauthorization is that, because of time limits, TANF block grants or other Federal funding should be used to create *short-term public employment programs* to get people trained and back to work (Blank 2001). These programs would have to be connected to transportation and mobility improvements as well, in order for the jobs to be accessible to the working poor.

The welfare reform bill also suggests that states use TANF funds to *provide diversions or emergency funds* for clients. There are many one-time expenses that could force a family back on welfare. Families just coming off of welfare already find themselves in tenuous economic situations, thus events like job loss, a family emergency, or a major car repair could ruin the hard work it took to get to a more secure position. If there were emergency funds in place, families could receive a one-time benefit to stay on their feet.

Many analysts argue that poverty would be reduced even more if working families were able to *continue receiving full benefits*, including food stamps, cash, childcare, and transportation assistance as they make the transition into the workforce (Haskins and Primus 2001). As women enter the workforce and their wages go up, so do their work-related expenses, and yet their public assistance benefits are decreased or eliminated. If wages were combined with food stamps, earned income tax credits, childcare and transportation grants, and a small cash grant during transition periods, families would be more likely to remain off of welfare, and recidivism could be greatly reduced.

CONCLUSION

Based on the changing morphology of the American city and by examining the constraints women face in employment and mobility, this study exposes the unreality of current welfare reform and transportation policies. This research uncovers complex individual-level travel behavior, the knowledge of which can be used to modify welfare reform policies to make them more responsive to the transportation-related needs of working poor women. The complexity of

women's daily lives highlighted in this study disproves the validity of using aggregate-level data alone, which suggest that people can ride the bus with little inconvenience.

The constraints placed on women's earning power by limited services and mobility in the city only reinforce their poverty. Perhaps aggregate-level data suggests that these women can and should ride the bus in a place like Knoxville, as routes seem to be going to the right places, and fares are relatively inexpensive. However, after interrogating individual-level travel diary data, I have found evidence of substantive constraints of public transportation.

The complexity of the women's lives uncovered in this study has undermined the assumptions generated by analysis of aggregate-level data, in that the transition from welfare to work will not be as smooth as aggregate data indicate. Aggregate-level data do not draw a complete picture of the poor; however, it is because of such omissions that policymakers may not only attempt to implement untenable solutions, they may also try to solve the wrong problems, often at the expense of the poor. Public transportation is an example of this: public transportation is one problem; poverty is another. This research has assessed current welfare reform programs and related transportation plans, and on this basis recommends increased investment in car ownership and related assistance. Access to a car will increase not only daily mobility, but also job choice, earning, and hours, increasing the prospects for the working poor.

Bartering for basics

From this research, it is evident that many women are not becoming as self-sufficient as welfare reform intends; rather, they are increasing their social skills, networks, and reliance on others in a more social economy, creating communities of necessity. As women enter the workforce because of welfare reform, they may leave poverty, but they will have more expenses and will receive fewer benefits. Women may have higher incomes, but tend to have more hardship associated with this increase in expenses. Edin and Lein (1997) posed the question: how do they manage? The good news, they argue, is that poor people have more resources than it may appear. They found that almost all poor single mothers supplement their income with a combination of "under-the table" employment and assistance from friends, relatives, partners, or their children's fathers. In fact, in their study compiled in *Making Ends Meet*, they did not find any single mothers living on welfare alone (Edin and Lein 1997). Instead, through personal skills and bartering, the women in this study are able to accumulate and share resources, which is more realistic than using the bus. The bartering system of transportation is the preferred strategy for the carless poor in an automobile-oriented city. Despite the high cost of car ownership, nearly 75

percent of low-income families report having *access* to a car (Waller 2005). They make ends meet by *trading services*, such as childcare, transportation, and food stamps. The automobile is part of the sociology of poverty, as it is a traded resource. It is this type of system that should be formalized to improve the situation of the working poor.

I have uncovered extensive networks of family and friends used to manage transportation needs. Similarly, Besharov and Germanis (2000) found that up to 40 percent of single mothers who have left welfare depend on support from boyfriends, family and friends, and other government or private programs. Women are bartering for basic needs, including transportation, in order to make ends meet. The working poor make due by relying on others to meet their needs, as public transportation is simply too inconvenient. Lisa White provides an example as she pays her daughter “just about every time I go somewhere. Sometimes \$2, just whatever I have... The convenience. I’d rather have a car, but you can’t always get what you want.”

Summary

Welfare reform is an extremely complex system that is necessary in order to break the cycle of poverty that many families face. Therefore, additional programs such as those that provide affordable transportation are necessary to truly reform welfare and encourage self-sufficiency. The key to getting women out of poverty and off of welfare is to develop programs that truly meet the basic needs of women and their families. Our society will never fully function if a substantial number of people do not have the hope of working and supporting their families. The working poor need to be reconnected to society through comprehensive welfare reform efforts, including transportation improvements that are designed for specific urban landscapes and geographic realities.

The results in this study indicate that the transit-dependent poor will find it difficult to make the transition from welfare to work successfully with existing public transportation services; the restrictions of public transportation are so enormous in a medium-size American city, such that it simply does not fit into the lives of the working poor. The fact that millions of dollars are spent on public transit every year does *not* necessarily mean it is going to work. Knoxville, like most other medium-size cities, needs something more and should not simply chase after public transportation grant money simply because it is available. Public transit can work in cities like New York, Los Angeles, and Chicago because of their much higher densities, but not in medium-size cities like Knoxville. The only cases where public transportation seems to work in a city like Knoxville is when trips are planned well in advance, and when few destinations are involved

(e.g., home to work, and then back home again); however, this type of behavior is not the norm on today's urban landscape.

In addition, public transportation will actually work even *less so* if other aspects of welfare reform (work, self-sufficiency, and approaching the American middle-class norm) succeed, as more and more people without access to private automobiles make the transition from welfare to work. Transportation needs to be dealt with more *explicitly* in the new welfare reform reauthorization debate. And while there is growing recognition that transportation is a serious barrier to employment, the problem is only going to increase as more and more people are pushed off of welfare and back to work. There are simply too many constraints to overcome; there will still be places they cannot go, and they will still have to sacrifice trips. This study has shown that because of the urban morphology of a medium-size city, as well as the constraints single, poor, working mothers face, public transportation will not work in a city like Knoxville.

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APPENDICES

APPENDIX A
Human Subjects Review (IRB) Documentation

FORM B

IRB # _____

Date Received in Office of Research _____

THE UNIVERSITY OF TENNESSEE, KNOXVILLE

Application for Review of Research Involving Human Subjects

I. IDENTIFICATION OF PROJECT

1. Principal Investigator (PI)

Jennifer Rogalsky
College of Arts and Sciences
Department of Geography
304 Burchfiel Geography Building
974-2418
jrogalsk@utk.edu

Faculty Advisor

Ronald Foresta
College of Arts and Sciences
Department of Geography
304 Burchfiel Geography Building
974-6044
foresta@utk.edu

2. Project Classification: Dissertation

3. Project Title: Urban Transit and the Working Poor

4. Starting Date: Upon IRB Approval

5. Estimated Completion Date: May 2001

6. External Funding:

1. Grant/Contract Submission Deadline: April 15, 2000 -- approved April 28, 2000 for \$200 to cover mileage and supplies (cassette tapes, etc.) and approximately \$400 to purchase a transcribing machine
2. Funding Agency: The Stewart K. McCroskey Memorial Fund (Department of Geography)
3. Sponsor ID Number (if known): NA
4. UTK Proposal Number (if known): NA

II. PROJECT OBJECTIVES

Recent welfare reform is attempting to make the welfare system more efficient for the government and more effective for recipients. The current Welfare Reform bill establishes time limits for receiving assistance and moves away from a system of entitlements to one emphasizing employment and self-sufficiency. Tennessee's Families First welfare reform program, which replaced Aid to Families with Dependent Children (AFDC) in September 1996, is an example of a state program attempting to get people

off of welfare and into the work force. In this program, each "customer" must commit to a Personal Responsibilities Plan which requires up to forty hours per week of: classes on parenting, nutrition, and financial planning; seeking an education; searching for employment; or performing assigned work until a permanent job is acquired. The goal is that transitional benefits along with time limits will allow a welfare recipient to take a low paying job, continue to receive benefits, and continue to upgrade her skills, hopefully getting herself out of a low paying job.

Unfortunately, national welfare reform will *adversely* affect millions of families in the US, as people will soon be pushed off of welfare. Although welfare reform has the intention of getting people back to work, low-income mothers face many transportation-related financial, geographic, and time constraints. Realizing these constraints, as well as the fact that transportation is inadequately addressed in current welfare reform policy, various public and private organizations are putting large amounts of money into public transportation programs. However, based on the changing geography of mid-size cities, including: people's patterns, where they live, the transportation network, how low densities affect services, and how employment is moving to the outskirts, there is a serious problem with public transportation. The obstacles to getting off of welfare *and* being forced to use public transportation seem overwhelming, thus I am unsure that it is going to work in mid-size American cities.

Therefore, this research will examine changes in urban morphology and the transportation constraints that reduce the possibility of employment for the working poor, and thus the effectiveness of welfare reform. Analysis of these transportation-related constraints can aid in policy changes that will be crucial to getting the welfare-dependent poor, who are mostly single mothers, back to work and off of welfare. I will argue that transportation issues should be a *mandatory* and integral consideration of welfare reform policy.

This research will focus on Knoxville, Tennessee, as an example of a mid-size American city. I will attempt to determine what transportation needs Knoxville has and if there is any way public transportation can operate in Knoxville to address the transportation constraints of the working poor. I expect to find that an automobile-oriented city like Knoxville will need *more* than public transportation. Although current welfare reform and related plans show the need for increased public transportation, Knoxville does not have the density required to provide adequate and effective public transportation. Because of the densities and distribution of the poor and jobs in Knoxville, I expect to find that fixed line public transportation will not work; transportation needs to be available on-demand.

Welfare reform is pushing more and more people into the pool of the working poor, yet the existing class of working poor is already struggling. Thus, the question posed in this study is how will the working poor handle daily life when they are forced off of welfare and back to work. This study will therefore include an examination of people as *individuals* in order to disaggregate the existing data on peoples' lives. There is a difference between how things look at the aggregate level versus the individual level, which welfare reform and its programs do not take into account. Aggregate data is important in assessing the current situation of the working poor; however, it does not provide a complete picture, thus individual level data will be analyzed to create a picture of the lifeways and movement paths of the working poor. This individual level data will also be used to analyze and critique existing policy recommendations in the Welfare Reform bill in order to suggest new transportation-related policies. I will show that welfare reform will not work in its current form and give policy recommendations that have more potential for success. The intention of this study is to help Knoxville and other similar mid-size American cities better plan for the future of welfare reform.

III. DESCRIPTION AND SOURCE OF RESEARCH PARTICIPANTS

In order to test my hypothesis, the primary data set for this study will be developed through interviews with working, poor, single mothers. The reason for focusing on low-income mothers is that they often face more problems than other groups while attempting to achieve economic self-sufficiency for their families. Two-thirds of poor adults are women. 45 percent of all female-headed households are below the poverty line. 70 percent of poor female-headed families pay more than 30 percent of their income for housing; 51 percent pay more than 50 percent; and 35 percent pay more than 70 percent (US Department of Housing and Urban Development/US Department of Commerce, 1995. *American Housing Survey for the United States in 1993*). This leaves little available spending money for other necessary goods and services,

jeopardizing the quality of life for mothers and their children. Changes in the welfare system may *further* reduce women's incomes, and the resulting instability will worsen their access to child care, jobs, and education. There are clearly many constraints facing women, and although welfare reform promises new jobs, it does not mean that all women have access to transportation or affordable child care to enable them to maintain employment.

Thus, the criteria for the case studies in this dissertation project include women who: are or have recently been welfare reliant, have children, are currently working/have recently worked/are currently seeking employment, have a private mode of transportation, and are living in subsidized housing. An initial pool of twenty interview candidates will be selected by Knoxville's Community Development Corporation (KCDC). After discussing my research abstract, reviewing the consent form, and discussing the criteria for respondents, each of three KCDC representatives will notify the residents of a public housing development about my research project. Those residents who are interested in participating in the study will reply to one of the three KCDC contacts. I will then receive a list of candidates when at least twenty people respond. After screening them through a brief phone interview (to make sure they meet all of the criteria), at least fifteen candidates (possibly all twenty) will be contacted by KCDC and informed that I will be calling them to set up an interview. Any of the initial twenty candidates who do not meet all the criteria will be sent a letter thanking them for their consideration of participation.

The respondents will be given a \$15 cash "gift" for the initial, approximately one-hour one-on-one interview. These women will be interviewed for qualitative information, including their life history, life on welfare, work history, community interactions, budget information, and most importantly, transportation patterns. I will then call each of these women every evening for seven consecutive days to record their daily transportation patterns, mileage, and various costs. After I examine the data, uncovering spatial and temporal patterns, there will be a follow-up meeting with each of these women to address gaps in their data, analyze patterns, and find out how they would deal with "exceptional trips" (visits to relatives, doctor visits, etc.). The respondents will receive another \$15 cash gift at this final meeting.

These one or two small gifts of \$15 will be used simply to show appreciation for their time. This group of low-income women might otherwise not be interested in taking an hour out of their tight schedules to talk to a researcher. This \$15 will create an incentive for them to take time out to talk to me, as well as encourage them to be on time and more willing to provide the information I am requesting.

IV. METHODS AND PROCEDURES

The first session with the respondent will last approximately one hour and will be a one-on-one interview. These sessions will be audiotaped for the sole purpose of aiding in post-interview data review. I will only be using the tapes to review the sessions to avoid having to take notes during the actual interview.

The second interaction will be a five minute interview over the phone, as I ask them simple questions about their travel patterns for that day. This call will be made for seven consecutive days in order to develop a clear picture of their transportation habits. These short calls will be recorded and immediately deleted after I transcribe the data.

The third, and final interaction will be another one-on-one interview that will last less than one-half hour. The purpose of this final meeting is to follow up on their transportation log information, filling in gaps from particular days or asking questions regarding situations that did not occur during the week the travel log was maintained. These sessions will also be audiotaped for the sole purpose of aiding in post-interview data review. I will only be using the tapes to review the sessions to avoid having to take notes during the actual interview.

The audiotapes will be stored in a locked cabinet in the Department of Geography's main office (304 Burchfiel Geography Building by Thomas Bell, Chair, Human Subjects Departmental Review Committee) and will be made available only authorized University personnel unless participants specifically give permission in writing to do otherwise. No reference will be made in oral or written reports which could link participants to the study. Any identifying information, like real names and addresses, will be removed during transcription of the interview. The tapes will be destroyed after the transcript is completed.

Photographs of the woman, their families, or surroundings (this will be up to the respondent) may be taken with full consent of the respondent. They will be used solely for presentation purposes (e.g. professional meetings or oral dissertation defense). A name will never be associated with these photographs; however, viewers will know that they are part of a study that involves economically disadvantaged women. The photographs will also be stored in a locked cabinet in the Department of Geography's main office for three years following the completion of the research. Respondents will *not* be disqualified from participation if they decline the photo.

The qualitative data (interviews) will be used to support arguments made in the dissertation. The quantitative data (transportation logs) will be entered into a Geographic Information System (GIS) to reconstruct these women's daily lives and transportation patterns as if they *did not* have the use of a car. Their costs, including: time, money, miles walked, deferred opportunities, and inconvenience, will be calculated to see what these women would have to change if they did not have the use of a car. The overall question is whether or not public transportation will take the bulk of the working poor to their jobs, back home, and everywhere else they need to go within a reasonable time without having to sacrifice things such as child care, shopping, and other necessary trips. The results will illustrate how people would have to change their daily lives by using public transportation.

If these new, public transportation-reliant scenarios are found to be unsatisfactory (which I assume they will), I will then examine changes that could be made to decrease the constraints of using public transportation. What if bus frequency was doubled: how would that change the time budget? What if routes were added: would that be enough to accommodate special or multi-purpose trips, in addition to getting to and from work? I expect to find that because of the urban morphology of a mid-size city, as well as the constraints single, poor, working mothers face, public transportation will not work in a city like Knoxville.

V. SPECIFIC RISKS AND PROTECTION MEASURES

The only risk involved in this study is in the unlikely event that personal information could be seen or heard by those other than the researcher and her advisor. However, to protect against this, the information in the study records will be kept confidential. Data will be stored securely and will be made available only to the researchers and her advisor unless participants specifically give permission in writing to do otherwise. No reference will be made in oral or written reports which could link participants to the study.

To maintain confidentiality, a pseudonym will be used for each person interviewed. The respondent can choose her pseudonym. Any identifying information (including real names and addresses) will be removed from the transcript. When the transcript is finished, the tape will be destroyed. The pseudonym will be used in all documentation for this project. A document with all pseudonyms and actual contact information will be kept in a locked cabinet in the Department of Geography's main office (304 Burchfiel Geography Building by Thomas Bell, Chair, Human Subjects Departmental Review Committee) and will only be accessible to authorized University personnel.

Photographs will only be taken if the respondent fully consents and is aware that they may be used in conjunction with this study for presentation purposes (e.g. professional meetings or during the oral defense of the dissertation). She will be made aware that her name will never be associated with these photographs, although it will be known by the viewers that she is part of a study that involves economically disadvantaged women.

VI. BENEFITS

Both the risks and benefits are minimal to the respondents in this study. In addition to a greater body of knowledge in this field of research, the greatest benefit will come to society as well as the women in this study through an increased understanding of the lives of the working poor. Through this understanding, the hope is that new policy recommendations will more fully address the transportation needs of the working poor.

VII. METHODS FOR OBTAINING "INFORMED CONSENT" FROM PARTICIPANTS

The method for obtaining informed consent from the participants is through a signed form including all information that is pertinent to the study. The language used in the consent form is understandable to the participants. After it is signed, they will be given an extra copy of the form as well as an information sheet that indicates the basic elements of informed consent. In addition to being contacted directly by KCDC, the researcher will be contacting the respondents again by phone before they participate in the interview. This, in addition to the informed consent form, should allow the respondents sufficient opportunity to consider whether to participate.

The signed consent forms will be stored in a locked cabinet in the Department of Geography's main office (304 Burchfiel Geography Building by Thomas Bell, Chair, Human Subjects Departmental Review Committee) for three years following the completion of the research. These forms will only be accessible to authorized University personnel.

VIII. QUALIFICATIONS OF THE INVESTIGATOR

Qualifications of the primary investigator, Jennifer Rogalsky, include a Master of Sciences degree in Urban Geography from the University of Tennessee, as well as extensive training and research in urban and human geography and Geographic Information Systems (GIS). Additional coursework in social work (welfare reform and policy) and interviewing techniques has also been completed. The researcher also has Dr. Stan Bowie (Social Work) on her dissertation committee; Bowie has extensive research experience involving long-term interviews with welfare recipients

IX. FACILITIES AND EQUIPMENT TO BE USED IN THE RESEARCH

Interviews will take place at the home of the respondent unless she decides otherwise. If she does not want the interview to take place at her home, she can choose another public place, such as a nearby park or restaurant.

Storage and analysis of data will take place on the PI's home computer.

The use of audio tapes, a transcriber, and a 35 mm camera will also be used during interviews and transcriptions.

X. RESPONSIBILITY OF THE PRINCIPAL INVESTIGATOR

By compliance with the policies established by the Institutional Review Board of The University of Tennessee, Knoxville, the principal investigator subscribes to the principles stated in "The Belmont Report" and standards of professional ethics in all research, development, and related activities involving human participants under the auspices of The University of Tennessee, Knoxville. The principal investigator further agrees that:

1. Approval will be obtained from the Institutional Review Board prior to instituting any change in this project.
2. Development of any unexpected risks will be immediately reported to the Compliances Section.
3. An annual review and progress report (Form R) will be completed and submitted when requested by the Institutional Review Board.
4. Signed informed consent documents will be kept for the duration of the project and for at least three years thereafter at a location approved by the Institutional Review Board.

XI. SIGNATURES

Principal Investigator _____

Signature _____ Date _____

Student Advisor _____

Signature _____ Date _____

XII. DEPARTMENT REVIEW AND APPROVAL

The IRB departmental review committee has reviewed and approved the application described above. The DRC recommends that this application be reviewed as:

Expedited Review -- Category(ies): _____

OR

Full IRB Review

Chair, DRC _____

Signature _____ Date _____

Department Head _____

Signature _____ Date _____

Protocol sent to Compliance Section for final approval on (Date) _____

Approved: Compliance Section

Office of Research

404 Andy Holt Tower

Signature _____ Date _____

UNIVERSITY OF TENNESSEE, KNOXVILLE
Office of Research, Compliance Section

INFORMED CONSENT STATEMENT
Urban Transit and the Working Poor

INTRODUCTION

You are invited to participate in a study that involves human research. The purpose of this study is talking with people to better understand the lives of low-income, working, single mothers and obtain information on their daily transportation patterns. The data collected in this study will be used to analyze and critique existing welfare reform policy recommendations in order to make new transportation-related policy recommendations.

INFORMATION ABOUT PARTICIPANTS' INVOLVEMENT IN THE STUDY

The first session will last approximately one hour and will be a simple one-on-one interview. You will be asked about several aspects of your experience: your background, life on AFDC/Families First, work history, community interactions, budget information, and most importantly, transportation patterns. I like to tape record the conversations so I can get the details right. If you want me to turn the recorder off for any reason, I can press the pause button; that way you can tell me things off the record. I will only be using the tapes to review the sessions to avoid having to take notes during the interview.

A second interaction may be requested: this will consist of maintaining a travel log for five consecutive days. You can maintain this on your own with sheets that I provide or I can call you each evening. You will be asked simple questions about your travel patterns for that day, including mileage, time, and purpose in order to develop a clear picture of your transportation habits.

A third, and final interaction (related to the travel logs mentioned above) will be another one-on-one interview that will last less than one-half hour. The purpose of this final meeting is to follow up on your transportation log information, filling in gaps from particular days or asking questions regarding situations that did not occur during the days we maintained a travel log. This session will also be tape recorded so I can review the sessions to avoid having to take notes during the interview.

Photographs of you, your family, or your surroundings (this will be completely up to you) may be taken with your full consent. A name will never be associated with these photographs. They will be used solely for presentation purposes (for example: professional meetings or during the oral defense of the dissertation). The photographs will be stored in a locked cabinet in the Department of Geography's main office for three years following the completion of the research. The photographs will be destroyed after the three years storage. You will *not* be disqualified from participation in this study if you decline the photo.

RISKS

The only foreseeable risk involved in this study is that personal information could be seen or heard by those other than me and my advisor. However, every effort will be made to maintain confidentiality (see "Confidentiality" section below).

BENEFITS

Both the risks and benefits are minimal to the respondents in this study. In addition to a greater body of knowledge in this field of research, the greatest benefit will come to society, as well as the women in this study, through an increased understanding of the lives of the working poor. Through this understanding, the hope is that new policy recommendations will more fully address the transportation needs of the working poor.

Participant's (pseudonym) initials _____

CONFIDENTIALITY

The information in the study records will be kept confidential, so even though no one will know who you are, your message will be conveyed. Data will be stored securely and will be made available only to me and my advisor unless you specifically give permission in writing to do otherwise. No reference will be made in oral or written reports which could link participants to the study.

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To maintain confidentiality, a pseudonym (false name) will be used for each person interviewed. You can choose a name you'd like to go by. After you choose a name, it will be written on a piece of paper we can keep between us; that way, we'll both remember to use your new name when the tape is on. If we slip up, mistakes can easily be corrected on the transcript of the tape. Any identifying information (like real names and addresses) will be removed from the transcript. When the transcript is finished, the tape will be destroyed. Your pseudonym will be used in all documentation for this project. A document with all pseudonyms and actual contact information will be kept in a locked cabinet in the Department of Geography's main office and will only be accessible to authorized University personnel.

INCENTIVE

Although the project has a limited budget, each respondent will be given something in return for their time. You will receive \$15 per one-on-one interview session for your participation in this study. You will not be eligible for this incentive if you withdraw from the mutually agreed upon meeting.

EMERGENCY MEDICAL TREATMENT

The University of Tennessee does not "automatically" reimburse subjects for medical claims. If physical injury is suffered in the course of research, please notify the investigator in charge, (Jennifer Rogalsky, 974-2418).

CONTACT INFORMATION

If you have questions at any time about the study or the procedures, (or you experience adverse effects as a result of participating in this study,) you may contact Jennifer Rogalsky, at 304 Burchfiel Geography Building, University of Tennessee, Knoxville, TN 37996-0925 or at 974-2418. If you have questions about your rights as a participant, contact the Compliance Section of the Office of Research at 974-3466.

PARTICIPATION

Your participation in this study is voluntary; you may decline to participate without penalty. If you decide to participate, you may withdraw from the study at anytime without penalty and without loss of benefits to which you are otherwise entitled. If you withdraw from the study before data collection is completed your data will be returned to you or destroyed.

CONSENT

I have read the above information. I have received a copy of this form. I agree to participate in this study.

Participant's (pseudonym) signature _____ Date _____

Investigator's signature _____ Date _____

UNIVERSITY OF TENNESSEE, KNOXVILLE
Office of Research, Compliance Section

STUDY INFORMATION SHEET

If you have any questions, please contact the Compliances Section at 974-3466.

Urban Transit and the Working Poor

INTRODUCTION

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APPENDIX B
Sample Request Letter for Participation and Response Card

August 3, 2001



Name
Address
City, State, Zip

Dear Career Investment Academy Participants Past and Present:

Jennifer Rogalsky, a graduate student in the Department of Geography at the University of Tennessee, would like to invite you to participate in a study that involves talking to people like yourself to better understand the lives of low-income, working, single mothers and to obtain information on daily transportation patterns. The information collected in this study will be used to further her academic research and allow her to examine existing welfare reform policies in order to make new transportation-related policy recommendations.

Participation in this research is completely voluntary, and although the project has a limited budget, you will be given a small amount of compensation in return for your time.

There are two parts to the study. If you are asked to participate in the first session, you will likely be asked to participate in the second. However, she is also looking for people to participate in the second part of the study only.

1. The first session will last approximately one hour and will be a simple one-on-one interview at a mutually agreed upon location. You will be asked about several aspects of your experience: your background, life on AFDC/Families First, work history, community interactions, budget information, and most importantly, transportation patterns.
2. A second interaction may be requested, which will consist of maintaining a travel log. This includes keeping track of mileage, time, and purpose of travel, in order to develop a clear picture of your transportation habits. There will be a short follow up meeting or phone call after you complete your transportation log information: filling in gaps from particular days or answering questions regarding situations that could have, but did not occur during the week you kept the travel log.

For your protection, your name will *never* be associated with any of your statements or travel log. The information in the study records will be kept confidential, so even though no one will know who you are, your message will be conveyed. Again, your participation in this study is voluntary; and even if you decide to participate, you may withdraw from the study at anytime without penalty and without loss of benefits to which you are otherwise entitled.

In addition to contributing to the greater body of knowledge in this field of research, the greatest benefit will come to the Knoxville community, as well as the women in this study, through an increased understanding of the lives of working mothers. Through this understanding, the hope is that new policy recommendations will more fully address the transportation needs of low-income working mothers.

If you have questions at any time about the study or the procedures, you may contact Kara Roach at KCDC 594-8647 or Jennifer Rogalsky, at 304 Burchfiel Geography Building, University of Tennessee, Knoxville, TN 37996 or at 974-2418. If you have questions about your rights as a participant, you may contact the University's Compliance Section of the Office of Research at 974-3466.

If you would like to participate in this study, please refer to the enclosed half sheet and check all the items that apply. Return this form to the Career Investment Academy Secretary or call 594-8649 and the secretary will fill out the information for you over the phone. You will then be contacted directly by Jennifer Rogalsky. Thank you in advance for your time.

Sincerely,
Kara R. Roach
Program Administrator
KCDC's Career Investment Academy

PARTICIPATION FORM
JENNIFER ROGALSKY'S DISSERTATION STUDY

To participate in this study, please fill in your name, address, and phone number so you can be contacted and check (or circle if indicated) all the items that apply. Please return this sheet as soon as possible to _____ or call ____ - ____ and indicate your desire to participate. You will then be directly contacted by Jennifer Rogalsky.

Name: _____

Address: _____

Phone: _____

- Female (check box if true)
- Single (check box if true)
- Children living at home (check box if true)
- Currently working (check box if true)
- Welfare reliant – currently transitioning off welfare – recently off welfare (circle one)
- Have your own mode of transportation (check box if true)

APPENDIX C
Interview Questions and Travel Characteristics Information Survey

INTERVIEW QUESTIONS

INTRODUCTION/LIFE HISTORY

- Can you give me other contact information – how can I always find you (relative/friend)?
- Tell me the story of your life. How was it for you growing up?
 - R's year and place of birth, educational history
 - Parent's marital status, education, occupation, and welfare history
- How did you get to where you are now?
 - Circumstances surrounding the birth of each child
 - Relational history with men – including marital history
 - *Brief* summary of work history (see detailed questions below)
 - *Brief* summary of welfare history (how long, on again/off again)
- How would you describe your current situation?
- What do you think your life will be like for you a year from now? In five or ten years?
 - Employment and education
 - Living quarters and living situation (marital status)

LIFE UNDER TANF

- What is it (was it) like being on welfare these days (recently)?
- How long have you been off of welfare? Why – what were the circumstances?
- What has changed at the welfare office? (positive and negative)
- With all of these changes, it's hard for me to keep track, what are the new rules as you understand them?
 - Are there time limits? What kind of different time limits are there? How do they work? Do you feel threatened by them?
 - Are there work requirements? What happens if you can't find a job? What happens if you don't want to take a job for some reason? If you want to leave a job? What happens if you get laid off or fired?
 - What about training and education: what kinds are available? How does that work? Do you attend? Do you think they are worth your time? Why do you think people don't attend?
 - Do families get sanctioned for different things? What kind of sanctions are there? How do they work?
 - What if you have another child while you are on welfare? What happens?
- Are there transitional benefits when you get a job? Do you think they are sufficient?
- How do you think the new rules compare to the old rules? Does it seem like there are exceptions to the rules? Tell me about that.
- What do you feel are the biggest constraints to getting off of welfare and back to work (e.g., childcare, transportation, health care, etc.)? Are there structural problems or is it the fault of the recipient?
- What do you see as the long-term effects of welfare reform? What do you think some of the side effects will be? (positive and negative)
- Do you think welfare reform is (or will be) a success? Do you think it is leading to self-sufficiency (the goal)?
- Does a reduction in caseload make it a success? Where do you think those who are off welfare have gone? Are people really better off?
- What do you think the answer is? What do you see as a solution?

WORK INCENTIVES AND DISINCENTIVES

- What do you think about working as opposed to receiving welfare:
 - What are the advantages and disadvantages of each?
 - In your opinion, how did working compare with welfare under the old system?
 - In your opinion, how does working compare with welfare under the new system?
- Some people think that working will make their finances better, others think that work will make their financial situations worse. What do you think?
 - What about the short term (first three months or so)?
 - What about after the first year? After the second year?
- Some people think that going to work will improve their family life; others think that work will make their family life more difficult. What do you think?
 - What about the short term (first three months or so)?
 - What about after the first year? After the second year?
- What about mothers who move off welfare and do not go to work? What do they do?
- Have you been in this situation in the last year? What did you do?
- What do you think you might do if you couldn't get welfare or a job? What are the chances this might happen?

Planning to Work

- What about your work plans? Tell me what you think you might do.
 - What about the short term (first 12 months)?
 - What about the long term – let's say five years from now?
 - Can you think of anything that might interfere with your plans?
- Some people say there are lots of jobs out there. Other people say it is hard to find a job. What do you think?
- What is it like out there in the work force? What kind of jobs do you think are available?
 - Working conditions, hours, hourly pay, benefits
- What about other kinds of work, like temporary work?
 - Working conditions, hours, hourly pay, benefits
- What about other ways of making money, like odd jobs or cash work?
 - Working conditions, hours, hourly pay, benefits
- What will you lose when you go to work? What will you gain?
- What will your children lose and gain? What will you do with them when you go to work?
- When you consider a particular job, what kinds of things go through your mind?
 - Working conditions, hours, hourly pay, benefits
 - Opportunities/requirements for overtime
 - Distance from home/distance to childcare – availability of childcare
 - Accessibility to public transportation
 - Job stability or opportunities to move up
- What makes a bad job?
- In your mind, what makes a good job? What is your ideal job?

Last Three Jobs Applied For

- Let's talk about the last three jobs you have applied for.
 - Working conditions, hours, hourly pay, benefits
 - Opportunities/requirements for overtime
 - Distance from home/distance to childcare – availability of childcare

- Accessibility to public transportation
- Job stability or opportunities to move up
- If you get (had gotten) that job, what will you do (would you have done) with your kids (ask for each job)

Last Three Jobs Held

- Let's talk about your last three jobs. Can you tell me more about those jobs?
 - Working conditions, hours, hourly pay, benefits
 - Opportunities/requirements for overtime
 - Distance from home/distance to childcare – availability of childcare
 - Accessibility to public transportation
 - Job stability or opportunities to move up
- What did you do with your kids while you worked at that job? (ask for each job)
 - Do they have more responsibilities: caring for selves/others?
 - Do you sign them up for activities?
 - Are they better off in childcare or home alone?
 - Are they better off with you at home or working?
 - What is your family life like when you're working?
- When did you leave that job? How did that come about?
- What kinds of jobs are you thinking about now?
- Do any of these jobs require additional training or education beyond what you have now? Have you considered getting the additional training you would need? Would it be difficult to arrange that (time, childcare, transportation)?

Current Job and Transportation

- Specifically, what are your duties at work?
- Now that you are working, go through your day with me. What do you do now that you didn't do before you went to work (e.g., children and transportation)?
- Now that you are working, what do you like best about your daily routine? Least?
- Managing a job and family is hard work. How do you do it?
 - What happens when your kids get sick? What did you do the last time that happened (while working)?
 - What about when your childcare arrangements fall through? What did you do the last time this happened (while working)?
 - What about when you have to go to school for a parent-teacher conference, a special event, or something like that? What did you do the last time that happened (while working)?
 - What about the kids' medical appointments, like immunizations, school physicals, things like that? What did you do the last time that happened (while working)?
- How do you get to work?
 - How long does it take you to get to work each day?
 - What happens when your regular way of getting to work falls through? What did you do the last time that happened?
 - Are there any other problems with getting to work? Tell me about them.
- How do you think your job or wage would be different if you had a car? (If they do use public transportation)

PUBLIC TRANSPORTATION

If They Use Public Transportation

- How long have you been riding the bus?
- How often do you ride the bus?
- Why do you ride the bus? What are the circumstances? Would you rather drive a car – if so, why don't you?
- Do you depend on the bus? What do you do if you can't rely on the bus (weather, miss it, child sick, no cash, etc.)? Do you have something else to rely on if you cannot catch a bus?
- What is it like to navigate the city with a bus schedule and a dollar? Give me an example of a typical day.
- How do you feel about riding the bus? (dependent/independent, demeaned, intimidated, inconvenienced)
- What groups of people ride the bus? What groups of people *don't* ride the bus? Why do you think that is?

Problems and the Future of Public Transit

- What do you see as problems of public transportation? What are the biggest constraints in relying on the bus?
 - Inconvenience: hours, route locations, frequency – miss the bus and have to wait for the next?
 - Little choice?
 - Safety (traffic, personal safety)?
 - Too expensive?
- Do you think KAT services its riders well? If not, what could be done about this – how could it be made better?
- How do you think public transportation fits into the city's future?

NEIGHBORHOOD AND COMMUNITY SERVICES

- Are there any childcare facilities in your neighborhood?
 - How far of a walk/drive are they?
 - How would you rate their quality? If you had to rate them on a scale from 1 to 10 (10 being best) what would you give them? Why?
 - Have you used them in the last year? Tell me about that.
 - Do you use childcare centers outside of your neighborhood? Tell me about that.
- Are there any _____ in your neighborhood?
 - Public libraries
 - Post office
 - Convenience stores or supermarkets
 - Pharmacies/drug stores
 - Clothing stores
 - General merchandise (e.g., Family Dollar, Target, etc.)
 - Thrift stores
 - Clinics or doctor's office
 - Informal stores (in someone's house or apartment)
 - Laundromat/dry cleaners
 - Bank/check cashing facilities
 - How far of a walk/drive are they?

- How would you rate their quality? If you had to rate them on a scale from 1 to 10 (10 being best) what would you give them? Why?
- Have you (or your children) used them in the last year? Tell me about that.
- Do you use these services outside of your neighborhood? Tell me about that.
- Who are the neighborhood's employers?
 - How far of a walk/drive are they?
 - How would you rate the quality of the jobs they offer? If you had to rate them on a scale from 1 to 10 (10 being best) what would you give them? Why?
 - Have you worked for a local employer in the last year? Tell me about that.
 - Do other neighborhood people work for local employers? Tell me about that.
 - Where do these employers draw their employees from?

BUDGET INFORMATION

- If you're comfortable talking about it, let's go through your monthly budget – can you rough out your monthly budget for me?
- What are your current expenses?
 - Rent (public or private housing)
 - Utilities (water, gas, electric, phone, cable)
 - Food
 - Childcare
 - Health/life insurance – doctor/dental bills
 - Clothing
 - Transportation: car (car payment, insurance, licensing, gas, repairs); other (bus, taxi, carpool)
 - Drug store items (including medications, toiletries, cleaning supplies)
 - Laundry
 - School costs (mother *and* children – tuition, books, uniforms, trips, etc.)
 - Furniture, appliances, and other household items
 - Recreation (eating out, video rental, movies, cable, books, gifts, etc.)
 - Credit card payments and other debt
- What is your current income? What is subsidized?
 - Welfare-related: welfare, food stamps, tax return, SSI (Supplemental Security Income/"disability"), WIC, child support, etc.
 - Work-related: main job, overtime, second job, temporary job, odd job
- Has your check been reduced because welfare knows you're working? Tell me about this.

Pseudonym: _____

TRAVEL CHARACTERISTICS INFORMATION SURVEY

Age: _____

Marital Status: _____

Which best describes the building you live in?

- | | | |
|--|------------------------------------|--------------------------------------|
| <input type="checkbox"/> Single family home | <input type="checkbox"/> Apartment | <input type="checkbox"/> Mobile home |
| <input type="checkbox"/> Duplex, triplex, quad | <input type="checkbox"/> Townhouse | <input type="checkbox"/> Hotel/motel |

Do you own or rent?

- Own – mortgage \$ _____
 Rent – rent \$ _____

Including yourself, how many people:

- | | |
|-------------------------------|----------------------------|
| Live in your household? _____ | Have part-time jobs? _____ |
| Are 5 years or younger? _____ | Have full-time jobs? _____ |
| Are retired? _____ | |

How many licensed drivers are in your household? _____

How many passenger vehicles are at home for use by members of your household? _____

What is/are the year, make, model, and driveability of your car(s)? _____

Employment – are you:

- Working with extensive driving (e.g., traveling sales or delivery)?
- Working and earning income at your home address?
- Working outside of the home at an office, store, plant, or business?
- Homemaker?
- Unemployed?

How many persons in your household are:

- Pre-school children? _____
- Children in school? _____
- Schooled at home? _____
- Dropped off/ride with others by auto to school? _____
- Bused to school? _____
- Drive themselves to school? _____
- Walk or bike to school? _____

Is public transportation available to your household? _____

How far is it from your home to the nearest public transportation stop? _____

Completing Travel Diary? _____ Number of days? _____

APPENDIX D
Travel Diary Instructions, Sample, and Blank Form Distributed to Respondents

TRAVEL DIARY INSTRUCTIONS

Please maintain your travel log for the following days _____.

Please write out your sheets *each day*, NOT at the end of the days.

You have been given 3 sheets per day (15 sheets) plus an extra 5 sheets (for a total of 20 sheets) to account for high travel days or mistakes when writing out the sheets.

Please maintain the travel log for the full 24-hour day – in other words, from midnight to midnight.

You can use my travel log as an example, or call me if you need additional help (523-1326).

TRAVEL AND ACTIVITY DIARY

Date: 8/26/01

Pseudonym: Jane Doe

	TRIP START INFORMATION		TRIP END INFORMATION		TRAVEL CHARACTERISTICS		
	Start Time	I started at	Arrival Time	I traveled to	Purpose	Means	Other
	7:45 AM PM	Home Name of place Address or nearest intersection City (if other than Knoxville)	8:00 AM PM	Work - City County Bldg. Name of place 400 Main St. Address or nearest intersection City (if other than Knoxville)	work church shopping school home visit friend/relat. drop/pick up recreation eat auto/gas	car/van/truck bike motorcycle school bus public bus taxi walk other	driver or passenger for self or someone else 1 # of persons in vehicle
	4:45 AM PM	Work Name of place Address or nearest intersection City (if other than Knoxville)	4:55 AM PM	UT Name of place Burchfiel Geography Address or nearest intersection Philip Fulmer Way Bldg. Address or nearest intersection City (if other than Knoxville)	work church shopping school home visit friend/relat. drop/pick up recreation eat auto/gas	car/van/truck bike motorcycle school bus public bus taxi walk other	driver or passenger for self or someone else 1 # of persons in vehicle
	6:00 AM PM	UT Name of place Address or nearest intersection City (if other than Knoxville)	6:15 AM PM	Señor Taco Name of place 3325 N. Broadway Address or nearest intersection City (if other than Knoxville)	work church shopping school home visit friend/relat. drop/pick up recreation eat auto/gas	car/van/truck bike motorcycle school bus public bus taxi walk other	driver or passenger for self or someone else 2 # of persons in vehicle
	6:15 AM PM	Señor Taco Name of place Address or nearest intersection City (if other than Knoxville)	6:30 AM PM	home Name of place Address or nearest intersection City (if other than Knoxville)	work church shopping school home visit friend/relat. drop/pick up recreation eat auto/gas	car/van/truck bike motorcycle school bus public bus taxi walk other	driver or passenger for self or someone else 2 # of persons in vehicle

TRAVEL AND ACTIVITY DIARY

Date: _____

Pseudonym: _____

TRIP START INFORMATION		TRIP END INFORMATION		TRAVEL CHARACTERISTICS			
Start Time	I started at	Arrival Time	I traveled to	Purpose	Means	Other	Expenses
:_____ AM PM	_____ Name of place _____ Address or nearest intersection _____ City (if other than Knoxville)	:_____ AM PM	_____ Name of place _____ Address or nearest intersection _____ City (if other than Knoxville)	work church shopping school home visit friend/relat. drop/pick up recreation eat auto/gas	car/van/truck bike motorcycle school bus public bus taxi walk other	driver or passenger for self or someone else # of persons in vehicle	
:_____ AM PM	_____ Name of place _____ Address or nearest intersection _____ City (if other than Knoxville)	:_____ AM PM	_____ Name of place _____ Address or nearest intersection _____ City (if other than Knoxville)	work church shopping school home visit friend/relat. drop/pick up recreation eat auto/gas	car/van/truck bike motorcycle school bus public bus taxi walk other	driver or passenger for self or someone else # of persons in vehicle	
:_____ AM PM	_____ Name of place _____ Address or nearest intersection _____ City (if other than Knoxville)	:_____ AM PM	_____ Name of place _____ Address or nearest intersection _____ City (if other than Knoxville)	work church shopping school home visit friend/relat. drop/pick up recreation eat auto/gas	car/van/truck bike motorcycle school bus public bus taxi walk other	driver or passenger for self or someone else # of persons in vehicle	
:_____ AM PM	_____ Name of place _____ Address or nearest intersection _____ City (if other than Knoxville)	:_____ AM PM	_____ Name of place _____ Address or nearest intersection _____ City (if other than Knoxville)	work church shopping school home visit friend/relat. drop/pick up recreation eat auto/gas	car/van/truck bike motorcycle school bus public bus taxi walk other	driver or passenger for self or someone else # of persons in vehicle	

APPENDIX E
Travel Diary Follow-Up Interview Questions

TRAVEL DIARY FOLLOW-UP INTERVIEW QUESTIONS

1. Overall, do you feel the week you maintained your travel diary was a **typical** week?
 - If not, was it more or less difficult/stressful?
2. Tell me about the specific trips you made:
 - How long did you have to **wait** between each of these trips?
 - How far did you have to **walk** to accommodate each of these trips?
 - Rate the **difficulty** of making each of these trips in terms of access to a mode of transportation (easy, moderate, difficult).
- 3A. Did you make any **exceptional trips** (e.g., pick up a sick child, parent-teacher conference, doctor's appointment, etc.)?
 - If so, tell me about it/them.
 - Rate the difficulty of making each of these trips in terms of access to a mode of transportation (easy, moderate, difficult).
- 3B. If not, what would you do if you had to make an exceptional trip?
 - Rate the difficulty of making each of these trips in terms of access to a mode of transportation (easy, moderate, difficult).
- 4A. Did you encounter any **problems** with your normal mode of transportation (e.g., car breakdown, out of gas, bus late, bad weather, carpool driver sick)?
 - If so, what did you do?
 - Rate the difficulty of dealing with this problem (easy, moderate, difficult).
- 4B. If not, what would you do if you encounter problems with your normal mode of transportation?
 - Rate the difficulty of dealing with this problem (easy, moderate, difficult).
- 5A. How much do you normally **spend** (weekly/monthly/yearly) on your mode of transportation (e.g., gas, parking, maintenance, bus fare, etc.)?
 - Do you think this is too much? Or is it worth it for the convenience?
 - Rate the difficulty of covering these expenses in terms of normal budget, cash on hand, etc. (easy, moderate, difficult).
 - What would you do if an unexpected expense came up? If it has, tell me about it? What did you do?
- 5B. How much did you spend in these ____ days on your mode of transportation?
 - Is this normal or exceptional?
 - Rate the difficulty of covering these expenses in terms of normal budget, cash on hand, etc. (easy, moderate, difficult).
6. How would your week have been **different** if you DID/DID NOT have a car?

APPENDIX F
Summary of Trips, Routes, and Travel Areas

SUMMARY OF TRIPS, ROUTES, AND TRAVEL AREAS

	Total Days	Total Trips	Average Trips/Day	Total Routes	Average Trips/Route	Average Routes/Day	Mean Trip Length (mi.)	Max Trip Length (mi.)	Min Trip Length (mi.)	Total Miles	Average Miles/Day	Average Miles/Route	Travel Area mi ²
BE Betty Elliott	5	28	5.60	7	4.00	1.40	4.26	12.03	1.35	119.21	23.84	17.03	38.03
DY Diamond Young	6	68	11.33	14	4.86	2.33	2.01	6.14	0.18	132.62	22.10	9.47	21.75
FN Faye Nicks	6	12	2.00	6	2.00	1.00	12.10	12.10	12.10	145.20	24.20	24.20	4.76
GR Grace Randolph	6	37	6.17	13	2.85	2.17	2.82	7.19	0.24	104.44	17.41	8.03	13.99
LW Lisa White	6	23	3.83	7	3.29	1.17	1.31	3.27	0.10	30.20	5.03	4.31	3.06
MF Malika Felton	5	27	5.40	6	4.50	1.20	4.36	12.70	0.04	117.81	23.56	19.64	65.29
MK Michelle Kelly	5	38	7.60	8	4.75	1.60	3.00	10.04	0.04	110.92	22.18	13.87	27.05
MP Monique Pride	6	49	8.17	11	4.45	1.83	2.53	5.98	0.28	124.09	20.68	11.28	11.44
MS Mary Stevens	10	32	3.20	10	3.20	1.00	4.03	7.11	0.46	128.83	12.88	12.88	3.66
MW Monica Williams	7	69	9.86	25	2.76	3.57	1.23	6.73	0.07	84.58	12.08	3.38	14.22
MZ Mahogany Zaire	6	42	7.00	8	5.25	1.33	1.92	6.06	0.04	80.80	13.47	10.10	9.73
SG Sharon Griffen	8	19	2.38	8	2.38	1.00	3.09	8.00	0.55	58.66	7.33	7.33	9.79
SH Sabrina Henkins	9	66	7.33	23	2.87	2.56	1.99	8.37	0.45	131.64	14.63	5.72	13.00
SJ Sheena Jordan	1	10	10.00	2	5.00	2.00	1.66	2.55	0.63	16.64	16.64	8.32	2.31
SM Sally Malone	5	7	1.40	3	2.33	0.60	NA	NA	NA	NA	NA	NA	NA
TJ Tracy Jones	5	31	6.20	9	3.44	1.80	2.37	7.94	0.07	73.38	14.68	8.15	9.24
TP Tracy Pruett	5	31	6.20	9	3.44	1.80	3.88	10.91	0.45	120.19	24.04	13.35	26.26
WD Whitney Davis	6	18	3.00	8	2.25	1.33	7.55	15.38	0.17	135.92	22.65	16.99	8.60
TOTAL	107	607	--	177	--	--	--	--	--	1715.13	--	--	--
AVERAGE	5.94	33.72	5.93	9.83	3.53	1.65	3.54	8.38	1.01	100.89	17.49	11.42	16.60
MINIMUM	1	7	1.40	2	2.00	0.60	1.23	2.55	0.04	16.64	5.03	3.38	2.31
MAXIMUM	10	69	11.33	25	5.25	3.57	12.10	15.38	12.10	145.20	24.20	24.20	65.29

APPENDIX G
Summary of Recreated Trips with No Car

SUMMARY OF RECREATED TRIPS WITH NO CAR

PSEUDONYM	WORK DAY	OFF DAY	Trips	Trips	MPH	MPH	MPH	MPH	Time Inc	Time Inc	Cost Inc	Cost Inc	Cost	Cost	Cost	Cost	Trips	Trips
			1	2	as is 1	as is 2	no car 1	no car 2	no car 1	no car 2	no car 1	no car 2	as is 1	as is2	no car 1	no car 2	Elim 1	Elim 2
Betty Elliott	Fri	Sun	12	2	17.4	20.3	?	3.6	2.0	5.6	1.3	5.1	\$18.90	\$0.89	\$24.80	\$4.25	4	0
Diamond Young	Tues	Sat	6	16	11.3	8.8	4.3	?	2.7	1.3	zero	9.3	\$0.00	\$2.25	\$4.20	\$21.00	0	2
Faye Nicks	Mon	NA	2	NA	16.1	NA	10.2	NA	1.6	NA	0.3	NA	\$7.99	NA	\$2.40	NA	0	NA
Grace Randolph	Tues	Thurs	7	9	5.5	13.9	?	?	0.7	2.4	0.7	0.8	\$7.68	\$11.47	\$5.00	\$9.00	2	1
Lisa White	Unemp	Mon/Wd	3	7	3.0	11.5	1.9	?	1.6	1.8	1.5	0.4	\$0.67	\$4.56	\$1.00	\$2.00	0	5
Malika Felton	Unemp	Mon/Tue	4	10	13.0	34.3	7.0	?	1.9	1.4	3.7	14.0	\$2.14	\$3.09	\$8.00	\$43.20	0	3
Michelle Kelly	Wed	Thurs	12	8	23.6	8.8	?	?	3.0	1.4	0.6	1.4	\$11.15	\$3.04	\$6.90	\$4.20	5	3
Monique Pride	Sat	Sun	6	6	15.1	9.2	?	?	2.7	0.5	0.5	1.9	\$4.58	\$6.28	\$2.40	\$12.00	4	2
Mary Stevens	Sat	Thurs	5	5	14.4	7.9	10.5	3.7	1.4	2.1	0.6	0.6	\$9.20	\$5.00	\$5.40	\$3.20	0	0
Monica Williams	Tues	Fri	13	9	10.2	13.8	5.3	?	1.9	1.0	2.2	0.1	\$6.06	\$4.94	\$13.60	\$0.50	0	2
Mahogany Zaire	Tues	Fri	11	9	12.3	7.7	?	?	1.5	0.8	0.8	1.1	\$7.19	\$4.83	\$5.60	\$5.40	4	6
Sharon Griffen	Wd/Mon	No travel	2	5	6.8	10.9	1.8	5.0	3.8	2.2	zero	8.4	\$0.00	\$1.36	\$2.40	\$11.40	0	0
Sabrina Henkins	Thurs	Sun	9	2	7.0	17.8	5.0	17.8	1.4	1.0	1.5	0.9	\$5.02	\$3.53	\$7.70	\$3.00	0	0
Summer Hunt	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sheena Jordan	NA	Fri	10	NA	20.0	NA	3.2	NA	5.8	NA	1.7	NA	\$4.35	NA	\$7.00	NA	1	NA
Sally Malone	Oak Ridge	Oak Ridge	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tracy Jones	Thurs	Sat	9	5	15.0	8.9	?	4.9	3.9	1.8	0.7	1.5	\$8.15	\$3.66	\$5.60	\$5.40	1	0
Tracy Pruett	Fri	Sat	6	2	12.7	21.8	8.6	21.8	1.5	1.0	zero	zero	\$0.00	\$0.00	\$5.20	\$2.00	0	0
Whitney Davis	Tues	Fri	4	2	25.0	6.1	9.1	3.2	2.7	1.9	1.9	2.9	\$13.22	\$0.34	\$25.40	\$1.00	0	0
			121	97	13.4	13.5	6.1	8.6	2.4	1.7	1.3	3.5	\$6.25	\$3.68	\$7.80	\$8.50	17.4	24.7
			total	total	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	avg	pct	pct
			218/607 (36%)		13.4		7.3		2.0		2.4		\$4.97		\$8.22		21.1	

APPENDIX H
Individual Recreated Trips with No Car

BETTY ELLIOTT (WORK DAY): Friday - January 19, 2001

TRIP	OPTIONS	TIME W/CAR	TIME W/NO CAR	COST W/CAR	COST W/NO CAR	ORIGIN TIME	ORIGIN TIME W/NO CAR	ORIGIN PLACE	DEST. TIME	DEST. TIME W/NO CAR	DEST. PLACE	PURPOSE	# IN CAR	MILES
1	Walk 12 min. to bus 11; ride 5 min.; walk 8 min. to school	23	25	\$0.45	\$3.00	0726	730	HOME (Mom's)	0749	755	Sacred Heart School	drop child(ren)	6	1.35
2	Walk 8 min. to bus 11; wait 4 min. for bus 11; ride for 7 min.; wait 6 min.; transfer to 90B; ride 12 min.	14	37	\$0.60	\$1.20	0749	755	Sacred Heart School	0803	832	Westbrook Senior Ctr	drop relative	4	1.83
3	Wouldn't make trip because wouldn't have car	42	NA	\$2.61	NA	0803	NA	Westbrook Senior Ctr	0845	NA	Delmar Haynes Pontiac	automotive	3	7.92
4	Wouldn't make trip because son could get to school on the bus by himself	20	NA	\$3.97	NA	0930	NA	Delmar Haynes Pontiac	0950	NA	Knoxville Catholic HS	drop child(ren)	2	12.03
5	CHANGE: Travel from Westbrook Senior Center to Michael's: Wait 51 min. for bus 90A; ride bus for 12 min.; wait 40 min.; transfer to 11B; ride 18 min.; walk 9 min.	9	130	\$0.78	\$1.20	0950	832	Knoxville Catholic HS	0959	1042	Michael's Arts & Crafts	shopping	2	2.36
6	Can't make trip on bus because bus only runs three times in the morning and afternoon -- and it's an express bus that you can only catch downtown; wouldn't get to school on time	14	NA	\$1.58	NA	1105	NA	Michael's Arts & Crafts	1119	NA	Mellow Mushroom	eat	2	4.79
7	CHANGE: Michael's to Pellissippi: Use Call-A-KAT (assuming she had it planned 24 hours in advance) -- the only bus that goes to Pellissippi is one that only picks up downtown and at the Division Street campus	21	15	\$1.75	\$2.00	1220	1148	Mellow Mushroom	1241	1203	Pellissippi State	school	2	5.30
8	Bus leaves Pellissippi three times a day (8AM, 1PM, 5PM), so must take taxi home (9 miles)	25	25	\$2.90	\$13.50	1352	1352	Pellissippi State	1417	1417	HOME	home	2	8.78
9	Wouldn't make trip because son could get home from school on the bus by himself	11	NA	\$1.50	NA	1505	NA	HOME	1516	NA	Knoxville Catholic HS	pick up child(ren)	2	4.56
10	CHANGE: Home to Westbrook Senior Center: walk 13 min. to bus 90B; wait 3 min.; ride bus for 4 min.; wait 35 min. for grandmother	5	56	\$1.70	\$1.00	1520	1430	Knoxville Catholic HS	1525	1525	Westbrook Senior Ctr	pick up relative	3	5.16
11	Wait 6 min. for bus 90A; ride 13 min.; transfer to bus 11 A/B; wait 15 min.; ride 10 min.; walk 8 min. to school -- 43 min. late to pick up daughter!	9	52	\$0.60	\$1.20	1531	1531	Westbrook Senior Ctr	1540	1623	Sacred Heart School	pick up child(ren)	4	1.83
12	Walk 8 min. to bus 11; wait 7 min.; ride 11 min.; wait 10 min.; transfer to 90B; ride 10 min.; walk 13 min.	5	59	\$0.45	\$1.70	1546	1629	Sacred Heart School	1551	1728	HOME (Mom's)	home	6	1.35
TOTAL	Eliminated 4 of 12 (33%) trips; costs are different because she would only pay for her and her children, not her mother or grandmother	198	399	\$18.90	\$24.80									57.26

BETTY ELLIOTT (OFF DAY): Sunday - January 21, 2001

TRIP	OPTIONS	TIME W/CAR	TIME W/NO CAR	COST W/CAR	COST W/NO CAR	ORIGIN TIME	ORIGIN TIME W/NO CAR	ORIGIN PLACE	DEST. TIME	DEST. TIME W/NO CAR	DEST. PLACE	PURPOSE	# IN CAR	MILES
1	Sunday bus doesn't start running until 11:15 - take taxi	5	5	\$0.45	\$2.25	1015	1015	HOME (Mom's)	1020	1020	Sacred Heart Cathedral	church	2	1.35
2	Walk 8 minutes to west Sunday Rider; wait 16 minutes; ride bus for 4 minutes; walk 12 minutes home	3	40	\$0.45	\$2.00	1141	1141	Sacred Heart Cathedral	1144	1221	HOME (Mom's)	home	2	1.35
TOTAL	For another \$0.25, she could take a taxi both ways. No use for the bus.	8	45	\$0.89	\$4.25									2.70

DIAMOND YOUNG (WORK DAY): Tuesday - May 1, 2001

TRIP	OPTIONS	TIME W/CAR	TIME W/NO CAR	COST W/CAR	COST W/NO CAR	ORIGIN TIME	ORIGIN TIME W/NO CAR	ORIGIN PLACE	DEST. TIME	DEST. TIME W/NO CAR	DEST. PLACE	PURPOSE	# IN CAR	MILES
1	Walk 2 minutes to bus 20A/B/C; ride 13 minutes; wait 4 minutes for bus 33 (can take the 90A, 30, or 33); ride 6 minutes	20	25	\$0.00	\$1.20	0800	0743	HOME	0820	0808	Career Investment Academy	school	3	3.99
2	Walk 10 minutes	10	10	walked	walked	0900	0900	Career Investment Academy	0910	0910	Austin Homes	visit friend	walk	0.20
3	Walk 2 minutes to bus 90A (only runs hourly); wait 33 minutes; ride 15 minutes; walk 1 minute	10	51	\$0.00	\$1.00	1145	1145	Austin Homes	1155	1236	First Tennessee Bank	banking	3	2.78
4	Walk 1 minute to bus 90B (could also take route 33); wait 28 minutes; ride 15 minutes; walk 2 minutes	10	46	\$0.00	\$1.00	1215	1256	First Tennessee Bank	1225	1342	Austin Homes	pick up something	3	2.78
5	Walk 2 minutes to bus 33; wait 24 minutes; ride 10 minutes; walk 5 minutes	15	41	\$0.00	\$1.00	1225	1342	Austin Homes	1240	1423	COUSIN'S HOME	home	3	2.53
TOTAL	A lot of waiting because buses don't run frequently. COST is not a factor... convenience is (she was a passenger, so incurred no costs)	65	173	\$0.00	\$4.20									12.28

DIAMOND YOUNG (OFF DAY): Saturday - May 5, 2001

TRIP	OPTIONS	TIME W/CAR	TIME W/NO CAR	COST W/CAR	COST W/NO CAR	ORIGIN TIME	ORIGIN TIME W/ NO CAR	ORIGIN PLACE	DEST. TIME	DEST. TIME W/NO CAR	DEST. PLACE	PURPOSE	# IN CAR	MILES
1	No buses run: Taxi	20	20	\$0.00	\$3.00	0055	0055	COUSIN'S HOME	0115	0115	Mike & Willie's	recreation	3	4.39
2	No buses run: Taxi	15	15	\$0.00	\$3.00	0315	0315	Mike & Willie's	0330	0330	Long John Silvers	visit friend	2	3.85
3	No buses run: Taxi	13	13	\$0.00	\$2.00	0335	0335	Long John Silvers	0348	0348	Krystal	eat	2	2.63
4	No buses run: Taxi	15	15	\$0.00	\$3.00	0400	0400	Krystal	0415	0415	COUSIN'S HOME	home	2	3.61
5	Walk 4 min. to bus 33; wait 1 minute for bus; ride 6 min. -- arrived 24 min. early	8	11	\$0.42	\$1.00	1500	1435	COUSIN'S HOME	1508	1446	Friend's Home	visit friend	2	1.27
6	Wouldn't make trip - for someone else	10	NA	\$0.15	NA	1520	NA	Friend's Home	1530	NA	Friend's Home	pick up friend	2	0.46
7	Wouldn't make trip - for someone else	20	NA	\$0.17	NA	1540	NA	Friend's Home	1600	NA	Chubby's	drop friend	5	0.53
8	CHANGE: Friend's home to Holston Park: Walk 8 min. to bus 32B; wait 3 min. for bus; ride 10 min.; walk 13 min. (13 min. late)	13	34	\$0.84	\$1.00	1602	1554	Chubby's	1615	1628	Holston Park	visit friend	3	2.56
9	Walk 13 min. to bus 32B; wait 24 min.; ride 5 min.; walk 9 min.	12	51	\$0.66	\$1.00	1625	1638	Holston Park	1637	1729	COUSIN'S HOME	home	2	1.99
10	Walk 9 min. to bus 32B; wait 2 min.; ride 6 min.; walk 13 min. (13 min. late)	15	30	\$0.00	\$1.00	1800	1758	COUSIN'S HOME	1815	1828	Holston Park	recreation	4	1.99
11	Taxi (bus stops running at 6:45PM)	15	15	\$0.00	\$2.00	2045	2045	Holston Park	2100	2100	Boo's Store @ Walter P. Taylor	pick up something	3	2.29
12	Walk 7 min. (Safe???)	5	7	\$0.00	NA	2110	2110	Boo's Store @ Walter P. Taylor	2115	2117	Friend's Home	visit friend	walk	0.35
13	Walk 10 min. (Safe???)	5	10	\$0.00	NA	2238	2240	Friend's Home	2243	2250	East Side Soul Food	recreation	4	0.46
14	Night routes only = Taxi (not safe to walk after dark) -- could use Call-A-KAT, but this needs to be done 24 hours in advance	10	10	\$0.00	\$1.00	2245	2252	East Side Soul Food	2255	2302	COUSIN'S HOME	pick up something	4	1.64
15	Night routes only = Taxi (not safe to walk after dark) -- could use Call-A-KAT, but this needs to be done 24 hours in advance	25	25	\$0.00	\$2.00	2258	2305	COUSIN'S HOME	2323	2330	Weigels	banking	4	2.84
16	Night routes only = Taxi (not safe to walk after dark) -- could use Call-A-KAT, but needs to be done 24 hours in advance	18	18	\$0.00	\$1.00	2327	2334	Weigels	2345	2352	East Side Soul Food	visit friend	4	1.29
TOTAL	Many choices to make: are these visits to friends really timed or are they flexible? Arriving early or late... is that okay -- probably, but still sacrificing. Many taxi rides. But didn't have to make two trips that were for friends. Costs were very low because she was a passenger with friends	219	274	\$2.25	\$21.00									32.15

FAYE NICKS (WORK DAY): Monday - January 28, 2001

TRIP	OPTIONS	TIME W/CAR	TIME W/NO CAR	COST W/CAR	COST W/NO CAR	ORIGIN TIME	ORIGIN TIME W/NO CAR	ORIGIN PLACE	DEST. TIME	DEST. TIME W/NO CAR	DEST. PLACE	PURPOSE	# IN CAR	MILES
1	Walk 2 minutes to bus 90B; wait 2 minutes; ride 10 minutes to transfer point; transfer to bus 11B IMMEDIATELY (30 minute interval if miss bus); ride 48 minutes -- get to work 30 minutes early	45	60	\$3.99	\$1.20	715	630	HOME	800	730	Work - Ed South	work	1	12.10
2	Walk outside workplace to bus -- catch IMMEDIATELY 60 minute interval if miss bus); ride bus 74 minutes; transfer to bus 90A immediately (60 minute interval if miss bus); ride bus 8 minutes	45	83	\$3.99	\$1.20	1700	1700	Work - Ed South	1745	1823	HOME	home	1	12.10
TOTAL	Get to work early, but connections are perfect -- if she makes every connection, which is unlikely.	90	143	\$7.99	\$2.40									24.20

GRACE RANDOLPH (WORK DAY): Tuesday - March 27, 2001

TRIP	OPTIONS	TIME W/CAR	TIME W/NO CAR	COST W/CAR	COST W/NO CAR	ORIGIN TIME	ORIGIN TIME W/NO CAR	ORIGIN PLACE	DEST. TIME	DEST. TIME W/NO CAR	DEST. PLACE	PURPOSE	# IN CAR	MILES
1	Already taking bus -- picks up in front of house; walk 2 min. to bus; wait 2 min.; ride 30 min. on bus 12, which goes on to serve bus 33 at downtown station; walk 2 min. to school -- this is the route she used, but with rounding or a delayed bus, her reality was 9 min. greater than ideal	45	36	\$1.00	\$1.00	0730	734	HOME	0815	810	Career Investment Academy	school	bus	4.07
2	Walk 2 min. to bus; wait 3 min. for bus; ride 28 min. on bus 33, which goes on to serve bus 12 at downtown station; walk 2 min. home -- this is the route she used, but with rounding or a delayed bus, her reality was 25 min. greater than ideal	60	35	\$1.00	\$1.00	1245	1245	Career Investment Academy	1345	1320	HOME	home	bus	4.07
3	Won't need to pick someone up if don't have car	15	NA	\$0.79	NA	1730	NA	HOME	1745	NA	Helen Ross McNabb	pick up relative	1	2.40
4	Don't need to make trip without a car	15	NA	\$3.25	NA	1800	NA	Helen Ross McNabb	1815	NA	Pilot Gas Station	gas	2	0.75
5	CHANGE: Home to Krystal then Kroger, so not going to Krystal with groceries (because skipped two previous trips): Would not go north to Kroger and Krystal, but west on Western Avenue (much closer): Walk 20 min. to Krystal	12	20	\$0.56	NA	1818	1730	Pilot Gas Station	1830	1750	Kroger	shopping	2	1.70
6	CHANGE: Krystal to Kroger: Walk 15 min. to Kroger	10	15	\$0.15	NA	1900	1810	Kroger	1910	1825	Krystal	eat	2	0.45
7	CHANGE: Kroger to Home: Taxi ride home (\$3.00) -- could otherwise use Call-A-KAT, but this is unrealistic that they would know 24 hours in advance	20	10	\$0.93	\$3.00	1930	1855	Krystal	1950		HOME	home	2	2.83
TOTAL	Cheaper and less time with bus, but eliminated 2 trips and there is a lot of walking	177	116	\$7.68	\$5.00									16.27

GRACE RANDOLPH (OFF DAY): Thursday - March 29, 2001

TRIP	OPTIONS	TIME W/CAR	TIME W/NO CAR	COST W/CAR	COST W/NO CAR	ORIGIN TIME	ORIGIN TIME W/NO CAR	ORIGIN PLACE	DEST. TIME	DEST. TIME W/NO CAR	DEST. PLACE	PURPOSE	# IN CAR	MILES
1	Exceptional trip: got call at 11:30: walk 15 minutes to bus 90A (not feasible to ride bus 12 that goes in front of her house, because both routes are only hourly); catch 12:13 bus; ride 10 minutes; walk 3 minutes to school	15	31	\$1.72	\$1.00	1145	1155	HOME	1200	1226	West End Academy	pick up relative	1	5.22
2	Walk 3 minutes to bus; wait 1 minute; catch bus 90B (lucky because bus runs only every 1 hour and 15 minutes); ride 73 minutes (two other bus options: 1) gets her there at the same time and involves less bus time, but more walking; 2) misses connection by 3 minutes)	28	77	\$2.37	\$1.00	1202	1228	West End Academy	1230	1345	City County Building	legal	1	7.19
3	Don't need to make this trip without a car	15	NA	\$0.49	NA	1300	NA	City County Building	1315	NA	Pilot Gas Station	gas	1	1.49
4	CHANGE: From City County Building to Home: walk 8 minutes to bus 14; wait 7 minutes for bus 12; ride 20 minutes; walk 2 minutes home	12	37	\$0.63	\$1.00	1318	1415	Pilot Gas Station	1330	1452	HOME	home	1	1.91
5	Walk 15 minutes to bus 90A; wait 3 minutes; ride 10 minutes; walk 3 minutes to school (have to wait another 19 minutes for grandson to be ready to go)	15	31	\$1.72	\$1.00	1645	1610	HOME	1700	1641	West End Academy	pick up relative	1	5.22
6	NO way to get him there via the bus -- the only feasible connection stops running earlier. Must use taxi (\$11.00) -- or Call-A-KAT (if they know 24 hours in advance)	25	76	\$2.32	\$1.50	1705	1705	West End Academy	1730	1730	Emerald Street Youth Ctr	drop relative	2	7.04
7	Walk 17 minutes to Route 12; wait 36 minutes for bus; ride 14 minutes; walk 2 minutes home	10	67	\$0.74	\$1.00	1735	1735	Emerald Street Youth Ctr	1745	1844	HOME	home	1	2.23
8	Walk 2 minutes to Route 12; wait 2 minutes; ride bus 12 minutes; walk 17 minutes to Youth Center (22 minutes late = child has to wait alone at night)	15	33	\$0.74	\$1.00	1945	1949	HOME	2000	2022	Emerald Street Youth Ctr	pick up relative	1	2.23
9	No way to get home via the bus -- not running this late -- Must use taxi (\$3.50) or Call-A-KAT (if they know 24 hours in advance)	15	15	\$0.74	\$1.50	2000	2022	Emerald Street Youth Ctr	2015	2037	HOME	home	2	2.23
TOTAL	Distances were pretty close for her, but the routes didn't connect very easily.	150	367	\$11.47	\$9.00									34.76

LISA WHITE (OFF DAY): Monday - May 7, 2001

TRIP	OPTIONS	TIME W/CAR	TIME W/NO CAR	COST W/CAR	COST W/NO CAR	ORIGIN TIME	ORIGIN TIME W/ NO CAR	ORIGIN PLACE	DEST. TIME	DEST. TIME W/NO CAR	DEST. PLACE	PURPOSE	# IN CAR	MILES
1	Walk 20 minutes to SaveWay	15	20	\$0.33	NA	1600	1600	HOME	1615	1620	SaveWay	shopping	1	1.00
2	Walk 8 minutes to bus 33; wait 26 minutes for bus; ride 3 minutes; walk 2 minutes to Mother's house	15	39	\$0.27	\$1.00	1630	1635	SaveWay	1645	1714	Mother's Home	visit relative	1	0.81
3	Walk home 5 minutes	10	5	\$0.07	NA	1715	1744	Mother's Home	1725	1749	HOME	home	1	0.22
TOTAL	Includes a lot of waiting and walking for such a short distance.	40	64	\$0.67	\$1.00									2.03

LISA WHITE (OFF DAY 2): Wednesday - May 9, 2001

TRIP	OPTIONS	TIME W/CAR	TIME W/NO CAR	COST W/CAR	COST W/NO CAR	ORIGIN TIME	ORIGIN TIME W/NO CAR	ORIGIN PLACE	DEST. TIME	DEST. TIME W/NO CAR	DEST. PLACE	PURPOSE	# IN CAR	MILES
1	Won't make trip -- driving 18 year old daughter around	15	NA	\$0.72	NA	1015	NA	HOME	1030	NA	KCDC	transfer housing	2	2.19
2	Won't make trip -- driving 18 year old daughter around	2	NA	\$0.13	NA	1100	NA	KCDC	1102	NA	Health Department	medical/dental	2	0.39
3	Won't make trip -- driving 18 year old daughter around	10	NA	\$0.29	NA	1110	NA	Health Department	1120	NA	Western Heights Dental	medical/dental	2	0.87
4	CHANGE: Home to Kroger: Walk 2 minutes to bus 33; wait 2 minutes; ride 14 minutes; wait 15 minutes to transfer to bus 22; ride 15 minutes; walk 2 minutes to Kroger	10	50	\$0.49	\$1.00	1200	1142	Western Heights Dental	1210	1232	Kroger	shopping	1	1.49
5	Walk 2 minutes to bus 22; wait 14 minutes; ride 17 minutes; wait 35 minutes for bus 33 (runs every hour); ride 12 minutes; walk 2 minutes home	15	82	\$0.77	\$1.00	1230	1252	Kroger	1245	1414	HOME	home	1	2.33
6	Won't make trip -- driving 18 year old daughter around	10	NA	\$1.08	NA	1315	NA	HOME	1325	NA	Western Heights Dental	medical/dental	1	3.27
7	Won't make trip -- driving 18 year old daughter around	10	NA	\$1.08	NA	1325	NA	Western Heights Dental	1335	NA	HOME	home	1	3.27
TOTAL	Eliminated all but two routes (home-Kroger-home) because she was driving her daughter around -- but time still increases greatly	72	132	\$4.56	\$2.00									13.81

MALIKA FELTON (OFF DAY): Monday - September 17, 2001

TRIP	OPTIONS	TIME W/CAR	TIME W/NO CAR	COST W/CAR	COST W/NO CAR	ORIGIN TIME	ORIGIN TIME W/NO CAR	ORIGIN PLACE	DEST. TIME	DEST. TIME W/NO CAR	DEST. PLACE	PURPOSE	# IN CAR	MILES
1	Walk 16 minutes to bus 33; wait 2 minutes; ride 13 minutes; walk 3 minutes to CVS	5	34	\$0.56	\$2.00	1810	1733	HOME	1815	1807	CVS Drug Store	shopping	5	1.71
2	Walk 2 minutes to Food City	5	2	\$0.01	NA	1820	1812	CVS Drug Store	1825	1814	Food City	shopping	5	0.04
3	Take taxi (\$4.00) or Call-A-KAT (\$5.00 and have to know 24 hours in advance)	10	10	\$0.68	\$4.00	1830	1819	Food City	1840	1829	Holston-Chilhowee Ballfields	recreation	5	2.06
4	Take taxi (\$5.00) or Call-A-KAT (\$2.00 and have to know 24 hours in advance) because it's too late for buses to run, and none are convenient	10	10	\$0.88	\$2.00	2020	2020	Holston-Chilhowee Ballfields	2030	2030	HOME	home	5	2.68
TOTAL	The increase in time isn't that great, and they stayed on schedule, but the cost is most likely prohibitive -- she probably doesn't have this much cash just to go to a ballfield. Bus/Call-A-KAT rates based on her and her two small children	30	56	\$2.14	\$8.00									6.49

MALIKA FELTON (OFF DAY 2): Tuesday - September 18, 2001

TRIP	OPTIONS	TIME W/CAR	TIME W/NO CAR	COST W/CAR	COST W/NO CAR	ORIGIN TIME	ORIGIN TIME W/NO CAR	ORIGIN PLACE	DEST. TIME	DEST. TIME W/NO CAR	DEST. PLACE	PURPOSE	# IN CAR	MILES
1	There is no KAT bus to the school -- because it was an emergency trip, she'll have to take a taxi (\$20) -- she couldn't afford this and would have to call a friend or wait until the next day and Call-A-KAT (24 hour notice)	20	20	\$0.00	\$20.00	0930	930	HOME	0950	950	Powell High School	school	2	12.70
2	If she did go to Powell High School, she would have to take a taxi (\$12) -- she would have needed to call 24 hours in advance to use Call-A-KAT	5	5	\$0.00	\$12.00	1100	1100	Powell High School	1105	1105	CVS Drug Store	shopping	2	7.53
3	Take taxi (\$5) 10 min. to route 22 stop; wait 10 min.; ride 25 min.; walk 4 min. to route 31; immediately catch bus (not one minute to spare); ride 18 min.; walk 2 min.	20	69	\$3.09	\$6.20	1200	1200	CVS Drug Store	1220	1309	Children's grandmother's home	visit relative	2	9.35
4	Wouldn't make trip -- made for someone else	5	NA	\$0.00	NA	1530	NA	Children's grandmother's home	1535	NA	Home Federal Bank	banking	3	1.34
5	Wouldn't make trip -- made for someone else	5	NA	\$0.00	NA	1540	NA	Home Federal Bank	0545	NA	Walgreens	shopping	3	0.71
6	Wouldn't make trip -- made for someone else	5	NA	\$0.00	NA	1550	NA	Walgreens	1555	NA	Magnolia Mart	shopping	3	0.18
7	CHANGE: Children's Grandmother's to First Tennessee: Use Call-A-KAT (assuming planned 24 hours in advance)	5	10	\$0.00	\$1.00	1600	1619	Magnolia Mart	1605	1629	First Tennessee Bank	banking	3	7.87
8	Hopefully Call-A-KAT would wait 5 min. for her at the bank? If so, take Call-A-KAT back home because no routes go out to First Tennessee (but it's in city limits)	5	5	\$0.00	\$1.00	1610	1634	First Tennessee Bank	1615	1639	HOME	home	3	6.46
9	Use Call-A-KAT since most buses have stopped running and none are convenient	10	10	\$0.00	\$1.50	1900	1900	HOME	1910	1910	Holston-Chilhowee Ballfields	recreation	3	2.68
10	Use Call-A-KAT since most buses have stopped running and none are convenient	10	10	\$0.00	\$1.50	2030	2030	Holston-Chilhowee Ballfields	2040	2040	HOME	home	3	2.68
TOTAL	Several trips were unnecessary (made for others). Most of remaining trips are not feasible with bus, because most would have to be made by taxi (some of the destinations are not served by KAT), which she could not afford. She would either have to not make the trips, or, more likely change her plans and go to stores/banks that ARE on bus routes. Many of her trips are just far enough off the bus system, that she would have to use Call-A-KAT. Most trips were \$0.00 because she didn't drive/didn't pay anyone.	90	129	\$3.09	\$43.20									51.50

MICHELLE KELLY (WORK DAY): Wednesday - May 16, 2001

TRIP	OPTIONS	TIME W/CAR	TIME W/NO CAR	COST W/CAR	COST W/NO CAR	ORIGIN TIME	ORIGIN TIME W/NO CAR	ORIGIN PLACE	DEST. TIME	DEST. TIME W/NO CAR	DEST. PLACE	PURPOSE	# IN CAR	MILES
1	Wouldn't make trip -- made for someone else	5	NA	\$0.91	NA	1200	NA	HOME	1205	NA	Townview Apartments	drop relative	3	2.75
2	CHANGE: Home to Day Care: Walk 2 minutes to bus 33; wait 2 minutes; ride 9 minutes; walk 2 minutes to day care	10	39	\$0.26	\$1.50	1205	1136	Townview Apartments	1215	1151	Day Care	drop child(ren)	2	0.80
3	Walk 10 minutes to Pellissippi	3	10	\$0.16	NA	1217	1153	Day Care	1220	1203	Pellissippi State	school	1	0.48
4	Wouldn't make trip -- don't need gas if don't have car	2	NA	\$0.09	NA	1330	NA	Pellissippi State	1332	NA	Citgo Gas Station	gas	1	0.27
5	CHANGE: Pellissippi to Weigels: walk 2 minutes to bus 30 -- wait 43 minutes (just missed bus by 2 minutes) -- WALK 20 minutes to Weigels	3	20	\$0.23	NA	1335	1330	Citgo Gas Station	1338	1350	Weigels	shopping	1	0.71
6	Wouldn't make trip -- made for someone else	2	NA	\$0.10	NA	1340	NA	Weigels	1342	NA	Townview Apartments	pick up relative	1	0.29
7	CHANGE: Weigels to Pilot: Walk 2 minutes to bus 90A; wait 24 minutes; ride 14 minutes; walk 4 minutes to Pilot	5	44	\$0.80	\$1.00	1345	1352	Townview Apartments	1350	1436	Pilot Gas Station	shopping	1	2.42
8	Unlikely that this day was going to be planned as it ended up, but assuming she planned 24 hours in advance, she could use Call-A-KAT (otherwise, a cab would cost \$11)	3	3	\$2.30	\$1.00	1352	1438	Pilot Gas Station	1355	1441	First Tennessee Bank	banking	1	6.97
9	Wouldn't make trip -- made for someone else	10	NA	\$3.13	NA	1400	NA	First Tennessee Bank	1410	NA	Cal Johnson Rec Center	pick up relative	1	9.48
10	CHANGE: First Tennessee to Lonsdale Apartments: Hopefully Call-A-KAT will wait 5 minutes for her at the bank then take her back to the 31 bus stop (5 minutes); wait 29 minutes; ride 20; wait 20 minutes to transfer to bus 12; ride 18 minutes; walk 2 minutes	15	94	\$1.16	\$2.20	1415	1446	Cal Johnson Rec Center	1430	1620	Lonsdale Apartments	visit friend	2	3.53
11	Wouldn't make trip -- made for someone else	25	NA	\$1.68	NA	1445	NA	Lonsdale Apartments	1510	NA	Bi-Lo Supermarket	banking	2	5.09
12	CHANGE: Lonsdale Apartments to HOME: Walk 2 minutes to bus 12; wait 16 minutes; ride 9 minutes; wait 3 minutes to transfer to route 33; ride 11 minutes; walk 5 minutes home	3	46	\$0.33	\$1.20	1515	1635	Bi-Lo Supermarket	1518	1721	HOME	home	2	1.00
TOTAL	Bus/walking worked okay, but got there too early	86	256	\$11.15	\$6.90									33.79

MICHELLE KELLY (OFF DAY): Thursday - May 17, 2001

TRIP	OPTIONS	TIME W/CAR	TIME W/NO CAR	COST W/CAR	COST W/NO CAR	ORIGIN TIME	ORIGIN TIME W/NO CAR	ORIGIN PLACE	DEST. TIME	DEST. TIME W/NO CAR	DEST. PLACE	PURPOSE	# IN CAR	MILES
1	Wouldn't make trip -- made for someone else	5	NA	\$0.61	NA	1400	NA	HOME	1405	NA	Friend's Home	pick up friend	1	1.86
2	CHANGE: HOME to Taco Bell: Walk 19 minutes -- could catch bus, and there is a good connection (no walking), BUT, the connection is missed by 1 minute!	5	19	\$0.37	NA	1410	1400	Friend's Home	1415	1419	Taco Bell	eat	2	1.11
3	Walk 2 minutes to bus 31; wait 4 minutes; ride 3 minutes; wait 4 minutes; ride 2 minutes; walk 2 minutes home (with friend; won't pay for her)	3	17	\$0.29	\$1.20	1420	1424	Taco Bell	1423	1441	HOME	home	2	0.89
4	Walk 2 minutes to bus 33; Wait 8 minutes; ride 6 minutes; walk 8 minutes to Hair Plus (with friend; won't pay for her)	10	24	\$0.48	\$1.00	1600	1600	HOME	1610	1624	Hair Plus Beauty Supply	shopping	2	1.44
5	Wouldn't make trip -- made for someone else	5	NA	\$0.15	NA	1615	NA	Hair Plus Beauty Supply	1620	NA	Friend's Home	drop friend	2	0.45
6	CHANGE: Hair Plus to Day Care: Walk 20 minutes (could have taken a bus part way, but missed it by 3 minutes -- only runs every half hour)	5	NA	\$0.26	NA	1620	1629	Friend's Home	1625	1649	Day Care	pick up child(ren)	1	0.80
7	Wouldn't make trip -- made for someone else	10	NA	\$0.26	NA	1630	NA	Day Care	1640	NA	Friend's Home	pick up friend	5	0.80
8	CHANGE: Day Care to HOME: Walk 2 minutes to bus; wait 19 minutes; ride 8 minutes; walk 2 minutes home (her and three kids, not her friend and her child)	20	31	\$0.61	\$2.00	1650	1654	Friend's Home	1700	1725	HOME	home	6	1.86
TOTAL	Stayed pretty much on schedule, but only because 3 of the 8 trips were eliminated -- they had been made for someone else.	63	91	\$3.04	\$4.20									9.21

MONIQUE PRIDE (WORK DAY): Saturday - September 22, 2001

TRIP	OPTIONS	TIME W/CAR	TIME W/NO CAR	COST W/CAR	COST W/NO CAR	ORIGIN TIME	ORIGIN TIME W/NO CAR	ORIGIN PLACE	DEST. TIME	DEST. TIME W/NO CAR	DEST. PLACE	PURPOSE	# IN CAR	MILES
1	Wouldn't make trip because it was made for someone else -- picked up friend to car pool	6	NA	\$0.48	NA	0740	NA	HOME	0746	NA	Friend's home	pick up friend	1	1.46
2	CHANGE: HOME to work: Walk 5 minutes to bus 40B; wait 2 minutes; ride 37 minutes (arrive downtown 7:15); transfer to bus 22 immediately (not a minute to spare); ride 21 minutes; walk 2 minutes to work (22 minutes early)	14	67	\$1.51	\$1.20	0750	631	Friend's home	0804	738	Work - GC Services	work	2	4.58
3	Cannot make trip -- it would take 36 minutes to walk and she only gets 1/2 hour AND bus only runs every hour	5	NA	\$0.30	NA	1230	NA	Work - GC Services	1235	NA	McDonald's	eat	1	0.90
4	Cannot make trip -- it would take 36 minutes to walk and she only gets 1/2 hour AND bus only runs every hour	5	NA	\$0.30	NA	1245	NA	McDonald's	1250	NA	Work - GC Services	work	1	0.90
5	Wouldn't make trip because it was made for someone else	15	NA	\$1.51	NA	1630	NA	Work - GC Services	1645	NA	Friend's home	drop friend	2	4.58
6	CHANGE: Work to HOME: walk 2 minutes to bus 22; wait 22 minutes; ride 21 minutes; transfer immediately to bus 40A (not a minute to spare); ride 32 minutes; walk 2 minutes home	10	79	\$0.48	\$1.20	1650	1630	Friend's home	1700	1749	HOME	home	1	1.46
TOTAL	Would work somewhat easier on a weekday, but Saturday schedule is only 1/3 the weekday routes; have to eliminate McDonald's lunch trip because of the lack of Saturday routes. HOWEVER, she was lucky in that her connections were perfect, not a minute to wait... but is this realistic that the buses will not be late? Even so, her time increased significantly.	55	146	\$4.58	\$2.40									13.88

MONIQUE PRIDE (OFF DAY): Sunday - September 23, 2001

TRIP	OPTIONS	TIME W/CAR	TIME W/NO CAR	COST W/CAR	COST W/NO CAR	ORIGIN TIME	ORIGIN TIME W/NO CAR	ORIGIN PLACE	DEST. TIME	DEST. TIME W/NO CAR	DEST. PLACE	PURPOSE	# IN CAR	MILES
1	Assuming she had it planned 24 hours in advance, she can use Call-A-KAT	7	7	\$0.71	\$1.00	2320	2320	HOME	2327	2327	Cousin's home	visit relative	1	2.14
2	Taxi -- buses/Call-A-KAT are not running (split \$7 ride with cousin)	25	25	\$1.46	\$3.50	0030	30	Cousin's home	0055	55	Matrix	recreation	4	4.42
3	Taxi -- would split \$7 ride with cousin (shorter time, because not "riding" on the way home)	45	25	\$1.46	\$3.50	0300	300	Matrix	0345	325	Cousin's home	drop friend	4	4.42
4	Get another taxi HOME (shorter time, because not "riding" on the way home)	17	7	\$0.71	\$4.00	0408	348	Cousin's home	0425	355	HOME	home	1	2.14
5	Wouldn't make trip -- made for someone else	15	NA	\$0.97	NA	2100	NA	HOME	2115	NA	Cousin's home	drop relative	4	2.95
6	Wouldn't make trip -- made for someone else	15	NA	\$0.97	NA	2135	NA	Cousin's home	2150	NA	HOME	home	3	2.95
TOTAL	Less time because eliminated trip in afternoon to take cousin home AND her individual trips were shorter because I eliminated the time they went "riding." Much more expensive, because her hours were LATE and no buses were running.	124	64	\$6.28	\$12.00									19.02

MARY STEVENS (WORK DAY): Saturday - September 15, 2001

TRIP	OPTIONS	TIME W/CAR	TIME W/NO CAR	COST W/CAR	COST W/NO CAR	ORIGIN TIME	ORIGIN TIME W/NO CAR	ORIGIN PLACE	DEST. TIME	DEST. TIME W/NO CAR	DEST. PLACE	PURPOSE	# IN CAR	MILES
1	Wait 2 minutes for bus 12 Combination; ride 7 minutes to transfer station downtown; wait 15 minutes for bus 11A; ride 27 minutes	25	51	\$3.00	\$1.20	0720	651	HOME	0745	742	Work - Taco Bell	work	2	6.29
2	Wait 27 minutes for bus 11A; ride 33 minutes to transfer station downtown	30	60	\$1.00	\$1.00	1615	1615	Work - Taco Bell	1645	1715	Transfer Stop	home	bus	7.11
3	Catch bus immediately (not a minute to spare); ride 7 minutes	20	7	\$0.20	\$0.20	1645	1715	Transfer Stop	1705	1722	HOME	home	bus	1.24
4	Assuming she knew in advance, she has to use Call-A-KAT or a taxi since the latest the buses get to the mall on Saturday is 6:47 (an hour before she wants to get there) -- 2 children ride free, one child is \$0.50	25	25	\$5.00	\$1.50	1920	1920	HOME	1945	1945	Movie - West Town Mall	recreation	5	6.46
5	Use Call-A-KAT since buses do not run this late on Saturdays	15	15	\$0.00	\$1.50	2200	2200	Movie - West Town Mall	2215	2215	HOME	home	5	6.46
TOTAL	Expensive as is, because she gave \$8 in gas to friends. She's lucky because the Saturday bus goes right in front of her house. My re-creation of a trip she actually took on the bus is LONGER -- maybe because she just rounded times or estimated? She has one connection that is immediate -- the bus cannot be late or early.	115	158	\$9.20	\$5.40									27.56

MARY STEVENS (OFF DAY): Thursday - September 20, 2001

TRIP	OPTIONS	TIME W/CAR	TIME W/NO CAR	COST W/CAR	COST W/NO CAR	ORIGIN TIME	ORIGIN TIME W/NO CAR	ORIGIN PLACE	DEST. TIME	DEST. TIME W/NO CAR	DEST. PLACE	PURPOSE	# IN CAR	MILES
1	Walk outside to catch bus; wait 6 minutes for bus 14; ride 6 minutes; wait 8 minutes for bus 31; ride 5 minutes	15	25	\$5.00	\$1.20	1500	1500	HOME	1515	1525	Covington Credit	banking	2	1.66
2	Wait 5 minutes for bus 31; ride 8 minutes; walk 5 minutes to Chesterfield	5	18	\$0.00	\$1.00	1545	1555	Covington Credit	1550	1613	Chesterfield Finances	banking	2	1.17
3	Walk 5 minutes to downtown station; wait 12 minutes for bus 14; ride 5 minutes to HOME	10	22	\$0.00	\$1.00	1550	1613	Chesterfield Finances	1600	1635	HOME	home	2	1.44
4	Walk 10 minutes	5	10	\$0.00	NA	1745	1745	HOME	1750	1755	Laura Cansler Center	pick up child(ren)	2	0.46
5	Walk 10 minutes	5	10	\$0.00	NA	1800	1805	Laura Cansler Center	1805	1815	HOME	home	5	0.46
TOTAL	Trips would be made alone, because she was getting rides from someone else. Her trips were pretty convenient -- very little waiting and walking time and all her stops were pretty easily accessible via the bus, BUT she still doubled her time. Cost was relatively low because she was a passenger and only gave \$5 one time. 2 in car -- assuming her and a small child who rides bus free)	40	85	\$5.00	\$3.20									5.19

MONICA WILLIAMS (WORK DAY): Tuesday - January 16, 2001

TRIP	OPTIONS	TIME W/CAR	TIME W/NO CAR	COST W/CAR	COST W/NO CAR	ORIGIN TIME	ORIGIN TIME W/NO CAR	ORIGIN PLACE	DEST. TIME	DEST. TIME W/NO CAR	DEST. PLACE	PURPOSE	# IN CAR	MILES
1	Walk 5 minutes to Maynard School	5	5	\$0.08	NA	0730	730	HOME	735		Maynard School	drop child(ren)	3	0.24
2	Walk 5 minutes HOME	5	5	\$0.08	NA	0745	745	Maynard School	750		HOME	home	1	0.24
3	Walk 2 minutes to bus; wait 2 minutes for bus 12; ride 12 minutes; transfer to bus 33 immediately (not a minute to spare); ride 8 minutes -- got to school 17 minutes early	15	24	\$0.72	\$1.20	0810	744	HOME	0825	808	Career Investment Academy	school	1	2.18
4	Wait 5 minutes for bus 33; ride 10 minutes; continue on same bus (switches to route 12); ride for 10 minutes; walk 2 minutes home	15	27	\$0.72	\$1.20	1045	1045	Career Investment Academy	1100	1112	HOME	home	1	2.18
5	Walk 5 minutes to Maynard School	2	5	\$0.08	NA	1255	1255	HOME	1257	1300	Maynard School	pick up child(ren)	1	0.24
6	Walk 5 minutes HOME	3	5	\$0.08	NA	1300	1303	Maynard School	1303	1308	HOME	home	3	0.24
7	Walk 2 minutes to bus; wait 9 minutes; ride bus 14 4 minutes; walk 5 minutes	8	20	\$0.36	\$2.00	1325	1325	HOME	1333	1345	AmSouth Bank	banking	3	1.09
8	Wait 27 minutes for bus 22; ride 8 minutes (just missed bus by 3 minutes)	5	35	\$0.38	\$2.00	1343	1355	AmSouth Bank	1348	1430	Kroger	shopping	3	1.16
9	Walk 2 minutes to bus 22; wait 4 minutes; ride 11 minutes; wait 14 minutes; ride 3 minutes; walk 2 minutes home	7	36	\$0.70	\$2.20	1420	1502	Kroger	1427	1538	HOME	home	3	2.13
10	Walk 5 minutes to Mother's home	5	5	\$0.07	NA	1725	1725	HOME	1730	1730	Mother's Home	visit relative	2	0.22
11	Walk 5 minutes HOME	3	5	\$0.07	NA	1800	1800	Mother's Home	1803	1805	HOME	home	1	0.22
12	Hopefully she planned ahead and called Call-A-KAT since buses stop running before 7PM	20	20	\$1.36	\$2.50	1920	1920	HOME	1940	1940	Sarah Moore Greene School	recreation	4	4.11
13	Hopefully she planned ahead and called Call-A-KAT since buses stop running before 7PM	15	15	\$1.36	2.5	2015	2015	Sarah Moore Greene School	2030	2030	HOME	home	4	4.11
TOTAL	Her bus connections are pretty good. She can walk to many of her destinations. Bus cost is based on her and 2 five year old children	108	207	\$6.06	\$13.60									18.36

MONICA WILLIAMS (OFF DAY): Friday - January 19, 2001

TRIP	OPTIONS	TIME W/CAR	TIME W/NO CAR	COST W/CAR	COST W/NO CAR	ORIGIN TIME	ORIGIN TIME W/NO CAR	ORIGIN PLACE	DEST. TIME	DEST. TIME W/NO CAR	DEST. PLACE	PURPOSE	# IN CAR	MILES
1	Walk 5 minutes to school	3	5	\$0.08	NA	0750	NA	HOME	0753	755	Maynard School	drop child(ren)	4	0.24
2	CHANGE: She would have walked 4 minutes and waited 21 minutes with her son for the 90A bus to school. This is a major constraint, as he is only 12, but she wouldn't have any other choice	22	25	\$2.17	\$0.50	0758	800	Maynard School	0820	825	Bearden Middle School	drop child(ren)	2	6.58
3	CHANGE: Walk 7 minutes home from bus stop	20	7	\$2.22	NA	0830	825	Bearden Middle School	0850	832	HOME	home	1	6.73
4	Walk 5 minutes to school	3	5	\$0.08	NA	1253	1253	HOME	1256	1258	Maynard School	pick up child(ren)	1	0.24
5	Walk 5 minutes home	2	5	\$0.08	NA	1303	1305	Maynard School	1305	1310	HOME	home	3	0.24
6	Walk 9 minutes to United Way	8	9	\$0.15	NA	1755	1755	HOME	1803	1804	United Way	neigh. mtg.	3	0.44
7	Wouldn't make trip -- made for someone else	3	NA	\$0.08	NA	1915	NA	United Way	1918	NA	Mother's Home	drop relative	5	0.25
8	Wouldn't make trip -- made for someone else	1	NA	\$0.04	NA	1918	NA	Mother's Home	1919	NA	Friend's Home	drop friend	4	0.12
9	CHANGE: Walk 9 minutes from United Way to Home	3	9	\$0.04	NA	1919	1915	Friend's Home	1922	1924	HOME	home	3	0.12
TOTAL	Saved some time in morning, but only because she couldn't drive her son to school. Her time was identical without a car, and her cost was much less, but it is because she had to walk everywhere -- which was actually quite feasible for her since her longest trip (besides the trip to her son's school) was just .44 miles A very unique case with an extremely small travel area (in general) -- BUT this one trip that is eliminated is a real problem	65	65	\$4.94	\$0.50									14.96

MAHOGANY ZAIRE (WORK DAY): Tuesday - April 24, 2001

TRIP	OPTIONS	TIME W/CAR	TIME W/NO CAR	COST W/CAR	COST W/NO CAR	ORIGIN TIME	ORIGIN TIME W/NO CAR	ORIGIN PLACE	DEST. TIME	DEST. TIME W/NO CAR	DEST. PLACE	PURPOSE	# IN CAR	MILES
1	Wouldn't make trip -- made to pick up brother's car -- won't do that if taking bus	20	NA	\$1.55	NA	0715	NA	HOME (Mom's)	0735	NA	Broadway Carpet - Bro. work	drop relative	2	4.71
2	CHANGE: Home (Mom's) to Career Investment Academy: Walk 2 minutes to bus 40B; wait 2 minutes; ride 20 minutes to downtown transfer station; catch bus 33 IMMEDIATELY (not a minute to spare); ride 8 minutes; walk 2 minutes to CIA	8	34	\$0.48	\$1.20	0737	706	Broadway Carpet - Bro. work	0745	740	Career Investment Academy	school	1	1.44
3	Walk 10 minutes to Police Station	4	10	\$0.17	NA	0746	741	Career Investment Academy	0750	751	Police Station - Safety Building	legal	1	0.50
4	Walk 10 minutes to CIA	5	10	\$0.17	NA	0820	821	Police Station - Safety Building	0825	831	Career Investment Academy	school	1	0.50
5	Walk 2 minutes to bus 30; wait 3 minutes; ride 10 minutes to downtown transfer station; transfer to bus 14 immediately (not a minute to spare); ride 20 minutes; walk 2 minutes HOME	25	37	\$1.28	\$1.20	1115	1115	Career Investment Academy	1140	1152	HOME	home	1	3.88
6	Walk 2 minutes to bus 14; wait 1 minute; ride 25 minutes to downtown transfer station; wait 15 minutes; ride 20 minutes; walk 2 minutes HOME (Mom's)	20	65	\$2.00	\$1.20	1205	1217	HOME	1225	1322	HOME (Mom's)	home	1	6.06
7	Wouldn't make trip -- made for someone else	5	NA	\$0.01	NA	1825	NA	HOME (Mom's)	1830	NA	Friend's Home	pick up friend	2	0.04
8	Wouldn't make trip -- made for someone else	15	NA	\$1.54	NA	1837	NA	Friend's Home	1852	NA	Broadway Carpet - Bro. work	pick up relativ	3	4.67
9	CHANGE: HOME (Mom's) to Kroger: Walk 2 minutes to bus 40A; wait 8 minutes; ride 5 minutes	17	15	\$0.00	\$1.00	1906	1825	Broadway Carpet - Bro. work	1923	1840	Kroger	shopping	4	3.46
10	Wouldn't make trip -- made for someone else	6	NA	\$0.00	NA	1930	NA	Kroger	1936	NA	Friend's Home	drop friend	4	1.56
11	CHANGE: Kroger to HOME: assuming she knew ahead of time, she could have called Call-A-KAT to pick her up -- probably told them to come at 7PM (wait 13 minutes)	6	23	\$0.00	\$1.00	1941	1847	Friend's Home	1947	1910	HOME (Mom's)	home	3	0.04
TOTAL	Cost with car is zero when she was the passenger (had no expenses of using her own car). Time wasn't that much more with the bus, but she didn't make many of her trips and she walked many others	131	194	\$7.19	\$5.60									26.86

MAHOGANY ZAIRE (OFF DAY): Friday - April 27, 2001

TRIP	OPTIONS	TIME W/CAR	TIME W/NO CAR	COST W/CAR	COST W/NO CAR	ORIGIN TIME	ORIGIN TIME W/NO CAR	ORIGIN PLACE	DEST. TIME	DEST. TIME W/NO CAR	DEST. PLACE	PURPOSE	# IN CAR	MILES
1	Wouldn't need to make trip -- going to get brother's car	12	NA	\$0.06	NA	1355	NA	HOME (Mom's)	1407	NA	Bus Stop	bus	walk	0.18
2	Wouldn't need to make trip -- going to get brother's car	69	NA	\$1.00	NA	1420	NA	Bus Stop	1529	NA	Transfer Point	bus	bus	3.49
3	Wouldn't need to make trip -- going to get brother's car	11	NA	\$0.20	NA	1532	NA	Transfer Point	1543	NA	Broadway Carpet - Bro. work	pick up car	bus	1.27
4	Wouldn't make trip -- made for someone else	12	NA	\$1.54	NA	1605	NA	Broadway Carpet - Bro. work	1617	NA	Friend's Home	pick up friend	1	4.67
5	CHANGE: HOME to Unbeweavable: Walk 2 minutes to bus; wait 2 minutes; ride 20 minutes to downtown transfer point; wait 15 minutes for bus 22; ride 15 minutes; walk 2 minutes to store	14	56	\$1.79	\$1.20	1620	1506	Friend's Home	1634	1602	Unbeweavable Hair Store	shopping	3	5.41
6	Wouldn't need to make trip -- going to get brother's car	3	NA	\$0.24	NA	1723	NA	Unbeweavable Hair Store	1726	NA	Broadway Carpet - Bro. work	pick up relative	3	0.74
7	CHANGE: Unbeweavable to Kroger: Walk 2 minutes to bus stop; wait 15 minutes for bus 22; ride 17 minutes to downtown transfer point; wait 20 minutes for bus 41A; ride 15 minutes; walk 2 minutes to Kroger	33	71	\$0.00	\$1.20	1737	1651	Broadway Carpet - Bro. work	1810	1802	Kroger	shopping	4	3.46
8	Wouldn't make trip -- made for someone else	5	NA	\$0.00	NA	1838	NA	Kroger	1843	NA	Friend's Home	drop friend	4	1.56
9	CHANGE: Kroger to HOME: Last bus was at 6:05; if she knew in advance, she could use Call-A-KAT, but it's unlikely that she would know exactly what time to have told them since she was already out running errands. I will assume she will take a taxi.	3	5	\$0.00	\$3.00	1850	1830	Friend's Home	1853	1835	HOME (Mom's)	home	2	0.04
TOTAL	It would have been a radically different day if she just used the bus instead of borrowing her brother's car. She drove to get his car to make just TWO stops. Her time was 1/2 hour less just taking the bus, but the point is, she'd rather spend more time getting his car (and riding with her friend) than riding the bus. Cost is ZERO if she was a passenger with someone else.	162	132	\$4.83	\$5.40									20.82

SHARON GRIFFIN (WORK DAY): Wednesday - September 12, 2001

TRIP	OPTIONS	TIME W/CAR	TIME W/NO CAR	COST W/CAR	COST W/NO CAR	ORIGIN TIME	ORIGIN TIME W/NO CAR	ORIGIN PLACE	DEST. TIME	DEST. TIME W/NO CAR	DEST. PLACE	PURPOSE	# IN CAR	MILES
1	Walk 5 minutes to bus; wait 2 minutes for bus 13; ride 3 minutes; wait 5 minutes to transfer to bus 21; ride 15 minutes; walk 2 minutes	10	32	\$0.00	\$1.20	0650	607	HOME	0700	639	NHC Nursing Home	school	2	1.41
2	Walk 2 minutes to bus 21; wait 23 minutes; ride 14 minutes; wait 16 minutes to transfer to bus 13; ride 2 minutes; walk 5 minutes HOME	15	62	\$0.00	\$1.20	1330	1330	NHC Nursing Home	1345	1432	HOME	home	2	1.41
TOTAL	She has no car, but didn't ride the bus -- would rather carpool with friend. No cost with car because she was a passenger. Time increased significantly and she only went to work and home.	25	94	\$0.00	\$2.40									2.82

SHARON GRIFFIN (WORK DAY 2): Monday - September 17, 2001

TRIP	OPTIONS	TIME W/CAR	TIME W/NO CAR	COST W/CAR	COST W/NO CAR	ORIGIN TIME	ORIGIN TIME W/NO CAR	ORIGIN PLACE	DEST. TIME	DEST. TIME W/NO CAR	DEST. PLACE	PURPOSE	# IN CAR	MILES
1	Walk 3 minutes to bus 13; wait 2 minutes; ride 8 minutes; walk 5 minutes to Tennessee Tech	20	18	\$0.00	\$1.00	0730	724	HOME	0750	742	Tennessee Tech	school	2	2.25
2	Walk 5 minutes to bus 13; wait 32 minutes; ride 23 minutes to downtown transfer station; continue on same bus to route 23; ride 33 minutes to WalMart	15	93	\$0.00	\$1.20	1100	1100	Tennessee Tech	1115	1233	WalMart	shopping	2	7.94
3	Walk 10 minutes to route 90B; wait 12 minutes; ride 35 minutes to downtown transfer station; wait 15 minutes; ride 12 minutes	30	84	\$0.00	\$1.20	1230	1348	WalMart	1300	1512	HOME	home	2	5.75
4	Would have to take taxi if she was self reliant (\$4) -- no buses are direct and most have stopped running	30	30	\$0.68	\$4.00	2000		HOME	2030		Children's Hospital	medical/dental	2	2.06
5	Would have to take taxi if she was self reliant (\$4) -- no buses are direct and most have stopped running	15	15	\$0.68	\$4.00	2130		Children's Hospital	2145		HOME	home	2	2.06
TOTAL	Cost is ZERO when she was a passenger. Huge increases in time for her errand-type trips with bus (trip to school was 2 minutes SHORTER)	110	240	\$1.36	\$11.40									20.06

SABRINA HENKINS (WORK DAY): Thursday - September 27, 2001

TRIP	OPTIONS	TIME W/CAR	TIME W/NO CAR	COST W/CAR	COST W/NO CAR	ORIGIN TIME	ORIGIN TIME W/NO CAR	ORIGIN PLACE	DEST. TIME	DEST. TIME W/NO CAR	DEST. PLACE	PURPOSE	# IN CAR	MILES
1	Walk 3 minutes to bus 30; wait 2 minutes; ride 5 minutes	7	10	\$0.29	\$1.50	0715	642	HOME	0722	652	Green Magnet School	drop child(ren)	3	0.87
2	Walk 10 minutes to Kid Base	6	10	\$0.16	NA	0722	652	Green Magnet School	0728	702	Kid Base	drop child(ren)	2	0.47
3	Walk 2 minutes to bus 90B; wait 1 minute; ride 26 minutes	25	29	\$1.26	\$1.00	0730	704	Kid Base	0755	733	Pellissippi State	school	1	3.82
4	Walk 20 minutes to DHS	3	20	\$0.32	NA	1405	1405	Pellissippi State	1408	1425	DHS	recert. appointment	1	0.97
5	Walk 2 minutes to bus 13; wait 5 minutes; ride 21 minutes to downtown transfer station; wait 5 minutes; ride 9 minutes	30	42	\$1.03	\$1.20	1545	1602	DHS	1615	1644	Kid Base	pick up child(ren)	1	3.11
6	Walk 2 minutes to bus 90A; wait 4 minutes; ride 3 minutes; walk 2 minutes	5	11	\$0.27	\$1.00	1615	1644	Kid Base	1620	1655	Boys & Girls Club	pick up child(ren)	2	0.82
7	Walk 14 minutes home	10	14	\$0.23	NA	1620	1655	Boys & Girls Club	1630	1709	HOME	home	3	0.70
8	Have to use Call-A-KAT because Lincoln Park #21 (destination) stops running before 6:00) -- Had to plan 24 hours in advance	20	20	\$0.73	\$1.50	1800	1800	HOME	1820	1820	Christenberry Ballfields	recreation	3	2.22
9	Have to use Call-A-KAT because Lincoln Park #21 (destination) stops running before 6:00) -- Had to plan 24 hours in advance	25	25	\$0.73	\$1.50	2000	2000	Christenberry Ballfields	2025	2025	HOME	home	3	2.22
TOTAL	Time in morning was very close (getting to school/daycare/school), but she had to leave and arrive earlier. Overall time didn't go up that much -- just a lot of walking modifying times a little	131	181	\$5.02	\$7.70									15.20

SABRINA HENKINS (OFF DAY): Sunday - September 23, 2001

TRIP	OPTIONS	TIME W/CAR	TIME W/NO CAR	COST W/CAR	COST W/NO CAR	ORIGIN TIME	ORIGIN TIME W/NO CAR	ORIGIN PLACE	DEST. TIME	DEST. TIME W/NO CAR	DEST. PLACE	PURPOSE	# IN CAR	MILES
1	Provided she planned ahead and called 24 hours in advance, she will have to use Call-A-KAT -- only 4 main bus routes run on Sundays.	18	18	\$1.77	\$1.50	1100	1100	HOME	1118	1118	WalMart	shopping	2	5.35
2	Provided she planned ahead and called 24 hours in advance, she will have to use Call-A-KAT -- only 4 main bus routes run on Sundays.	18	18	\$1.77	\$1.50	1330	1330	WalMart	1348	1348	HOME	home	2	5.35
TOTAL	No change in plans -- actually cheaper, but she had to have planned ahead and called KAT in time. This is an example of where it's easy to make plans work with the bus, but would she really have planned this trip 24 hours in advance?	36	36	\$3.53	\$3.00									10.70

SHEENA JORDAN (OFF DAY): Friday - January 19, 2001

TRIP	OPTIONS	TIME W/CAR	TIME W/NO CAR	COST W/CAR	COST W/NO CAR	ORIGIN TIME	ORIGIN TIME W/NO CAR	ORIGIN PLACE	DEST. TIME	DEST. TIME W/NO CAR	DEST. PLACE	PURPOSE	# IN CAR	MILES
1	NA - won't need this trip because she doesn't need gas if no car	5	NA	\$0.21	NA	730	NA	HOME	735	NA	Weigels	gas	3	0.63
2	CHANGE: Home to Sarah Moore Greene School; walk 2 minutes to bus 32; wait 2 minutes; ride 21 minutes	5	25	\$0.84	\$2.00	740	716	Weigels	745	741	Sarah Moore Greene School	drop child(ren)	3	2.55
3	Stay on same bus (ride 21 minutes) and return to friend's house (walking 2 minutes)	5	23	\$0.56	\$0.20	750	741	Sarah Moore Greene School	755	804	Friend's home	visit friend	1	1.70
4	Walk 11 minutes to bus 90A; wait 10 minutes; ride 5 minutes; walk 3 minutes to Pilot	5	29	\$0.68	\$1.00	830	830	Friend's home	835	859	Pilot gas station	shopping	2	2.05
5	Walk 24 minutes to Pilot (arrive 9:29)	5	24	\$0.38	\$0.00	840	905	Pilot gas station	845	929	Pilot gas station	shopping	2	1.15
6	Wait 2 minutes for bus 30; ride for 12 minutes; walk 11 minutes to friend's house	5	25	\$0.71	\$1.00	850	935	Pilot gas station	855	1000	Friend's home	visit friend	2	2.15
7	Walk 10 minutes to bus 90A; wait 48 minutes; ride 5 minutes; walk 6 minutes to Hair Plus	5	69	\$0.46	\$1.00	915	1020	Friend's home	920	1129	Hair Plus Beauty Supply	shopping	1	1.38
8	Walk 6 minutes to bus 90B; wait 39 minutes; ride 5 minutes; walk 1 minute home	5	51	\$0.45	\$1.00	940	1150	Hair Plus Beauty Supply	945	1241	HOME	home	1	1.37
9	Walk 1 minute to bus 90A; wait 17 minutes; ride 7 minutes; walk 4 minutes to McDonalds	5	29	\$0.60	\$1.50	1600	1600	HOME	1605	1629	McDonald's	eat	3	1.83
10	Walk 4 minutes to bus 90B; wait 3 minutes; ride 8 minutes; walk 1 minute home	5	16	\$0.60	\$1.50	1625	1650	McDonald's	1630	1706	HOME	home	3	1.83
TOTAL	Cost on bus includes \$0.50 for children	50	291	\$5.49	\$9.20									16.64

TRACY JONES (WORK DAY): Thursday - September 13, 2001

TRIP	OPTIONS	TIME W/CAR	TIME W/NO CAR	COST W/CAR	COST W/NO CAR	ORIGIN TIME	ORIGIN TIME W/NO CAR	ORIGIN PLACE	DEST. TIME	DEST. TIME W/NO CAR	DEST. PLACE	PURPOSE	# IN CAR	MILES
1	Walk 15 minutes to school	5	15	\$0.23	NA	0710	700	HOME	0715	715	Belle Morris Elementary School	drop child(ren)	2	0.71
2	Walk 15 minutes HOME	5	15	\$0.23	NA	0715	715	Belle Morris Elementary School	0720	730	HOME	home	2	0.71
3	Walk 10 minutes to bus 23; wait 2 minutes; ride 14 minutes to downtown transfer station; wait 7 minutes; ride 17 minutes	15	50	\$1.59	\$1.20	0830	742	HOME	0845	832	Pellissippi State Comm. College	school	1	4.81
4	Wait 15 minutes for bus 53; ride 15 minutes to downtown transfer station; wait 20 minutes for bus 23; ride 15 minutes	15	65	\$1.57	\$1.20	1310	1310	Pellissippi State Comm. College	1325	1415	Belle Morris Elementary School	pick up child(ren)	1	4.77
5	Walk 15 minutes HOME	5	15	\$0.23	NA	1330	1420	Belle Morris Elementary School	1335	1435	HOME	home	2	0.71
6	Wouldn't have made trip -- made from someone else	15	NA	\$1.34	NA	1600	NA	HOME	1615	NA	Friend's Home	drop friend	3	4.06
7	CHANGE: HOME to sister's home: Wait 2 minutes for bus 30; ride 25 minutes to downtown transfer station; transfer to bus 13 immediately (not a minute to spare);	19	45	\$1.94	\$1.20	1616	1618	Friend's Home	1635	1703	Sister's Home	visit relative	2	5.87
8	Can get downtown on bus 12/13, but can't make a connection from there. Split cab fare with sister (\$4)	15	15	\$0.72	\$2.00	1800	1800	Sister's Home	1815	1815	Family Dollar	shopping	2	2.19
9	Walk 18 minutes home	5	18	\$0.29	NA	1830	1830	Family Dollar	1835	1848	HOME	home	2	0.87
TOTAL		99	238	\$8.15	\$5.60									24.70

TRACY JONES (OFF DAY): Saturday - September 15, 2001

TRIP	OPTIONS	TIME W/CAR	TIME W/NO CAR	COST W/CAR	COST W/NO CAR	ORIGIN TIME	ORIGIN TIME W/NO CAR	ORIGIN PLACE	DEST. TIME	DEST. TIME W/NO CAR	DEST. PLACE	PURPOSE	# IN CAR	MILES
1	Wait 2 minutes for bus; ride 4 minutes; walk 8 minutes to friend's house	10	14	\$0.47	\$1.00	1500	1448	HOME	1510	1502	Friend's House	visit friend	1	1.43
2	Wait 1 minute for bus 31; ride 17 minutes to downtown transfer station; wait 5 minutes for bus 22; ride 15 minutes	15	38	\$0.76	\$1.20	1700	1652	Friend's House	1715	1730	Kroger	shopping	1	2.31
3	Wait 25 minutes for bus 22; ride 15 minutes to downtown transfer station; transfer immediately (not a minute to spare) to bus Saturday #12 Combination; ride 6 minutes; walk 4 minutes	15	50	\$0.67	\$1.20	1720	1735	Kroger	1735	1825	Friend's House	visit friend	1	2.04
4	Hopefully this is planned ahead and she can use Call-A-KAT	15	15	\$0.50	\$1.00	1900	1900	Friend's House	1915	1915	O'Charley's	eat	3	1.50
5	Hopefully this is planned ahead and she can use Call-A-KAT	20	20	\$1.26	\$1.00	2100	2100	O'Charley's	2120	2120	HOME	home	1	3.82
TOTAL	The recreated time to her friend's house and Kroger is MUCH higher. Saturday travel is difficult -- routes run less frequently and some are combined.	75	137	\$3.66	\$5.40									11.10

TRACY PRUETT (WORK DAY): Friday - March 30, 2001

TRIP	OPTIONS	TIME W/CAR	TIME W/NO CAR	COST W/CAR	COST W/NO CAR	ORIGIN TIME	ORIGIN TIME W/NO CAR	ORIGIN PLACE	DEST. TIME	DEST. TIME W/NO CAR	DEST. PLACE	PURPOSE	# IN CAR	MILES
1	Walk 2 minutes to bus 40; wait 2 minutes; ride 20 minutes to downtown transfer station; wait 15 minutes; ride bus 30 for 8 minutes; walk 2 minutes to CIA	10	49	\$0.00	\$1.20	0825	706	HOME	0835	755	Career Investment Academy	school	2	4.41
2	Walk 17 minutes to work	10	17	\$0.00	NA	1300	1300	Career Investment Academy	1310	1317	Work - Dollar General	work	2	0.82
3	Hopefully she planned ahead -- and has to use Call-A-KAT	35	35	\$0.00	\$1.00	1845	1845	Work - Dollar General	1920	1920	WalMart	shopping	2	5.70
4	Hopefully she planned ahead -- and has to use Call-A-KAT	20	20	\$0.00	\$1.00	2000	2000	WalMart	2020	2020	HOME	home	2	4.07
5	Hopefully she planned ahead -- and has to use Call-A-KAT	10	10	\$0.00	\$1.00	2040	2040	HOME	2050	2050	Pizza Hut	eat	2	2.55
6	Hopefully she planned ahead -- and has to use Call-A-KAT	10	10	\$0.00	\$1.00	2100	2100	Pizza Hut	2110	2110	HOME	home	2	2.55
TOTAL	All costs were \$0.00 because she was a passenger -- her boyfriend drove her everywhere. She had to use Call-A-KAT a lot, so hopefully she had planned ahead	95	141	\$0.00	\$5.20									20.10

TRACY PRUETT (OFF DAY): Saturday - March 31, 2001

TRIP	OPTIONS	TIME W/CAR	TIME W/NO CAR	COST W/CAR	COST W/NO CAR	ORIGIN TIME	ORIGIN TIME W/NO CAR	ORIGIN PLACE	DEST. TIME	DEST. TIME W/NO CAR	DEST. PLACE	PURPOSE	# IN CAR	MILES
1	Hopefully she planned ahead -- her only option this late on a Saturday is Call-A-KAT	30	30	\$0.00	\$1.00	1910	1910	HOME	1940	1940	WalMart	shopping	2	10.91
2	Hopefully she planned ahead -- her only option this late on a Saturday is Call-A-KAT	30	30	\$0.00	\$1.00	2130	2130	WalMart	2200	2200	HOME	home	2	10.91
TOTAL	Cost was \$0.00 with a car since she was a passenger -- this day was easy to recreate with no disincentives -- HOWEVER, she had to plan in advance.	60	60	\$0.00	\$2.00									21.82

WHITNEY DAVIS (WORK DAY): Tuesday - January 23, 2001

TRIP	OPTIONS	TIME W/CAR	TIME W/NO CAR	COST W/CAR	COST W/NO CAR	ORIGIN TIME	ORIGIN TIME W/NO CAR	ORIGIN PLACE	DEST. TIME	DEST. TIME W/NO CAR	DEST. PLACE	PURPOSE	# IN CAR	MILES
1	Use taxi - bus doesn't start running until 5:40am	30	30	\$5.05	\$20.00	340	340	HOME	410	410	Work-Parkwest Medical Center	work	1	15.29
2	Wait 6 minutes for bus 11; ride 29 minutes; wait 15 minutes; transfer to 90A and ride for 50 minutes; wait 5 minutes; continue riding 20 minutes; transfer to bus 31; ride 5 minutes; walk 3 minutes home	40	133	\$5.05	\$1.40	1430	1430	Work-Parkwest Medical Center	1510	1643	HOME	home	1	15.29
3	Walk 3 minutes to bus 31; wait 7 minutes; ride 28 minutes; walk 6 minutes to Community School	15	44	\$1.56	\$2.00	1600	1600	HOME	1615	1644	Community School of the Arts	child dance/piano	3	4.74
4	Walk 6 minutes to bus 31; wait 26 minutes; ride 23 minutes; walk 3 minutes home	15	58	\$1.56	\$2.00	1815	1815	Community School of the Arts	1830	1913	HOME	home	3	4.74
TOTAL	Cost will likely be prohibitive for her to even be able to keep this job -- she would at least have to try to change her hours. Time increases dramatically. Bus price is based on her and two school-age children.	100	265	\$13.22	\$25.40									40.07

WHITNEY DAVIS (OFF DAY): Friday - January 19, 2001

TRIP	OPTIONS	TIME W/CAR	TIME W/NO CAR	COST W/CAR	COST W/NO CAR	ORIGIN TIME	ORIGIN TIME W/NO CAR	ORIGIN PLACE	DEST. TIME	DEST. TIME W/NO CAR	DEST. PLACE	PURPOSE	# IN CAR	MILES
1	Walk 2 minutes to bus 31; wait 1 minute; ride 2 minutes; walk 4 minutes	5	9	\$0.17	\$1.00	1000	950	HOME	1005	959	Kroger	shopping	1	0.51
2	Walk - the return bus takes a different route	5	10	\$0.17	NA	1230	1230	Kroger	1235	1240	HOME	home	1	0.51
TOTAL	Could have walked there, but easier to ride the bus for part of the way -- very little sacrifice in time or money, just convenience (walking)...	10	19	\$0.34	\$1.00									1.02

VITA

Jennifer Lynn Rogalsky was born in Racine, Wisconsin on July 23, 1972. She was raised in Racine and attended Jefferson Lighthouse Elementary School, McKinley Middle School, and Washington Park High School, all in Racine. She graduated Summa Cum Laude in 1994 with a B.S. in Geography (Resource Management) from the University of Wisconsin, Eau Claire. She earned her M.S. in Geography in 1997 at the University of Tennessee, Knoxville.

Jennifer is currently an Instructor and the Director of the Urban Studies Program at the State University of New York, College at Geneseo.