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# TCRP Report 49

## **Using Public Transportation to Reduce the Economic, Social, and Human Costs of Personal Immobility**

Transportation Research Board  
National Research Council

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# Report 49

## Using Public Transportation to Reduce the Economic, Social, and Human Costs of Personal Immobility

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with  
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Washington, DC  
and  
OMNIVERSED INTERNATIONAL  
Los Angeles, CA

*Subject Area*

Planning and Administration  
Public Transit

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## TRANSIT COOPERATIVE RESEARCH PROGRAM

The nation's growth and the need to meet mobility, environmental, and energy objectives place demands on public transit systems. Current systems, some of which are old and in need of upgrading, must expand service area, increase service frequency, and improve efficiency to serve these demands. Research is necessary to solve operating problems, to adapt appropriate new technologies from other industries, and to introduce innovations into the transit industry. The Transit Cooperative Research Program (TCRP) serves as one of the principal means by which the transit industry can develop innovative near-term solutions to meet demands placed on it.

The need for TCRP was originally identified in *TRB Special Report 213--Research for Public Transit: New Directions*, published in 1987 and based on a study sponsored by the Urban Mass Transportation Administration--now the Federal Transit Administration (FTA). A report by the American Public Transit Association (APTA), *Transportation 2000*, also recognized the need for local, problem-solving research. TCRP, modeled after the longstanding and successful National Cooperative Highway Research Program, undertakes research and other technical activities in response to the needs of transit service providers. The scope of TCRP includes a variety of transit research fields including planning, service configuration, equipment, facilities, operations, human resources, maintenance, policy, and administrative practices.

TCRP was established under FTA sponsorship in July 1992. Proposed by the U.S. Department of Transportation, TCRP was authorized as part of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA). On May 13, 1992, a memorandum agreement outlining TCRP operating procedures was executed by the three cooperating organizations: FTA, the National Academy of Sciences, acting through the Transportation Research Board (TRB); and the Transit Development Corporation, Inc. (TDC), a nonprofit educational and research organization established by APTA. TDC is responsible for forming the independent governing board, designated as the TCRP Oversight and Project Selection (TOPS) Committee.

Research problem statements for TCRP are solicited periodically but may be submitted to TRB by anyone at any time. It is the responsibility of the TOPS Committee to formulate the research program by identifying the highest priority projects. As part of the evaluation, the TOPS Committee defines funding levels and expected products.

Once selected, each project is assigned to an expert panel, appointed by the Transportation Research Board. The panels prepare project statements (requests for proposals), select contractors, and provide technical guidance and counsel throughout the life of the project. The process for developing research problem statements and selecting research agencies has been used by TRB in managing cooperative research programs since 1962. As in other TRB activities, TCRP project panels serve voluntarily without compensation.

Because research cannot have the desired impact if products fail to reach the intended audience, special emphasis is placed on disseminating TCRP results to the intended end users of the research: transit agencies, service providers, and suppliers. TRB provides a series of research reports, syntheses of transit practice, and other supporting material developed by TCRP research. APTA will arrange for workshops, training aids, field visits, and other activities to ensure that results are implemented by urban and rural transit industry practitioners.

The TCRP provides a forum where transit agencies can cooperatively address common operational problems. The TCRP results support and complement other ongoing transit research and training programs.

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### NOTICE

The project that is the subject of this report was a part of the Transit Cooperative Research Program conducted by the Transportation Research Board with the approval of the Governing Board of the National Research Council. Such approval reflects the Governing Board's judgment that the project concerned is appropriate with respect to both the purposes and resources of the National Research Council.

The members of the technical advisory panel selected to monitor this project and to review this report were chosen for recognized scholarly competence and with due consideration for the balance of disciplines appropriate to the project. The opinions and conclusions expressed or implied are those of the research agency that performed the research, and while they have been accepted as appropriate by the technical panel, they are not necessarily those of the Transportation Research Board, the National Research Council, the Transit Development Corporation, or the Federal Transit Administration of the U.S. Department of Transportation.

Each report is reviewed and accepted for publication by the technical panel according to procedures established and monitored by the Transportation Research Board Executive Committee and the Governing Board of the National Research Council.

To save time and money in disseminating the research findings, the report is essentially the original text as submitted by the research agency. This report has not been edited by TRB.

### Special Notice

The Transportation Research Board, the National Research Council, the Transit Development Corporation, and the Federal Transit Administration (sponsor of the Transit Cooperative Research Program) do not endorse products or manufacturers. Trade or manufacturers' names appear herein solely because they are considered essential to the clarity and completeness of the project reporting.

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# FOREWORD

*By Staff  
Transportation Research  
Board*

This report provides a method to define and measure the costs of personal immobility at a local level and contains a compendium of public transportation practices that address immobility, help reduce costs, and possibly provide economic benefits to both the riders and the larger community. The focus is on practices that assist people who need transportation to health care or who are transitioning from welfare to work. This report should be of interest to planners, decision makers, and social service and transportation providers. It should also serve as a resource to assist decision makers and transportation service providers in using their services more effectively to address the issue of personal immobility.

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The social effects of the post-World War II growth in automobile ownership and highway expansion have been studied extensively. During this period, many businesses and services relocated from transit-oriented cities to automobile-oriented locations, resulting in the migration of homes, employment, health care, education, shopping, and social services to the suburbs. Without a car, it is now difficult to fully participate in American society. However, the 1990 census indicates the approximately 9.2 percent of American households do not have access to a car, and many of these do not have access to good public transportation either. Young, elderly, and poor persons are primarily affected. This lack of personal mobility has an economic, social, and human cost, but the magnitude of these costs has not been well demonstrated. It is known that the costs include higher unemployment, lower tax revenues, higher welfare expenditures, greater medical costs, and limited human development opportunities. How much benefit would be generated by improving mobility for segments of society, and how can public transit play a stronger role? To answer these questions, there is a need to better define and measure the costs of immobility and to identify ways in which public transportation can help improve mobility.

Crain & Associates, Inc., in association with Ricardo Byrd and Omniversed International, was the contractor for TCRP Project H-8 and prepared the final report. To achieve the project objective of developing a product that will assist transit and humanservices professionals in using their services more effectively to address the issue of immobility, the researchers conducted a comprehensive review of the literature on the economic, social, and human costs of immobility and the practices that assist in reducing these costs. Further, a method was developed to define and measure the economic, social, and human costs of immobility at the local level. Solicitations were made through articles in industry publications aimed at transit agencies, human-service agencies, and community-based organizations to identify the most current practices using public transportation. A summary of current practices is included; it highlights the institutional barriers that inhibit more effective use of available public transportation services and presents key findings on how these barriers can be overcome.

In addition to the final report, this project produced in-depth documentation of 11 case studies conducted in six regions of the country. These case studies, which address welfare-to-work and access to health care, can be found on the TCRP home page ([www4.nas.edu/trb/crp.nsf](http://www4.nas.edu/trb/crp.nsf)) on the Internet's World Wide Web as TCRP Web Document 7.

# CONTENTS

## 1 EXECUTIVE SUMMARY

### 1-1 CHAPTER 1 Introduction

Research Problem Statement, 1-1  
Objectives, 1-1  
Organization of This Report, 1-2

### 2-1 CHAPTER 2 Immobility Issues

Who Are the Transportation Disadvantaged?, 2-1  
Key Barriers to Improving Mobility, 2-2  
Using Public Transportation to Address the Barriers to Mobility, 2-10  
Empowerment Zone and Enterprise Communities (EZ/EC), 2-22  
Key Findings, 2-22  
Chapter References, 2-23

### 3-1 CHAPTER 3 Key Research Findings

Summary of Key Findings, 3-1  
Chapter References, 3-17

### 4-1 CHAPTER 4 Guide for Economic Analysis of Transit Projects

Overview, 4-1  
Step 1: Describe Project Characteristics and Costs, 4-2  
Step 2: Select Economic Features, Update Unit Costs, 4-6  
Step 3: Determine Project Patronage, Identify Mobility Benefits, 4-8  
Step 4: Estimate Efficiency Benefits of Project, 4-11  
Step 5: Calculate and Interpret Economic Indices, 4-13  
Chapter References, 4-18

### 5-1 CHAPTER 5 Compendium of Public Transportation Practices to Address Immobility

Compendium Organization, 5-1  
Access to Jobs, 5-1  
Filling Mobility Gaps, 5-13  
Coordination with Health and Human Services Agencies, 5-19  
Elderly Services, 5-21  
Youth Services, 5-24  
Transit Oriented Development, 5-26  
Vehicle Programs, 5-27  
Chapter References, 5-31

### 6-1 CHAPTER 6 Implementation and Dissemination Plans

Implementation Plan, 6-1  
Dissemination Plan, 6-5  
Chapter References, 6-9

### A-1 APPENDIX A Case Studies

### B-1 APPENDIX B Literature Search: Who Are the Transportation Disadvantaged?

### C-1 APPENDIX C Glossary of Terms

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## **AUTHOR ACKNOWLEDGMENTS**

The research described in this report was performed under TCRP Project H-8 by Crain & Associates, Inc., Ricardo Byrd, and Omniversed International. Gail Murray was the Principal Investigator and principal author of the summary and all chapters except Chapter 4. She directed and wrote the case studies for the AC Transit service area, South Carolina, Metro-Dade Transit Agency, and two of the Los Angeles cases. Cliff Chambers was the Project Manager, led and wrote the case studies of SEPTA and OATS, Inc., and synthesized the key findings for Chapter 3. Ricardo Byrd provided significant industry outreach in selecting the case studies and participated in the development of the Metro-Dade, OATS, and SEPTA cases. Lou Collier of Omniversed wrote the Numero Uno Supermarket Shuttle case study and provided important contributions to the South Carolina and Los Angeles area case studies.

David Curry of Crain & Associates conducted the economic analyses of benefits and costs in the case studies and wrote the economic methodologies guide in Chapter 4. Corinne Goodrich provided valuable assistance in compiling industry best practices for the compendium in Chapter 5.

Guidance for this research was provided by Gwen Chisholm, the Senior Program Officer for the project, and the project panel.

The research team received excellent cooperation from the staff of each of the case study locations. Without this invaluable assistance, the research effort would not have been possible.

This work was sponsored by the Federal Transit Administration and was conducted in the Transit Cooperative Research Program, which is administered by the Transportation Research Board of the National Research Council.

## EXECUTIVE SUMMARY

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When the Interstate Highway Act was passed in 1956, few could envision the dramatic impact that the highway system would have on the economic and social structure of American society. Because of the easy access created by highways, many businesses and essential services relocated from the inner cities to the outlying suburbs. However, public transportation systems have not kept pace with changing land use patterns and, as a result, many of the transportation disadvantaged now find fewer essential destinations available to them.

The lack of personal mobility has economic, social and human costs, such as higher unemployment, reduced tax revenue, greater welfare and medical costs, and limited social potential. This research identified 11 transportation practices that help reduce such costs and provide economic benefits to both the riders and the larger community.

### INTRODUCTION

*"In many metropolitan areas, jobs in the cities are no longer around the corner. Jobs are over the horizon."*

*Mark Alan Hughes  
Public/Private Ventures*

---

The transportation disadvantaged are those people whose range of travel alternatives is limited, especially in the availability of easy-to-use and inexpensive options for trip-making. Factors influencing this immobility are:

#### 1. ACCESS TO AUTOMOBILES

In 1990, 9.2% of American households did not have an automobile. Almost half of those **without an automobile** are persons 65 years or older, and of these, 81% are women.

#### 2. DEMOGRAPHIC FACTORS:

**income:** Individuals with incomes below \$10,000 make about one trip per day less than individuals with incomes over \$40,000 per year.

**disabilities:** Non-disabled persons make over 50% more trips than persons with disabilities.

**gender:** 23% of full-time working mothers and almost 60% of part-time working mothers have non-traditional work hours. This reduces women's ability to join carpools or find appropriately-scheduled transit options.

### WHO ARE THE TRANSPORTATION DISADVANTAGED?

*"The largest groups of the transportation disadvantaged are those over 65 and those with a physical or mental handicap."*  
*Sandra Rosenbloom  
University of Arizona*

*During the past 40 years, nearly 2 out of 3 new jobs have been created in the suburbs of metropolitan areas: "If you cannot afford a car, you can't get to work." Director of an economic development program in the Kentucky Highlands.*

**ethnicity:** Nearly 40% of central city African-American households were without access to an automobile, compared to fewer than one out of five white central city households.

**education:** A change in education produces a greater overall effect on higher trip rates than a change in income, with the more educated taking more trips.

### 3. AVAILABILITY OF PUBLIC TRANSPORTATION

Almost four in ten American households **do not have public transportation available** within two miles.

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#### VEHICLE OWNERSHIP AND POVERTY LEVELS (PERSONS 16 AND OLDER)

	HOUSEHOLD VEHICLE OWNERSHIP	
	ONE OR MORE VEHICLES	NO VEHICLES
Below Poverty	76.1%	23.9%
Near Poverty	81.1%	18.9%
Above Poverty	97.6%	2.4%

---

## **BARRIERS TO MOBILITY**

It is widely believed that persons who are poor, disabled, or elderly cannot participate fully in society without an automobile or high quality, low-cost public transportation. Some of the major reasons for these barriers to full participation are:

- ❖ Lack of access to job opportunities for inner-city residents;
- ❖ Need to improve basic services in the inner city to reduce travel needs;
- ❖ Deficient rural and small town transit services;
- ❖ Inadequate funding to improve mobility for the transportation disadvantaged; and
- ❖ Need for improved public safety to reduce fear of travel by public transit.

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## KEY RESEARCH FINDINGS

This research focused on transportation practices that have successfully addressed immobility, particularly those designed for better access to health care and to jobs. Six regions of the country were chosen for in-depth case studies, highlighted in the accompanying sidebars. Rider surveys and documentation from the case study sites form the basis of a guide for economic analysis of the practices. The full research document contains an additional 53 practices, which are summarized in a compendium of operational and community development strategies. The eight key findings below are the result of this extensive look at personal immobility.

### 1. RETAINING BASIC PUBLIC TRANSPORTATION SERVICES IS CRITICAL TO IMPROVING THE MOBILITY OF THE TRANSPORTATION DISADVANTAGED.

In these days of declining funds, it is important to recognize the fundamental premise of availability which underpins this research; therefore, the first and most obvious finding of this research is that public transportation must be **available** if it is to be used to address immobility. A case study of the AC Transit District in Oakland, California concluded that urban bus service can be enormously productive economically, and its curtailment, even in lowpatronage, off-peak hours, can create added travel costs and income losses for riders that exceed by many times the dollar savings to transit agencies from service reductions. Although AC Transit was able to balance its budget by service reductions which saved \$4.8 million, the economic impact on riders was \$48.1 million in lost income and added travel time and expenses.

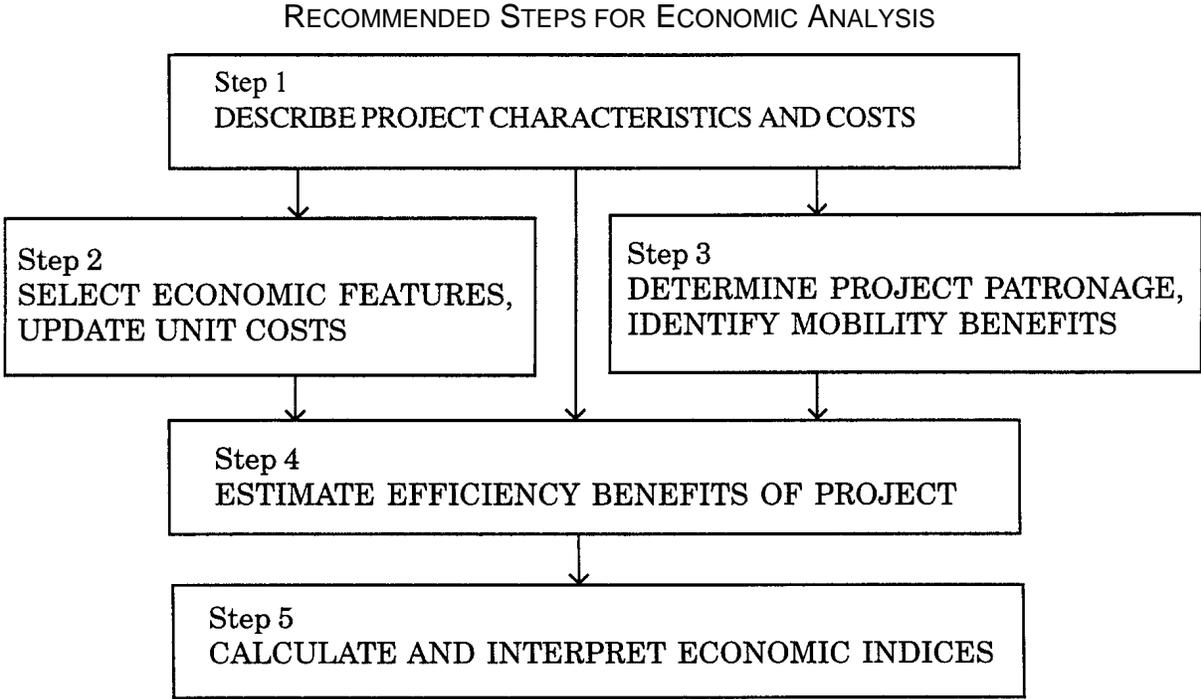
*Public comments on AC Transit's weekend cuts:  
"No more Sunday concerts."  
"Could not visit friend in hospital..."  
"Zero night life!"  
"San Francisco is out for recreation."  
"Trapped at home."*

### 2. PUBLIC TRANSPORTATION PRACTICES DIRECTED AT REDUCING PERSONAL IMMOBILITY ARE ECONOMICALLY BENEFICIAL.

The full research document contains a Guide for Economic Analysis which describes the five steps recommended to perform an economic analysis of transit projects. This analysis can be used to determine the economic value of a proposed project that addresses immobility. The economic

analysis can be used by policy makers in making informed transit investment decisions by comparing the transit benefits and costs of a specific proposed project. For proposed projects where quantified benefits clearly outweigh the costs, the economic analysis can be utilized to build support for budgets that provide sufficient public transportation funding.

The following figure illustrates the five recommended steps for economic analysis. In step 3, mobility benefits refer to benefits from transit trips that would not be made without the availability of transit. Efficiency benefits in step 4, result from the shift of trips from automobiles to transit, which typically improves the efficiency, safety, and environmental performance of the highway transportation system.



The table below depicts results of the economic analysis developed for six of the practices studied in this research. The high ratio of benefits to costs supports this finding that practices directed at reducing personal mobility are economically beneficial. The analysis further demonstrates that the economic productivity of public transit is not very dependent on the income levels served and could greatly benefit the economy by further appropriate expansion in low income areas.

Case Study	THOUSANDS OF DOLLARS		Benefit/Cost Ratio (a/b)	Net Annual Benefits (a-b)
	Annual Benefits	Annual Costs		
	a	b	c	c
PDRTA, Myrtle Beach	\$2,177	\$79	27.4	\$2,098
SEPTA Horsham Breeze	1,563	213	7.3	1,350
MDTA Metropass	7,619	1,580	4.8	6,039
MTA Immediate Needs	13,951	5,400	2.6	8,551
OATS, Missouri	13,939	6,010	2.3	7,929
Fremont travel training	52	27	1.9	25
AC Transit service cuts	4,759	48,100	0.1	(43,341)

Society benefits when individuals can access more parts of society. The programs in these case studies also save society money in ways that are not easily quantified by helping to:

- ❖ avoid medical institutionalization of the indigent;
- ❖ prevent crime by providing job training for employment and food for the hungry;
- ❖ reduce the demand on more expensive and oversubscribed paratransit services;
- ❖ provide an option to a costly ambulance ride for medical care;
- ❖ increase the purchasing power enjoyed by transit riders with access to jobs or to broader market choices; and
- ❖ relieve other agencies funded by tax dollars of transportation responsibilities and, thereby, increase their productivity

**TRANSIT CREATES ACCESS TO JOBS**

*Southeastern Pennsylvania Transportation Authority's Horsham Breeze Shuttle meets buses from downtown Philadelphia to connect to suburban employment centers with major employers, such as UPS and Prudential. Extended hours of service are paid for by employers and the county pays for midday service.*

If transit agencies could incorporate these benefits into new metrics for evaluation, transit's true value to society would be startlingly apparent.

600 PARTNERS PROVIDE  
ACCESS TO IMMEDIATE  
NEEDS

**The Metropolitan  
Transportation Authority**  
*underwrites both taxi  
vouchers and bus tokens,  
which are used by clients of  
600 social service agencies in  
Los Angeles. Clients in the  
Immediate Needs  
Transportation Program use  
the assistance for trips to food  
banks and grocery stores,  
medical appointments, job  
training and job interviews,  
and for emergencies.*

COORDINATION IS  
CREATING MORE WITH  
LESS

**The Chesterfield County  
Coordinating Council in  
South Carolina** *is increasing  
mobility for rural residents  
by layering a fixed-route  
system on dial-a-ride routes  
and allowing adults to ride  
school buses. The 43 member  
agencies have also agreed to  
share their vehicles.*

3. PUBLIC TRANSPORTATION AGENCIES THAT ARE ABLE TO DEVELOP NEW ALLIANCES WITH NONTRADITIONAL PARTNERS WILL HAVE THE BEST RESULTS WITH TRANSPORTATION PRACTICES ADDRESSING WELFARE-TO-WORK, EMPLOYMENT AND HEALTH CARE.

The transit industry has been in partnership with state and federal governments over the years to fund transportation services. However, almost all the operations spotlighted in the case studies were new services developed with nontraditional partners, such as:

- ❖ social service agencies
- ❖ community-based organizations
- ❖ volunteer groups
- ❖ businesses, and
- ❖ local governments.

Dramatic changes are occurring in the delivery of health care and reform of the welfare system that directly impact transit properties. These case studies identify transit operators that are ahead of the curve in meeting these societal and political shifts in priorities. By designing services in conjunction with their nontraditional partners, they have been able to respond effectively to these external influences and meet the needs of the transportation disadvantaged. Important elements of agreements with nontraditional partners are:

- ❖ a vested interest shared by all parties;
- ❖ a willingness to share control;
- ❖ a climate of trust;
- ❖ consensus on a common agenda;
- ❖ an ability to listen to the partner's needs and respond flexibly; and
- ❖ an action orientation with scheduled, short-term results.

4. OPPORTUNITIES EXIST FOR BLENDING A WIDE ARRAY OF DIFFERENT HUMAN AND MONETARY RESOURCES TO ADDRESS IMMOBILITY.

This finding is a byproduct of the partnerships discussed above. These partnerships have expanded transit's resources by providing new funding sources or alternative

methods of administering services. The result has been additional services that increase mobility for the transportation disadvantaged. Collectively, the case study sites have tapped funds from:

<ul style="list-style-type: none"> <li>medical centers and HMOs</li> <li>dialysis clinics</li> <li>retirement housing</li> <li>universities</li> <li>chambers of commerce</li> <li>businesses and employers</li> <li>airlines</li> <li>social service agencies</li> <li>school districts</li> <li>rider voluntary contributions</li> <li>group travel</li> <li>local cash contributions</li> <li>loans and lines of credit</li> <li>foundation grants</li> <li>Amtrak</li> <li>cities' and counties' general funds</li> <li>cities' federal Community Development block grants</li> </ul>	<ul style="list-style-type: none"> <li>county congestion management agencies</li> <li>city bond measures</li> <li>city redevelopment funds</li> <li>cities' federal Enterprise Community funds</li> <li>state Medicaid transportation funds</li> <li>state Departments of Mental Health</li> <li>state Elderly and Handicapped Transportation Assistance Programs</li> <li>state Departments of Social Services</li> <li>U.S. Area Agency on Aging</li> <li>U.S. Dept. of Transportation</li> <li>U.S. Dept. of Housing and Urban Development</li> <li>U.S. Environmental Protection Agency</li> <li>U.S. Dept. of Commerce</li> </ul>
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Coordinating with others is another way to blend resources in ways that may not require new funding. By sharing resources, agencies can better use existing capacity of vehicles; reduce liabilities; increase available expertise; create staffing pools; and eliminate redundancy, thereby, freeing up funds.

**5. PUBLIC TRANSPORTATION PRACTICES BUNDLED WITH OTHER SUPPORT SERVICES MOST EFFECTIVELY ADDRESS IMMOBILITY ISSUES RELATED TO WELFARE-TO-WORK, EMPLOYMENT, AND HEALTH CARE.**

Immobility is an indicator of other social issues that typically cannot be addressed by transportation alone. Although transportation is an essential component in solving immobility, it will not resolve the problem in and of itself, because the origins of immobility are entangled in demographic, geographic and cultural causes as well. Some programs are now being designed through collaborative planning with job training and placement organizations, transportation providers, community-based organizations, human services agencies, and regional planning institutions. These programs include help for inner-city residents in locating job openings, particularly in the suburbs; commute routes targeted to connect inner-city

**RIDERS INCREASE MOBILITY THROUGH PEER TRAINING**

*AC Transit District and the Bay Area Rapid Transit District funded group travel training with peers as assistants. Conducted by the City of Fremont, California, the travel training empowered persons who are elderly or with disabilities to shift from paratransit to fixed routes for some of their trips, saving both the transit agencies and riders money.*

PEOPLE WORK DAY AND NIGHT--SHOULDN'T TRANSIT?

***Pee Dee Regional Transportation Authority*** runs a 24-hour commute service linking residents in rural South Carolina with entry-level jobs in the tourist industry at Myrtle Beach. Service operates to meet day and night shifts and is coordinated with the Marion County Department of Social Services.

TRANSIT + ENTREPRENEUR= MORE MOBILITY

***The Metropolitan Transportation Authority's*** buses bring customers to the Numero Uno supermarket in South Central Los Angeles, where they can shop and return home with their groceries on free shuttles operated by the market. This entrepreneurial service complements the public transit system and boosts sales at the market.

residents to previously inaccessible employment locations; and support services to mitigate demands created by a commute to distant job locations, including extended childcare arrangements, a guaranteed ride home in an emergency, and conflict resolution with co-workers.

Transit staffs need a new set of skills and knowledge to integrate socio-economic factors into their service planning and delivery. By bundling transportation solutions with packages of support services, public transportation providers will attack the problem more comprehensively, with a higher likelihood of success.

6. PUBLIC TRANSPORTATION AGENCIES CAN PROVIDE LEADERSHIP IN ECONOMIC DEVELOPMENT, THEREBY REDUCING THE COSTS OF IMMOBILITY.

The suburbanization of jobs has followed the suburbanization of residences. As of 1990, the suburbs account for 60% of the metropolitan work force. Today, just one-quarter of the American people live in central cities, and the largest proportion of people--half the population--live, work, and shop in urban areas outside the central city. At the same time, poverty and disadvantage are concentrated in the former central cities.

Transit agencies have responded with both operational improvements and land-use changes designed to address this jobs/housing mismatch. Reverse commute routes bring inner-city and rural residents to job-rich areas in the suburbs and in the tourist industry. Auto ownership may become more feasible when these employees have work experience which allows them to advance to higher-paying jobs. Whatever ill effects may occur for transit ridership or road congestion, auto ownership under today's land use patterns will definitely increase the personal mobility of these workers. Thus, the reverse commutes will have given these employees an opportunity for entry into the personal mobility enjoyed by most Americans.

Two transit agencies spotlighted in these cases studies are involved in long-term land use changes that can have a more permanent impact on economic development. They are developing services and activity centers around a transit hub, positioning transit as part of a larger economic

development strategy. However, although transit can have an important role in economic development, it cannot substitute for sound land use decisions.

#### 7. TODAY'S MOBILITY ISSUES, PARTICULARLY IN ACCESS TO JOBS, DEMAND REGIONAL APPROACHES.

Another outgrowth of the jobs/housing mismatch discussed above is the need for transit agencies to enlarge the sphere of influence used in their planning, perhaps even beyond their own service areas. County lines and transit service area boundaries are artificial barriers for people who need to cross them to get to the jobs and services they need.

Oftentimes, a regional approach is part of a larger corporate strategy of mobility management. The definition of mobility management is "an institutional state of mind that emphasizes moving people instead of the mode of transportation." Such tailored approaches are needed for job-access transportation as well as transportation to regional services, such as hospitals and clinics, food banks, and crisis centers.

Given the patterns of land use and demography that now exist in the United States, regional approaches are essential to address the economic, social, and human costs of immobility. It will take a great deal of collaboration on the part of governments, businesses, non-profit agencies, churches, metropolitan planning organizations, and other leading institutions to help knit together a plan that addresses immobility across jurisdictional and institutional boundaries.

#### 8. SIMPLE IDEAS AND PROGRAMS CAN YIELD SIGNIFICANT MOBILITY IMPROVEMENTS.

Many of the programs studied in this research begin with simple ideas which have yielded significant results: None are elaborate concepts; none required costly capital investments. Including these simple, independent programs into the overall strategy of a company will reinforce the mobility management ethos of the organizations. Including them can also be more effective than considering them as

#### TRANSIT VILLAGE BRINGS SERVICES TO THE PEOPLE

*The Bay Area Rapid Transit District will revitalize a rail station in a low-income neighborhood in Oakland, California. Its partner, the Spanish Speaking Unity Council, will address immobility by creating a Transit Village at the hub, which features a mix of social services, retail, and residential uses.*

#### RIDERS BENEFIT AS METROPASS SAVES \$\$

*Metro-Dade Transit Agency avoids \$10 million annually in paratransit costs through the Metropass program it created in partnership with the Florida Medicare administration. Medicare recipients pay \$1 for an unlimited monthly pass, but give up paratransit, saving Medicare over \$500K a month.*

adjuncts to the agency's mission, by assuring the programs greater funding security and integration within the organization.

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## CHECKLIST FOR SUCCESSFUL IMPLEMENTATION

- ✓ *Exert leadership.*
- ✓ *Win internal support from the staff and the policymakers.*
- ✓ *Adopt a mobility management mission.*
- ✓ *Build community support.*

*"An administrator tells you what you cannot do-what the rules are. A manager rewrites the rules to get things done."*  
Danny Alvarez, Metro-Dade Transit Agency

Public transportation organizations cannot solve the problems of immobility alone. As identified in the findings above, coordination with organizations across other strata of society will be needed to enhance options for personal mobility. The transportation organizations visited in the case studies had certain strategies in common that have led to their success, which can be replicated by others. These strategies can be summarized in the following checklist for success:

### *EXERT LEADERSHIP*

Leaders experiment; leaders challenge the status quo; leaders inspire others with their vision. Leaders are needed at many levels of society to solve the difficult issues of immobility that have been presented in this research. The collaborative efforts needed to tackle problems of immobility point to a role for social service agencies, community-based organizations, local governments, and employers, as well as transportation organizations. Public transit cannot tackle immobility alone.

Nonetheless, mobility is the *mission* of transportation organizations. Transit agencies need to seize the initiative in their realm of expertise to insure the best transportation alternatives are implemented. If transportation organizations do not take on this role, they may be preempted by others with their own agendas. It is proper that transportation organizations be among the first to exert leadership in addressing immobility. Without leadership, the problems of immobility will worsen and transportation organizations will have failed in their mission.

### *WIN INTERNAL SUPPORT FROM STAFF AND POLICY-MAKERS.*

The culture of any organization hoping to solve immobility problems must nurture an environment in which the key findings can be implemented. This means encouraging staff to exercise leadership by taking the initiative and being creative. It means preventing bureaucracy and hierarchy from stifling innovation. A leader, by definition, needs followers. If the leader fails to build support within the organization, the innovation will languish or even be sabotaged.

**ADOPT A MOBILITY MANAGEMENT MISSION.**

Effective mobility management requires viewing the passenger transportation system as a whole. Mobility management is the opposite of an institutional state of mind that offers a single product with a "one size fits all" approach. Specifically, mobility management is defined as brokering, facilitating, encouraging, coordinating, and managing both nontraditional and traditional services to expand the array of transportation services to diverse consumer groups. This is an inclusionary definition which envisions responsibility from many partners to assist public transportation in accomplishing its mission of mobility.

**BUILD COMMUNITY SUPPORT.**

Organizations cannot form nontraditional partnerships (Finding 3), bundle transportation and support services (Finding 5), and plan regionally (Finding 7) in the absence of community support. Building community support takes energy and visibility on the part of transit staff. It means not only attending community meetings but also setting up such meetings. In designing increased access to jobs and health care, it means stepping outside the transportation field and learning other industries' terminology and key players. But the rewards can be a wider constituency of support for transit, an enhanced image of transit, availability of new funding sources and human resources, and, consequently, more participation in society by those now afflicted by immobility.

**TELEVILLAGE IS A VIRTUAL  
MAIN STREET**

*The Metropolitan Transportation Authority's Blue Line TeleVillage contains a Telework Center, a computer lab with Internet access, a video conference center, and interactive kiosks. Residents and employees in Compton, California can access many services without the need to travel. The TeleVillage will be part of a one-stop training center for welfare recipients.*

**VOLUNTEERS  
CONTRIBUTE 76K HOURS  
FOR TRANSIT**

*OATS, INC. blends a wide variety of funding to provide transportation in 87 counties of rural Missouri. Volunteers donate 76,000 hours annually, an equivalent of 36 employees, for scheduling and fundraising.*

# 1. INTRODUCTION

## RESEARCH PROBLEM STATEMENT

### Research Problem Statement

In 1956, the Interstate Highway Act was passed. This law was designed to provide the nation with a modern and effective highway system. At the time of the law's passage, few could envision the dramatic impact that the highway system would have on the economic and social structure of the American society. Development has followed the highway system because of its easy access, and many businesses and essential services have relocated from the inner cities to the outlying suburbs. This migration has included employment, health care, educational institutions, shopping, and social services. Despite the broad availability of the automobile, considerable segments of the population do not have access to the highway network because they do not own a car. These segments of the population, which include the nation's youth, the elderly, and low-income groups, remain dependent on public transportation systems. However, public transportation systems have not kept pace with changing land use patterns and, as a result, many transit-dependent users now find fewer essential destinations available to them.

This lack of personal mobility has economic, social, and human costs, such as higher unemployment, reduced tax revenue, greater welfare and medical costs, and limited social potential. There is a need to define and measure the economic, social, and human costs of personal immobility and to identify public transportation services that will help reduce such costs. For the purposes of this project, the public transportation system is broadly defined to include publicly operated rail, bus, and light rail systems; school bus systems, social service agency transportation; paratransit; jitneys; private bus systems; and taxicabs. Many of these transportation services have specific trip purposes, and eligibility is sometimes limited to specific groups. However, some communities have effectively used various combinations of transportation services to reduce personal immobility.

## OBJECTIVES

The objectives of this research are:

- to develop a methodology for economic analysis that will assist regions to estimate the economic, social and human costs of personal immobility; and
- to identify or develop public transportation practices to reduce such costs.

The products developed as a result of this research will assist decision makers and transportation-service providers in using their services more effectively to address the issue of personal immobility.

## **ORGANIZATION OF THIS REPORT**

In addition to the Summary and this Introduction, the report includes five additional chapters and three appendixes.

### Chapter 2: Immobility Issues

This chapter discusses who the transportation disadvantaged are, key barriers to improving mobility, and six significant public policy efforts that have been used to address the barriers to mobility: basic transit services; reverse commute services, demand responsive services, fare subsidy programs, livable communities, and social services coordination.

### Chapter 3: Key Research Findings

Eight key findings are described, based on the case studies and compendium resulting from this research. The first finding is that retaining basic public transportation services is critical to improving the mobility of the transportation disadvantaged. Others describe how transportation practices can be both simple ideas and programs that are also economically beneficial. Successful practices develop partnerships, blend resources, bundle services, plan regionally, and assist in economic development.

### Chapter 4: Guide for Economic Analysis of Transit Projects

This chapter explains the guiding principles and procedures that were used in conducting economic analyses of the consequences of immobility. Drawing on the case studies, the guide describes five recommended steps for economic analysis: (1) Describe project characteristics and costs; (2) select economic study features, update cost factors; (3) determine project patronage, identify mobility benefits; (4) estimate efficiency benefits of project; and (5) calculate and interpret economic indices.

### Chapter 5: Compendium

Examples of operational and community-based practices to address immobility are briefly presented to complement the in-depth case studies. The Compendium contains 53 additional practices from urban, suburban and rural settings around the country. The Compendium is divided into sections dealing with

Access to Jobs, Filling Mobility Gaps, Coordination with Health and Human Services, Elderly Services, Youth Services, Transit Oriented Development, and Vehicle Programs.

### Chapter 6: Implementation and Dissemination Plans

The implementation plan builds on the key findings in Chapter 2 and adds a Checklist for Success. The chapter describes what an organization can do within its own cultural environment by adopting strategies necessary to replicate the successful projects studied during this research. A dissemination plan outlines audiences for this research and mechanisms to reach these audiences, including mass media distribution, traditional methods, and suggested additional products as outgrowths of the research.

### Appendix A: Case Studies

In-depth documentation of 11 case studies conducted in six regions of the country is presented in Appendix A. Case studies describe one practice in a suburb of Philadelphia, Pennsylvania; two in rural South Carolina; one in rural Missouri; one in Miami, Florida; three in Los Angeles, California; and three in Oakland, California and its suburbs. The case studies can be found on the TCRP homepage (<http://www4.nas.edu/trb/crp.nsf>) as TCRP Web Document 7.

### Appendix B: Literature Search: Who Are the Transportation Disadvantaged?

This chapter elaborates on the travel and demographic characteristics of the transportation disadvantaged described in Chapter 2.

### Appendix C: Glossary of Terms

This appendix defines the key terms utilized in this research.

## 2. IMMOBILITY ISSUES

### WHO ARE THE TRANSPORTATION DISADVANTAGED?

Overall mobility has improved for the average American. Although the U.S. total population grew by only 4% between 1983 and 1990, total travel, measured by person trips, increased by 6% over the same period. Thus, mobility is increasing at a much higher rate than population.(1)

While overall mobility of the population has improved, a significant segment of the population is moderately or severely immobile. This group is defined as the *transportation disadvantaged* throughout this research. The transportation disadvantaged are those people whose range of travel alternatives is limited, especially in the availability of easy-to-use and inexpensive options for trip-making. Examples include persons who are young, elderly, poor, with disabilities, or without automobiles.

#### 1. Individuals Without Access to Automobiles

In the auto-dominated American society, a primary factor for immobility is lack of access to an automobile. In 1990, 9.2% of American households did not have an automobile. The typical zero-vehicle household has no one in the labor force (either employed or searching for work), has a lower than average income, and lives in the central part of a large urban area, according to an analysis of the 1990 Nationwide Personal Transportation Survey. (2)

One measure of mobility is the average number of trips per day made by an individual. During the Nationwide Personal Transportation Survey, 46% of the households without an automobile took no trips, compared to 21% of the general population. Almost half of those without an automobile are persons 65 years or older, and of these, 81% are women. Those between ages 65-74 with no automobile make about 1.34 trips per day, compared to 2.32 trips for individuals of the same age with an automobile.

#### 2. Demographic Factors Affecting Mobility

Income, disabilities, gender, ethnicity, and education are all factors affecting mobility. For example, individuals with **incomes** below \$10,000 make about one trip per day less than individuals with incomes over \$40,000 per year. Non-disabled persons make over 50% more trips than persons with **disabilities**. (3)

**Gender** also plays an important role in mobility. Women, in general, make slightly more trips per day than men. However, 23% of full-time working mothers

and almost 60% of part-time working mothers have non-traditional work hours. This reduces their ability to join carpools or find appropriately-scheduled transit options. (4) Furthermore, almost 70% of adults living in households without automobiles are women.

According to the 1990 Nationwide Personal Transportation Survey, there is a relationship between **ethnicity** and travel. Nearly 40% of central city African-American households were without access to an automobile, compared to fewer than one out of five white central city households. Nonetheless, African-Americans have the least immobility stemming from absence of a vehicle, partly because of a higher overall use of public transit: Their rate of transit use is more than twice as high as whites'.(5)

**Education** probably has the strongest impact on the propensity to make trips. As education level increases, the average number of person trips per day increases for both those without an automobile and those with an automobile. According to an analysis by Dr. Charles Lave and Richard Crepeau, "increased education produces increased income, which in turn produces more travel. The data indicates that a change in education produces a greater overall effect on trip rates than the change in income." (6)

### 3. Availability of Public Transportation

If a household does not own an automobile but has reliable, affordable, and convenient public transportation, then mobility levels are retained. However, almost four in ten American households do not have public transportation available within two miles. This is most pronounced in non-urbanized areas, where only 20.2% have public transportation within two miles of their houses. By contrast, in central cities almost 83% of the households have public transportation available, and trip-making is greatly increased. For example, in areas with a million or more in population, people without automobiles but with access to subways or elevated rail lines took almost 30% more trips per household than those living in large urban areas without these public transportation modes.

## **KEY BARRIERS TO IMPROVING MOBILITY**

The following discussion highlights several major themes on the causes and key barriers to countering the economic, social, and personal costs of immobility. These barriers can be characterized by a lack of:

- Access to job opportunities for inner-city residents.
- Basic services in the inner city.

- Rural and small town transit services funding.
- Public safety measures to combat crime and fear of crime.

## Geography and Economics of Opportunity

### Job Opportunities for Inner-City Residents

Changing land use patterns and resulting economic development locations have had a profound impact on employment opportunities for residents of the inner city. During the past 40 years, nearly two out of every three new jobs have been created in the suburbs of metropolitan areas, and most of the new jobs are not accessible by public transportation.(7) The pace of suburban employment growth during the 1980s was phenomenal. In 1980, 57% of all office space was located in urban centers and 43% in suburbs. By 1986, the situation had reversed itself with 60% of the jobs in suburbs compared to 40% in cities. A key factor in this growth is that many firms in the financial/insurance/real estate (FIRE) sectors, one of the nation's fastest growing, have opted for the suburbs, moving the back office and clerical workers to branch facilities. Low land prices and the availability of pools of (primarily female) second wage earners have been the primary lures attracting FIRE firms to the fringes.(8)

Philadelphia, which was the location of one of the case studies for this research, illustrates the impact of the suburbanization of jobs. Between 1982 and 1992, 163,000 new service jobs and 58,000 retail jobs were created. Approximately 87% of the new service jobs and 97% of new retail jobs opened outside of Philadelphia. Philadelphia is following a nationwide trend of increased reverse commuting. Between 1980 and 1990, there was a 43.7% increase in journey to work trips between Philadelphia and the suburbs.

The Philadelphia experience mirrors a national trend of increased reverse commuting and a decline in the share of transit use for those trips. From 1970 to 1990, the number of work trips from central cities to suburban rings increased by 25%; from 1970 to 1990, the number of work trips by transit declined by 33%.(9)

For many inner-city residents, there are fewer employment opportunities closer to home. According to some observers, the inner-city job market is changing to a highly skilled, predominantly white-collar market for which many inner-city residents with low incomes lack the necessary skills to obtain gainful employment. The number of white-collar jobs generated have failed to replace the loss of blue-collar jobs in the city. The white-collar jobs in the inner city are accessible by public transportation, but many inner-city residents with low incomes are not qualified for them.

The disparity of opportunities between the inner city and suburbs is documented in a study contrasting geographical and socioeconomic indicators between the central cities and suburbs in eight of the largest metropolitan areas plus four additional metropolitan areas. Mark Alan Hughes found that in 7 of 12 metropolitan areas, population growth in the central cities has declined between 1980 and 1990. Population suburbanization had gone so far that suburban residents outnumbered city residents in all 12 of the metropolitan areas. Among his other key findings were: (10)

- A significant disparity of poverty rates exists in cities and suburbs. Six percent of the residents in suburbs versus 28% of residents in the central city are below the poverty level in Detroit. In general there is less disparity as you go West and South. In Los Angeles, 10% of the suburban population and 18% in the central city live in poverty.
- Central cities remain disproportionately African-American compared to the general population. In all 12 metropolitan areas, the percentage of central city population that was African-American was at least twice as high as the suburban percentage, and in half of them it was at least four times as high. In Milwaukee, 26.9% of City residents are African-American compared to 0.8% in the suburbs.
- In six of the eight largest metropolitan areas, most if not all job growth during the 1980s was located in the suburbs. The suburbs appear to be the engines of employment growth in these metropolitan areas.
- In sum, there is an extreme pattern in these metropolitan areas: poverty and joblessness are concentrated in formerly central cities while prosperity and job growth are deconcentrating toward the metropolitan periphery. **In many metropolitan areas, jobs in the cities are no longer around the corner. Jobs are over the horizon** (emphasis added).

Most public transportation systems were developed to converge in central business districts (CBD). Access and headways are designed, in general, to encourage the commute to the CBD. The widely dispersed settlement patterns of the suburban office park are a difficult market to serve. There has been a long history of attempts to provide reverse commute services. Overall, among the lessons learned is that reverse commute transportation services alone will not address the employment mismatch between the suburbs and inner-city residents.

Transportation access is not the problem, but it is certainly part of the problem. The evidence points to declining transit access to suburban employment opportunities as a significant problem, particularly in those cities with the largest

numbers of transit dependent minorities. Steven Blake of the National Association of Regional Councils concludes that the data strongly suggests that in most metropolitan areas, "most jobs are beyond the reach of the transit dependent, among whom minorities are disproportionately represented."(11)

If transit service is available, it must be affordable and convenient. According to a number of stakeholders interviewed in the Los Angeles case study for this report, minimum wage jobs are available in the San Fernando Valley but are inaccessible to inner-city residents because the fare on the bus would cost too much to make it worthwhile to even take the job. For the new commuter rail services, it would cost \$200 dollars a month to travel on Metrorail from San Bernardino to jobs in Los Angeles, a fare beyond the capability of most low income people.

#### Efforts to Improve Basic Services Within Inner City

Site visits to both Philadelphia and Los Angeles point to the lack of basic services, such as a grocery store, in many inner-city neighborhoods. Residents have to rely on more expensive convenience stores and spend a higher percentage of their low incomes on food. Both site visits revealed significant community efforts to improve basic services within the community.

After the 1965 Watts riots in Los Angeles, local services, such as grocery stores and banks, left the community. Watts residents, who do not have supermarkets near their homes, must pay \$2.70 to get to the grocery store and back on the bus. Consequently, residents often go to the local liquor stores with minimarts, where they can pay \$5.00 for a gallon of milk. The lack of basic services in the community has significant personal and social costs for residents.

In a progressive effort to improve local services, a 500-member community church in South Central Los Angeles is spearheading redevelopment plans for a shopping center with a major supermarket as the anchor tenant. According to the minister, residents are currently paying 30 to 50% more for their goods in the small minimarts that are available in the neighborhood. He said that church members often pay people with cars to go the market, because public transit service is unreliable and inconvenient. The minister pointed to two-hour headways for some routes and significant out of direction travel to an isolated transfer point, where riders fear being assaulted. "Young males enrolled in a job training program cannot get to work on time because the bus service is infrequent," he said.

The minister is currently working with the Metropolitan Transportation Authority (MTA), The U.S. Housing and Urban Development, the City of Los Angeles Redevelopment Agency, California Department of Transportation (Caltrans), and the International Council of Shopping Centers to secure financing to support a 50,000 square foot national chain grocery store near the Harbor Freeway.

He has involved MTA and Caltrans to ensure appropriate access to the proposed grocery store.

In West Philadelphia, the community is planning a major mixed-use intermodal transportation center at 52nd St. and Lancaster. One of the key objectives presented by community leaders is to attract a local grocery store and other basic services for local residents. Many of these services are only available outside West Philadelphia and require long journeys by residents.

Almost 20 years ago, the Southeastern Pennsylvania Transportation Authority (SEPTA) discontinued stops on two different train lines at the 52nd St. station, reportedly due to crime concerns. The abandoned station is a major public eyesore to the community. There are currently 250 zone businesses and nearly 10,000 residents located in the vicinity of the former SEPTA rail station. AMTRAK train service runs through the site, but does not stop. Two bus routes and a light rail line provide good access to the site, but no bus shelters and little lighting discourage use, according to community members.

Since January of 1993, a committee of business leaders and community residents have been meeting to devise a strategy to improve both public transportation and economic development in the area. Plans envision a major intermodal center with a new supermarket, shopping center, a few strip stores, and a parking garage as part of the master plan. Significant publicity and political fanfare for the demolition of the old abandoned station overpass is expected to draw continued external political support for the project. Improving public transportation services and attracting basic services go hand-to-hand, according to community organizers.

Community members are hopeful that a successful intermodal transit center will provide momentum to local economic development in an adjacent business park. The Philadelphia Industrial Development Corporation now owns an adjacent 68-acre industrial park that was formerly an abandoned rail yard. The community has a future vision of local jobs for local residents of West Philadelphia.

The lack of services and reliable public transportation in the inner city has significant economic, social, and personal costs. Because public transportation is unreliable and basic services are not available locally, many residents buy old junker cars according to the Los Angeles minister interviewed for this research. Owners often do not have driver's licenses; and the cars are not smog checked, registered, or insured because of the high costs for residents who can barely find enough gas money. As a result, owners will leave the area and their job to avoid being arrested for unpaid tickets, he said.

Because employers want to know that employees will be able to get to work on time, they won't hire employees without driver's licenses. The minister contends that employers will not recruit from his area, because of its reputation for a labor pool without driver's licenses. His experience has shown that, since many prospective employees do not have a license or a car, they don't even try to find a job, because they believe they won't be hired.

### Deficient Rural and Small Town Transit Services

Much of rural America remains unserved by public transit. According to the Community Transit Association of America (CTAA), 38% of the nation's rural residents live in areas without any public transit and another 28% live in areas in which the service level is negligible.

Providing public transit in rural areas is the responsibility of a network of 1,162 agencies funded under Section 18 of the Federal Transit Act. Their collective service area includes 53 million people, or six out of ten persons living in rural areas or small towns. The network provides 95 million trips a year. This is equivalent to less than two trips per capita in the service area, compared to 49 trips per capita in urban areas.(12)

Interviews were held with six stakeholders in two rural empowerment zones and two locations with CTAA JobLinks grants. The Kentucky Highlands Empowerment Zone includes an 11-county area in southeastern Kentucky. The overall population is 266,000 with 32.5% of the residents having incomes below the poverty level. Despite the poverty, over 95% of households have at least one car. According to the Executive Director of a local economic development program, "If you cannot afford a car, you can't get to work." There is no public transportation in the area. Local residents either have a car or have a family member who has one. A key effort of the economic development program has been to invest in local credit unions which make low- or no-interest loans to residents who wish to purchase cars. For those without access to automobiles, a critical need is nonemergency transportation to medical appointments within southeastern Kentucky and to Louisville, which is three to four hours away by car.

The Rio Grande Valley Empowerment Zone consists of portions of four counties with a total population of 29,900 over a 228-square mile area. Although population densities are very low, there is an intercity fixed-route service that provides minimal levels of service. During the strategic planning process for the empowerment zone, transportation was frequently cited by all participants in the process as a significant impediment to achieving an enhanced quality of life. Social service agencies have expressed concern over their inability to provide services to those most in need due to the lack of transportation. Residents have expressed similar frustration over their inability to access even the most basic community

facilities, such as grocery stores and medical facilities. Two primary objectives of the strategic plan are to:

- Enhance access to medical and social service providers.
- Provide residents with access to training and employment opportunities.

To achieve these objectives, one of the empowerment subzones has set aside \$200,000 for improved transportation services. The Rio Grande Empowerment Zone Board is currently addressing policy issues about how the funds should be spent. For example,

- Although empowerment zone funds could be utilized to provide transportation to job training, what transportation will be available when trainees are placed in a permanent job?
- If public transportation services are expanded with empowerment zone funds, where will the long term funds come from to continue the service?

### Inadequate Funding and Equity Issues

#### Inadequate Funding

Inadequate funding was identified as a key barrier to addressing immobility during the stakeholder interviews. In Philadelphia, at the time the site visit interviews were held, a 10% budget cut was about to take place. Significant concerns were expressed about future reductions in transit service levels and the impact that they may have on the transit dependent population. The Rio Grande Valley Empowerment Zone Corporation is reluctant to use Empowerment Zone funds as seed money because it is fearful that longer term operating assistance will not be available after the demonstration period is over. Federal Transit Administration staff who were interviewed said that a constraint on public funding and a failure to develop more diverse sources of funding is a primary barrier to improving mobility.

#### Funding Equity

With scarce financial resources, the investment of transportation dollars raises questions of policy priorities. A major policy issue raised during the interview process and literature review is: "Are the transportation disadvantaged receiving an equitable share of funding to address immobility issues?"

Studies of the benefits and tax burdens of transit subsidy allocations among income classes have led to the following general conclusions: (13,14,15)

1. Overall, transit subsidization redistributes income from high-income to low-income classes, but it is not very effective in targeting benefits to the poor.
2. Long-distance, peak-hour, suburban trips are more heavily subsidized and have significantly higher income riders than their converse.
3. Of the three modes (bus, commuter rail, and rail rapid transit), buses transport the largest percentage of riders, transport the lowest income riders, and receive the least amount of capital subsidy.
4. The transit industry generates indirect benefits to the local, state, and national economy in terms of jobs created and business revenues from operating and capital investments.
5. Federal income and corporate taxes are progressive. State and local taxes, especially sales and property taxes, are regressive. (In 1981, the conclusion was that since more transit subsidy is generated at the federal level, the overall burden of transit taxation is progressively distributed.)

When MTA in the Los Angeles area raised its fares recently, a lawsuit was brought against MTA by a legal defense fund representing bus drivers in the NAACP, indicating that the fare hike was inequitable and the impacts would fall more heavily on the poor. The lawsuit also claimed that MTA was investing more in railways, which the lawsuit argued serves predominantly the affluent suburbs, than it was in transportation for the poor. MTA is now sponsoring a mobility allowance program, which is trying to determine how to subsidize transportation equitably.

In his article, "Discrimination in Mass Transit," J. Pulcher includes four recommendations for improving the equity of subsidy programs: (16)

1. Increase fares for commuter rail service. This would decrease the amount of subsidy needed for the more affluent riders.
2. Put a hold on construction of new multi-billion dollar rail transit systems which benefit the affluent.
3. Impose peak hour surcharges and distance-based fares on all transit modes.
4. Set up a program of discount transit passes for the poor and improve service in low-income neighborhoods.

## Public Safety

Crime and fear of crime is an important barrier to increased use of public transportation by many inner-city residents. The elderly often are fearful of walking to and waiting at the bus stop and riding with unruly passengers on the bus. In West Philadelphia crime was a significant factor in closing the 52nd St. station.

Fear of crime was expressed by a representative of the Los Angeles Housing Authority, who runs a youth entrepreneur program. She is fearful of putting the students of her program, who are 16 to 25 years old, on public transit because one of her students was "jumped" at a transfer point while participating in the program. She now transports the students through more costly door-to-door service. In general, public transit has a poor image in her community, in large part due to a fear of crime, she said.

The MTA spends \$6 million per year on security with 500 transit police officers. There are police officers on most light rail trains, according to an MTA representative, because lots of people can be protected on one train with one officer. Because there are not public resources to put an officer on every bus, security on buses is less than the security on the trains, and there is no security at most stops and stations.

## **USING PUBLIC TRANSPORTATION TO ADDRESS THE BARRIERS TO MOBILITY**

Prior to 1960, little effort was devoted to alleviating the barriers to mobility described in the previous section. Persons who were poor, disabled or elderly were thought to benefit from existing transportation programs. In the 1960s and 1970s, however, the civil rights movement brought greater political awareness of this segment of society. In urban transportation, as in other areas, government programs proliferated to meet the problems faced by the transportation disadvantaged.

This section describes significant public policy efforts to provide public transportation that addresses the economic, social, and human costs of immobility:

- Development of Public Transportation
- Reverse Commute Services
- Demand Responsive Services
- Fare Subsidy Programs
- Livable Communities
- Social Services Coordination

- Empowerment Zone and Enterprise Communities (EZ/EC)

The development of these public policies is discussed below, illustrated by specific examples from the case studies conducted for this research. Further examples are given in Chapter 5. Documentation of the case studies can be found in Appendix A.

### Development of Public Transportation Services

There are over 6,000 transit systems in the United States. About 2,250 operate bus service, 5,200 operate demand response service, and about 150 operate other modes. In 1995, 3.5 billion miles of service were operated, providing about 7.9 billion trips.(17)

Today's network of bus, rail, and ferries provides an important mobility option for millions of people. The development and maintenance of core public transportation services, however, has been reliant on a number of public policy efforts to ensure that public transportation services remain a viable choice. The twentieth century has seen a significant transformation in public transportation service levels and in how transit agencies are organized and funded.

To the urban dweller of the first quarter of the twentieth century, transit was as pervasive a travel mode and sociological phenomenon as the automobile is today. The street railway system provided significant access to downtown areas for urban residents during their 6-day workweek, but also allowed the family a Sunday visit to amusement parks located at the end of the transit line.(18)

As suburbanization and automobile ownership increased, transit experienced a well-documented countervailing downward spiral: diversion of patronage to the automobile forced service reductions that further eroded patronage and revenue, necessitating far increases and loss of ridership. During World War II, the public transportation service network and patronage reached its peak with over 20 billion annual passengers. Many historians argue that the decline in public transportation service really started in the 1920s, and only the war provided an artificial boost to the transit industry.(19)

As public utilities began divesting their public transportation networks and private operators became increasingly financially unstable, Congress began to debate the importance of maintaining a basic network of public transportation services in 1960. The first federal aid passed in 1961 authorized \$50 million in low-interest loans and \$25 million in demonstration projects. The first federal capital assistance was included in the Urban Mass Transportation Act of 1974, while funds to defray operating expense were authorized by Congress in 1974.

Only a handful of cities provided municipal tax subsidies for the operation of transit systems in 1960.(20) David Jones points to an important matter of public policy development:

"Federal initiative preceded local concern about the future of transit in most communities; indeed the congressional supporters of transit assistance argue that federal involvement was necessary to motivate and stimulate state and local action in an arena heretofore neglected."(21)

As federal initiatives were undertaken to address urban problems in the 1960s and 1970s, maintenance of a viable public transportation network was supported as a means to address a number of societal goals, including the restoration of the economic vitality of cities, protecting the environment, conserving energy, easing the mobility of transit dependent persons, and providing inner-city residents with better access to jobs.(22) Many states and municipalities followed the federal initiatives with funding to support and maintain a viable public transportation network.

After hitting a low in the 1970s, the infusion of public funding enabled the maintenance of core public transportation services, and patronage continued to rise slowly through 1990. While this basic network is widely available, and transit service has improved in many cities, Arthur Saltzman concludes that "most passengers are still those who do not have easy access to an automobile and are thus captive to the transit system".(23) Thus, public policy efforts to maintain a basic public transportation network have provided an important mobility option for the transportation disadvantaged.

The importance of core transportation services and the impact on riders when the services are reduced was the subject of one of the case studies for this research.

#### AC Transit Service Reductions

At the end of its 1994-95 fiscal year, the Alameda-Contra Costa (AC) Transit District, headquartered in Oakland, California, had a \$2.3 million shortfall out of a total budget of \$144,464,000 and faced an even larger deficit for the following fiscal year. To address this financial crisis, the District implemented an 11% reduction in service between December, 1995 and June, 1996. Before implementing the service reductions, AC Transit attempted to reduce its internal costs and pursue grants and private-sector partnerships. In May, 1995, the District also adopted a fare increase, raising the cash fare from \$1.10 to \$1.25. Despite these measures, the District found it necessary to cut approximately 1,000 hours of bus service by reducing some frequencies and eliminating most evening, owl and weekend service, except on 21 basic trunk lines. A survey of riders revealed that the changes in travel time and

in bus and rail expenses before and after the cuts cost riders \$48.1 million in added travel expenses, income losses, and the value of added travel time.

The AC Transit case study demonstrates the importance of fixed-route service to the community and the economic costs that can result from its curtailment even in low patronage, off-peak hours. It has implications for welfare reform measures, which have assumed that public transportation will be available for new job-seekers. The majority of the practices illustrated in the other case studies and in the Compendium are *dependent* on a core fixed-route service--one that operates 20-24 hours a day, seven days a week.

### Reverse Commute Services

Between 1966 and 1970, the federal government paid community groups for 14 demonstration projects in 14 cities to test the hypothesis that improved bus service to outlying employment centers would reduce unemployment in inner-city neighborhoods. These demonstration projects were a response to the McCone Commission's report following the 1964 riots in Watts, California, which blamed the civil disturbance on a lack of employment. The Commission argued that unemployment was due, in part, to the inadequate and expensive public transportation connecting Watts with the suburban areas where jobs were increasingly concentrated.

Although local and state recipients of the federal grants stressed finding employment for inner-city residents as the purpose of these routes, federal officials desired to create 50 new routes with long-term viability for traditional transit operations. By this measure, the reverse commute routes were a failure; only three of the 14 demonstration reverse commute projects developed routes that were taken over by the transit operators. In addition, "There was little evidence in Watts or elsewhere that reverse commute services got people jobs or even better jobs."(24)

### 1990s Reverse Commute Programs

There has been renewed interest in reverse commute programs in the 1990s. According to a 1993 survey by the American Public Transit Association, 458,500 riders were utilizing 37 reverse commute programs. Office parks were the key destinations. (25)

Several differences between the programs in the 1960s and those of the 1990s are **keys to the success** of the new reverse commute programs:

- **involvement of public transit operators with non-traditional partners;**

- **collaboration with private sector firms needing increased access to labor; and**
- **linkage with support services.**

The two reverse commute practices documented in this research illustrate the more comprehensive approach of the 1990s.

#### PDRTA's 24-hour rural commute service

With the advent of welfare reform, Pee Dee Regional Transportation Authority (PDRTA) in South Carolina has begun 24-hour commute services linking residents in rural areas with entry-level jobs in the tourist industry along the Grand Strand at Myrtle Beach. PDRTA coordinates with the Marion County Department of Social Services (DSS) to transport persons transitioning from welfare to work. Because the labor market is so tight, several employers have agreed to subsidize some of the routes to bring workers living 40-70 miles away to their retail establishments. DSS provides assistance with support services, such as job training, child care, and counseling, to help workers succeed in this transition. DSS has dramatically decreased its welfare caseload. At the same time PDRTA's reverse commute program has contributed to an increase in net annual benefits of more than \$2 million from earnings of those formerly unemployed or underemployed, and from savings in unemployment, welfare, and food stamp assistance. For every \$1 invested in the program, there is an annual net economic benefit of \$26.60.

#### SEPTA's Horsham Breeze Shuttle

Developers initiated discussions with the Southeastern Pennsylvania Transportation Authority (SEPTA) for improved transit service from downtown Philadelphia to Horsham business parks, 18 miles to the north. In November, 1996, SEPTA introduced the Horsham Breeze, a 10-mile loop serving major employers, such as United Parcel Service (UPS) and Prudential Insurance, which connects with timed transfers to three fixed routes. The 25-foot buses, funded by a federal Congestion Management and Air Quality (CMAQ) grant, are driven by part-time drivers, under a labor agreement allowing 40% less wages than full-time drivers. With peak service at 10-20 minute headways, ridership has grown to 800 passengers on 39 daily trips. The Partnership Transportation Management Association (TMA), which actively promotes the Horsham Breeze, attributes some of the swelling ridership to new employers who moved to the business park partially because of the Horsham Breeze's ability to supply them with entry-level and service employees. Employees can earn \$8-12 an hour in these jobs. To meet the extended workday hours typical of these types of jobs, Montgomery County pays for midday hourly service, and employers subsidize evening and

Saturday service. For every \$1 invested in the program, there is an annual net economic benefit of \$7.30.

As these two case studies indicate, increasing access to jobs involves strong alliances between the public transportation operator and non-traditional partners. According to one evaluation of the 1960s reverse commute programs designed by community organizations, the lack of involvement by the mass transit industry "...undermined the program and made testing of innovative operation rather meaningless." (26) In contrast, both of these examples are dependent upon a willingness of the public transit provider to actively participate. The result is routes designed to meet transit industry standards as well as the social and economic goals of transit's partners.

In the SEPTA example, traditional funding partners, such as Montgomery County and the federal government, were supplemented by subsidies from UPS and Prudential. Similarly, PDRTA received private sector funding support. In both instances, the need for labor by businesses meshed well with the transit agencies' mission to increase ridership and to fill mobility gaps within their service areas.

Another non-traditional partner highlighted in the PDRTA case study is the Department of Social Services. It has not been typical for transit staff and social workers to collaborate so directly. In this example, DSS also provides support services critical to the success of the transit routes. Without DSS' resources to assist employees in keeping their jobs, ridership could be too unstable to maintain the transit routes. In the SEPTA example, promotion by the Partnership TMA has been an important contributor to the increases in ridership.

Another example, from the Compendium in Chapter 5, further illustrates these keys to success in the 1990s reverse commute programs:

#### *Bridges to Work*

Bridges to Work is an \$8 million project funded primarily from the Ford Foundation and the federal Housing and Urban Development Department. Its goal is to combine reverse commute transportation services with job placement and **support services** in five metropolitan regions. This model goes well beyond the historical reverse commute programs because of its greater attention to a "bundling" of services to meet human needs.

#### Demand Responsive Services

Congress passed legislation in 1973 encouraging door-to-door services for the elderly and persons with disabilities. Transit agencies responded by providing special demand responsive services using vans or small buses or by equipping half

of their fleets with wheelchair lifts. In July, 1990, Congress passed the Americans with Disabilities Act (ADA), requiring all transportation providers to equip new vehicles with wheelchair lifts and to provide comparable paratransit service for those unable to utilize the accessible fixed-route service.

The federal effort to reduce the economic, social, and personal costs of immobility has been impressive in both the number of programs and in the amount of expenditures. In 1977, the U.S. General Accounting Office estimated that 114 separate federal programs expended money on transportation services for the disadvantaged and elderly, over half of which were located in the Department of Health and Human Services (HHS). By 1985, HHS estimated that it spent \$800 million on transportation services alone, or roughly eight times the combined 1989-90 expenditures of the U.S. Department of Transportation's funding of programs for rural residents, the elderly, and individuals with disabilities. (27)

An array of state programs also provide significant funding for demand responsive services directed at the transportation disadvantaged. For example, Florida's legislature has funded a state-level policy board charged with coordinating specialized transportation services for transportation disadvantaged persons. In 1971, the California legislature enacted the Transportation Development Act, creating a fund out of 1/4-cent of the statewide six-cent retail sales tax. The law has provided a stable state funding source for public transportation, including demand responsive services, in California.

### Case Study Examples

Four very different demand response programs were studied during this research. All have in common their success as mobility managers backed by community support.

#### OATS, INC.

Since 1971, OATS has been providing rural transportation, serving 87 of Missouri's 114 counties. The extensive use of volunteers and a creative blending of funding sources have been particularly important contributing factors to reducing immobility in rural portions of the state. The door-to-door service delivery is fairly conventional; the means of organizing, scheduling and dispatching trips is not. OATS volunteers are responsible for scheduling the trips in their county. In 1996, for example, volunteers donated almost 76,000 hours recording ride requests, communicating with drivers and riders, fundraising and providing publicity. County committees are the backbone of the OATS operation. This decentralized decision-making leads to a sense of ownership and motivation among the volunteers. Local funding provides 35.1% of the total revenues. The diverse array of funding sources and contracts is a testament to the flexible and entrepreneurial management

style. OATS returns \$2.30 to the community for every \$1 invested in the program.

#### MTA's Immediate Needs Transportation Program

The Los Angeles County Metropolitan Transportation Authority (MTA) in California has developed the Immediate Needs Transportation Program, a \$5 million program funded from local sales taxes to underwrite both taxi vouchers and bus tokens. MTA staff notes that Immediate Needs "is filling a service niche which is not effectively addressed through other transportation programs." (28) Under the administrative brokerage of two community-based organizations, about 600 social service agencies participate in providing bus and taxi trips to food banks and grocery stores, medical appointments, job training and job interviews, and for emergencies. In the first half of 1997, over 403,000 trips were provided at an average cost of \$5.50. (29) For every \$1 invested in the program, the annual net economic benefit is \$2.60.

#### City of Fremont's Travel Training Project

Unlike the two programs described above, the Travel Training Project developed by Fremont, a suburban city of 190,000 located in Northern California, seeks to increase mobility for the elderly and people with disabilities by decreasing their reliance on demand responsive services. Goals are to expand travel options and create long term behavioral change by training this population to ride fixed-route, public transit. Central to the philosophy of the program's design is that training should occur in groups with peers as travel training assistants. The Travel Training Project was conducted with residents from Fremont and four adjacent cities in July, 1993 through June, 1996. AC Transit District, the Bay Area Rapid Transit District and Union City Transit funded the project to determine whether it could reduce the costs and demands on their paratransit systems resulting from ADA. An analysis demonstrates that the transit agencies will potentially save \$407,442 over five years, assuming each transit trip made by participants offsets one paratransit trip. The benefit/cost ratio is 1.9, meaning that for every \$1 invested in the Travel Training Project, the benefit is \$1.90. Individuals who have been trained also save \$1.90 (the difference between the bus fare and the paratransit fare).

#### Numero Uno Market Shoppers' Shuttle

As was shown in the reverse commute case studies, private businesses will often provide transportation assistance if they perceive a positive economic return. The owner of Numero Uno Supermarket in South Central Los Angeles, California, recognized difficulties his customers had carrying their groceries home without an automobile. Many ride an MTA bus or walk to the store, very often accompanied by their children. To help his customers and to build customer loyalty, this entrepreneur provides a modified demand

responsive system to customers who buy at least \$30 worth of groceries. After making their purchases, customers can board one of the nine vans he has available to take them and their families and bags of groceries home free of charge. The store is one of the top five supermarkets in Los Angeles, grossing more than the industry's average sales. The van service is less than 1% of the market's gross volume in sales.

The Compendium includes additional examples of demand responsive services, such as the San Diego DART in California, which uses vans as feeders to fixed routes, picking up callers in suburban and rural areas and transporting them to a transfer point for the mainline bus routes.

### Reduced Fares

Historically, mechanisms to reduce fares have been focused on the elderly and people with disabilities. In late 1974, Congress made **discount fares** for the elderly virtually universal by requiring that any urban transit system receiving federal operating assistance charge elderly and riders with disabilities half or less of the base fare. In the late 1970s and early 1980s, the federal government funded demonstration projects to provide low-cost, shared-ride taxi services for the elderly and individuals with disabilities. These "**user-side**" **subsidies** consisted of below-cost vouchers, scrip, or tickets which the user could buy from a sponsoring agency and then redeem from a transportation provider for the full value of a trip. (30)

### Case Study Examples

Both these mechanisms--discounted fares and user subsidies--continue to be cost-effective means of reducing fares for the transportation disadvantaged. Use of the mechanisms has expanded to aid low-income groups, although not with the widespread application afforded the elderly and people with disabilities. **The Immediate Needs Transportation Program**, described in the previous section, is an example where the MTA has used discounted tokens and taxi vouchers to fund \$5 million toward the unmet transportation needs of its poorest constituents. In the case study below, a reduced fare program provides greater mobility for Medicare patients in Miami, Florida, while containing the state's Medicare costs and increasing the transit agency's fixed-route ridership.

#### MDTA's Medicaid Metropass Program

Medicaid is a federal entitlement program that pays for basic health care services for people with low incomes and long-term care for the elderly and persons with disabilities. In order to reduce its transportation costs for non-emergency medical services, the Medicaid office in Miami, Florida, contracts with Metro-Dade Transit Agency (MDTA) to administer a Metropass program. Under this program, a Medicaid recipient who agrees to give up

door-to-door paratransit receives a monthly bus pass for \$1. To make the program cost-effective, Medicaid requires that only recipients who make six or more one-way trips a month for three consecutive months are eligible. The third one-way trip is the break-even point for Medicaid, when the cost of the paratransit trips matches the cost of a monthly pass. The result of the Metropass program is a savings to Medicaid of over \$500,000 a month in transportation costs. MDTA benefits by increased pass sales of 3,600 a month, by receipt of \$4-6 per pass in reimbursement from Medicaid for administration of the program, and by avoidance of \$10 million in potential ADA costs. Riders benefit from increased mobility, independence and flexibility. Since the \$1 per month bus pass is less than the \$1 per ride copayment on paratransit, Medicaid recipients also have an economic incentive to enroll in the Metropass program.

The Compendium features additional examples, including systems in Utah and Washington where fares are free.

### Livable Communities

In 1994 the Federal Transit Administration (FTA) introduced the Livable Communities Initiative to improve mobility and the quality of life by:

- 1) strengthening the link between transit and community planning, including land use policies and urban design standards which support the use of transit;
- 2) promoting increased participation by neighborhood and community organizations, small and minority businesses, persons with disabilities and the elderly;
- 3) increasing access to or generating employment through high quality community-oriented transit services and facilities; and
- 4) serving, where appropriate, as the transportation component for the Empowerment Zones and Enterprise Communities (EZ/EC) Program of the Department of Housing and Urban Development (HUD) and the United States Department of Agriculture (USDA). (31)

To date, FTA has awarded 17 demonstration grants in various communities, including the Fruitvale BART Station project in Oakland, California, detailed below.

### Case Study Examples

#### Fruitvale BART Transit Village

The Fruitvale BART Transit Village is an example of community-based planning which responds to immobility by moving the services to the people who need them. The centerpiece of the plan is the Bay Area Rapid Transit

District's (BART) commuter rail station located in the Fruitvale neighborhood of Oakland, California. The Spanish Speaking Unity Council, a community development corporation serving the 51,000 people in this neighborhood, has taken the lead in the revitalization of the BART station area. It has proposed the Transit Village, which will link transportation with a mix of social services, retail, and residential uses. Among the community services planned are a health care center, a senior citizens' center, housing for senior citizens, a child care center, a community resource center, and a library branch. One of the most impressive aspects of the Transit Village project is the package of public funding that has been assembled by the Unity Council, which includes federal funds from FTA, HUD, the EC Program and three other agencies, along with county and city funds. A private developer will build the market rate retail and residential projects in partnership with the Unity Council.

#### City of Compton's Blue Line TeleVillage

The Blue Line TeleVillage creates mobility through technology. Located in Compton, a California city of over 90,000 near South-Central Los Angeles, the TeleVillage allows residents and employees to access many services without the need to travel. The TeleVillage is a virtual Main Street which connects people electronically through a Telework Center, a computer lab with Internet access, a video conference center, and interactive kiosks. Funded by the Los Angeles County Metropolitan Transportation Authority (MTA) and the City of Compton, it is served by local bus routes, MTA routes, Greyhound and the Blue Line light rail at Compton's transit hub. Although the project was not FTA-funded, part of the impetus for building the TeleVillage was the transportation agency's desire to create Livable Communities through joint development at the light rail stations. With federal welfare reform, the TeleVillage will now also become part of a onestop training center, where welfare recipients will be enrolled in computer courses and distance learning classes.

While not formally Livable Communities Initiative projects, examples in the Compendium of a Neighborhood Travel Center in Texas and the Broadway-Manchester Transit Center in Los Angeles follow the Initiative's principle of strengthening the link between transit and community planning.

#### Social Services Coordination

While coordination of public transportation with the transportation provided through the social service system has long been a goal, the goal has been difficult to achieve. One reason is the division of responsibility for transportation at the federal level. Whereas public transportation is the primary focus of the Federal Transit Administration, it is only an ancillary service for many other federal

departments that fund transportation. Yet Medicaid non-emergency transportation, which the federal Department of Health and Human Services (HHS) funds, is the second largest federal expenditure for public transportation, amounting to \$1.5 billion. (32) Although transportation is recognized as important to current welfare recipients' successful entry into the job market, transportation is not called out specifically as an expenditure in the \$3 billion the federal Department of Labor will administer to accomplish welfare reform. (However, Congress has required the Department of Transportation to develop joint planning guidelines with HHS on ways to provide transportation under welfare reform.)

Instead, coordination of public transit and social services has historically taken place at the state level. Florida has developed a five-year plan and has designated an official planning agency in each county to coordinate services for the transportation disadvantaged. California state law allows for the designation of a consolidated transportation service agency to coordinate social service agency demand responsive services through such actions as joint dispatching, purchase of vehicle insurance, driver training and shared vehicle use. South Carolina has formed an Interagency Steering Committee to address the concerns of inefficiency in transportation services. Thus, although implementation of the public policy to coordinate public transportation with social services transportation has been spotty, it is continuing to evolve with the impetus of welfare reform.

#### Case Study Examples:

Even at the local level, coordination of transportation among social service agencies and with the public transportation provider is not easy. Many social service agencies do not track transportation costs as separate line items. Within some social service agencies, drivers serve dual functions, and the salaries are allocated to a program other than transportation. Some vehicles are multi-purpose, used for transporting clients, staff, hot meals, supplies, etc. (33) Agencies lack an understanding of each other's goals and fear that their programs will suffer if they share scarce resources. This TCRP research includes a case study on such barriers to coordination faced by a rural county in South Carolina and the methods participants undertook to overcome them.

#### Chesterfield County Coordinating Council in South Carolina

The Chesterfield County Coordinating Council (CCCC) strives to better utilize existing resources in order to increase mobility for clients of rural human services agencies. By tapping into unused capacity of vehicles owned by several organizations, it is an example of coordination among the social services, school district, and the public transportation provider. Transportation has emerged as one of the primary obstacles to better delivery of social services among its 43 member agencies. Some of the elements of its coordinated transportation plan include:

- sharing vehicles and drivers among agencies,
- pooling driver training,
- layering a new fixed route on top of door-to-door transportation,
- adding adult passengers on school buses, and
- freeing case workers from transporting clients.

For other case study examples of coordination with health and human services transportation, refer to these practices described above in other sections:

- MDTA's Medicaid Metropass Program;
- MTA's Immediate Needs Transportation Program;
- PDRTA's 24-hour rural commute service; and
- OATS, INC.

## **EMPOWERMENT ZONE AND ENTERPRISE COMMUNITIES (EZ/EC)**

At the time of this research, the EZ/ECs contacted were only in the planning stage for the transportation projects under consideration. Future research could document the community efforts and barriers overcome in moving these projects to implementation. The ideas being developed by these EZ/ECs are described earlier in this chapter.

## **KEY FINDINGS**

The next chapter presents eight key findings of this research. It is based on the literature review, stakeholder interviews, and case studies, including an economic analysis of the 11 practices investigated. The chapter captures themes that are central to using public transportation to address the economic, social and human costs of personal immobility.

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