

Forging the Dream



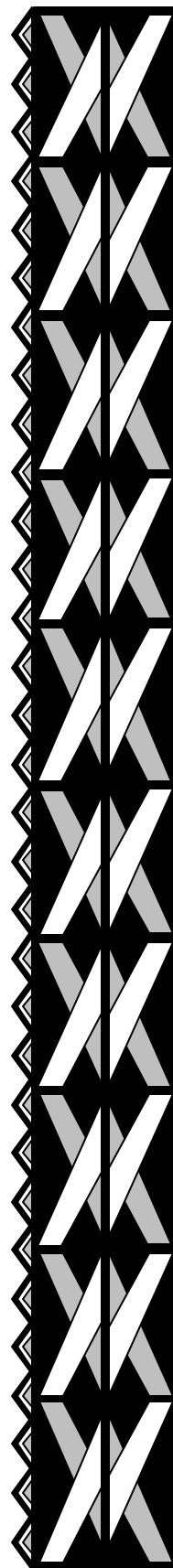
Proceedings of Symposium IV on

African-American Mobility Issues

April 30 - May 2, 1997
Wyndham Harbour Island Hotel
Tampa, Florida



April 2000



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**African-American
Mobility Issues**

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April 2000



*Beverly G. Ward, Editor
Director for
Ethnography and Transportation Systems
Center for Urban Transportation Research
University of South Florida*

PROCEEDINGS OF SYMPOSIUM IV ON
AFRICAN AMERICAN MOBILITY ISSUES

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Acknowledgements



The Center for Urban Transportation Research (CUTR) at the University of South Florida (USF); the American Public Transit Association (APTA); Amtrak, National Railroad Passenger Corporation; the Conference on Minority Transportation Officials (COMTO); the Federal Highway Administration (FHWA); Federal Transit Administration (FTA); Florida Agricultural & Mechanical University; the Florida Transit Association; General Motors, Inc.; Hillsborough Regional Transit Authority (HARTLine); Institute on Black Life at the University of South Florida; National Transportation Consortium of Minority Colleges and Universities; National Transportation Consortium of States; the National Urban Transit Institute (NUTI) at the University of South Florida; Project ACTION; Sverdrup Civil, Inc.; and the Women's Transportation Seminar (WTS) sponsored the 1997 symposium.

The symposium team members were:

Demetrus "Mike" Crittenden, Senior Research Associate, CUTR

Eric T. Hill, Senior Research Associate, CUTR

Beverly G. Ward, Director for Ethnography and Transportation Systems, CUTR

and

Fredalyn M. Frasier, Assistant Director, Bureau of Planning, City of Atlanta

The following Steering Committee Members provided guidance and had an active role in making the symposium a success:

Deborah A. Price, Co-chairperson, District of Columbia Department of Public Works

Franklin E. White, Co-chairperson, Independent Consultant

Sharon Banks, Alameda-Contra Costa Transit District

Sheron D. Bellamy, Hillsborough Area Regional Transit Authority

Cecil W. Bond, Jr., Southeastern Pennsylvania Transportation Authority

Alyce Boyd-Stewart, J.D., Office of the Secretary, U. S. Department of Transportation

Gary L. Brosch, Center for Urban Transportation Research

Gwendolyn Chisholm, Transportation Research Board

Gwendolyn Cooper, Federal Transit Administration

Lee Davis, National Transportation Consortium of Minority Colleges

Frank Enty, Ph. D., Department of Health and Human Services

Raymond M. Flood, Student, Florida Agricultural and Mechanical University

Marion Hart, Florida Department of Transportation

6 □ PROCEEDINGS OF SYMPOSIUM IV ON AFRICAN-AMERICAN MOBILITY ISSUES

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Gloria J. Jeff, Federal Highway Administration

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Joyce Johnson, Transportation Institute, North Carolina Agricultural & Technical State University

The Honorable Arthur W. Kennedy, Florida Transportation Commission

Joyce E. Latson, Hillsborough County Clerk of the Circuit Court

Wade Lawson, South Jersey Transportation Authority

William H. McCloud, ATC/VANCOM

Ilene Payne, Ph.D., Federal Highway Administration

Sharon Ransome-Smith, Project ACTION, National Easter Seal Society

Stephanie Nellons Robinson, Ryder/ATE Management & Service Company, Inc.

Rosalyn M. Simon, Ph. D., Amtrak, National Railroad Passenger Corporation

Joel Volinski, Center for Urban Transportation Research

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Vioienne Williams, American Public Transit Association

Charles Wright, Ph. D., P. E., Florida Agricultural & Mechanical University

Developing the symposium required significant technical assistance from CUTR staff members and local private and public service providers, both during and afterwards. These individuals were:

Vasti Amaro, Sharon Dent, Rickey Kendall, Terri Murph, and Albert Perry, Hillsborough Area Regional Transit Authority (HARTline)

W. Joseph Balderson, Program Assistant, CUTR

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Steve Polzin, Deputy Director for Institutes, CUTR

Cindy Wooten, MIS Manager, CUTR

Vicki Zambito, Training Coordinator, CUTR

CUTR and the AAMS Steering Committee extend a special thank you to Angie Summons and the staff of MultiConsultant Associates!

Summary



In March 1994, the Center for Urban Transportation Research (CUTR) at the University of South Florida convened a symposium on African-American mobility issues. African-American faculty members at CUTR acted as the principal investigators. More than 60 participants attended and the symposium received a good rating. Participants strongly recommended that the symposium be repeated in 1995 and expanded to a two-day format.

In April 1995, CUTR convened a second symposium for two days. The 1995 symposium was significant in that it featured the keynote addresses by Mr. Gordon Linton, Administrator of the Federal Transit Administration and Mr. Rodney Slater, then Administrator of the Federal Highway Administration, and a presentation by Florida State Senator James Hargrett. Panelists and attendees at the 1995 symposium gave the event a good rating again and pledged their support of future meetings.

The 1996 symposium, held April 14 through 16, built on the experiences and issues provided from the earlier symposia and continued the discourse on the special transportation needs of the African-American community. It provided a forum for continuing the exchange of ideas, information, and for discussion of transportation planning, programming, and policy issues as they relate to the African-American population. That year's symposium included additional information and technology transfer activities that extended beyond the convening of the symposium, including the establishment of an Internet presence and video production of the inspirational keynote address of the Honorable Alcee

Hastings, U. S. House of Representatives, 23rd District.

Based on the ratings and recommendations received in 1996, a fourth symposium was convened, again, in Tampa. The fourth symposium was attended by more than 230 participants from the United States and the Caribbean. The principal investigators were particularly pleased with the level of student participation, notably from Florida Agricultural and Mechanical University, Florida International University, South Carolina State University and the University of South Florida.

As in previous years, the project was a collaborative effort. Sponsors included the Center for Urban Transportation Research (CUTR), the University of South Florida (USF), the American Public Transit Association (APTA); Amtrak, National Railroad Passenger Corporation; the Conference on Minority Transportation Officials (COMTO); the Federal Highway Administration (FHWA); Federal Transit Administration (FTA); Florida Agricultural & Mechanical University; the Florida Transit Association; General Motors, Inc.; Hillsborough Regional Transit Authority (HARTLine); Institute on Black Life at the University of South Florida; National Transportation Consortium of Minority Colleges and Universities; National Transportation Consortium of States; the National Urban Transit Institute (NUTI) at the University of South Florida; Project ACTION; Sverdrup Civil, Inc.; and the Women's Transportation Seminar (WTS). A steering committee, representing transportation and public officials, was established to assist the project team in developing topics, symposium format, and potential speakers.

SYMPOSIUM IV ON
African-American Mobility Issues

PROGRAM □ 9

April 30 - May 2, 1997
Wyndham Harbour Island Hotel Tampa, Florida

Program

Wednesday, April 30, 1997

11:30 a.m. - Ongoing *Registration*

11:30 a.m. - 4:30 p.m. *Marketplace*

1:30 p.m. - 3:15 p.m. *Issue Forums*

Welfare Reform

Moderator:

Rosalyn Simon, Ph.D., Senior Director, Customer Advocacy, National Railroad Passenger Corporation, Washington, D.C.

Presenters:

□ Lois Bell, Technical Assistance and Coordination, Administration for Children and Families, Washington, D.C.

Jeanee Elswick-Morrison, Special Populations Coordinator, Department of Children and Families, Tallahassee, Florida

Affirmative Action Post-Adarand

Facilitator:

Paula Alexander, General Counsel, The Metropolitan Transit Authority of Harris County, Houston, Texas

3:00 p.m. - 3:30 p.m. *Break*

3:30 p.m. - 4:15 p.m. *Poster Session*

"Challenges and Opportunities for Minorities Presented by Recent Trends in the Transportation Industry," Lewis P. Clopton, Ph.D., P.E., Morgan State University, Baltimore, Maryland

"The Effects of Intelligent Transportation Systems (ITS) on Urban Populations," Howard Turner, Florida Agricultural and Mechanical University, Tallahassee, Florida

4:15 p.m. - 4:30 p.m. *Break*

4:30 p.m. - 5:30 p.m. *Welcome and Opening Session*

□ Presentation appears in this volume.

Program (continued)

Presiding

Gary L. Brosch, Director, Center for Urban Transportation Research (CUTR)

Welcome Remarks

Deborah A. Price, Symposium Co-chairperson and Administrator, Office of Mass Transit, District of Columbia Department of Public Works, Washington, D. C.

Greetings

Michael G. Kovac, Ph.D., Dean, University of South Florida, College of Engineering, Tampa, Florida

Keynote Address

The Honorable Gordon J. Linton, Administrator, Federal Transit Administration, U. S. Department of Transportation, Washington, D.C.

Closing Remarks

Deborah A. Price

6:00 p.m. - 7:30 p.m. *Reception and Marketplace Open*

Thursday, May 1, 1997

7:30 a.m. *Registration*

7:30 a.m. - 8:15 a.m. *Continental Breakfast*

8:30 a.m. - 10:00 a.m. *Opening Plenary Session and Symposium Overview*

"Transportation and the African-American Community: Opportunities for the 21st Century"

Presiding:

Franklin E. White, Symposium Co-chairperson and Independent Consultant, Los Angeles, California

Keynote Speaker:

Gloria J. Jeff, Associate Administrator for Policy, Federal Highway Administration, U. S. Department of Transportation, Washington, D.C.

10:00 a.m. - 10:15 a.m. *Break*

10:15 a.m. - 12:00 noon *Concurrent Workshops*

□ Presentation appears in this volume.

Program (continued)

Workshop I

TRAVEL PATTERNS

Moderator:

Alyce Boyd-Stewart, Senior Equal Opportunity Specialist, U. S. Department of Transportation, Washington, D. C.

Presenters:

□ "Van Service Access in Detroit for Low-Income Women Needing Prenatal Care (Paper)," Talia McCray, University of Michigan, Ann Arbor

"Ethnic and Racial Differences in Commuting Behavior of Men and Women (Paper)," Rudolph Wilson, Ph.D., Chair, Norfolk State University, Norfolk, Virginia

□ "Daily Travel by Persons with Low Income," Elaine Murakami, Community Planner, Federal Highway Administration, U. S. Department of Transportation, Washington, D. C.

Workshop II

PUBLIC PARTICIPATION

Moderator:

Grover Hankins, Ph.D., Thurgood Marshall School of Law, Houston, Texas

Presenters:

□ "Implementing Effective Public Involvement Methods to Increase Participation in Transportation Planning by African-Americans (Paper)," Patrice Koonce Rosemond, Miami-Dade Transit Agency, Miami, Florida

□ "Los Angeles Neighborhood Initiative: A Model for Economic Revitalization Using Citizen-Driven Transportation Improvements," Joyce Perkins, Los Angeles Neighborhood Initiative (LANI), Los Angeles, California

"The Political, Economic, Social, and Ecological Impact of Eliminating the Federal Transit Operating Subsidy," Christopher Niles, Organizing and Research Consultant, The Niles Files, Takoma Park, Maryland

Workshop III

ENVIRONMENTAL JUSTICE

Moderator: Michele DePass, Esquire, New York City Environmental Justice Alliance, New York, New York

□ Presentation appears in this volume.

Program (continued)

Presenters:

"Environmental Justice: Past, Present, and Future," Robert Knox, Deputy Director, Office of Environmental Justice, Environmental Protection Agency, Washington, D. C.

"Environmental Justice Overview," Eugene Cleckley, Chief, Environmental Operations Division, Federal Highway Administration, Washington, D. C.

"The Blast at Ground Level," Marilyn Ababio, Sunshine Environmental Services, Willingboro, New Jersey

□ "Consideration of Environmental Justice Issues During the NEPA Evaluation (Paper)," Cheryl Calloway, Cooley Law School, Lansing, Michigan

Workshop IV

AMERICANS WITH DISABILITIES

Moderator: Sharon Ransome-Smith, Project Manager NIAT, Project ACTION, National Easter Seal Society, Washington, D. C.

Presenters:

"Legal Realities of the ADA for Transit Providers and People with Disabilities," Clementine W. Morris, Ed.D., Principal, C. W. M. Associates, Louisville, Kentucky

"ADA Challenges and Opportunities: Paratransit Contracting Methods," Rosalyn Simon, Ph.D., Senior Director, Customer Advocacy, Amtrak, National Railroad Passenger Corporation, Washington, D.C.

12:15 p.m. - 2:00 p.m. *Luncheon*

Presiding:

Ronald L. Barnes, National President and Board Chair, Conference of Minority Transportation Officials, and Deputy General Manager, Greater Cleveland Regional Transit Authority, Cleveland, Ohio

Invocation:

Reverend Thomas Scott, Commissioner, Hillsborough County, Tampa, Florida

Introduction of Keynote Speaker:

The Honorable Arthenia L. Joyner, Commissioner, Hillsborough County Aviation Authority, Tampa, Florida

Keynote Speaker:

Mark Alan Hughes, Ph.D., Vice President for Policy Development, Public/Private Ventures, Philadelphia, Pennsylvania

□ Presentation appears in this volume.

Program (continued)

2:00 p.m. - 2:15 p.m. *Break*

2:15 p.m. - 3:45 p.m. *Concurrent Workshops*

Workshop V

TRANSPORTATION AND LAND-USE

Moderator:

Joel Volinski, Deputy Director for Transit, Center for Urban Transportation Research, University of South Florida, Tampa

Presenters:

□ "Location Characteristics of Inner-City Neighborhoods and Employment Accessibility of Low-wage Workers (Paper)," Qing Shen, Massachusetts Institute of Technology, Cambridge, Massachusetts

□ "Location Efficient Mortgage Project," Jacky Grimshaw, Coordinator, Transportation and Air Quality, Center for Neighborhood Technology, Chicago, Illinois

Workshop VI

PUBLIC EDUCATION

Moderator:

Ilene Payne, Ph.D., Director, Universities and Grants Programs, National Highway Institute, Federal Highway Administration, U. S. Department of Transportation, Washington, D. C.

Presenters:

□ "Public Education in Urban Centers: Analysis, Trends, and Policy Issues," Lora G. Mayo, Commissioner, Baltimore City Public Schools, Baltimore, Maryland

□ "The Church: An Alternative Urban Transportation Amenity (Paper)," Charles Wright, Ph.D., P.E., Florida Agricultural and Mechanical University, Tallahassee, Florida

Workshop VII

LIVABLE COMMUNITIES

Moderator:

Gwendolyn Chisholm, Senior Program Officer, Transportation Research Board, Washington, D. C.

Program (continued)

Presenters:

□ "Traffic Calming and its Role in Creating Livable Inner City Communities (Paper)," Ian Lockwood, City of West Palm Beach, Florida

"The Livable Communities Project," Aurelia Jones-Taylor, Executive Director, Community Health Center, Clarksdale, Mississippi

"Livable Communities," Fernando Benavidez, Project Manager, Corpus Christi Regional Transportation Authority, Corpus Christi, Texas

Workshop VIII

TRANSPORTATION AND THE EMPLOYMENT MISMATCH

Moderator:

Gloria J. Jeff, Associate Administrator for Policy, Federal Highway Administration, Washington, D. C.

Presenters:

"It's Economic Development, Not a Poverty Program," Ernest Maddox, The World of Work, Ltd., St. Clair Shores, Michigan

"Time-Limited Welfare," Neil Bania, Ph.D., Associate Director for Community Analysis, Center on Urban Poverty and Social Change, Cleveland, Ohio

"Transit and Welfare Reform," Diana Carsey, Hillsborough Area Regional Transit Authority (HARTLine), Tampa, Florida

3:45 p.m. - 4:00 p.m. *Break*

4:00 p.m. - 5:30 p.m. *Concurrent Sessions*

Workshop IX

INTERMODALISM

Moderator:

William H. McCloud, Senior Vice President, ATC/VANCOM, Oakbrook Terrace, Illinois

Presenters:

"Intermodal Flexibility and Opportunities: Community/Stakeholder Partnerships (Paper)," Francis Wambalaba, Ph.D., Tri-Met, Portland, Oregon

"Mobility for Minorities," Lucie Ayer, Executive Director, Hillsborough County Metropolitan Planning Organization, Tampa, Florida

□ Presentation appears in this volume.

Program (continued)

“The Intermodal Transit System of the Future: Where Do We Go From Here and What Does It Mean for the Communities Served?,” Emmett Crockett, Associate Director Office of Business Planning and Development, Washington Metropolitan Area Transportation Authority, Washington, D. C.

Workshop X

ADVANCED TECHNOLOGIES

Moderator:

Sylvan C. Jolibois, Jr., Ph.D., Assistant Professor and Deputy Director, Lehman Center for Transportation Research, Florida International University, Miami

Presenters:

□ “Technology, Transportation, and African-Americans: No Innovations in Policy Directives (Paper),” Terrence Taylor, Miami-Dade Metropolitan Planning Organization, Miami, Florida

“The Impacts of Intelligent Transportation Systems on Minority and Rural Communities,” Stephen Blake, Center for Transportation Training, Education, and Research, Springfield, Virginia

“Emerging Fare Collection Technologies in Mass Transit and the Low-Income African-American Population,” Nii O. Attoh-Okine, Ph.D., Department of Civil and Environmental Engineering, Florida International University, Miami, Florida

Workshop XI

ACCESS TO JOBS

Moderator:

Gayle Holliday, Deputy General Manager, Kansas City Transit Authority, Kansas City, Missouri

Presenters:

□ “Broward County Minibus Demonstration Project (Paper),” Fabian Cevallos, Broward County Transit, Pompano Beach, Florida

“Lower Income Market and Welfare Reform: A Market Opportunity for Transit Systems,” Morris Davis, M. Davis and Company, Philadelphia, Pennsylvania

□ “First Report from the Field on the Bridges to Work Demonstration,” Richard Presha, Public/Private Ventures, Philadelphia, Pennsylvania

Program (continued)

"Federal Access to Jobs Initiatives," Gwendolyn R. Cooper, Office of Research Management, Federal Transit Administration, U. S. Department of Transportation, Washington, D. C.

5:30 p.m. *Adjourn*

7:00 p.m. *SPECIAL EVENT: Blues Ship, Ybor City*

Friday, May 2, 1997

8:00 a.m. *Continental Breakfast*

8:30 a.m. - 10:15 a.m. *Plenary Session*

NEXTEA PANEL

Moderator:

Jomoya S. Mobutu, Chief, Fair Employment Practices, Metro-Dade Transit Agency, Miami, Florida

Panelists:

Reverend Jerry Moore, Interim Executive Director, Conference of Minority Transportation Officials (COMTO), Washington, D. C.

Scott Paine, Ph.D., Councillor, Tampa, and, Chairperson, Hillsborough County Metropolitan Planning Organization, Tampa, Florida

The Honorable Edward L. Jennings, Sr., Mayor, City of Gainesville, Gainesville, Florida, and Representative, National Conference of Black Mayors

10:15 a.m. - 10:45 a.m. *Break*

10:45 a.m. - 12:00 noon *Plenary Session*

□ FUTURE RESEARCH NEEDS AND POLICY IMPLICATIONS

Moderator: Franklin E. White, Symposium Co-chairperson and Independent Consultant, Los Angeles, California

Presenters:

Ronald L. Barnes, National President and Board Chair, Conference of Minority Transportation Officials (COMTO), and Deputy General Manager, Greater Cleveland Regional Transit Authority, Cleveland, Ohio

□ Presentation appears in this volume.

Program (continued)

Alyce Boyd-Stewart, Senior Equal Opportunity Specialist, Office of the Secretary, U. S. Department of Transportation, Washington, D. C.

Gwendolyn R. Cooper, Office of Research Management, Federal Transit Administration, U. S. Department of Transportation, Washington, D. C.

Gloria Jeff, Associate Administrator for Policy, Federal Highway Administration, U. S. Department of Transportation, Washington, D. C.

Ilene Payne, Ph.D., Director, Universities and Grants Programs, National Highway Institute, Federal Highway Administration, U. S. Department of Transportation, Arlington, Virginia

Sharon Ransome-Smith, Project Manager NIAT, Project ACTION, National Easter Seal Society, Washington, D. C.

12:00 noon *Final Session and Evaluations*

Closing Remarks

Franklin E. White, Symposium Co-chairperson and Independent Consultant, Los Angeles, California

12:30 p.m. *Adjourn*

SYMPOSIUM IV ON
African-American Mobility Issues

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 Wyndham Harbour Island Hotel Tampa, Florida

Facilitators, Presenters, and Speakers



Marilyn Ababio is an entrepreneur and Chief Operations Officer of Sunshine Environmental Services, Willingboro, New Jersey.

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Stephen Blake is with the Center for Transportation Training, Education, and Research in Springfield, Virginia

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Cheryl Calloway is Adjunct Professor of Environmental Law at the Thomas S. Cooley Law School and President of ENVIRONICS in Lansing, Michigan.

Diana Carsey is Director of Planning of the Hillsborough Area Regional Transit Authority (HARTLine) in Tampa.

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The Honorable Gloria J. Jeff is Associate Administrator for Policy of the Federal Highway Administration, U. S. Department of Transportation, Washington, D.C.

The Honorable Edward L. Jennings, Sr., is Mayor of the City of Gainesville and a Representative of the National Conference of Black Mayors.

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Sylvan C. Jolibois, Jr., Ph.D., is Assistant Professor of Transportation Engineering and Deputy Director of the Lehman Center for Transportation Research at Florida International University, in Miami.

The Honorable Arthenia L. Joyner, Esq. is a Commissioner of Hillsborough County Aviation Authority in Florida.

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The Honorable Gordon J. Linton is Administrator of the Federal Transit Administration, U. S. Department of Transportation in Washington, D.C. *Deborah A. Price* is Administrator, Office of Mass Transit, District of Columbia Department of Public Works in Washington, D. C.

Ian Lockwood is City Transportation Planner of West Palm Beach.

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Ilene Payne, Ph.D., is Director of the Universities and Grants Programs at the National Highway Institute, Federal Highway Administration, U. S. Department of Transportation, Washington, D. C.

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Sharon Ransome-Smith is Project Manager NIAT, Project ACTION, National Easter Seal Society in Washington, D. C.

Patrice Koonce Rosemond is Chief of the Public Involvement, Miami-Dade Transit Agency in Miami.

The Honorable Reverend Thomas Scott is a Commissioner of Hillsborough County in Florida.

Qing Shen is Assistant Professor, Department of Urban Studies and Planning, Massachusetts Institute of Technology, Cambridge, Massachusetts.

Rosalyn Simon, Ph.D., is Senior Director, Customer Advocacy, Amtrak, National Railroad Passenger Corporation in Washington, D.C.

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Charles Wright, Ph.D., P.E., is Director of the National Urban Transit Institute and Professor of Engineering at Florida Agricultural and Mechanical University in Tallahassee.



Transportation Issues in Welfare-to-Work Programs

Lois A. Bell

U. S. Department of Health and Human Services



Overview

Title I of the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) of 1996 (P.L. 104-193) creates the Temporary Assistance for Needy Families (TANF) program which transforms welfare into a system that requires work in exchange for time-limited assistance. The law specifically eliminates any individual entitlement to or guarantee of assistance and replaces the Aid to Families with Dependant Children, Job Opportunities and Basic Skills Training and Emergency Assistance programs with a single block grant to States under Title IV of the Social Security Act.

Now more than ever before, the States and Federal governments will have to work together as partners in order to meet the many requirements and outcome measures under TANF. In addition, time is of an essence since the clock is ticking for families to meet the work requirement. More importantly, the clock is ticking on families' lifetime limit to receive assistance.

Background

On August 22, 1996, H.R. 3734, PRWORA was enacted. Even though States have a great deal of flexibility in the design of their TANF programs, they continue to have many requirements to meet.

Under TANF, States are required to assess the skills of recipients and help them prepare for and find work. States may create community service jobs, or provide income subsidies or hiring incentives for potential employers. In addition, they must assure that adult recipients work after receiving assistance for 24 months or less, with few exceptions. Also, States cannot allow fami-

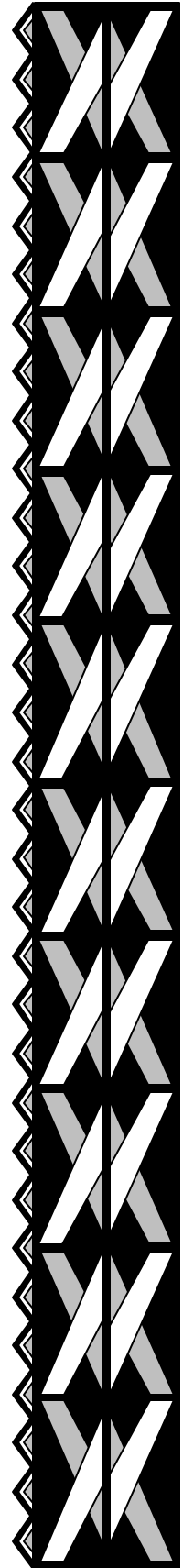
lies, unless exempt, who have received assistance for five cumulative years (or less at State option) to be eligible for assistance funded with Federal TANF funds.

States also must meet specific outcome measures. For example, 25 percent of all families must be engaged in work activities in fiscal year (FY) 1997, rising by five percent each fiscal year until the requirement reaches 50 percent in FY 2002. Seventy-five percent of two-parent families must be working or engaged in job preparation activities in fiscal years 1997-98, and 90 percent thereafter. To count in the all-families rate, individuals must be working or engaged in job preparation activities for at least 20 hours per week the first year, increasing to 30 hours per week by FY 2000. In two-parent families, at least one individual must work 35 hours per week.

In order to achieve these outcomes, States must help increasing numbers of clients prepare for, find, and maintain jobs. Inevitably, this means working with some clients who are difficult to place. Many lack basic skills that employers require. Others have skills, but face significant challenges in getting and keeping jobs, such as lack of transportation and violence at home.

Welfare-to-Work Transportation: The Critical Link

Research and project experience have shown that the availability of transportation is a critical element to the successful transition from dependence on welfare to independent employment. I intend to highlight what we currently know about this element of welfare reform, highlight some projects currently underway designed to alleviate the problem, and make some recommendations for transit and human services agencies.



The Federal Transit Administration, USDOT, reports only 6.5 percent of welfare recipients own private automobiles.

What We Know

The Manpower Demonstration Research Corporation reported, depending on the specific characteristics of the subsample, between one-fourth and one-third of those surveyed experienced the lack of transportation as a significant barrier to consistent participation in the JOBS program (the work component of the AFDC program).

During regional HHS/DOT meetings in late 1995 and 1996, state human services officials repeatedly indicated transportation would play a major role in their ability to meet the proposed welfare reform participation rates.

The Federal Transit Administration, USDOT reports only 6.5 percent of welfare recipients own private automobiles. The spatial displacement of jobs and welfare recipients leaves jobseekers at odds with public transportation systems which focus on express buses and trains into the city in the morning and out in the evening on a traditional workday schedule.

A recent study in Cleveland, Ohio, revealed that over half of the entry level-jobs involved nontraditional work hours, or working at more than one job site, and 80 percent of the new jobs were in the suburbs.

What is currently being done

HHS is working with a number of other federal agencies and national organizations to develop creative ways to get welfare recipients to and from work and child care. The Joint DHHS/DOT Coordinating Council on Human Services Transportation has formed a task force on welfare reform transportation which will reach to other federal departments and agencies to promote a collaborative strategy.

HHS is advising FTA on the JOBLINKS project, which has 16 demonstrations of innovative approaches to linking low-

income individuals and employment locations. We are also serving as technical advisors on the Bridges to Work project, a HUD/DOT/private partnership demonstration that seeks to address transportation needs in a comprehensive, supportive services strategy to transition welfare recipients to independence.

Recommendations

There are four essential ingredients to successfully overcome the transportation barrier to welfare-to-work strategies: collaboration, planning, coordination, and financing.

□ **Collaboration:** It is imperative that all the necessary parties come together to pool and allocate resources to address the problem rather than undertake separate strategies. The local transit authority, human services agencies, community groups, economic development agencies, and employers must work together to forge solutions.

□ **Planning:** The collaboration must establish a mechanism to coordinate transportation and welfare-to-work program design planning.

□ **Coordination:** The collaboration must design an implementation plan: who is responsible for what, and who is to provide what service and when. There should also be a monitoring mechanism to ensure that the plan is operating as envisioned and is achieving the desired results. There should also be a means to modify the plan if monitoring information indicates that changes should be made.

□ **Financing:** The transformation of low income individuals from welfare to work is the shared responsibility of transportation agencies, human service, employment service, job training programs, economic development agencies, and the private sector. Therefore, all sectors must share in the financing of the effort.



Van Service Access in Detroit for Low-Income Women Needing Prenatal Care

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Introduction

Given that there are many reasons why low-income pregnant women do not begin or keep their prenatal care appointments, the transportation factor is often minimized. Prenatal care plays a major role in preventing low-birth weight and other adverse pregnancy outcomes (Leveno, et al., 1985; Greenberg, 1983; Sokol, et al., 1980). Several studies have identified transportation as a common barrier to receiving adequate prenatal care (Kalmus and Fennelly, 1990; Lia-Hoagberg, et al., 1990; Ny, et al., 1993; Poland, et al., 1987). These studies found that low-income women did not have access to a private vehicle and had to rely on others or public transportation for their appointments. In many cases, not having access to a vehicle deterred their desire to begin or continue prenatal care. Public transportation created a problem because of the cost of transportation, unreliable bus schedules, long traveling times to move from a woman's home to a health care provider's office, poor weather, and dangerous conditions at bus stops. In addition, if a woman had childcare problems, she was also very likely to have transportation problems (Lia-Hoagberg, et al.). Even though transportation was identified as a barrier to receiving prenatal care, the studies did not include this factor in their analyses. The question then becomes to what degree is this a problem, and if a specialized form of transportation is provided, will a greater number of low-income women receive prenatal care.

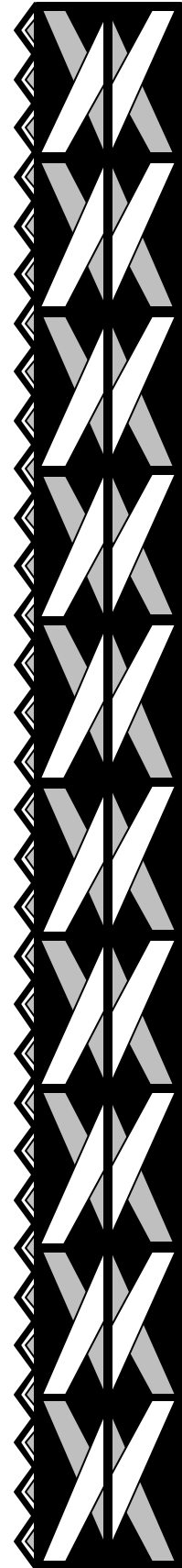
To provide physical access, the Healthy Baby Service (HBS) was started in 1988 to aid in the reduction of infant mortality in low income communities by lessening the barrier of transportation to and from health care fa-

cilities. This free door-to-door service is provided to low income women within the City of Detroit and Wayne County for the purpose of prenatal care, well-baby care, visits to neonatal intensive care, and participation in health and nutrition programs. In 1996, the HBS provided 18,000 one-way rides to clinics and hospitals in the City of Detroit and Wayne County (Lindsey, 1997). The service runs its operation out of the Herman Kiefer Clinic in Detroit, Michigan, and is financially supported by the Detroit and Wayne County Health Departments, Healthy Start Initiative, United Way Community Service, and Medicaid revenue. An unusual characteristic of the HBS is that enroute, the drivers counsel the women in family planning, childrearing, nutrition, and other health-related issues. All drivers must complete a six-week course on social service counseling. Many of the drivers and dispatchers are women or individuals who can identify with the economical hardships of the clients, as many of them were once on welfare.

The overall purpose of the research is to understand the complexity of barriers that exist for low-income women needing prenatal care, and to evaluate the service provision by the HBS in order to be able to suggest ways for improvement. Information and knowledge gathered will be used for applications elsewhere. Focus groups, through the unique voice of the clients, served as the primary evaluation tool of the HBS, and as a preliminary stage in generating a survey questionnaire.

Background

Preliminary analysis was performed using logistic regression to support the argument that a high percentage of women liv-



The focus for this research is on a woman's physical space: the condition of one's community, housing, health care facility, environment around public mass transportation, and the distance from one's home to clinics or hospitals.

ing in the City of Detroit do not have access to a private vehicle. The data were extracted from the 1990 Census of Population and Housing Public Use Microdata Area (PUMA) files. PUMA data files are samples of the individual household records from aggregates of census tracts with a total population of at least 100,000. These computer-accessible files contain records of 5% samples of the housing units in the United States and the persons living in them. Information available are characteristics of each housing unit and the people in it. All identifying information has been removed to protect the confidentiality of the respondents (PUMS home page). Overall, households in the City of Detroit had a family income between \$0.00 and \$345,499.00, with a mean family income of \$27,577.98. Households headed by single females consistently had a lower degree of access to vehicles and lower family income than those households headed by married couples. The logistic regression equation estimated the probability a woman would have access to a vehicle versus not having access based on age, family income, and education for women between the ages of 16 and 45 years. The following equation was developed to estimate the probability of having access to a vehicle:

$$p(x)/[1 - p(x)] = \exp(-2.753 + 133*ed + (8.25E-)*faminc + 0.0221*age)$$

where:

ed is education level (1 [no school] through 17 [doctorate degree]), faminc is family income (\$), and age is age measured in years.

All of the variables in the equation were found to be significant ($p=0.00$ approximately) given an $\alpha = 0.05$ level of significance. Out of the 5,177 records, 520 case were misclassified giving a 90 percent accuracy in predicting accessibility of a vehicle. As expected, the results showed the great effect that education and income play on one's ability to have access to a vehicle. Those women who did not make it to the 12th grade were found to be denied access to a vehicle. Those who had at least a high school diploma

or GED had access to a vehicle. A correlation existed between education and family income. The more education a woman had, the greater her family income was. This work set the stage for addressing transportation barriers for low-income women needing prenatal care.

Having established that a high percentage of women living in the City of Detroit had no access to a private vehicle, the degree of other ecological and attitudinal factors that assist or prevent women in connecting with medical services were investigated. Ecological refers to environmental factors of the space and time context of the women's daily lives. The focus for this research is on a woman's physical space: the condition of one's community, housing, health care facility, environment around public mass transportation, and the distance from one's home to clinics or hospitals. Time is used as an ecological variable to refer to a point in time or a period of time. The time it takes to travel from one's home to a health care facility of choice, and the time spent waiting in a reception room to see a health care provider affects a woman's ability to receive adequate prenatal care. The above ecological concepts were taken from theory developed by Amos Hawley who defined human ecology as "the study of the relation of organisms to their environment." (1986). Attitudinal factors were added to reflect how a woman's perception of prenatal care, her attitude towards her pregnancy, her interpersonal relationships, her personal health practices, and her history of problems with federal systems affect the outcome of her pregnancy.

Methodology

The sample used in the study consisted of 20 low-income women in the City of Detroit between the ages of 18 and 46 who are clients of the HBS. Eleven were African American, two were white, and seven were Hispanic.

Three focus groups were held during a two-week period in March 1997 at the office of HBS, located at the Herman Kiefer clinic in Detroit, Michigan. The focus group participants were identified by the head dis-

patcher of HBS and were paid a stipend of \$20.00 for a two hour session. Recognizing the difficulty in finding affordable child care, mothers were encouraged to bring their children. A total of twenty women participated, even though thirty women were invited. To determine the makeup of the groups, three strata were defined geographically where clusters of clients lived in the City of Detroit. The three areas defined were central, north-east, and south.

All sessions were taped to insure accuracy of reporting, and an assistant was used to take notes during the sessions. Transcriptions of the tapes were verified by the researcher and the assistant.

Focus groups are a valuable qualitative method that can serve a variety of purposes. They can be used as the basis for a complete study, or as a supplement to another primary method, or as a combination of group and individual interviews (Morgan, 1997). Questions to the groups were presented in a structured format. The following questions were used to guide the discussions.

- Who have you relied on mostly for support during your pregnancy?
- What do you see prenatal care doing for you? What is prenatal care?
- Where do you go for doctor's care?
- Why did you choose your particular hospital or clinic?
- How are you treated by the nurses and doctors?
- Have you ever tried using public transportation or a taxi to get to your doctor's appointment?
- What do you do with your children while at the doctor's office?
- Are you working and/or going to school?
- Do you participate in any support programs for pregnant women?
- What means of transportation do you use to get to the grocery store or church?
- What recommendations would you make to the HBS?

A spatial analysis was used to investigate where clients lived with respect to where they received prenatal care at health care facilities in the City of Detroit. Further analysis was done by locating Detroit De-

partment of Transportation (DDOT) bus routes that serviced the identified facilities. Only those routes that were direct routes within a quarter of a mile from the hospitals and clinics were used for analysis. All spatial analyses were performed using ARC/INFO version 7.0.3 and ARCVIEW version 4.0.

Results and Discussion

Twenty women participated in the focus groups. Six African American women and two White women formed the central area focus group. Five African American women formed the northeast area focus group, and seven Hispanic women (all from Mexico) formed the south area focus group. Being that the Hispanic women spoke little to no English, a Spanish translator was used. Ninety percent of the women were unemployed and 79 percent reported having no access to a vehicle. All of the women had some form of medical insurance, except for two. The majority of those covered were under Medicaid. Eighty five percent of the women were multiparous, with all of them having children under the age of six.

Many ecological factors were identified that affect a low income woman's access to adequate prenatal care. Ecological factors considered to be both barriers and promoters of health were identified. It was also found that a woman's attitude towards herself greatly affected her perception of the importance of receiving prenatal care.

After reviewing transcripts, data were organized using the technique of content analysis under six major headings: Health Care System, Individual, Social Networks (personal relations), Child Care, Community Environment (structure), and Transportation.

Transportation modes were modeled in a like fashion to show the degree to which each issue was a barrier or promoter to prenatal care. It was found that some of the barriers would always remain barriers, and others if addressed deliberately could become promoters of health. For the purpose of this paper, only the transportation model will be addressed directly. The ecological

Ninety percent of the women were unemployed and 79 percent reported having no access to a vehicle.

The general consensus was that if the services of the HBS did not exist and public transportation was the only means to get to a prenatal appointment, they would just not go

factor of bus stop environments in low income communities from the community environment model will be used to express the fear women felt when waiting for public transportation. To demonstrate travel patterns the Health Care System ecological factor will illustrate reasons why women chose certain hospitals and clinics over others.

The majority of participants reported being within walking distance to bus stops. However, the environment around the bus stops was considered to be dangerous.

TM: "Is it safe to take the bus?"

M1: "No it's not! Not at all! I live off the west side. Grand River is one of the worst bus stops that you can be at. You will get robbed! My sister-in-law, they robbed her for a dollar at the Grand River bus stop. It's the Plymouth, River, Greenfield [bus routes]."

M2: "Well yeah, I'd have to say I've been robbed off of Greenfield."

M1: "I know. Plymouth, Greenfield is one of the worst routes. Plymouth, Greenfield, and Grand River are the worst, and I live by all three of them!"

M3: "And Finkel [bus stop]. My mother got robbed, and they didn't even want anything. They just wanted to assault her. They hit her with poles. She gave them the purse, but they didn't take it. It was cold."

The general consensus was that if the services of the HBS did not exist and public transportation was the only means to get to a prenatal appointment, they would just not go. Hispanic women had not experienced the same fear that African American women had concerning crime at bus stops. The Hispanic women reported they did not take the bus because of the language barrier.

M4: "I don't really know about the bus, where it's going. I have a language barrier, and don't speak English. So if I have a question, how do I ask the bus driver? Where are you going to stop if you don't even know where to stop."

Five of the six areas were identified by participants as being barriers to prenatal care. The category, Other [transportation] Modes Used, was considered a promoter of health. This category included walking and getting a ride to a prenatal appointment from

a neighbor, friend, spouse, or boyfriend. The majority of the Hispanic women chose to walk during clement weather to their prenatal appointments because of the close proximity of the CHASS clinic that serves the Hispanic community, although in some instances close meant up to 15 blocks. The majority of the nurses and staff are bilingual.

Other major areas of concern for those who took public transportation were the cost of transportation; the unreliability of the scheduling of DDOT buses; the attitude of other DDOT riders; and the shortage of direct bus routes to hospitals and clinics from their communities. Many had stories to tell of being humiliated and insulted by other riders on the bus. They felt vulnerable because they were single parents, had more than one small child to transport, and were often weighted down with baby strollers. Under these circumstances a trip that required waiting to transfer from one bus to another was not tolerable.

M5: "Somebody will have a smart remark. I ain't going to say it out loud, like you got all them babies. . ." Very seldom did the bus driver or riders offer to help the mothers.

M6: "They see you standing with babies. They won't let you sit down. High school kids on the bus, they don't give up their seats."

M7: "Sometimes you didn't have any money to get there, or just didn't want the hassle of catching two buses, or walking that long walk, or waiting for the bus."

Figure 2 shows the travel patterns of the focus group participants to health care facilities.

From the figure, one can see that many of the women travelled to facilities that were located far from their homes. Several of the participants reported being treated poorly by physicians and nurses. Often doctors did not take the time to answer questions the women had concerning their pregnancies. For some who had complications, they blamed the doctors for their poor birth outcomes. For these reasons women often changed doctors from pregnancy to pregnancy. If they found a health care provider across town that they felt comfortable with,

Hospital Accessibility Direct DDOT Routes

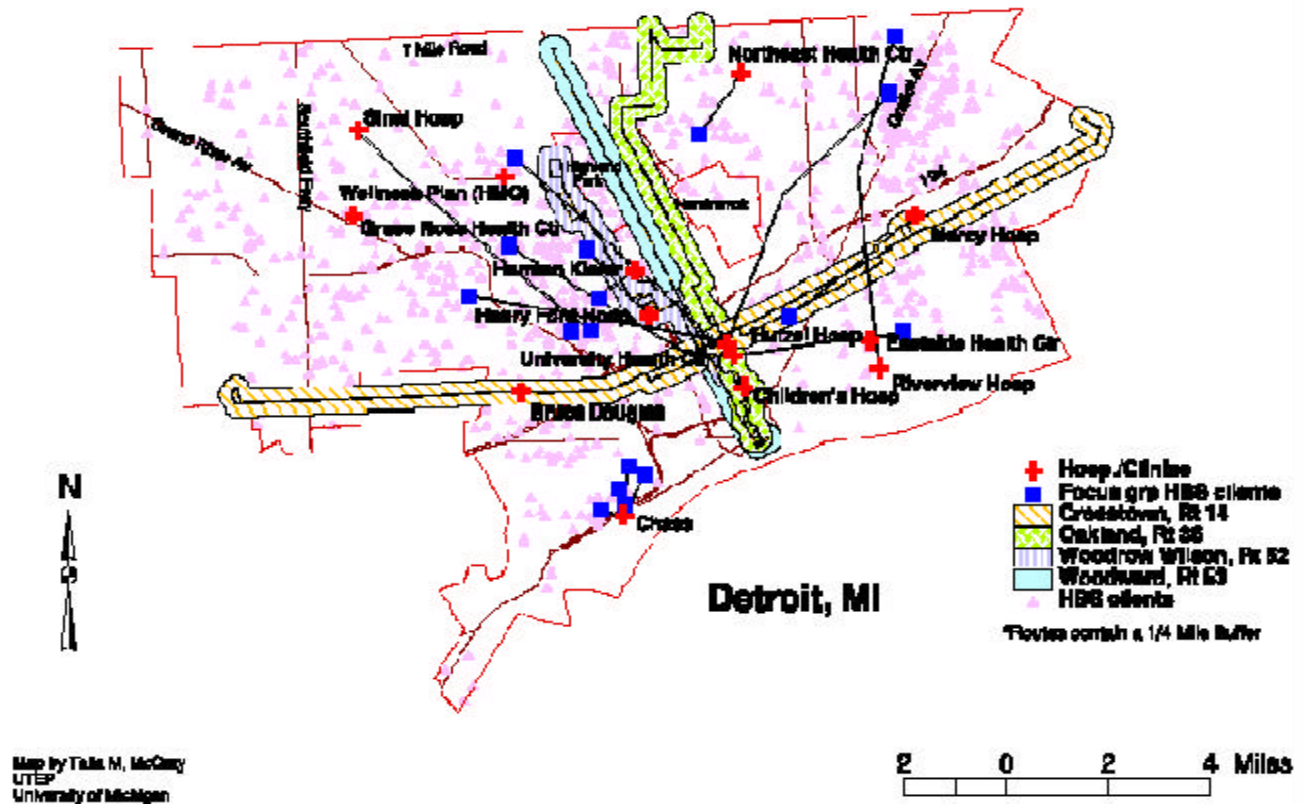


Figure 2. Travel Patterns of Focus Group Participants to Hospitals and Clinics in Detroit

they went to that location. The Hispanic women reported some of the same ill treatment experienced by nurses.

M8: "The nurses sometime get an attitude. The ones that are bilingual get an attitude because they have to do something extra other than their work, like translating. Sometimes they say in Spanish that they don't speak Spanish."

The Hispanic women were confined to the CHASS clinic because of the language barrier. They did not have the freedom that the women in the other focus groups had to change facilities. The HBS supports a woman's decision to choose her health care provider by providing transportation to a number of facilities in the city. Figure 2 shows the major hospitals and clinics that

they service. All health care facilities within the city are accessible through the HBS. Although, accessibility to the facilities of lesser demand are limited to certain days.

Depicted in Figure 3 is a map showing all direct public bus routes located within a quarter of a mile of major health care facilities serviced by the HBS in relation to where their clients live.

Many clusters exist where there is obviously no access to a direct route servicing a facility. On first glance one might think that enough routes exist that provide access to a great number of clients, but Figure 3 supports the fact that the majority of those clients living next to major routes must still take at least two buses to reach their chosen health care facility. Four main bus routes in figure

that pop? They always passing out literature. Like I said, they were more than just drivers. They were like technicians or directors or whatever. You know, whatever they doing, they doing it well."

M10: "I call them [drivers] on Christmas and right before New Years. I just like them all. All of them are very sweet."

Several support programs for low-income mothers of small children use the van services of the HBS to transport women to their programs. One of these, WIC (Women, Infants, and Children) is a food and nutrition program that is funded by the United States Department of Agriculture. One of the goals of the program is to encourage more women to breast feed. The program seeks to correct or prevent malnutrition in low income pregnant women, those who just recently had a baby, and children up to five years of age. Another program serviced by the HBS is the Skillman Parenting Program. This program exists to strengthen and support families through offering classes on developing coping skills to deal with the day-to-day changes of life. By transporting women to programs that teach parenting skills and support improvement of health and nutrition practices, the HBS addresses the attitudinal factors that affect the health of the mother and her children. In this way the HBS not only addresses the transportation needs of its clients, but also some aspects of their quality of life. They are seeking to improve the overall physical and mental health of the mother and child.

The focus group participants made several recommendations to the HBS to improve their services. The Hispanic women raised the issue of not being able to communicate with the drivers because none of them speak Spanish. Therefore, they supported the hiring of a bilingual driver. Several of the women complained about the extensive amount of time spent on vans picking up other riders. They felt that some of the dispatchers were not efficient in coordinating pickups within the same area.

M11: "Bernard paces himself where he picks up all the same people in the same area. The other lady gets on there and she sends ya to Ypsilanti; then way over on the east

side; then way over on the north side; then way over on the south side. That's why people end up late! When Bernard gets on there he says, 'okay. . . this, this, this.' It's done right!"

Bernard is the head dispatcher who has been with the service since its inception in 1988. He knows the street network extremely well and serves as the "intelligent routing system". The HBS is very much in need of automating their operation where reservations, scheduling, and routing could be tied together. Presently, they are using Teletrax with the aid of paper maps to assign the routes. If a dispatcher does not know the street network well, the route assignment made may not be an efficient one. Other complaints were made concerning the promptness of pickups. The women felt that this was due partially to the time spent in waiting for riders who after much time often became "no-shows".

M12: "I've never been to an appointment on time, and I've been here two years. But they'll pick you up 45 minutes to an hour before [your] appointment!"

M13: (In defense of HBS) "They get to the house; they [client] not ready. They waiting forever. So that's why you don't be on time for your appointments. You can go to Betty's house, and she's sitting up there, and she's peeking out the window with her house coat on. Hold on [she says]. She goes in there to get dressed, then you go to Mary's house. Yeah, that happens all the time."

Despite these problems, the women agreed that the service was very much needed and should be expanded to operate on the weekends. The HBS only operates Monday through Friday from 8:00 a.m. until 5:00 p.m. The women felt that the HBS needed to increase its capacity to handle more riders; because many of them had friends who were missing prenatal care appointments due to transportation problems. For the majority of the women, the HBS was their only means of transportation to prenatal and well baby care appointments and support service programs.

By transporting women to programs that teach parenting skills and support improvement of health and nutrition practices, the HBS addresses the attitudinal factors that affect the health of the mother and her children.

By financially supporting special transportation services such as the HBS, maybe we could all benefit from a system that would link health care reservation systems with intelligent scheduling and routing systems.

Conclusion

The HBS is an excellent example of a creative transportation service that addresses the overall well being of the individual. They are affecting in a positive way the quality of life for individuals who live in distressed areas. There is a great need for transportation planners and engineers to view transportation differently. Dr. Patricia Waller, director of the University of Michigan's Transportation Research Institute states:

"We need to reconsider how we envision the role of transportation in our society. While historically transportation has been defined as 'the safe and efficient movement of people and goods in our society', it is far more than that. In America today transportation is an essential component of health care, education, employment, recreation, culture, maintenance of ties with family and friends, and all that makes life worthwhile. . . transportation is a necessity."

In order to give people the means to act for themselves, transportation specialists must review existing public transportation modes to make sure that communities are not being isolated from the services that enrich the quality of life. Combining the role of driver with that of social service advisor is an example of the extra step needed to close the gap between transportation service and other essential social services. This is vital when addressing the issue of prenatal care which plays a major role in preventing low birth weight and other adverse pregnancy outcomes.

In addition we should create opportunities to research and financially support new applications of computer and communication technologies that are collectively labelled intelligent transportation systems (ITS) that would benefit a greater number of Americans despite economic standing. A service such as the HBS would benefit greatly from an intelligent routing system, but is limited by its resources. By financially supporting special transportation services such as the HBS, maybe we could all benefit from a system that would link health care reservation systems with intelligent scheduling and routing systems. This, for ex-

ample, could be used to keep track of time spent "waiting" for services, and could lead to increased efficiency on both sides. A change, such as this, would make life better for all of us.

REFERENCES

- Greenberg, R. S.
1983 The Impact of Prenatal Care in Different Social Groups. *American Journal of Obstetrics and Gynecology*; 145: 797-801.
- Hawley, A. H.
1986 *Human Ecology, A Theoretical Essay*. Chicago: University of Chicago Press.
- Kalmuss, Debra and Fennelly, Katherine
1990 Barriers to Prenatal Care Among Low-Income Women in New York City. *Family Planning Perspectives*; 22: 215-218.
- Leveno K. J., et alia
1985 Prenatal Care and the Low Birthweight Infant. *Obstetrics and Gynecology*; 66: 599-605.
- Lia-Hoagberg, B. et alia
1990 Barriers and Motivators to Prenatal Care among Low-Income Women. *Social Science and Medicine*; 30: 487-495.
- Lindsey, Oliver
1997 Director Healthy Baby Service. Interview. February 18.
- Morgan, David L.
1997 *Focus Groups as Qualitative Research*, 2nd ed., SAGE Publications.
- Ng, E., Wilkins, R., and Perras, A.
1993 How Far Is It to the Nearest Hospital? Calculating Distances Using the Statistics Canada Postal Code Conversion File. *Health Reports*; 5(2): 179-188.
- Poland, M., Ager, J., and Olson J.
1987 Barriers to Receiving Adequate Prenatal Care. *American Journal of Obstetrics and Gynecology*; 157(2): 297-303.
- PUMS home page. <http://www.ciesin.org/datasets/pums/pums-home.html>
- Sokol, R. et alia
1980 Risk, Antepartum Care, and Outcome: Impact of a Maternity and Infant Care Project". *Obstetrics and Gynecology*; 56: 150-156.

St. Clair, Patricia et alia

1989 Social Network Structure and Prenatal Care Utilization. *Medical Care*; 27(8): 823-832.

Waller, Patricia

1994 IVHS and Social Policy. *IVHS Review*.



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Daily Travel by Persons with Low Income

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The contents of this paper reflect the views of the author and do not necessarily reflect the policy of the U.S. Department of Transportation.

Summary

Persons in households with low incomes are much less likely to have a vehicle, largely in part because a greater proportion of their income is spent on shelter and food. Nearly a quarter (24 percent) of low-income households do not have a car, compared to 4 percent of other households. These low-income households often are without regular telephone service because it is an additional expense. Thus, monthly payments for a car or car insurance would be very difficult to meet.

When these households have a car, the car is quite old. The average car is 10 years old in low-income households, compared to 7.3 years for other households. However, in low-income households, there is on average, only .7 vehicles per adult, compared to over 1 vehicle per adult in other households.

Despite having fewer vehicles, people in low-income households still make most of their trips in private vehicles. These trips are much more likely to be made in a vehicle owned by someone else, like a friend or relative (10 percent for low income, compared to 1 percent for other income group).

The biggest difference in travel mode is in the proportion of walking trips. People in low-income households are nearly twice as likely to walk as people in other income groups. For example, for work (and work-related) trips, low-income households report 6 percent by walk, compared to 3 percent for other income groups. There is very little difference in the proportion trips using public transit.

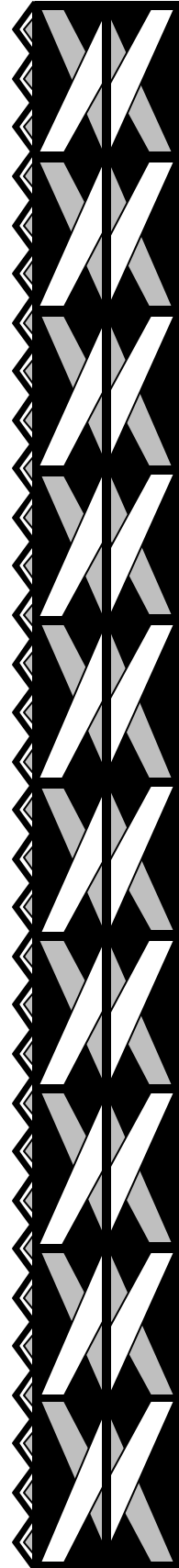
Because so many trips are made by walking, the space in which people in low-income households travel is more constricted than for others. About 60 percent of their trips are 3 miles or less, compared to 50 percent for other households. For low-income, single parent households, nearly 70 percent of trips are 3 miles or less.

Introduction

Transportation is a critical element for everyone to accomplish tasks in their daily lives, including getting to work and school, and accessing goods and services. As we focus on moving people from welfare to work, we need to reduce transportation problems as a hindrance by improving accessibility and mobility for this group.

As a first step, we need to understand how people in poverty travel today. We used the first six months of the 1995 Nationwide Personal Transportation Survey (NPTS) to provide a picture.

The poverty guidelines and poverty definitions used by the Bureau of the Census and Health and Human Services are based on before-tax cash income. Income measures ignore home ownership and other assets that can be important sources of consumption. The official poverty rate does not account for taxes or in-kind transfers such as food stamps or other government-provided medical insurance, which improve living conditions without affecting a family's official poverty status¹. For example, a person making \$10,000 a year who receives no public assistance is considered the same as a person making \$10,000 a year who received food-stamps and Medicaid benefits. Despite these definitional problems, we also used income as a measure to classify households



Data

The first 6 months of the 1995 NPTS dataset includes 19,710 households. The tables in this paper should be considered preliminary, as this is only a working file delivered to DOT for staff review. Although the file includes weights to bring the sample to a national total, the weights do not adjust for as many personal and geographic characteristics as will the final 1995 NPTS dataset.

The NPTS does not include extensive questions about income sources or on assets. That is, there is no question specifically on whether the respondent received welfare payments, food stamps, etc. Income is asked only at the household level, not for each person, and is grouped in \$5000 increments.

Using the 1990 Census Public Use Microdata Sample (PUMS) and examining the household incomes by persons receiving public assistance, by household size, we cat-

Number of persons (regardless of age)	Household Income (SIPP 1992)
1-2 persons	Under \$10,000
3-4 persons	Under \$20,000
5+ persons	Under \$25,000

egorized the 1995 NPTS households as follows:

Table 1. Definition of “Low Income” Households for 1995 NPTS 6-month Interim File

Using this definition, 2,319 households in the 1995 NPTS 6-month interim sample are classified as low income, and 303 households are classified as single parent low income households. Thus, any tables in this paper showing single parent low income households are subject to less accuracy than for the sample of low income households. The NPTS likely underrepresents single parent low income households because it is a telephone survey (2). Although nationwide, only 5 percent of households do not have a telephone, these households are concentrated amongst the poor and the rural areas. Among families receiving welfare, over 30

percent report not having continuous phone service.

The sample includes all ages, and households with and without children (Table 2). About 52 percent of the low income households have no children, and 48 percent have children. About 27 percent of the sample has a reference person age 65 and over, with no children present. For households headed by someone between age 21_29, 79 percent had 1 or more children; and for households headed by someone between 30_64, 62 percent had 1 or more children.

In the total sample (n = 19,710), African American households account for 11 percent, and Hispanic households account for 7.5 percent of the sample. For low income households, the proportion of African Americans is 23 percent, and for Hispanics, 13 percent. For the 303 households in the single parent low income group, nearly 40 percent are African American, and 16 percent are Hispanic, for a total for 56 percent in these two groups. Nearly 90 percent are with a female head. (Table 3)

Travel by Persons with Low Income

In this paper, we will examine three basic characteristics:

- Vehicle Availability,
- Travel Mode and Vehicle Occupancy, and
- Total trips and miles of travel.

Vehicle Availability

Probably, the most critical item that affects the mobility of low income persons is access to a car. The 1995 NPTS 6-month interim file shows 24 percent of low income households did not have a car, compared to 4 percent of other households (Figure 1). When a low income household has a car, it is likely to be quite old. The average car is 10 years old for low income households, compared to 7.3 years for other households. Not only are the vehicles older, but also, there are fewer vehicles available per adult: .7 vehicle per adult in low income households, compared to over 1 vehicle per adult in other households.

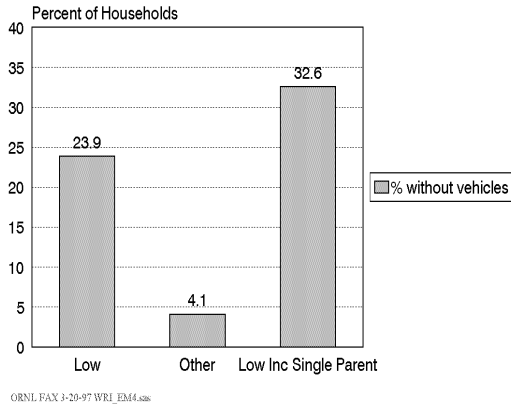


Figure 1. Households Without Vehicles 1995 NPTS 6-month Interim Sample

into two groups: “low income” and “other (not low) income” for purposes of comparing daily travel behavior.

The difference in vehicle availability reflects the lack of discretionary money beyond expenditures for food and shelter. Households receiving public assistance spent \$15,304 on average during 1992_93. Nearly 60 percent was allocated to food and shelter. Transportation was the next largest share at 15 percent (\$2,296) of the total. Single parent households receiving public assistance spent nearly 70 percent on food and shelter, with only 10 percent for transportation. Households not receiving public assistance allocate 47 percent to food and shelter, and 19 percent to transportation.

For people in poverty, even having a telephone is often a luxury that comes and goes. Among poor families (does not include people who live alone), 23 percent did not have on-going telephone service, compared to 3 percent of non-poor families. These proportions are nearly identical to the proportion of families without vehicles⁴.

Travel mode and time to travel

This section covers: (a) Journey to work trips and (b) Other trips.

Journey to Work

Despite a greater likelihood to be without a car, people in low-income households are still most likely to travel by private vehicles. For the work trip, 87 percent of trips

Table 2. Low-Income Households 1995 NPTS 6-month Interim Sample

		By Age Reference of Person and Number of Children			
		0	1	2+	Total
21	sample	37	10	19	56
	weighted	202,848	41,784	96,178	340,810
21-29	sample	85	104	185	374
	weighted	442,515	494,204	1,127,397	2,064,116
30-64	sample	481	247	515	1,234
	weighted	2,886,082	1,470,149	3,281,933	7,638,164
65+	sample	610	24	11	645
	weighted	3,859,016	142,303	28,517	4,029,836
Total	sample	1,213	385	721	2,319
	weighted	7,390,461	2,148,440	4,535,121	14,074,022

Table 3. Race and Hispanic Origin of NPTS Reference Person (%) 1995 NPTS 6-month Interim Sample

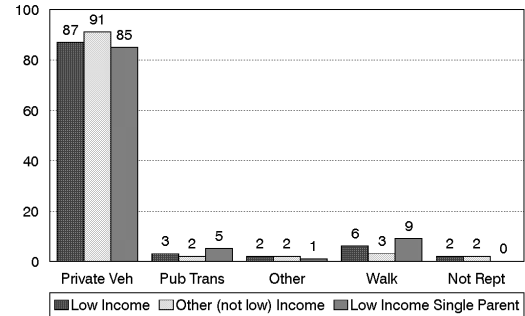
Race	All	Low Income	Low-Income, Single Parent
Black, non-Hispanic	11.2	23.0	39.6
Hispanic	7.5	12.9	16.1
Asian	1.3	1.0	.7
Other	80.0	63.1	43.5
Total	100.0	100.0	100.0

Table 4. Vehicle Availability 1995 NPTS 6-month Interim Sample

Income	Total	Low	Other (not low)	Low - Income, Single Parent
Avg HH size	2.61	2.73	2.57	3.24
Avg # of Vehicles	1.82	1.21	1.93	n/a
Avg Vehicle Age	7.7	10.0	7.4	n/a
% of HH w/o Vehicle	8%	24%	4%	33%
Vehicles/HH				
1 Adult HH	.97	.70	1.08	n/a
2+ Adult HH	2.16	1.65	2.23	N/A

Table 5. Expenditure by HHs by Receipt of PA, Presence of Working Members and Family Type, First Quarter 1992 to First Quarter 1994

Households Receiving Public Assistance by						
	Receive PA	No PA	No workers	Some workers	Single Parent	Dual parent
Food & Shelter	59.5	46.9	71.7	53.4	69.1	54.0
Transportation	15.3	19.2	9.5	19.1	10.2	19.6



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Figure 2. Person Trips by Mode by Income

by workers in low-income households, compared to 91 percent in other households, use private vehicles (Figure 2). However, average vehicle occupancy is significantly higher low income, compared to 46 minutes for other incomes.

During the last 20 years, the majority of employment growth has been in suburban areas, and many of the jobs for entry level workers have likewise been in the suburbs. Suburban employment represents an increasing share of metropolitan employment. Case studies in Cleveland, and in Atlanta, have shown the mismatch between the residential location of welfare recipients and new employment locations in the region⁵.

Other trips (non-work)

Travel mode for family and personal business and socialrecreation trips show an even greater propensity of low income households recreational trips and 6 percent of family and personal business trips are walk trips for other (not low) income house-

Table 6. Percent of Families (Monthly Labor Review May 1996:8)

	Nonpoor Families	Poor Families	Single-parent Families	Families Receiving Welfare
Car/truck owner (SIPP 1992)	97.2	76.8	64.1	65.3
Telephone in Home (AHS 1993)	97.2	76.7	69.9	67.5

	All	Low-Income	Other (not low) Income
To & From Work	1.19	1.94	1.13
Work-Related	1.21	1.42	1.18
Family & Personal Business	1.80	2.04	1.75
Social & Recreational	2.23	2.93	2.22
TOTAL	1.68	2.17	1.63

Table 7. Average Vehicle Occupancy for Private Vehicle Trips (Weighted by Miles) 1995 NPTS 6-month Interim Sample

holds (Figures 4 and 5). Social and recreational trips for low income households are significantly shorter (on average) than for other households (Table 8).

For private vehicle trips, the average vehicle occupancy is higher (see Table 7). Part of the higher occupancy, particularly for non-work trips, can be attributed to a larger household size, but more significant is the difference in vehicle availability. When there are fewer cars, drivers must spend more time assuring that **all** household members can get their daily needs and activities met, resulting in higher occupancy rates.

Person trips in low-income households are much more likely to be made as passengers in private vehicles, rather than as the driver. Trips made in private vehicles are much more likely to be in “non-household” vehicles, that is, in vehicles of friends, neighbors, or relatives. For low income households, about 10 percent of private vehicle trips are in “non-household” vehicles, compared to only 1 percent for other income

Table 8. Average Trip Length in Miles 1995 NPTS 6-month Interim Sample

	ALL	Low-Income	Other (not low) Income
Family & Personal Business	6.92	6.18	7.00
Social & Recreation	11.34	8.56	11.86

households. For low income single parent households, the proportion is nearly 20 percent.

These results corroborate findings from the 1990 NPTS, showing that for persons in households without vehicles, more trips are typically made by private vehicles and by walking, than using public transportation. For example, for African Americans (age 16 and over), in households without a vehicle, 37 percent of trips were made by private vehicles, 37 percent of trips by walking, and 23 percent of trips by public transportation⁶.

Annual person trips and person miles of travel

On a per person basis, people in low-income households make about 20 percent fewer trips than people in other households (1,304 person trips compared to 1,623 person trips) (Table 9). However, because so many of these trips are by walking, the difference in person miles of travel is much more striking. People in low income households travel nearly 40 percent fewer miles (8,487 vs. 15,468 person miles).

Because so many trips are made by walking, the space in which people in low income households travel is more constricted than for others. About 60 percent of their trips are 3 miles or less, compared to 50 percent for other households. For low income single parent households, nearly 70 percent of trips are 3 miles or less

If we compare a travel radius of 3 miles to a travel radius of 10 miles, the 10 mile radius covers 10 times more area. Within a 3 mile radius of one’s home, one has 28 square miles which are accessible. With a 10 mile radius, this area expands to 300 square miles. Given the dispersion of jobs in our large metropolitan areas, the ability to travel beyond 3 miles from our homes is critical the accessibility of jobs. The ability to travel beyond 3 miles from our homes is also critical to our ability to access goods and services.

Conclusions

The Nationwide Personal Transportation Survey (NPTS) can be used to understand the travel patterns of low income households, and other special groups, such as households without cars. Access to the 1995 dataset will be much easier than with the 1990 dataset, with access via Internet.

On a short term basis, the quickest way to improve people's accessibility to jobs may be to help them get a car. Having a car provides the range to travel longer distances and to get to a range of locations that may be inaccessible by bus. Many entry level jobs may require work in the evenings, and some jobs may be shift work. There is usually much less opportunity to use transit at these times, even if the jobs may be located in traditional downtown areas.

The NPTS 6-month interim data show that, with a car, people with low incomes not only will drive themselves and their household members, but are also likely to assist friends and neighbors.

While efforts to return jobs to the central city, to change land use patterns to have employment centers with densities and designs that support transit, bike and walk alternatives, should continue to be long term goals, these approaches may not solve immediate problems of assisting people who now have a limited time for receiving welfare assistance.

REFERENCES

- Passero, W.D.
1996 Monthly Labor Review, 119(4): 21-28.
- Leete, L. And Bania, N.
1995 The Impact of Welfare Reform on Local Labor Markets. Center for Urban Poverty and Social Change, Case Western Reserve University, Cleveland, Ohio. August .
- Lave, C. and Crepeau, R
1994 Travel by Households without Vehicles. In 1990 NPTS Travel Mode Special Reports. FHWA (FHWA-PL-94-019), Washington, D.C. December .

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Implementing Effective Public Involvement Methods to Increase Participation by African Americans in Transportation Planning

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Transportation agencies routinely plan and develop transportation systems designed to meet the needs of the public whom they are mandated to serve. At one time, transportation planners and operators exercised the latitude to design systems based on industry trends, industry standards and on their own concepts of proper transportation planning. Over the past twenty years the public has expressed increasing concern about the decisions made by urban transportation planners and public officials. They continually seek to influence these decisions which have far-reaching impacts on the quality of life of their communities. Effective public participation techniques must be developed and implemented from the perspective of citizens who want to be informed from the inception of the project and throughout the decision making process.

Public participation is the process of incorporating the needs and values of citizens into government decision making. Ideally, the goal of public participation is to insure that decisions which effect the public are based on a policy balanced by technical expertise and community input. While methods of securing public input may differ, they do share at least two common elements: the transportation plan must reflect the common views and values of all parties involved and the commitment to a public involvement program using outreach techniques which are sensitive to the needs of the full range of community interests.

The following is a discussion of some widely used citizen participation techniques which can be highly effective in increasing

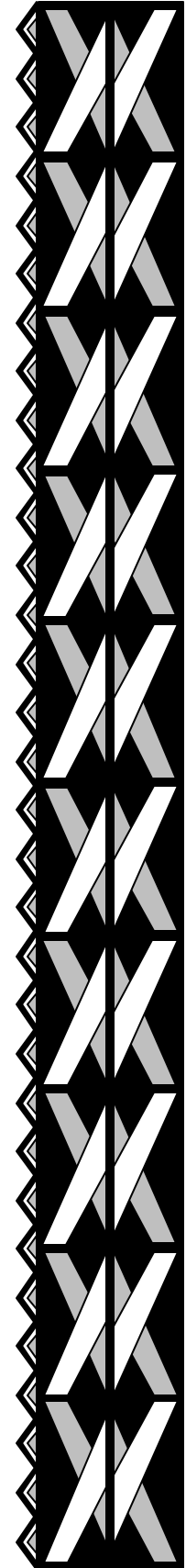
participation in transportation planning by African Americans.

Working Meetings are called to focus on an agenda of work to be accomplished and are composed of individuals representing all affected interests. The key to using this technique is to set a specific objective to be achieved and to tailor the agenda and attendance to support this objective.

A Forum is an excellent means to air certain issues and to hear different points of view. It is characterized by open discussion by all affected interests and plays a constructive role in bringing out the views and perceptions of various interest groups, it also exposes everyone to each other's views. This is not a decision making body but the record of the proceedings provides good documentation on the background that contributes to the final outcomes.

The Public Hearing is a much-used and important technique of public participation. It can be an effective public involvement tool when used as the method of last resort after initially meeting individually and informally with interest groups. The small group session is the time to discuss all sides of the project, and to make every effort at this level to accommodate the needs and concerns of citizens before any formal meeting takes place.

When the public hearing is not successful in accomplishing citizen participation goals it is generally because the hearing is used as the only method of public input without any mitigating techniques. This can also happen when too much importance is placed on the potential outcome of the hearing for-



Despite the fact that minorities are the most needy in terms of transportation dependency, the focus of the public involvement process is not proportionate to the level of their transportation needs.

ing conflicting parties to use the hearing to confront rather than listen to each other.

It is the responsibility of urban transportation planners and public officials to initiate a public participation plan early in the process and reach out to all segments of the community who might be impacted by the project. When this is accomplished, public input becomes a meaningful part of the planning process.

Access to the Process - Stakeholders

One of the greatest criticisms of public involvement techniques is that they lack the sensitivity necessary to relate to minority groups, particularly African Americans, who are most likely to be underserved by public transportation. The level of mobility of a community, easy access to public transit, is closely related to the economic status of the residents. It is a strong determinant of how people live and has an overriding impact on the quality of life of that community.

In most cases minority groups, African Americans included, live in communities that are not always well-served by public transportation. The net result of this dynamic is that minority communities lack the benefits of access to transit for work, school, recreation and other trip purposes. Often minority groups, because of their low economic status, cannot afford to move into the areas which are well-served by public transportation. Despite the fact that minorities are the most needy in terms of transportation dependency, the focus of the public involvement process is not proportionate to the level of their transportation needs.

At the same time government agencies generally consider civic leaders, property owners' automobile users and entrepreneurs as typical stakeholders in developing public transportation projects. This profile too often excludes minority groups who should be considered the primary stakeholders in developing mass transportation projects and designing a public participation plan.

Addressing the Public

Any further discussion of methods of public involvement must lead to a statement of a means for government entities to gain

the commitment of citizens to participate in planning and implementing a transportation project. To address this need, public officials and urban transportation planners must understand how citizens weigh the potential gains and losses to them personally of implementing a transportation project. Officials and planners must also be prepared to support this process by presenting a clear and balanced picture of what is at stake for all interests with special emphasis on minority groups.

Historically, racial, ethnic and religious minority groups have experienced barriers to participating in the public decision-making process and are therefore under-represented. Public officials must be constantly aware that there are substantive differences between interest groups. Their responsibility is to approach minority groups in a manner which reflects a sensitivity to their racial extraction, language proficiency, religious beliefs and cultural practices.

African Americans, for example, differ from the traditional description of an interest group usually targeted by public outreach programs in significant ways. They are less likely to be property owners, are more often captive users of public transit and they demonstrate a lower level of participation in agency-sponsored informational events related to the transportation planning process.

There are two possible explanations for the lack of participation on the part of African Americans. The first explanation is that there are individuals who have not been informed about the project and therefore lack the opportunity to assert their views. The second one is that some civic leaders who are aware of the informational events related to projects and choose not to participate because they do not believe that their input would influence the final plans.

A good faith effort to convey issues in ways that are meaningful to different sectors of the community must be sensitive to the prevailing culture and language, bring out the important elements of the project at stake for all citizens and provide them with the opportunity to participate in the planning process through informational and public involvement plans.

Form and Techniques

Public participation techniques, effectively designed and implemented, can help reach the goal of increasing the participation of minority groups.

One important aspect, when developing a public participation session is the structure of the meeting. This effort should take into account the manner in which the message is delivered, the venue of the meeting, with whom initial contact is made within the community and even the size of the meeting. Considering these factors would yield a productive and inclusive process which can significantly enhance attendance and participation in meetings by minorities.

For example, using meeting facilitators who are bilingual and who are familiar with the customs of minority groups would be needed to reach the goal of inclusive public participation. These measures can initially add to the cost and complexity of the outreach effort but give a greater return in better communication and increased public participation.

Conventional public hearings frequently result in open confrontation between groups with different views on the project. One way to minimize confrontation and gain the support of conflicting interest groups is to conduct informal working meetings in advance of the hearing with key civic leaders. This technique can be refined further by conducting a "Pre-Hearing," which is a practice session of the actual hearing with one representative of each interest group participating in the discussion. The "Pre-Hearing" yields an advance view of how issues might arise at the formal hearing and allows time for any adjustments which might be necessary.

Understanding the full range of a community's needs would enable an agency to create more responsive and sometimes innovative plans for transit expansion and enhancement. Gaining input from historically underrepresented groups can offer new insight into the validity of a project's goals and outcomes.

When these principles of public involvement outlined above are incorporated throughout the process, they can facilitate constructive communication between citizens and public officials. Urban transporta-

tion planners and public officials should seize this opportunity to establish a long-term partnership with the public whom they are mandated to serve. This would enable them to implement transportation plans that can effectively enhance the quality of life.

Public Participation Techniques

Listed below are other techniques of public involvement which can be used in conjunction with the major participation techniques.

Newsletters

Newsletters are an excellent means of sustaining interest of citizens throughout a decision making process. This is especially important when a public participation effort lasts for several months. The newsletter should be targeted at those people who are impacted by the project or who have expressed interest in the issue. They might include neighbors, leaders of interest groups, elected officials and participants in other public participation activities. Newsletters can provide information in addition to that which is communicated in mass meeting and through the news media.

A well-done newsletter should be visually attractive and written in language which can be understood by all the readers. It should be objective presenting all sides of the issues associated with the public participation effort. To ensure objectivity and to protect credibility, the wording of the newsletter can be reviewed by a citizen advisory group sensitive to any political nuance which might arise.

This publication can also serve to document the fact that the public has been kept fully informed throughout the process and provide good background information to the media.

Focus Groups

Some organizations and agencies have begun to use focus groups as primary means of gathering public input. They are small discussion groups representing the demographics of the community. Focus groups are led

Gaining input from historically underrepresented groups can offer new insight into the validity of a project's goals and outcomes.

Community advisory committees can also help anticipate public reaction to proposals, educate officials to the continuing concerns of interest groups, and provide for continuous communication between citizens and public officials.

by a trained moderator who can draw out people's reactions to a plan and provides good feedback when alternative plans are being considered.

Focus groups only assess personal preferences subsequently do not have statistical validity. They do provide information which is useful in the decision making process when implemented in conjunction with other forms of direct participation.

Advisory Groups/Taskforces

Next to public meetings, the participation technique most often used is the establishment of a citizen's advisory group. Advisory groups are useful in providing citizens' perspectives throughout the decision making process on all aspects of the public participation plan and project development. They can be effective in reviewing publications before they are released to the media and the general public. Community advisory committees can also help anticipate public reaction to proposals, educate officials to the continuing concerns of interest groups, and provide for continuous communication between citizens and public officials.

Metro-Dade Transit Agency's Black History Tours Program

The Black History Tours Program was implemented by Metro-Dade Transit (MDTA) as a means of creating a positive image of transit in the community and to highlight the rich history of African Americans in Dade County.

MDTA received extensive assistance from the Black Archives History and Research Foundation of South Florida, Inc., in determining the most important historical sites to visit and in developing the script used by the tour guides. The tours are operated and narrated by MDTA bus operators selected for excellent safety and high performance ratings. This project was inaugurated February of 1994 with Saturday morning trips and, because of high demand, was expanded to include weekday tours for large groups, churches, family reunions and schools.

The three-hour tours visit four of the oldest Black communities in Dade County: Co-

conut Grove, Overtown which is historically called "Colored Town", Liberty City, and Brownsville also know as Brown's Subdivision. The first two were established in the late 1890s, the others in the early part of this century. The tour is narrated from a prepared script and various landmarks are pointed out by the bus operator while relating their history. At two of the sites, participants have an opportunity to walk through and view displays of historical significance.

The Black History Tours project has been a successful public relations and marketing effort for MDTA and has been embraced by the community at large. Teachers at all grade levels use the tours to supplement their Black History Month curricula to give young people a sense of history and of community.

REFERENCES

- Creighton, James L.
1992 Involving Citizens in Community Decision Making. Washington, DC: Program for Community Problem Solving.
- Federal Highway Administration and Federal Transit Administration
1995 A Guide to Metropolitan Transportation Planning Under ISTEA: How the Pieces Fit Together. Washington, DC: U. S. Department of Transportation.
- 1996 Public Involvement Techniques for Transportation Decision-Making. Washington, DC: U. S. Department of Transportation.
- Federal Transit Administration
1996 Building Livable Communities Through Transportation Washington, DC: U.S. Department of Transportation
- 1997 Planning, Developing, and Implementing Community-Sensitive Transit: the Federal Transit Administration, Livable Communities Initiative. Washington, DC: U.S. Department of Transportation.
- Institute for Participatory Management and Planning
1993 Citizen Participation Handbook for Public Officials and other Professionals Serving the Public. Monterrey, CA: The Institute.

Office of Environment and Planning
1996 Community Impact Assessment:
A Quick Reference Guide. Washington,
DC: U.S. Department of Transportation,
Federal Highway Administration.

National Research Council (U. S.)
1972 Citizen Participation and Community
Values. Highway Research Record,
Highway Research Board, Number 380.



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The Los Angeles Neighborhood Initiative (LANI): A Model for Community Participation and Empowerment

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Los Angeles Neighborhood Initiative (LANI)



The Los Angeles Neighborhood Initiative (LANI) is a community-driven neighborhood revitalization program that jump-starts economic revitalization and improves transit access in transit-dependent urban neighborhoods by providing:

- Seed funding for community-planned improvement projects;
- Hands-on training in project planning and development, and
- Technical assistance in the development and support of sustainable community organizations.

LANI has established a unique community participation and empowerment process which can be an effective and versatile tool, applicable to any type of development project, and even to direct service programs. LANI's current project areas are twelve (12) diverse transit-dependent communities in Los Angeles.

Program History

LANI was founded in 1994 to bring back a sense of identity and ownership to main streets and transportation corridors throughout the City. Sponsored by Mayor Richard Riordan, LANI began as a three-year demonstration project charged with developing an innovative model for involving community members in neighborhood revitalization efforts, with a focus on increasing transportation access and economic revitalization.

The LANI demonstration was funded largely by the Federal Transit Administration (FTA) Livable Community Initiative, leveraged with private and in-kind donations. In the past year, LANI has been recognized

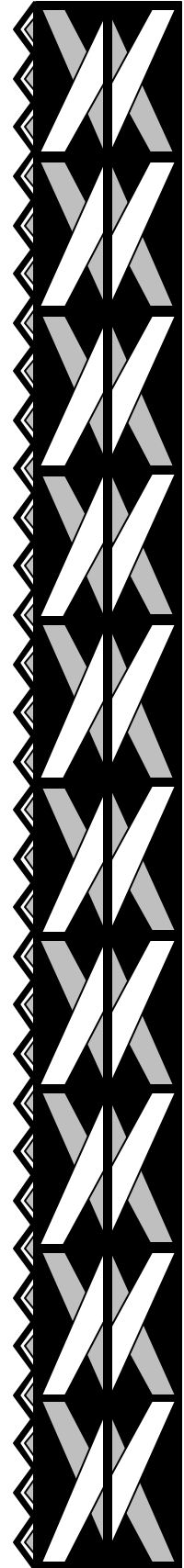
by President Clinton, the U.S. Department of Transportation, the Southern California Association of Governments and others as a national model for community-driven revitalization.

Due to the success of the demonstration in the initial eight project areas, and of LANI's community participation process, LANI has become a permanent agency, and has secured initial funding to expand to four new transit-dependent neighborhoods.

Program Need

In Los Angeles neighborhoods and nationwide, the walkable main streets which once served as centers of community life have been degraded by crime, auto congestion and physical and economic deterioration. Without vital businesses and public spaces, and streets conducive to pedestrian activity, communities have lost their identity and sense of place.

Many well-meaning developments and government efforts intended to address these problems have lost their neighborhood scale and connection to public transit and, more important, have failed to involve community members in decision-making processes. In addition, previous revitalization efforts in many neighborhoods have lacked provisions for sustainability, and their eventual withdrawal or failure left communities disillusioned about the possibility of neighborhood improvement. The result, as Los Angeles learned from the 1992 civil unrest, is that residents often feel disconnected from their own neighborhoods and efforts to im-



prove them -- and in many cases they are disconnected.

Community Participation

Based on the understanding that communities know what they need, but LANI has created an innovative process for meaningfully involving community members in neighborhood revitalization. Each LANI project area creates and is guided by a Recognized Community Organization (RCO) composed of local residents, business and property owners, and representatives from community organizations.

LANI is designed to create community ownership of their projects, therefore, RCOs participate in every aspect of project planning and implementation, from developing projects to hiring designers and contractors. With their strong ties to the community and their detailed knowledge of its strengths and needs, RCO members are uniquely qualified to lead their neighborhood's revitalization -- and more important, to sustain it.

Program Design

Neighborhood Selection

Using an application process through the City Council Offices, LANI neighborhoods are selected to address areas of greatest need, ensure success, and maximize the beneficial results of our funds. LANI targets communities that have entered into a decline that would continue but for LANI, yet which can be turned around with our resources. LANI serves an ethnically, culturally and economically diverse group of communities, all of which meet the following criteria:

□ Transit-dependent population. In addition, four LANI neighborhoods are directly adjacent to developing rail stations.

□ Neighborhood "Main Street" in decline: density of small businesses and other neighborhood services which need an economic boost.

□ Some previous planning work in place to draw from.

□ Potential partners such as community-based organizations, and other development projects.

□ An active citizenry which has the potential to organize and become an effective RCO.

Creation and Training of the RCO

□ Outreach to community "stakeholders" to create RCO which represents the diversity of each community. In LANI's original eight (a) neighborhoods, local City Council Offices appointed members to seven (7) RCOs, while one neighborhood opted to hold community elections for RCO seats.

□ Once the RCO is assembled, each member signs a Letter of Intent committing themselves to the project. The Letter of Intent outlines RCO responsibilities, which include development of projects and project budgets, oversight of construction projects and Community Work Plan production, and community outreach.

□ Training in consensus building, rules of operation, creating an outreach plan, developing bylaws, etc., equips the RCOs to operate as a working and decisionmaking body.

Community Work Plans

Working with consultants and design professionals, each RCO develops a Community Work Plan, which includes the following:

□ Description of the neighborhood's history, physical infrastructure, social institutions, service programs, transit services and needs, other development projects, etc.

□ Assessment of the community's strengths and needs.

□ Creation of improvement projects which reflect the character of each community and create destinations within it.

□ Prioritized list of short-term goals for quick, visible improvements.

□ Achievable long-term goals necessary to sustain revitalization process.

Streetscape Improvements

LANI focuses on quick, visible, "neighborhood-scale" improvements such as pedestrian lighting, small parks, bus shelters, trees and potted plants, street furniture, fa-

Each LANI project area creates and is guided by a Recognized Community Organization (RCO) composed of local residents, business and property owners, and representatives from community organizations.

cade improvements, etc., that are designed to:

- Cement community support and commitment with quick, highly-visible projects, such as colorful community banners or trees.
- Give an immediate economic boost to area businesses.
- Create safe, attractive transit and pedestrian environments.
- Be a catalyst for further public and private sector investment.

These type of improvements signal to the community and to potential public and private investors that a successful neighborhood revitalization is underway. LANI improvements also begin to create destinations in neighborhoods that were previously “passthrough” areas. Most important, the projects promote community buy_in and initiative, and thus act as a catalyst to community_driven revitalization.

Sustaining Revitalization

LANI helps empower communities to build the capacity not only to implement improvement projects, but to sustain revitalization efforts on their own. As part of LANI’s program design, RCOs evolve from community boards into sustainable legal organizations. In addition to their hands_on experience in planning and development, the RCOs receive technical assistance in the development and support of sustainable community organizations. These organizations, such as Community Development Corporations and Business Improvement Districts, take responsibility for maintaining LANI improvements, and once established, will continue to seek funding and implement projects independently from LANI.

Sustaining revitalization efforts, and even maintaining physical improvements, takes commitment and responsibility from the entire community. Therefore, RCOs work closely with their larger community on improvement projects, soliciting input on everything from what the most important issues facing the neighborhood are, to what color to paint a bus shelter. In addition, most improvement projects utilize financial support and/or maintenance commitments from local businesses. When a shopkeeper

helps plant a tree in front of his business and takes responsibility for watering it, he assumes ownership, and therefore will go one step further _making sure that the tree is not vandalized, and that it is properly and regularly trimmed. As this example shows, community involvement in project planning and implementation creates a grassroots ownership that is an invaluable sustainability mechanism.

Partnership

A crucial ingredient in LANI’s success is partnership and support at every level of government. In addition to LANI’s approximately \$6 million in U.S. Department of Transportation grants, under the sponsorship of Mayor Richard Riordan, LANI has received extensive financial and technical support from the City and County of Los Angeles. For example, the Los Angeles County Metropolitan Transit Authority (MTA) has provided LANI with office space, other overhead expenses, and technical assistance, while the City of Los Angeles waived approximately \$185,000 in permit fees for LANI projects.

Of course, partnership with community members is the most critical component of the program. LANI demonstrated its commitment to this partnership to community members at the onset of the program, when LANI not only asked them for their opinion, but put money behind their decisions.

Future Plans

LANI has not only shown that community-driven projects can be successful, but has produced a proven process for community participation that is applicable to any neighborhood, city, or project. Given the great need nationally for community-driven projects, LANI is seeking to increase its funding sufficiently to expand its scope of projects to address other pressing needs that neighborhoods have, such as housing, child care facilities, and other developments and services.

Los Angeles Mayor Richard Riordan, who founded LANI, said, “My dream for LANI is that it becomes a national model for revitalizing and sustaining neighborhoods

LANI hopes to continue to influence programs and cities around the country to incorporate substantive community participation into their work

through community empowerment." In accordance with this ambitious goal, LANI hopes to continue to influence programs and cities around the country to incorporate sub-

stantive community participation into their work, and in addition, expects to expand to serve constituencies outside of the City of Los Angeles.



A Summary of the "Human Environment" Requirements of the National Environmental Policy Act: Implications for Environmental Justice

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The following is a summary of a much more detailed, and yet to be published article providing guidance to those responsible for preparing or reviewing NEPA environmental assessments or environmental impact statements regarding "human environment" and environmental justice issues. Because this is a summary, citations have been eliminated, except where absolutely necessary.

Introduction

In recent years, much has been written about whether people of color have been, disproportionately exposed to toxic substances or, disproportionately affected by local, state or federal governmental decisions concerning the siting or expansion of such things as businesses, highways, power plants, or incinerators.

At the federal level, the National Environmental Policy Act (NEPA) requires the preparation of one or more types of documents in cases of a "major federal action." A "major federal action" can include private projects that:

- require federal approval,
- require federal permits,
- require federal financial assistance, or
- are subject to federal regulation.

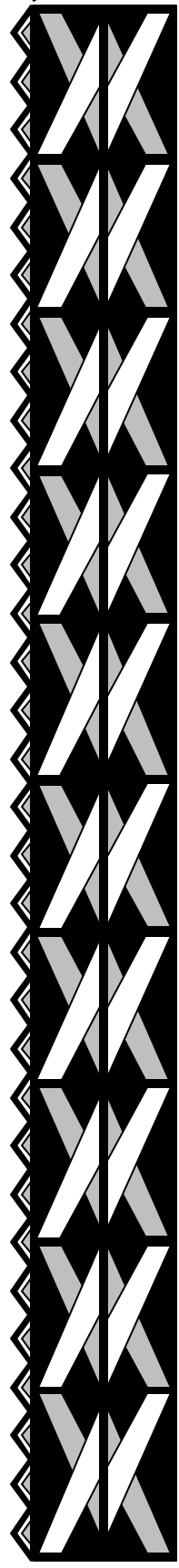
It also can include adoption of official agency policies, rules, regulations, interpretations, treaties, or formal plans and concerted efforts to implement a plan, program or policy. Among other things, NEPA re-

quires a consideration of the "human environment" -- a concept which is critical to an evaluation of whether people of color are being disproportionately subjected to adverse public and private environmental decision-making.

What is the relationship between NEPA and the concepts of Environmental Justice?

NEPA contains the most comprehensive and far reaching statements of national policy regarding environmental issues of any of the multitude of environmental statutes. The introductory language of NEPA is profound and places stringent requirements both on the Federal Government and individual citizens. The most critical of these requirements are:

1. Each person should enjoy a healthful environment.
2. Each person has a responsibility to contribute to the preservation and enhancement of the environment.
3. The Federal Government, in cooperation with State and local governments, and other concerned public and private organizations is to:
 - a. use all practicable means and measures, including financial and technical assistance, in a manner calculated to foster and promote the general welfare, and



**decision makers
have an affirmative
duty under NEPA
to seek out and
fairly address
information
relevant to their
statutory
requirements**

- b. create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans.
4. The Federal Government is to:
 - a. assure for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings;
 - b. attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences;
 - c. preserve important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity and variety of individual choice;
 - d. achieve a balance between population and resource use which will permit high standard of living and a wide sharing of life' amenities; and
 - e. include in every recommendation or report on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment, a detailed statement by the responsible official on -
 - (I) the environmental impact of the proposed action;
 - (ii) any adverse environmental effects which cannot be avoided should the proposal be implemented;
 - (iii) alternatives to the proposed action;
 - (iv) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity; and
 - (v) any irreversible and irretrievable commitments of resources which

would be involved in the proposed action should it be implemented.

These NEPA requirements, when looked at in conjunction with any definition of environmental justice, lead to some interesting conclusions:

- both recognize the rights of people to enjoy a healthful environment.
- both recognize the responsibility to all people to ensure the existence of such an environment.
- both recognize a need to balance competing interests, while minimizing harm to the human environment.
- both require the taking of affirmative actions by decision-makers to seek out and identify any harmful effects of official action.
- both recognize a need to lessen or mitigate any identified harms.

Given this commonality of purpose, the "human environment" considerations of NEPA must be enhanced to better identify environmental racism/justice possibilities.

The "Human Environment" Requirements of NEPA

The promises of the NEPA policy statements in regard to emphasis on "human environment" issues have been lessened significantly by the Supreme Court's declaration that NEPA's requirements are "essentially procedural."¹ In other words, it may not matter what decision is ultimately made or what actions ultimately are taken, so long as the decision maker had available and "considered" appropriate information. However, decision makers have an affirmative duty under NEPA to seek out and fairly address information relevant to their statutory requirements. These "records" will then be available for examination to determine if there is a pattern or practice of actions which evince an intent or effect of invidious discrimination.

Major Federal Action

Section 102(2)(C) of NEPA requires that federal agencies prepare an environmental impact statement (EIS) for proposed "legislation and other major Federal actions sig-

nificantly affecting the quality of the human environment." The EIS must include a detailed description of the proposed action, the environmental impact and adverse effects of this action, alternatives, and the resources which would be irretrievably and irreversibly committed to the proposed action. A "major federal action" can include:

- private projects that require federal approval, permits, or financial assistance or are subject to federal regulation;
- Adoption of official agency policy, rules, regulations, interpretations, treaties, formal plans, or programs;
- Concerted actions to implement those plans, programs, and policies;
- The grant of a license to construct a high voltage line;
- The issuance of an interim operating license for a nuclear power plant; and
- The authorization for the abandonment of a railroad line.

For certain federal actions, at a minimum, an environmental assessment (EA) must be prepared. These actions include those likely to:

1. Affect properties protected by the Historic Preservation Act of 1966 or section 4(f) lands;
2. Be highly controversial on environmental grounds or with respect to availability of adequate relocation housing;
3. Have significant impact on natural, ecological, cultural, or scenic resources;
4. Cause substantial disruption, for example, increased traffic congestion;
5. Have significant impact on noise levels, air or water quality including the contamination of a public water system; or
6. Directly or indirectly affect human beings by creating a significant impact on the environment.

In preparing an EA or EIS, the Federal Government is required to consider three types of actions:

- "Cumulative actions" -- those "which when viewed with other proposed actions have cumulatively significant impacts" and must be considered together in one EIS.
- "Connected actions" -- those that automatically trigger other actions, can't proceed without another action occurring, or depend on a larger action for their justifica-

tion. Connected actions cannot be segmented to escape the need for an EIS, but rather, must be considered together in one EIS.

- "Similar actions"--those which "when viewed with other reasonably foreseeable or proposed agency actions, have similarities that provide a basis for evaluating their environmental consequences together" in one EIS.

Once the proposal is determined to be a "major federal action," NEPA then requires a determination whether the proposal will "significantly affect" the quality of the human environment. Notwithstanding NEPA's clear requirement that federal government agencies consider human environmental issues, including socio-economic issues, the Council on Environmental Quality (CEQ) regulations do not require an EIS when a federal action only causes socio-economic effects on the human environment. Only when these effects are interrelated with natural and physical effects, will an EIS be required to discuss them.

Overview of the NEPA Process

The following is a summary of what agencies must to under NEPA:

1. Define the purpose of a project and describe why there is a need for action.
2. If the action is a "major federal action," conduct a preliminary screening to determine potential impacts.
3. If the federal action has been categorized as not normally requiring an EIS then no further action is required.
4. If there is no exception, or it is not clear that an EIS is required, then prepare an EA which must "provide sufficient evidence and analysis for determining whether to prepare an EIS." The EA must discuss the need for the proposal, alternatives to the proposed action, the environmental impacts, and provide a listing of the other environmental agencies and members of the public consulted.
5. If appropriate, issue a "finding of no significant impact" (FONSI) briefly describing why the action will not have a significant effect on the human environment and include the EA or a summary of it. An agency also may issue a mitigated FONSI if

Once the proposal is determined to be a "major federal action," NEPA then requires a determination whether the proposal will "significantly affect" the quality of the human environment.

Make a particular effort to understand the concerns of the community, as well as the distrust the community may have.

measures are incorporated to reduce any potentially significant effects revealed in the EA to insignificant levels.

6. If there may be significant impacts on the human environment, publish a “notice of intent” that an EIS will be prepared.

7. If there is more than one federal agency, or if state and local agencies or Tribal Governments also are involved, designated a lead agency.

8. Identify the range of actions, alternatives, impacts, and significant issues to be analyzed and considered in the EIS.

9. “Rigorously explore and objectively evaluate” a reasonable range of alternatives including: no action or avoidance, other reasonable course(s) or minimization, mitigation measures, or enhancement activities.

10. Include a brief description of any issues found not to be significant and the reason for the finding in the statement.

11. Ensure participation from the public, affected Indian tribes, the applicant, and other agencies.

12. Circulate the draft EIS and accept public comment for forty-five days.

13. Assess, consider, and respond to comments in the final EIS.

14. Published a notice in the Federal Register that the EIS has been filed with the Environmental Protection Agency (EPA).

15. Make no decision until the later of ninety days after notice of the availability of the draft EIS was published or thirty days after notice of the final EIS is published.

16. Prepare a supplemental EIS if there are substantial changes in the proposed action or there are significant new circumstances or information that are relevant to environmental concerns.

Consideration of Environmental Justice issues

The following is a listing of types of actions agencies should undertake to ensure consideration of environmental justice issues:

1. Identify and characterize potential communities of color early in the preliminary screening process.

2. Conduct risk assessments to determine the adverse effects on human health.

3. Review public facilities and determine how the project might affect either the use or effectiveness of those services.

4. Determine whether the environmental impacts fall disproportionately on any population or population subgroup.

5. Determine other avenues of exposure, such as from inside the home or other workplaces, as well as synergistic exposures.

6. Look for positive impacts.²

7. Involve the public. Make a “diligent” effort to establish a continuing pattern of public involvement beginning at the screening stage and continuing throughout the entire process.

8. Be sure to get public input during the development of an EA and the determination of significant impacts, possible alternatives, mitigation measures, or enhancements.

9. Don’t use traditional notice methods -- seek ways more likely to reach the community.

10. Involve persons on community advisory groups who represent neighborhood groups in the affected area.

11. Do not have forums as one-sided attempts to persuade a community to accept the project, nor merely informational meetings, but allow for an open-minded and meaningful exchange of views, ideas, alternatives, and concerns.

12. Do not make assumptions about the “smartness” of community groups.

13. Put people on your assessment teams who are skilled in recognizing environmental justice concerns and in working with the public.

14. Share information with community groups. In addition, regulatory personnel on such matters as waste streams, regulatory procedures and health risks.

15. Make a particular effort to understand the concerns of the community, as well as the distrust the community may have.

16. Involve the community in the conduct of needed research.

17. Gear your communications to the people of color population. This means that all notices, information, public hearing documents, findings, EA, draft EIS, EIS, supplemental EIS may need to be translated into

one or more foreign languages in order to meet the notice requirements.

18. Identify alternatives if the results of the EA/EIS lead to a conclusion that effects on the human environment are significant.

19. Do not make inaction or minimal action decisions on the basis of the political strength of the community.

20. Be creative in developing mitigation or enhancement alternatives.

INFORMATION SOURCES

There are numerous sources of information and other resources available both to those responsible for the preparation of an EA, EIS or FONSI, as well as those responsible for the review of or comment upon, such documents. The following is not a comprehensive listing of all of the available resources. Rather, it is designed to provide some guidance on the types of information which is available and where it might be found. We do not vouch for the accuracy of any of the information found in or provided by these resources. World Wide Web addresses, regular addresses, and telephone and facsimile numbers provided herein are accurate as of March 24, 1997, but are always subject to change.

The Emergency Planning and Community Right To Know Act

The Emergency Planning and Community Right To Know Act requires industry to report about releases for more than 600 toxic chemicals. On April 22, 1997, Secretary Browner signed a final EPA rule increasing by approximately 6,100, the number of industrial facilities required to make such filings. A computerized Toxic Release Inventory (TRI) maintained by the EPA which is available to the public. TRI data also is available on microfiche, Disk, CD-ROM, Disk and 9-track magnetic tape. Information reported includes releases to air, land, and water, on-site and off-site transfers of chemicals, source reduction, recycling, and waste minimization efforts. Material Safety Data Sheets (MSDS) are another valuable source of information concerning the identity and location of hazardous chemicals in the commu-

nity. MSDS also provide valuable information to public officials for emergency planning and response.

The Right-to-Know Network [<http://www.rtk.net>] site contains TRI data, as well as information on hazardous waste, reported toxic spills, Superfund sites, waste-water discharge permits, water use by county and all civil cases filed by the Department of Justice. You also can get lending, housing, and campaign finance data. It also can be reached via telnet at rtk.net. Community groups may be able to get an 800 number. For more information contact Iris Figueroa, RTKnet, Unison Institute/OMB Watch, 1742 Connecticut Avenue, NW, Washington, DC 20009-1171; 202-234-8494; fax 202-234-8584.

Environmental Justice

Bibliographic Guide, found in Jim Schwab, *Deeper Shades of Green: The Rise of Blue Collar and Minority Environmentalism in America*, Sierra Club Books, 1994 at 433-440. This is an excellent book discussing the background and history of the environmental justice movement.

Earth WINS [<http://www.geocities.com/~earthwins>] contains news and information about worldwide activism. They also publish a newsletter dedicated to helping people resist unsafe mining [<http://www.geocities.com/earthwins/ewd.html#econtent>]. NoMining WINS provides information and discussion about metallic sulfide mining in the Great Lakes and Mississippi Watersheds. To subscribe, send an e-mail to

"nomining@wi.frontiercomm.net"

Directory of Pro Bono Service Providers for Environmental Justice. This publication is available from the American Bar Association for \$18.95 (including shipping and handling). For more information see <http://www.abanet.org/media/dec96/probdir.html>.

Eco-Justice Network [<http://www.igc.apc.org/envjustice/>] contains a wealth of information and links. They include government resources; African American Networking; Toxics, Hazards & Waste; and various articles of interest.

Do not make inaction or minimal action decisions on the basis of the political strength of the community.

The January/February 1997 issue of *E/The Environmental Magazine* has an article describing several environmental justice sites on the web.

Justice-Peace-Environment [<http://www.ipt.com/htmlpub/jpi/hotlist.htm>] is a collection of links to more than 50 sites on a variety of topics, including environmental justice and sustainable policy.

Environmental Protection Agency

EPA web site [<http://www.epa.gov>] contains a wealth of information about the agency and its programs.

You can get periodic news releases from the EPA describing such items as press opportunities, enforcement actions, proposed rules or regulations, and pesticide registrations via "EPA-press@webster.rtpnc.epa.gov"

EPA has created The Office of Children's Health Protection [Dr. Philip Landrigan, Senior Advisor to the Administrator for Children's Health], the Office of Reinvention [J. Charles Fox, Associate Administrator for the Office of Reinvention] and The Center for Environmental Information and Statistics. The Center, which is to provide more electronic access to information about local pollution, will not be operational until January 1998. This Office of Children's Health Prevention is to address an array of complex threats to children's health. The Office of Reinvention is to address the reinvention of EPA as well as innovative compliance programs.

Technology Transfer Network: this is a bulletin board provided by EPA which contains a wealth of information. It can be accessed at <http://ttnwww.rtpnc.epa.gov>.

EPA's Office of Environmental Justice may be reached at <http://es.inel.gov/oeca/oej.html>.

Publications

"A Financing Guide for Recycling Business: Investment Forums, Meetings and Networks." This is published by the National Recycling Coalition and Kirkworks and provides information on sources of capital, financing strategies and business planning. It

is available by calling the RCRA/Superfund Hotline at 1-800-424-9346. It is document number EPA-530-R-96-012.

"Beyond Compliance - Environmental Information: Find it on the Internet!" This is an article which discusses many resources. It can be found at <http://www.ercweb.com/BC0996/ENVINFO.HTM>

"The NIOSH Pocket Guide to Chemical Hazards" This is a valuable source of information on hundreds of chemicals found in the workplace. It can be ordered through any bookstore.

Reports

Comparative Study of Hazardous Waste Characterization in the United States and Mexico. This study was conducted by the National Law Center for Inter-American Free Trade and the Centro Juridico para el Comercio Interamericano. The study examines how each country defines hazardous wastes and an overview of the applicable requirements for generators, transporters, owners and operators of hazardous waste related facilities. The English version is located at <http://www.natlaw.com/pubs/spmxcn8.exe>. The Spanish version is located at <http://www.natlaw.com/pubs/spmxcn7.exe>.

"Drinking Water Infrastructure Needs Survey: First Report to Congress" issued by EPA in January, 1997 pursuant to a requirement of the Safe Drinking Water Act. For more information call the EPA's Safe Drinking Water Hotline at 1-800-426-4791.

"Recycling Contaminated Land: A Community Resource Guide." This is a 1996 document prepared by Kevin Green of the Center for Neighborhood Technology, 2125 W. North Avenue, Chicago, IL 60647. Among other items it discusses identification of brownfield sites, how to determine if contamination is present on a site, types of redevelopment, and evaluating the cleanup plans. It is available from CNT or at http://www.cnt.org/sus_man/b13.htm.

"Special Report on Environmental Endocrine Disruption: An Effects Assessment and Analysis." This is an interim report issued by EPA in March 1997 which reviews the existing scientific research on endocrine

disruptors. These are chemical and other things which are suspected of disrupting the hormonal or endocrine systems of humans and animals. A hard copy can be obtained from EPA's Office of Research and Development at 513-569-7562. It also can be found at <http://www.epa.gov/ORD/whatsnew.htm>.

"Ten Tips to Protect Children From Pesticide and Lead Poisonings." This leaflet is produced by EPA and is available in English and Spanish. Multiple copies can be obtained by calling the National Center for Environmental Publications and Information at 513-489-8190 or the Toxic Substances Control Act Hotline at 202-544-1404. Single copies can be obtained by calling the Office of Pesticide Programs, Communications Branch at 703-305-5017.

"Environment & Public Health Initiatives." This is President Clinton's Earth Day 1995 report describing various initiatives. Contact the Council on Environmental Quality for more information.

"Guidelines for the Development of Wetland Replacement Areas" by the Transportation Research Board, National Research Council. This \$65.00, 1996 report provides detailed information concerning the development of wetland replacement areas. It may be obtained from the Transportation Research Board, National Research Council, 2101 Constitution Avenue, NW, Washington, DC 20418.

Health

HealthE: a discussion mailing list designed to educate the general public about potential environmental threats to physical, emotional, and psychological health and well-being, development management strategies to reduce health risks and work with medical, scientific, legal, industrial communities and the media to find solutions to environmentally caused health problems.. To subscribe, send a message to "listserv@home.ease.lsoft.com" In the body of the message say "subscribe HealthE Your Name"

National Institutes of Environmental Health Studies [<http://www.niehs.nih.gov>] - put in description.

General Environmental Information

Envirotext [<http://tamora.cs.umass.edu/info/envirotext/welcome.html>]. This is a searchable library containing environmental regulations as well as Indian Tribal Codes and Treaties.

List of Regulations and Procedures Implementing NEPA [<http://ceq.eh.doe.gov/nepa/agency/agencies.htm>]

Environmental Impact Analysis Data Links [http://water.usgs.gov/public/eap/env_data.html] Provides sources of on-line data sets, including agricultural; endangered species; energy; hydrologic; meteorologic; pollution prevention; socio-economic; spatial; wetlands; state, regional and international resources. It also contains "environmental hotlist pages" with links to other resources.

Pesticide Information: The National Pesticides Telecommunications Network 1-800-858-7378.

Lead Information: The National Lead Information Center 1-800-LEADFYI. (1-800-532-3394).

Superfund Information [<http://www.epa.gov/superfund>].

Air Quality Resources Federal Register Index [<http://homepage.interaccess.com/~scotte/apr/frindex.htm>]. This site contains a linked list of all 1994 to the present major Federal Register notices concerning the Clean Air Act Amendments of 1990.

Publications

Ecology Law Quarterly [<http://www.law.berkeley.edu/~elq/abstract.html>] Contains indices of issues from 1994 to the present, along with short article abstracts.

Other Information

OMB Watch [<http://rtk.net> or ombwatch@rtk.net] is a Washington, DC based, non-profit organization which moni-

tors executive branch activities affecting non-profit and community groups.

The Center for Neighborhood Technology Neighborhood Early Warning System [<http://www.cnt.org/>] integrates property information from several Chicago agencies.

Don't overlook law firm web pages - particularly those specializing in environmental law. There are too many to mention, but they tend to contain many things including articles, testimony of EPA and environmental group officials, news about recent cases or regulations, and additional sources of information.

Minority Environmental Lawyers Association, Inc. [<http://www.concentric.net>] says it is a not-for-profit corporation dedicated to promoting equity in the practice and application of environmental law.

The World Wide Web Virtual Law Library [<http://www.law.indiana.edu/law/v-lib/lawindex.html>] has all kinds of information, including law firms, law journals, and links to government and state sites.

ENDNOTES

1 *Vermont Yankee Nuclear Power Corp v. NRDC*, 435 U.S. 519, 558 (1978).

2 Data provided by agencies, for example, the Toxics Release Inventory, CERCLA Information System, Department of Transportation's chemicals in transit information, and information collected as a result of the Emergency Planning and Right to Know Act may assist in determining the setting in which the new project will be constructed and if there is a potential for cumulative effects.



Location Characteristics of Inner-City Neighborhoods and Employment Accessibility of Low-Wage Workers

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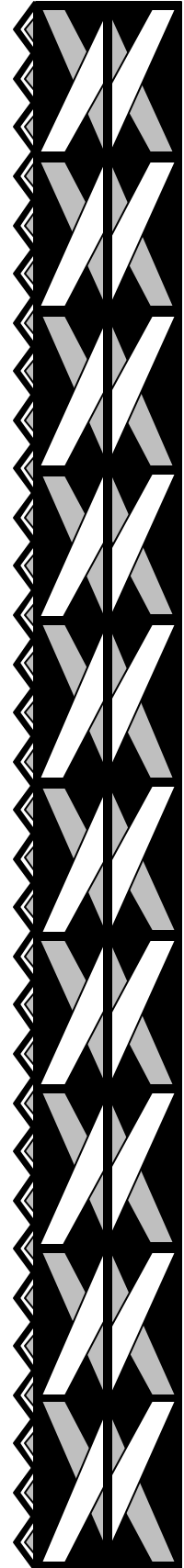
Abstract

Studies that examine spatial characteristics of urban unemployment are often based on some simplistic and problematic measures of employment accessibility. This paper presents a refined methodological framework for measuring accessibility, which enables the researcher to (1) improve the measurement by accounting for job competition among workers commuting by different modes and (2) understand the outcome more thoroughly by distinguishing the effect of location from that of workers' auto ownership. This refined framework is applied to a case study of employment accessibility of low-wage workers living in Boston's inner-city neighborhoods, using primarily 1990 Census demographic data and journey-to-work data. The empirical results show clearly that although the central location of inner-city residence still gives the low-wage workers some advantage, auto ownership is nonetheless the key determinant. Low-wage workers living in inner-city neighborhoods on average do not have high employment

accessibility because a large proportion of them do not own any motor vehicle and, hence, have limited spatial mobility. Implications of the findings are discussed and qualified in light of the limitation of the research.

Introduction

Since the pioneering work by Kain (1968) three decades ago, many urban policy researchers have attempted to understand spatial characteristics of unemployment in American metropolitan areas. Most of the studies have focused on the inner-city, where unemployment and related social ills display high levels of concentration.¹ Some of the studies indicate that the problem of unemployment in the inner-city is at least partially caused by spatial factors, such as employment decentralization and residential segregation (Ihlanfeldt and Sjoquist, 1989; Kain, 1968). Others suggest that the problem is caused entirely by non-spatial factors, such as racial discrimination and failure of governmental policy (Ellwood, 1986; Harrison, 1974). Different diagnoses lead to different prescriptions, which range from planned suburbanization of low-wage workers to planned revitalization of inner-city neighborhoods. The debate continues, and will likely be intensified because substantial reductions in the federal and state governments' welfare budgets for the last few years have prompted many policy researchers to



Do inner-city neighborhoods give the residents any location advantage? Is there substantial variation in employment accessibility among inner-city neighborhoods? How important is low-wage workers' spatial mobility, measured in terms of auto ownership, in determining their employment accessibility?

seek new strategies for addressing urban economic and social problems. One important example is Porter's (1995) recent proposition to create economic vitality in the inner-city based on its competitive advantage, which he argues to be partly attributed to its strategic location.

It is not the purpose of this paper to give a comprehensive review of empirical research on the relationship between urban unemployment and location, or to join the ongoing debate on spatial mismatch hypothesis with some new empirical evidence. Instead, the paper is aimed at improving the measurement, and consequently the basic understanding, of some important aspects of location characteristics of urban neighborhoods - especially ones located in inner-cities. More specifically, it presents a study that develops a refined methodological framework for measuring accessibility and applies the framework to a case study of employment accessibility of low-wage workers living in Boston's inner-city neighborhoods. Although the objective seems modest, it is actually rather important, because many researchers use some location variable - most often employment accessibility - to help explain the problem of unemployment without first measuring the variable appropriately. Proper measurement and understanding of variables is undoubtedly the foundation for credible empirical analysis of the relationships between the variables.

One of the common, problematic approaches to measuring employment accessibility is to simply calculate the ratio of the number of blue-collar jobs to the number of workers within a certain area defined by some threshold commuting distance (Leonard, 1985). Obviously, this approach does not appropriately capture the spatial interaction between jobs and workers, the occupational match between jobs and workers, or the job competition among workers. A second common approach is to adopt a simple central city/suburban dichotomy to define locations (Harrison, 1974). This approach is often problematic because it ignores the potentially great variation in employment accessibility among different neighborhoods within the central city, and thus leaves out information that is highly

valuable for many urban planning and policy making purposes. A third common approach is to use the average travel time of workers - often those who are currently employed and commute by automobile - as the indicator of employment accessibility (Ihlanfeldt and Sjoquist, 1989). The problem of this approach is that it becomes impossible to separate the effect of location from the effect of auto ownership, or to distinguish between accessibility as the cause, and accessibility as the effect, of employment.

The methodological question that will be addressed in this paper, therefore, is: How to measure employment accessibility appropriately - such that the above-mentioned common problems can be avoided?

The paper will go much beyond methodological discussion. It will address a number of urban planning and policy related questions based on the case study of employment accessibility of low-wage workers living in Boston's inner-city neighborhoods, which applied the refined methodological framework developed in the first part of the research. The first question is: Do inner-city neighborhoods give the residents any location advantage? Here location advantage is narrowly defined as having relatively low level spatial separation between residence and employment. This narrow definition serves the purpose of clarifying some important cause-effect relationships in location analysis by distinguishing spatial factors from other factors, such as racial discrimination (Ellwood, 1986).

The next question is: Is there substantial variation in employment accessibility among inner-city neighborhoods? To be sure, there are urban planning and policy questions, including municipal tax base loss and fiscal crisis, which can be appropriately addressed by highly aggregated analyses that treat central city as a single spatial entity (Harrison, 1974). However, many urban planning and policy actions involve location decisions at such levels of detail as neighborhoods, blocks, or even parcels. For example, understanding local spatial variation in accessibility is obviously important for planning public housing and transit service.

The third and final question is: How important is low-wage workers' spatial mobil-



ity, measured in terms of auto ownership, in determining their employment accessibility? A number of recent urban transportation studies suggest that spatial separation is of decreasing importance because transportation has become cheap and ubiquitous, and market forces have adjusted themselves well in responding to new transportation and communication technologies (Giuliano and Small, 1993; Gordon, Kumar, and Richardson, 1989). But the fact is that a high percentage of low-income households, especially those living in inner-cities, do not own any motor vehicle. Therefore, the optimistic outlooks may not apply to low-wage workers, because more and more of them find themselves constrained by their lack of spatial mobility in dispersing metropolitan economies which make private auto increasingly necessary for employment (Kasarda, 1989). The discussion on integrating land use and transportation planning, advocated most strongly by Cervero (1989), may be especially relevant to planning and policy making regarding low-wage workers living in inner-cities.

Research Methodology

The key methodological component of this study is to develop an improved measure of employment accessibility and use it as a means of understanding location characteristics of inner-city neighborhoods. A truly useful measure must satisfy two important criteria. One is that it must enable the researcher to decompose the problem by determining the different levels of employment accessibility for workers who belong to different socioeconomic groups, rely on different transportation means, and live in different locations. The other important criterion is that it must enable the researcher to compare the different results for different workers meaningfully. With an appropriately constructed accessibility measure, the researcher can then apply it to one or more cases to obtain empirical evidence for shedding new light onto the debate on location characteristics of inner-city neighborhoods.

MEASUREMENT OF ACCESSIBILITY

HANSEN-TYPE MEASURES AND THEIR MAJOR LIMITATION

Accessibility denotes the ease with which spatially distributed opportunities may be reached from a given location using a particular transportation system (Morris, Dumble, and Wigan, 1979). It is, therefore, a function of both land use patterns and the performance of the transportation system. Most existing operational measures of accessibility are based on Hansen's original formula (Hansen, 1959). These measures can be generally expressed as:

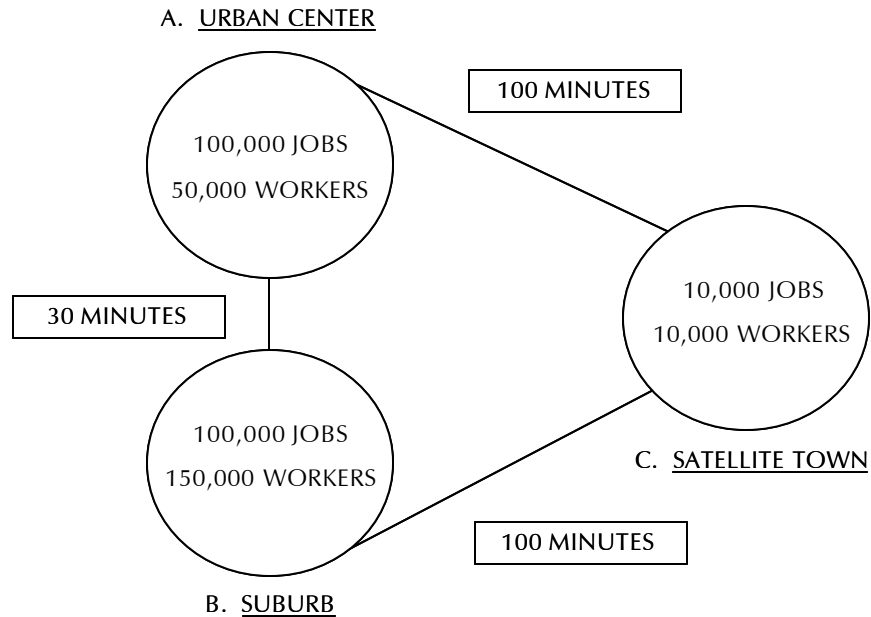
Equation (1)

$$S_i = \sum_j O_j f(C_{ij})$$

where S_i is accessibility for location i ;
 O_j is number of relevant opportunities in location j ;
 C_{ij} is travel time, distance, or cost for a trip from i to j ;
 $f(C_{ij})$ is the impedance function measuring the spatial separation between i and j ;
 For an urban or regional system with N locations, $i = 1, 2, \dots, N$, and $j = 1, 2, \dots, N$.

In actual applications, Equation (1) is further specified in various ways.² One type of variation coincides with different opportunities and transportation means available to different socioeconomic groups. Researchers often find it necessary to measure opportunities and travel impedance in certain restricted ways in order to address their questions appropriately. For example, in a study of the social implications of urban spatial structure, the researchers stratified the population into relatively homogeneous groups - male workers and female workers - and calculated accessibility for each group separately (Black and Conroy, 1977). In another study, the researchers examined the importance of spatial mobility by comparing accessibility between those who drive and those who ride public transportation (Wachs and Kumagai, 1973). The other type of variation corresponds to alternative views regarding the appropriate measurement of spatial separation, which originally used a power function adopted from Newton's Law of Gravity. Alternative specifications of spa-

...the fact is that a high percentage of low-income households, especially those living in inner-cities, do not own any motor vehicle.s



AVERAGE INTRAZONAL TRAVEL TIME FOR ALL ZONES, 15 MINUTES

Figure 1. A Simplified Urban System

tial separation include exponential functions (Wilson, 1971), Gaussian functions (Ingram, 1971), and travel-time threshold functions (Wachs and Kumagai, 1973).

Equation (1) is accepted by many authors of major texts of urban modeling and transportation planning as the formal representation of accessibility (Hutchinson, 1974; Meyer and Miller, 1984; Putman, 1983; Wilson, 1974). It has been widely applied - in many cases properly - to urban studies and planning. Nonetheless, this seemingly general measure of accessibility has one major limitation, which has unfortunately drawn little attention from researchers who use it. Morris, Dumble, and Wigan (1979) are among the few researchers who have recognized the limitation of Equation (1), which has taken into consideration only the "supply side" of accessibility measurement; the "demand side" - the competition for available opportunities - is not considered.³ If we carry this discussion a little further, we can see that Equation (1) is valid only when at least one of the following two conditions is satisfied.

(a) The demand for the available opportunities is uniformly distributed across the space;

(b) The available opportunities have no capacity limitation.⁴

Condition (a) is rarely met in cities and regions, which are characterized by uneven spatial distribution of people, firms, and activities. Condition (b) is theoretically met only when the opportunities are nonrival goods, of which TV and radio signals are good examples. In reality, however, researchers may find many situations where this condition is satisfied in the practical sense. For example, major recreational and commercial facilities, such as national parks and regional shopping malls, often do not have practical capacity limitations.

However, it is rather problematic to use Equation (1) to measure employment accessibility, because each job is for only one worker at any moment in time. Thus, as long as the spatial distribution of workers who are suitable for the available jobs is not uniform, this accessibility measure generates an inaccurate or even misleading result. To illustrate this point, we may use a highly sim-



plified urban system depicted in Figure 1, which is composed of three zones. Zone A is the urban center that has 100,000 jobs and 50,000 workers among its residents, Zone B is the suburb that has also 100,000 jobs but 150,000 workers among its residents, and Zone C is the remote satellite town that has 10,000 jobs and 10,000 workers among its residents. We assume that all the workers have similar skills, and all the jobs match the workers' skills. We also assume that there is only a single transportation mode. The travel time is 30 minutes between Zone A and Zone B, 100 minutes between Zone C and Zone A, and again 100 minutes between Zone C and Zone B. Intra-zonal travel time is 15 minutes for all three zones. If we use Equation (1) to measure employment accessibility for the three zones, we will always obtain the following result:⁵

$$S_A = S_B > S_C$$

The result is clearly unreasonable. We would expect workers living in Zone A to have the highest employment accessibility because the number of jobs within the zone is twice as large as the number of workers. We would expect workers living in Zone B to have lower employment accessibility than those living in Zone A, because at least one third of them must commute to the other zones. And we would expect workers living in Zone C to have either higher or lower employment accessibility than those living in Zone B, depending on what proportion of them commute the long distance to work in the other zones. Most likely, though, relatively few workers living in Zone C would commute to the other zones because the number of jobs and the number of workers are well balanced within the zone.

A REFINED FRAMEWORK FOR MEASURING ACCESSIBILITY

The problem is due to the fact that the spatial distribution of the "demand", which is not uniform, is not taken into consideration. Because opportunities exist in locations with various levels of demand potential, accessibility to each set of opportunities is partly determined by the demand poten-

tial for the particular location of the opportunities. We can refine the measurement by first calculating the demand potential (D_j) for each location using Equation (1), except that the number of people seeking opportunities, instead of the number of opportunities, is included in the calculation. We can formally redefine accessibility by incorporating the demand potential in the following modified formula:

Equation (2)

$$A_i = \sum_j O_j f(C_{ij}) / D_j$$

$$D_j = \sum_k P_k f(C_{kj})$$

where A_i is accessibility of people living in location i ;

P_k is number of people in location k seeking the opportunities; $k = 1, 2, \dots, N$;

$f(C_{kj})$ is the impedance function measuring the spatial separation between k and j ; Other notations are the same as those in Equation (1).

Equation (2) has one important property: For any location where people have an average accessibility, it always yields a value that equals the ratio of the total number of opportunities to the total number of people seeking the opportunities.⁶ When these two numbers are equal, the weighted average accessibility is 1. Thus it is very easy to differentiate "accessibility rich locations" and "accessibility deficient locations". And it is appropriate to interpret each resulting accessibility score as the accessibility potential for an average opportunity seeker in a particular location, and compare it in proportional terms with the benchmark value.

If we apply Equation (2) to the measurement of employment accessibility for the three zones in the hypothetical urban system, we will indeed always obtain the following result:⁷

$$A_A > A_B \text{ and } A_A > A_C$$

In this particular example, the calculated employment accessibility scores indicate that Zone A is an accessibility rich location, Zone B is an accessibility deficient location, and Zone C is a location with an average accessibility. The results confirm the expectations.

In reality, there is more than one transportation mode, and we are often interested

The urban labor market is highly segmented. Therefore, it is important to match the jobs with the workers by applying such criteria as education background, occupation, and wage.

in measuring and comparing accessibility for different groups of people who use different modes. It is important to understand that each group is competing with all other groups, because opportunities are potentially accessible by all kinds of transportation means. There are, no matter which group of people we measure accessibility for, the demand potential stays constant for any given location. The supply potential, on the other hand, varies according to the spatial mobility of the particular group of people. The further modified accessibility measure can be expressed as:⁸

Equation (3)

$$A_i^v = \sum_j O_j f(C_{ij}^v) / \sum_m D_j^m$$

where A_i^v is accessibility of people living in location i and traveling by mode v ;

P_k^m is number of people living in location k and traveling by mode m in seeking the opportunities;

For an urban or regional system with M modes, $m = 1, 2, \dots, M$;

$f(C_{ij}^v)$ and $f(C_{kj}^m)$ are the impedance functions for modes v and m , respectively;

Other notations are the same as those in Equations (1) and (2).

Equation (3) has two important properties. One is that it has the same property that Equation (2) has, which makes it easy to identify "accessibility rich locations" and "accessibility deficient locations" based on a predetermined weighted average score and to interpret any resulting accessibility score by comparing it to the weighted average score. The other important property is that it allows the researcher to compare accessibility scores directly across different transportation modes. This is because the formula incorporates the same overall demand potential into the measurements of accessibility for different groups of people traveling by different modes.

Finally, a refined general measure of accessibility can be defined by calculating for each location a weighted score. The proportions of people who travel by the different modes are used as the weights. The refined general measure is expressed as:

Equation (4)

$$A_i^G = \sum_v (P_i^v / P_i) A_i^v$$

$$A_i^v = \sum_j O_j f(C_{ij}^v) / \sum_m \sum_k P_k^m f(C_{kj}^m)$$

where A_i^G is general accessibility for all groups of people living in location i ;

P_i^v is number of people in location i traveling by mode v in seeking the opportunities;

$v = 1, 2, \dots, M$;

P_i is the total number of people in location i ;

Other notations are the same as those in Equations (1), (2), and (3).

We call equation (4) the general measure of accessibility because each of the previous equations is just a special case of it. Equation (3) is used when the researcher is interested in measuring the spatial variation of accessibility for only the group of people traveling by one of the alternative transportation modes. Equation (2) is applied when there is only a single transportation mode in the urban system. And finally, equation (1) is appropriate when there is only a single transportation mode and the demand potential is constant for all locations.⁹

EMPLOYMENT ACCESSIBILITY MEASURES FOR AUTO DRIVERS AND TRANSIT RIDERS

When measuring employment accessibility, Equations (3) and (4) use the number of relevant jobs in each location as opportunities and the number of relevant workers as opportunity seekers. The urban labor market is highly segmented. Therefore, it is important to match the jobs with the workers by applying such criteria as education background, occupation, and wage. In this research occupation and wage are used as criteria to group jobs and workers.

The great importance of spatial mobility, which is closely related to transportation modes and strongly correlated with income, must be examined in order to appropriately address location questions for inner city neighborhoods. In this research, two distinctive groups of workers are identified by applying auto ownership as the criterion. One group, which consists of workers whose household owns at least one motor vehicle, is able to choose transportation means. For these workers the performance of transportation system is essentially evaluated on the



basis of the spatial mobility associated with automobiles. Therefore, auto travel impedance is used in the measurement of their employment accessibility. The other group of workers, which consists of the rest of the labor force, are captive transit riders. For this group, transit travel impedance is used in the measurement of employment accessibility.

Specifically, this research applies the following three formulas to the measurement of employment accessibility for workers of any given occupation or wage group:

Equation (5)

$$A_i^{\text{auto}} = \sum_j E_j f(C_{ij}^{\text{auto}}) / \sum_k (\alpha_k W_k f(C_{kj}^{\text{auto}}) + (1 - \alpha_k) W_k f(C_{kj}^{\text{tran}}))$$

Equation (6)

$$A_i^{\text{auto}} = \sum_j E_j f(C_{ij}^{\text{tran}}) / \sum_k (\alpha_k W_k f(C_{kj}^{\text{auto}}) + (1 - \alpha_k) W_k f(C_{kj}^{\text{tran}}))$$

Equation (7)

$A_i^G = (\alpha_i W_i / W_i) A_i^{\text{auto}} + ((1 - \alpha_i) W_i / W_i) A_i^{\text{tran}}$
 where A_i^{auto} and A_i^{tran} are employment accessibility of workers who are auto drivers and captive transit riders, respectively, living in location i ;

A_i^G is general employment accessibility combining A_i^{auto} and A_i^{tran} ;

E_j is relevant employment opportunities in location j ;

W_k and W_i are numbers of relevant workers in locations k and i , respectively;

α_k and α_i are proportions of households in locations k and i , respectively, that own one or more motor vehicles;

$f(C_{ij}^{\text{auto}})$, $f(C_{ij}^{\text{tran}})$, $f(C_{kj}^{\text{auto}})$, and $f(C_{kj}^{\text{tran}})$ are impedance functions for modes and links;

Other notations are the same as those in the previous equations.

THE DATA, COMPUTATION, AND MAPPING

The Boston Metropolitan Area is used as the case for the research. The metropolitan area covers roughly 1,400 square miles of land and accommodates over 4 million people. Although the study examines employment accessibility for workers belonging to different wage and occupation groups

and living in different locations, the main focus is on the low-wage workers living in inner-city neighborhoods outside the CBD of Boston.

A considerable range of data is required for the empirical analysis. Thanks to the increasingly rich transportation and socioeconomic data available at spatially highly disaggregated levels, it is now feasible to operationalize the more sophisticated measures of employment accessibility. The data were obtained from five sources.

(1) Transportation data were obtained from the Central Transportation Planning Staff (CTPS), the regional transportation planning agency. For 1990, the whole metropolitan area was represented by 790 traffic analysis zone (TAZs). Almost all the TAZs are some geographical aggregation of Census block groups. Data made available by CTPS include:

- Two sets of origin-destination matrices for the TAZs, one for peak-hour auto trips and the other for peak-hour transit trips. These data are required for measuring travel impedance.

- A set of friction factors for home-based commuting trips. These data allow the researcher to calibrate the parameter (i.e. the P value) for travel impedance functions. A simple exponential function, $f(C_{ij}) = \exp(-bC_{ij})$ is applied to this research. The b value is 0.1034, calibrated through a simple regression procedure.¹⁰

- A geographic information system (GIS) map coverage (in Arc/Info format) of the 790 TAZs.

(2) Most of the demographic and socioeconomic data were pulled from the Summary Tape File 3A, which originates from the United States Census of 1990 and 1980. The data were initially compiled at the block group level, and were later aggregated to match the TAZs. The following data items are particular important:

- Workers by residential location, categorized into 9 occupation groups.

- Employed and unemployed workers by residential location.

- Auto ownership.

(3) Employment by job location data for 1990 and 1980 were generated originally by

The Boston Metropolitan Area is used as the case for the research. The metropolitan area covers roughly 1,400 square miles of land and accommodates over 4 million people.

the United States Census Bureau using Journey-to-Work compilation packages. These employment data are categorized into Standard Occupation Codes and organized into 9 groups that match the data of workers by residential location. The data are reported at the TAZ level. This data set was actually obtained indirectly from CTPS.

(4) A table of conversion between occupations and individual workers' income was obtained from the State Data Center located at University of Massachusetts, Amherst. This conversion table was derived from the 1990 Public Use Microdata Sample A (5%), which was compiled by the United States Census Bureau in 1990. This table, which is shown in appendix 1, enables the researcher to classify jobs and workers into 10 wage groups and measure employment accessibility for different wage groups separately.

(5) Other data describing various geographical features of the metropolitan area were obtained from MassGIS, an agency in charge of Massachusetts' state-wide GIS effort. These data help the researcher understand more thoroughly the differences among different locations. The following data items are especially useful:

- A land use coverage (in Arc/Info format).
- A coverage of administrative boundaries of cities and towns (in Arc/Info format).
- A coverage of major roads (in Arc/Info format).
- Coverages of railroads and subways (in Arc/Info format).

The measurement of employment accessibility, which involves a large amount of computation, was implemented through a C program. An interface was created for the purpose of specifying transportation mode, income range or occupation, and impedance function and parameter values, which are all required for the measurement. The resulting accessibility scores were imported to a GIS package for visual display.¹¹ Supplement analyses were undertaken using data analysis and mapping packages.

Primary Empirical Results

For Boston Metropolitan Area, the unemployment rate reported in the 1990 Cen-

sus was 6.5%. Therefore, the weighted average value of employment accessibility, i.e. the benchmark value, is 0.935. In visual displays of employment accessibility, TAZs that have an accessibility score higher than the weighted average value are clearly distinguished from the rest of the TAZs by applying two completely different styles of shading.

EMPLOYMENT ACCESSIBILITY OF LOW-WAGE WORKERS

The first set of measurements were for low-wage workers who earn less than US \$10,000 per year. The results are displayed in Figures 2 and 3. The first map shows the spatial variation of employment accessibility for low-wage workers who commute by automobile, whereas the second map shows the result for low-wage workers who commute by public transit. The most obvious finding in both maps is that for workers who use a given transportation means, those living near the CBD of the metropolitan area still have relatively higher employment accessibility than those living in the suburbs. Low-wage workers on average will not improve their employment accessibility by moving away from inner-city neighborhoods to the suburbs, because a large proportion of the inner city neighborhoods are in the TAZs that have clear advantage in accessibility.

The second finding, which is the most striking and most important one, is that more than half of the TAZs are "accessibility rich locations" for low-wage workers who commute by auto, whereas only a very small proportion of the TAZs are "accessibility rich locations" for low-wage workers who commute by public transit. Indeed, the few TAZs where transit riders have employment accessibility scores higher than the weighted average value are all located in or adjacent to the CBD. What it means is that although central location of residence still has advantage as far as employment accessibility is concerned, auto ownership is nonetheless the key determinant. Indeed, it is most often the case that workers living in the suburban areas who commute by auto have higher employment accessibility than those

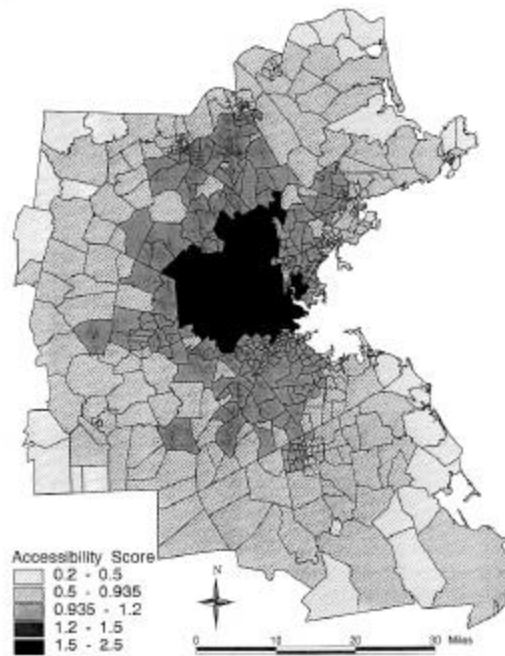


Figure 2. Employment Accessibility of Auto Drivers (Annual Wage < \$10k, in 1989)

living in the inner-city neighborhoods who commute by public transit.

The third finding is that there is a considerable amount of local spatial variation in employment accessibility, especially for workers who commute by public transit. This is shown most clearly in Figures 4 and 5, which depict in greater detail the accessibility of workers living in the central part of the metropolitan area. The boundary of the inner-city neighborhoods is roughly represented by a circle. From both maps we can see significant variation in employment accessibility among TAZs inside the circle. This reflects the spatial features - highways, transit lines, and transit stations - of the transportation system, as well as the spatial distribution of jobs. For instance, transit riders who live near a transit station often have much higher accessibility than those who live a few blocks away.

EMPLOYMENT ACCESSIBILITY OF WORKERS IN LOW-WAGE OCCUPATIONS

Following the same analytical procedure, the researcher also used occupation instead of wage as a criterion in classifying

jobs and workers, and measured accessibility accordingly for each group. Because the focus of the study is on low-wage workers living in the inner-city, measurements were made for workers in manufacturing, administrative support, sales, services, and agriculture. The results were similar to the ones we have just discussed, which confirmed the three major findings so far.

The findings remain valid even as we measure employment accessibility for all workers. While most of the results are not worth repeating in detail, a pair of interesting summary statistics are useful in highlighting the great importance of auto ownership: 60% of all workers in Boston Metropolitan Area live in "accessibility rich locations" for auto drivers, but only a very small percentage - roughly 0.2% - of them live in "accessibility rich locations" for transit riders.

GENERAL EMPLOYMENT ACCESSIBILITY OF LOW-WAGE WORKERS

Although low-wage workers living in inner-city neighborhoods benefit from the central location of their residence, many suf-

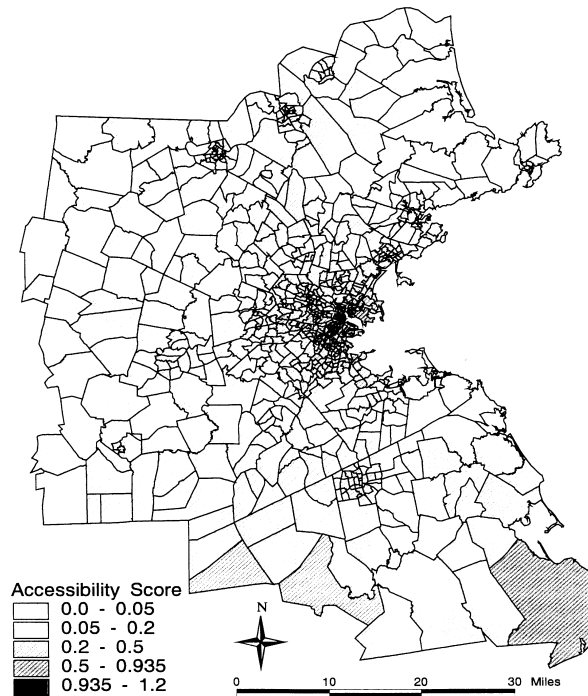


Figure 3. Employment Accessibility of Transit Riders (Annual Wage < \$10k, in 1989)

fer from low spatial mobility because they do not own any motor vehicle. What is their overall level of employment accessibility when both location and auto ownership are taken into consideration? To answer this question, the researcher calculated the general measurement of employment accessibility using Equation (7). The result, which combines accessibility of auto drivers with that of transit riders.

The fourth important finding of this research is shown on these two figures, which are clearly different from the previous ones. For a large proportion of the inner-city TAZs, general employment accessibility is no longer relatively high because the percentage of workers owning automobiles is low. The location advantage of these TAZs is in most cases more than offset by the low level of auto ownership. The low-wage workers living in the area inside the circle have an average accessibility score below the weighted average for the whole metropolitan area.

Those living in the center of the inner-city have an average accessibility score that is even lower. On the contrary, low-wage workers living in some of the suburban TAZs

on average have high scores of -general employment accessibility mainly because these areas have high levels of auto ownership.

Implications of the Research Findings

The research findings suggest that despite the increasing pace of employment decentralization over the past several decades, central location of residence in Boston Metropolitan Area still gives the workers some advantage as far as employment accessibility is concerned. For low-wage workers who commute by the same transportation mode, those living in the urban center, including inner-city neighborhoods, on average have higher accessibility than those living in the suburbs. The spatial concentration of low-income residents in the urban center means that the basic pattern of urban residential location today still confirms the theoretical framework proposed by Alonso (1964) and Muth (1969) three decades ago, although underlying the observed location pattern there are many factors in addition to transportation cost. If, as Blakely (1985), Wilson (1995), and many others strongly argue, a

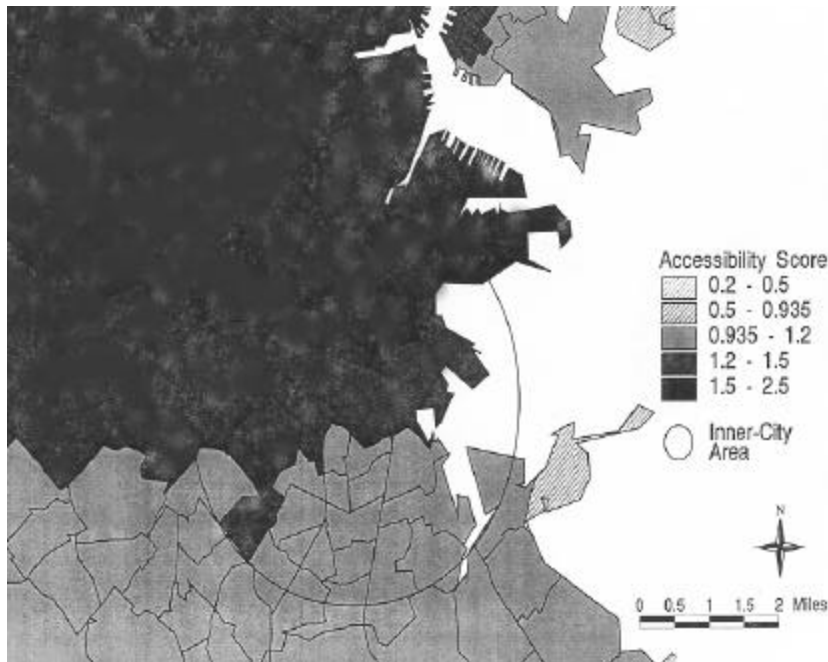


Figure 4. Employment Accessibility of Auto Drivers Living in Inner-City Neighborhoods (Annual Wage < \$10k, in 1989)

primary goal of urban planning and policy making is to increase the number and variety of job opportunities available to low-income people, then plans and policies should in principle help inner-city residents make good use of the location advantage. Actions such as creating empowerment zones and improving transit service are highly desirable.

The empirical evidence obtained in this study contrasts directly to the argument that employment decentralization has resulted in an overall spatial disadvantage for low-wage workers remaining in the urban center (Holzer, 1991; Leonard, 1985). Of course, employment decentralization is continuing and will likely accelerate because of advanced communications technology. Planners and policy makers must monitor the evolution of urban spatial structure, and adjust their actions accordingly. It is not inconceivable that employment decentralization will cause the location advantage of the urban center to diminish. Indeed, a plausible explanation to the increase in unemployment in the inner-city over the past several decades is that the location advantage

of the inner-city has been decreasing over time.

It is important to point out that the empirical research did not examine the interaction between spatial and some important social factors. Therefore, the results should not be used as evidence to prove or disprove the spatial mismatch hypothesis, because racial discrimination is considered as a key factor in the original paper (Kain, 1968). Even subtle forms of racial discrimination, such as keeping black employees below certain percentage of the firm's total and avoiding hiring youths living in high-crime neighborhoods, can change the spatial pattern of employment accessibility considerably. Such scenarios can easily be simulated using the accessibility measures developed in this study. While it is admittedly important to examine interactions between spatial factors and social factors in urban planning, and policy studies, it is equally important to be able to clearly distinguish spatial factors from social factors.

The most significant result of the study is not that inner-city still has location advantage, however; the most significant result is that location advantage is far from being suf-

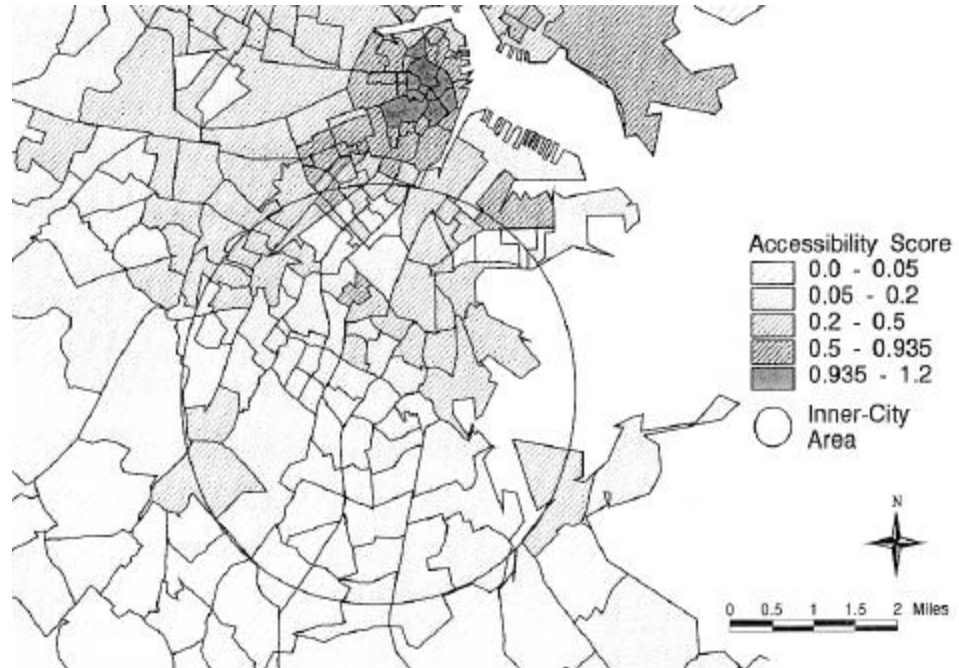


Figure 5. Employment Accessibility of Transit Riders Living in Inner-City Neighborhoods (Annual Wage < \$10k, in 1989)

ficient to give most low-wage workers living in the inner-city high employment accessibility. The empirical evidence from the case study demonstrates the critical importance of auto ownership in dispersing metropolitan economies, and thus supports the argument by Kasarda (1989). What really matters is perhaps not location per se, but the lack of spatial mobility of a high percentage of low-wage workers to overcome the increasing spatial separation between jobs and residence. The great discrepancy in employment accessibility between auto drivers and transit riders shows clearly that much needs to be done to help low-wage workers who cannot afford a motor vehicle. Any program that increases the number of jobs close to the workers' residence or improve transit linkages between the workers' employment and residence will be helpful. But it will take a great many innovative short-term actions and persistent long-term efforts, especially efforts to improve transit service, to make a significant difference.

The great discrepancy in employment accessibility between auto drivers and transit riders also suggests that one must be very careful in measuring workers' accessibility.

Using observed average commuting time of drivers as the indicator is only appropriate when the question is about workers commuting by auto. Similarly, using observed average commuting time of transit riders as the indicator is only appropriate when the question is about workers commuting by public transportation. Using either one to discuss workers' location and employment accessibility generally is misleading. In fact, even using the combined average commuting time of drivers and transit riders as the indicator is questionable, because the observed commuters do not include those workers who are unemployed partly because they have low employment accessibility. As discussed earlier, many researchers use average commuting time of drivers as the measure of neighborhoods' location characteristics and residents' employment accessibility. This approach is particularly problematic when the question is about inner-city neighborhoods and low-wage workers, because auto ownership is negatively correlated with income.

The research findings also indicate that there is significant variation in employment accessibility among inner-city neighbor-



hoods. Urban planners must understand such spatial variation and use the knowledge to make location decisions for public housing, transportation, and economic development projects. Good location decisions can help provide a foundation for creating, economic vitality.

Such spatial variation also has major methodological implications for urban studies. It demonstrates the great importance of incorporating spatial analysis techniques and spatially disaggregated data for studying many types of urban planning and policy problems. Given the great institutional and spatial complexity of urban governance in the US and the increasingly active role played by many municipal governments in shaping urban space, spatial analysis techniques and spatially disaggregated data are becoming more and more important in urban studies (Shen, 1996).

It is important to point out the limitations of the research and, when it is appropriate, qualify the research findings accordingly. One major limitation, as already discussed, is that interactions between spatial factors and some important social factors have not been examined. In addition to racial discrimination, factors such as cultural tradition and social network also affect the true meaning of employment accessibility (Holzer, 1987; Kasarda, 1989). Although this limitation does not invalidate the empirical results, it confines the interpretation of the results.

A second limitation of this study is that the measurement of employment accessibility may involve some inaccuracy because of data limitation. More specifically, the auto ownership data from the US Census are available only by household and race instead of by worker and income, and the conversion between occupations and income is based on the averages for the metropolitan area instead of individual census tracts/block groups. If more accurate data were available, the results would change quantitatively. But under no reasonable scenario would the results change qualitatively.

A third limitation, also related to data, is that the study has examined only employment accessibility, which is a part of overall accessibility. For many female workers and

single parents, the other components are actually not separable from commuting because they often have to combine work trips with trips to shopping centers and day-care centers. There is no doubt that our understanding of location and accessibility will be much improved by incorporating other components. Unfortunately, the available data are so sparse that systematic measurement cannot be readily made.

A fourth limitation, which is common to virtually all accessibility studies, is that the measurement is static and aggregate. In reality at least a certain proportion of workers can change their residential location in responding to their job location, or change their status regarding auto ownership in responding to their commuting characteristics. For instance, some of the low-wage workers living in the inner-city do not own any motor vehicle because they do not think it is necessary given their residential and job locations. This level of sophistication is not captured in this study. Nonetheless, given the great mobility of urban labor markets and the severe problem of residential segregation in the US, the reality of most low-wage workers should be adequately captured by applying the methodological framework developed in this study.

A final limitation of the study is that it is only based on the case of Boston Metropolitan Area. This particular case may be in some ways not representative of American metropolitan areas. Therefore, one should not attempt to generalize the results before examining other cases. However, compared to other American cities, Boston is known for its extensive public transportation network and good transit service. Auto ownership must be even more critical in determining employment accessibility of low-wage workers in other American cities.

Conclusion

This paper presented a refined methodological framework for measuring accessibility and, by applying the methodology to a case study of Boston Metropolitan Area, discussed a number of important location and employment accessibility questions. The refined methodological framework has over-

...compared to other American cities, Boston is known for its extensive public transportation network and good transit service. Auto ownership must be even more critical in determining employment accessibility of low-wage workers in other American cities.

...when the question is about inner-city neighborhoods and low-wage workers, it is critical not to use average commuting time of drivers as the measure of employment accessibility.

come some major limitation of Hansen-type accessibility measures. It improves the measurement by accounting for job competition among workers commuting by different modes, and it helps understand the outcome by distinguishing the effect of location from that of workers' auto ownership. The empirical analysis was based on primarily 1990 Census demographic data and journey-to-work data. An important finding was that despite the increasing pace of employment decentralization over the past several decades, central location of residence in Boston Metropolitan Area still gives the workers some advantage as far as employment accessibility is concerned. However, the most significant result of the study is that location advantage is far from being sufficient to give most low-wage workers living in the inner-city high employment accessibility. Auto ownership is the key determinant of accessibility. Low-wage workers living in inner-city neighborhoods on average do not have high employment accessibility because a large proportion of them do not own any motor vehicle. In addition, the results indicate that there is considerable variation in employment accessibility among inner-city neighborhoods.

A number of important implications were drawn from the empirical results. First of all, planners and policy makers should in principle help inner-city residents make good use of the location advantage. Creating empowerment zones and improving transit service are examples of highly desirable actions. Secondly, the auto-oriented, spatially dispersing metropolitan development makes it increasingly difficult for the low-wage workers who cannot afford a motor vehicle to access employment opportunities. Many innovative short-term actions and persistent long-term efforts are required to make a significant difference for these workers. Thirdly, urban planners must understand spatial relationships among urban activities and use the knowledge to make location decisions. In addition, a couple of major methodological implications for urban studies were drawn from the empirical results. One is that when the question is about

inner-city neighborhoods and low-wage workers, it is critical not to use average commuting time of drivers as the measure of employment accessibility. Another is that it requires spatial analysis techniques and spatially disaggregated data to study location characteristics and employment accessibility.

The paper also discussed the limitations of the study. The discussion pointed to several possible directions for future research. First of all, it is essential to examine other metropolitan areas and compare the results with ones from this case study. Secondly, it is important to start exploring ways to expand the notion of accessibility, because for many low-income workers employment accessibility is not separable from accessibility regarding such activities as shopping and sending kids to day-care. Thirdly, future studies of location characteristics and employment accessibility should attempt to examine interactions between spatial factors and some important social factors. And finally, perhaps the most challenging future effort is to incorporate some critical behavioral and dynamic elements, such as employment decentralization, residential location choice, and mode choice, into studies of accessibility.

ENDNOTES

1. The term "inner-city" generally refers to urban districts which are located nearby the CBD of a metropolitan area, used predominantly for residential purpose, and often characterized by poverty and other socioeconomic features that distinguish them from typical suburban communities.
2. The reader is referred to Morris, Dumble, and Wigan (1979) for a thorough review and classification of operational accessibility measures.
3. The author benefited enormously from several inspiring conversations with Britton Harris on the topic of accessibility measures and job competition.



4. In this situation, the quantity of accessible opportunities matters only because larger quantity offers more choices and greater economy of scale.

5. This result stands as long as the specification of the impedance function meets the minimum requirement that longer travel time increases travel impedance.

(a) When a gravity function, $f(C_{ij}) = C_{ij}^{-b}$, or an exponential function, $f(C_{ij}) = \exp(-bC_{ij})$, is applied, the minimum requirement is $b > 0$.

(b) When a travel-time threshold function, $f(C_{ij}) = 1$ for $C_{ij} < C_{ij}^c$ and $f(C_{ij}) = 0$ otherwise, is applied, the minimum requirement is $0 < C_{ij}^c < 100$.

As an example, when the exponential function is applied, with $b = 0.1$, the following result is obtained:

$$S_A = 41767$$

$$S_B = 41767$$

$$S_C = 3688$$

6. In other words, the weighted average accessibility calculated using this formula is always equal to the ratio of the total number of opportunities in the urban system to the total number of people seeking the opportunities. In the case of employment accessibility, the weighted average accessibility for a typical US metropolitan area is 0.9 - 0.95, because the unemployment rate is 5% - 10%.

7. The same minimum requirement - that longer travel time increases travel impedance - also applies here. As an illustration, we may once again apply the exponential function, with $P = 0.1$, to the measurement of the demand potentials of employment accessibility for the three zones of the simplified urban system. The following result is obtained:

$$D_A = 25\,863$$

$$D_B = 57\,672$$

$$D_C = 3\,688$$

If we combine this result with the earlier one, we obtain the following accessibility scores for the three zones:

$$A_A = 1.51$$

$$A_B = 0.83$$

$$A_C = 1.00$$

8. After I developed this accessibility measure by following the reasoning and testing procedure described in this paper, I discovered that Weibull (1976) obtained the same

formula a long time ago by taking an "axiomatic approach". However, for some mysterious reason, Weibull didn't explore some of the important properties of this refined accessibility measure. To my knowledge, no researcher has applied this formula to measure simultaneously job competition and differential accessibility across different groups of workers who rely on different transportation means.

9. This constant value of demand potential, however, is taken away from Hansen-type measures. This omission does not change the order of the accessibility scores for the locations, but it does make it more difficult to interpret the scores because the weighted average is no longer easily predetermined.

10. The regression has the natural log of the friction factors as the dependent variable and travel time intervals as the independent variable.

11. I used the software ArcView in this research.

REFERENCES

- Alonso, W.
1964 *Location and Land Use*. Cambridge: Harvard University Press.
- Ben-Akiva, M. and S. Lerman
1985 *Discrete Choice Analysis: Theory and Application to Travel Demand*. Cambridge: The MIT Press.
- Black J. and M. Conroy
1977 *Accessibility Measures and the Social Evaluation of Urban Structure*. *Environment and Planning A* 9:1013-1031.
- Blakely, E. J.
1989 *Planning Local Economic Development: Theory and Practice*. Newbury Park, CA: Sage Publications.
- Cervero, R.
1989 *Jobs-Housing Balancing and Regional Mobility*. *Journal of American Planning Association* 55:136-150.
- Ellwood, D. T.
1986 *The Spatial Mismatch Hypothesis: Are There Teenage Jobs Missing in the Ghetto?* In R. B. Freeman and H. J. Holzer, eds., *The Black Youth Employment Crisis*. Chicago: University of Chicago Press.

- Geertman, S. and J. Van Eck. 1995 GIS and Models of Accessibility Potentials: An Application in Planning", *International Journal of Geographical Information Systems*, 9:67-80.
- Giuliano, G. and K. A. Small
1993 Is the Journey to Work Explained by Urban Structure? *Urban Studies*, 30:1485-1500.
- Gordon, P. A. Kumar, and H. Richardson
1989 Congestion, Changing Metropolitan Structure and City Size in the United States *International Regional Science Review* 12:45-56.
- Hansen, W. G.
1959 How Accessibility Shapes Land Use. *Journal of the American Institute of Planners*, 25:73-76.
- Harrison, B.
1974 Urban Economic Development: Suburbanization, Minority Opportunity and the Condition of the Central City. Washington, D.C.: The Urban Institute.
- Holzer, H.
1987 Informal Job Search and Black Youth Unemployment. *The American Economic Review*, 77:446-452.
- Holzer, H.
1991 The Spatial Mismatch Hypothesis: What Has the Evidence Shown. *Urban Studies* 28:105-122.
- Hutchinson, B. G.
1974 Principles of Urban Transportation Systems Planning. New York: McGraw-Hill Book Company.
- Ihlanfeldt, K. R. and D. L. Sjoquist
1990 Job Accessibility and Racial Differences in Youth Employment Rates. *The American Economic Review*, 80:267-276.
- Ingram, D. R.
1971 The Concept of Accessibility: A Search for an Operational Form. *Regional Studies*, 5:101-107.
- Kain, J. F.
1968 Housing Segregation, Negro Employment, and Metropolitan Decentralization. *The Quarterly Journal of Economics* 82:175-197.
- Kasarda, J.
1989 Urban Industrial Transition and the Underclass. *The Annals of the American Academy of Political and Social Science*, 26-47.
- Leonard, J. S.
1985 Space, Time and Unemployment: Los Angeles 1980. Manuscript, University of California, Berkeley.
- Meyer, M. D. and E. J. Miller
1984 Urban Transportation Planning: A Decision-Oriented Approach. New York: McGraw-Hill Book Company.
- Morris, J. M., P. L. Dumble, and M. R. Wigan
1979 Accessibility Indicators for Transportation Planning. *Transportation Research A*, 13:91-109.
- Muth, R. F.
1969 Cities and Housing. Chicago: University of Chicago Press.
- Porter, M.
1995 The Competitive Advantage of the Inner City", *Harvard Business Review*, May-June, Cambridge, MA: Harvard University Press.
- Putman, S.
1983 Integrated Urban Models. London: Pion Limited.
- Shen, Q.
1996 Spatial Impacts of Locally Enacted Growth Controls: The San Francisco Bay Region in the 1980s. *Environment and Planning B*, 23:61-91.
- Wachs, M. and Kumagai, T. G.
1973 Physical Accessibility as a Social Indicator. *Socio-Economic Planning Science*, 7:437-456.
- Weibull, J. W.
1976 An Axiomatic Approach to the Measurement of Accessibility. *Regional Science and Urban Economics*, 6:357-379.
- Wilson, A. G.
1974 Urban and Regional Models in Geography and Planning. London: John Wiley & Sons.
- Wilson, A. G.
1971 A Family of Spatial Interaction Models, and Associated Developments. *Environment and Planning A*, 3:1-32.
- Wilson, W. J.
1995 Jobless Ghettos. Manuscript, Center for the Study of Urban Inequality, University of Chicago.

Location Efficient Mortgage Project: Capturing the Benefits of Public Transportation

Jacky Grimshaw
Center for Neighborhood Technology



Background

In 1992, the Chicago Transit Authority (CTA) announced a decision that has had broad ranging results. At that time, the CTA announced the casing of the Lake Street elevated rapid transit line. The long practice of deferred maintenance had created such hazardous conditions that the line was no longer safe. Minimal ridership on the line could not justify the repair cost estimates. This announcement was the catalyst for the formation of a citizen's coalition composed of many community and city-wide organizations and as well as citizens to oppose this decision.

This newly formed coalition asked the Center for Neighborhood Technology (CNT) to provide technical assistance in developing an approach to persuade the CTA to reverse its decision. The outcome was a strategy that combined environmental, employment and community development objectives. The strategy viewed the line as a valuable engine for economic revitalization of the Lake Street corridor communities. These communities have been underdeveloped and underpopulated since the riots of the 1960s reduced the housing stock and laid acres of these central city lands vacant. The result was a transit oriented development (TOD) plan brought together a number of strategies to increase ridership on the El line through programs such as industrial retention, housing intensification, a pedestrian-friendly and safe streetscapes.

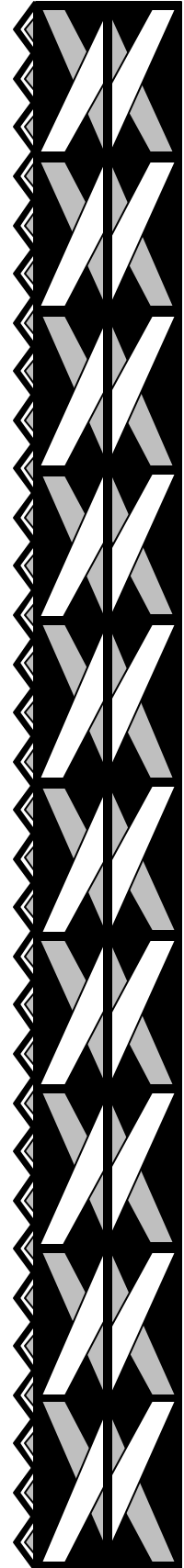
The initial proposal was to model transit-oriented development at one of the sites along the Lake Street corridor. After com-

munity representatives announced the TOD plan, the CTA did indeed reverse its decision and announced a \$300 million rehabilitation of the elevated line. The Lake Street Line had a new name - the Green Line because of a reconfigured alignment joining the south and west sides. The line runs from the western suburb of Oak Park to the southside communities of Englewood and Jackson Park.

The citizen coalition evolved into a Joint Venture Partnership that took responsibility for implementing the community's TOD plan. CNT, in its role as a member of the Joint Partnership, has continued to provide technical assistance to this community group. As the implementation process proceeded, the development of needed solutions for various critical elements for a successful TOD occurred.

The Center for Neighborhood Technology focused on two of these elements: minority entrepreneurship for the TOD area businesses and homeownership. The development of two new programs resulted: Connections for Community Ownership and Location Efficient Mortgages (LEM). The Connections Program is a strategy to recruit, train and finance minority entrepreneurs interested in establishing businesses in the TOD area. The LEM Program is a strategy to increase the number of families purchasing homes in banisrich communities, to redensify depopulated communities by stimulating new developments, and to increase the base of transit riders.

In addition to being tools for redeveloping transit communities, these programs have the potential, once implemented, of mo-



Studies¹ have consistently observed the relationship between land uses and travel behavior for residents of densely populated, transit and amenity-rich communities.

bilizing public support for the transit agency. Most indicators support the conclusion that Chicagoland residents are committed to preserving and enhancing existing communities and most residents also support a level of density needed to make transit feasible. The location efficiency concept facilitates the realization of both these objectives.

What is location efficiency? What is it and what does it do?

Some forty years of research by geographers, transportation economics, and urban planners culminated in 1994 in a concept known variously as "transit-efficient," or more recently, "location efficiency". Location efficiency can be thought of as access: a multi-purpose concept which incorporates efficient mobility, and a spatial match between populations and their activities in a manner which minimizes the latent demand for transportation and its environmental effects and maximizes value capture of investments for metropolitan communities and the regions in which they are located.

Location Efficiency stresses "accessibility" rather than "mobility". It focuses on where people live, work, and shop. It considers how and where people travel, how people impact their environment, and how well or poorly, people utilize the publicly funded infrastructure.

The local characteristics that define "Location Efficiency" include:

- household density at the community level
- access to public transportation
- access to shopping, services, cultural amenities, and schools
- pedestrian "friendliness" of sidewalks, bikeways, benches, lighting, plantings.

How are location efficiency and homeownership related?

Older urban communities developed along transit lines. Multi-family housing and mixed-use commercial development evolved in proximity to public transit system in order to ensure ease of access. At a time when private mobility sources were not so ubiquitous, employers and retailers relied on

the public system to transport their workers and customers. Residents and workers would access services and other needs by walking, biking, or taking a short transit ride. In the late 1990's, we are "reinventing" communities. New communities are once again being planned around transit. Previous industrial areas are being redeveloped as residential lofts and mixed work-live spaces.

Studies¹ have consistently observed the relationship between land uses and travel behavior for residents of densely populated, transit and amenity-rich communities. The travel behavior is in inverse proportion to these same conditions: the higher the density, the greater both the transit-and pedestrian-access, the lower the propensity to drive.

In 1994, a study by John Holtzclaw for the Natural Resources Defense Council (NRDC) established a strong relationship between community density and transit access, on the one hand, and automobile use and ownership, on the other. Holtzclaw's formulas "measured reductions in automobile usage and personal transportation costs that result from different characteristics of a neighborhood."² Specifically, he focused on the factors that tend to make public transportation systems attractive to riders, and converted them into a predictable "avoided-cost savings". This suggested a compelling method for recognizing the cost savings to residents of dense, transit-rich areas.

Holtzclaw's study indicated that location-related savings vary according to the following:

- reliance on public transit resources
- vehicles miles traveled (VMT) per year
- access and use of local shops, services, and cultural and recreational amenities

The magnitude of savings suggested in the San Francisco Bay Area, based on the original study, was between \$350-\$400 per household per month. Current research documents a similar savings in the Chicago area.

In 1995, CNT and two other organizations interested in location eminency - NRDC and STPP (Surface Transportation Policy Project) - obtained funding for a research project that would develop a way to shift part of that savings to homeownership. The

outcome of the research has been the creation of the Location Efficient Mortgage (LEM).

The LEM proposes that families applying for a LEM be allowed to apply this discretionary income savings to the financing of a home mortgage. Participating lenders will have the additional benefit of having a borrower with potentially lesser risk than a similar family in an automobile dependent location, assuming that they rely on public transit.

A focus group of lenders convened in Chicago by the Center for Neighborhood Technology suggested that this level of savings as a function of “location efficiency,” could amortize as much as an additional \$50,000 in mortgage debt. Thus LEMs enable families to use a portion of their location-related savings to “stretch” their mortgage application’s income/expense by recognizing expense adjustments reflecting the transportation efficiencies the family has or plans to have.

What will LEMs accomplish for urban communities?

Making mortgage funds available in location efficient communities will encourage greater homeownership by families that might otherwise locate in auto dependent communities, enable home purchases by families who might not ordinarily qualify, and also stimulate private investment in these reinvested communities. The incorporation of LEM mortgage lending in the underwriting standards of FNMA (or Fannie Mae) would facilitate more than \$300 billion in inner-city mortgages over the next seven years. The resulting change in mortgage lending practices would have positive long-term effects on urban disinvested communities and their economies, air quality, land use and transportation patterns. It would also result in institutionalizing the correction of historic patterns of discrimination.

Increased homeownership in location efficient, amenity-rich communities will reduce vehicle miles traveled because of easier access through walking, transit, bicycling, or other alternate transportation modes. Reduced vehicle miles traveled will also result in reduced congestion, reduced air pollution,

reduced community noise levels, and reduced risk of injury or death from automobile accidents.

Transportation, land use and community redevelopment planning can easily incorporate LEMs. Transportation planners can avoid the creation or expansion of roadways if the public transit system carries more and more riders. In air quality non-attainment areas, LEM offers a voluntary transportation control measure (TCM) that requires the issuance of no adverse mandates, no inconvenience, no extra cost, nor creates any inequities. The MPOs in two of the market test cities are considering including LEMs as a TCM. MPOs can also encourage changes in local policies and programs that can enhance location efficiency. Examples of such measures include:

- Measures which enhance the utility of local and regional transit systems
- Measures which encourage the development of moderate density multifamily housing near transit systems and pedestrian friendly shopping areas
- Measures to encourage home ownership opportunities in multi-family neighborhoods near transit and other commercial amenities
- Measures which encourage provision of transit passes in lieu of parking requirements in multifamily housing communities
- Measures that encourage neighborhood and community-oriented commercial uses near residential neighborhoods
- Measures that provide for greater pedestrian and bicycle access to services and amenities in the community
- Measures that place local serving activity centers near transit systems and pedestrian-oriented commercial areas.

Creating the LEM Consortium

The Center for Neighborhood Technology (CNT), the Natural Resources Defense Council (NRDC), and the Surface Transportation Policy Project (STPP) launched a joint effort, the LEM partnership, to realize this opportunity. The objective was to translate and to focus Holtzclaw’s initial study into a mortgage industry-accepted method for rec-

Transportation planners can avoid the creation or expansion of roadways if the public transit system carries more and more riders.

ognizing and considering the avoided cost or cost savings that is available to residents of densely populated, transit-rich urban areas. Research began on the function of locational and household characteristics in three metropolitan areas: Chicago, Los Angeles, and San Francisco.

In November, 1996, the Partnership completed a calibration of Holtzclaw's formulas using preliminary Chicago area data sets. The research confirmed the accuracy and reliability of Holtzclaw's model and refined its ability to delineate location efficient residential settings throughout the city. The model calibration allowed the Partnership to proceed with designing a market test of the LEM product.

The LEM Partnership received funding from the Federal Transit Administration (FTA), the U. S. Department of Energy (DOE), the U. S. Environmental Protection Agency (EPA), and the Surdna Foundation.

How does the LEM work?

CURRENT CONFIGURATION OF THE LOCATION EFFICIENT MORTGAGE (LEM)

The Location Efficient Mortgage (LEM) is an innovative mortgage product currently being developed for availability in Chicago, San Francisco, and Los Angeles. The target group is moderate income borrowers interested in living in urban areas served by public transportation systems. It is not presently on the market, but plans presently foresee a market test in late 1997.

The LEM recognizes that when families rely on public transit rather than automobiles for their travel needs they spend less on transportation. The LEM's computer software and mapping system can calculate such a family's annual and monthly transportation savings under various situations and conditions. If a borrower chooses a LEM, the calculation of borrowing capacity includes a portion of this savings as an integrated part of the customary mortgage application process. This procedure would create significant "stretch" in borrowing capacity.

In order to implement the LEM market test in Chicago, Los Angeles, and San Fran-

cisco, local lenders will conduct an "Alternative Underwriting Experiment" under Federal National Mortgage Association (Fannie Mae) guidelines. The process of establishing the configuration of the LEM and its various applications in these markets has now begun, but the establishment of firm underwriting criteria has not occurred.. It is probable, however, that the LEM will be very much like other mortgage products accepted on the secondary market by major underwriters. Likely characteristics of the LEM will include:

- 30-year fixed rate mortgage for owner occupied, single or multi-unit homes or condominium units;
- Interest rates will be determined by the prevailing rate at the time of application or at closing;
- Loan-to-value ratio (LTV) of up to 95 percent based on appraisal of the property;
- Qualifying housing debt ratio will be 34 percent;
- Qualifying total debt ratio will be 38 percent;
- Pre-application homeownership counseling will be required;
- Post-application counseling and reporting will be required;
- Key household information reported annually to LEM Program for research purposes only;
- Positive affirmation required of willingness to rely on public transit;
- Purchase encouraged or required of long-term, discounted transit passes for the household;
- Standard verification of employment and credit history will be required;
- Disclosure of automobile ownership will be encouraged or required;

LEM's key provision, setting it apart from other mortgage products, is LEM's linkage to a quantified value for the relative advantage of a decagon efficient home over other homes that do not have public transportation accessibility or located in non-densely populated areas locking ready access to necessities and amenities. Calculation of the LEM value is on an address-specific

basis, using a geographical information system developed and operated by the LEM Partnership. The established Location Efficient Savings value will be integrated into the following equation used to calculate the total debt ratio:

$$(GI + LEV) \leq 38\% \text{ PITI}$$

when GI = Gross Income before taxes

LE= Location Efficient Value

PITI = Principal, Interest, Taxes, and Insurance

ENDNOTES

1 The Cost of Sprawl 1976; several Articles such as "PublicTransit: Realizing its Potential," by Richard Voith. Federal Reserve Bank: "Using Residential Patterns and Transit to Decrease Auto Dependence and Costs," by John Holtzclaw are just a few.

2 Holtzclaw, John. Using Residential Patterns and Transit to Decease Auto Dependence and Costs. San Francisco: Natural Resources Defense Council, 1994.



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Public Education in Urban Centers: Analysis' Trends and Policy Issues

Lora G. Mayo

Baltimore City Public Schools



President Clinton's Call to Action for American Education in the 21st Century 10-Point Plan

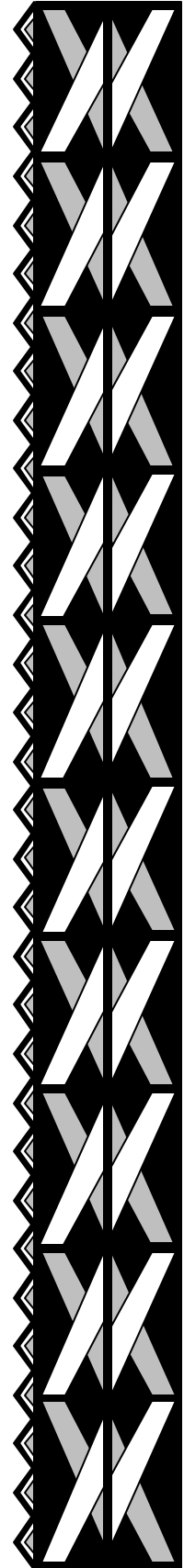
1. Set rigorous national standards, with national tests in 4th grade reading & 8th grade math to make sure our children master the basics.
 2. Make sure there's a talented and dedicated teacher in every classroom.
 3. Help every student to read independently and well by the end of the 3rd grade.
 4. Expand Head Start and challenge parents to get involved early in their children's learning.
 5. Expand school choice and accountability in public education.
 6. Make sure our schools are safe, disciplined and drug free, and instill basic American values.
 7. Modernize school buildings and help support school construction.
 8. Open the doors of college to all who work hard and make the grade, and make the 13th and 14th years of education as universal as high school.
 9. Help adults improve their education and skills by transforming the tangle of federal training programs into a simple skilled grant.
 10. Connect every classroom and library to the Internet by the year 2000 and help all students become technologically literate.
- Source: Department of Education's Home Page.

Policy Issues - 1 of 3

**NATIONAL DEFENSE TRANQUILITY ACT:
EQUAL OPPORTUNITY FOR CLOSING THE**

GAP, 10 POINTS FOR ACHIEVING EQUALITY OPPORTUNITY IN URBAN EDUCATION SOURCE: PRESS RELEASE, RAINBOW PUSH COALITION, 25 FEBRUARY 1997

1. Rebuild schools infrastructure to ensure capability to join in computer age. Both urban and rural schools are crumbling.
2. Higher academic standards, sound management and accountability.
3. Strong emphasis in home, church, school and mass media on character education. Ethical standards are critical to growth as a nation.
4. Greater parental responsibility & involvement. (Mobilize 2 million parents & 5000 ministers/judges to reclaim our youth).
5. Empower Superintendents and Chief Executive Officer leadership to achieve these goals.
6. Mandatory training for teachers, provide salary & benefits to lend itself to more professionalism, accountability & stability.
7. Teach youth skills of survival and success: For example, to apply economic principles to make money legally.
8. Provide children health care and early childhood education programs. Studies demonstrate correlation between physical and mental well-being, Head Start opportunities and ability to learn.
9. In world where everyone is a neighborhood - one button away on the Internet - multi-lingual education is essential.
10. Encourage media - primary factor in development of minds and values of children to show the demeaning stereotypes that



unfortunately shape the visions of our children.

Policy Issues - 2 of 3

COUNCIL OF GREAT CITY SCHOOLS

10 of the 35 Most Important Needs of the Urban School District (What the School Administrators, Teachers, Parents Say Is Needed to Improve Urban Education: Listed in Priority Order)

1. Improve academic achievement.
 2. Obtain adequate financial resources.
 3. Enhance parental involvement.
 4. Build public confidence in schools.
 5. Higher academic standards for student achievement.
 6. Professional development for teachers and staff.
 7. Close achievement gaps between races.
 8. Reduce dropout rates.
 9. Provide adequate assessment and testing instruments.
 10. Provide instructional technology.
- Source: Critical Trends in Urban Education: A Poll of America's Great City School, February 1996.

Policy Issues - 3 of 3

WHAT IS AN URBAN SCHOOL DISTRICT?

According to the Council of Great City Schools (Article IV: Membership, By-Laws), population: 250,000 or more enrollment in public high schools and 35,000 or more in 1980 in elementary schools or the predominant Board of Education serving the largest urban city of each state regardless of enrollment of the school district. If the Board of Education has jurisdiction over areas outside the central city, then the populations and enrollments of those areas shall also be included. (A School District may also eligible for membership by vote of Executive Committee of Council of Great City Schools.)

CHARACTERISTICS OF URBAN SCHOOL

Children eligible for Chapter I of the Elementary and Secondary Education Act.

Children in families qualifying for Temporary Assistance to Needy Families (TANF). Children with limited English proficiency. Children who are racial minorities as classified by Civil Rights statutes

Current Trends 1 of 4

CHARACTERISTICS OF YOUTH IN A WELL-FUNDED JAIL

Sixty- to-90 percent are ARE HIGH SCHOOL DROPOUTS. Eighty-five-to- 92 percent ARE FUNCTIONALLY ILLITERATE. Eighty percent HAVE TESTED DRUG POSITIVE. Seventy-five percent HAVE RETURNED TO JAIL MORE THAN ONCE.

With a diminishing commitment to provide education and treatment, young people tend to be recycled through the prison system at this alarming high rate. They tend to emerge much worse than we they entered. Source: Press Release, Education: National Defense Tranquility Act Equal Opportunity For Closing the Gap, 25 February 1997

Current Trends 2 of 4

URBAN SCHOOL: STUDENT CHARACTERISTIC AND SCHOOL EXPERIENCES

Urban children are two times more likely to be living in poverty than those in suburban location (30 percent compared with 13 Percent in 1990), while 22 percent of rural children were poor in 1990. Urban schools had larger enrollments, on average, than suburban or rural schools at both the elementary and secondary Cyril. Urban teachers had fewer resource to them and less control over their curriculum than teachers in other locations, as did teachers in urban high poverty schools compared with those in rural high poverty schools. (p.7)

Teacher absenteeism, an indicator of morale, was more problem in urban schools than in suburban or rural schools, and in urban high poverty schools compared with rural high poverty schools. (p. 8) Teachers in urban and urban high poverty school had comparable levels of experience and salaries as their suburban counterparts, but they had more experience and higher salaries than

With a diminishing commitment to provide education and treatment, young people tend to be recycled through the prison system at this alarming high rate.

most their rural counterparts. However, administrators or urban and urban high poverty schools had more difficulty hiring teachers than their counterparts in most other schools. (pp. 7-8) Source: Department of Education's Home Page; Poverty Rates for children under 18, by urbanicity; 1980 and 1990, p.3

Current Trends 3 of 4

HOW ARE CHILDREN SPENDING THEIR TIME?

By the age of 15, our youth have spent 18,000 hours watching television, listened to more than 22,000 hours of radio, seen ¼-million conflicts resolve by murder, spent 11,000 hours in school, spent less than 3,000 hours in church. Source: Press Release, Education: National Defense Tranquility Act, Equal Opportunity for Closing the Gap, 25 February 1997.

Current Trends 4 of 4

POSITIVE IMPACTS ON EDUCATION AND BALTIMORE CITY'S SUCCESSES

Strong leadership that is empowered; Leadership that is empowered with adequate and equal funding and community support. Leadership that is credentialed and experienced. Leadership that understands political climate. Leadership that understands importance of all stakeholders – parents, community, business.

Professional development is a must. Administrators, principals, teachers and staff need continuing training in the areas of delivery of instruction, computer technology, cultural diversity, laws and ADA training.

Maintain strong curriculum division. What new innovations are available? Know the difference in innovation and "guinea pig" research. Obtain data from the Research and Evaluation Office on student achievement, including after the diploma is awarded.

Organized coalitions are very effective. Who are the administrators in the schools? Are you involved in the selection process? When are school board meetings held?

What is the structure of the parent component of your school district? Who are your city, state and federal representatives? What are their positions on public education? What is their voting record?

Develop business partnerships for future employment opportunities and to contribute to student's life experiences. Get expertise. Funding resource. Establishes goodwill.

Establish partnerships with community and services groups, foundations, fraternities, sororities, churches, and community groups connected to school.

Keep the lines of communication open. Informed stakeholders become partners of education, not adversaries. Establish strong government relations office in school system. Establish strong public relations office in school system.

A Few Success Stories from Baltimore City From the 1994 - 1995 Annual Report

Safe School Initiatives: Reduced incidents involving firearms by 23 percent. Opened six Achieving Personal Excellence (APEX) centers. Opened citywide Conflict Resolution Centers to assist school staff.

Student Achievement: 24 schools achieved MSPP performance indices greater than 50 and ahead of state goals, despite poverty levels of more than 60 percent. Of 155 schools administering tests, 97 improved, 39 maintained achievement levels, and 36 gained 5 or more percentage points ("significant improvement" according to MSDE). Offered graduates more than \$8 million in scholarship funds. Graduates were accepted at more than 45 colleges. Displayed over 500 pieces of students' artwork at the Dazzling Vistas Youth Art Exhibit.

Partnerships: Worked in partnership with Greater Baltimore Committee to provide leadership and management training for principals, and assistant principals. Brought immunization compliance to 98.8 percent as of June 1996 in collaboration with Baltimore City Health Department.

Special Education: Raised over \$15 million in third party billing for special education services through Medicaid reimburse-

Keep the lines of communication open. Informed stakeholders become partners of education, not adversaries.

ments. Designated William S. Baer School
as Mobility Opportunities Via Education
Demonstration Center for the East Coast.

Conducted intense training program for spe-
cial education personnel using Distance
learning labs in high schools.



The Church: An Alternative Urban Transportation Amenity

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Objective: To access the ability of churches to contribute as an alternative resource for urban transportation services. Methodology: Evaluate existing transport investment by the church and commitment to providing alternative for members. Existing Capital Investment: Examine community-based contribution to alternative sources of transportation. Access state-wide church data bases to obtain a list of 200 candidate churches. Determine type of transportation vehicles that are available. Candidate Population Review: Considered churches with potential transport vehicles. Selected pilot list of 200 churches.

Survey questions included the number of transportation vehicle owned and operated by the church; the total passenger capacity of transit vehicles; weekly frequency of use of transportation vehicles; purpose of vehicle use; the number of church members. To measure commitment to providing alternatives, questions included, work; social services; medical facilities; social, recreational,

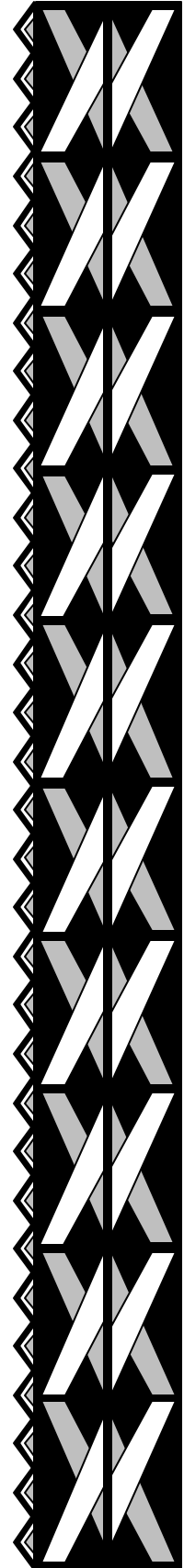
sightseeing; errands, appointments, business, and other as alternative trip purposes.

Results and Analysis of Data

The number of transportation vehicle owned and operated by the most churches was less than two. The total passenger capacity of transit vehicles of most respondent churches was five to 10. Seventy-three percent of respondents stated transportation vehicles (weekly) were used one day per week. The purposes included recreation, 66 percent; ministry, 88 percent; and conferences, 77 percent. Sixty-four percent of respondents had more than 500 church members.

Problems or Needs

Reasons expressed for not providing more alternatives to members included, repair of vehicles; paperwork; coordination; insurance costs; liability, and the need for more information. To assist churches, Dr. Wright recommends providing financial incentives to churches for transportation services.



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Traffic Calming and Its Role in Creating Livable Inner-City Communities

Ian M. Lockwood

City of West Palm Beach, Florida



Creating livable inner city communities can and needs to be done. There are many challenges facing inner city communities and many strategies and initiatives available to meet the challenges. Normally a package of tailored initiatives is desirable to suit the needs of a particular community. However, one of the areas that is typically overlooked in many packages is addressing the streets in these communities. The purpose of this submission is to introduce the concept of traffic calming and describe how it contributes to the inner city. To do this, the author has selected and attached several relevant and concise documents. Readers will discover what traffic calming is, what it does, how the City of West Palm Beach uses traffic calming in one of its inner city communities, and how it has helped the downtown. *What is Traffic Calming?*, was prepared for the 1997 International Conference of the Institute of Transportation Engineers. The paper provides an up-to-date definition of traffic calming and provides a clear interpretation of the definition. Also included is the City Transportation Language Policy, adopted in 1996 by the City of West Palm Beach to change the way engineers, planners, and the public speak and think about streets and transportation planning. The policy was considered very important to help shift the priorities away from accommodating cars at all costs, towards building streets for people. Before the policy was adopted, there was a pro-automobile bias to the language, and consequently the thought patterns of City staff. The policy helps people to consider a broader perspective (social, environmental, and economic.) *Traffic Calming Combined with Other Initiatives*, describes what the City is doing in one of its inner-city communities with respect to traffic calming and other programs. The City is making a large and care-

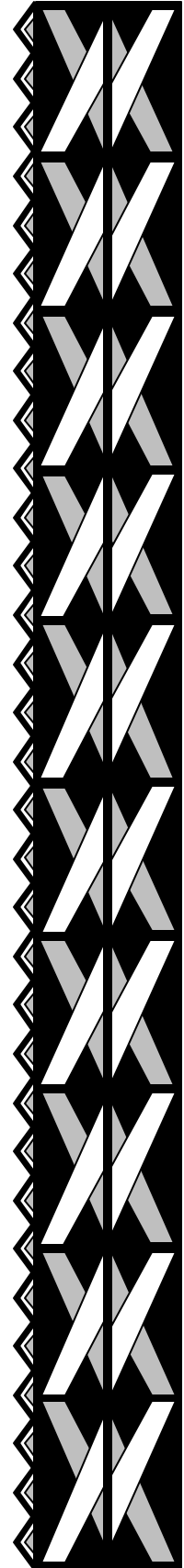
fully designed investment in the community, and believes that it will make a big difference.

What is Traffic Calming?

In September 1996, at the 66th ITE Annual Meeting, there was special meeting to discuss traffic calming. About 40 people from countries around the world attended. The purpose was to discuss how the ITE could contribute to, or be involved with, traffic calming. During the discussions, it became apparent that people had different definitions of traffic calming. Progress was difficult due to the lack of a common definition. The decision was to establish a subcommittee to define traffic calming for the ITE. The intent was to draft a definition for the 1997 International ITE Conference in Tampa, Florida.

A Sample of Various Definitions

Research into the definition of traffic calming confirmed that a common definition did not exist and that the range of definitions was broad. For example, Tim Pharoah and John Russell defined traffic calming as "the attempt to achieve calm, safe and environmentally improved conditions on streets." Dr. Carmen Hass-Klau stated that the Pharoah-Russell definition did not go far enough. She felt that in the narrow sense, traffic calming meant "to lower speeds". Then, in a broader sense, she felt that it must be thought of as "an overall transportation policy concept" to promote non-automobile modes of transportation. Her definition included such things as road pricing, taxation



To help the public, transportation professionals, municipal staff, and politicians communicate effectively about traffic calming, a common understanding of the term is necessary.

changes, and parking restrictions. Her definition was, “the combination of policies intended to alleviate the adverse environmental, safety, and severance effects motor vehicles continue to impose on both the individual and society at large.” Another definition of traffic calming developed by a British group of engineers and surveyors was, “the application of traffic engineering and other physical measures designed to control traffic speeds and encourage driving behaviour appropriate to the environment.”

The Problem

The sample of definitions indicates that traffic calming can mean anything from lowering motor vehicle speeds to an all-encompassing transportation policy. Unfortunately, many definitions for the same term lead to communication problems; orally or in written legislation and guidelines. For example, how is the ITE supposed to develop a set of traffic calming guidelines for its membership when its membership has widely varying views about what traffic calming is? How can a municipality support traffic calming without adopting its own definition? To help the public, transportation professionals, municipal staff, and politicians communicate effectively about traffic calming, a common understanding of the term is necessary.

The Draft Definition

As developed by the ITE Subcommittee, the draft definition of traffic calming is “the combination of mainly physical measures that reduce the negative effects of motor vehicle use, alter driver behavior, and improve conditions for non-motorized street users.”

Interpretation of the Definition

The research into the definitions of traffic calming showed that, with few exceptions, the definitions were accompanied by interpretations to ensure a clear understanding of the intent. For example, the Ontario Traffic Conference’s definition of traffic calming was very good, but extremely long. Its length made it very easy to interpret and parts of it were used to help interpret the draft

ITE definition. The interpretation is not only important to define what traffic calming is, it also determines what traffic calming is not. That is, if something is not included in the interpretation, then it is likely not traffic calming. For further guidance on what traffic calming is not, see the section entitled “Related Words and Phrases”.

The definition’s phrase “mainly physical measures” means physical measures and a supportive environment, which includes such things as policy and legislative support for traffic calming and flexibility of existing standards, guidelines, and practices. A supportive environment is as important as the traffic calming measures themselves because it is what allows traffic calming to happen. The phrase “reduce the negative effects of motor vehicle use” means changing the design and the role of the street to reduce the negative social and environmental effects of motor vehicles on individuals (speeding, intrusion, etc.) and on society in general (energy consumption, pollution, urban sprawl, etc.). The phrase “alter driver behavior” addresses the self enforcement aspect of traffic calming; the lowering of speeds, the reduction of aggressive driving, and the increase in respect for non-motorized users of the streets. The phrase “improve conditions for nonmotorized street users” means to promote walking and cycling, increase safety, create a feeling of safety, improve the aesthetics, etc.

Traffic calming measures include: vertical changes in the street (e.g. speed humps, speed tables, raised intersections); lateral changes in the street (e.g. chicanes, off-set intersections, lateral shifts); constrictions (e.g. narrowings, pinch points, islands); narrow pavement widths (e.g. medians, edge treatments); entrance features; traffic circles; small corner radii; and related streetscaping (e.g. surface textures and colors, landscaping, street trees, and furniture). This list of measures is particularly useful because it gives the categories of traffic calming measures, while not limiting the ability to create new measures within those categories.

Traffic calming goals include: increasing the quality of life; incorporating the preferences and requirements of the people using the area (e.g. working, playing, residing)

along the street(s), or at the intersection(s); creating safe and attractive streets, helping reduce the negative effects of motor vehicles on the environment (e.g. pollution, sprawl); and promoting pedestrian, cycle, and transit use. Traffic calming objectives include: achieving slow speeds for motor vehicles; reducing collision frequency and severity; increasing the safety and the perception of safety for nonmotorized users of the street(s); reducing the need for police enforcement; enhancing the street environment (e.g. streetscaping); encouraging water infiltration into the ground; increasing access for all modes of transportation; and reducing cut-through motor vehicle traffic.

The lists of goals and objectives are very useful supplements to the definition. They allow people to relate traffic calming to other policies, official plans, master plans, etc. It is recognized that the goals are rather intangible, which is what goals should be. However, the objectives are more tangible. Therefore, using the objectives, people can assess traffic calming at whatever level they need to, and develop measures of success and failure for their own traffic calming projects and policies.

The goals and objectives demonstrate that traffic calming involves much more than just motor vehicle issues. It is important that municipalities and communities have a choice of why they should traffic calm. For example, in one city, reducing speeding may be the key objective, while in another it may be a combination of increasing access to land uses and increasing water infiltration into the ground. Another city may be concerned about urban renewal, crime, and aesthetics.

Despite the great deal of flexibility inherent with traffic calming, there are some principles that apply to all traffic calming measures. Traffic calming must be community-based and supported. Through design, traffic calming must incorporate a degree of self-enforcement of motor vehicle speeds. Driver behavior must be directly affected by the traffic calming measures. Traffic calming must improve the safety of street users, particularly the vulnerable users including the children, disabled, elderly, pedestrians, and cyclists. The list of principles can be thought of as a test of minimum criteria to

determine if a candidate street modification is actually traffic calming; if the principles are not met, then it is not truly traffic calming.

The definition and its interpretation were developed to be broad enough to apply to many places and situations, but narrow enough to have a definite meaning. It is recognized that different combinations of goals and objectives will apply to different situations. Different combinations of traffic calming measures are appropriate depending on the existing and anticipated or desired motor vehicle speeds and volumes, the overall traffic calming plan, and the goals and objectives for the street(s). Additional factors affecting the choice of traffic calming measures for specific locations include: the location type (entrance, internal intersection, mid-block location), street type (local, collector, and arterial), street geometry, adjacent land uses, mass transit needs, budget, aesthetic considerations, and community preferences.

Related Words and Phrases

As described in the example definitions, traffic calming has been equated to practically everything from slowing down motor vehicles to changing tax laws. The common definition of traffic calming can have two effects on previous definitions. For those who previously had a narrow definition of traffic calming, the new definition is broader. For those who had a broader definition, the opposite occurs. But, what happens to all the items that are no longer covered by the common definition of traffic calming? To help with these issues, a draft set of definitions for related words and phrases was prepared.

Traffic calming measures are design elements in and or along the street or intersection that conform to the definition of traffic calming.

Traffic management (or route modification) is the combination of measures that alters the available routes for traffic or traffic flow. Examples include one-way streets, diverters, closures, and turn prohibitions.

Discussion: Traffic management and traffic calming are frequently confused. Al-

though traffic management could share the common goal of improving quality of life by preventing cut-through traffic, traffic management is an attempt to change traffic routing or traffic flow on the street network, while traffic calming is an attempt to alter driver behaviour. The confusion between traffic management and traffic calming can likely be traced back to the 1970s when "traffic management plans" were very popular. When traffic calming came along later, many people lumped it in with traffic management as if it were the same thing.

Traffic control devices are signs, signals, and markings, designed to regulate, warn, guide, and provide information. Examples include stops signs, speed limit signs, and traffic signals.

Discussion: Traffic control devices are frequently confused with traffic calming measures. Although a traffic control device and a traffic calming measure could share the common goal of slowing down car drivers, the traffic control device is an attempt in communication, while the traffic calming measure is a part of the design of the street or intersection.

Streetscaping includes planning and placing distinctive lighting, furniture, art, trees, other landscaping, etc. along streets and at intersections.

Discussion: Streetscaping can occur quite successfully without traffic calming, but traffic calming is most successful when it is done in conjunction with streetscaping which is why "related streetscaping" was included in the definition of traffic calming.

Traffic calming plans affect one or more streets and/or intersections and involves traffic calming measures.

Neighborhood traffic calming plans are traffic calming plans for whole neighborhoods.

Area-wide traffic calming plans are traffic calming plans for large areas.

Traffic management plans affect one or more streets and/or intersections and involve traffic management measures.

Neighborhood traffic management plans are traffic management plans for whole neighborhoods.

Street plans affect one or more streets and intersections and involve traffic calming, traffic management, streetscaping, traffic control, provisions for non-automobile modes (sidewalks, contra-flow cycle lanes, etc.), and on-street parking.

Conclusions and Recommendations

Naturally, developing a common definition of traffic calming and related terms will have repercussions. People who have been using unrecommended language will have some difficulty adjusting in the short term. However, if these issues are not addressed soon, then defining clear terminology will only get more difficult in the future as traffic calming becomes more popular. In addition, clear terminology will help with legislation, standards, and other communication. It is recommended that the ITE continue to critically examine and revise as necessary the language of transportation planning and engineering to ensure that communication is effective.

REFERENCES

- County Surveyors Society et. al.
1994 Traffic Calming in Practice. Landor Publishing Ltd., London, England.
- Hass-Klau, Dr. Carmen
1990 The Theory and Practice of Traffic Calming, Can Britain Learn from the German Experience? Environmental and Transport Planning, Brighton, England.
- Ontario Traffic Conference Subcommittee on Traffic Calming

1995 Traffic Calming, the 21st Century. Ontario Traffic Conference, Toronto, Canada, November

Pharoah, Tim, and John Russell

1989 Traffic Calming: Policy and Evaluations in Three European Countries. South Bank Polytechnic, London, England.

MEMO

To: Department Directors and Division Heads
 From: Michael J. Wright, City Administrator
 Subject: City Transportation Language Policy
 Date: November 14, 1996

Please be advised that the City of West Palm Beach has adopted a new transportation language policy. Employees are asked to follow the policy and encourage those who deal with the City to do the same. The intent of the policy is to remove the biases inherent in some of the current transportation language used at the City. This change is consistent with the shift in philosophy as the City works towards becoming a sustainable community. Objective language will be used for all correspondences, resolutions, ordinances, plans, language at meetings, etc. and when updating past work.

Everyone's cooperation will be greatly appreciated. Please ensure that your employees are aware of, and use, the objective language. After a few of weeks of practice, using the objective language will become second nature.

Background: Much of the current transportation language was developed in the 1950's and 1960's. This was the golden age of automobiles and accommodating them was a major priority in society. Times have changed, especially in urban areas where creating a balanced, equitable, and sustainable transportation system is the new priority. The transportation language has not evolved at the same pace as the changing priorities much of it still carries a pro-automobile bias. Continued use of biased language is not in keeping with the goal of addressing transportation issues in an objective way in the City.

Languages Changes: There are several biased words and phrases that have been identified and summarized at the end of this memo. Suggested objective language is also summarized. The rationale for the changes is explained below. In summary, the City has to be unbiased, and appear to be unbiased. Objective language will also allow the City to be inclusive of all of the City's constituents and modes of transportation.

The word improvements is often used when referring to the addition of through lanes, turn lanes, channelization, or other means of increasing motor vehicle capacity and/or speeds. Though these changes may indeed be improvements from the perspective of motor vehicle users, they would not be considered improvements by other constituents of the City. For example, a resident may not think that adding more lanes in front of the resident's house is an improvement. A parent may not think that a channelized right turn lane is an improvement on their child's pedestrian route to school. By City staff referring to these changes as improvements, it indicates that the City is biased in favor of one group at the expense of others. Suggested objective language includes being descriptive (e.g. use through lanes, turn lanes, etc.) or using language such as modifications or changes.

Examples: Biased: The following street improvements are recommended.
 The intersection improvement will cost \$5,000.00.

The motor vehicle capacity will be improved.

Objective: The following street modifications are recommended.

The right turn channel will cost \$5,000.00.

The motor vehicle capacity will be changed.

Like *improved* and *improvement*, there are similarly biased words such as *enhance*, *enhancement*, and *deteriorate*. Suggested objective language is shown in the examples below.

Examples: Biased: The level of service for motor vehicles was *enhanced*.
The level of service for motor vehicles *deteriorated*.
The motor vehicle capacity *enhancements* will cost \$40,000.00.

Objective: The level of service for motor vehicles was changed.
The level of service for motor vehicles was decreased.
The level of service for motor vehicles was increased.
The increases to motor vehicle capacity will cost \$40,000.00.

Upgrade is a term that is currently used to describe what happens when a local street is reconstructed as a collector, or when a two-lane street is expanded to four lanes. Upgrade implies a change for the better. Though this may be the case for one constituent, others may disagree. Again, using upgrade in this way indicates that the City has a bias that favors one group over other groups. Objective language includes *expansion*, *reconstruction*, *widened*, or *changed*.

Examples: Biased: Upgrading the street will require a wider right of way.
The upgrades will lengthen sight distances.

Objective: Widening the street will require a wider right of way.
The changes will lengthen sight distances.

Level of service is a qualitative measure describing the operational conditions of a facility or service from the perspective of a particular set of users (motor vehicle users, cyclists, pedestrians, etc.). If the set of users is not specified, then it is a mystery as to which set is being considered. The bias enters the picture when it is assumed that, unless otherwise specified, level of service implies for motor vehicle users. The objective way to use this term is to add the appropriate modifier after "level of service".

Examples: Biased: The level of service was "A".

Objective: The level of service for motor vehicle users was "A".
The level of service for pedestrians was "A".

If "level of service" were used frequently for the same users in the same document, using the modifier every time would be cumbersome. In these situations, the modifier is only required at the beginning of the document and periodically after that.

Traffic is often used synonymously with motor vehicle traffic. However, there are several types of traffic in the City: pedestrian traffic, cycle traffic, and train traffic. To be objective, if you mean motor vehicle traffic, then say motor vehicle traffic. If you mean all the types of traffic, then say traffic.

Examples: Biased: The problem is speeding traffic.
The traffic queued back for one mile.

Objective: The problem is speeding motor vehicles.
The motor vehicles queued back for one mile.

At the City, we frequently discuss the concept of traffic demand, fluctuations in traffic demand, peak hour traffic demand, etc. Notwithstanding the concerns about the word traffic, the concept of traffic demand contains a bias. There is really no such thing as demand for traffic; traffic is not a commodity that most people desire. Demand is an overly strong word which implies a sense of urgency which does not necessarily exist at the City, especially considering the shift in priorities as discussed at the beginning of this memo. Objective language would be motor vehicle use or travel demand.

- Examples: Biased: The traffic demand will increase.
The traffic demand projections will be complete soon.
The peak hour traffic demand is falling.
- Objective: Motor vehicle use will increase.
Travel demand will increase.
The projections of motor vehicle use will be complete soon.
The peak hour motor vehicle use is falling.

Promoting alternative modes of transportation is generally considered a good thing at the City. However, the word alternative begs the question, "Alternative to what?" The assumption is alternative to automobiles. Alternative also implies that these alternative modes are nontraditional or nonconventional which is not the case with the pedestrian, cycle, nor transit modes. If we are discussing alternative modes of transportation in the City, then use direct and objective language such as non-automobile modes of transportation. Alternatively, one can add an appropriate modifier as shown in the last example.

- Examples: Biased: Alternative modes of transportation are important to downtown.
- Objective: Non-automobile modes of transportation are important to the downtown.
Non-motorized modes of transportation are important to the downtown.
Alternative modes of transportation to the automobile are important to the downtown.

Accidents are events during which something harmful or unlucky happens unexpectedly or by chance. Accident implies no fault. It is well known that the vast majority of accidents are preventable and that fault can be assigned. The use of accident also reduces the degree of responsibility and severity associated with the situation and invokes an inherent degree of sympathy for the person responsible. Objective language includes collision and crash.

- Examples: Biased: Motor vehicle accidents kill 200 people every year in the County.
He had an accident with a light pole.
Here is the accident report.
- Objective: Motor vehicle collisions kill 200 people every year in the County.
He crashed into a light pole.
Here is the collision report.

Protect means shielding from harm. However, when we discuss protecting land for a right of way for a road, the intent is not to shield the land from harm, but to construct a road over it. Objective words include designate and purchase.

- Examples: Biased: We have protected this right of way.
- Objective: We have purchased this right of way.
We have designated this a right of way.

Everyone at the City should strive to make the transportation systems operate as efficiently as possible. However, we must be careful how we use efficient because that word is frequently confused with the word faster. Typically, efficiency issues are raised when dealing with motor vehicles operating at slow speeds. The assumption is that if changes were made that increase the speeds of the motor vehicles, then efficiency rises. However, this assumption is highly debatable. For example, high motor vehicle speeds lead to urban sprawl, motor vehicle dependence, and high resource use (land, metal, rubber, etc) which reduces efficiency. Motor vehicles burn the least fuel at about 30 miles per hour, speeds above this result in inefficiencies. In urban areas, accelerating and decelerating from stopped conditions to high speeds results in inefficiencies when compared to slow and steady speeds. There are also efficiency debates about people's travel time and other issues as well.

Therefore, be careful how you use the word efficient at the City. If you really mean then say faster. Do not assume that faster is necessarily more efficient. Similarly, if you mean slower, then say slower.

Examples: Biased: The traffic signal timings were adjusted to increase motor vehicle efficiency.

Let us widen the road so that cars operate more efficiently.

Objective: The traffic signal timings were adjusted to increase motor vehicle speeds.

Let us widen the road so that it cars operate faster.

Summary

Biased Terms

.improve
enhance, deteriorate
upgrade
level of service traffic
traffic demand
accident
protect
efficient

Objective Terms

change, modify
change, increase, decrease
change, redesignate, expand, widen, replace
level of service for motor vehicles
motor vehicle use
collision, crash
purchase, designate
fast



Technology, Transportation, and African Americans : No Innovations in Policy Directives

Terrence A. Taylor, MPA

Miami-Dade Metropolitan Planning Organization



The United States is a segregated nation. It is no accident that the reversal of segregation laws and the legitimation of the Civil Rights movement by corresponding public policy roughly paralleled the suburbanization of America. Unfortunately for African Americans, the capital needed to provide an economic base and to sustain the central city left also.

The result was an increase in poverty and unemployment. Without the symbols of wealth and potential, one is at an extreme disadvantage in a capitalist society. Social problems that accompany poverty and unemployment beset those who live away from the capital base. As it will be demonstrated within this paper, the persons left behind tended to be African Americans more than any other ethnic group.

The problem is further exacerbated by public policy. The explicit, implicit and sometimes de facto public policy has been that since African-American communities, especially those located within central cities, have more than their share of social, criminal, and economic ills, it is not unreasonable to visit a few more of these ills upon those who must reside in these areas.

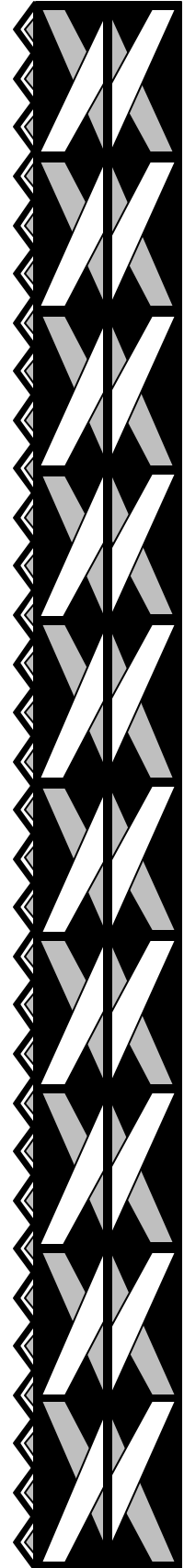
The development and implementation of transportation infrastructure are examples of the public policy problem. It is well documented by Mohl (1993) that transportation infrastructure has often been designed to the detriment of those dwelling in the urban core. By making it feasible to develop additional suburbs along the route, the nation's highway system allowed financially able Americans to establish enclaves further

away from the central city. Instead of creating Africa-American communities, however, it destroyed them.

Highways were constructed in many places so that suburbanites could travel to their employ in the central city without actually living there. Now transportation planning policies are geared toward making it feasible for those who wish to bypass the central city altogether to do so.

The deployment of Intelligent Transportation Systems (ITS), formerly known as Intelligent Vehicle Highway Systems (IVHS), is a technologically-based continuation of this policy. While the name changed to include improvements in the transit system such as the Automated Vehicle Locator System (AVL), the primary focus is on things such as automated toll collection, variables message signs, and the potential for real-time pricing (Peña 1996).

This investment should alarm African-American communities, scholars and planners. It is a motor vehicle capacity improvement, and such improvements have traditionally had adverse effects on African-American communities. Without proper safeguards, ITS will continue this tradition. First, it will maintain the segregation that besets the nation's major metropolitan areas. Second, it will further erode job accessibility for many African Americans and potentially worsen the poverty in many communities. Third, African Americans are heavily transit-dependent and lack the vehicular capital necessary to participate in ITS. Fourth, African Americans in many communities lack the education or even the access to the education necessary to participate



in the information age. Finally, African Americans continue to lack the capital necessary to participate in the information age, including ITS.

African Americans and Their Locations Within Cities

The term "cities", for the purposes of this paper, will be used interchangeably with the term "metropolitan areas." In either case, it refers to an entire urbanized area that, along with its suburban areas, are economically and socially bound together. At the core of a metropolitan area is the "central city." This is the formally bounded municipal corporation around which the metropolitan area supposedly revolves. Finally, there is the "inner city." The inner city is a dense part of the metropolitan area, usually in the center city. The inner city, by definition, is often plagued by undesirable social, economic and physical conditions that occur in that limited portion of the central city." (Byrum 1992)

These definitions are important because they place the various activities that occur within cities in perspective. Types of residence, employment and recreation are important when defining living conditions. Furthermore, the distance one has to travel between these activities of everyday life and the availability of various modes of transportation to be used are important to the social and economic health of a community.

Most people who live in the central city, especially the inner city do so because they must. The general trend is that those who can afford to leave will move away, and those who cannot afford to do so will remain. Byrum (1992) notes that "racial attitudes and economic class are deeply involved in this tendency and metropolitan housing markets provide the means for this tendency to become residential practice and geography."

There is, however, more than the market at work. Historically, the movement of inner city populations, or lack thereof, was planned methodically in many metropolitan areas. (Mohl 1993) The idea was that if these communities could be contained, then their economic force could also be contained. The result of such policies was that the people who lived in the inner city were "compacted

and quarantined" (Miller 1996) from the development that benefited the central city.

Of course, it should not be implied from this historical discussion that African Americans do not live in suburbs. Massey and Denton (1993) do note, however, that blacks traditionally have not been able to relocate to the suburbs at the same rates as whites. Minneapolis, Kansas City, Milwaukee, and New York had suburbanization rates under 10 percent as late as 1980. The closest parity in the suburbanization rate is in Los Angeles, where in 1980 it approached 42 percent. Nevertheless, it was still lower than the white suburbanization rate of 57 percent.

Furthermore, Massey and Denton (1993) note that black suburbanization does not eliminate black-white disparities in employment and housing. In many ways, the conditions of the suburbs to which they move often replicate the problems of the inner cities they fled. They tend to be "old" suburbs that white populations have already deserted to move farther away. Likewise, by the time African Americans move there, the economic and capital base needed to sustain a viable community has moved away as well.

In some places, especially in the South, African-American populations have traditionally lived outside the central city. Because of post-slavery economics and segregation, they were relegated to live outside the city in rural areas. Oddly enough, the post-integration era often brought about the annexation of many rural areas as southern cities began to grow and expand. Thus, many southern blacks became suburbanites with little or no effort on their part. (Massey and Denton 1993)

Transportation and Progress

American cities, in their segregated heydays, often could not decide what to do with African Americans. They were always viewed as a problem, even if their communities were thriving. Mohl (1993), Miller (1996) and others note that when the community was thriving then it needed to be destroyed, or at the very least relocated, presumably because the location would be a good place for the majority population's residence and commerce. If a community was

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considered “blighted,” then the “slums” had to be cleared to renew the urban area. The literature concurs that the designations “blighted” and “slum” were used interchangeably depending on the needs of the power-brokers at the time.

By the early part of this century, cities had begun to serve as incubators of racial and ethnic tensions. By the 1920’s, many blacks had migrated in mass to the urbanized North, as did many immigrants seeking a better way of life. (Mohl, *Shifting*, 1993) Yet, segregation was a way of life in most northern American cities, especially in education and zoning. Unofficial discrimination policies abounded in housing, hiring, and voting. There was also a resurgence of the Ku Klux Klan. East Saint Louis, Houston, Philadelphia, Chicago, Tulsa, and Washington, D.C. had experienced race riots by 1921 (Mohl 1993).

The 1920’s also brought about the mainstreaming of the automobile. With increased mobility, the concept of the metropolitan area was expanded. Living outside the central city, and being able to travel to the central city for daily activities of commerce and employment, became a viable option (Mohl 1993).

Urban planners and power-brokers were then obligated to do something about the traffic congestion. They began to build modern streets and highways. The 1920’s was the decade in which the reign of the automobile ascended. It was also the decade that realized a decline of mass transit, particularly the electric street car systems found in many cities. General Motors bought the street car systems in many cities and replaced them with buses. (Mohl 1993). The end of the decade was marked by the Stock Market Crash and the beginning of the Great Depression. The era would have a significant impact on residential patterns and transportation.

The New Deal, Sort of

The Great Depression of the 1930’s had great adverse affects on American cities. Unemployment was rampant, and millions of immigrants who came to America in the early part of the century were homeless.

Private agencies were ill-equipped to handle the load, so urban leaders such as Major Murphy of Detroit and Mayor La Guardia of New York worked to forge new links between Washington and the nation’s cities. When Franklin Delano Roosevelt became president in 1933, he knew he had to act quickly.

The Works Progress Administration (WPA), and its predecessors, the Federal Emergency Relief Administration (FERA) and Civil Works Administration (CWA), provided employment for millions of American. Direct assistance was provided to municipalities for the building of the nation’s infrastructure, including streets and highways and other public facilities, (Mohl 1993)

In addition to building infrastructure, the Public Works Administration (PWA) supported activities such as slum clearance and housing projects. Later, the U.S. Housing Administration would assume these functions. As a condition for funding, localities were required to provide evidence of efficient planning and administration; thus, the program helped “stimulate urban planning and more efficient local management practices.” (Mohl 1993) Another dose of investment in local economies resulted from U.S. participation in World War II.

Segregation: The Old Deal

It is especially popular to blame the Roosevelt Administration’s “New Deal” as the impetus for the rise of dependency on public assistance. Those who challenge this perception are often referred to as supporters of “the last of the New Deal Democrats.” It probably can be argued that such assumptions are false; or at the very least, African Americans and the poor were not the ones feeding at the trough.

The Federal Housing Administration, between 1935 and 1950, deliberately discriminated against African Americans in housing loan guarantees. The FHA would not guarantee loans in housing developments that would upset the racial balance of neighborhoods. One only had to peruse the FHA *Underwriting Manual* to realize that segregation was a necessity to get an FHA insured loan (Hirsch 1993).

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The funding that came from the New Deal programs was used to contain African Americans in small encampments within the metropolitan area. Mayor Daley of Chicago, for example, used the Federal Housing Acts of 1949 and 1955 to clear supposed "slums" and to keep poverty out of the downtown area. In place of the homes they previously occupied, the population was placed in dense, high-rise housing in roughly the same place (Miller 1996).

In other cities, the goal was to relocate the black neighborhoods to new places. A public housing project called Liberty Square was built five miles from Miami's current downtown in the 1930's to relocate the blacks that living in the adjacent "Colored Town" (also called Overtown). By using federal dollars for this project, the civic leaders hoped to expand the downtown area. (Mohl 1993b) In fact, the legislation that was supposed to provide affordable housing and spur development, such as the Federal Housing Act of 1949, was later used in combination with state and local planning practices, to effectively quarantine African Americans and low-income populations (Hirsch 1993).

Officials continually attempted to take advantage of opportunities to control the movement of the African-American population in cities. The Dade County Planning Board proposed a "Negro Resettlement" plan to move the Overtown population away from the central business district in 1936 and relocate it to the agricultural area just outside the City. Developer George Merrick was outspoken about his wish to remove African Americans from the city limits. Though never successfully implemented, there were a variety proposals to utilize expansion of the central business district to accelerate the demise of the "Colored Town" adjacent to Downtown Miami (Mohl 1993b).

Erection of the Barriers

The attempts to control African-American populations in the nation's cities was only moderately successful. The period following World War II brought prosperity, and prosperity brought suburbanization, especially of white Americans. Black Americans, too, were gaining more access to re-

sources. Meanwhile, the nation's segregation laws were coming under increased scrutiny. For segregationists, Brown vs. Board of Education in 1954, sounded the true alarm as to the legal era in which the nation was about to enter.

Local planners, politicians, government officials and business people decided that additional barriers to integration needed to be created. Road and highway construction and designation became an effective tool for the isolation of African-American. Roads were used to limit their transportation options, limit expansion of neighborhoods, and to "red-line" communities. With the mainstreaming of the automobile, it became necessary for urban areas to pave city streets early this century. Congress passed the Highway Act of 1916 to assist road building in rural areas. The Federal Highway Act of 1921 provided for matching funds to permit states to develop a national system of paved highways. President Dwight D. Eisenhower persuaded the Congress to authorize funding for an Interstate Highway System in 1956 (Mohl 1993b).

These building projects were good for America in many respects. Metropolitan areas were increasingly accessible to their suburbs and to one another. Most notably, they put Americans to work during the Great Depression and following World War II. However, segregationists also saw this as an opportunity to effectively separate the communities within their cities.

The federal government adopted an attitude toward such efforts that lay some where between laissez-faire and outright encouragement. Private agencies jumped on the opportunity. For example, c (Mohl 1993b).

Indeed, Mohl (1993b) also notes that

Not surprisingly, the neighborhoods destroyed and the people uprooted in the process of highway building tended to be overwhelmingly poor and black. A general pattern emerged, promoted by state and federal highway officials and private agencies such as the Urban Land Institute of using highway construction to eliminate "blighted"

urban neighborhoods and redevelop valuable inner city land.

In addition, interstates were used to connect central cities with their suburbs and facilitate automobile commuting. In many places, this good worked to detriment of effective mass transit. The federal government was acutely aware of the issue. The Congressional Committee on Public Works, in the early 1960's estimated that an average of 32,400 families would be dislocated each year due to highway construction. The Committee then forecasted that number to be closer to 37,000 between 1960 and 1972 (Mohl 1993b). In 1969, the National Commission on Urban Problems estimated federal highway building efforts demolished 330,000 urban housing units between 1957 and 1968.

The Cities Tell The Story

In order to facilitate and "revitalize" the North loop area of Chicago, Mayor Daley had to contain the poor, primarily black population that lived there. With money received under the Federal Housing Acts of 1949 and 1955, he was able to build public housing. After condemning and clearing, miles of so-called "slums," the City constructed much denser housing. By compacting people in the high-rise "second ghetto," new roads could be constructed to serve the area (Miller 1996).

The condemnation of certain portions of the downtown, however, did not occur because these areas were actually blighted. Those who previously had shopped on the South Side had come to support a vibrant economy in the area. The Mayor, nevertheless, found this economy to be incompatible with the one he was attempting to create for the area (Miller 1996).

In 1917, the Atlanta planners proposed the use of highways to segregate the City by constructing a 180 foot-wide parkway, and designating certain areas along the parkway for black residents. The parkway was never built, but it was only the beginning of their efforts. The City would consider similar proposals in 1941 and 1947. The Atlanta Bureau of Planning in a 1960 report referenced

the "understanding" that the proposed I-20 Highway would serve as a boundary between African-American and White communities, (Bayer 1988). Fortunately, for Afro-Atlantans, they had enough economic clout that such policies and efforts were temporary setbacks. Black Miamians, however, were not as lucky.

The City of Miami incorporated in 1896, and it had a significant Black population from its inception. When there were not enough white residents available to incorporate the city, Blacks were allowed to sign the charter. Yet, if one reviews a copy of the charter, the notation "Col." appears in parentheses next to certain names to indicate that these particular signatories were "colored." Many of them had come to work on Henry Flagler's railroad which he extended to Miami at the urging of Julia Tuttle.

Dade County, often referred to as "Greater Miami," had black settlements in various areas; but the one located within the city proper was called "Colored Town", and later became known as "Overtown." The settlement is northwest of the central business district, or downtown. In segregated Miami much of it was considered, even then, to be substandard housing that lacked basic things such as running water, indoor plumbing, electricity and other amenities. The streets were unpaved and the community lacked proper sewage systems, a condition shared by other Black communities located in Greater Miami, including Coconut Grove and Homestead at the time.

Despite, these problems, Overtown thrived. Until the 1960's, it was often referred to as the "Harlem of the South." It had hotels and theaters and large Black churches were located there. Black entertainers such as Count Basie, Ella Fitzgerald and Billie Holiday lived in the hotels and performed there, often after entertaining white folk on Miami Beach. (Miami Beach was one of the places in Dade County where Blacks were not allowed unless they worked there. Even so, they had to have a "pass", especially after dark. Without proper identification one could be arrested. Also, Blacks could not stay in the hotels.) Retail, doctors, lawyers and other professionals were located there.

Until the 1960's, Overtown was often referred to as the "Harlem of the South."

Not only have African Americans been contained, the opportunities have dissipated for anything resembling a community norm of self-sufficiency.

Blacks who lived in other parts of the County looked forward to visiting Overtown.

The building of Interstate-95 was a culmination of previous efforts (outlined earlier) to destroy Overtown. I-95 was routed through the main business district and the homes of approximately ten thousand people were demolished. Most of the people relocated to other black communities, particularly, Liberty City. To add insult to injury other large parcels were converted into parking garages, municipal and county buildings, or garnered for other future development by invoking the powers of eminent domain (Mohl 1993b).

Not ironically, Liberty City was home to Liberty Square, a project designed decades earlier to lure Blacks from Overtown. Civic leaders wished to expand the central business district and they wanted the "Colored Town" relocated. In fact, many Blacks who moved to this project built with New Deal federal housing funds had done so at the urging of Black leaders. The big lure for Black residents was indoor plumbing.

The Result

The segregation of African Americans from the rest of the community resulted in a system of social and economic problems. These problems are a direct result of sectioning off certain portions of the population from the economic activity in the metropolitan area. Over 80 percent of the nation's jobs created since 1948 were located in the suburbs, especially those in manufacturing retail and wholesale, and certain service industries. Nearly 71 percent of African Americans, however, live in central cities (Darden 1988). Not only have African Americans been contained, the opportunities have dissipated for anything resembling a community norm of self-sufficiency.

ITS

The United States of America is a nation that celebrates the private car. In 1996, then-Secretary of Transportation Federico Peña announced the Operation Timesaver initiative to the Transportation Research Board. This initiative's goal is to reduce travel time for U.S. commuters by at least 15 percent.

Former U. S. DOT Secretary Peña outlined nine objectives for "Intelligent Transportation Infrastructure (ITI)".

1. The installation of smart traffic control systems will alleviate traffic congestion. Lexington, Kentucky's computerized traffic system was able to reduce "stop-and-go traffic" by 40 percent.
2. Freeway management systems will help communities meter cars entering freeway ramps and detect accidents. Minneapolis has used this system to increase freeway speeds by 35 percent and reduced accidents by one-quarter.
3. Transit management systems will take advantage of global positioning systems (GPS) capability to monitor the locations and movements of the nation's 60,000 buses and adjust transit schedules accordingly.
4. Incident management programs can monitor roads and detect accidents and other road hazards.
5. Electronic toll collection will alleviate the time spent at the nation's toll booths.
6. Electronic fare payment systems will increase those who ride public transit.
7. Railroad crossing systems will be linked with other systems, such as emergency management.
8. Emergency service providers can be equipped with traffic signal control devices.
9. Traveler information systems will provide real-time traffic information before hitting the road or getting on the bus or train.

Most of these objectives do very little to help the inner city, and they are not designed to do so. Some of them, such as freeway management systems that may ultimately lead to real time congestion pricing, will probably have a negative impact on the poor. The primary goal is to increase the motor vehicle capacity of the nation's transportation infrastructure. This policy has traditionally meant trouble for central and inner city communities, especially those inhabited by African Americans, either intentionally or accidentally.

Proponents of ITS promise that it will increase capacity on the nation's roads and highways, yet they do not make specific mention of the goal of moving suburban residents from one suburb to another. To implement these improvements with out re-

gard to the need of central cities, particularly inner cities, may have nearly irreversible negative consequences.

Motor Vehicle Capacity Improvement Policy (including ITS): Leaving Populations Behind

The consequences of assisting suburban residents' ability to commute by car from suburb to suburb and bypass the central city will be felt long term. Central cities, especially those with large African-American populations, suffer from more than their share of unemployment. Linking other communities together that are the major employment centers and leaving the inner city, if not the entire central city behind, can only exacerbate the problem.

Secretary Peña made specific note of Minneapolis' freeway management system. What he did not mention is that such successes carry their own burdens. According to the Urban Coalition (1993) more than one third of the households in the Twin Cities (Minneapolis-Saint Paul) metropolitan area do not own vehicles. They must rely on public transportation. Even if they can access the necessary transportation, one out of every nine African-American households in the area does not have a telephone - let alone a computer - so it is questionable as to whether they can access the available real-time information to effectively make transportation plans.

Spatial distance is an additional transportation-related barrier to improving the economic problems of the region. Unemployment increased dramatically for African Americans in the Twin Cities whether they lived in the central cities (Minneapolis or Saint Paul) or the suburbs between 1980 and 1990. As a result, home ownership declined for African Americans by six percent by the close of the last decade.

For years transportation was a problem in Los Angeles because it is a proliferation of loosely linked neighborhoods spread across a large area. It did not have a public transportation system sufficient enough to meet the needs of the residents that did not have vehicles. As a result person who needed jobs had limited prospects if they did

not have access to private vehicles. This problem only increased the despair of those who lived in neighborhoods such as Watts (Hashe 1990).

Opportunities for the unemployed to look for work diminish the further away this population resides from available jobs. Wilson (1996) clearly demonstrates the spatial distance problem in cities like Chicago. Many unemployed residents are frustrated when they spend portions of their limited resources to travel long distances and spend significant sums of money looking for work.

The fact that these citizens are isolated means that they live around and socialize with other unemployed people. They, therefore, lack the informal networks necessary to obtain gainful employment. The money spent answering classified advertisements of potential employers only to be turned down after traveling to the interview is frustrating. Employers often will not hire potential employees who they believe do not have a dependable way to get to work (Wilson 1996).

The problem has a significant impact on youth and their employment in the nation's cities. The differential in youth employment between races, and to a lesser extent between the different economic strata, can be directly attributed to job access, in combination with other factors. The differential access is especially problematic in cities like Philadelphia. African American youth have a significant problem when automobile transportation is not readily available. Also, "because differences in the distance to jobs between youths from low-and high-income families tend to be small within the same racial group, job access plays only a modest role, at best, in explaining differences in youth unemployment rates at different family income levels" (Ihlanfeldt 1992). In other words, spatial mismatch has an even greater impact if one is both African-American and among the economically less fortunate.

Using information obtained from the American Housing Survey, Gabriel and Rosenthal (1996) suggest that housing discrimination plays a significant role in commuting distances and times regardless of age or education level. African-American workers with a high school education have 22 per-

African-American workers with a high school education have 22 percent longer commute times than their white counterparts. This translates into an average of 39 additional commute hours each year.

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Beyond Capacity

Lengthy commute times are more than a mere inconvenience for African Americans. Gabriel and Rosenthal (1996) observe that families, as a whole in the United States, tend to relocate if they believe they are undercompensated for their employment commutes. African-American families, however, are less likely to move despite continual undercompensation for their commute times. Furthermore, lengthy commute times coupled with housing discrimination, translate into even less compensation than they already receive.

Consider, for example, a white worker and a minority worker with different length commutes, but who would otherwise earn the same wage and face equivalent local amenities and housing prices. Assume the minority worker has the longer commute. Then the minority worker receives a less valuable compensation package, where compensation comprises quality adjusted housing prices, a basket of neighborhood amenities, and commute times. (Gabriel and Rosenthal 1996:63),

Effective transportation systems provide alternatives other than increasing motor vehicle capacity to move suburban residents from one suburb to another. This is a discriminatory goal because relocating is not an option for many families. In addition, it frustrates alternative transportation efforts such as mass transit. Louderback (1997) makes special mention of Washington, D.C.'s metropolitan area that has a much-heralded mass transit system designed to facilitate the commute to and within the District.

The problem with the Washington Metropolitan Area Transit Authority (WMATA) is that it competes in an atmosphere of more and more employers locating in the suburbs.

Therefore, commuters have an increased need to move from suburb to suburb, and not from suburb to city. The Beltway is experiencing critical gridlock. The additional five million people that are expected to move to the area by the year 2020 are expected to settle in Washington's Virginia and Maryland suburbs. They will not be served well by a transit system that distributes itself radially from the nucleus of the central city.

As low skill jobs disappear, neither increased road capacity nor efficient mass transit will be of particular concern to African Americans in the inner-city, many of whom are living in poverty. These low- and under-skilled Americans will have been left behind by both the transportation and the economic system. In short, even if they can be transported to employers, they do not have the skills necessary to participate in the Information Age's job market. Yet, they should not be blamed because it was the transportation system that in combination with other factors, isolated them in the first place. In many places, it was designed to do so. Expenditures on ITS pour salt in the wound caused by transportation planning in this country. In addition to helping more and more people bypass the nation's central cities and placing an unfair economic burden on the poor, technology is being employed that the persons who are being left behind will have little chance of learning.

Carver (1994) documents then disparity between those who have access to the technological education necessary to compete in the Information Age. African Americans and other minorities comprise a significant portion of the "information-poor", thus placing them at a greater risk of failure. The National Commission on Excellence in Education's 1983 report, *A Nation At Risk*, sharply criticized the nation's public school systems for failing to educate "at-risk" students. As part of the remedy, the Commission recommended that computer competence be added to the three "R's" - reading, writing, and arithmetic - as a fourth basic skill needed to be globally competitive. Nevertheless, African Americans are still technologically behind even though computers are now found in 98 percent of all U.S. schools. However, African-American com-

puter exposure often centers around remedial basic skills instruction or practice programs used to teach basic skills. This situation is particularly true for African-American males.

The most telling information about this disparity comes from the National Center for Education Statistics (1995). Using statistics compiled by the U.S. Census Bureau, the Center determined that 74.9 percent of white students used computers in 1993; however, only 56.6 percent of Black children and 57.8 percent of Hispanic children used them. 69.7 percent of all children used computers in school. Thus African-American and Hispanic children were exposed to computers at a rate nearly 18 percent less than their white peers. Even more alarming is the fact that 24.1 percent of all children had computers at home in 1993, with 30.5 percent of whites had such an opportunity. Only 8.7 percent of all black children and 7.1 percent of Hispanic children had such an opportunity. Given such statistics, one must ask who will be eligible to participate in the global economy, or simply to get the jobs that are available in the suburbs.

It is doubtful that the African-American population will benefit from ITS because of isolation, vehicle ownership disparity, and a lack of technological knowledge. The key will not be to make African Americans more mobile, but to bring them into the information age. African Americans should insist that ITS installation in metropolitan areas also include programs for computer education of the disadvantaged citizenry. Investments in the capacity of Americans are at least as important as the capacity of American highways.

REFERENCES

- Bayor, Ronald H.
1988 Roads to Racial Segregation: Atlanta in the Twentieth Century, *Journal of Urban History* 15(1), pp. 3-21. November.
- Byrum, Oliver
1992 Old Problems in New Times: Urban Strategies for the 1990's. Chicago: Planners Press.
- Carver, Bernard A.
1994 Defining the Context of Early Computer Learning for African-American Males in Urban Elementary Schools, *Journal of Negro Education*, 63(4) pp. 532-538.
- Darden, Joseph T.
1988 Blacks and Other Racial Minorities: The Significance of Inequality, prepared as a Working Paper for the Institute of Social Science Research, University of California at Los Angeles, 4(3).
- Gabriel, Stuart A., and Rosenthal, Stuart S.
1996 Commutes, Neighborhood Effects, and Earnings: An Analysis of Racial Discrimination and Compensating Differentials, *Journal of Urban Economics*, 40(1), pp. 61-83. July.
- Hashe, Janis
1990A Tale of Two Cities: Los Angeles 2000: Can the Dream be Realized?, *Crisis*, 98(5). pp. 22-23. May.
- Hirsch, Arnold R.
1993 With or Without Jim Crow, Black Residential Segregation in the United States, *In Urban Policy in Twentieth Century America*, Hirsch, Arnold R. and Raymond A. Mohl, eds. New Brunswick, NJ: Rutgers University Press.
- Ihlanfeldt, Keith R.
1992 Job Accessibility and the Employment and School Enrollment of Teenagers. Kalamazoo, MI: W.E. Upjohn Institute for Employment Research.
- Louderback, Joseph
1997 Suburban Shift Stymies D.C. Transit. *Journal of Mass Transit*, pp. 44-45. January/February.
- Massey, Douglas S. and Nancy A. Denton
1993 American Apartheid: Segregation and the Making of the Underclass. Cambridge, MA: Harvard University Press.
- Mohl, Raymond A.
1993a Race and Space in the Modern City: Interstate-95 and the Black Community in Miami. *In Urban Policy in Twentieth Century America*. Hirsch, Arnold R. and Raymond A. Mohl, eds. New Brunswick, NJ: Rutgers University Press.

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- 1993b Shifting Patterns of Urban Policy since 1900. *In* Urban Policy in Twentieth Century America. Hirsch, Arnold R. and Raymond A. Mohl, eds. New Brunswick, NJ: Rutgers University Press.
- Miller, Ross
- 1996 Here's the Deal: The Buying and Selling of a Great American City. New York: Alfred A Knopf Press.
- Peña, Federico F.
- 1996 Intelligent Transportation Infrastructure: A National Goal. *Government Finance Review*, pp. 44-45.
- Urban Coalition
- 1993 Profiles of Change: Communities of Color in the Twin Cities Area. Saint Paul, MN: The Coalition.
- U.S. Department of Education
- 1995 Student Use of Computers. Indicator of the Month. Washington, D.C. National Center for Education Statistics.



Broward County Minibus Demonstration Project

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Broward County Mass Transit



This paper attempts to serve as a model for the selection of minority transportation providers. It describes how an African American company was selected as Transportation Provider in Broward County, based on recommendations from a corridor study and a selection committee. This is an innovative way of attracting minority owned companies into doing business with the county as well as other government transit agencies. The paper suggests linking population composition with contracting procedures as a means for achieving equality. Court rulings against Disadvantaged Business Enterprise (DBE) programs, in detriment to minority contractors, are also addressed. Finally, recommendations are made on how contracts should be handled to guarantee equal participation of minority groups. The experience obtained from the minibus project will provide the necessary tools to make intelligent and fair decisions in future negotiations, for the benefit of minority groups, transit agencies, and the entire community.

Background

In 1989, Barton-Aschman Associates, Inc., under contract with Broward County, conducted a multimodal study along the Broward Boulevard Corridor. The main purpose of this study was to identify ways to maximize the corridors' people canying capacity using innovative transportation alternatives. The recommendations included traffic control measures, roadway improvements, and enhanced public transportation.

Expected results from this project were twofold: increased transportation services to/from Central Business Districts (CBDs), major employment destinations, major at-

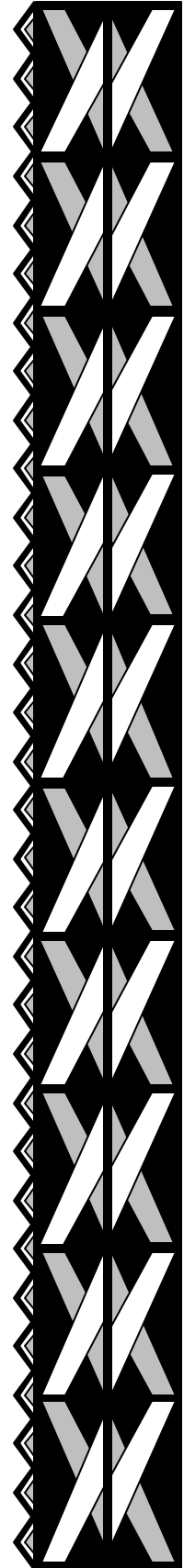
tractions, and reverse commute locations; and to compete more efficiently with the private automobile.

Based on the consultant's recommendations, Broward County decided that community minibuses operating on Broward Boulevard could be one part of the solution to increasing traffic congestion along the corridor. In addition, this project would provide greater opportunities for public/private partnerships and encourage participation of local Small Disadvantaged Business Enterprises (SDBEs). The minibus project would (along with existing line haul service) add local circulator transit service through several predominantly African-American neighborhoods within the Broward Boulevard corridor.

Broward County Statistics

In order to understand the complex issues revolving around the minibus project, it seems appropriate to present pertinent statistical information about Broward County's population and the users of its transit system. The population of Broward County, according to the 1994 estimate of the U.S. Census Bureau, was 1,382,990. Whites account for 81.32percent, African Americans 16.73percent, American Indians 0.24percent, and Asians 1.71percent. Hispanics comprise 8.64 percent of the total Broward County population. Thus, the combined population of these minority groups represent a significant part (almost 27percent) of the total population in the county.

In 1992, an onboard passenger survey was performed by Dr. Jay Mendelof Florida Atlantic University. This study clearly



The main purpose of this program was to enhance the County's contracting efforts with small minority and women owned businesses.

showed that minorities depend on Broward County Transit (BCT) System for transportation to work school, medical, shopping, and recreation facilities. It may be argued that the "propensity" to ride transit has nothing to do with race, but with low income levels, proximity to transit routes, and no other means of transportation. Yet, at this point in time, the socio-economic status of most African Americans in Broward County exceed all the above criteria. Nevertheless, minorities, particularly African Americans are, without a doubt, an essential element of the transit system.

Equal Opportunity

In 1984, Broward County enacted a Small Disadvantaged Business Enterprise (SDBE) program which was fully implemented in 1985. The main purpose of this program was to enhance the County's contracting efforts with small minority and women owned businesses. The initial goal was set at 15percent for minority- and 5percent for women-owned companies.

In 1993, Broward County Ordinance No. 93-17 became effective. This ordinance provides specific guidelines to ensure full and equitable participation of SDBEs. It gives the director of the Office of Equal Opportunity (OEO) the responsibility of monitoring County contracts to ensure that reasonable efforts are made to eliminate or remedy discrimination on the basis of race, ethnicity, or gender as well as to encourage and foster participation of SDBEs in the procurement process.

The most important remedial measures are: a set aside program, contract goals for Small Disadvantaged Business Enterprises, a targeted market program, a bid preference program, a bid credit program, and an economic development program.

In order to know if discrimination to SDBEs has occurred, it must be determined whether there is a disparity between the percentage of qualified businesses in the appropriate market and the actual participation of the SDBE. If there are qualified businesses in the appropriate market, and participation is significantly smaller than their share of the market, then it can be determined that SDBEs are being discriminated against.

In September 1993, the Office of Equal Opportunity prepared a Transportation Disparity Study for Broward County. The project was funded by the Federal Transit Administration. The purpose of this project was to identify disparity and describe existing transportation related industries within the market area. Results from this disparity study are expected to facilitate the creation and growth of transportation businesses.

Construction, Services, and Transportation were the different categories used in the study. The percentage of minority utilization for fiscal years 1900 through 1993 was extremely low. Among minority groups, African American contractors were the least utilized. African-Americans comprised less than one-half percent of the transportation providers of services and supplies in the area.

Selection Committee

The Broward County Board of County Commissioners appointed a selection/negotiation committee to identify the most qualified providers and to negotiate a contract. The selection committee included two members from the Broward County Board of County Commissioners, the Director of Mass Transit (who served as chair), the Director of Strategic Planning and Growth Management, and the Director of the Office of Equal Opportunity. Based on the information provided in the Disparity Study, the selection committee decided that the minibus demonstration project should be "Set Aside" for African-American transportation service providers.

Selection criteria included previous experience, training, maintenance, personnel, and years in business. A Request for Letters of Interest (RLI) was used to solicit qualified proposers and seven responses were received. Transportation Suppliers, Inc. was chosen as the company to provide this new service.

The Minibus Project

On March 17, 1997, Broward County Transit (BCT) began a new demand-response minibus service called the Broward Urban Shuttle or BUS. This is a very innovative,

first-of-its-kind demonstration project. It is the first time Broward County has contracted an African-American Transportation service provider and the first time that demand-response service has been provided in a specific geographic area. The BUS service area incorporates origins and destinations where transportation improvements are needed by providing access to family service providers, shopping centers, medical facilities, intermodal connections to a commuter train (Tri-Rail), a Park and Ride facility, and existing BCt fixed routes. Funding for this project comes from the Florida Department of Transportation (FDOT), using a mix of CMAQ and Corridor funds for a two-year period.

Besides providing mid-day demand-response service, the minibus operates under a different name during the morning and evening "rush hours." At those times, the service is called the "Western Express." It brings inner city workers to potential job opportunities in the rapidly growing communities of Weston and Pembroke Pines. The service also gives Weston and Pembroke Pines residents an alternative to the automobile and more relaxed way to commute to downtown Fort Lauderdale. Between commuter runs, the minibus or "Broward Urban Shuttle" operates as an on-demand service for trips within the Broward Boulevard corridor.

At the ribbon-cutting ceremony on March 17, the minibus service officially started. The general consensus is that the project was eagerly anticipated and well received by the community (since it took almost two years for funding approval). BCt officials are enthusiastic about the success of this project. The Planning section will continue to provide support to this new service for the benefit of the communities served. The service will be monitored frequently to identify any needed areas of improvement. Initially, the service is free, however changes in hours of operation and fares are expected to occur as users define the service better and the new ridership base is established.

Conclusions

The Broward Boulevard Corridor Study recommends that traffic control, geometric design, and public transportation be improved to increase the people carrying capacity along the corridor. Demographics show that minorities account for a significant segment of the population. The FAU onboard survey identified minority groups as major users of Broward County Transit. Furthermore, the likelihood of African Americans to ride transit is higher than other minority ethnic groups.

According to the Transportation Disparity Study, minority transportation providers are still underutilized. Broward County is keenly aware of past discrimination practice to minority contractors and is committed to solving this problem by offering remedial alternatives. The Office Equal Opportunity, as authorized by the County Administrator and the Board of County Commissioners, monitors contracts with minority businesses and advises the parties involved if a discrimination case has occurred. In addition, the OEO has goals that must be met as far as Small Disadvantaged Business Enterprises are concerned. This helps guaranty equal participation of minority groups in the contracting process. In an attempt to correct past inequities, ordinance 93-17 was enacted, opening new doors for minority businesses.

Based on recommendations from the Broward Boulevard Corridor Study and the Transportation Disparity Study, Broward County decided that a community minibus was a viable alternative to increase mobility within the corridor. It further identified this project as a "Set Aside" for African Americans.

In the long run, the way contracts are handled with SDBEs will surely change. In fact, recent court decisions against SDBE programs and the possibility of law suits in Broward County, have forced county officials to suspend "set aside" programs. It is argued that these types of programs violate the Constitution on the basis of race. Accordingly, ordinance 93-17 is expected to be revised and set asides might be eliminated, to the detriment of Small Minority Disadvantaged Business Enterprises.

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As a society that values its diversity, we in the transit industry must lead by example and demonstrate our commitment to end discrimination in the way we do business.

Recommendations

Disparity studies are necessary to determine if discrimination exists and to find ways to remedy the problem. They should be included in the selection process and serve as a guideline to ensure that minority groups have an equal opportunity to participate in public/private partnerships. Updates of the Disparity Study should be done at least every two years to assess loss/gain in minority utilization. Demographic information, such as population by ethnic groups, must be included in the Disparity Studies in order to get a view of the "whole picture." Additionally, transit ridership by ethnicity should be included in all Transportation Disparity Studies.

Minority groups through special "outreach" programs need to be informed about ways they can do business with the county. Workshops should be organized at strategic locations such as neighborhood associations, churches, social clubs, schools, etc. Easy access to information pertaining to contracting and procurement procedures should be made available. There is a need to increase the market share of minorities to the point

where their utilization percentage is at or close to the percentage of the minority population.

Under the leadership of the federal government, stronger affirmative action mechanisms need to be implemented and enforced to make sure that SDBE goals are reached. Contracts should be monitored frequently to assure proper implementation of the SDBE program. Minorities and women should be included in all aspects of the contracting process

The minibus project is just the initial step to transportation contracting with minority-owned business firms. There is still a long way to go to achieve equality in utilizing transit providers. We now know what works and what coos not. BCt with the cooperation of the Office of Equal Opportunity will continue to monitor and advise the parties involved of any inconsistency in contracting and procurement procedures. The struggle for equality continues. As a society that values its diversity, we in the transit industry must lead by example and demonstrate our commitment to end discrimination in the way we do business. Our future success depends on it.



First Report from the Field on the Bridges to Work Demonstration

Richard Presha
Public/Private Ventures



In the early 1990s, Public/Private Ventures began to examine the increase in inner-city joblessness and the growing “suburbanization” of employment that had occurred in many major metropolitan areas of the United States over the last three decades. Our investigation showed that, in six of the nation’s eight largest metropolitan regions, more than two-thirds of the jobs created during the 1980s were located in the suburbs; at the same time, inner-city poverty rates had become from two to five times higher than those in the suburbs of those regions.

The results of our examination interested us particularly because they highlight a problem we see often in the employment and training field: graduates of city-based job training programs doomed to unemployment, regardless of their training, partly because they have no access to the suburban job market where “good” entry-level jobs often abound. Further investigation identified three barriers to this access.

First, the administrative, or information, barrier keeps the inner-city job-seeker from jobs in the suburbs. City-based job training programs typically have city-wide rather than metropolitan-wide jurisdictions, which means that they cannot place program participants into suburban jobs and often have no information about suburban job openings. Second, the physical, or transportation, barrier, limits access. Even if program graduates obtain suburban jobs, they may be unable to get “from here to there.” They may not have reliable automobiles and, for the most part, public transit supports suburb-to-city commuters, not those going the other way. Finally, the lack of supports like diver-

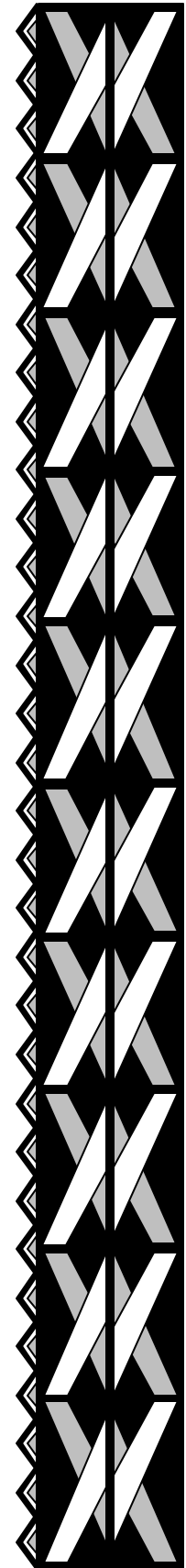
sity training, counseling and child care limits access. Many workers, of course, need supports regardless of economic status. However, such supports are critical to low-income workers trying to make the transition to self-sufficiency and keep a job that requires a relatively lengthy commute to a place where unfamiliarity, even resistance, may confront them.

In 1993, with the support of a consortium of private funders, the Department of Housing and Urban Development and the Federal Transit Administration, P/PV began to plan Bridges to Work, a research demonstration designed to test the idea that improved access to jobs can significantly improve outcomes for low-income workers and their neighborhoods. The elements of the Bridges to Work model are designed to address each of the three barriers. Bridges’ elements are:

1. A metropolitan-wide placement mechanism to connect residents of inner-city neighborhoods to suburban job openings;
2. A targeted commute to allow residents to reach those suburban destinations; and
3. Limited support services delivered only to mitigate problems created or exacerbated by the daily commute to new, distant job locations.

In the spring of 1996, five sites—Baltimore, Chicago, Denver, Milwaukee and St. Louis—were selected to implement the model based on their demonstrated capacity to build, manage and sustain these complex new collaboratives. These sites began four full years of project operations in late 1996.

A key goal of the demonstration is to generate information for policymakers, the employment field and the transportation



Public/Private Ventures found a severe problem of spatial mismatch between poor households concentrated in large cities and the increasing number of employers located in the surrounding suburbs.

field about Bridges' "mobility" approach, which focuses on the realities of current metropolitan settlement patterns and the demands of the labor market. Because Bridges to Work is a research demonstration with a rigorous evaluation design, we expect to be able to provide critical information about this strategy's impact on the lives of participants and on the capacity of funding streams to respond to the structure and requirements of this important policy initiative.

Although the pilots have just begun at the five sites and full-fledged research and operations will not begin until late spring 1997, we have already observed some operations lessons and challenges emerge from the implementation of what looks like a simple solution to the problem of spatial mismatch. We have begun to document and wish to share some of these issues and challenges because they go to the heart of two big questions about the Bridges to Work approach: does it work, and what does it take to make it work?

What is Bridges to Work?

Bridges to Work (BtW), a research demonstration project, will operate for four years in Baltimore, Chicago, Denver, Milwaukee and St. Louis. BtW is administered jointly by Public/Private Ventures (P/PV), a Philadelphia-based nonprofit research and program development organization, and the U.S. Department of Housing and Urban Development (HUD). The initiative connects inner-city residents with suburban employment opportunities through local partners who will provide job placement, transportation and support services. The project will assist lower income, innercity residents to become self-sufficient and will strengthen regional economies by providing workers for growing suburban businesses.

How did the idea for BtW originate?

With foundation funding, P/PV examined the increase in inner-city unemployment and the growing "suburbanization" of employment over three decades within 20 metropolitan areas. P/PV found a severe

problem of spatial mismatch between poor households concentrated in large cities and the increasing number of employers located in the surrounding suburbs.

In 1990, inner-city poverty rates were from two to five times higher than those in the suburbs of the Nation's eight largest metropolitan areas. In five of the eight areas, innercity unemployment rates were twice those of the suburbs.

In six of the eight largest metropolitan areas, more than two-thirds of the jobs created during the 1980s were located in the suburbs. In three of these areas (Chicago, Detroit, and Philadelphia) all net growth was in the suburbs.

Building on this research, and with additional support from HUD and the U.S. Department of Transportation (DOT), PIPV developed BtW as a research demonstration to link poor but job-ready inner-city residents with suburban jobs. The BtW program will examine how unemployed and underemployed inner-city residents and suburban employers seeking qualified workers may benefit from this linkage.

What do we expect BtW to achieve?

BtW has four goals that complement other important urban policy strategies. Low-income city residents will gain access to unsubsidized, private-sector jobs enabling them to become self sufficient and to import wages back into their city neighborhoods, thus helping to stabilize the neighborhoods. Suburban employers will recruit inner-city workers. Regional transportation providers will recognize the demand for city-to-suburb commutes and be willing to initiate new service to support this "reverse commuting." Federal, state and local policymakers will team the value of designing social policy at a metropolitan-wide scale and incorporate these lessons into their planning for programs in housing assistance, employment training and placement, transportation, support services, and land use.

What are the components of a BtW program?

Each BtW site has a defined geographic “origin” (a low-income, inner-city neighborhood) and “destination” (a job-rich suburb). Job-ready origin residents will receive enhanced program services provided through BtW’s three key program elements:

- placement in existing, private suburban jobs through a metropolitan employment placement mechanism;
- a targeted commute connecting workers to otherwise inaccessible suburban job locations; and
- support services, such as counseling and child care, to ensure that workers can sustain newly-made job connections and to mitigate demands created by the suburban commute.

The BtW model also requires each site to form regional partnerships called collaboratives, which typically include a lead community-based organization, transportation provider, nonprofit service providers, a metropolitan planning organization (MPO), and city and suburban government.

How were the BtW project sites selected?

From its research of the Nation’s 20 largest metropolitan areas, P/PV identified 10 that demonstrated both significant spatial mismatch and the local capacity to reduce the mismatch. With support from five foundations, HUD and DOT, P/PV gave small planning grants to these 10 target sites to develop local BtW plans. Using standard selection criteria, P/PV and HUD chose the five strongest plans for inclusion in the research demonstration project.

What is the demonstration timeframe?

BtW’s four-year research and demonstration phase is scheduled to begin in late Fall with a 3- to month pilot phase. Full implementation will begin between January and March 1997 at all sites and will conclude in December 2000.

Who funds BtW and how much does it cost?

BtW is funded by private foundations, the Federal government and local resources. Pre-demonstration costs included support for: the spatial mismatch studies \$300,000 provided by The Ford Foundation and the John D. & Catherine T. MacArthur Foundation and the design of the BtW concept and the development of 10 BtW site plans--\$1,500,000 from the Ford Foundation, The Annie E. Casey Foundation, John D. & Catherine T. MacArthur Foundation, The Pew Charitable Trusts and The Rockefeller Foundation; HUD; and DOT/FTA. Demonstration costs include support for: five demonstration programs--\$11 million over 4 years, \$8 million from HUD and \$3 million in local matches; and research and development--\$5.9 million from the Ford Foundation, HUD Office of Policy Development and Research, and the Rockefeller Foundation (with support pending from the MacArthur Foundation).

What methodology will guide the project research?

The key component of the research plan is an experimental design that will allow a rigorous evaluation of BtW’s impact on participants and to document the potential of regional partnerships and job placement mechanisms.

A competitively selected, independent research firm will randomly assign 800 participants at each of the four BtW sites into treatment and control groups and will conduct baseline and followup surveys. These four experimental sites-Baltimore, Denver, Milwaukee, and St. Louis-will each place and maintain 400 people from the treatment group who will receive BtW enhanced services and 400 from the control group who will rely on existing services. Chicago, the sole “scale” BtW site, will attempt to place 1,500 workers without random assignment and will document issues and challenges involved in attempting to place as many persons as possible using enhanced BtW services.

Federal, state and local policymakers will team the value of designing social policy at a metropolitan-wide scale and incorporate these lessons into their planning for programs in housing assistance, employment training and placement, transportation, support services, and land use.

Is BtW related to other Federal, State and local job initiatives?

In addition to building on local programs supported under other federal or state initiatives, BtW has brought together unprecedented partnerships among city and suburban Service Delivery Areas and Private Industry Councils that administer the Job Training Partnership Act (May), state and local human service providers, and regional transportation providers. The Baltimore and Chicago BtW programs are linked directly to HUD's Empowerment Zone initiative, and the St. Louis program is involved in Enterprise Community activities. BtW is one of three complementary national strategies developed by HUD to offer low-income residents opportunities for independence and

self-sufficiency. The other strategies are: Community Revitalization, the expansion of jobs and employment in economically distressed areas such as Empowerment Zones and Enterprise Communities, and Moving to Opportunity (MTO), relocation opportunities for poor persons receiving Federal housing assistance to move into safer communities with better schools and jobs.

Other Federal jobs initiatives will play a role in BtW. These include the JTPA One-Stop Service Centers and HUD's JobsPlus Initiative for public housing residents.

How can I learn more about BtW?

For information about Bridges to Work, contact Beth Palubinsky or Joseph Tierney, the project's Co-Directors at P/PV, at (215)557-4400. You may also read about the project on the Internet at www.epn.org/ppv.



Future Research Needs and Policy Implications



Ronald L. Barnes

Conference of Minority Transportation Officials (COMTO) and Greater Cleveland Regional Transit Authority

Speaking on behalf of COMTO, Barnes encouraged a holistic approach to providing resources. He also expressed concern that future forums not focus solely on welfare reform. Participants were encouraged to invest in young people.

Policy must be broad-based, international or geopolitical, intermodal, and innovative. Intelligent Transportation Systems (ITS) also must be factored into policy. Consideration must be given to its impact on African-Americans. Efforts also should be made to increase information technology and access. Barnes challenged participants to take information from the symposium to communities where the information was needed.

Alyce Boyd-Stewart

*Office of the Secretary
U. S. Department of Transportation*

Critical issues to be considered in National Economic Crossroads Transportation Efficiency Act (NEXTEA), now, Transportation Equity Act for the 21st Century (TEA-21), will include equal access and equal delivery as applies to all citizens and all modes. Also, efforts should be made to improve the underrepresentation of women in decisionmaking positions.

Questions to be resolved include NEXTEA's flexibility in the use of funds; the continuation of ISTEA programs; and a better understanding of the merits of research.

ITS: what can it do to us? ITS is a two-edged sword, stated Boyd-Stewart. Answers need to be sought from ITS proponents. The

deployment of ITS is a policy issue that must be fully considered.

Civil rights have been isolated. Boyd-Stewart asked attendees to recognize that the struggle continues. There is continued need to work toward African-American mobility.

Gwendolyn R. Cooper

*Federal Transit Administration
U. S. Department of Transportation*

Cooper stated that there is an increase in African-American involvement in research, increasing the professional capacity of transportation research. She encouraged participants to become involved in the Transit Cooperative Research Program (TCRP), as researchers or panelists and to submit research ideas. Participants also were encouraged to become involved in the International Transit Program.

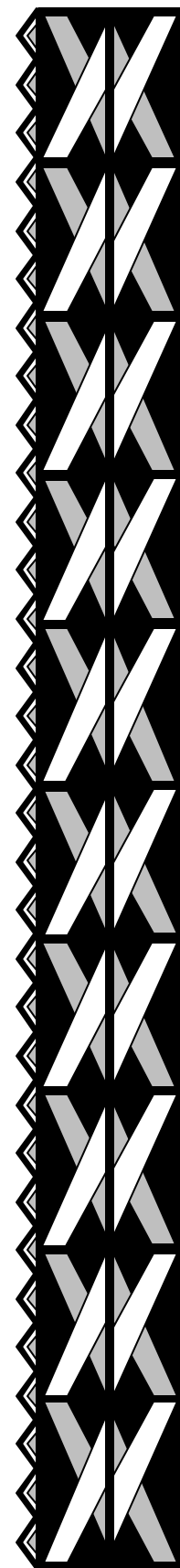
Gloria Jeff

*Federal Highway Administration
U. S. Department of Transportation*

In regard to ITS, Jeff stated it is too late to stop the train. Efforts should be focused on shaping how ITS is used.

The focus of research needs to be refined. One area was data. Better data is needed regarding race and gender. This will help professionals understand travel patterns. A better understanding is needed of where, when, why, who, and how people travel. A better understanding is needed of the travel needs of persons under 16 years of age and over 60 years of age.

The social and cultural impacts of transportation actions and decisions also need to be researched. These actions and decisions



do have sociocultural effects and can be seen in residential and other location patterns.

There are unanswered research questions with policy implications regarding vehicle ownership; longevity and age; household composition; faith-based organizations; and livability of communities. Jeff challenged the research community to change research methodologies, involving the people studied in the research as more than subjects. More work, she thought, was needed on public participation models and the dissemination of "best practices" documents.

Ilene Payne

***National Highway Institute
Federal Highway Administration
U. S. Department of Transportation***

An important factor is transportation education. The Garrett A. Morgan Program has been established in U. S. DOT for funding the education needs of one million chil-

dren. More emphasis still is needed on the educational and employment need of students. Payne advised attendees to pay more attention to research being done at majority institutions, evaluating the validity of findings and representation of the researchers. She also advised participants to monitor federal funding for research and to monitor the issues researched.

Sharon Ransome-Smith

Project ACTION

Smith admonished attendees for the poor attendance at ADA workshop. She pointed out that 6.2 million (one in five) African-Americans have disabilities. The transportation needs of persons with disabilities is an area that needs much more research. More participation by African-American community also is needed in the process of research and support for persons with disabilities.



Evaluation Summary



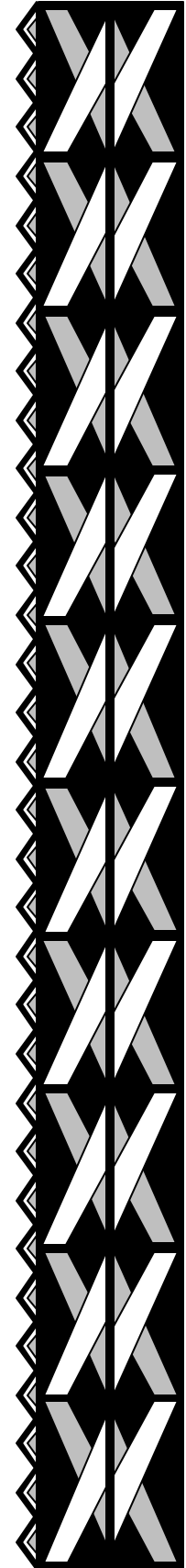
Number of surveys mailed: 262

Number of surveys received: 36

Response rate: 14 percent

What respondents hoped to gain:

- I had hoped to see and mingle with people of color who are pursuing a career in transit.
- Learn about issues relating to topic.
- An idea of what issues are of interest at the symposium.
- I wanted to achieve an improved understanding that public transit is more than riding a bus.
- New ideas for services in African-American communities...also to network.
- Learn more about the means of transportation available to minorities.
- It was my hope that the symposium would highlight key mobility issues facing the African-American community and identify recommendations.
- Knowledge concerning the transportation issues and concerns of minorities and how to improve conditions under which minorities travel every day.
- Meet with others of various backgrounds with similar interests to bring attention for action to transportation needs of African Americans.
- Learn and to share information on strategies for labor mobility.
- Knowledge about transportation issues affecting blacks.
- Insight into areas of transportation that I am unaware of; Educated on transportation issues and how these impact African-American community.
- Efforts toward improving participation of African Americans, minorities, and disadvantaged groups in the transit industry.
- Better understanding of environmental justice requirements.
- How transportation and communities affect each other.
- I had hoped to meet people from various transportation backgrounds.
- Specific transportation information regarding African-American travel demands, needs, and participation in the transportation field.
- I hoped to gain a better handle on the transportation industry and how extensive the role of African Americans was in transportation.
- Get useful feedback for my work, learn others' work.
- Better understanding of ISTEA.



Factor	Average Rating (Four-Point Scale)
Application to your job	3.29
Length of symposium	3.20
Topics presented	3.61
Speakers	3.58
Facility	3.02
Audience	3.20
Overall	3.5

My personal objective for attending this symposium was to get a better understanding on specific transportation issues as it relates to African Americans, specifically those areas I have heard about in passing, but never obtained a detailed understanding, i.e., environmental justice, livable communities, traffic calming. Also, I sought to develop a network with various transportation professionals as well as enhance the friendships that I acquired from attending last year's conference. Increase my knowledge and understanding of current mobility issues.

Symposium met or exceeded expectations: 92 percent

- Best conference that I've attended in years. Huge success!
- The symposium broadened my interest in transit and I met a variety of professionals.
- Excellent access to top decisionmakers; clear understanding of issues and action items.
- I did not know what to expect.
- I learned a great deal which has already helped me to do my job better.
- Presenters and materials were relevant and useful (exceeded).
- It not only gave me an improved understanding, but it gave avenues that we Afri-

can Americans can take to be part of the decisionmaking process.

- Did some networking. The opening session was very informative.
- Sessions concentrated on transportation barriers and modes available to minorities.
- There were several workshops identifying issues with case studies and recommended actions.
- Many speakers gave me insight on different neighborhood improvement programs that are working in various communities.
- The organization of the symposium and the breakout sessions were right on target.
- Broad base of information on current issues that are relevant to RTS including African American public participation
- Without prior exposure, I didn't really know what to expect. I learned so much about government and its impact on transportation and the importance of lobbying for transit minorities.
- Too much politics. Real issues were not addressed, nor was a real interest to face the issues. "Double talk" prevailed.
- I learned a lot about livable communities/given space.
- I expected to encounter participants from a wide variety of transportation backgrounds.
- There were very solid issues being discussed that have very practical applications in marketing to minorities, access to jobs, etc.
- Significant transportation information was given regarding the impact of transportation issues on African Americans.
- I not only got a better understanding of the industry, I was also quite impressed by the number of African Americans who are in position to make change.

- I expected to learn more about what was going on at the federal level and I did.
- Gained new ideas for the implementation of our projects and knowledge of pending legislation.
- I accomplished my goals and objectives and look forward to attending and recruiting others for the 1998 African American Mobility Issues Symposium.
- My initial and overall expectations were met.
- I was only there for one pre-conference session where I was presenter.
- It had a variety of workshops covering a range of issues.



Afterword



In March 1994, the Center for Urban Transportation Research convened its first symposium on African-American mobility issues. Since then, the Center for Urban Transportation Research convened a total of four such symposia attended by transportation operators and providers, policymakers, interest group representatives, and federal, state, and local transportation officials from the United States and the Caribbean. Over the four-year period, the attendance and other support for the symposium grew, steadily, providing evidence of continued interest and need in this area of research. Federal support for the symposium was provided by the Federal Highway, Federal Transit, and Research and Special Projects Administrations. The 1997 symposium featured Mark Alan Hughes, Ph. D., as the keynote speaker.

The 1997 symposium and other activities, including the African American Mobility Issues World Wide Website, served as a vehicle to distribute the findings of the previous symposia and contributed to the reauthorization process. In addition, the symposia and other research projects conducted by

CUTR provided the groundwork of a storehouse of information on minority travel issues. This was somewhat expanded into a clearinghouse in 1997 and served as an information center and database on the literature and other resources related to minority travel behavior and needs. As in previous years, a steering committee including transportation and public officials was established to assist the project team in developing topics, symposium format, and potential speakers.

African Americans, transportation professionals, elected officials and the public have benefitted from the symposia by the opportunity afforded to discuss these issues, establish networks, and transfer technology. Other benefits included the opportunity to hear presentations from both the U. S. Department of Transportation officials and to participate in workshops and sessions with peers from throughout the United States and the Caribbean.

The fourth symposium was the last convened to date.

