METROPOLITAN TRANSIT IN THE 1980s: AN INTERGOVERNMENTAL CHALLENGE

CHAPTER 1. INTRODUCTION

Transit in Transition

Metropolitan transit is in transition. From its status as a largely private-sector conglomeration of trolleys, buses, and commuter rail lines prior to the 1960s, it has become predominantly public and intergovernmental. This transition, marked by private transit company failures, has seen the goals of metropolitan transit expand greatly, along with the associated public expenditures. The systems no longer simply transport paying customers for a profit, they attempt to reduce traffic congestion, air pollution, and noise; to conserve energy; and to provide improved mobility to the poor, the handicapped, the elderly, and others who often have not had ready access to the diverse opportunities offered throughout their communities.[1/] These newer publicly held goals all have tended to expand transit services -- and have demanded rapidly increasing public subsidies. The level of these subsidies -- and their sources -- are now being questioned as public resources at all levels have become increasingly scarce.

With respect to public financing, local government expenditures for transit have become common throughout urban America, rather than being

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1/ Journal of the American Planning Association, special issue on "Emerging Themes in Transportation Policy," Vol. 48, No. 3, Summer 1982.

limited to the largest areas. Federal-aid transit expenditures moved from zero to about $4 billion annually in the space of just two decades. As a condition of this federal aid, metropolitan transit planning has been established in all of the nation's metropolitan areas. And, by 1982, all 50 states had established transit programs; their budgets for these mostly new programs (since 1970) totaled $1.2 billion in 1980,[1/] $1.9 billion in 1982,[2/] and $2.4 billion by 1983,[3/] largely in the form of aid to local systems. Thus, transit financing rapidly has become not just governmental, but intergovernmental as well.

In the 1980s, another period of readjustment appears to be beginning.[4/]

+ Public transit operating subsidies are said to be at levels so high that they cannot be sustained.

+ Public transit facilities and vehicles are falling into disrepair at an alarming rate for lack of maintenance.

1/ Fred L. Williams, States in Public Transportation: An Analysis Based on Nine Case Studies (Washington, DC: U.S Department of Transportation, UMTA Office of Program Evaluation, 1981), p. 7.

2/ American Association of State Highway and Transportation Officials, Survey of State Involvement in Public Transportation (Washington, DC: June 1982), p. 7.

3/ Letter from Francis B. Francois, Executive Director, American Association of State Highway and Transportation Officials, September 12, 1983.

4/ See, for example, Edward Weiner, "Redefinition of Roles and Responsibilities in U.S. Transportation," November 19, 1982.

+ New rapid rail systems may no longer be feasible to build and operate.

+ Public funds, it is charged, are being wasted on transit subsidies that too often benefit the affluent more than the poor.

+ Despite massive financial contributions to transit by the national government in recent years, some contend that transit is not a national responsibility and should, therefore, be turned back to the state and local governments. Federal budget cuts in transit have begun to take effect (although the new gasoline tax increase could modify this trend), and the Reagan Administration has proposed phasing out transit operating funds altogether.

These pressures to reassess transit policies reflect the broader societal trends in the nation, as recently popularized by the book Megatrends[1/] and in the press.

+ Demographic trends are producing smaller, more affluent families with fewer children, more job-holders, and larger amounts of leisure time. Job locations are dispersing within both metropolitan and nonmetropolitan areas. The number of interstate commuting areas continues to rise. People are demanding and getting a greater variety of choices. Different parts of the nation, however, are experiencing varying degrees of economic and population growth or decline, so the general trends do not accurately depict conditions everywhere.

+ Physical facilities are lagging behind needs. Public physical assets are not keeping pace with growth in new and revitalizing areas, and are falling into disrepair in older areas. The nation's industrial plant is not being upgraded at an internationally competitive rate. Systematic capital budgeting is being practiced neither in enough places nor with sufficient commitment.

1/ John Naisbitt, Megatrends: Ten New Directions Transforming Our Lives (New York: Warner Books, 1982).

+ New technologies are not applied as quickly at they could be because it takes time for people to adjust to them.

+ The nation's economy is shifting rapidly from a highly structured industrial one to a much more flexible one based upon information generation and processing. Our economy is becoming much more highly integrated into the international marketplace, so that events in other nations have an immediate impact on national and local affairs at home. Government activity in the U.S. is leveling off or declining as a proportion of Gross National Product. The U.S. has no national economic development strategy, but U.S. corporate managers are beginning to think more about the long-term.

+ Social institutions of many types are decentralizing. There is a growing sense of self-reliance in the populace, and rising influence by citizens, workers, and consumers over affairs that affect them.

For transit, these broad trends would seem to point toward:

+ more flexible transit systems meeting increasingly diverse needs in diverse ways -- relying less on traditional linehaul services (often provided by a metropolitanwide transit authority) and more on lower capacity, less costly supplemental services (provided by individual local governments or other smaller providers, sometimes including private ones);

+ construction of fewer large new rail transit systems, but better maintenance and use of existing ones;

+ increasing reliance on user fees, perhaps supplemented by voucher systems of some sort for the needy;

+ proportionally less public money in transit than at present;

+ greater use of private sector transit providers, and a rethinking of the role of public regulation over transit;

+ a reduced federal role in transit, with greater roles played by the states and their subdivisions; and

+ greater attention paid to international markets for rail cars, buses, and fuels.

Thus, even the definition of transit is changing. For purposes of this study, the definition is somewhat open ended. It includes the traditional forms of transit along with the many varieties of paratransit.

Many changes in organizing, financing, and providing metropolitan transit services have been proposed in recent years, and there is some actual experience with most of them. Yet, the transit systems in most metropolitan areas remain predominantly conventional (regularly scheduled bus and rail services) and very expensive. Many of them now face significant budget shortfalls. They may need to adapt to current conditions with organizational, financial, and service-delivery innovations, but such changes often prove difficult because conditions conducive to them are lacking or specific impediments intervene.

Purpose of the Study

This study is based on the premise that an unusual amount of institutional, financial, and service adaptation in the field of transit is now needed and that many metropolitan areas and their states may need help in responding to this situation. This study, then, seeks to identify those factors that might facilitate metropolitan transit innovations in the intergovernmental setting -- including needed service-delivery, financial, and institutional adaptations.

As a result of shifts in intergovernmental aids to localities for transit, it seems likely that local governments and metropolitan organizations will have increasing responsibilities for raising funds, redesigning transit services, improving productivity, and cooperating with the private sector. This study explores how the intergovernmental system is likely to react to transit needs during the coming stressful years.

ACIR's Approach to the Study

The Office of Strategic Planning in the U.S. Urban Mass Transportation Administration (UMTA) requested ACIR's assistance in studying the process of adapting metropolitan transit to current needs. Under terms of the agreement with UMTA, ACIR considered (1) metropolitan transit goal setting processes, (2) mechanisms for financing metropolitan transit, (3) methods of sharing transit costs among local jurisdictions within metropolitan areas, and (4) processes for setting transit fares in metropolitan areas. The research method included a cross-sectional survey of 56 metropolitan areas across the nation supplemented by intensive interviews with several types of local and metropolitan officials in three diverse metropolitan areas -- New York, Chicago, and Seattle.

In preparing for the metropolitan survey and interviews, ACIR staff members (1) reviewed the literature on transit finances and economics,

on transit politics and organizations, and on current proposals for transit service innovations, (2) identified existing transportation case studies of metropolitan areas -- and their states -- to enrich its own sample, and (3) examined many characteristics of the metropolitan areas that differentiated them by size, type, location and transit needs.

The literature reviews provided background for focusing the metropolitan survey and interviews on key questions concerning:

+ existing goal-setting, financing, cost-sharing, and fare-setting processes;
+ awareness of the need for changes in present policies, services, and institutions;
+ awareness of available options and attitudes toward them;
+ factors conducive to adapting metropolitan transit to current conditions; and
+ awareness of impediments to change and the capacity to overcome them.

When ACIR last studied metropolitan transportation (in 1974),[1/] it recommended comprehensive areawide decisionmaking and service delivery

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1/ Advisory Commission on Intergovernmental Relations, Toward More Balanced Transportation: New Intergovernmental Proposals (Washington, DC: U.S. Government Printing Office, 1975).

organizations (with assured sources of transportation funds and with flexibility to take advantage of a range of subordinate service providers). This metropolitan structure, it was recommended, should be backed up by flexible federal block grants and supportive state Departments of Transportation. Finally, it was recommended that independent state and local regulatory bodies with metropolitan transportation responsibilities be reformed to encompass related transportation modes and broad public policy objectives like equal opportunity, environmental protection, and energy conservation in addition to their traditional concerns with economics and safety. Because many conditions have changed in metropolitan areas since 1974, it is time to reevaluate these previously adopted ACIR recommendations to see how well they suit the needs of the 1980s.

The cross-sectional questionnaire survey of 56 metropolitan areas encompasses the 26 largest ones in the nation and at least one from each state (except Vermont and Wyoming where metropolitan areas have only recently been designated). It uses the same areas studied by ACIR for UMTA in 1982 to determine their relative taxing capacities and abilities to absorb cuts in federal aid for transit operations.[1/] This congruity was designed to enrich ACIR's current work.

1/ ACIR, "The Relative Dependency of 56 Metropolitan Areas on UMTA Operating Subsidies," Staff Working Paper, Washington, DC, February 1983, reprinted herein as Appendix H.

ACIR's "1983 Survey of Metropolitan Transit Adaptations" asked six questions:

1. Which of 28 specifically listed means of adapting to changing metropolitan transit needs are being pursued currently in the respondent's own area, and how important is each practice likely to be in the future? (The practices listed encompassed operational, financial, institutional, and policy-process adaptations.)

2. What types of transit fare policies are currently in effect, and how are these likely to change in the future? (This question was asked separately for bus, rapid transit, and commuter railroad systems.)

3. What methods, if any, are currently used to share interlocal responsibilities for financing areawide transit costs, and how might such methods change in the future? (This question was asked separately for bus, rapid transit, and commuter railroad systems.)

4. If formulas are used for interlocal sharing of transit financial responsibilities, what factors are currently used in the formulas and what factors are most likely to be used in the future? (This question was asked separately for bus, rapid transit, and commuter railroad systems.)

5. To what degree might 30 specifically listed factors impede needed transit system adaptations in the respondent's own metropolitan area? (The factors listed encompassed potential regulatory, organizational, political, physical, financial, and other difficulties.)

6. How well would the respondent's own metropolitan area be able to meet its transit needs in the 1980s? (This question was asked separately assuming federal aid (a) would continue at current levels and (b) would be discontinued.)

The full questionnaire is reprinted in Appendix A. A response rate of 78% was achieved (see Appendix C), and the survey data greatly enhanced all chapters of this report. The detailed tables appear in Appendix B.

They show differences in current practices and views of the future from one section of the nation to another, for different sized areas, and by six different target groups (namely, city, county, metropolitan planning, transit union, transit agency executive, and transit agency governing board officials).

The three case studies supplied greater understanding to many of the institutional issues emerging from the survey findings. The same target groups surveyed by questionnaire also were interviewed, except that citizen or business representatives were added and transit agency governing board officials were omitted. The three cases are presented in Appendices D, E, and F.

Scope of This Report

The remainder of this report is divided into four chapters:

Chapter 2. Transit Financing

Chapter 3. Transit Services

Chapter 4. Transit Institutions and Decision Processes

Chapter 5. Findings, Issues, and Recommendations

Research findings by others as well as from ACIR's survey are reflected in each chapter, and the ACIR case study findings are integrated into Chapter 4.

Chapter 2 gives an overview of transit revenue and expenditure trends, evaluates the components of transit benefits and costs, describes

the current transit financing roles of the three levels of government and the private sector, explores the effects of public transit subsidies, and examines the relative levels of funding provided by fares and the three levels of government.

Chapter 3 evaluates potentials for controlling transit expenditures by trimming services, by substituting non-conventional "paratransit" services for conventional regularly scheduled bus and rail services, by improving the productivity of conventional transit through better marketing and service adjustments, and by pursuing traditional measures to eliminate waste and to increase operating efficiencies within transit systems.

Chapter 4 reviews the present organizational structures in metropolitan areas for planning and providing transit services, traces the evolution of the urban transportation planning process over the past two-and-a-half decades, and evaluates various proposals for adapting transit institutions and processes to current conditions.

Chapter 5 summarizes findings from the three preceding chapters, identifies the key intergovernmental issues, and presents the Commission's recommendations for responding to these issues. The recommendations address transit service-delivery diversification and organization, the financing roles of the farebox and of the three governmental levels, organizations and processes for metropolitan transportation planning

and policymaking, and the need for continued research and information-sharing by all levels of government involved with metropolitan transit. These recommendations are sensitive to the growing revenue-cost squeeze confronting the urban transit industry and have been designed to help manage fiscal scarcity in the most constructive manner.

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CHAPTER 2. TRANSIT FINANCES

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Introduction

Fiscal and economic concerns dominate current discussions of public transit in the United States. Across the nation, transit systems, including both bus and rail services, are being forced into difficult decisions as increasingly severe financial pressures push against needed transit services. This chapter provides an intergovernmental perspective on the costs, benefits, and revenue sources of transit.

Each of the three levels of government plays an important role in transit finance. Crucial issues at the local level include fare policy, other local mechanisms for raising transit revenues, and interlocal financial arrangements. State issues include defining the state role, making budgetary commitments, and assisting localities to provide effective transit programs. At the federal level, the issues focus on current debates about the amounts and forms of future financial assistance.

The seven facets of transit finance explored in this chapter are:

- trends in transit expenditures and revenues;
- exploration of transit benefits;
- evaluation of transit costs;
- examination of the local role;

- analysis of the state role;
- appraisal of the federal role; and
- effects of subsidies on transit.

Analyzing these aspects of transit finance provides a comprehensive background for considering of major current issues.

This chapter concludes with particular attention to issues of immediate policy concern. Paramount are questions of the appropriate transit responsibilities of the local, state, and national levels of government. Transit systems are actively considering adjustments they may need to make if federal operating subsidies continue to decrease or are eliminated. States and localities are considering a variety of expanded and new financing mechanisms and arrangements. The financial choices made by the three levels of government and the transit agencies will profoundly affect the future of transit in the United States.

Overview of Transit Revenues and Expenditures

Public transit in the United States is a multi-billion-dollar a year industry, including both operating and capital expenditures. It consumed an estimated $12.5 billion in 1982 according to the leading transit association,[1/] and spent about $15 billion the same year according to the U.S. Census.[2/] These estimates of total expenditure represent the combined spending of fare and other operating revenues plus subsidies from the local, state, and national governments.

This section summarizes national patterns of transit expenditures and revenues. It is concerned both with the number of dollars raised and spent for transit, and with changes in the proportions of revenues coming from the various sources and going to the two major categories of expense -- capital and operating.

Total nationwide transit expenditures (in nominal dollars) have risen continuously since 1940. Total nationwide transit system revenues, i.e. fares and other revenues raised through system operations, have also increased, but at a much slower rate than transit expenses (see Table 2-1). On a nationwide basis, expenditures overtook revenues in the 1960-1965 period. Since then, public buy-outs of ailing private transit companies accelerated, and subsidies have climbed steeply.

1/ American Public Transit Association, An Overview of State Transit Funding (Washington, DC: American Public Transit Association, 1982), p. 4.

2/ See Table 4-2 in Chapter 4 of this report.

TABLE 2-1

Growth in Transit Operating Expenses and System Revenues
($ in millions)

Year	Total Transit Expense (Operating)		Total System Revenues (primarily fares)	
	Dollars	Percentage Change	Dollars	Percentage Change
1940	$ 660.7		$ 737.0	
1945	1,231.7	+86.4%	1,380.4	+87.3%
1950	1,385.7	+12.5	1,452.1	+ 5.2
1955	1,370.7	- 1.1	1,426.4	- 1.8
1960	1,376.5	+ .4	1,407.2	- 1.3
1965	1,454.4	+ 5.6	1,443.8	+ 2.6
1970	1,995.6	+37.2	1,707.4	+18.2
1971	2,152.1	+ 7.8	1,740.7	+19.5
1972	2,241.6	+ 4.2	1,728.5	+ .7
1973	2,536.1	+13.1	1,797.7	+ 4.0
1974	3,239.3	+27.7	1,939.7	+ 7.9
1975	3,752.5	+15.8	2,043.0	+ 5.3
1976	4,082.6	+ 8.8	2,236.1	+ 9.4
1977	4,366.6	+ 7.0	2,353.6	+ 5.2
1978	4,788.9	+ 9.7	2,449.9	+ 4.1
1979	5,611.4	+17.2	2,647.8	+ 8.1
1980	6,710.6	+19.6	2,805.1	+ 5.3
1981	7,621.7*	+13.6	3,045.1	+ 8.6
1982	8,324.3*	+ 9.2	3,456.9	+13.5

* Since 1981 this figure is termed "Total Expense," and includes growing "expenses" for depreciation, amortization and other reconciling items.

Source: American Public Transit Association, APTA Statistical Department, Transit Fact Book, 1981 (Washington, DC: American Public Transit Association, 1981), p. 47.

Taken together, system revenues and local subsidies covered approximately 70% of total operating expenses in 1980, while state and federal subsidies made up the remainder (see Table 2-2). Fares traditionally contributed the largest percentage of funds to transit operating revenues (and even produced a profit in bygone eras), but the percentage of transit operating expenses covered by passenger fares has decreased steadily over the last four decades.

Growing government subsidies have filled the gap between system generated operating revenues and expenses. Total funds from local, state, and national governments have increased both in dollar value and as a proportion of transit operating expenses (see Appendix G Table G-1). Local government subsidies still constitute the largest proportion of government funds for transit operating expenses, while federal subsidies provide the bulk of funds for capital expenses (see Table 2-3).

In addition to the major transit programs, there are several related "human service" programs providing special transportation services -- largely for the elderly and handicapped. These programs are funded through a variety of local, state, and federal sources, but no current estimate of their overall costs exists. All that is known is one report's estimate that North Carolina and Kentucky, respectively, spent $4.5 and $7.5 million annually in local, state, and federal money for such "human service" transportation services.[1/]

1/ U.S. Department of HEW (Atlanta), Transportation Authorities in Federal Human Service Programs, Office of the Regional Director, January 1976.

TABLE 2-2
Proportional Provision of Operating Revenue, 1980

Fares	41%
Other Operating Revenue	2%
Local Governments	27%
Federal Government	17%
State Governments	13%

Source: APTA, Transit Fact Book 1981, p. 45.

TABLE 2-3
Sources of Capital Funds for Urban Transit

	Local	State	Federal
	%	%	%
1979	9.7%	9.6%	80.8%
1980	12.3	9.0	78.7
1981	11.5	10.1	78.4

Source: U.S. Department of Transportation, Urban Mass Transportation Administration, National Urban Mass Transportation Statistics Section 15 Report, May 1981, June 1982, and November 1982.

Note: These data ignore capital projects that are carried out without federal support, notably substantial capital activity in the New York City area.

Fares

Fares and other system revenues produced approximately $2.6 billion in 1980, covering approximately 41% of total transit operating expenses. While total revenues from fares increased 54.5% between 1971 and 1980, the inflation rate of 86.1% between these years caused the apparent increase to be an actual decrease in real dollars (see Table 2-4). The proportion of total transit operating expenses covered by fare revenue slipped steadily as a result of the combined effect of decreased real values of fare revenues plus substantially increased operating costs (see Table 2-5). This trend was fueled by the federal Section 5 program objective of maintaining low fares to attract greater ridership.

Total system revenues are a product of ridership levels and average fares. The major trends in transit ridership levels since the turn of the century are illustrated in Figure 1. Transit ridership increased from the turn of the century almost until 1930, and then decreased drastically during the Great Depression. Ridership soared during World War II, because of a relatively high level of production activity and restricted automobile usage, but then dropped dramatically after the end of the war. Transit ridership continued to decline through the 1950s, 1960s, and early 1970s, spurred by the convenience of the automobile,

TABLE 2-4
Nominal vs. Real Change in Total Passenger Revenue

Year	Total Passenger Revenue (millions)	Total Passenger Revenue in 1972 Dollars* (millions)
1971	$1,661.9	$1,731.0
1972	1,650.7	1,650.7
1973	1,683.7	1,592.2
1974	1,805.2	1,568.6
1975	1,860.5	1,479.1
1976	2,025.6	1,530.6
1977	2,157.1	1,450.2
1978	2,271.0	1,509.8
1979	2,436.3	1,490.8
1980	2,556.8	1,431.2
1981	2,701.4	1,381.7
1982	3,076.9	1,573.7
	Increase of 85% in nominal dollars	Decrease of 9% in real dollars

* Based on GNP Implicit Price Deflator, U.S. Department of Commerce, October 1982, vol. 62, no. 10, p. 43.

Source: ACIR staff calculations based upon APTA, Transit Fact Book 1981, p. 51, and unpublished APTA data.

TABLE 2-5
System Revenue as a Percentage of Total Operating Expenses
($ in millions)

Year	Total Operating Expenses	System Revenue	System Revenue* as a percentage of total operating expenses
1940	$ 660.7	$ 737.0	111.5%
1945	1,231.7	1,380.4	112.1
1950	1,385.7	1,452.1	104.8
1955	1,370.7	1,426.4	104.1
1960	1,376.5	1,407.2	102.2
1965	1,454.4	1,443.8	99.2
1970	1,995.6	1,707.4	85.6
1971	2,152.1	1,740.7	80.9
1972	2,241.6	1,728.5	77.1
1973	2,536.1	1,797.7	70.9
1974	3,239.4	1,939.7	59.8
1975	3,757.6	2,043.0	54.4
1976	4,082.6	2,236.1	54.8
1977	4,366.6	2,353.6	53.9
1978	4,788.9	2,449.9	51.2
1979	5,558.2	2,647.8	47.6
1980	6,710.6	2,805.1	41.8
1981	7,621.7**	3,045.1	40.0
1982	8,324.3**	3,456.9	41.5

Note: Table excludes automated guideway transit, commuter railroad, and urban ferry boat.

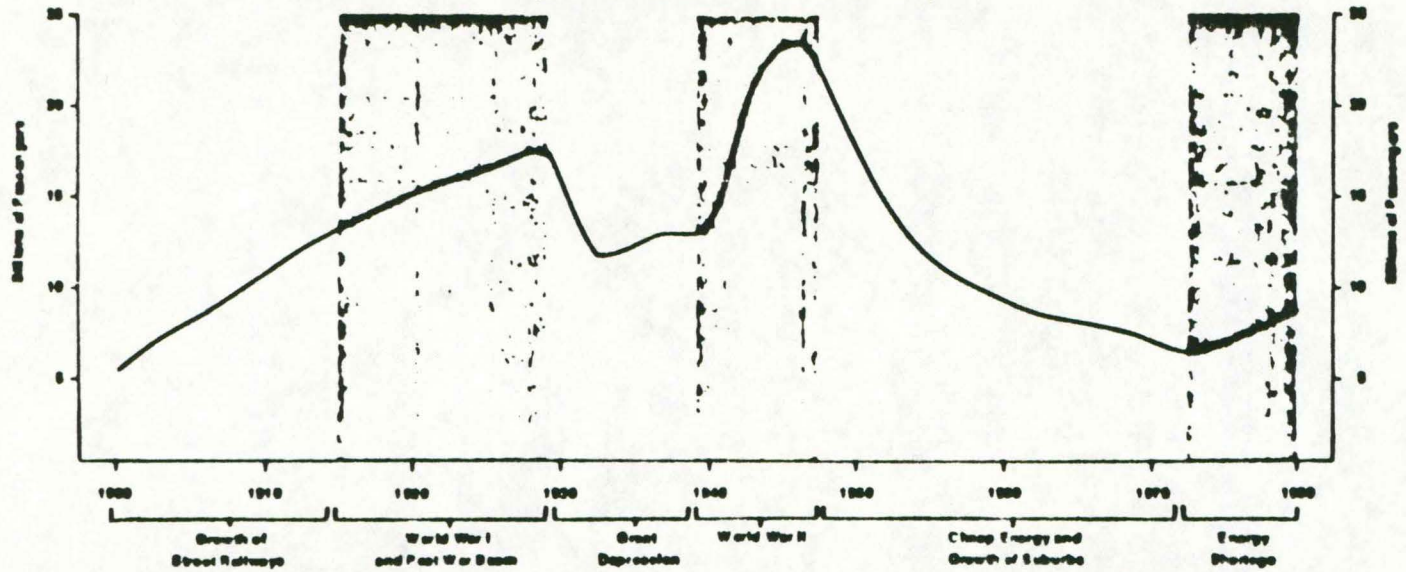
* System Revenue is used to include passenger fares, operating revenue, and non-operating and auxiliary revenue. In 1980, passenger fares constituted over 91% of system revenues.

** Note that as of 1981 this figure is termed "Total Expense," and includes growing "expenses" for depreciation, amortization and other other reconciling items.

Source: ACIR staff calculations based upon APTA, Transit Fact Book 1981, and unpublished APTA data.

FIGURE I

Major Trends of Transit Ridership



Transit ridership has gone through five major cycles of growth and decline during the Twentieth Century influenced by social and economic forces outside the transit industry. From 1900 to 1929 transit ridership grew steadily, first due to technical innovation and investment opportunities during the early growth of the street railway industry and then due to the economic boom of World War I and the post war period. The Great Depression caused a steep decline in ridership between 1929 and 1939 as people made fewer work trips and often could not afford to take pleasure trips. World War II caused motor fuel rationing and economic boom that led to a new rapid growth cycle in transit ridership. Ridership quickly declined from the artificially high war levels as people fled to the suburbs, spurred on by cheap fuel and government policy favoring low density suburban growth. In 1973 the ridership cycle reversed again and transit began a long term growth period that may continue through the end of the Twentieth Century. Rising motor fuel prices and shortages clearly signal the end of the era of cheap energy. Increasing trends of movement back to higher density cities indicate the need for efficient urban transportation will continue to push transit ridership in its newest growth cycle.

SOURCE: American Public Transit Association, Transit Fact Book: 1981, Washington, D.C., APTA, October 1981, p. 51.

preferences for suburban living, increased average incomes allowing massive suburbanization of both homes and jobs, cheap gasoline for automobiles, extensive highway construction, and other government policies encouraging low density suburban growth. Transit ridership began to rise again in the early 1970s, probably due to gasoline price hikes and shortages, improvements in the quantity and quality of federally supported transit services, and the maintenance of relatively low fares on many systems.

Although average fares generally have not kept pace with inflation over the last decade, this trend has changed in the last few years. Average adult fares increased from 35.7¢ in 1979 to 52.5¢ in 1982, an increase of over 41% in nominal dollars,* well in excess of the inflation rate of 24.7% (see Table 2-6). Total fare revenue also has been increasing at a rate faster than inflation, rising 18% between 1980 and

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* Unfortunately, these averages are the result of averaged unweighted system fares, in which each U.S. system is counted as one equal piece of data. This statistic probably understates true average fares, because fares tend to be higher in the big cities, and more people in the big cities use transit. It would also tend to distort the degree of fare changes. However, the predominate direction of change is clearly upward.

TABLE 2-6
Increases in Average Adult Fares*

Year	Mean** Adult Cash Fare	Percentage Change (nominal dollars)	Inflation Rate
1976-1977	32.6¢		
1977-1978	33.6	3.1%	7.4%
1978-1979	35.7	6.3	8.6
1979-1980	40.3	12.9	9.3
1980-1981p	46.3	14.9	9.4
June 1982p	52.5	13.4	6.0

p - Preliminary figures.

* Base period fares.

** Unweighted average of adult case fares, each system counted equally.

Source: ACIR staff calculations based upon APTA, Transit Fact Book 1981, p. 60, Table 14, unpublished APTA data, and GNP Implicit Price Deflator, U.S. Department of Commerce, October 1982, vol. 62, no. 10, p. 43.

1981, and another 13% between 1981 and 1982.[1/] Again, these increases are substantially greater than the rates of inflation of 9.4% and 6.0% for those two years.[2/]

Such summary figures, however, conceal a high degree of variation in basic fares, in the direction of change in fares, and in the degree to which operating expenses are covered by fares. For example, basic adult fares vary from $1.00 to nothing. Also, while most transit systems are raising basic fare levels, a few have recently reduced fares. Coverage of operating expenses by fares, likewise, varies greatly -- from a few profit-making enterprises (like chartered suburban commuter buses), to systems that are almost completely subsidized.

Subsidies

The Local Role. Historically, local jurisdictions provided the earliest public subsidies for transit, and they continue to provide the largest amount of government assistance for transit operations. Direct local spending for transit operations increased from $231 million in 1970 to $1.7 billion in 1980. The percentage of operating expenses covered by direct local subsidies also rose substantially, from 11.5% in 1970 to over 26% in 1980 (see Appendix G, Table G-1).

1/ APTA, An Overview of State Transit Funding, p. 5.

2/ GNP Implicit Price Deflator, U.S. Department of Commerce, October 1982, vol. 62, no. 10, p. 43.

Many local jurisdictions also provide funds for capital expenses. In some cases, substantial amounts of local funds are used. For example, over 50% of the public capital funds for San Francisco's BART system come from this source. More commonly, however, much smaller proportions of capital expenses are provided by local funds. The latter often are used principally to match federal capital grants.

Finally, local assistance frequently helps fund transit planning, administration, management, lobbying, grant preparation, and contacting with the private sector.

The State Role. The states provided an estimated $2.4 billion in capital and operating assistance for public transit in 1983, an increase over the $1.9, $1.7, and $1.2 billion they provided in 1982, 1981, and 1980, respectively.[1/] With respect to operating expenses, direct state aid

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1/ Letter from Francis B. Francois, Executive Director, American Association of State Highway and Transportation Officials, September 12, 1983; APTA, An Overview of State Transit Funding.

increased substantially over the last decade -- in the number of states participating, in the dollars involved, and in the proportion of expenses covered. Only two states had significant programs in 1971,[1/] compared with 27 states in 1982 that had transit budgets of $1 million or more.[2/] Furthermore, all 40 state departments of transportation existing as of 1981 had transit responsibilities.[3/] The estimated $820.4 million that the states spent in 1980 on direct subsidies for transit operations provided 13% of operating revenues.[4/] This growing effort still produces less operating aid than the other levels of government, and the average hides great variations among the states. Several states provide very substantial assistance, while others provide very little or none. For instance, the top six states together accounted for 80% of these dollars, and the top ten provided 91%.[5/]

1/ Fred L. Williams, States in Public Transportation, Report No. UMTA-MA-06-0109-81-2, (Washington, D.C.: U.S. Department of Transportation, UMTA, Office of Program Evaluation, 1981), p. 27.

2/ American Association of State Highway and Transportation Officials, Survey of State Involvement in Public Transportation, (Washington, D.C.: June 1982), p. 7.

3/ The Council of State Governments, The Book of the States: 1982-1983 (Lexington, Ky: The Council of State Governments, 1982), p. 470.

4/ APTA, Transit Fact Book: 1981, pp. 45-46.

5/ AASHTO, Survey of State Involvement in Public Transportation, p. 7.

Other state aid for transit helps to meet expenses for planning, research, administration, federal relations, information exchange, issuing bonds, and developing legislation.

The Federal Role. After steady real dollar increases in federal transit grants each year since the early 1960s, the inflation-adjusted amount approved decreased between 1980 and 1981, as did the amount between 1981 and 1982 (see Appendix G, Table G-2), and the future is uncertain. Although Congress authorized subsidy increases of almost 15% in nominal terms for FY 1984, over 1983 ($4.2 billion) -- backed by the one-cent portion of the increased gas tax dedicated to transit -- actual appropriations of this magnitude did not materialize. The Administration asked for even less in FY 1985.

Federal funding of transit has always emphasized capital rather than operating subsidies, and continues to do so. Even in the years since 1978, when federal funding of operations was well established, almost three-quarters (72%) of federal subsidies have gone to capital expenses. These federal grants account for roughly 80% of all the nation's capital expenses for transit, while federal aid provides only about 12% of all operating expenses (see previous Table 2-3 and Table 2-7). Current Administration proposals to phase-out federal operating subsidies would move toward a federal role oriented exclusively to capital rather than operating concerns.

TABLE 2-7
Federal Operating Assistance Revenues

Year	Total Operating Expenses	Federal $ (millions)	Federal Subsidies as a % of Operations
1975	$3,757.6	$ 301.8	8.0%
1976	4,082.6	422.9	10.4
1977	4,366.6	584.5	13.4
1978	4,788.9	689.5	14.4
1979	5,513.8	855.8	15.5
1980	6,710.6	1,093.9	16.8
1981	7,621.7*	1,095.1	14.4
1982	8,324.3*	1,005.4	12.1

* As of 1981 this figure is termed "Total Expense," and includes growing "expenses" for depreciation, amorization and other reconciling items.

Note: Table excludes automated guideway transit, commuter railroad, and urban ferry boat.

Source: ACIR staff calculations based upon APTA, Transit Fact Book 1981, and unpublished APTA data.

The Reagan proposal for phasing-out federal transit operating subsidies originally sought a two-thirds cut in such funding for FY 1984 from the FY 1983 level ($275 million instead of $875 million), and a complete elimination of federal funds for operations by 1985. Both the House and Senate Appropriations Committees, however, rejected this proposal and appropriated funds for operating assistance at approximately $873 million, a very slight decrease from FY 1983.[1/] Subsequently, the Administration proposed a four-year phase-out of operating funds. The debate continues, leaving the future of federal funding for transit operations uncertain.

Benefits of Transit

Transit benefits are both direct and indirect. They affect society-at-large as well as transit users and private businesses, and they are associated with direct and indirect costs.

Transit improvements allow riders to increase their mobility without as many negative side-effects as would accompany an equivalent expansion of highways for automobile use. The indirect transit benefits to the general public related to decreased automobile use, however, are

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1/ U.S. Congress, Congressional Budget Office, The Federal Government in a Federal System: Current Intergovernmental Programs and Options for Change, August 1983, p. 39.

difficult to determine. They include reduced air pollution, congestion, land use inefficiencies, and energy waste, but they depend upon how much people actually will reduce their use of cars by shifting to transit. Although increased transit services will generally induce some such shifts they also are likely to simply increase the total amount of travel, unless they are coupled with disincentives for automobile use. Such disincentives, however, are seldom applied because they limit total mobility and raise great controversy. Thus, transit may do more to increase accessibility to congested areas than to reduce congestion.[1/]

The largest increases in transit benefits may be realized in areas of substantial population growth. Many such areas are using their existing transportation systems at peak capacity, or more, and foresee escalating congestion problems that will waste commuters' time and tend to dampen the rate of population increase. Improved transit services might allow such areas to grow without experiencing as severe automobile-related and other transportation problems as would be the case without expanded transit. However, the transit expansion itself may accelerate the area's growth so much that there may be little or no overall reduction in congestion. For example, places like Houston, Dallas, Los Angeles, and San Jose have continued growing despite their worsening transportation problems. Notwithstanding these uncertainties, a major overarching goal

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1/ Alan Altshuler, et al, The Urban Transportation System: Politics and Policy Innovation, (Cambridge, MA; The MIT Press, 1979), p. 435.

of transit remains that of city building -- expanding the transportation capacity of the area to benefit transit riders, to make businesses and other private sector establishments more accessible and successful, and to benefit the general public by limiting the negative consequences that would accompany equivalent levels of automobile travel. A fuller exploration of benefits to these three sectors is warranted.

Benefits to Transit Riders

Clearly the most direct of the many benefits conventional mass transit provides is increased mobility for individuals. In 1980, Americans took approximately 8.2 billion transit trips by bus, rail (not including commuter railroad), and trolley coaches. Transit use declined steadily following World War II until 1972 (see previous Figure 1 and Appendix G, Table G-3) and has generally been increasing since then.

The most common purpose of transit trips may have shifted somewhat in the 1970s. It appears from a 1977 survey that the proportion of transit trips made for non-work purposes has grown while the proportion of such trips for work purposes has decreased -- at least through the period of 1969-1977.[1/] This period was a rather unusual one for transit,

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1/ U.S. Department of Transportation, National Personal Transportation Study Reports published in the course of years following the surveys of 1969 and 1970 and 1977 and additional tabulations prepared for UBP and FHWA.

however, because its use reached an all time low around 1972, and then started its first increase since the end of World War II. With transit use increasing since 1977, the earlier evidence of a decrease in the proportion and number of transit worktrips may not be a valid indicator of current conditions. Unfortunately, more recent data concerning non-work trips are not available, so it is difficult to appraise the proportions of transit trip purposes at this time.

The 1980 Census did gather information for work-related transit trips, however. It appears that the number of workers using transit as their primary means of transportation to work continued to decrease through the earlier part of the 1970s, but increased in the later part of that decade. The turning point may have been around 1973 or 1974. The Census estimates that the number of workers using transit as their primary means of traveling to work decreased from 6.1 million in 1970 to 4.8 million in 1975, but rebounded back to 6.1 million workers by 1980. Nevertheless, conventional transit's share of worktrips declined over the decade from 9% to 6.4%.

Older urban areas of the Northeast and North Central parts of the country have the highest percentages of workers using transit. New York City has both the highest number of transit commuters of any U.S. city and the highest percentage of its workers using transit. Transit use is next highest, in terms of number of workers using it to commute, in Chicago, Philadelphia, San Francisco, Washington, DC, Los Angeles, and Boston, in that order.

The cities that are experiencing the largest increases in the numbers of people using transit to get to work are generally those that are experiencing substantial growth in population. These cities are mostly located in the South and West, including Washington, DC, Atlanta, Fort Lauderdale, and San Antonio in the South, and almost all the major urban areas of the West, especially San Francisco, San Jose, Sacramento, Los Angeles, Anaheim, Riverside, San Diego, Denver, Seattle, Phoenix, and Portland. Additionally, transit use in Minneapolis-St. Paul is rising as its population grows.

Appendix G, Table G-4 indicates how the numbers and percentages of workers using transit to commute have changed between 1970 and 1980, compared with population changes in that decade for American metropolitan areas of over one million population. A close relationship emerges between areas that have experienced significant population growth in the 1970s and areas that have experienced an increased number of workers using transit to get to work. Thus, as the population has shifted toward the South and West, the growth in transit use for commuting has also shifted in the same direction. The Northeast region still has by far the highest percentage of workers using transit, and still has six major cities where over 10% of the workforce uses transit as the primary

TABLE 2-8
Reasons for Not Using Public Transportation by Workers
Who Use a Car, Truck or Van to Get to Work, 1980

		All Workers Using Car, Truck, or Van
Public transportation is not available		49.4%
Available transit does not go to place of work	10.4	
Time schedule is not convenient	8.4	25.1
Takes too long to get to work	5.1	
Transit stop is too far from residence	1.2	
Rather use a car, truck or van		12.7
Need car, truck or van for work		8.9
Too expensive		.6
Physical and/or mental impairment		.2
Other reason		3.2

Source: U.S. Bureau of the Census, "Journey-to-Work Supplement to the 1980 Annual Housing Survey," unpublished preliminary data, as cited in Fulton, p. 19.

means of transportation. However, only the West experienced an increase in both the number and percentage of workers using transit.[1/]

Availability is a major factor affecting transit use by individuals. When the Census Bureau asked car, truck, and van users why they did not use public transportation, almost half replied that such service was not available to them (see Table 2-8). Another quarter answered that the available transit did not go to their place of work, or took too long, or was too inconvenient. "Thus, in sum, about 75 percent of all the workers who commute in a private vehicle did not use public transportation because it was either not available or it could not conveniently get them to work."[2/] Only 12.7% responded that they would rather use a car, truck, or van. Another 8.9% reported that they needed their vehicle for work, and only 0.6% said that expense was the reason they did not use transit.

Of course, expanding conventional transit to make its services available to larger proportions of today's scattered worksites and homesites would be very costly and uneconomic. This reality suggests the need for increased attention to paratransit modes, especially ridesharing. This non-conventional mode now is more heavily used than

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1/ Philip Fulton, "Public Transportation: Solving the Commuting Problem?" Presented at the annual meeting of the Transportation Research Board (Washington, DC: U.S. Department of Commerce, Bureau of the Census, January 18, 1983), p. 7.

2/ Ibid., p. 19.

conventional transit in many places, according to 1980 Census data.[1/] In fact, nearly 20% of all employees in the nation carpool to work.

To the extent that transit benefits accrue directly to individuals who can afford to pay the associated costs of providing the service, a case can be made that commensurate fares should be charged. This self-financing is done, in fact, on some long distance subscription buses and rail lines charging distance-based fares and covering all or most of their costs.[2/]

Benefits to the General Public

There are a great many benefits attributed to mass transit that accrue to the general public rather than to specific identifiable individuals. Many cities, particularly the older, larger ones with extensive transit services, could not function as they now do without their transit systems. Cities such as New York, Philadelphia, Boston, and San Francisco simply do not have the street capacity to accommodate the numbers of people who work in their downtown areas. Their transit systems carry

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1/ Stephen J. Lynton, "Census Shows Washington is Carpool Capital of Nation," Washington Post, Sunday, May 20, 1984, pp. C1, C7.

2/ Philip A. Viton, Redundancy in Public Transit, vol. II, "The Profits of Competition in Public Transit," prepared for U.S. DOT/UMTA (Berkeley, CA: University of California Institute of Urban and Regional Development, August 1980), p. 10.

large numbers of people into their downtown areas and the direct economic benefits from transit in these cities is very great. Collapse of their transit systems would be catastrophic.

Transit benefits other than increased mobility include:

1. Equal opportunities for mobility of the "transportation disadvantaged," including individuals who cannot own or drive cars, like the young, elderly, poor, and handicapped;

2. Ability of the urban population to respond to personal or national emergencies requiring mobility through the "optional mode" of transit;

3. Economic stimulus, development, and support for the area, especially for business activity and employment in central cities;

4. Improved land use through a reduced use of land for streets, highways, and parking for a given level of transportation capacity;

5. Improved environmental quality through a reduction in automobile related pollution;

6. Increased safety through a reduction in automobile usage;

7. Decreased congestion in the inner city and in major traffic corridors; and

8. Decreased energy use, especially for imported oil.

Most of the interrelated transit benefits listed above accrue to large groups or to the general public. They cannot be divided, nor can individuals decide to have more or less of them than is true of the general public. Because of the collective nature of these benefits, society needs mechanisms other than market-type pricing and profit maximization for determining their value.

For example, any reduction in air pollution resulting from greater reliance upon transit benefits everyone. However, the value of clean air to individuals not using transit could not be captured as revenues for a purely private transit system.

The primary analytical question, then, is to what extent mass transit actually produces public benefits for which society is willing to pay. The indirect benefits of public transit, however, are more difficult to measure or attribute to transit than direct ones. Direct benefits like increased mobility can be surveyed fairly easily, while indirect benefits like reduced highway congestion that may occur are hard to predict. Table 2-9 classifies the commonly purported benefits of transit according to whether they are predominately private or public and whether they are direct or indirect.

The evidence that mass transit actually provides each of these benefits, especially those that are public and indirect, is somewhat mixed, ranging from quite convincing to inconclusive.

° Equal Opportunities

The "transportation disadvantaged" portion of the population uses public transit for a higher percentage of its trips than does the general public, increasing its mobility.

Individuals from households with incomes below $5,000 used public transit for almost 14% of their travel in 1970, while households from all higher income levels used public transit

TABLE 2-9
Classification of Transit Benefits

	Private	Public	Direct	Indirect
Increased Mobility for Individual Members of the General Public	X		X	
Increased Mobility for the "Transportation Dis-Advantaged"		X	X	
Provision of an Optional Mode to the private automobile		X	X	
Economic Stimulus, development and support		X		X
Improved land use		X		X
Improved environmental quality, especially air pollution		X		X
Increased Safety		X		X
Decreased highway congestion		X		X
Decreased energy usage		X		X

for less than 5% of their travel in 1970, (see Table 2-10). 1/ Although the poor make fewer trips of all kinds than do other income groups, a disproportionately high percentage of their trips are made on transit. Households making less the $7,500 constituted approximately 29% of the population in SMSAs in 1977 and took only 17% of all trips on all modes but constituted 31%, a disproportionately high level, of all transit ridership. 2/ However, middle income persons do not appear to use transit for significantly more of their trips than do high income persons, who constitute a high percentage of commuter train trips. In addition, females, non-whites, and elderly travel less but use transit for a relatively higher percentage of their trips than does the population at large, (see Table 2-11).

In sum, mass transit does not provide all of the transportation-disadvantaged population with mobility equal to the rest of the population. However, the evidence is convincing that transit does increase their mobility and is relied upon more heavily by this portion of the population than by the general public.

° Provision of an Optional Mode

Clearly the ability to use transit provides an optional mode of travel for many individuals. Transit is used as an optional mode when people have trouble with their cars, carpools, and vanpools. Additionally, transit provides an optional mode for large numbers of people in the case of planned events, like a football game, or unplanned events, like bridge or highway trouble or foul weather.

1/ John Pucher, "Equity in Transit Financing," (Ph.D. dissertation MIT, 1978), p. 28, as cited in Alan Altshuler, The Urban Transportation System (Cambridge, MA: The MIT Press, 1979), p. 272.

2/ U.S. Department of Transportation, National Personal Transportation Study Reports, p. 1.4.

TABLE 2-10

Modal Distribution for Urban Travel by Income Class, 1970

Income Class	Auto Driver	Auto Passenger	Bus or Streetcar	Subway or Elevated	Commuter Rail	Combined Transit	Taxi	Total
Below $5,000	47.6%	37.8%	12.2%	1.5%	0%	13.7%	8%	100%
$5,000-$7,499	55.8	37.0	5.5	1.4	0.1	7.0	0.2	100
$7,500-$9,999	57.6	38.3	2.5	1.0	0.2	3.7	0.5	100
$10,000-$14,999	60.3	36.0	2.4	0.9	0.3	3.6	0.2	100
$15,000 or more	60.7	34.0	3.1	1.6	0.3	5.0	0.3	100
All incomes	57.3	36.6	4.4	1.2	0.2		0.3	100

Source: John Pucher, "Equity in Transit Financing" (Ph.D. diss., MIT, 1978), p. 28. The distributions were calculated from a computer tape of the 1970 Nationwide Personal Transportation Study supplied by the Federal Highway Administration, U.S. Department of Transportation as cited in Alan Altshuler, The Urban Transportation System, p. 272.

Note: Each figure in the table represents the percentage of the total trips made by each income group accounted for by the indicated mode.

TABLE 2-11

Group	Percentage of Total Trips on all modes	Percentage of Trips on Transit
Income <$7,500	16.8%	31.1%
Females	49.3	54.1
Non-whites	9.7	28.7
Over 60	10.0	12.0

Source: U.S. Department of Transportation, Mode of Transportation and Personal Characteristics of Tripmakers, NPTS, Report No. 9 (November, 1973) Appendix C.

° Economic Stimulus and Land Use Effects

There is some evidence that transit systems, designed to bring commuters into a central business district, increase land values in the central business district and in certain suburban housing developments. Such systems have generally been supported by central city business and suburban land developers. Yet, the extent to which this pattern can be viewed as socially important economic development is unclear. The impact of transit on land use historically has been dramatic because the older cities developed largely around their transportation systems. The effects of recent and proposed transit systems on the urban landscape, however, are unclear both in size and type of impact. Transit systems may encourage denser city development, but they also may encourage development of housing at more distant locations from work places than would otherwise be the case. Major disagreements about favored land use arrangements leave it unclear whether such effects, even if they were clarified, should be considered as benefits.

"There is a general consensus that public transit materially benefits an area's physical environment," according to a recent study. 1/ Certainly, increased intra-urban transit allows for a higher degree of mobility with a given level of streets and parking in an area.

° Improved Environmental Quality

Significant reductions in air pollution have been found to be attained through increased bus service in several areas including Atlanta, Washington, DC, San Diego, and Orange County. 2/ Because automobiles produce very large percentages of the pollution in

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1/ Robert Cervero, Intergovernmental Responsibilities for Financing Public Transit Services, U.S. Department of Transportation, Report No. UMTA-CA-11-0023 (November, 1982), p. 60.

2/ James P. Curry, Case Studies of Transit Energy and Air Pollution Impacts, Washington, DC: U.S. Environmental Protection Agency, 1976, as cited in Cervero, Intergovernmental Responsibilities, p. 61.

most metropolitan areas, including 80% of the carbon monoxide and lead emissions, 70% of the hydrocarbon emissions, and 50% of the nitrogen oxide emissions, 1/ it seems evident that a reduction in the use of automobiles would reduce pollution levels. Thus, to the extent that mass transit reduces the use of automobiles it will help reduce air pollution levels, or limit increases in growing areas.

° Increased Saftey

There is strong evidence that the fatality rate for passengers on buses and rapid transit is much lower than for occupants of automobiles and trucks. There are approximately .07 and .25 fatalities per 100 million passenger miles (HMPM) traveled on buses and rapid transit, respectively, versus .53 for automobiles and trucks. 2/ However, other more complex analyses suggest that the fatality rates for nonoccupants are fairly similar for buses and for automobiles and trucks per HMPM (.51 and .43 respectively), but higher for rail rapid transit (1.65). 3/

° Decreased Highway Congestion

Transit has the inherent advantage of being capable of transporting more people in less space than required by automobiles. The earliest arguments for transit were largely based upon this potential. Conversely, it is clear that major reductions in transit can dramatically increase street and highway congestion,

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1/ Alan Altshuler, The Urban Transportation System (Cambridge, MA: The MIT Press, 1981), p. 207

2/ Ibid., p. 224.

3/ Ibid.

as has been shown in studies of transit strikes in New York City, Washington, DC, and Los Angeles. 1/

However, the long-term effect of transit on street congestion levels is much less clear. The ability of expanded transit services to decongest automobile traffic is far from proven. Many of the new rapid transit systems of the 1970s appear to have simply increased the transportation capacity of the area without having major long-term effects upon highway and street congestion. Thus, if one considers some ratio of the amount of street and highway congestion to the number of people traveling in a given area, clearly transit reduces "per commuter congestion." However, if one simply measures the use and over-use of highway capacity in an area, it is not at all clear that the introduction or expansion of a transit system has a long-term significant effect upon highway congestion levels.

° Energy Conservation

Energy conservation in the transportation sector, including vehicle fabrication and system construction, is an important public goal because this sector consumes over 40% of all energy consumed in the United States. Transportation vehicles use approximately 53% of the petroleum and natural gas liquids consumed in the United States, with almost 70% of this fuel used by highway vehicles. Automobiles use roughly three-quarters of this amount, and only two-thirds of 1% of energy consumed by the transportation sector was used by urban common carriers (bus and rail). 2/

1/ Barrington and Co., "The Effect of the 1966 New York City Transit Strike on the Travel Behavior of Regular Transit Users," (New York, NY: unpublished report); U.S. Department of Transportation, Federal Highway Administration, "The Effect of a Suspension of Bus Service on Local Peak Hour Traffic Congestion," (Washington, DC: Highway Planning Technical Report 25, 1971); and John Crain and Sydwell Flynn, "Southern California Rapid Transit District 1974 Strike Impact Study," (Sacramento, CA: State of California Business and Transportation Agency, 1975), as citied in Robert Cervero, Intergovernmental Responsibilities, p. 53.

2/ S. Sokolsky, "Energy Case Studies," in Public Transportation: Planning, Operations and Management, eds. George Gray and Lester Hoel (Englewood Cliffs, New Jersey: Pretince-Hall, Inc., 1979), pp. 550-551.

Thus, most transit is highly energy efficient in operation. Peak hour rail transit is potentially the most energy efficient mode of transportation, although some analysts have pointed out the large energy requirements for constructing such systems that may off-set any anticipated energy savings from operations for years to come. Rapid transit operating efficiency is followed closely by intercity rail, peak-hour transit bus, and intercity bus.

Conversely, "on the other end of the energy-efficiency spectrum is the typical automobile used for commuting, which many analysts have found exhibits an energy efficiency well below that of commercial jet aircraft." 1/ Most automobile transportation is for home-to-work and other urban personal trips. A large fraction of these urban trips involve continual stop-and-go driving, are made with automobiles carrying only one occupant, and are thus very inefficient. Some studies have attempted to estimate the energy savings potential of moderate public policy initiatives designed to induce commuters to use transit. One study that estimated the effects of transit time-line improvements, fare reductions, and cost increases for private automobiles on the use of energy found the degree of potential energy savings to be fairly small and city-specific. Energy savings were estimated between 5% and 6% in Baltimore and Chicago, but less than 1% in Albuquerque and San Diego. Both transit improvements and automobile disincentives were relatively effective in the first two cities, largely due to their large distinctive central business districts and well-developed transit systems. However, energy savings were minimal in the latter two cities, where the central business district and the transit system were both less well developed, and the road system less congested. 2/

Most studies tend to be skeptical about the abiltiy of transit improvements to significantly decrease energy use largely because

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1/ Sokolsky, Ibid., p. 554.

2/ R.H. Pratt Associates, Inc., The Potential for Transit as an Energy Saving Option, prepared for FEA (Kensington, MD: R.H. Pratt Associates, Inc., March 1976), now available as PB 263 087, as cited in S. Sokolsky, "Energy: Case Studies," p. 556. (This study apparently did not include introduction of new transit systems as an option in its analysis).

of a high degree of preference by the public for automobile use. Substantial energy savings are only thought possible along high density corridors and in the long-term, when transit might affect land use and travel demand patterns. Disincentives for automobile use are potentially effective in reducing energy use but very difficult to impose in most settings. Carpools and vanpools seem more realistically able to save substantial amounts of energy in the near future without requiring major investments in transit and disincentives for automobile use.

From this recitation of factual findings, it is clear that there are public transit goals worth subsidizing, but not all of those frequently cited by transit proponents have demonstrable benefits. In addition, not all the goals can be pursued at the same time or by the same means. Crucial interactions among transit benefits are important to recognize. Where conventional transit proves too costly for the benefits it produces, ridesharing and other non-conventional modes may offer more realistic alternatives. Further research may provide better guidance in the future, but for now there is no substitute for careful route-by-route analysis and ultimately for political judgment on some of these points.

Benefits to the Private Sector

A number of important benefits of transit accrue to various components of the private sector. In addition to direct profits for private transit companies, these benefits can include:

- Increased mobility for the workforce, providing private companies with access to a larger proportion of the workforce, an optional mode of transportation for employees, and a reduced need for parking places.

- Increased mobility for consumers, creating a larger market to which private companies can sell their goods and services. Some major stores rely heavily upon transit. For example, 75% and 60% of the customers at Gimbels in New York City and J.C. Penny in Portland, Oregon, respectively, arrive by transit. 1/

- Economic development of downtown areas, benefiting private business in both direct and indirect ways. Increased demand and value for downtown land can directly profit downtown companies. An increased economic base can provide more services and limit the need for tax increases. In addition, city growth, often encouraged by transit expansion, can increase the population of an area, thus increasing the potential markets. For example, the BART rail system has been credited with stimulating $1.4 billion worth of construction in San Francisco since it opened, and estimates are that the Metro system in Washington, DC will generate $6 billion of private development. 2/

- Housing development in the suburbs can be made more profitable for developers by transit expansions that increase housing demand in specific areas.

Since there are a variety of benefits of transit for the private sector, some degree of financing by the private sector makes sense. The increased involvement in public transit by private (non-transit) companies suggests that these benefits are being recognized.

These benefits, to transit users, to the local citizenry, to the state and federal governments, and to the private sector, are not free -- they cost significant sums of money. Costs are the next topic to which this discussion will turn.

Costs of Transit

As noted earlier, the total direct costs of public transit in the United States (including public and private expenditures for both capital

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1/ APTA, Transit Fact Book 1981, p. 22.

2/ Ibid.

and operating purposes) now amount to $12-$15 billion annually. The $12.5 billion estimate by APTA equals a nationwide cost of roughly $54 per capita (although the costs obviously are not evenly distributed).

Of course, there are additional indirect costs that are extremely difficult to quantify, including the noise and inconvenience of construction and operation, the disruption of communities, and the influence on land use patterns. For some individuals and neighborhoods the "city building" effects of transit expansion are a cost rather than a benefit. Although these costs are important, no attempt is made here to quantify them. Only the direct costs (both capital and operating) are analyzed below.

Capital Costs

Capital costs for individual transit systems are highly dependent upon the stage of development of the system and the metropolitan area. Capital costs are very high when systems are being established or expanded to accommodate new population growth, particularly if rail systems are used.

Nationally, the bulk of capital costs for transit has been paid for recently by federal subsidies. Estimates suggest that approximately 80% of capital costs for the recent years were paid through federal subsidies (see previous Table 2-3). However, this source of funds is shrinking. In 1982 the federal government approved about $2.6 billion for this

purpose, a decrease from 1981 of approximately 17% in real inflation-adjusted dollars.

The major factors that affect the need for future capital investments in mass transit are (1) a large pent-up physical necessity to prevent or reduce the deterioration of existing facilities, particularly in the older cities, and (2) the demand for new or expanded transit capacity, particularly in the newer cities that are experiencing substantial increases in population.

The condition of established transit facilities in the older cities varies widely, in accordance with factors like facility age, patterns and intensity of transit service, levels of maintenance, topography, and weather. Some of the older systems are in especially bad physical condition, including those in New York, Chicago, Philadelphia, and Boston. Many of the severe problems on these systems reflect a backlog of postponed work, as well as normally expected vehicle replacement. Many systems probably will require rehabilitation or replacement of rail track, buses, rail cars, or bus and rail car garages within the next decade. These physical problems can have strong effects upon both ridership and finances because they reduce service levels. As a recent CBO report pointed out:

> High (mechanical) failure rates can have important implications for transit authority finances, because ridership -- hence fare revenues -- is considerably more sensitive to passengers' comfort

> and convenience that it is to fare levels. Thus continuing to neglect repair and maintenance needs could result in increased road traffic congestion and wasted fuel, and in greater expenses for businesses and private individuals alike. Over the long term, an area's economic development can suffer. These costs are likely to be concentrated in the older, densely populated cities that depend most on transit. 1/

The second major source of demand for capital investment in transit comes from the new and expanding cities. Several new systems have been started in recent years that are not yet complete, including the systems in Washington, DC, Baltimore, San Diego, Atlanta, and Portland, Oregon. According to one analysis, there are only four or five urban areas left in the United States that are strong candidates for new rapid transit: Los Angeles, Seattle, Honolulu, Houston, and possibly Dallas. Each of these areas is working on plans for rapid rail systems. However, "[W]e need not fear that there will be a 'bottomless pit' of rapid transit construction or 'little BART's' proliferating all over the country," 2/ because other areas do not have the necessary travel-demand conditions. There are more numerous serious candidates for

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1/ U.S. Congress, Congressional Budget Office, Public Works Infrastructure: Policy Considerations for the 1980s, April 1983, p. 39.

2/ Boris S. Puskarev, Jeffrey M. Zupan, and Robert S. Cumella, Urban Rail in America: An Exploration of Criteria for Fixed-Guideway, a Regional Plan Association book (Bloomington, IN: Indiana University Press, 1982), p. 195.

light rail, because of lower ridership requirements for cost effectiveness, totaling perhaps 20 additional areas.[1/]

A recent CBO report estimated transit capital needs of $3.6 to $5.5 billion annually, as shown on Table 2-12. This estimate was based upon an UMTA estimate of about $3.3 billion needed annually to repair, modernize, or replace existing transit facilities, and an APTA estimate of $2.2 billion for new and expanded rail systems. The sum of these figures equals the high CBO estimate, and the low estimate was scaled-back to suggest that economies could be achieved.

Operating Costs

Increasing the overall productivity, or cost-effectiveness, of regularly scheduled bus and rail systems is the most commonly cited need of transit systems, according to a recent ACIR survey of officials in metropolitan areas (see Appendix Table B-1). A number of cost components combine to affect transit operating efficiency. These components include demographic trends, capital structures, governmental policies, management skill, and labor productivity. Although there is little consensus about the effect of these factors on system productivity, it was not generally thought by

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1/ Ibid.

TABLE 2-12
Annual Public Transit Capital Needs, 1983-1990
(In millions of dollars)

Category and Program	Annual Needs: High Estimate Total	Annual Needs: Low Estimate Total d/
REPAIR, MODERNIZATION, AND REPLACEMENT		
Bus Rehabilitation and Replacement	610 a/	610
Bus Maintenance Facilities Modernization	500 a/	340
Rail Rolling Stock Replacement and Modernization	500 a/	250
Track and Signal Improvements	1,200 a/	1,200
Rail Maintenance Facilities Modernization	500 a/	500
Subtotal b/	(3,310)	(2,900)
ADDITIONAL CAPACITY		
Rail System Extensions	1,191 c/	500
New Rail Systems	1,012 c/	200
Subtotal b/	(2,203)	(700)
Total Needs	5,513	3,600

SOURCES: See notes below.

a. Congressional Budget Office from Urban Mass Transportation Administration, 10-Year Federal/State/Local Transit Investment Requirements, 1982.

b. Details may not add to totals because of rounding.

c. Congressional Budget Office from American Public Transit Association, Rail Capital Needs, February 1982 Update.

d. Congressional Budget Office modification of high estimates.

As cited in U.S. Congress, Congressional Budget Office, Public Works Infrastructure, p. 51.

respondents to the ACIR survey that a lack of sufficient incentives for productivity is a serious problem (see Appendix Table B-6).

The largest component of operating costs is labor. The transit industry is labor intensive and seems likely to remain so. Estimates of the percentage of transit operating costs devoted to labor range from 60% to over 80%, but vary considerably between systems. Yet, labor costs are largely determined by the transit industry itself, while other operating costs, like gasoline prices, are determined almost completely by forces outside the industry.

Transit costs are high partly because of the wide variation in the level of demand for services -- hence, for labor and equipment -- during the day and week. Most service demand is in morning and evening peaks for five days a week. Cities with the greatest differences between rush hour and non-rush hour service demands tend to have the highest costs. Peak demand in some cities is four times as high as non-peak demand, requiring enough drivers, operators, buses, and rail lines (in some cases) to serve the peak, even though they are not

used during the off-peak times. Peaks that are closer together cause less idle labor than widely spread ones, but transit peaks differ in this respect from place-to-place. The further spread apart and broader the peaks are, the longer the work shifts and higher the overtime pay, or the greater the need to hire two shifts of workers. Part-time workers have been used infrequently, and often are prohibited in labor union contracts.

As the transit industry in the United States changed over from almost complete private ownership to almost complete public ownership, the national government required that the heavily unionized patterns established in the private sector be continued. Collectively bargained transit workers' wages, fringe benefits, and work rules (usually conducted separately from those for other public employees) have a strong impact on transit costs.

The total number of public transit workers decreased continuously from WW II until 1970, but has increased from 1972 to the present, roughly paralleling the trends in transit ridership. Estimates of the average number of transit employees, total salaries and wages,

fringe benefit costs, and total labor costs are shown in Appendix G, Table G-5.

Although labor costs -- including wages, fringe benefits, and work rules — vary from one system to another, the average percentage of operating expenses attributable to labor appears to have been decreasing gradually over the last several years, as shown in Table 2-13.

The following conclusions can be drawn about transit wage trends:

1. Public transit wages, like other public and private wages in general, have increased in nominal dollar terms but have decreased in real dollar terms (i.e. controlled for the CPI) between 1970 and 1981 (see Appendix G, Table G-6).

2. The rate of increase in earnings for municipal transit workers was similar, but slightly lower, than the rate of increase in earnings for all private workers (see Table 2-14). Nevertheless, comparisons between public transit workers and private workers are difficult to make because some data:

   (a) include wages for supervisory personnel that others do not;

   (b) are based upon "Full-Time Employment Equivalents" rather than actual full-time workers;

   (c) may include part-time earnings in their calculation of average weekly earnings;

   (d) are not available by city size (a highly significant determinant of wages); and

   (e) are for different time periods (e.g. a week, a year) that are not directly comparable, (e.g. weekly earnings X 52 appears to fall short of annual earnings).

TABLE 2-13
LABOR COSTS AS A PERCENTAGE
OF TOTAL OPERATING COSTS

Year	Labor Costs as a Percentage of Total Operating Costs*
1975	80.6%
1976	79.9
1977	81.5
1978	81.6
1979	78.7
1980	74.2
1981**	73.2
1982**	72.7

* Estimated using a weighted sampling technique.
** Preliminary estimates.

Source: Telephone conversation with John Neff of APTA on September 1, 1983.

TABLE 2-14
Comparison of Earnings of Municipal Mass Transit Workers,
Private Production Workers in Manufacturing Industries,
and Full-time Wage and Salary Workers
(nominal dollars)

	Municipal Mass Transit Workers* (a) (Monthly)	Private Production Workers** (b) (Weekly)	Full-Time Wage and Salary Workers (c) (Weekly)
	$ 955	$ 155	NA
	1305	191	$ 185
	1569	269	244
	1765	289	266
	1895	318	289
itage change			
'2-1981	98%	105%	NA
'5-1981	45%	66%	56%

lot Available

rage October earnings. Includes supervisory workers.

rage weekly earnings. Figures do not include supervisory wages.

s: a) U.S. Department of Commerce, Bureau of the Census, Public Employment in 1965 - Public Employment in 1981, Series GE65-GE81, (Washington, DC: U.S. Government Printing Office), October wages.

b) U.S. Department of Commerce, Bureau of the Census, Statistical Abstract of the United States 1982-83, Table No. 668, p. 402.

c) Ibid, Table No. 671, p. 404.

3. Municipal transit employees' wages appear to have increased at a similar, but slightly higher, rate (in nominal dollars) than the wages of average local government employees between 1965 and 1981, and at almost the identical rate as those of other local government employees since 1974 (see Table 2-15).

4. Local transit union wage rates continue to be significantly lower than average union wage rates for motor truck drivers and helpers, and for many other union wage rates (see Appendix G, Table G-7).

5. Public transit earnings are higher than those of most categories of municipal employees, even in the biggest cities, but are not the highest. (Workers in large cities have higher earnings than do workers in other size cities, and transit workers are disproportionately concentrated in the largest cities.) City-employed higher education teachers, police officers, and electrical power workers in the largest cities have higher average monthly earnings than do transit workers in these jurisdictions (see Appendix G, Table G-8).

With respect to the costs of fringe benefits for transit workers (the second component of labor costs) about all that can be said is that they are rising (one study says by three times the rate of inflation in recent years). Much of the hike in these costs, however, is attributable to the increase in Social Security taxes and to the escalation of medical care costs rather than to expanded benefits. The costs

TABLE 2-15
Percentage Increase in Earnings* for Municipal Employees
and all Local Government Employees
(Nominal dollars)

Year	Transit**	All Local Government Functions
1965-1966	+ 7%	+ 4%
1966-1967	+15%	+ 9%
1967-1968	+10%	+ 8%
1968-1969	- 6%	+ 6%
1969-1970	+10%	+ 8%
1970-1971	+ 7%	+ 5%
1971-1972	+ 4%	+ 5%
1972-1973	+17%	+10%
1973-1974	+ 4%	+ 6%
1974-1975	+12%	+ 7%
1975-1976	+ 2%	+ 6%
1976-1977	+ 7%	+ 5%
1977-1978	+ 8%	+ 5%
1978-1979	+ 2%	+ 8%
1979-1980	+12%	+ 9%
1980-1981***	+ 7%	+ 9%
	Percentage Change	
1965-1973	+ 81%	+ 71%
1974-1981	+ 63%	+ 61%
1965-1981	+207%	+192%

* Average October wages.
** Includes both state and local full-time employees 1965-1973.
*** The increase in average city earnings between 1980 and 1981 is largely due to the cessation of the CETA program and the widespread layoffs of many other workers, rather than to an actual gain for the remaining workers.

Source: U.S. Bureau of the Census. Public Employment in 1965 -- Public Employment in 1981, Series GE65-GE81.

of these fringe benefits probably have increased in proportion to most other employment categories over the last decade, although no statistical comparisons of them are available.

With respect to work rules (the third component of transit labor costs), most are governed by current contracts similar to the previously operative ones developed between the private tranist companies and the unions. These rules reflect the spread-out peak demands for transit created by commuters. Such rules include extra pay for long shift hours -- called spread premium pay -- and limits on maximum spread width. Although some systems do not have such provisions, most of the major ones do.

A typical contract with such provisions, for example, might specify time-and-a-half pay for hours worked after the eleventh hour spread threshold, and a maximum run time (spread time) of 13 hours for regular drivers (see Appendix G, Table G-9). It is less common to have such provisions for workers who fill in for sick or absent operators (called extra-boards), and even when such provisions apply the allowable run times are longer for these workers. A typical driver with a split shift may regularly work a run consisting of a four-hour morning shift, a five-

hour break, and a four-hour evening shift, corresponding to the morning and evening commute hours. In this example, for the four hours of driving during the first shift the driver receives regular pay. Then there are five hours of break time, for which the driver receives no pay, but which are included for the maximum spread rule. The driver then receives regular pay for the next two hours of driving (up to the eleventh hour). After this point the driver receives "overtime" pay at a time-and-a-half rate, in this case for the last two hours of driving. In this example, then, the driver would receive the equivalent of nine hours regular-time pay (six hours regular time pay plus two hours of time-and-a-half pay) for a thirteen hour shift that included eight hours of active work (see Table 2-16).[1/]

If a driver worked a four-hour shift followed by a three-hour break and another four-hour shift, generally he or she would only receive pay for eight hours work, since the total hours on the run did not exceed the spread premium threshold of eleven hours. Provisions sometimes are made for workers to receive a full-day's pay (i.e. eight hours pay) for shifts

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1/ Chomitz, and Lave, "Forecasting the Financial Effects of Work Rule Changes," Transportation Quarterly, 37, July 1983.

TABLE 2-16
An Illustration of a Typical Spread Time Premium and Maximum Spread Time Arrangement

Time of Day	Running Total of Hours Worked	Spread Time "Clock"	Rate of Pay (X hourly wage rate)
6-7 a.m.	1	1	1.0
7-8 a.m.	2	2	1.0
8-9 a.m.	3	3	1.0
9-10 a.m.	4	4	1.0
10-11 a.m.	-	5	0
11-12 a.m.	-	6	0
12-1 p.m.	-	7	0
1-2 p.m.	-	8	0
2-3 p.m.	-	9	0
3-4 p.m.	5	10	1.0
4-5 p.m.	6	11 - Premium Threshold	1.0
5-6 p.m.	7	12	1.5
6-7 p.m.	8	13 - Maximum Threshold	1.5
	8 Hours Work		Equivalent to 9 Hours Straight Time Pay (6 Hours Straight Time Pay Plus 2 Hours Time-and-a-Half Pay)

that include less than 8 hours work but are widely spread, for example a shift of three hours' work followed by a five-hour break and another three hours of work.

The effect on costs of changing these premium pay and maximum threshold rules, is related to the specific characteristics of transit demands and services in a given area. Such changes tend to have little effect upon costs for systems with little difference between peak and non-peak riderships and with shorter periods between peaks or narrower peaks. Systems that have large, widely spaced, broad peaks will be more strongly affected by such work rule changes.[1/]

Significant increases in the use of part-time labor have occurred over the last few years, although many labor contracts limit the extent to which part-time labor may be utilized (see Appendix G, Table G-10). Commonly, the number of part-time workers is restricted to 10% of the number of full-time drivers, although at least one system (Seattle) allows as many part-time drivers as full-time ones. New and expanded authority to use part-time drivers has been recently established in such systems as Gary, Grand Rapids, Peoria, Kansas City, South Bend, Youngstown, Los Angeles, Denver, Spokane, Portland (Oregon), and suburbs of Philadelphia and Chicago.[2/] Table 2-17 shows the dramatic increase in the use of

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1/ Ibid.

2/ New York Times, October 24, 1982.

TABLE 2-17
Full-Time and Part-Time Transit Employment

Year	Average Number of Employees		Part-Time Workers as a Percentage of Full-Time Workers
	Full-Time	Part-Time	
1979	177,000	1,750	1.0%
1980	184,700	4,600	2.5
1981*	188,070	5,890	3.1
1982*	190,240	6,660	3.5
	+13,240	+4,910	
	Increase of 7.5%	Increase of 280.6%	

* Preliminary data.

Source: ACIR staff calculations based upon APTA, Transit Fact Book 1981, and unpublished APTA data.

part-time labor in recent years, as compared to the percentage growth of full-time workers. One study estimates that the use of part-time labor, given typical contracts, might save 1.5% to 4% of total operating costs.[1/] This estimate, however, relies on an ideal set of assumptions that may overstate actual savings. Despite this general trend toward part-time labor in most of the major systems, the smaller transit systems seldom use such drivers, perhaps because of their typically low, narrow, and close-together peaks.

Organized labor generally resists the use of part-time labor while simultaneously attempting to organize the part-timers to bring them basic benefits like health care and pensions. Presently many part-time drivers receive no fringe benefits, or lower ones than full-time drivers (even on a prorated basis). The fear of some unions is that part-time labor will be used increasingly to displace full-time workers and to lower wages and fringe benefits.

Central to these various aspects of labor costs is the controversy about the productivity of transit labor. High labor costs, difficult work rules, and labor disputes are considered to be serious problems by most transit managers, city governments and metropolitan transportation planning

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1/ Chomitz and Lawe, "Work Rule Changes," p. 472.

organizations (MPOs) surveyed by ACIR -- (see Appendix B, Table B-7). Most of the responding officials reported a need to tie labor productivity to labor contracts (see Appendix B, Table B-5).

It is difficult, however to establish and use appropriate measures of labor productivity. Two traditional measures of transit labor productivity are (1) the number of passengers carried per transit employee and (2) the vehicle miles of service per employee. Passengers carried per transit employee fell by 16%, and vehicle miles of service per employee fell by 10% between 1970 and 1978.[1/] Yet, it is unclear, how much labor itself contributes to these results, as compared to undercapitalization and mismanagement in the industry, or exogenous changes affecting ridership levels.[2/]

1/ U.S. Department of Commerce, Bureau of Economic Analysis, Survey of Current Business (Washington, DC: U.S. Government Printing Office, 1980) as cited in John Pucher, "Equity in Transit Finance," Journal of the American Planning Association, vol. 47, no. 4, October 1981, pp. 387-407.

2/ Pucher, "Equity in Transit Finance."

Undoubtedly, some measures of productivity are affected by the behavior of transit workers. A recent study found that absenteeism among transit employees averaged 29 days per employee per year, costing U.S. transit systems $287 million.[1/] Such absences have increased significantly over the past several years, with the rate of absenteeism due to illness alone increasing by 24% from 1974 to 1978.[2/] No comparisons were found, however, concerning the level or change in absenteeism of public transit workers compared to other workers.

No consensus exists on the effects of public ownership on labor or transit system productivity. Some analysts have stated that public transit productivity has not risen at the same rate as average productivity in the private market. However, this lack of increase in productivity is common to many labor-intensive services. It has been charged that labor costs are higher on public than private systems, but there is little conclusive evidence. In fact one study concluded, through a statistical analysis of productivity in bus transit systems over the last decade, that public ownership and smaller size lead to higher productivity.[3/]

1/ Peat, Marwick, Mitchell and Co., Study of Operator Absenteeism and Workers' Compensation Trends in the Urban Mass Transportation Industry, Report prepared for UMTA, Washington, D.C.: U.S. Department of Transportation, February, 1980, as cited in Pucher, p. 393.

2/ Pucher, "Equity in Transit Finance," p. 393.

3/ Barnum, Darold T., From Public to Private: Labor Relations in Urban Mass Transit (Lubbock, TX: Texas Tech University Press, 1977).

A variety of suggestions have been advanced for ways to improve the productivity of transit systems in general, although many of these proposals are controversial. Many of them emphasize reorienting public transit services toward a more traditional business approach, including:

- increased use of part-time labor;
- increased maximum spread times;
- encouraging private ridesharing to help flatten the peaks in public transit ridership;
- more flexible work rules allowing drivers to be assigned other tasks in the transit system while they are not driving;
- increased special and demand-sensitive systems, for example dial-a-ride systems during the off-peak hours;
- technological changes, including priority entry, special lanes for buses, and larger buses during peak hours;
- pricing strategies to both reduce peak demand and increase non-peak demand;
- reducing or discontinuing less profitable services, and concentrating on the more highly used routes, i.e. concentration on radial trips to the centers of large dense metropolitan areas and on inner city services in the densely populated areas;
- market differentiation, including providing better services for those who are willing to pay for them (e.g. suburban to city commuters), and lower levels of service for those who prefer lower prices, (e.g. inner city users); and
- contracting self-sustaining or subsidized services to the private sector. 1/

1/ Many of these suggestions are from Jose Gomez-Ibanez, and John R. Meyer, "Growth of Productivity and Labor Relations in Urban Mass Transit," Urban Transportation Economics (Washington, DC: National Academy of Sciences, 1978).

Clearly problems arise with some of these suggestions because transit is a publicly supported service. For example, many people might be upset if their public transit system, supported with their tax monies, had an explicit policy to run low-quality transit in the inner cities and high quality transit in the suburbs, even if the prices were differentiated. There also are significant controversies over the suggestions that involve reducing the number of workers and changing their work rules.

Transit labor is governed by Section 13(c) of the Urban Mass Transportation Act of 1964 (see box). This provision inhibits using federal funds to damage labor agreements reached with private management before public takeovers. Section 13(c) requires that:

1. existing labor rights, privileges, and benefits be preserved;
2. collective bargaining rights be continued;
3. individual employees be protected against a worsening of their positions with respect to their employment;
4. employees of acquired mass transportation systems be assured continued employment or priority for reemployment if laid off; and
5. paid training or retraining programs be provided.

Considerable debate has emerged over the effects of 13(c). It is commonly charged by transit managements that 13(c) has caused them considerable expense. However, a major study, completed in 1978 by the

Labor Protection Section of Urban Mass Transportation Act

Section 13(c) It shall be a condition of any assistance under section 3 of this Act that fair and equitable arrangements are made, as determined by the Secretary of Labor, to protect the interests of employees affected by such assistance. Such protective arrangements shall include, without being limited to, such provisions as may be necessary for (1) the preservation of rights, privileges, and benefits (including continuation of pension rights and benefits) under existing collective bargaining agreements or otherwise, (2) the continuation of collective bargaining rights, (3) the protection of individual employees against a worsening of their positions with respect to their employment, (4) assurances of employment to employees of acquired mass transportation systems and priority of reemployment of employees terminated or laid off, and (5) paid training or retraining programs. Such arrangements shall include provisions protecting individual employees against a worsening of their positions with respect to their employment which shall in no event provide benefits less than those established pursuant to section 5(2)(f) of the Act of February 4, 1887 (24 Stat. 379), as amended. The contract for the granting of any such assistance shall specify the terms and conditions of the protective arrangements.

Source: *Urban Mass Transportation Act of 1964*, as amended through February 5, 1976. U.S. Government Printing Office, Washington, D.C.

U.S Department of Labor concluded ". . . that while Section (c) has not been cost- less, neither has it been a major burden to the systems." The report stated that Section 13(c) is not a particularly important aspect of overall labor-management relations in most systems. Yet, the study also indicated that in systems where conflict between labor and management is more common, problems with 13(c) were more frequent. The study concluded ". . . that the major cost imposed on management has been the area of uncertainty" rather than in tangible monetary costs.[1/] In ACIR's 1983 survey, almost three-quarters (73%) of the transit system managers considered federal labor requirements under Sec. 13(c) to be a serious or intractable difficulty, limiting their ability to adapt to current needs (see Appendix B, Table B-47).

From an economic perspective, one final aspect of labor costs deserves mention. Although wages are a major cost to the transit industry, they also are an economic benefit to the community. As stated by David Jones, "to the extent that transit wages are spent for consumer goods

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1/ Frederic B. Siskind, and Ernest W. Stromsdorfer, The Economic Cost Impact of the Labor Protection Provisions of Section 13(c) of the Urban Mass Transportation Act of 1964, (Office of the Assistant Secretary for Policy, Evaluation and Research, U.S. Department of Labor, May 1978), p. xiii.

and cycled through local economies, they represent a boon to the service sector and the local economy. . . ." 1/

The Local Role in Financing Transit

As stated earlier, local citizens pay the preponderance of operating costs for local transit systems. Of total operating revenues, 70% comes from fares plus other revenues generated by system operations (like advertising on transit vehicles) and local taxes. The majority of these revenues are provided by fares, sales taxes, and property taxes. Local financing also may include other taxes and fees, borrowing, and private sector involvement. In addition, many local jurisdictions also are involved in interlocal financing arrangements to support transit.

Local jurisdictions have some choice about the extent to which they rely upon each of these funding sources. For example, Los Angeles County voters recently approved a referendum to increase the sales tax and to dedicate the proceeds to reducing bus fares immediately while establishing the financial base for a rapid transit system in future years.

However, states set limits on the financing methods that may be used by local governments and transit agencies. Such provisions limit both the tax rates that may be levied and the types of taxes that may be enacted and used for or dedicated to transit (see Appendix G, Tables

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1/ David Jones, "Conventional Transit: Financing and Budgeting Constraints," University of California, Berkeley, n.d. p. 4.

G-11 and G-12). Legal restrictions on local taxes are seen as a serious problem by most transit providers, local governments, MPOs, and transit unions responding to the ACIR survey (see Appendix B, Table B-41). Some states also require minimum farebox recovery ratios as a condition for receiving state funding for transit.

Transit Fares

Almost all fare structures differentiate price by the age of the rider (i.e. youth and senior citizens pay a reduced rate), provide special services at subsidized rates for the handicapped, elderly, or both. This practice is due largely to federal regulations and school board negotiations (in areas where public transit is used instead of school buses).

Apart from these special fares, two major criteria frequently are used for differentiating regular fares: distance traveled and time of use. Although most transit systems have flat fares that make no differentiation, many larger systems (except New York) base fares on distance. A recent survey[1/] found that 48 of 112 systems responding indicated use of some type of distance-based fares, and about two-thirds of the systems

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1/ U.S. Conference of Mayors, The Transit Financing Agenda for the 1980s, Status Report and Views of the Nation's Mayors, (Prepared for the UMTA, U.S. Department of Transportation, April 1982), Table 8.

with urban populations over 1 million (which represent most transit use) reported using such fares (see Table 2-18). In the past, many transit systems changed from distance-based fares to flat fares, but the recent record suggests a shift back toward distance-based fares as transit revenues have become more scarce.

Some transit systems, including about one-third of those with populations over one million, also practice some form of peak pricing (see Appendix G, Table G-13). These systems charge higher fares during times of greatest use, and reduce fares during times of lower use. This practice commonly results in higher fares during weekday commuting hours, and lower prices during the other hours on weekdays as well as on weekends and holidays. Peak pricing is generally justified on the basis that (1) services are most expensive to produce during times of peak demand and (2) riders during the peak hours generally have higher incomes than riders during off-peak hours. Peak pricing is intended to encourage a shift of ridership to non-peak hours and to bring in greater revenues.

The effects of peak pricing are difficult to gauge, however. An increase in peak hour fares may decrease or have no effect upon ridership levels, resulting in either decreased or increased total farebox revenues, depending upon the local situation and the availability of alternative modes of travel. A decrease in off-peak fares also may have unpredictable results, either increasing or having no effect upon ridership

relations are an important facet of promotion, constituting a two-way process of meeting the public, keeping it informed of transit plans and activities, and receiving feedback from it on transit operations and services. Handled properly, promotion can help to change consumers' image of the transit system, thereby making it easier for the system to meet consumer demand.

Strategy for Using the Market Mix. Standard marketing theory suggests that a transit system has three options in responding to the market structure and the associated opportunities revealed by the marketing opportunity analysis: undifferentiated marketing, in which the system produces one product and attempts to appeal to the entire market with one marketing program; differentiated marketing, in which the system continues to appeal to the entire market but with different marketing programs for different segments of the market; and concentrated marketing in which the system does not appeal to the entire market but appeals to one or a few segments with different marketing programs. Transit's limited resources suggest a concentrated marketing strategy. So does the fact that the market for transit services is not homogeneous. Although the vast majority of the potential riding public are commuters to work and school and shoppers, other important segments are those who need transit for recreational and social purposes. Nor are the transit techniques homogeneous, consisting variously of express and local buses, special services such as subscription buses, dial-a-bus, charters, and various other types of paratransit.

Marketing specialists suggest that transit systems take a number of steps in applying their concentrated marketing strategy.[1/] The strategy should appeal first to the most accessible or easily reached potential-user segment, using a psychological, status-upgrading theme, or promoting specific destinations (such as shopping centers or senior citizen centers) and the use of transit to reach them. It should then concentrate on retaining this first segment's patronage by sustaining and enhancing the quality of service -- dependability, convenience, comfort, access, and flexibility. Then the transit system should go after the next best segment and repeat the process, counting on word-of-mouth advertising from satisfied consumers to make outreach to additional segments easier. This process should be repeated until the cost of covering a new segment effectively is beyond the system's financial and service capabilities. Each step should be followed up with research on those who actually use the service and why. An effort also should be made to identify and classify those who are not using the service and their reasons for not using it.

External Factors. "Selling" transit service most effectively requires that transit management control as many as possible of the various elements that go

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1/ Smerk, Mass Transit Management, p. 381.

into the production of the transit product. One important element usually is not under management's direct control: the right-of-way and general environment in which transit operates. That is the responsibility of the local government(s) governing the territory of the transit system and the traffic within it. If the transit system is to operate effectively and deliver the desired service, it must have the close cooperation of responsible local officials -- council members, planners, traffic engineers, most essentially -- to assure that reserved lanes for high-occupancy-vehicles, no-parking at bus stop zones, bus-only lanes and streets, and other controls over the environment are secured.

One question in ACIR's 1983 survey touched on this issue. Addressees were asked how much difficulty their metropolitan areas were likely to encounter (in adapting transit services to changing conditions) because of inadequate street and highway capacity or maintenance. About 36% felt the difficulty would be "serious but manageable" or even "intractable." (Appendix Table B-6.) The problem was seen as notably greater in the larger metropolitan areas. Among the interests represented, 46% of the labor representatives saw streets and highways as serious or intractable problems, but, at the other extreme, only 24% of the transit agency respondents viewed them so. Presumably the labor spokesmen reflected the experience of vehicle operation and maintenance personnel in having to cope daily and directly with deficiencies in streets and highways.

Reorienting the Transit Perspective: The Essential but Difficult Step

The logic of the marketing approach and its dominance in nontransit sectors of the economy would seem to make an overwhelming case for adoption of that approach by transit systems. Yet the transit industry by no means has shown that it is "sold" on this philosophy and is eager to embrace the policies and techniques outlined in the preceding pages. As evidence of this fact, Couture cites the results of a recent survey of 26 small to medium sized operations (65 to 473 buses). It showed that only 2% to 4% of sales (farebox) revenues were spent on marketing activities, compared with 10% to 20% for manufacturing firms.[1/]

Couture traces this difference to transit's traditional emphasis on operations and on the practice of adjusting to changing conditions first of all by cutting costs, that is, emphasizing a supply-side rather than a demand-side approach.[2/] Smerk sees the problem stemming from a related source: transit's self-image:

> If a firm sees itself in the public transit business, it generally enjoys a monopoly and therefore faces no competition. If, on the other hand, a transit firm sees itself in the transportation business (moving people for hire), it very definitely faces competition.

1/ Couture, op. cit.

2/ Ibid.

> If transit firms are to be effective in their marketing efforts, they must see themselves in the transportation business, with the private automobile as the major competitor. As is well known, the automobile appeals to many aspects of human need and desire apart from the need for transportation. This fact is a clue to the kind of creative marketing program transit must develop.1/

A.H. Savage, manager of the Toronto Transit Company (TTC), links transit's cool attitude toward marketing to three myths: first (agreeing with Smerk), transit is a monopoly, so there is no need to worry about competition; second, transit is a social benefit and hence there is no need to promote it; and third, marketing does not affect ridership, so that spending money on promotional activities is a waste. He attacks each of these myths with facts and arguments derived from his company's experience since the early 1970s.2/

Transit is not a monopoly, he argues, so there is need to worry about competition. He notes that although his system had 2,126 transit vehicles on Toronto's streets and subways, there were about one million cars on the streets every day. He estimates that General Motors spent about $8 million yearly in promoting its cars in Toronto, and that about 50% of nontransit users would not use transit even if it were free. Finally, he points out that 68% of drivers to work or school said that they would drive regardless of the price of gas.

1/ Smerk and Gerty, Mass Transit Management, p. 381.

2/ A.H. Savage, "Another Myth Falls: Marketing Really Does Affect Transit Ridership Levels," Passenger Transport, April 2, 1982, pp. 4-5.

Savage concedes that transit benefits society but contends that it cannot be characterized solely as a service for the poor and unfortunate. It benefits all segments of the community and is used by people from all socioeconomic groupings. Benefits of transit to business are obvious, as exemplified by the concentrations of development around subway stations and active negotiations with TTC for air rights, direct subway connections, and transit-related parking facilities.

Finally, to counter the belief that marketing does not affect ridership, Savage describes TTC's experience in 1976 when it adopted a new marketing strategy in response to a steep decline in ridership. First, it fixed the transit product, extending services, implementing new experimental transit lanes, and providing greater priority for transit vehicles on roads. Then it followed up with advertising and publicity, increasing the promotion budget from $200,000 in the mid-1970s to $2 million in 1982. Savage reports that the results were positive: over 70% of the residents were aware of TTC advertising and found it highly believable.

1983 Survey Responses on Marketing Concerns

Almost 75% of the respondents to ACIR's transit survey said that transit services in their metropolitan areas were currently improving their marketing efforts ("better information for riders, advertising, promotional campaigns, etc.") The labor respondents reported the least activity (50%) and the transit agencies the most (84%). Over 87% overall

said that such efforts would be definitely or probably needed in the future, with the labor group again on the low end of the scale (74%) and MPO respondents at the top (98%). (See Appendix Tables B-1 and B-2.)

The belief that greater marketing effort would be needed in the future, even though considerable activity already exists, ties in to the answer to another question: To what extent is inadequate general public support a transit problem? Over half (52%) said it was serious. In contrast, only 34% viewed inadequate media support as a serious problem.

From the high level of marketing effort that is reported to exist, one can conclude that the leading transit interests in these 56 metropolitan areas are more tuned in to the importance of marketing than appears from the statements of the authorities cited earlier. Perhaps the difference has something to do with the fact that the questionnaire used a more limited meaning of marketing, essentially equating it with only the "promotion" part of the product-price-promotion definition enunciated by the marketing specialists.

In regard to this broader definition, the questionnaire elicited a number of responses relative to the quality of the transit product.

- Forty-eight percent of the respondents said that public transit agencies in their areas were currently working to increase regularly scheduled bus, rapid transit, or commuter rail services. Small percentages of the provider and labor representatives reported such current improvements. But over 84% said that these service enhancements are needed in the future, with the lowest percentage so indicating being the MPO representatives.

- Almost 67% said that transit agencies in their areas were trying to improve the quality of existing bus and/or rail service (cleaner, more on-time, more courteous personnel, easier fare collection, etc.). Transit agency respondents were the most positive in this response (81%) and labor respondents the least (44%). As for the future, 83% felt quality improvements are needed, a view shared fairly evenly among all the subgroups.

In sum, the responses from the 56 metropolitan areas surveyed indicate considerable current, and even greater future, sensitivity to the need for improving the quantity and quality of services -- a central element of the marketing mix and essential for attracting more riders.

Increasing Operating Speed

A second category of opportunities for enhancing the productivity of the existing transit system is the opportunity to increase trip speed. Greater speed not only reduces operating costs, but increases the attractiveness of transit, potentially boosting ridership and revenues. Among the speed-increasing alternatives are priority treatment techniques, such as exclusive lanes for buses, traffic signal preemption devices, express bus service where warranted by demand, and techniques to expedite vehicle boarding, such as monthly flash passes. The time-saving value of express bus service and the use of passes is self-evident. The others require explanation.

An example of traffic signal preemption is provided by the City of Concord, CA, which installed such a system to give priority to

transit vehicles at 12 intersections along a main arterial. The equipment was installed on buses traveling to shopping centers and the Bay Area Rapid Transit (BART) station in Concord. The equipment can be operated continually, but it is activated by the driver. After six months of operation, bus travel time was reduced by 10% and schedule reliability improved. Bus delay was reduced by 36% and the number of times the bus stopped in traffic decreased by 18%. The saving in bus operating time was estimated at $24,000 annually.[1/]

In early 1983, reserved bus lanes were found in the central business districts of some 30 American and Canadian cities. These lanes generally are provided along the curb and operate in the same direction as car traffic. Usually the lanes were occupied by buses before they were reserved, so that their "bus only" designation caused only a minimum reduction of street capacity and hence restraint of automobile traffic.[2/]

Some transit priority lanes do involve traffic restraint, however. The City of Chicago, for example, instituted contra-flow curb bus lanes on four east-west downtown streets, and a north-south bus-only street as part of a program to improve air quality and reduce vehicle-miles of

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1/ Public Technology, Inc., Transit Actions: Techniques for Improving Productivity and Performance, Washington, DC, October 1979, p. 96.

2/ Herbert S. Levinson, "Travel Restraints in City Centers: The American Experience," Transportation Quarterly, Vol. 37, No. 2, April 1983, pp. 278-279.

travel. Along Madison Avenue in New York City, the first exclusive dual bus lanes on downtown city streets were designated in May 1981. The eastern two lanes of a five-lane one-way northbound street were restricted to buses and taxis with passengers, while automobiles and trucks were confined to the western three lanes. Right turns were prohibited over the 17 block stretch on weekdays from 2 p.m. to 7 p.m. It was reported that during this period some 700 buses carrying 25,000 riders saved up to 20 minutes per trip.[1/]

Transit vehicles are given preferential treatment on freeways as well as on city streets, usually along with other types of high occupancy vehicles (HOVs), such as carpools and vanpools. Altshuler identifies four major categories of HOV priority techniques on freeways: exclusive HOV lanes physically separated from the regular travel lanes, reserved regular travel lanes in the predominant flow direction ("withflow" lanes), reserved regular travel lanes in the off-peak direction ("contraflow" lanes), and preferential access within the context of ramp metering for all traffic.[2/] The last needs further explanation.

1/ Ibid., p. 279.

2/ Alan Altshuler, with James P. Womack and John R. Pucher, The Urban Transportation System: Politics and Policy Innovation, Cambridge, MA, The MIT Press, 1981, p. 345.

Ramp metering involves the use of traffic signals on entrance ramps to keep vehicle input and freeway capacity in balance. When queue delays on these access lanes are long, HOVs sometimes can be given special lanes to bypass the queues, thereby of course speeding up the trip of the transit or other HOV.

Introducing these and other techniques to speed up bus travel may be difficult if it appears to be at the expense of other users of streets and freeways. Special priority for HOVs at freeway access ramps may be such a case, particularly if a special ramp lane is not provided for the HOVs. Altshuler believes, however, that traffic signal systems that give priority to transit vehicles, exclusive HOV lanes, and wrong-way bus lanes, if properly implemented, need entail little or no inconvenience for other users.

> Priority signal systems have generally not impaired the overall traffic-carrying capacity of the streets affected. Wrong-way bus lanes have been implemented only where it has been possible to do so without causing significant congestion delays for those highway users moving in the off-peak direction. And exclusive freeway lanes have been developed only as features of new or expanded facilities.1/

Using passes as a way of speeding up service creates another kind of possible drawback: the loss of revenue. As one observer concluded:

1/ Altshuler, op. cit., pp. 87-88.

> The basic limitation of a pass program -- that it loses a significant amount of revenue -- has received far less attention, but many recent studies have shown the lost revenue factor to more than offset other benefits of a pass program, sometimes by a significant margin.1/

The other benefits cited are speedier service, convenience to the user, saving to the user, improved cash flow, and increased marketing opportunities.

1983 SURVEY RESPONSES RE: HOV ACCOMMODATIONS

ACIR's 1983 transit survey inquired about metropolitan areas' establishing HOV facilities and regulations "to increase peak hour commuter capacity." Thirty-two percent of the respondents reported HOV facilities and regulations were currently used in their areas. Use was much greater in the areas over 200,000 population than in the smaller places. Over 61% thought that HOV facilities would be needed more in the future than at present. Again, this view was much stronger in the larger than in the smaller areas. There was little variation among the four interest groups queried -- local government and MPO officials, transit agencies, and labor representatives -- in this perception. The large areas' greater interest in special accommodations for HOVs is understandable in light of their more severe traffic problems. (See Appendix Tables B-4 and B-5.)

1/ Richard L. Oram, "Making Transit Passes Viable in the 1980s," Transportation Quarterly, Vo. 37, No. 2, April 1983, p. 290.

Accommodating Present Transit Usage Patterns

Fare and service policies can boost productivity, particularly when promoted by an imaginative, energetic marketing program. A third approach to increasing systemwide productivity is to find more efficient ways of accommodating present transit usage patterns, basically fixed-route scheduled service systems employing buses, light rail, rapid transit, and commuter trains. Such accommodations can be achieved, for example, by using larger capacity equipment during peak periods -- thereby reducing peak period labor and vehicle requirements -- when such changes can be made without increasing capital costs more than the savings in operating expenses. Two additional ways of modifying existing transit usage patterns are flextime for commuters to work and -- of particular note in the past decade -- paratransit.

FLEXTIME

Promoting flextime employment among employers is often urged as a way of relieving the strain on peak period facilities. Increased efficiency is not always an assured outcome, however, as one study found.

> If the transit system must offer increased service to attract patrons to the new schedule or simply to accommodate them and must do so with vehicles and personnel not currently in service, the increased cost to the system may pose a serious problem; the transit system generally will not be able to meet such costs without assistance. Transit systems

> that are able to use the staggered work hours plan to fill underutilized transit equipment during peak-periods generally experience both increased ridership and increased revenue. Clearly the situation is a very complex one and involves a number of costs and benefits that may be external to the individual transit system, planning agency, employer, or employee actively involved in the scheme.1/

Even so, this study found that of all the components of an urban transportation system, the transit system was the primary beneficiary of the schedule changes and not the arterial or highway system.2/

One city where flextime clearly contributed to more effective transit use is San Francisco. The San Francisco Flex-time Demonstration Project, sponsored in 1978 by the California Department of Transportation (Caltrans) and managed by the Institute of Transportation Studies, introduced flexible scheduling on a city-wide scale. The project orchestrated a campaign to involve large private companies, eventually including 6,000 employees in the program. Among the 6,000, those who were transit riders reported a significant improvement in the quality of the commute. They reported saving six minutes per trip on the average. Fifty-nine percent found

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1/ Sandra Rosenbloom,, "Peak-Period Traffic Congestion: A State-of-the-Art Analysis and Evaluation of Effective Solutions," Urban Transportation, Perspective and Prospects, ed. Herbert S. Levinson and Robert A. Weant, Westport, CT, Eno Foundation for Transportation, Inc., 1982, p. 159.

2/ Ibid.

less crowded conditions, 47% said they were less "anxious," and 42% said they could find a seat more often. These improvements reflected the fact that the workers chose commute schedules that conformed to those needed to alleviate peak-hour crowding on mass transit.

The impact of the flextime demonstration project on transit was notable in the Golden Gate Corridor which connects downtown San Francisco with suburban Marin County via the Golden Gate Bridge. The project added 5% more early morning bus riders in the corridor, permitting Golden Gate Transit to reschedule service to make more effective use of its fleet. Buses that previously were used only once during the peak of the morning rush hour were rescheduled on a second run.

> Rescheduling allowed Golden Gate to increase its peak period capacity by about 10 percent without additional capital investment. Peak hour operations were reduced in order to increase service in the early and late "shoulders" of the peak period. A five percent increase in patronage was absorbed during the period of service adjustment and the number of standees actually declined. Thus, changes in bus scheduling that improved the use of the fleet and labor were implemented without discouraging ridership or increasing the number of standees at the peak of the peak.1/

1/ David W. Jones, "Flex-time: A Voluntary Approach," The ITS Review, Institute of Transportation Studies, University of California, February 1983, pp. 4-5.

Apart from directly relieving the peak-period pressure on regular transit services, flextime can also provide an indirect benefit as an incentive for employees to participate in vanpooling or carpooling. This result was reported in a survey of 13 transit agencies.[1/]

PARATRANSIT

> Employer-supported transit and ride sharing programs are increasing, and other forms of paratransit are being initiated in various urban areas -- often with the involvement of, or under the auspices of transit agencies.[2/]

In the past decade or so, those seeking more efficient ways of accommodating conventional transit usage patterns have focused a major share of their attention on paratransit. Paratransit is a transportation service that falls somewhere between the private automobile and fixed-route public transportation. The word is a compound of the prefix "para," which means "closely related to," and "transit," the conventional public transportation service.[3/] Conventional public transportation has

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1/ Jesse Glazer, David Curry, Pat Moix, and Jim Lightbody, Thirteen Ridesharing Programs Operated by Transit Agencies, Los Altos, CA, Crain & Associates, Inc., October 1983, p. ii.

2/ Transportation Research Board, 1982 Conference Consensus Statement, Woods Hole, MA, September 1982 (processed draft), pp. 8-9.

3/ "An Overview of Paratransit," in Urban Transportation, Perspectives and Prospects, ed. S. Levinson and Robert A. Weant, Westport, CT, Eno Foundation for Transportation, Inc., 1982, p. 303.

predetermined schedules, fixed routes and stops, and is available to the general public. Paratransit services lack one or more of these features.

In its statement of paratransit policy, the Urban Mass Transportation Administration (UMTA) of the U.S. Department of Transportation (DOT) defines the term as

> . . . a family of transportation services, generally provided in small vehicles, which are tailored to individual travel needs through flexible scheduling or routing of vehicles. Services include carpooling, vanpooling, dial-a-ride, shared-ride taxi, jitney, airport limousine, and subscription and route-deviated bus services.1/

General Characteristics2/

As the UMTA definition suggests, paratransit comes in a variety of forms, offering a wide range of services and ownership and operation patterns. The major types fall into two categories: demand-responsive transportation (DRT) and prearranged ridesharing (RS).

Demand-responsive transportation is characterized by the flexible routing and scheduling of relatively small vehicles that provide door-to-door personalized transportation on demand, on a shared-ride basis and at a modest cost to the rider. There are three basic types of demand-responsive paratransit: dial-a-ride (or dial-a-bus), shared-ride taxi,

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1/ Federal Register, October 18, 1982, p. 46410.

2/ This section is drawn largely from "An Overview of Paratransit," op. cit.

and jitney. Dial-a-ride is demand-responsive in that the vehicles are scheduled according to the needs of the users. Instead of waiting at a bus stop, for example, the rider telephones a dial-a-ride dispatcher and arranges to be picked up either shortly after the call or at some other specified time. Usually service is somewhat restricted during peak traffic hours. Also, 24-hour advance notice may be required, or service may be limited to emergency situations.

Most dial-a-ride systems operate in communities of 10,000 to 25,000 people, use fewer than five vehicles, and serve an area of eight square miles. Typically, they operate 12 hours a day, with reduced service on weekends, and are operated by some type of public authority, whether they serve the general public or only special groups. Most of the patrons of dial-a-ride systems are people who do not own automobiles or have driver licenses. Women and the elderly are the most frequent users.

In large cities, dial-a-ride systems complement conventional public transportation services and sometimes serve as feeders to them. Here they are mostly confined to a certain area of the city or serve only limited mobility users, such as the elderly or handicapped. Mainly, however, dial-a-ride systems are found in smaller cities or towns in which there is little or no conventional public transportation because of the sparse population.

Shared-ride taxi services use standard size passenger cars to pick up several passengers at various times and locations and transport them to different destinations. Most of these services are found in small cities, serve the entire area, and have an average of six vehicles that carry up to 260 rides per day. A private taxi operator usually provides the service, receiving a subsidy or operating under contract to a public transit or other agency. Shared-ride taxis can act as feeders to regular fixed-route public transportation services and can integrate these services with exclusive-ride taxis. Their operating cost per passenger is lower than that of buses operating at low passenger levels. One variant is the dial-a-ride taxi which, under contract with the transit agency, is used in place of regular fixed-route buses for late night or Sunday service.[1/]

One other form of transit also may be classified as demand-responsive paratransit, although sometimes it is more like a fixed-route bus. This is a jitney, an unscheduled fixed-route (or route deviation) service, operating on short but variable headways. The vehicle holds six to 18 passengers and is owned and operated by a self-employed individual.

At one time jitneys were in common use in the U.S. They were generally legislated out of business, however, largely as a result of the efforts of their then major competitors, the streetcar companies. Since 1930, jitneys have operated legally only in a few places. In 1982, legal jitneys were found in Atlantic City and San Francisco and had recently been legalized in San Diego, Dade County, and Indianapolis. Illegal operations were known to exist in Chicago, Pittsburgh, Newark,

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1/ S. Flynn and J. Crain, Phoenix Transit Sunday Dial-a-Ride, Washington, DC, U.S. Department of Transportation, UMTA-MA-06-0049-83-7, August 1983.

Chattanooga, and Winston-Salem. Unlike the situation in this country, jitneys are a major form of public transport in many foreign cities, especially in Latin America, Africa, and the Middle and Far East.

San Francisco's Misson Street jitneys provide service along a 10-mile route through the central business district. They compete with buses and rail transit, although their headways are shorter, at roughly four minutes, and can be hailed all along the route. In early 1982, the jitneys charged a fare of 50¢ -- the same as transit buses -- operated nearly 16 hours per day, and used 12-passenger vans.[1/]

Prearranged ridesharing transportation, the second of the two major categories of paratransit, is characterized by services in which a driver and a number of travelers agree to travel together at specified times, on a regular basis, predominantly to their work place. It involves some route deviation to pick up and drop off individual riders. There are three types of prearranged ridesharing transportation services -- carpools, vanpools, and subscription buses.

Carpool services are an arrangement between two or more people to ride together regularly (usually to and from work) and share traveling

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1/ Multisystems, Inc., General Community Paratransit Services in Urban Areas, Cambridge, MA, January 1982, pp. 18-19. Also see Neal R. Peirce, "Jitneys: An Ingenious Solution," Nation's Cities Weekly, September 13, 1982, p. 5.

expenses and sometimes the driving. Most carpools are of the shared-cost type, with fewer riders and shorter driving distances than the shared-driver type. Carpooling programs appeal to planners and transportation experts because they reduce gasoline consumption, traffic congestion, and air and noise pollution. In addition, they do not call for massive public investment or a large force of public employees. They have not gained wider acceptance, however, because of certain disadvantages. Chief among these is their inflexibility for people who work irregular hours, often work overtime, or need a car for work-connected or other errands. Another is the difficulty of matching home and work locations, travel schedules, and, often as not, personalities. Frequently the most successful carpool matching programs have been arranged through employers.

Vanpool services are arrangements through which a number of people share the costs of commuting to work every day by using a van that can carry up to 15 passengers. They are organized by employer sponsorship, by employee organizations, by neighborhood groups, by individuals who own vans, or by third party lease operations. Employers are the most frequent sponsors in the mutual interest of the company and its employees. The employer buys or leases vans and organizes and administers the program. The capital and operating costs are paid out of the riders' fares. A sizeable number of employees are needed to match potential riders with vans that serve feasible routes. Consequently, employer-sponsored vanpools

usually are limited to employees of a single company. Employee organizations that sponsor vanpools are similar to the employer-sponsored type, except that the employees make their own arrangements through their organization. Individually owned vanpools are most like the larger, shared-cost carpools. The vanpool's driver and passengers negotiate an acceptable fare structure and decide on pickup and delivery locations.

Third-party vanpool lease operators provide the vans, organize groups into vanpools, select the drivers, set the fares, and keep central records. Persons interested in joining the program submit an application to their employer or the operator. Fares are determined by distance and the number of persons in the van, with equal sharing in the cost. Drivers are responsible for maintaining and caring for the van, delivering the passengers, and collecting fares. In exchange, they ride free of charge and have limited personal use of the van for a nominal charge.

A subscription bus, sometimes called a buspool, is a third form of prearranged ridesharing designed to accommodate the commuting needs of a specific group. It is usually organized for people who have to commute over long distances to work and operates along routes where conventional public transportation is not offered. Private groups, communities, or employers organize the service. Subscription buses feature guaranteed seating, an express ride for most of the trip, and route and schedule adjustments in response to changes in rider demand. Fares are usually paid in advance.

Subscription buses are attractive for producing less traffic congestion and pollution and consuming less fuel, reducing employers' parking facilities requirements, improving accessibility for some workers, requiring little or no public investment, and offering a profitmaking opportunity for a private operator. They obtain their drivers and vehicles by contracting with a private bus company or by purchasing their own vehicles and hiring their own drivers. Usually organized for a home to work commute and return, subscription bus service is typically a peak-hour operation.

Origin and Recent History

Elements of paratransit have existed for many years, but the concept of a "family" of transportation services between private auto and fixed route transit formally emerged in the early 1970s. The term and the concept were popularized in a seminal study by the Urban Institute for the U.S. Urban Mass Transportation Administration in 1975.[1/]

Also in 1975, paratransit received a significant boost when the Federal Highway Administration (FHWA) and the Urban Mass Transportation Administration (UMTA) jointly issued a new planning regulation mandating that urban transportation plans thereafter deal with short-term as well as

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1/ Ronald F. Kirby, Kiran U. Bhatt, Michael A. Kemp, Robert G. McGillivray, Martin Wohl, Para-Transit, Neglected Options for Urban Mobility, Washington, DC, The Urban Institute, 1975.

long-term, and with operational as well as capital improvement alternatives. The plans were required as a condition for the receipt of federal capital or operating assistance. Two short-term plan elements were specified: the transportation improvement program (TIP), a staged three-to-five year capital improvement plan; and a transportation system management (TSM) plan, designed to bring about more effective use of the existing transportation capital stock, private and public.[1/] The TSM portion included an extensive list of actions to be considered, including:

> (B) Actions to reduce vehicle use in congested areas through encouragement of carpooling and other forms of ride-sharing. . .
>
> (C) Actions to improve transit service through provision of better . . . services (including route-deviation and demand responsive services) within low density areas, . . . encouragement of jitneys and other flexible paratransit services and their integration in the metropolitan public transportation system. . . [2/]

The 1981 revision of the urban transportation planning regulations states that

> A range of tactics (actions) is available to solve State and local transportation problems. Examples are:
> . . .
> -- Ridesharing
> . . .
> -- Innovative transit and paratransit services
> . . . [3/]

1/ Altshuler et al, op. cit., p. 51.

2/ 46 FR 5702, 1/19/81.

3/ 23 CFR 450, Subpart A, Appendix A.

The federal government's encouragement of paratransit came not only through transportation planning regulations, but also through subsidies and other activities of UMTA and FHWA and through efforts of the Environmental Protection Agency (EPA), the Federal Energy Administration and its successor, the Department of Energy (DOE), the Department of Health and Human Services (HHS, formerly HEW), and the Veterans Administration (VA). UMTA has supported development of DRT services and funded vanpool demonstration projects, made grants to nonprofit organizations to purchase buses to provide special DRT services for the elderly and handicapped, and since 1976 permitted urban areas to use their transit formula assistance funds for DRT as well as fixed route transit purposes. EPA promoted private ridesharing in administering the Clean Air Act Amendments of 1970, which required achieving certain air quality standards by 1977. Under the Emergency Highway Conservation Act of 1974, the FHWA authorized states to use highway aid funds for carpool demonstration projects. In 1978 Congress authorized the use of federal aid primary, secondary, and urban funds for carpool and vanpool projects, and in 1982 allowed 100% federal participation for carpool/vanpool projects funded through these three programs. FHWA's Rural Highway Public Transportation Demonstration Program since 1973 provides grants for DRT in rural areas. In promoting energy conservation under pressure of the 1973 oil embargo, the Federal Energy Administration worked with major employers in metropolitan areas to promote ridesharing. DOE continues to administer grants for state energy conservation activities, which include promoting ridesharing. HHS and VA fund transportation services

in connection with their social service and medical care programs, generally for the transportation handicapped (TH). Using this federal money, human service agencies increasingly contract with DRT service providers or themselves provide such services directly, often with volunteer drivers or drivers performing nontransportation duties as well.[1/]

The most recent expression of federal policy on paratransit was UMTA's "Statement of Paratransit Policy."[2/] The statement stresses UMTA's belief that the strength of our transportation system lies in its diversity. Paratransit fits in well with this emphasis, because "paratransit readily lends itself to flexible routing and demand responsive scheduling. . . "

> In rural America, in small towns, and in suburban communities, paratransit is usually the most economical form of transportation. In many communities, large and small, paratransit will best meet the travel needs of the elderly, very young, physically handicapped, or persons lacking cars or without convenient access to line-haul transit.
>
> Proper coordination of paratransit with conventional transit will increase the effectiveness and efficiency of an area's total transportation system.[3/]

1/ Altshuler et al, op. cit., pp. 56-58.

2/ Federal Register, October 18, 1982, pp. 46410-46411.

3/ Ibid., p. 46411.

The statement of policy identifies financial assistance available under the Urban Mass Transportation Act for planning and developing paratransit services and related activities, for shared-ride equipment and facilities, for capital and administrative costs associated with transportation brokerage and coordination, and to support research and development of innovative approaches to paratransit service.

Paratransit and Improved Transit Effectiveness

Paratransit was given impetus in the early 1970s by concerns over fuel shortages, escalating fuel prices, environmental pollution, and mounting traffic congestion. More recent emphasis -- as in UMTA's "Statement of Paratransit Policy" -- is on increasing the effectiveness and efficiency of the total transportation system. That emphasis brings this discussion back to its central concern: adjusting transit services to accommodate to the fiscal and other constraints that impinge upon public transit. How can paratransit help in this adjustment? From the standpoint of the private employer, how can it help him to get a good workforce to arrive on time with reasonable ease?

An overall indication of the possible answer to this question is suggested in Table 2-1. The "Potential Paratransit Role" column indicates the situations in which paratransit is expected to increase the cost-effectiveness of the conventional transit system as well as achieve other goals. To judge whether increased cost-effectiveness really is likely to result requires an evaluation of experience with various types of paratransit. A recent series of reports by Multisystems,

Table 2-1

POTENTIAL PARATRANSIT ROLES

	Situation	Potential Paratransit Role
Conventional Fixed-Route Systems Exist	A sparse fixed-route bus or rail system exists with a perceived need for feeder service	Paratransit may provide feeder service.
	A fairly dense fixed-route system exists, but is radially oriented and does not serve cross-town trips which are not radial.	Paratransit may serve cross-town trips.
	A fixed-route system exists but contains a number of very lightly used routes.	Paratransit may be used to replace lightly used fixed routes or to determine promising patterns for a modified fixed-route system.
	A fixed-route system exists but does not provide equitable coverage to the entire political jurisdiction paying the transit bill. Although political forces may be demanding "transit equity," expansion of the fixed-route system is not perceived as being cost-effective.	Paratransit may be used to increase system coverage in a more cost-effective fashion.
Conventional Transit May or May Not Exist	There is a perceived need for service in areas expected to provide fairly low trip densities.	Paratransit may prove to be more cost-effective than conventional transit.
	There is a perceived need to provide transit service to elements of the population such as the elderly and the handicapped who either have no alternative form of transportation or who would benefit from door-to-door service.	Paratransit may be a cost-effective means of providing target market service to special population groups.
	Heavy commuting causes peak traffic congestion or air pollution, or a social goal exists to reduce vehicle miles traveled (VMT).	Subscription service may be introduced as a component of the existing service to reduce peak-period congestion.
	Many paratransit services are operated in an uncoordinated fashion by social service agencies.	Paratransit may be used to consolidate separate services, or a brokerage system may be introduced to coordinate existing demands.
No Transit Service	No transit exists in an area of fairly high population density where a high potential demand is perceived, although there is little knowledge of promising transit patterns.	Paratransit may be used to test the transit market, perhaps, as a prologue to a fixed-route system or an integrated system composed of both conventional and paratransit services.

SOURCE: J.W. Billheimer, et al., Paratransit Handbook, A Guide to Paratransit Implementation, 2 volumes, Systan, Inc., prepared for U.S. Department of Transportation, Transportation Systems Center, Cambridge, MA, January 1979.

Inc., for UMTA assessed paratransit experience, based on case studies and an examination of other research on the current and possible future use of paratransit.[1/] These reports are the central source of much of the following discussion.

For its analysis, Multisystems, Inc., classified paratransit on the basis of the market for service rather than the individual service type. This approach still permits a general distinction between the two major categories of service modes, however, because each of the three identified markets is predominantly if not exclusively linked to either demand-responsive transit (DRT) or prearranged ridesharing (RS). Specifically, the two dominant service markets -- service for the transportation handicapped (TH) and service for the work trip -- focus, respectively, on DRT and RS. The third sector encompasses the remainder of the market and is served by "general community paratransit." "General community paratransit" or general market paratransit is defined to include the entire range of paratransit services which are accessible to all users and attempt to serve a broad cross-section of community travel needs, but in practice it is largely restricted to demand-responsive service types.

1/ Multisystems, Inc., Paratransit: Options for the Future, Cambridge, MA, 1982. Four of the six reports in the series were of particular relevance to this study: An Overview (December 1982), General Community Paratransit Services in Urban Areas (January 1982), Paratransit for the Work Trip: Commuter Ridesharing (January 1982), and Paratransit Services for the Transportation Handicapped (April 1982).

General Community Demand-Responsive Paratransit Services

The key findings in Multisystems, Inc.'s analysis of general community paratransit[1/] were drawn from 10 case studies representing a variety of institutional settings, operating/contractual arrangements, and service types in Merrill, WI, the State of Michigan, Westport, CT, Santa Clara County, CA, Ann Arbor, MI, Orange County, CA, Peterborough, Ontario, Madison, WI, San Francisco, CA, and St. Louis, MO. The case studies examined the manner in which service had been developed, the general operating experience, the nature of integration with the transit system, and reasons for apparent success or failure. Some of the systems were implemented in small cities, some in suburban communities, and some in urban neighborhoods. Some were operated exclusively by the private sector, some by the public sector, and some by a combination of the two. Some used only two or three vehicles, whereas some used 50 or more; some were integrated with fixed route services, other were not.

Viable Mostly in Smaller Urban Areas. The analysis found that the general community paratransit services have proven to be viable transportation alternatives in selected applications, but basically in smaller urban areas. In some of these communities they have been

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1/ Multisystems, Inc., General Community Paratransit Services in Urban Areas, Cambridge, MA, January 1982.

in operation for seven or more years and although they do not carry a great many passengers, they do satisfy a local transportation need. Smaller urban areas have less existing transit service, and thus a greater need for service and less potential for displacing riders of conventional transit. In addition, the smaller areas have fewer institutional constraints imposed by traditional transit authorities and by transit labor resistant to services they fear will compete with fixed routes. Lower wage rates in smaller communities help hold down the costs of low productivity paratransit services. Finally, funding specifically targeted to paratransit has been made available to smaller communities.

Paratransit/Transit Integration. Of particular interest for existing transit systems concerned about serving their area's growing needs in a most cost-effective manner is the possibility of integrating paratransit with transit operations. In an integrated system, flexible paratransit services provide feeder/circulation services in low density parts of metropolitan areas, while fixed route service runs along high density corridors. The case studies yielded mixed results on integration, from rather clear failure in Santa Clara County to an unqualified success in Peterborough, Ontario. The conclusion, on the basis of admittedly limited experimentation: integration can work and be relatively cost-effective if properly designed. It "could see greater use over the coming

years, as reduced funding forces transit operators to seek new, lower cost service arrangements."[1/]

Limited Use in Metropolitan Areas. Among the reasons that relatively few general community paratransit systems have been implemented in metropolitan areas are the following:

- Most metropolitan areas have fixed-route systems; implementing a paratransit system as an additional service is a luxury transit authorities may be reluctant to provide. Also, redesigning service to include paratransit might require changes in the fixed routes, which might not be politically expedient.
- Paratransit services provided by transit authorities face high wage rates and stringent work rules, generally making them too costly.
- Organizational inertia and the potential effect on labor contract negotiations dampen transit authorities' enthusiasms for innovative paratransit services. Also, labor may oppose such services if they are to be operated by some other agency.
- It is politically difficult for transit authorities to implement paratransit in some sections of a metropolitan area and not others; yet implementation areawide may be economically infeasible.
- Past experience has not demonstrated that paratransit is truly successful as a feeder/local circulator service in metropolitan areas.
- Paratransit must "compete" with fixed route service for available UMTA Section 5 operating assistance.

1/ Ibid., p. 23.

Unlike the case of specialized market service (such as for the work trip and the transportation handicapped), therefore, general community paratransit has not seen widespread implementation in metropolitan areas.

Organizational Options. General community paratransit services have typically been developed, implemented, and operated by local government bodies, transit agencies, or private transportation companies. The first two have been the most common type of operator, but the private sector (chiefly the taxi industry) is becoming increasingly involved, both on its own initiative in introducing shared-ride service and in response to solicitation of service contracts by public agencies. Participation of private operators has led to lower operating costs and is therefore gaining in popularity.

Early in its development, paratransit was considered another form of transit service to be operated by the public. Taxis were not regarded as potential providers because they were not generally viewed as a form of public transportation. The taxi industry did not mind, generally wanting nothing to do with the public sector. This situation changed by 1973, when many taxi companies realized that public paratransit could adversely affect their business. At first the companies tried to stop paratransit systems from being implemented, but then sought to operate the services themselves. The public sector, initially reluctant to involve the taxi industry, began to change its attitude when recognizing

that dial-a-ride was little more than shared-ride taxi; contracts could be controlled to assure proper service standards; and cost could be decreased via private sector operation. As a result, the majority of general community paratransit systems implemented in the U.S. over the past few years have involved the private sector, mainly through the taxi industry.

Barriers and Aids. Perhaps the most common and frustrating barriers to successful implementation of general community paratransit services have been those associated with labor and competition. Opposition from local transit labor typically is based on Section 13(c) of the Urban Mass Transportation Act of 1964, which requires that the position of existing workers "not be diminished" through projects initiated with UMTA funds. The main 13(c) problem arises when existing transit labor units demand that they operate any new paratransit service, even in cases there only new jobs are at stake. The possible results are that: (1) service ends up being operated by transit labor, which is more expensive than alternative courses of action; (2) the service is not implemented; or (3) a compromise is reached which increases costs, e.g., maintenance is performed by union labor. It should be noted, however, that Section 13(c) was not a problem in any of the 10 cases studied, although it was reported as a problem in other cases researched by Multisystems for its report.

Difficulties with claims of competition with taxi companies occurred in four of the sites studied. In three, taxi companies brought suit based on local statutes. The fourth suit was based on Section 3(e) of the Urban Mass Transportation Act, which prohibits competition with private transportation companies. The court ruled in favor of the transit agency in three of the four cases. This experience suggests that opposition can be expected from taxi companies if they are not offered the opportunity to participate in paratransit service.

Factors that helped general community paratransit succeed were:

- Adequate funding. The states that have been the bulk of paratransit development to date are those that provide funds for paratransit operations: Michigan, Minnesota, and California.
- Demonstration projects. These are important to generate community support and allow the operator to gain operational experience. Community support also depends on the presence of an enthusiastic and effective lead agency or individual and the availability of staff with entrepreneurial skills and motivation to manage and operate the service.
- An effective marketing campaign.
- Once the system is operational, reliable performance and ease of use.

Service Types Used. A variety of demand-responsive paratransit services were used in the ten cases studied, from pure door-to-door dial-a-ride service in many of the sites to the scheduled point deviation service in Merrill and the fixed route jitney in San Francisco. This

record reflects the evolution of the concept of general community paratransit from the original notion of a large scale, publicly-run dial-a-ride system, to recognition of a family of services often small in scale, which may be operated by a variety of groups. But the industry is still on a "learning curve" in terms of developing and operating paratransit services.

Dial-a-ride often is considered the service best suited for low density areas not having well-defined travel corridors. Yet it has several inherent disadvantages in this setting:

- It has a limited achievable productivity level, measured in passengers per vehicle hour, which means high cost per passenger.
- It has an inherent unreliability, given the fluctuation of demand from hour to hour and day to day, creating uncertainty about wait and ride times.
- Many people do not like to "plan" for service (via a telephone call) and then have the associated uncertainty regarding pick-up time.

Despite its limitations, dial-a-ride service continues to be used in many smaller communities where lower public sector wage rates or use of the private sector keep costs down. Hybrid types of dial-a-ride service, on the other hand, have displayed evidence of being attractive to passengers, reducing unreliability, and achieving productivities higher than door-to-door services. Hybrid options include route deviation, point deviation, checkpoint, and cycled service. Deviation services

offer passengers a choice between accessing a vehicle along a route or at a checkpoint or being picked up and dropped off at their doors. Checkpoint services limit stops to designated locations, otherwise operating basically as dial-a-ride services. Cycled service schedules vehicles to arrive and leave a major activity center on a regular basis. Despite the appeal of these hybrid services, however, very few have gone into effect in this country, because of insufficient publicity and the fact that they are more complicated to implement than pure demand-responsive or fixed route alternatives.

Possible Future Scenarios: Budgetary and Other Forces. Multisystems, Inc., sees the ambivalence of transit authorities toward paratransit as the central factor in the future of general community demand-responsive paratransit in metropolitan areas. Yet it believes that this situation may be changing as suburban communities demand improved service from regional authorities in return for the funds they contribute. In addition, some transit authorities see suburban paratransit as a mechanism for expanding their constituency in a more cost-effective manner than in extending fixed-route, fixed-schedule service. Finally, some transit authorities view paratransit basically as a means for discharging their obligations to meet the needs of the handicapped, avoiding the more costly alternative of modifying line-haul equipment and service to serve that group.

Weighing against the likelihood of transit authorities being more sympathetic to general community paratransit in the suburbs is the matter of funding, according to Multisystems, Inc. In an era of contracting resources, newer, low productivity suburban services may be the first to be cut, even though the suburbs are where the need for transit has grown the most in recent years. In addition, labor could insist on the transit authority itself operating demonstration projects in the suburbs instead of private contractors, claiming that the award of contracts violates the 13(c) provision. This happened in Boston.

Projecting the future from a broader perspective, the Multisystems, Inc. report identifies four key factors as having possible influence on developing general community paratransit services: energy availability and cost, reductions in transit subsidies, migratory and development patterns, and technological advances.

Of particular interest to this report, Multisystems, Inc. concludes that the proposed cutback in federal aid will force most transit agencies to overhaul their operations, reducing expenditures while maintaining acceptable levels of service.

> Paratransit options -- generally less expensive to operate than transit -- can potentially play a role in meeting this need, both by replacing less productive transit routes and by supplementing transit during peak periods so as to reduce the inefficiencies caused by unbalanced peak to off-peak service ratios.1/

1/ Ibid., p. 47.

In both cases, the transit authority might employ a private contractor to provide paratransit service to meet the local needs. The contractor might be able to reduce operating expenses by the lower wage rates of the private sector or the use of part-time labor where possible, and the use of smaller vehicles to meet lower demand levels. In that situation, the agency must be careful to assure that the change in service does not cause a drop in revenue greater than the reduction in costs.

Paratransit offers the flexibility necessary to adapt service to specific demand patterns and user needs.

> . . . community-based services can be operated as fixed route collectors/feeders interfacing with line haul or express transit routes during peak commuting periods; then, during the off-peak, these community services can be operated on a demand-responsive (or route-point deviation) so as to accommodate the needs of non-commuters (e.g., the elderly or non-workers making shopping trips). The level of service can be adjusted to meet the level of demand so as to avoid providing much more service than is necessary, as is often the case for transit during the off-peak times. Furthermore, the individual communities (both suburban and central city) are more likely to take responsibility for funding such services than for contributing greater sums to the regional transit operation which may provide only minimal intra-community service. The development of a regional network of community-based services, linked by mass transit serving major corridors, would improve the efficiency of the overall system. The transit agency could continue to operate regional service and function, in effect, as a regional "broker."1/

1/ Ibid., p. 48.

Thus, the report foresees that

> . . . the transit cost spiral and the planned cutback in federal operating subsidies will likely dictate a new approach to the provision of public transportation. In efforts to improve the efficiency of transit operations, paratransit options -- especially those operated through the private sector -- will likely see increasing application over the coming years.1/

In short, recent and current developments suggest to Multisystems, Inc. a future scenario in which the transit agency directly operates line-haul routes within major travel corridors, and the remainder of the service in the region is provided by private operators, under contract to the transit agency. To minimize operating costs, those services that are implemented as local circulators/feeders are likely to be variations on fixed route/fixed schedule service (e.g., "hybrid" services such as route or point deviation), rather than the completely demand-responsive "dial-a-ride" type. The latter has been shown to be considerably more expensive to operate than less flexible options; consequently, pure demand-responsive arrangements are likely to be reserved primarily for services targeted to the transportation handicapped.

Demand-Responsive Paratransit and the Transportation Handicapped (TH)2/

The transportation handicapped (TH) constitute another major market segment serviced by paratransit. These are persons whose physical or mental

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1/ Ibid., p. 49.

2/ This discussion draws substantially on Multisystems, Inc., Paratransit Services for the Transportation Handicapped, Cambridge, MA, April 1982.

conditions make it difficult for them to use conventional transit, essentially the elderly and handicapped (E and H). Over 13 million Americans are estimated to be in this group. They represent a large part of the market for demand-responsive paratransit services. Moreover, because of certain requirements attached to federal financial assistance, they constitute a special responsibility of transit agencies in metropolitan areas. How their transportation needs are met can have an important effect on transit agencies' ability to control the cost of future operations.

Origin and Recent Development. Many TH paratransit services were initiated by public and private nonprofit social service agencies, which realized that transportation was an auxiliary service needed by their clients if they were to benefit from the primary social service programs. The agencies also saw paratransit as enabling their clients to attend to their own basic needs without having to depend on others to chauffeur them. These agencies exist in virtually every fair-sized locality in the country. Although most continue to operate their own services, many have joined together in some form of coordinated arrangement, mainly to increase efficiency and avoid duplication of effort. Coordination extends to other transportation providers, clients of other agencies, or non-affiliated individuals.

Specialized TH services by social service agencies have been funded largely through a variety of federally aided programs authorized by such legislation as the Older Americans Act of 1965, the Social Security Act of 1935, the Public Health Service Act of 1944, and the Community Services Act of 1974. All told, over 100 different federal programs -- most of which are administered by the Department of Health and Human Services (HHS) -- provide funds for TH services in an estimated 5,300 local social service programs.[1/]

Although social service agencies continue to dominate the field, regular transit operators and other governmental agencies increasingly are involved in specialized TH services. Transit's involvement began in 1970 with amendments to the Urban Mass Transportation Act of 1964 which declared it to be national policy that the elderly and handicapped have the same right as others to use mass transportation facilities and service. Along with reduced fare programs on fixed-route service, paratransit became a common response to the needs of the elderly and handicapped, with transit agencies beginning to provide door-to-door services to supplement their fixed route operations. Paratransit activities intensified when the National Mass Transportation Assistance Act of 1974 initiated federal operating subsidies and required "special

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1/ AASHTO 1982 estimate. See Table 4-1, Chapter 4 below.

efforts" to meet the needs of the elderly and handicapped. Unlike HHS-funded programs, these initiatives were aimed at all people with transportation problems, rather than travel needs associated only with social service agency programs.

State and local governments have also entered the TH paratransit field, providing specialized funding -- as in Wisconsin's Elderly and Handicapped Transportation Assistance Program -- coordinating social service programs, directly providing transportation services, or contracting for service from nonprofit social service agencies or (less frequently) from for-profit operators.

The Section 504 Controversy. The single recent development that potentially can have the greatest impact on paratransit for the TH is the DOT regulation implementing Section 504 of the Rehabilitation Act of 1973. Section 504 prohibits discrimination against any handicapped individual by any program or activity receiving federal financial assistance. The 1978 guideline issued by the Department of Health, Education, and Welfare (now HHS) interpreted this clause to mean that any federally funded program or activity must be readily accessible to, and usable by, handicapped persons. The implications for public transit were revealed when DOT issued its implementing rules in 1979. In general, these mandated "accessible public transit" as the legally required long-term solution to urban public transportation for handicapped

individuals. For federally funded bus systems the rules required, among other provisions, that: buses purchased after July 2, 1979 be accessible to handicapped persons, including wheelchair users, which meant equipping buses with power lifts; fixed route bus systems achieve program accessibility as soon as practicable, but within three years; and where service could not be made accessible within three years, some form of interim accessible service be offered. The regulations also permitted operators of existing rapid rail systems to provide handicapped persons with some mode of bus or taxi service instead of adapting the rail system, if local handicapped persons and DOT agreed with the alternative.

Although these regulations aimed to guarantee the handicapped their civil rights, many observers questioned whether they would really improve mobility of the handicapped. It was argued, moreover, that solutions involving combinations of paratransit and conventional transit would be less costly and would reach more potential users.

Studies by the National Research Council (NRC) and the Congressional Budget Office (CBO) explored the cost and mobility implications of full accessibility under various alternatives. Their studies were based, in part, on the experience of cities such as San Diego and St. Louis that had implemented accessible bus service, providing lift-equipped buses to accommodate wheelchairs. NRC and CBO concluded that modifying

existing transit systems to make them accessible in accord with the 1979 DOT regulations would cost the most and benefit the fewest people. Offering handicapped individuals financial assistance to buy specially equipped autos or offering them direct user-side subsidies to buy any type of transportation service probably would meet the needs of the greatest number but would be very expensive. Specially tailored door-to-door paratransit services would serve three to four times the number of handicapped people that would be served by converting conventional transit and would cost substantially less.

In light of these findings, the 504 requirements generated considerable opposition. The U.S. District Court for the District of Columbia upheld their legality in 1980 in a suit brought by the American Public Transit Association (APTA). Transit authorities reacted to the regulations and the Court decision in different ways. Some proceeded to implement full accessibility before the 1982 deadline, some moved slowly to comply but hoped for modifications in the regulations to afford increased flexibility in meeting accessibility guidelines, and others indicated that they would not make their fleets fully accessible.

The widespread controversy, particularly concern over the enormous costs involved, spurred a move in Congress in 1980 to modify the rules to allow more local discretion, but the session took no action. In 1981, however, the U.S. Court of Appeals for the District of Columbia

reversed the District Court's decision,[1] holding that DOT's regulation required extensive and costly affirmative action efforts to modify existing systems and, therefore, exceeded the department's authority under the statute.

While the court decision was pending, the Reagan Administration's Presidential Task Force on Regulatory Relief directed DOT to give the regulation priority review. As a result of its review, DOT issued a policy statement declaring that recipients of federal aid for mass transit must provide transportation that handicapped persons can use but that local communities have the major responsibility for deciding how this transportation should be provided.[2] In July 1981, DOT issued an interim final rule deleting the mass transit requirements of the original regulation and substituting a new section. The new section required recipients to certify that special efforts were being made in their service area to provide transportation that handicapped persons could use. This temporary measure was succeeded by a proposed final rule issued on September 8, 1983.

This proposal offers three alternative ways that recipients can meet their obligation to provide transportation services for handicapped persons:

1/ American Public Transit Association v. Lewis, 556 F. 2d 1927 (D.C. Cir., 1981).

2/ Federal Register, September 8, 1983, p. 40684.

(1) Make 50% of their fixed route bus service accessible. To meet this requirement, the recipient has to ensure that half of the buses it has on the street during peak and non-peak periods are lift-equipped or otherwise accessible to wheelchair users and semi-ambulatory persons.

(2) Establish a paratransit or special services system to provide transportation for handicapped and elderly persons. Such a system must provide demand-responsive service by means such as accessible vans operated by the recipient or subsidized tax vouchers.

(3) Choose a mix of fixed-route accessibility and special service paratransit.1/

Under the proposed rule, no recipient is required, in order to meet the above requirements, to spend in any fiscal year an amount exceeding either (a) 7.1% of the average annual amount of federal aid for mass transportation it expects to receive over the current year and has received over the past two years, or (b) 3.0% of the recipient's average operating budgets for the same three year period.

It is too soon, of course, to judge how these regulations are apt to influence transit agencies' future use of paratransit. Clearly, however, they make it much more likely than the original regulations that transit agencies will resort to paratransit services for the transportation handicapped. The impact may be less than expected, however. As Multisystems, Inc., observed concerning the modifications effected by the July 1981 interim final rules:

1/ Ibid., p. 40693.

> . . . although some transit agencies will certainly follow the paratransit route, many agencies will choose the transit accessibility option. The presence of 80% federal capital assistance, coupled with the proposed phase-out of federal operating assistance, will, in most instances, make fleet accessibility less costly on the local level (i.e., providing a 20% match) than implementing and operating a new paratransit service. On the other hand, most areas have TH paratransit services in existence -- sponsored by transit authorities and/or by social service agencies. Hence, many of those transit authorities electing the paratransit option will likely make use of existing service, rather than implement a new service.1/

On balance, Multisystems, Inc., concludes that the Section 504 controversy created a better environment for the initiation of all paratransit options by focusing public attention on the ability of paratransit to serve the TH.

Experience with Paratransit for the TH. Multisystems, Inc., examined the handling of paratransit for the TH in nine urban areas, as well as the results of other related research. The nine cases represent a variety of service delivery mechanisms and a range of institutional arrangements, from social service agency-sponsored and operated to transit-agency operated and sponsored services. The nine are: Spokane Area Special Transportation Agency, Spokane, WA; Neighborhood Transportation Service, Chicago, IL; Office of Human Development Services (then part of HEW), five locations; the LIFT, Portland, OR; Community Responsive Transit,

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1/ Multisystems, Inc., op. cit., p. 73.

Cuyahoga County, OH; Metro Mobility, Minneapolis/St. Paul, MN; ACCESS, Allegheny County, PA; DAST, State of Delaware; and TRADE, Mercer County, NJ.

Four of the systems were initiated, operated, or both by transit agencies. In Portland, the Tri-County Metropolitan Transportation District (Tri-Met) began operating LIFT -- demand-responsive service for the TH -- in 1976, upon receipt of a three-year UMTA demonstration grant. It provided service to clients of contracting public and nonprofit agencies as well as the non-affiliated TH. Private taxi and chair-carrier companies provided supplementary transportation for long distance low demand trips which the bus system could not service efficiently. Because of the high cost of the transit-operated service, LIFT was discontinued in mid-1980. Tri-Met subsequently contracted with three nonprofit agencies and a taxi company to provide the service.

The Cleveland Regional Transit Authority operates two separate demand-responsive services -- one for the elderly and more mobile handicapped and one for wheelchair users commuting to work -- and contracts out a portion of the former to a taxi operator. The service is targeted solely at unaffiliated individuals. A 24-hour advance notice is required for service. Travel is free within each of 18 service zones, but no transportation is provided between zones. The comparatively low operating cost of the transit-operated portion is due to a labor

agreement that stipulates a job classification different from that of regular transit authority drivers.

Metro Mobility, a coordinated TH system in the Twin Cities, was developed jointly by the Metropolitan Transit Commission (MTC), the state DOT, and the Metropolitan Council. Metro Mobility runs a wheelchair service and non-wheelchair services are operated by three local taxi companies and two private nonprofit organizations. All service requests are received by the MTC-operated Metro Mobility Transportation Center and then assigned to the appropriate carrier. Requests need to be received only two hours in advance.

ACCESS, initiated by the Port Authority of Allegheny County (PAT) as an UMTA demonstration project in 1978, is a TH "brokerage" system. ACCESS, a private company, is the central broker under contract to PAT, and subcontracts for service with a number of private providers. Eight forprofit (taxi) and nonprofits were under contract as of 1981, providing service for social service agencies and for unaffiliated elderly and handicapped individuals. Requests for service are made directly to the carrier or through the ACCESS office.

Reviewing the record of the nine case studies and supplementary research in the Multisystems, Inc., report, a number of major findings seem most pertinent:

° Though specialized services (paratransit) for TH have been relatively expensive to operate compared to service for the general public, they have proven to be the most cost-effective way to improve the mobility of individuals who do not have other transportation options.

° Specialized services for the TH have developed a modest sized market but there is still room for greater market penetration.

° Costs, although quite high, can be kept under control by: restricting trip length through a zone system; offering different levels of service/ assistance according to minimum needs; using private operators, particularly in low density areas; including productivity incentives in private operator contracts; setting advance request times that permit efficient scheduling, but are short enough to minimize the likelihood of no-shows and cancellations; and promoting higher productivity subscription (and other fixed schedule) service.

° The transit agency is not the most cost-effective setting for managing and providing the specialized transportation services required by the TH. Rather, private operations -- taxi companies and nonprofit providers -- generally offer much less expensive services, primarily because of their lower wage rates. Privately operated service, moreover, has been found to be quite acceptable to the riders.

° The proliferation of TH services and service providers in many areas raises questions of efficiency, particularly in a time of budgetary

restraint. Better coordination is the usual remedy offered. Analyses of various efforts at coordination, however, indicate mixed results of those efforts. Many agencies keep costs relatively low by using volunteer drivers and staff and donated vehicles and office space. These costs may increase in a coordinated system with, for example, a formal purchasing structure. Also, any coordination effort involves considerable front-end costs (e.g., planning and administration), which may never be offset by slightly greater efficiency in actual operations.

° User-side subsidies are an alternative to creating and subsidizing a new paratransit service. They enable a segment of the population to use existing transportation facilities like buses and taxis and therefore the problem is one of cost rather than supply. The advantages of user-side subsidies are that they can be varied for persons with different needs, require a minimum amount of overhead, do not require the purchase and operation of vehicles, and are attractive to private operators. Among their drawbacks: a significant number of the more severely handicapped cannot use existing carriers, except some that are very expensive, and lack of controls over carriers may jeopardize quality of service.

Commuter Ridesharing (RS): Paratransit for the Work Trip

The third general market for paratransit service is that of the commuter to work, for which the most appropriate form of paratransit is

prearranged ridesharing (RS). Multisystems, Inc.'s evaluation of this paratransit group again was based on a series of case studies supplemented by reports of other research.[1/]

Development; Types of Sponsor. Commuter ridesharing has existed since the advent of the automobile but formal promotion of the arrangement did not begin until the early 1970s when the Minnesota Mining and Manufacturing Company (3M) introduced the first vanpool program in an effort to reduce the need for employee parking at its main headquarters. During the 1972 oil embargo, other employers followed the 3M example, and a number of programs aimed at commuters in general were initiated by chambers of commerce and radio stations. The federal government became involved fiscally as a consequence of the oil embargo, when the Emergency Highway Energy Conservation Act of 1974 authorized federal highway funds to finance 90% of the cost of carpool demonstration projects. Funding through this mechanism was made permanent in 1978 and supplemented with money through the Energy Conservation Policy Act of 1974 and the UMTA Services and Methods Demonstration program.

Concurrent with federal action, state and local programs in the 1970s promoted ridesharing, primarily through large employers. California and Massachusetts were among the first to set up programs to promote

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1/ Multisystems, Inc., Paratransit for the Work Trip: Commuter Ridesharing, Cambridge, MA, January 1982.

both carpooling and vanpooling statewide. The gas shortage stimulated many localities to launch carpool matching programs.

The numbr of employer-sponsored programs grew dramatically after 3M's initial vanpool program in 1973, until by 1981 there were over 500.[1/] These operated nearly 10,000 vanpools at 700 different sites throughout the country. Most included carpool-matching and commuter bus arrangements as well.[2/]

Government-sponsored areawide carpooling programs generally were spawned by the 1973 energy crisis and most were funded, at least in part, by the Federal Highway Administration. The Emergency Highway Energy Conservation Act of 1974, previously cited, generated over 100 carpool demonstration projects in 34 states and 96 urbanized areas. Thirty-five of these were still active in early 1978, of which 26 were considered continuing and comprehensive. These programs initially were directed at the public at large, but when they failed to generate enough public demand, they were refocused on employer-based matching and promotion. The focus has continued on the major employers in each local area.

1/ AASHTO's 1982 survey reported 754 companies with vanpools. See Table 4-1, Chapter 4 below.

2/ The National Association of Vanpool Operators predicts as many as 100,000 vanpools by 1985. Paula R. Valente, "Public Transportation in the 1980s: An Era of Change," Public Management, July 1982, p. 7.

The latest stage in the evolution of ridesharing was development of the "third party" arrangement. In this arrangement, an organization established through either government, private sector, or joint public/private efforts organizes vanpools and carpools, and often provides (or arranges for) vans. The first such efforts were nonprofit organizations, as in the establishment of Commuter Computer of Los Angeles in 1976. Nonprofit corporations were chosen to avoid certain institutional burdens that existing public agencies hesitated to face in establishing vanpooling programs. These burdens included the financial and legal liability associated with organizing and providing vans and the administrative requirements of such a program. A positive aspect of nonprofit corporation involvement is that for-profit private corporations may be willing to make "donations" to the nonprofit group, although they would not make them to a public agency/program for ridesharing.

Commuter Computer in Los Angeles is the largest third-party ridesharing program in the country. With over 80 employees and a budget of about $2 million, it works with an estimated 1,000 companies, maintains a data base of 470,000 commuters, and estimated that, as of mid-1980, it had been responsible for placing nearly 60,000 persons into carpools and forming 95 vanpools. The program is funded almost entirely by the California Department of Transportation, which funds ridesharing programs throughout the state.

Other outstanding examples of third-party programs are the Knoxville Transportation Brokerage Service (KTBS) which acts as a broker in identifying and matching individual traveler needs with a range of existing

and new transportation services; RIDES for Bay Area Commuters, Inc., of San Francisco, which provides vans and matching services for a ten-county area with a total population of five million; and the program of the Tidewater Transportation District Commission in Virginia. The last-named, initiated in 1976 to serve Navy Employees but now serving non-Navy personnel as well, owns and operates 95 vanpools and leases 13 40-passenger buses. Finally, many taxi companies contract to provide prearranged shared-ride services for various groups including company and government employees.[1/]

Factors Influencing Program Initiation and Success. The 11 case studies and supplemental research pinpointed factors that affected the success or failure of ridesharing programs. Employers were motivated by poor transit service, rising gasoline prices, parking problems, employees' excessive commuting time, traffic congestion, and such other factors as intraplant transportation needs, energy conservation, and public relations. Poor transit service was associated with employment in suburban areas having no direct transit service or in cities with limited fixed-route transit service, such as Houston and Knoxville. Reduction in employee parking demand most

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1/ See Ronald F. Kirby, "Innovations in the Regulation and Operation of Taxicabs," Taxicab Innovations: Services and Regulations, proceedings of the National Conference on Taxicab Innovations, May 5-6, 1980, pp. 5-7.

often motivated employers located in downtown areas who subsidized employee parking. Ridesharing cut down costs for both employers and employees.

Government-sponsored ridesharing programs were influenced by the same factors but to a less significant degree. Their major motivations were energy conservation and air pollution control. Presumably reducing the demand on high-cost, peak-hour public transit service -- sometimes cited as a way to make public transit more cost-effective -- was not a motivating factor for public or transit agency sponsorship of ridesharing plans.

Barriers to Program Initiation. Institutional and regulatory barriers hinder the initiation and expansion of ridesharing programs. Varying among locations, programs, and type of sponsor, they fall into two categories: (1) those that limit developing and providing actual ridesharing services, and (2) those that impede promoting and expanding programs.

First among the former are state (and sometimes local and federal) regulations governing forms of public and private transportation.[1/]

1/ For a description of the local problems involved in establishing and operating a vanpool under various types of sponsorship, see Frank W. Davis, Jr., David A. Burkhalter II, and Steve A. LeMay, "Developing Ridesharing Law: A First Step to Privatizing Transportation," Ridesharing 1981, Transportation Research Record 876, Washington, DC, National Research Council, Transportation Research Board, 1981, pp. 9-17.

Practically all states regulate passenger transportation, and vanpools traditionally have been included under carrier regulations. Such regulations have posed problems for third party operations in many states. Non-employer based programs, such as the Knoxville Transportation Brokerage Service and the Reston (VA) Commuter Bus, have had to seek special administrative rulings or legislative changes. On the other hand, employer-sponsored services and carpools in most states have been exempted from restrictive legislation and some states have passed laws encouraging vanpooling.

A second obstacle is transit workers' opposition to ridesharing programs based on Section 13(c) of the Urban Mass Transportation Act of 1964. Section 13(c), as noted earlier, requires the Secretary of Labor to sign off on any transportation project that may "worsen the status" of transit workers in the location of a proposed project.

Other barriers to successful employer-sponsored ridesharing programs are internal to the employers and include: a shortage of potential poolers, which can be attacked to some degree by aggressive marketing, by providing a matching service, and by using ridesharing incentives; the cost of the program; the perception of difficulties associated with program administration; and the lack of interest on the part of upper level management. Areawide third-party sponsored

ridesharing programs are inhibited by the fragmentation of public transportation responsibility, the lack of a single agency to play the lead role or competition among agencies for that role, overreliance on impersonal matching methods, inadequacy of staffing and budget, a weak marketing effort, and poor working relations with the private sector.

Impact of Incentives. High energy costs, limited parking, and other factors may not be sufficient motivations for initiating a ridesharing program, so certain other positive incentives may be necessary. Among those that employers can offer are:

- Subsidies for both ridesharing and transit use, to offset the subsidy given single-occupant auto users in the form of free parking.
- A well planned, continuous agenda of internal promotional efforts and a responsive mechanism for helping to match employees with rides.
- Preferential parking for poolers.
- Flexitime for ridesharers.

Government can encourage employers to develop ridesharing programs by aiding in developing promotional and matching materials, offering tax advantages for providing certain types of programs or achieving certain ridesharing goals, and passing legislation to clarify the insurance and regulatory status of vanpooling and buspooling arrangements. A negative governmental incentive is to require employers to initiate specific ridesharing program elements to help carry out the jurisdiction's Air Quality Transportation Control Plans.

Governmental agencies encourage commuters to use ridesharing through such incentives as use of government vehicles for car- or vanpooling, preferential and reduced-fee parking at public lots and garages, preferential roadway lanes for high-occupancy vehicles (HOVs), and lower tolls for HOVs. Governments also can help individuals form commuting ridesharing arrangements by providing matching informational services. They can discourage commuters from driving alone through parking surcharges and increased tolls, or outright exclusion from peak period use of certain street or traffic lanes.

Impact of Ridesharing on Transit Use. Although in recent years existing traditional transit agencies have had a variety of postures vis-a-vis ridesharing programs, most commonly it has been one of benign neglect, according to Multisystems, Inc., growing out of a fear that aggressive promotion of ridesharing will hurt peak period transit ridership. This fear seems unjustified, however, since a number of studies show that commuters who join carpools or vanpools are much more likely to come from those who were driving a car than from former transit riders. Moreover, the attitude reported by Multisystems, Inc., is not universal and indeed may not even be dominant, as indicated by the results of a recent survey by a task force of the American Public Transit Association reported below.

Future Directions for Ridesharing. Ridesharing is a practical, relatively inexpensive commuting alternative that provides solutions for energy shortage-induced crises and for site-specific problems, such

as inadequate employee parking. For example, ridesharing is report to be quite important now in San Francisco where 18% of all employees entering the central city come by that mode (compared to 16% by public transit) and at the Sony headquarters in Los Angeles where 64% of the workers arriving during the peak commuting hour are ridesharing.[1/] Its potential is not boundless, yet it is clear that the number of single-occupant auto commutes is much higher than work requirements actually dictate. A full 65% of all commuters in a typical area drive alone to work. Their number is bound to go down as the costs of auto commuting climb and fuel supplies remain uncertain.

The most important forces affecting the future of ridesharing are expected to be those related to energy availability and costs, according to Multisystems, Inc. Another is the nature of development and settlement patterns and land use planning. If gasoline does not run into short supply, the dominant suburbanization trend of the post-World War II years can be expected to continue, spurring further resort to ridesharing. On the other hand, certain public actions affecting land use planning and zoning can have a decided influence on ride-sharing activities, such as zoning restrictions on the number of parking spaces allowed for new development in high density areas, limits on on-street parking, requirements for minimum numbers of parking spaces for new developments, and taxing employer parking spaces. Actions to raise or lower the barriers of excessive regulation, insurance

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1/ Ridesharing panel at Seattle Conference of American Planning Association, 1983.

and liability ambiguities, and tax treatment inequities will also affect ridesharing development.

Continued growth of the role of third parties in encouraging employers to initiate ridesharing programs and in helping to administer them will hinge on the availability of funding and improved coordination by local agencies involved in ridesharing. Key parties who must work together in metropolitan areas are the metropolitan planning organization and transit agencies, the state DOT, and regional UMTA and FHWA representatives.

The role of the transit agency may be pivotal, Multisystems, Inc., says. It needs to recognize that ridesharing efforts can expand its constituency base to suburbanites and others who use private vehicles rather than transit. The danger in having the transit authority act as the lead agency, however, is that it may tend to favor conventional transit at the expense of other modes. Also, the objections of transit labor groups and the 13(c) issue may stall transit agencies' inclination to be more active in ridesharing, as the industry may not want to introduce another issue to be resolved through long negotiations.

U.S. DOT's model legislation is a significant step toward removing legal and regulatory barriers to ridesharing development. Another important step for the federal government is removal of economic barriers, such as the inequitable tax treatment of employer expenditures in parking and ridesharing.

Of all the factors that will influence the future of ridesharing, two have the most significant potential impact, according to Multisystems, Inc.: The price and availability of fuel, and the role of the employer.

If employers accept a greater responsibility for employee transportation, as they may if energy prices soar or energy becomes more scarce, then ridesharing participation is likely to increase substantially. Government policies and actions must continue to recognize the key role of employers, and continue to focus on generating employer activity in ridesharing.

Recent developments suggest other factors tending to enhance the role of ridesharing. Real estate developers, for example, are becoming increasingly involved in sponsoring and operating transportation management programs in large suburban developments not readily accessible by public transit. Some offer a wide range of transportation actions, including ridesharing, shuttle buses to rail stations, and commuter club buses. Examples of such programs are found at El Segundo, City Post Oak, and The Woodlands near Houston, University Circle in Cleveland, and the Longwood area of Boston.[1/]

Ridesharing Programs Operated by Transit Agencies: The APTA Study

The Multisystems, Inc., report found that transit agencies generally have taken an attitude of benign neglect toward commuter ridesharing, but concluded that their role in the future may be pivotal if they are prepared to broaden their constituency beyond those using fixed-route transit. A report by a special task force of the American Public Transit Association (APTA) in 1981 explores the issue of transit agencies' interest in commuter ridesharing in more depth, addressing the broad question of whether a ridesharing program conducted by an agency operating conventional fixed-route services could improve the agency's overall efficiency.[2/]

1/ C. Kenneth Orski, "Private Initiatives Spark Reforms in Public Transportation," TR News, November-December 1983, p. 18.

2/ Jesse Glazer, David Curry, Pat Moix, Jim Lightbody, Thirteen Ridesharing Programs Operated by Transit Agencies, Venice, CA, Crain and Associates, Inc., October 1983.

The task force probed the experiences of 13 transit agencies who were (1) acting as an information broker (by providing information on available carpools, vanpools, and transit services), (2) acting as a provider (by operating a vanpool/buspool fleet, for example), or (3) acting as both broker and provider. The 13 were: Mass Transit Administration, Baltimore, MD; Regional Transportation Authority, Chicago, IL; Peninsula Transportation District, Hampton, VA; Houston Metro, Houston, TX; Capital Area Transit Authority, Lansing, MI; Metropolitan Transit Authority, Nashville, TN; Tidewater Regional Transit, Norfolk, VA; Orange County Transit District, Garden Grove, CA; Tri-Met, Portland, OR; Santa Clara County Transit District, San Jose, CA; Metropolitan Transportation Commission, St. Paul, MN; Pierce Transit, Tacoma, WA; and Winston-Salem Transit Authority, Winston-Salem, NC.

Summary of Findings. The initiation of most of the 13 ridesharing programs was associated with the years of gas shortages. Yet the most common reason given for starting the program was the desire to create a full-service transportation system, and the most common stated goals were to supplement or complement the fixed-route system and to provide multiple transportation options. About half the programs were administered by the marketing department of the transit agency. Also, in about half the cases, another ridesharing program existed in the area before the current program began operation.

There was little consistency among the 13 agencies in regard to the service area or the transit services offered. Most employee parking within the central business districts (CBDs) was paid by employees themselves, but outside the CBD it was almost all free. Formal policies permitting flexible workhours were not common. Areawide commuter trip lengths and transit's share of those trips showed no unusual patterns. There was nothing about the nature of the transit services offered that would indicate a predisposition toward an in-house ridesharing program.

Eleven of the 13 programs offered computerized services for matching riders and vehicles. All but two actively promoted vanpools, and most promoted buspools, too. Usually the promotion was directed at employers, urging them to set up a fleet of company-owned vanpools. In other cases it was targeted toward individuals, encouraging "driver-owned" vanpools or buspools, or toward third parties. Four of the 13 operated their own vanpool/buspool vehicles; about half promoted company-owned, driver-owned, and third-party vanpools. A few did not promote any ridesharing mode. Marketing activities mostly were a combination of employer-based and mass-media (public) efforts. About one-third identified their single most effective marketing strategy to be employer-based marketing.

Some sort of public/private efforts were underway in half of the cities studied, but the type and extent varied from minor to substantial. In virtually all the programs, several major employers actively supported the ridesharing program. Their motivations grew out of local conditions such as traffic congestion, the high cost of commuting, parking costs, facility relocations, and corporate image and social responsibility. Strong management support was recognized as an important ingredient for a successful employer-based effort. Another was the on-site presence of an "employee transportation coordinator" (ETC). Few of the transit agencies had special training or support programs for ETCs.

The transit agencies only partially integrated the ridesharing activities with their conventional transit activities. More than half provided transit information along with carpool/vanpool information to those who called in. In their marketing activities, however, almost all promoted the transit service along with the ridesharing service. In many programs the ridesharing and transit marketing were conducted by the marketing unit. In about half the cases where the transit agency had recent service cuts, the ridesharing staff played an active role in planning and implementing such service changes. Although there was apprehension that transit/ridesharing integration would create labor-relations problems, especially concerning 13(c) requirements, respondents to the survey indicated that that was possible but not likely.

All 13 programs had some form of ridesharing incentives in place, but the type and amount varied widely. Park-and-ride lots were universally mentioned, but these were not always served by fixed-route transit. Generally 50% of their spaces were used. Promotion of the lots was always the responsibility of the transit ridesharing agency. In almost all of the cities, one or more local employers provided preferential parking for HOVs on employee parking lots, but special roadway facilities for HOVs were not common. Only one transit agency mentioned any legislative incentives, in the form of a tax incentive for owner-operators purchasing a van.

More than half of the programs were budgeted between $140,000 and $350,000 and were manned by no more than three staff persons. Funding came from a range of sources, including general revenue, various sections of the UMTA legislation, Federal Highway Administration discretionary grants, interstate transfer funds, and state and local funds.

About half the respondents said they had no major problems with their ridesharing program. Problems mentioned by the others were: gaining public acceptance and maintaining interest, internal competition for staff time or resources, funding, lack of federal policy, computer processing difficulties, and resistance to change by unions and private operators (such as the taxi companies). Anticipated changes and future directions for the program followed no discernable pattern, but several

indicated a growing role for ridesharing within the transit agency as funds decreased. Individual expectations included: more marketing, more incentives, more legislation (especially containing incentives), more benefit-based programs, some fee-based programs, large-scale transportation brokering, new parking policies, and work with developers. The most common suggestion offered to other transit operators considering initiating a new ridesharing program was to view it as complementary to transit and not necessarily competitive. The two services should be integrated, especially in terms of marketing activities and organizational structure.

Interpretation of Study Results. Several of the respondents mentioned that they expected the ridesharing program to improve efficiency of operation by reducing the peak-to-base ratio or by allowing them to reduce or eliminate some of the less productive existing services. The task force held that these are reasonable arguments, because commuter ridesharing is almost totally oriented to peak-hour trips and serves long-distance commuter transit routes that sometimes operate at a very high deficit per passenger. The task force found very little hard data were available from any of the agencies studied to prove that efficiency actually improved, but noted that the best evidence came from Golden Gate Transit. This evidence

> . . . demonstrated the radically lower cost of facilitating vanpools for commuters compared with provision of regular bus service. And carpools typically cost less per person to organize than vanpools.1/

Several respondents contended that ridesharing increases the effectiveness of the transportation service by providing a service in low-density areas where conventional fixed-route or dial-a-ride service would be too costly. The task force reported that:

> . . . the most convincing support comes from Portland (OR), where Tri-Met offers ridesharing services to employers who cannot effectively be served by transit routes. They report that this approach is both accepted and welcomed by employers, who all help support Tri-Met through local taxes.2/

A final claimed benefit is improvement of the transit agency's image, a benefit that is tied to increased efficiency and improved effectiveness. The task force found that this benefit was reported especially by operators who cited their program goals as "supplement the fixed-route service," and "provide a family of transportation services." It noted that:

> In addition to providing real benefits to commuters, ridesharing can provide a valid defense to criticisms arising from service changes and cutbacks. The evidence for this benefit is testimonial rather than statistical, but that is persuasive enough.3/

1/ Ibid., p. 28.

2/ Ibid., p. 29.

3/ Ibid.

Problems mentioned by the respondents were both internal and external. Among the former was the view of some of the existing transit staff that the ridesharing program threatened their current position or advancement potential. This attitude was seen as one source of the general organizational inertia that hampered easy assumption of the ridesharing activity.

Two sources of external problems identified were labor unions and private providers, despite the fact that most of the agencies queried had not had significant problems from either source. "Maintaining public interest" was another external problem mentioned. Meeting this problem requires recognizing that, unlike fixed-route transit operations which are supply-oriented, ridesharing is demand-oriented -- the mission is to respond to demand for matching services from employers and individual commuters. Public interest and awareness must be maintained or else the demand for these services will erode and program productivity will drop.

In general, it seems fair to conclude from the APTA task force report that, rather than displaying an attitude of indifference or "benign neglect," the 13 transit agencies surveyed were positively involved in varying degrees in promoting and operating ridesharing programs. Moreover, these programs were having a positive effect on the overall efficiency and effectiveness of the agencies' transit services. Judging by the experience of these 13 agencies, it seems that transit agencies are prepared to play a more pivotal role in ridesharing than that envisioned in the Multisystems, Inc., report.[1/]

1/ For another positive view of ridesharing's impact on transit service, see Teal, Giuliano, and Brenner, op. cit., pp. 9-10.

Taxicabs: A Major Paratransit Resource

In concluding this treatment of paratransit, a final word is in order about the role of the taxicab industry. The essential attraction of paratransit as a tool for increasing the cost-effectiveness of public transit systems is its flexibility. As the UMTA policy statement definition puts it, paratransit can be "tailored to individual travel needs through flexible scheduling or routing of vehicles." This flexibility makes paratransit useful as a lower-cost substitute or supplement to fixed-route, fixed-schedule bus and rail service, relieving the pressure on high cost, peak-hour service demands, avoiding the need for providing under-used bus service to sparsely settled areas, or offering greater accessibility for potential users who for distance or other reasons have difficulty getting to bus or rail lines.

Flexibility is the preeminent feature of course of the exclusive-ride taxicab. Although a less important characteristic of the shared-ride taxi, it is still the major attraction of this paratransit mode. That fact, plus the presence of taxicabs in cities nationwide, points to taxicabs as a major available resource to provide paratransit services. Consequently, it is not surprising that the paratransit experience reviewed in the preceding pages indicates that taxicab companies frequently emerge as the providers of paratransit services:

in general community paratransit, even though largely confined to smaller urban areas; in demand-responsive transportation of the elderly and handicapped in such varied places as Minneapolis-St. Paul, Portland, OR, and Allegheny County, PA; and to a limited extent on a prearrangement contract basis to transport employees to work. Indeed, it may be surprising that taxicabs currently are not used more widely for paratransit purposes. The reasons for this situation have been suggested at various places in the foregoing discussion but merit more concerted attention here in light of the possible importance of the taxi issue to the paratransit potential and, ultimately, improved transit systems. The reasons stem from actions and attitudes on the part of both government and the taxicab industry itself.

Taxicab firms in the early days of the industry often provided shared-ride service. This practice was gradually ended, however, as localities passed ordinances prohibiting shared-riding as a way of protecting the monopoly position of the streetcar systems, and prescribing the use of taximeters, which are not well suited to shared-ride services.[1/] Such ordinances still exist in many localities, confining taxi operations to exclusive-ride service and excluding hail-a-ride taxis and their cousin, the jitney.

1/ Gorman Gilbert and Robert E. Samuels, The Taxicab: An Urban Transportation Survivor, Chapel Hill, NC, The University of North Carolina Press, 1982, p. 125.

Use of on-call taxis to provide feeder service to existing transit routes -- short shared-ride trips from low density areas to conventional fixed-route, fixed-schedule transit -- seems like it would appeal to transit agencies, but nevertheless often meets resistance. The agencies fear that, if adopted widely, this kind of change could reduce bus transit's role in providing low density public transportation services.[1/] They are also concerned about the effect of Section 13(c) of the Urban Mass Transportation Act, which requires that employees be protected against the adverse effects from UMTA-funded projects, such as being laid off because of cutbacks in bus routes being replaced by the taxi feeder.[2/]

A final reason for government's failure to promote greater use of taxis in paratransit was the uncertainty, until recently, that taxi companies were eligible for UMTA financial assistance. With inclusion of shared-ride taxis in the definition of paratransit in UMTA's final regulation on paratransit policy, this element of doubt is now removed.

For its part, the taxi industry generally hesitated to offer paratransit service because many taxi owners did not like to become involved in the

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1/ Ronald F. Kirby, "Innovations in the Regulation and Operation of Taxicabs," op. cit., p. 13.

2/ Ibid., p. 14.

public sector. Part of this feeling stemmed from dissatisfaction with governmental regulation and resentment of public policy favoring mass transit against private taxi operators. Also many taxi companies were wedded to the idea of traditional exclusive-ride taxi service and hesitant about trying anything different or innovative. Finally, some were genuinely concerned that the paperwork and other administrative costs of participation in publicly funded programs would more than offset any chance of making a profit from participating in paratransit.[1/]

A number of developments have encouraged a change in attitude in both government and the taxi industry. On the governmental side, federal legislation in 1970 requiring special efforts for the transportation handicapped stimulated an interest in the taxi as the most readily available instrument for providing that service. Then came the impact of fuel shortages and price rises, growing concern over the financial problems of mass transit, and, particularly since the advent of the Reagan Administration, accelerated emphasis on greater use of the private sector to provide public services. Affecting the attitude of the taxi industry was the stimulus of competition, as publicly funded dial-a-ride service drove private taxi companies out of business in a few cities and seriously affected their size and profitability in others. Social service agencies' operation of their own vans for the elderly and handicapped, supported by

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1/ Kirby, op. cit., p. 15.

UMTA's Section 16(b)(2) financial assistance program, was a case in point. On this score, as noted earlier, taxi companies sometimes sought to defend themselves by bringing suit under Section 3(e) of the Urban Mass Transportation Act, which requires "maximum feasible participation" of private transportation companies in UMTA funded projects. A final reason for the taxi industry's altered perspective regarding participating in paratransit service was the gradually growing example of successful operations as paratransit services, particularly in the State of California.

Whether these and future changes surrounding the role of the taxi industry vis-a-vis public transit will result in taxicabs realizing their logical potential as the major paratransit resource remains to be seen. The outcome may depend, as transportation expert Ronald Kirby sees it, "primarily on the level of initiative displayed at the local level by taxicab operators, public regulators, and public transportation planners."[1/]

1983 Survey Responses on Paratransit-Related Issues

About 53% of the respondents to the ACIR transit survey said their metropolitan areas currently were using various forms of paratransit services "to substitute for uneconomic public transit services that exist now or might otherwise be needed in the future." The labor organization respondents saw the least evidence of such use (36%), the local government representatives saw the most (64%).

1/ Kirby, op. cit., p. 29.

As to the future, 65% felt it is important that paratransit be provided in their areas in the next few years. The local government respondents were most certain of the need (84%), labor representatives the least (only 8%). Probably the latter reflects a fact touched on several times in the paratransit analysis -- the strong position of organized labor in conventional fixed-route, fixed-schedule transit operations and its antagonism to rival providers who generally are less inclined to unionization of their personnel. (See Appendix Tables B-4 and B-5.)

Frequently associated with the need for paratransit is the existence of zones of sparse population where regular linehaul transit is uneconomic. Fifty-nine percent of the survey respondents reported that this was a transit service problem in their areas (Appendix Table B-6) -- a figure fairly close to those who saw a need for paratransit in the future (65%).

To provide paratransit services most effectively, policymakers need to be informed on all the possible alternatives, their pros and cons, etc. Availability of such information should not be a serious problem, according to the survey results. Only 24% of those replying reported that there is a "lack of information about alternatives to present practices" (Appendix Table B-6). Presumably, the various types of paratransit are high among these alternatives.

The Impact of Regulations. One concern of those promoting the use of paratransit is over the possible inhibiting effects of government

regulations, such as those that apply to taxicabs or to the use of federal funds. Survey respondents indicated that the impact is mixed.

On the issue of "excessive regulation of private transit and paratransit companies (taxis, charter buses, etc.)," 24% saw the problem as "serious but manageable" or worse. This feeling was considerably stronger in the larger metropolitan areas than in the smaller ones. Perhaps a significant reflection of public transit managers' level of sensitivity to the problems of private paratransit providers is the fact that only 12% saw excessive regulation as a problem compared, at the other extreme, to 46% of the labor representatives. No explanation of this disparity comes readily to mind.

The paratransit discussion above took note that the Section 13(c) provision protecting labor's benefits, and the uncertainty, until recently, about the availability of federal assistance for funding taxicabs as forms of paratransit were criticized by taxi companies and other private operators as deterrents to greater paratransit development. Two of the survey questions focused on these issues (Appendix Tables B-46 and B-47).

- Fifty percent of the respondents said "excessive restrictions on purposes for which federal funds may be used" were serious problems. The question as posed does not tell us what aspects of transit services were affected, but it seems likely that use of funds for paratransit was included in the minds of the respondents. The various subgroups were quite close together in their responses to this question.

- On the specific issue of the Section 13(c) labor requirement, 60% saw this as a serious problem. It was viewed as more of a problem in the larger metropolitan areas (60%) and by MPO respondents (77%) and transit agency officials (71%), and, not surprisingly, a minor problem (12%) by labor respondents.

Another form of federal restrictions -- "Buy American" requirements -- was rated a serious problem by 35% of the survey participants. Again, it loomed larger in the minds of transit agency officials (43%) but essentially was insignificant among labor representatives (14%).

Related to the issue of governmental regulation was the question of whether there are "too many social policies to satisfy in addition to transit efficiency (e.g., equal opportunity, environmental protection, energy conservation, growth shaping, etc.)." So far as paratransit is concerned, the Section 504 requirement on transportation for the handicapped addresses a social problem. Again it is impossible to sort out this issue and others specifically related to paratransit that might have been factors in the respondents' answers. In any case, 42% thought the matter of pursuing too many social goals does raise serious problems in delivering transit services. Transit agency officials were particularly of this mind (54%). Thirty-two percent of the labor respondents -- the lowest percentage of any of the four interest groups -- thought so, too.

Coordination of Transit Activities. Coordination needs came up directly in the discussion of provision of services for the transportation

handicapped by numerous social agencies, and tangentially in reference to transit agencies' involvement in commuter ridesharing. The survey found that the problem of coordination "among agencies with transit responsibilities" did not loom very large -- only 30% of those replying thought it was serious. Again, there is no way of knowing how much paratransit activities weighed in this overall perception. Of the four subgroups, the labor respondents viewed coordinatiion difficulties with the greatest seriousness. (See Appendix Tables B-36 and B-37.)

Political Environment. A final pair of questions provides additional insights into the setting in which paratransit operates in metropolitan areas. They concern respondents' views about certain aspects of the political environment. (Appendix Tables B-32 and B-33.)

- Asked to evaluate the degree of difficulty posed in their areas by inadequate support by private sector employers, 52% said this is a serious problem. The four interest groups were fairly even in their assessment, with the transit officials at the bottom in their rating of "serious" or worse (45%). Employers' involvement is of course vital to a vigorous ridesharing program as well as in such related areas as flextime policies.

- Finally, only 17% of the respondents thought "rivalries among transit providers" constituted a serious difficulty. Interestingly, it was regarded as substantially more serious (25%) in the areas under 200,000 population, perhaps because such areas are less likely to have a dominant conventional public transit agency. It is difficult to guess what the response means regarding the status of paratransit. It might mean widespread acceptance and use of various paratransit modes, all operating in comparative harmony; it might mean little development of paratransit and therefore small basis for competitive frictions; or it might reflect a variety of other scenarios.

Improvements Internal to the System

A final category of methods for improving transit productivity are those that are "internal to the system" -- maintenance operations, organizational structure and staffing, and procurement practices.[1/] These probably are the kinds of actions that come most readily to mind at the mention of improving efficiency. They include such measures as: establishing work standards to improve routine maintenance tasks; using detailed vehicle maintenance records and regular maintenance scheduling for better vehicle performance; improving the location and internal layout and design of equipment facilities; upgrading morale and efficiency through improved organizational structure and staffing; and achieving better quality and price of purchases through bidder competition and consortium buying.

Publications in the transit industry report many cases of these kinds of improvements on a monthly or weekly basis. Public Technology, Inc., catalogued examples from throughout the country in its 1979 report, Transit Actions: Techniques for Improving Productivity and Performance. Among technological improvements, for instance, it reported that:

— The Port Authority of Allegheny County developed a special sandblasting stall for removing rust from buses. The facility paid for itself the first year.

-- The Detroit Department of Transportation installed a computer-assisted vehicle maintenance management system that improved bus availability and reliability with no increase in personnel.

1/ Public Technology Inc., Transit System Productivity, p. 11.

— The Memphis Area Transit Authority installed a computer to provide a daily update of inventory.

Among examples of operational improvements:

-- The North Suburban Mass Transit District of Des Plaines, IL, analyzed crankcase oil after 3,000 miles instead of routinely changing it at that point, and found that oil changing could be stretched out to an average of 18,000 miles.

-- The Peninsula Transportation District Commission, Hampton, VA, initiated a policy of turning off bus engines during layovers that exceed three minutes and saved 20,000 gallons of fuel per year.

-- The Detroit Department of Transportation hired senior citizens at a rate of $50.00 per month to keep bus shelters clean.

-- The Metropolitan Suburban Bus Authority, East Meadow, NY, installed electric bus pre-heaters so that buses would not have to be kept running all night in cold weather. It saved about 24,000 gallons of diesel fuel during the winter of 1978-79, reduced wear and tear on bus engines, and decreased air pollution.

-- The Chicago Transit Authority installed a random access microfiche system for display of information needed by personnel manning the telephone information service. Results: a large increase in operator productivity. The system has also enabled the CTA System Control Center to handle non-routine operation situations better, such as accidents and fires.

-- Seattle Metro, with the agreement of the drivers union, initiated the use of part-time drivers at peak hours, producing money savings.

-- Seattle Metro also instituted under its labor agreement a sick leave insurance and enforcement program to reduce absenteeism and sick leave abuse significantly. Sick leave was cut back from an average of 18+ days/year/employee to less than 10 days/year/employee.

— The Central Ohio Transit Authority, Columbus, OH, initiated small group discussion sessions with labor union and management members to improve communcation between labor and management. Management staff became more willing to adopt newer management techniques. Labor was able to interact with management in a constructive way.

— The Kansas City Area Transportation Authority (Missouri) developed a performance-based training program for bus operator trainees.

— Seattle Metro introduced management by objectives (MBO), with each division having specific goals to achieve each year. Yearly salary increases for top and middle management are based on performance in achieving MBO goals.

— The Southeastern Michigan Transportation Authority (SEMTA) established an employee suggestion program to improve service, reduce cost, improve employment conditions, or improve safety. Cash awards up to $2,500 are given for suggestions accepted.

-- Long Beach Transit established maintenance teams and rewarded those with the best monthly performance record with trading stamps. Accidents, sick leave time, and late reports have all been reduced substantially.

-- In Mobile, AL, the Transit Authority gives employees one-half pay for unused sick leave as a pre-Christmas bonus.

-- The Orange County Transit District (CA) developed a productivity payment schedule for its demand-responsive service contractors. Their hourly rates were increased or decreased based on the number of passengers carried per hour. The program made contracted demand-responsive service more efficient and productive even though it reduced program effectiveness somewhat because of the disincentive to serve sole passengers.

1983 SURVEY COMMENTS

A number of questions in ACIR's 1983 survey sought to probe problems that transit systems are having in improving operating efficiency and steps that are being taken to overcome them (Appendix Tables B-6 and B-7). On specific problems:

Thirty-one percent of the respondents said the rundown condition of transit equipment and facilities created difficulties. The problems were almost exclusively in the larger metropolitan areas; only 5% of respondents in the smaller places reported difficulties from this source. Also, as might be expected, more labor representatives (42%) saw physical deterioration as a problem than any other subgroup.

Greater difficulties seem to be created by high labor costs, difficult work rules, or labor disputes. Fifty-seven percent of the respondents rated these as serious or even intractable problems. The ratings by interest groups were: MPO officials -- 75%, local government officials -- 66%, transit agency officials -- 65%, and labor representatives -- 16%. The breakdown by metropolitan area size (above and below 200,000 population) was: larger -- 58%, smaller -- 40%.

Only about one-third of the respondents (35%) thought that the lack of fiscal discipline creates insufficient incentive for transit organizations to seek productivity improvements. This response suggests that transit management and employees do not rely to any great degree on fiscal stringency to motivate them to improve productivity; conversely, it suggests that an assured revenue source (other than farebox) would not significantly erode their motivation. The MPO officials led in seeing this as a problem (42%); transit agency officials brought up the rear (25%), probably reflecting their view that as managers they strive for

efficiency as a part of their professional credo and do not need an external incentive.

Regarding transit systems' actions to improve efficiency (Appendix Tables B-4 and B-5): only about 27% of the respondents indicated that their systems currently are tying labor contracts to productivity improvements. There was a substantial difference of views on this issue, with 35% of the transit officials reporting such productivity tie-ins and only 19% of the MPO officials, with labor representatives in the middle (26%). On the other hand, 71% overall thought that such productivity incentives probably or definitely will be needed in the future. Here there was a clear division among the subgroups based on their interests: only 22% of the labor representatives saw the value of productivity tie-ins in the future as against over 80% of each of the other groups.

Finally, the respondents were queried about their transit system's use of route-by-route cost/revenue accounting. Such accounting is indispensable for the transit agency to make necessary routing, scheduling, and management adjustments to adapt to changing patronage and operating performance. Fifty-five percent said their systems already have such a control. This perception was rather uniform among all the interest groups except the labor representatives; only 34% of them saw that as current practice. Sixty-six percent of all respondents expressed the view that route-by-route accounting would be needed in the future. This view was strongest among the MPO officials (89%), weakest among the labor people (42%), and about average among the transit officials (68%).

SUMMARY OF MAJOR FINDINGS

This chapter has examined the principal ways transit agencies can adapt to declines in ridership and increasing fiscal constraints by adjusting services and otherwise reducing expenditures. Two general alternatives were identified: trimming services and improving the productivity of the present system. The main items discussed under the latter were: increasing ridership, speeding up services, paratransit, and internal "efficiency" improvements.

Trimming Services

Fixed-route, fixed-schedule services of the conventional transit system can be trimmed in several ways: eliminating all service during a certain segment of time, cutting out entire routes, and modifying the amount of service provided during a certain period or to a certain location. Two basic courses can be followed in choosing the services to be cut: eliminate the most costly services, or make cuts that minimize the ridership affected.

Service cutbacks are a highly sensitive public issue: people react more vigorously to service reductions than to fare increases. This high public sensitivity is consonant with making cuts on the basis of minimizing the ridership affected. It is also consistent with the relatively small proportion of respondents in the ACIR survey of 56 metropolitan areas who indicated that their transit systems had cut services and would expect to cut even more if outside grants are reduced.

The relative unpopularity of reducing services is also brought out by comparison with transit systems' willingness to pursue the other main avenue to reducing expenditures: increasing service productivity. About two-thirds of the survey respondents said that their transit agencies already are working to improve productivity of the current conventional transit system, and 87% said even greater efforts along these lines would be needed in the future to adapt to changing conditions.

Increasing Ridership: Marketing

A principal method of increasing a transit system's productivity is to increase its ridership. In general, this is more likely to be accomplished by improving services than by adjusting fares, although there are situations in which the opposite is true. But improving services does not by itself produce the greatest expansion of ridership. An effective marketing program is needed -- finding out what consumers want and need and then striving to satisfy those wants and needs. Such a program requires orienting the entire transit system -- organization, personnel, operations, etc. -- toward the goal of consumer satisfaction. It involves analyzing market opportunities, through environmental analyses and market segmentation analysis, and developing the right kind of "marketing mix." The marketing mix consists of all the product (service), price, and promotion (advertising, public information, community relations) factors under the control of management that may be manipulated to meet the needs of the potential riding public.

Certain elements that go into producing the transit product are not under transit management's control, such as the right-of-way and general environment in which transit operates. The transit agency needs the close cooperation of local governments to assure that these and other external factors contribute most effectively to transit service.

Although the value of adequate marketing seems obvious, many transit systems give it insufficient attention. Their attitude stems from a traditional preference for increasing productivity by reducing costs rather than increasing demand, and from viewing transit as a monopoly. To overcome this mindset, transit officials need to realize that they are in the transportation business and the private automobile is their major competitor. In contrast to the picture projected by the general transit literature, respondents to the ACIR transit survey indicated that transit systems in the 56 areas they represent appreciate the value of a sound marketirg program.

Speedier Service

A second category of opportunities for enhancing transit productivity are those that increase trip speed, thereby reducing operating costs and boosting ridership. Among the speed-increasing alternatives are priority treatment techniques, such as exclusive lanes for buses and other high occupancy vehicles (HOVs), traffic signal preemption devices, express bus service where warranted by demand, and techniques to expedite vehicle

boarding, such as monthly passes. ACIR's transit survey found that about one-third of the respondents reported HOV facilities and regulations in their areas, and about twice as many thought these would be needed even more in the future. The larger metropolitan areas saw a greater need for HOV facilities than the smaller areas.

Paratransit

A third general approach to increased productivity is to find more efficient ways to accommodate the conventional fixed-route, fixed-schedule transit system. Two ways to accomplish this goal are to use larger capacity equipment during peak periods and to encourage flextime for commuters. But a third technique receiving the most attention over the past decade is the use of paratransit: the range of transportation services that fall between the private automobile and fixed-route public transportation.

Paratransit services are of two general types. The first is demand-responsive transportation, which includes basically dial-a-ride (or dial-a-bus), shared-ride taxi, and jitney services. These modes are characterized by the flexible routing and scheduling of relatively small vehicles that provide door-to-door personalized transportation on demand, on a shared-ride basis, and a modest cost to the rider. The second general type is pre-arranged ridesharing, which consists of carpools, vanpools, and subscription buses. This mode is predominantly for trips to and from work.

Use of paratransit services was stimulated by the fuel-shortage, fuel-price, environmental, and traffic congestion concerns of the early and mid-1970s and was encouraged by federal financial assistance and regulatory programs. Currently interest is also focused on paratransit because of budgetary and service retrenchment problems confronting conventional transit systems and the opportunities it offers for greater involvement of the private sector in providing public services.

Paratransit serves three basic markets: the transportation handicapped, commuters to work, and the general community. Judging mainly by the recent case studies and related research by Multisystems, Inc., for UMTA, paratransit has varying potentials for helping conventional transit systems to serve each of these markets more cost-effectively.

The evidence presented suggests a mixed potential for general community paratransit. On the positive side, it shows that:

+ Some success has been registered with general community paratransit in metropolitan areas, as in a taxi-based feeder service service to linehaul routes in Peterborough, Ontario.

+ Integration of paratransit and linehaul service is feasible and cost-effective when properly designed and implemented.

+ Use of the private sector for paratransit services, mainly in the form of shared-ride taxis, has been shown to be cost-effective.

On the other side, however, are the negative signs:

+ Success with general community paratransit has been limited mainly to smaller urban nonmetropolitan areas, and even in some of these costs have been high.

+ Transit systems in metropolitan areas are handicapped by: management's negative attitude toward adding selected paratransit services and integrating them with the traditional fixed-route service, the prevalence of high wage rates and stringent work rules, organizational inertia, the political problems of implementing paratransit services in some areas and not in others, and a lack of evidence that paratransit can succeed as a feeder/circulator service.

Despite this equivocal record to date, Multisystems, Inc., sees a brighter prospect for general community paratransit in metropolitan areas as transit systems feel the growing pressure of inadequate funding and mounting demands from suburban areas for service commensurate with their contribution to the finances of the system. It believes that paratransit offers the flexibility necessary to adapt service to need most effectively. Nevertheless, this expectation presumes the ability and willingness of the transit agency to involve private sector providers much more than in the past and its ability to overcome the serious management and political obstacles that were identified as the reasons why metropolitan transit agencies have not been more enthusiastic users of general community paratransit heretofore.

Regarding demand-responsive paratransit for the transportation handicapped, there seems little question about its cost-effectiveness as an alternative to providing transit service for this group with traditional fixed-route, fixed-schedule bus and rail service. This conclusion became clear from reactions of the transit industry to the first draft of federal regulations implementing the Section 504 requirements applicable to mass transit and the subsequent modifications enabling transit systems to use paratransit in fulfillment of these requirements.

Regarding the third general market area for paratransit -- commuter ridesharing, Multisystems, Inc., found transit agencies generally pursuing a policy of benign neglect. That position is not prevalent among all transit agencies, however, at least among those queried by a special task force of APTA. Those agencies had their own programs promoting ridesharing. On the basis of that and other experience, the task force concluded that ridesharing sponsored by a transit agency improves the system's operating efficiency, first, by reducing the peak-to-base usage ratio, making it possible to eliminate some less-productive services; second, by providing a service in low-density areas where conventional fixed-route or dial-a-ride service would be too costly; and third, by enhancing the transit agency's image.

A brighter future for paratransit is projected by the ACIR's transit survey. Over one-half of the respondents reported that their

metropolitan areas were using paratransit to substitute for uneconomic public transit; about two-thirds felt paratransit will be needed in their areas in the future.

The survey respondents thought that "excessive regulation" of paratransit is not a serious problem, although it is more of a problem in the larger metropolitan areas with regard to the Section 13(c) federal regulation protecting labor benefits. Less than half thought that problems were caused for transit systems by having too many social goals to satisfy in addition to transit efficiency. About half thought inadequate support by employers was a handicap.

In the demand-responsive paratransit markets, taxicabs have great potential. They are a major available resource because of their inherent flexibility for meeting varying transportation needs and their presence in urban centers nationwide. Already they are being used for the transportation handicapped, for general community paratransit, and even to a limited extent for commuter ridesharing. Wider use has been deterred by the attitudes of the taxi industry, transit systems, and government, and by legislative and regulatory restrictions. Changes in federal policy that make taxicabs eligible for financial assistance as paratransit, the financial problems of many taxi companies, and the new emphasis on using the private sector to provide public services point to taxicabs' greater potential as paratransit in the future.

Improvements Internal to the System

"Internal improvements" -- efficiency measures -- are the most obvious means to increase transit productivity. They include an infinite variety of actions, including technological innovations, operational improvements, upgrading of employee training, and programs to reinforce employee motivation. Transit industry literature reflects considerable and varied action on this front.

According to the ACIR survey, labor-related problems -- costs, work rules, disputes -- are a major source of difficulty in making operational improvements, in the opinion of all those surveyed except the labor representatives. The lack of fiscal discipline and the rundown condition of transit equipment and facilities were viewed as lesser problems.

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CHAPTER 4. TRANSIT INSTITUTIONS AND DECISION PROCESSES

This chapter examines the institutions involved in planning, delivering, and financing metropolitan transit services, and the decision processes they use.

As the role of urban transit has changed rapidly in recent decades throughout the nation, so have the organizations sustaining these services. Since World War II, the urban transit industry has moved rapidly from predominantly private profit-making ownership toward mostly public subsidized ownership, from a multiplicity of submetropolitan systems toward consolidated regionwide ones, and from relative autonomy of transit decisionmaking based upon single purpose business economics (with modest regulatory oversight) toward the use of transit services as instruments of a broad range of public policies orchestrated by Congress, the state legislatures, and local elected officials.

To support these organizational transformations, an increasingly sophisticated urban transportation planning process evolved. Early public planning for transit (in the 1960s) was largely restricted to transit issues alone, rather than focused on broader transportation and urban development issues, although this transit planning was supposed to be coordinated with comprehensive urban development planning. Much of this early planning was for the design of new or extended rapid rail systems in a few very large urban areas or for acquisition of numerous financially ailing private bus companies all across the nation. Gradually,

transit planning became multimodal and concerned with such collateral goals as metropolitan growth management, civil rights, environmental protection, energy conservation, special problems of the elderly and handicapped, and minority business opportunities. It also moved from capital concerns like construction and acquisition to operating concerns like maintenance and productivity improvements.

Most of the characteristics of this evolving urban transportation planning process were hammered out in a series of conferences bringing together federal, state, and local officials. Then they were applied nationwide through incorporation into federal laws and regulations. Local officials acting through their metropolitan planning organizations gained increasing influence over the delivery of services and the location of construction projects. Yet, many resource allocation decisions were significantly constrained by state and federal use of categorical grant programs for particular purposes and by the formula distribution of funds to urban subareas.

The evolution of transit organizations and decision processes continues. The 1980s seem to be moving toward less federal prescription of organizational forms at the metropolitan level, a greater role for the states, less standardization in the urban transportation planning process, a greater variety of transit services and service providers, and increased participation by the private sector.

The remainder of this chapter provides an overview of current transit services and organizations, traces the evolution of the federally required urban transportation planning process, and explores the current organizational and decisionmaking issues facing the nation's transit industry in the 1980s.

Overview of Transit Services and Organizations

Many different types of transit services are provided by many different types of organizations -- some public and some private. A single urbanized area may have more than one transit service provider, especially in the larger places. The official "metropolitan planning organizations" (MPOs), designated under federal regulations to prepare required urban transportation plans and coordinate the various transit and other transportation activities in the area, also take many forms, as does state involvement in urban transit programs. These variegated patterns are detailed below.

Types of Urban Transit Services

Table 4-1 shows the number of transit systems in the United States as reported by four different sources, and then goes on to indicate the types of transit services provided by these systems and the relative importance of these differing services as measured by their proportions of the overall spending on operations. The number of systems reported varies from the 319 receiving federal financial support in urban areas to over 1,100 urban and rural systems in both public and private ownership reported by a survey prepared by the American Association of State Highway and Transportation Officials (AASHTO).

TABLE 4-1
TYPES OF PUBLIC TRANSIT

Types	Number of Systems Reported				% of Operating Expenses (Sec. 15 Report)
	Sec. 15 UMTA Report 1981	APTA Fact Book 1981	Census of Governments 1982	AASHTO Survey 1982	
Total, all modes	319 [1]	1,075	556	1,102	100.0%
Motor Bus (urban) (rural)	301	1,022		1,062 (807) (255)	69.1
Rapid (heavy) Rail	9	9		21	27.4
Street Car (light rail)	7	9		-	1.4
Trolley Bus	5	5		-	0.8
Ferryboat	2	12		-	0.2
Commuter Railroads	12	11		19	-
Other	6	7		-	0.2
Demand Responsive [2] (urban) (rural)	118	-		5,305 [3] (2,824) (2,481)	0.9
Ridesharing # States				48 (plus D.C.)	
#Cities/Regions w/Public Efforts				256	
#Companies w/ Vanpools				754	
#Vanpools (Public and Private)				14,527	
#State Sponsored Commuter Fringe Parking Lots				1,111	

1/ Figures below do not total to 319 because some "systems" are multimodal.

2/ The "Demand Responsive" category is not included in totals.

3/ These are "human service" transportation services.

The 1982 Census of Governments counted 556 public systems in urban and rural areas combined, excluding privately owned systems. The American Public Transit Association (APTA) counted almost 1,100 public and private systems offering regularly scheduled service in urban and rural areas.

None of these counts include paratransit services like taxis and jitneys flagged down on the spur of the moment, social services vans operating by appointment, or pre-arranged ridesharing activities (like subscription busses, carpools and vanpools). Some of these have been counted separately, in the AASHTO survey, however, and they number in the thousands. The more than 5,000 demand responsive systems are nearly equally divided between urban and rural areas, whereas a large majority of the fixed route regularly scheduled bus systems counted by AASHTO were in urban areas.

Public programs designed to encourage ridesharing now operate in 48 states and the District of Columbia, and are being pursued in 256 urban areas. Seven hundred fifty-four private companies sponsor vanpools for their employees. The total number of public and private vanpools is well over 14,000. These ridesharing activities are supported by well over 1,000 fringe parking lots built for commuters with state assistance.

Organizationally, a 1978 survey of UMTA-sponsored ridesharing programs found them located in MPOs (43% of the time), city or country governments (22%), state departments of transportation or energy (17%), transit operating agencies (12%), and other organizations (6%) including business or non-profit corporations, chambers of commerce, and

universities.[1] The 18 ridesharing programs specifically identified in transit agencies at the end of 1983 were Baltimore (MD), Birmingham (AL), Golden Gate Bridge Corridor (CA), Hampton (VA), Houston (TX), Lansing (MI), Melbourn (FL), Minneapolis/St. Paul (MN), Nashville (TN), Norfolk (VA), Orange County (CA), Phoenix (AZ), Portland, (OR), Santa Clara County (CA), Seattle (WA), Tacoma (WA), Tulsa (OK), and Winston-Salem (NC).[2]

It can be seen from these inventories that a great deal of transit service is being provided to the public throughout the nation in a variety of forms by a very large number of organizations. Most high volume services are provided by bus or heavy rail rapid transit, although street cars, trolley buses, ferries, commuter railroads, and other modes of regularly scheduled transit also are important in some places. Over 96% of transit operating expenses, however, are concentrated in the bus and rapid rail modes.

Types of Transit Operators

About half of all transit systems are operated by public organizations, rather than private. This can be inferred by comparing the total inventories by APTA and AASHTO (as shown in Table 4-1) with the 1982 Census count of 556 public systems.

1/ Fred A. Wagner, "Evaluation of Carpool Demonstration Projects," prepared for the Federal Highway Administration, August 1978, as cited in David Curry and Jesse Glazer, "Potential for a Full-Service Transit Agency," a paper presented in Session 173, the 63rd Annual Meeting of the Transportation Research Board, Washington, D.C., January 1984, p. 3.

2/ Curry and Glazer, op. cit.

Among the public systems, Table 4-2 shows that about 80% of the systems and a like proportion of operating expenditures are divided between municipal and special district transit operators. The special districts represent fewer but larger transit systems, while the municipal systems are more numerous but smaller. State and county systems are relatively rare, but the few state operated systems tend to be in fairly large areas with heavy public expenditures -- Hartford, New Haven, Stamford, the New York metropolitan region, Wilmington, (DE), Jacksonville, Baltimore, and Providence, (RI). The county transit systems are more numerous but generally smaller.

Regardless of who operates a given transit system, funding frequently comes from several sources. For the more than 300 systems that receive federal assistance, Table 4-3 shows how the shares of public subsidy presently are divided, according to federally reported data. Local subsidies are the most important for meeting operating expenses (at 44%), while federal and state subsidies for this purpose are roughly equal at somewhat under 30% each. (Comparable APTA data on operating subsidies indicate 47% local, 22% state, and 31% federal -- excluding automated guideway transit, commuter railroads, and urban ferry boats.)[1/] Capital subsidies for transit are nearly 80% federal,

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1/ American Public Transit Association, Transit Fact Book: 1981 (Washington, D.C.: APTA, October 1981), p. 44.

TABLE 4-2
PUBLIC TRANSIT SYSTEMS IN THE U.S. -- 1982 CENSUS OF GOVERNMENTS

Public Systems			Total Transit Expenditures	
Type of Operator	Number	Percent	($ million)	Percent
State	7	1.2	$ 2,440.5	16.2
County	85	15.3	772.6	5.2
Municipal	354	63.7	4,239.5	28.2
District or Authority	110	19.8	7,586.2	50.4
TOTAL	556	100.0%	$15,038.8	100.0%

Source: 1982 Government Finance Computer Tape, U.S. Bureau of the Census.

TABLE 4-3
INTERGOVERNMENTAL FISCAL RESPONSIBILITIES FOR
319 FEDERALLY SUBSIDIZED PUBLIC TRANSIT SYSTEMS: 1981

Level of Government	Type of Governmental Assistance		
	% of Operating Assistance	% Capital Assistance	% Total Assistance
Federal	28.9	78.4	46.8
State	27.1	10.1	21.0
Local	44.0	11.5	32.2
TOTAL	100.0%	100.0%	100.0%

Source: U.S. Department of Transportation, Urban Mass Transportation Administration, National Urban Mass Transportation Statistics: 1981 Section 15 Report (Washington, DC: U.S. Government Printing Office, November 1982), pp. 1-8 and 1-12.

with state and local shares coming in at slightly over 10% each. Combining these two types of subsidies, federal aid is most important overall, accounting for nearly one-half of the total, while local governments contribute about one-third and the states one-fifth.

Clearly as these tables show, each level of government is importantly involved in transit operations and finance.

Number of Transit Operators Per Urbanized Area: 1981

According to UMTA's directory of regularly scheduled, fixed route local public transportation service in urbanized areas over 50,000 population, there were 696 transit operators in 1981. They were divided almost evenly between private companies and public transit operators (numbering 338 and 358 respectively). Many of these public and private organizations operated in the same urbanized area. As shown in Table 4-4, nearly two-thirds of the urbanized areas have only one transit operator or none at all. About one-third have between two and 20 operators, while only four have more than 20. Nearly 60% of the private operators are in 10 large metropolitan areas, seven in the Northeast plus Chicago, Los Angeles, and San Francisco. Thus, the need to coordinate multiple transit operators is a significant issue in one-third of the urbanized areas, and there is a heavy private component to this coordination task in a number of areas.

TABLE 4-4
NUMBER OF FIXED ROUTE, SCHEDULED TRANSIT OPERATORS
PER URBANIZED AREA: 1981

Number of Operators Per Area	Urbanized Areas	
	Number	Percent
0	16	5.7
1	166	59.5
2-10	87	31.2
11-20	6	2.2
21+	4	1.4
TOTALS	279	100.0%

Source: U.S. Department of Transportation, Urban Mass Transportation Administration, A Directory of Regularly Scheduled, Fixed Route, Local Public Transportation Service in Urbanized Areas Over 50,000 Population (Washington, DC: U.S. Government Printing Office, August 1981).

Types of Metropolitan Planning Organizations (MPOs)

In 1972, state staffed metropolitan transportation planning organizations (MPOs) were the most numerous type in urban America, coming in just above the number of areas where regional councils had been designated to perform the MPO function. City or county staffed MPOs were less than half as numerous as these other groups, while separately established MPOs were very few. Since that early count, however, the number of state staffed MPOs has dropped dramatically as the other types have increased. General purpose regional councils have been the most numerous in all subsequent counts. They reached a peak of 75% of all MPOs in the mid 1970s, but fell to about 55% by 1983 as the number of urbanized areas increased following the 1980 census. City or county staffed MPOs tended to be designated most often in the new small areas, and now account for 25% of all MPOs. Nevertheless, the actual number of regional councils performing this function continued to increase during this recent period and now stands at 179. These trends are documented in Table 4-5.

The significance of these various types of parent bodies for the metropolitan transportation planning function is subtle. Regardless of which type of parent body is designated, a policy committee with representation of all affected local governments and transportation providers (including state transportation officials) formally governs the planning process. Yet, the day-to-day management environment is likely to reflect,

TABLE 4-5

TYPES OF SECTION 134 METROPOLITAN (TRANSPORTATION) PLANNING ORGANIZATIONS (MPOs)

Types of MPOs	1972 [1] #	1972 [1] %	1976 [2] #	1976 [2] %	1980 [3] #	1980 [3] %	1983 [4] #	1983 [4] %
Regional Councils	81	37.2	205	82.3*	152	58.9	179	54.6
City or County	38	17.4			44	17.1	83	25.3
Freestanding Transportation Study Organization	7	3.2	30	12.1	54	20.9	52	15.8
State	92	42.2	14	5.6	8	3.1	14	4.3
TOTAL	218	100.0	249	100.0	258	100.0	328	100.0

1/ ACIR, Toward More Blanaced Transportation (Washington, DC: U.S. Government Printing Office, 1974), pp. 82-83.

2/ U.S. Department of Transportation, Urban System Study (Washington, DC: Department of Transportation, December 1976), p. 45.

3/ U.S. Department of Transportation, Metropolitan Planning Organizations and State Transportation Agencies: Directory, June 1980 (Washington, DC: Department of Transportation, June 1980).

4/ MPO Mailing List, Supplied by U.S. Department of Transportation, September 26, 1983.

* Regional Councils accounted for about 75% of all MPOs at their peak in the mid 1970s. See ACIR, Toward More Balanced Transportation (Washington, DC: U.S. Government Printing Office, 1975), p. 119.

disproportionately, the parent bodies' own interests. In addition, when the metropolitan transportation planning is done by an organization other than the one performing metropolitan reviews of federal and federally assisted activities in the area (usually the regional council), a duplicate review process for projects included in the transportation plan and improvement program is necessary. Nevertheless, tapping the best staff capability for transportation planning in a region, or supplying that capability from the outside via the designation of a state staffed organization where such capability is not available locally, also is an important consideration. In the final analysis, the governor makes the MPO designations in concert with the region's local elected officials.

The considerable pressure applied by the U.S. Department of Transportation following enactment of the 1973 Highway Act to have regional councils designated as the MPOs has been relaxed in recent years so that more organizational options are available to suit diverse situations. While the number of regional councils designated has continued to rise, that growth has slowed in the face of rapid increases in the designation of city or county governments as MPO parent bodies in recent years.

The 328 MPOs designated as of 1983 serve 367 urbanized areas (45 of which are interstate).[1/] These urbanized areas make up 335 metropolitan

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1/ U.S. Department of Transportation, Urban Mass Transportation Administration, "Apportionment of the Formula Funds Provided Under the Federal Public Transportation Act of 1982," Federal Register (Washington, DC: U.S. Government Printing Office, November 2, 1983), pp. 50656-50659.

statistical areas (MSAs).[1/] In 23 large urban areas, the MSAs have been consolidated to recognize the continuous pattern of urbanization,[2/] and this brings the number of separate metropolitan areas down to 280 (35 of which are interstate). Some MPOs, then, serve more than one urbanized area (the geographical units to which federal urban transportation aid is allocated); at the same time, multiple MPOs exist in some metropolitan areas (especially the interstate ones where different governors are involved in making the designations). While there is no officially published list of these geographic relationships, a comparison of the 1983 lists of MPOs, metropolitan areas, and urbanized areas indicates that there are at least eight metropolitan areas with multiple MPOs and seven areas in which a single MPO serves more than one urbanized area (see Table 4-6). As can be seen in this table, one area -- Philadelphia -- fits both categories simultaneouly.

There are two practical implications that can be drawn from these geographic mismatches. First, in contiguously urbanized areas with multiple MPOs, there is no organization that can overview the whole area -- not even the state in most cases since six of these seven areas cross state lines. Second, in those areas where a single MPO spans

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1/ U.S. Office of Management and Budget, Press Release OMB-83-20, Monday, June 27, 1983, with attached lists.

2/ Ibid, List II.

TABLE 4-6
SOME METROPOLITAN AREAS IN 1983 HAVING MISMATCHED GEOGRAPHY AND ORGANIZATIONS

Areas with Multiple MPOs	Metropolitan Areas Where MPOs Serve Multiple Urbanized Areas
New York CMSA NY-NJ-CT (9 MPOs now in place of the single Tri-State Regional Planning Commission of earlier years)	San Francisco CMSA, CA (7 urbanized areas)
Boston CMSA, MA-NH (5 MPOs)	Los Angeles CMSA, CA (4 urbanized areas)
Chicago CMSA, IL-IN (2 MPOs)*	Seattle CMSA, WA (3 urbanized areas)
Cleveland-Akron CMSA, OH (2 MPOs)	Milwaukee CMSA, WI (3 urbanized areas)
Portland CMSA, OR-WA (2 MPOs)	Denver CMSA, CO (2 urbanized areas)
Hagerstown, MD-PA (2 MPOs)	Houston CMSA, TX (2 urbanized areas)
Memphis, TN-MS (2 MPOs)	Philadelphia CMSA, PA-NJ (2 urbanized areas)
Philadelphia CMSA, PA-NJ-DE-MD (2 MPOs)	

Source: ACIR staff compilation.

* The Bi-State Commission formed a decade ago to provide a bridge between these two MPOs lost its funding on October 1, 1983 and faces an uncertain future.

multiple urbanized areas, planning the use of federal funds is constrained because federal formulas sub-allocate grant funds within the region on the basis of the urbanized areas. Although the transfer of funds between and among such areas is an option under recently loosened federal regulations, it can be difficult to achieve politically and procedurally.

Types and Degree of State Involvement in Transit

A few highly urban states began to issue bonds in the late 1960s to help bail out failing urban transit systems,[1/] but state financial involvement in mass transit was not significant enough by 1970 to show up in government finance tabulations maintained by the Governments Division of the U.S. Census Bureau.[2/] Nevertheless, the states began to get involved in transit much more heavily during the 1970s. While only two states had urban transit operating assistance programs in 1971, 23 states had such programs by 1978.[3/]

State involvement in transit roughly paralleled the creation of state departments of transportation. By 1974 there were 27 states with such

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1/ Fred L. Williams, States in Public Transportation, report No. UMTA-MA-06-0109-81-2 (Washington, DC: U.S. DOT/ UMTA, Office of Program Evaluation, 1981), p. 18.

2/ U.S. Advisory Commission on Intergovernmental Relations, Toward More Balanced Transportation (Washington, DC: U.S. Government Printing Office, 1975), p. 149.

3/ Williams, p. 27.

departments.[1] This number grew to 37 by the fall of 1977,[2] and reached 40 by 1981.[3] Mass transit (not highways as one might expect) is the only transportation mode for which responsibility rests in all 40 state DOTs.

State participation in transit has moved even more quickly than the state DOT movement. Forty-eight states have some sort of an identifiable organizational unit dealing with transit, and the other two states (Alaska and Maryland) have transit programs that are handled by other transportation staffs. Thus, all states now have some transit activity. This total coverage derives not only from the growing significance of urban transit operations in the public sector, but also from the enactment of a federal program for rural transit (Sec. 18) enacted in 1978 for administration by the states.

Table 4-7 summarizes the current status of various forms of state involvement in public transportation, and gives a limited perspective on the growth of this involvement. In addition to the increasing number of states involved in public transportation programs mentioned above, state transit staffs more than doubled in size between 1975 and 1982, as did state transit expenditures from their own sources. The number of

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1/ ACIR, Toward More Balanced Transportation, p. 136.

2/ National Governors' Association, Governors' Bulletin, October 7, 1977.

3/ The Council of State Governments, The Book of the States: 1982-1983 (Lexington, KY: The Council of State Governments, 1982), p. 470.

TABLE 4-7
STATE OWN SOURCE FINANCIAL INVOLVEMENT IN PUBLIC TRANSPORTATION

Type of State Involvement	Number of States (unless otherwise noted)		
	1975 [1]	1980 [1]	1982 [2]
State Transit Unit Established	30	43	48 [3]
State Transit Staff	442	1,000	1,023 [4] (+11 in DC)
State Transit Expenditures (own source funds)	$931M	$1,200M	$1,923M
State Financial Commitment to Urban Transit (own source funds)	33	-	44(+ DC)
Rural Public Transit (State Administered Federal Program)			48
Types of Own Source Funding:			
Bus Assistance:			
Urbanized Areas			28(+ DC)
Non-Urbanized Areas			22
Rail Rapid Transit			7(+ DC)
Commuter Rail			10
Ridesharing/Paratransit			23(+ DC)
Intercity Bus			5
Research and Development			4
Transit Planning			27
Technical/Management Assistance			16
Demonstrations			5
Other Transit Activities			3

1/ Fred L. Williams, States in Public Transportation, Report No. UMTA-MA-06-0109-81-2 (Washington, DC: U.S. DOT/UMTA, Office of Program Evaluation, 1981), pp. 3-4, 7.

2/ Standing Committee on Public Transportation, Survey of State Involvement in Public Transportation (Washington, DC: American Association of State Highway and Transportation Officials, June 1982).

3/ Alaska and Maryland do not have transit units, but do have transit programs.

4/ The range of staff size in the states is 1-260.

states putting their own money into urban transit assistance increased during this period from 33 to 44, and 48 states now are involved in administering the federal aid program for rural public transit.

Table 4-7 also shows the particular types of transit activity receiving state funds. More than half the states are putting their own money into urban bus operations and transit planning. A little less than half the states are aiding small community and rural bus operations and ridesharing or paratransit services. The number of states assisting rapid transit and commuter rail is small because the number of urban areas where those systems exist is limited. Sixteen states also fund transit technical assistance themselves. Other transit activities are supported infrequently.

As has been noted, the number of states involved in rural public transportation is larger than the number involved in urban transit. Table 4-8 shows that the amount of state funding provided for urban transit varies quite considerably from one state to another. Eleven states' transit programs provide ten dollars or more per year for each urban resident, and another 12 states provide between one and ten dollars. Yet, more than half the states provide less than a dollar, and six provide nothing.

While state involvement in public transportation may not be as complete as some would wish, it has broadened and deepened very considerably over the past decade.

TABLE 4-8
STATE OWN SOURCE FINANCIAL COMMITMENT TO
URBAN TRANSIT ($per urbanized person): 1982

Zero		$1.01 to $10.00	
Arkansas	0	Texas	1.22
Mississippi	0	Florida	1.66
New Hampshire	0	Ohio	2.87
North Dakota	0	Indiana	3.57
Vermont	0	Nebraska	4.17
Wyoming	0	Pennsylvania	6.40
		Delaware	7.04
1$ or less		Louisiana	7.55
		Illinois	7.62
Alabama	0.01	Rhode Island	7.97
Colorado	0.01	Michigan	8.58
Kansas	0.01	Oregon	9.74
Missouri	0.01		
Utah	0.01	More than $10.00	
Maine	0.02		
New Mexico	0.02	Wisconsin	10.33
South Dakota	0.02	Minnesota	10.54
Hawaii	0.06	Washington	14.62
Arizona	0.08	Connecticut	19.18
Idaho	0.08	California	20.66
Montana	0.08	New Jersey	20.89
Okalahoma	0.08	New York	29.50
Virginia	0.09	Maryland	34.37
South Carolina	0.12	Alaska	46.69
West Virginia	0.13	Massachusetts	47.86
North Carolina	0.14	D.C.	212.57
Georgia	0.32		
Kentucky	0.48		
Nevada	0.60		
Tennessee	0.77		
Iowa	0.96		

Source: Calculated by ACIR staff from Standing Committee on Public Transportation, Survey of State Involvement in Public Transportation (Washington, DC: American Association of State Highway and Transportation Officials, June 1982), pp. 10, 12-13, 16-17.

Evolution of Urban Transportation Planning

Urban transportation planning has been required by the federal government in all metropolitan areas since 1962 as a condition for the continued receipt of federal highway and transit funding in those areas beginning in 1965. Even before this requirement, federal funding for urban transportation planning had become available through the state highway agencies (at state discretion) and through the local governments and regional planning commissions in metropolitan areas receiving Section 701 comprehensive urban planning assistance under the Housing Act of 1961.

In order to put the federally required urban transportation planning processes in place by 1965, a substantial portion of the states' 1.5% planning funds was committed to urban planning; federal regulations were issued to establish the "3C" process for continuing, comprehensive, and cooperative urban transportation planning; and a major technical assistance program was launched by U.S. DOT. In 1966, the Urban Mass Transportation Act was amended to provide specific funding for the transit planning portion of the process.

Under this federal prodding, there was a rush in all the nation's urbanized areas over 50,000 population to designate an existing metropolitan planning organization or to establish a new one to prepare the required comprehensive urban transportation plans. Since the late sixties,

the urban transportation planning process has become increasingly expert, broader in scope, and more sensitive to citizen inputs and local politics. At the same time it became more complex and time consuming. This evolution occurred through the interaction of outside forces, legislative responses, and technical adjustments, as explained below.

Major Trends

Five major outside forces have shaped the evolving urban transportation planning process. These are:

1. the metropolitanization movement;
2. the environmental movement;
3. the equal opportunities movement;
4. the energy crisis and international fiscal readjustment movement; and
5. the regulatory reform and New Federalism movement.

These forces are listed, generally, in their chronological order of occurence. In all cases, there have been federal legislative responses to these national trends, and the transportation community has adjusted effectively to the changing political conditions. In large measure, the success of technical adjustments has been due to the presence of well organized and adequately funded research and technology sharing efforts within the transportation field. These efforts have linked the research and training programs of the U.S. Department of Transportation

with the networks of highway and transit officials represented through the American Association of State Highway and Transportation Officials and the American Public Transit Association. Frequently, this link-up has been facilitated by the neutral meeting ground provided through the Transportation Research Board (TRB) of the National Academy of Sciences where competent staff support and publishing services have been provided. TRB's extensive committee structure, its well attended annual conferences, and its many special conferences on timely topics have produced a steady flow of state-of-the-art papers and reports that have received wide circulation within the transportation community. Other national transportation conferences with multiple sponsors also have been held when major national issues have demanded attention. At least seven such conferences have been held on the subject of urban transportation over the period from 1958 through 1982.

Table 4-9 chronologically lists the key dates, national conference reports, and federal actions contributing to the evolution of the urban transportation planning process. These historical points are summarized briefly below in the context of the five major movements that have shaped the evolution of urban transportation planning.

The Metropolitanization Movement. The movement toward regional planning in urban America was the first outside force to have a significant impact on urban transportation planning. Until the 1962 Highway Act required a metropolitanwide approach to highway planning in urban areas,

TABLE 4-9
EVOLUTION OF THE FEDERALLY REQUIRED URBAN TRANSPORTATION PLANNING PROCESS:
SELECTED HIGHLIGHTS

Year	Event	Significance
1934	Federal-Aid Highway Act of 1934	Allowed states to use 1.5% of their highway grants for planning.
1944	Federal-Aid Highway Act of 1944	Allowed expenditures of federal highway grants for highways in urban areas. Spurred urban travel surveys.
1956	Federal-Aid Highway Act of 1956	Authorized the Interstate Highway System, about 20% of which is in urban areas. Major urban areas used the states' 1.5% planning funds for major highway planning studies.
1958	Sagamore Conference on Highways and Urban Development	Urged that urban transportation planning be regionwide, complement urban growth strategies, and include transit as well as highways.
1961	Housing Act of 1961	Provided first federal aid to transit in the form of (1) loans for capital, (2) small grants for transit demonstration projects, and (3) eligibility of existing comprehensive urban planning (Sec. 701) funds for transportation planning. Sec. 701 was amended in 1965 to allow these planning funds to be used by councils of governments.
1962	Joint Report on Urban Mass Transportation; President Kennedy's First Report to Congress on Transportation; and the Federal Highway Act of 1962	Established the relationship between highways, transit, and urban development; established a requirement and funding for comprehensive transportation planning in all metropolitan areas by 1965 to be carried out cooperatively by state and local officials.
1962	Hershey Conference on Freeways in the Urban Setting	Reenforced the concepts of (1) integrating highway and urban development plans, (2) using interdiciplinary planning staffs, and (3) involving community participation.
1963	Federal regulations issued for urban transportation planning	Established the "3-C" process for continuing, comprehensive, cooperative urban transportation planning, and launched a major technical assistance program to support it.
1964	Urban Mass Transportation Act of 1964	Authorized federal capital grants for transit, required that funded projects be consistent with comprehensive metropolitan development plans, and supported research and demonstration projects.
1965	Williamsburg Conference	Emphasized the need to consider social goals in evaluating urban transportation plans, and to make maximum use of existing transportation facilities through traffic management and land use controls. It also called for increased intergovernmental coordination and greater participation by political policymakers.
1966	Amendments to the 1964 UMT Act	Authorized funds for urban transit planning, research, and transit management training.
1966	Department of Transportation Act	Established DOT, drawing the highway program from Commerce, but leaving transit at HUD.
1968	Reorganization Plan No. 2	Transferred the transit programs from HUD to DOT and established UMTA.
1969	OMB Circular A-95	Strengthened the federal-aid review and comment process established under 1966 legislation and broadened by a 1968 law, providing coordination of urban transportation projects with comprehensive plans and other federal-aid projects.
1969	FHWA Policy and Procedure Memorandum 20-8 and Amended 3-C planning guideline	Required two public hearings before highway project approval, one before the location is chosen and one before the design is settled. Citizen participation was required in all phases of the 3-C process.
1969	National Environmental Policy Act of 1969	Required an Environmental Impact Statement for all federal actions (including transportation aid) significantly affecting the environment.
1970	Clean Air Act Amendments	Required transportation control plans (TCPs) in urban areas with serious smog problems.
1970	Urban Mass Transportation Assistance Act of 1970	Provided the first long-term federal funding for transit (12 years), and established special policies and funding for the elderly and handicapped.

1970	Federal-Aid Highway Act of 1970	Established the federal-aid urban highway system, with routes to be selected cooperatively by state and local officials, and funds allocated by a population formula. Special bus lanes and fringe parking for transit could be included.
1971	Mt. Pocono Conference on Organization for Continuing Urban Transportation Planning	Called for multimodal transportation planning, integrated with comprehensive and other functional plans, prepared by much stronger metropolitan planning organizations, related much more closely to decisionmaking processes at all levels of government, manifested in near term programming of implementation activities that would be monitored for results, and drawing upon flexible non-modal funding from the federal level.
1971	DOT Initiatives for Unified Transportation Planning	Established Intermodal Planning Groups (IPGs) in each of the 10 federal regions to help channel all DOT planning assistance to a single planning organization in each metropolitan area and develop a unified planning work program annually for each area.
1973	Federal-Aid Highway Act of 1973	Made "urban system" funds available for transit capital expenses, authorized interstate highway funds to be transferred to transit projects, allowed funds for all federally aided highway systems to be used for bus-related projects (including fringe parking), and earmarked planning funds exclusively for metropolitan planning organizations (MPOs) so they would not have to rely upon sharing the states' highway planning funds. Also authorized a rural highway public transportation demonstration program.
1973	The Energy Crisis	Spurred new federal initiatives to emphasize energy conservation in urban transportation, especially promotion of carpooling and vanpooling.
1974	National Mass Transportation Assistance Act of 1974	Initiated federal operating assistance for transit and authorized purchasing capital equipment for rural public transportation.
1975	Joint Planning Regulations	UMTA and FHWA issued a single regulation governing all aspects of urban transportation planning providing for joint designation of the MPO in each region, agreements between MPOs and A-95 agencies where they are different, a unified planning work program, a long range plan, a shorter range transportation systems management element (TSME), and a multiyear transportation improvement program (TIP) with an annual element (AE) encompassing the first year funding priorities.
1976	UMTA Investment Criteria for Major Projects	Established a rigorous "alternative analysis" process for major capital projects, stressing cost-effectiveness and maximum use of existing transit facilities.
1978	Surface Transportation Act of 1978	This first Act combining highway and transit programs in a single piece of legislation somewhat restructured the formula grants for transit (Sec. 5) and added a new grant program for small city and rural transit (Sec. 18) to be administered by the states.
1979	Aspen Conference on Future Urban Transportation	Emphasized the need for (1) greater emphasis on energy policies, (2) revised environmental health standards to limit transportation related pollution on a cost-effective basis, (3) realistic cost-effective transportation safety programs and services for the elderly and handicapped, (4) greater flexibility in federal and state programs to respond to diverse forms of local and metropolitan organization, (5) better coordinated national goals for urban transportation and land development and decisionmaking, including greater reliance upon bottom-up participation and better informed analyses of alternatives, and (6) more effective public investment strategies to limit dependency on the automobile, including regional tax bases for transit and other revenue measures.
1981	Airlie House Conference on Urban Transportation Planning for the 1980s	Emphasized the need for (1) more short range strategic transportation planning tied to implementation realities as well as system maintenance and management, (2) continuation of the regional approach but with less insistence upon comprehensive long range systems planning having dubious implementation prospects, and (3) greater flexibility in federal planning regulations so planning processes can be adjusted more easily to the needs of various areas (particularly allowing streamlined planning in urban areas under 200,000 population).
1981	Joint Planning Regulations (Interim Revision)	Simplified planning process for areas under 200,000 population and gave states and local governments greater discretion in designating MPOs and in pursuing planning activities.

1982	Woods Hole Conference on Strategic Planning for the Transit Industry	Emphasized the need for industry-wide planning of strategies -- both nationally and locally -- to meet the critical challenges of financial limits, cost control, and productivity improvement facing transit operators in the 1980s, including strategies for managerial, financial, and organization as well as physical improvements.
1982	UMTA Policy on Paratransit	Encouraged diversity, innovation, and private sector participation in transit.
1982	Surface Transportation Assistance Act of 1982	Increased the federal gasoline tax and dedicated one cent of it to transit. Replaced the Sec. 5 formula grants for transit with a new block grant program (Sec. 9) giving transit operators (in urbanized areas) and states (in areas under 50,000 population) more discretion in the use of funds and reduced red tape. Sec. 9 funds can be used for planning as well as for capital and operating expenses.
1983	Revised Urban Transportation Planning Regulations	Reduced the federal role in urban transportation planning by allowing greater flexibility in the designation of metropolitan planning organizations, greater flexibility in the content of the planning process, fewer requirements for planning (especially in areas under 200,000 population), and less guidance concerning what constitutes good planning practice. The required transportation plan need not have identified long-range and short-range elements, and the "annual element" of the required Transportation Improvement Program (TIP) may be biennial instead. Minor projects may be included in the TIP as categories of activity rather than individual projects. Political endorsement of these planning documents is required only when significant changes occur. No special format applies to the required unified planning work program (UPWP) for areas under 200,000 population. Any Sec. 9 transit block grant funds used for planning must be included in the UPWP document, and the transit operators receiving Sec. 9 funds must be included on the committee that develops the UPWP. Interagency responsibilities for planning tasks are to be worked out in the UPWP process without federal intrusion or requirements for any formal interagency agreements. The states and MPOs, rather than the federal government, now certify that the planning process complies with applicable federal laws. The certification may be a simple one sentence statement.

Sources: Edward Weiner, "Evolution of Urban Transportation Planning," in George E. Gray and Lester A. Hoel, editors, Public Transportation: Planning, Operations and Management (Englewood Cliffs, NJ: Prentice-Hall, 1979), pp. 300-323; ACIR, Toward More Balanced Transportation (Washington, DC: U.S. Government Printing Office, 1975), pp. 66-73; Robert Cervero, Intergovernmental Responsibilities for Financing Public Transit Services (Berkeley, CA: University of California, November 1982), APPENDIX A1.1.; updating by ACIR staff.

the states had simply allocated a minor portion of their federal planning assistance to a few special studies that might help reduce highway and street congestion in the states' major urban areas. But with this Act, the nation began systematic transportation planning in all of the nation's metropolitan areas that simultaneously confronted the need to promote comprehensive development planning.

For about a decade, metropolitan planning commissions had been forming in many urban areas to attempt land use planning and the coordination of areawide facilities for such important functions as water supply, sewage disposal, and transportation. Such coordination was coming to be recognized as an important, though difficult, areawide function that needed to be addressed by the elected officials governing the local jurisdictions within each region. The 1962 Act substantially augmented the fledgeling efforts to coordinate land use and transportation planning, with the help of these local elected officials. That legislation was followed in 1965 by an act making comprehensive land use planning assistance available to areawide councils of governments composed of local elected officials, and then by two additional acts (in 1966 and 1968) requiring that a comprehensive planning body in each metropolitan area be designated to review and comment upon the relationship between the variety of federally aided urban development projects and the metropolitan development plans being prepared. The list of federal aid programs to be coordinated in this manner, of course, included transportation.

Meanwhile, a great variety of federal planning assistance programs was being enacted. By 1979, 39 such programs were supporting regional planning organizations in metropolitan and non-metropolitan America. The Mass Transportation Acts of 1964 and 1966 helped to bring transit planning more effectively into the urban transportation planning process originally established by the Highway Act alone. Then, the 1973 Highway Act earmarked transportation planning funds exclusively for use by metropolitan planning organizations led by local elected officials so that these organizations no longer would have to depend upon sharing the states' transportation planning funds.

Four national conferences on urban transportation planning strongly influenced the way in which the metropolitanization movement affected the transportation community. First, the 1958 Sagamore Conference on Highways and Urban Development[1/] urged that urban transportation planning be pursued on a regionwide basis as a complement to urban growth strategies, and that it include both transit and highway elements. Then, the Conference on Freeways in the Urban Setting held in 1962 in Hershey, Pennsylvania,[2/] reenforced the concept that plans for highways and urban development

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1/ The Sagamore Conference on Highways and Urban Development: Guidelines for Action (Syracuse, NY: Syracuse University, October 5-9, 1958).

2/ Freeways in the Urban Setting: The Hershey Conference (Washington, DC: Automotive Safety Foundation, June 1962).

should be integrated with one another using interdisciplinary planning staffs. Third, the Williamsburg conference held in 1965[1/] called for increased intergovernmental coordination and greater participation by political policymakers. Finally, the 1971 Conference on Organization for Continuing Urban Transportation Planning, held at Mt. Pocono, Pennsylvania,[2/] took these by then traditional calls for integrating multimodal transportation planning with comprehensive development plans a step further by calling for much stronger metropolitan planning organizations related closely to the political decisionmaking processes at all levels of government and by urging coordinated multimodal programs of implementation activities designed to be monitored for results.

The features suggested in these national conferences gradually became reflected in national legislation and the planning regulations issued by the Federal Highway Administration and the Urban Mass Transportation Administration. By the time these two modal administrations of the

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1/ Highways and Urban Development, Report on the Second National Conference, sponsored by American Association of State Highway Officials, National Association of Counties, and National League of Cities (Williamsburg, VA, December 12-16, 1965).

2/ Organization for Continuing Urban Transportation Planning, Report of a conference held by the Highway Research Board on November 14-18, 1971 at Mt. Pocono, Pennsylvania under the sponsorship of the Federal Highway Administration, the Urban Mass Transportation Administration, the Highway Users Federation for Safety and Mobility, and the Automotive Safety Foundation (Washington, DC: Highway Research Board, National Academy of Sciences, 1973).

U.S. Department of Transportation issued their first joint urban transportation planning regulations in 1975, all of these features were incorporated.

The Environmental Movement. The "freeway revolt" of the 1960s was a major component of the broader environmental protection movement that swept the country by the end of that decade. This reaction against the mammoth interstate highway links that were forcing their way through highly developed urban neighborhoods with great destructive force also reflected the realization that deadly pollution from automobile exhausts was seriously threatening many urban areas while noise and safety hazards from burgeoning streams of traffic were degrading the quality of life in growing numbers of neighborhoods.

Citizens began responding by throwing themselves in front of bulldozers as freeway construction projects were about to begin. The Hershey conference in 1962 recognized some of these growing concerns and urged greater opportunities for citizen participation in highway planning. This theme was reenforced by the 1965 Williamsburg conference which emphasized the growing need to consider a wide range of social goals in evaluating the potential effects of urban transportation plans.

By the end of the decade, Congress responded with three major new laws: The National Environmental Policy Act of 1969, the Uniform Relocation Act of 1970, and the Clean Air Act Amendments of 1970. All three

acts required a much closer look at the environmental impacts of highways and the potentials for substituting transit or other less damaging transportation alternatives. Major new provisions were written into the transportation planning regulations requiring air quality control measures, environmental impact statements, enhanced citizen participation, and adequate provisions for relocating persons and businesses displaced by transportation projects.

The Equal Opportunities Movement. Beginning with the 1964 Civil Rights Act, a prohibition against discrimination became a major goal in administering all federal aid programs and distributing their benefits. This, of course, applied to transportation programs as well as many others. Specific civil rights and equal opportunities provisions also were enacted directly in transportation legislation, including provisions in the 1970 Urban Mass Transportation Assistance Act regarding special policies and funding to enhance opportunities for the elderly and handicapped consistent with the social consciousness raised by the Williamsburg conference in 1965. As a result of this movement, the urban transportation planning regulations now include requirements for equal employment opportunities, access to transit by the handicapped, special fares for the elderly, and participation by minority businesses.

The Energy Crisis and International Fiscal Readjustment. Congress reacted to the sudden cutoff of Mideast oil and the resulting long gasoline lines in the United States with provisions in the 1973 Highway Act that expanded recipient flexibility by permitting use of highway trust funds for

transit purposes. Since 1970, when the "federal aid urban system" (FAUS) was created, its funds had been allowed to be used for such transit-related purposes as special bus lanes and finge parking for bus riders. However, the 1973 expansion of this program encompassed a much broader range of transit capital projects, and the promotion of ridesharing activities became a major emphasis. The 1979 Aspen Conference on Future Urban Transportation[1/] further reenforced the need for more effective energy conservation policies in transportation plans and more effective public investment strategies to limit dependency on the energy inefficient automobile. By 1982, UMTA established a formal policy promoting para-transit of various types, including ridesharing, and the Surface Transportation Act of that year earmarked 1¢ of the increased gasoline tax exclusively for transit capital expenditures.

Taking a cue in part from the energy conscious Highway Act of 1973, the joint planning regulations for urban transportation issued in 1975 initiated a shorter range type of planning known as "transportation systems management" (TSM). This planning element was designed specifically to get the most benefit from existing transportation facilities in light of shrinking capital budgets and reduced revenues from state and federal gasoline taxes resulting from gasoline shortages and high prices

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1/ American Planning Association, Transportation Planning Division, Proceedings of the Aspen Conference on Future Urban Transportation, a conference held at the Aspen Institute for Humanistic Studies, Aspen, Colorado, June 3-7, 1979 (Chicago, IL: American Planning Association, no date).

inhibiting nonessential driving. Ridesharing and the more efficient use of transit systems were important elements in this new planning emphasis. The 1982 Woods Hole Conference on Strategic Planning for the Transit Industry[1/] continued to emphasize the need for short range management strategies to get the most from existing systems at least cost.

The financial pressure put on the world economy by the energy price increases of the 1970s helped to worsen America's position in international trade enough to bring forth a protective reaction by Congress. As one small part of this reaction, the 1982 Surface Transportation Act included a provision encouraging transit construction materials and rolling stock to be purchased in the United States. Although this "buy American" policy contains a number of exceptions, it complicates the cost control efforts of the transit industry.

Regulatory Reform and New Federalism. As the many federal aid transportation programs evolved, their complexity increased. From multi-faceted planning requirements to detailed engineering drawings, there were federal regulations for every eventuality. By 1971, the Mt. Pocono conference began to draw attention to this problem. It called for flexible

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1/ Proceedings are forthcoming from the Transportation Research Board, Washington, DC.

multimodal funding from the federal level — in other words a block grant. Congress began to move in this direction in 1973 when, as noted above, the Highway Act authorized the potential use of urban system highway funds for certain transit capital expenses. In addition, this Act allowed urban sections of interstate highways not yet built to be deleted from the system with an equal amount of funds being made available for other federally funded highway or transit projects. Despite these moves, the bulk of transit funding remained in separate transit programs.

Meanwhile, the federal aid highway program became the first grant to incorporate the concept of certification acceptance. Under this concept, the federal government was authorized to find that the laws, regulations, and practices in a state highway program were equivalent to federal requirements and could be accepted in place of detailed reviews and approvals by federal administrators. The idea was to cut red tape, shave administrative expenses, and speed highway planning and construction projects by reducing duplication.

Cost consciousness received further consideration in two subsequent national conferences. First, the 1979 Aspen conference emphasized the need to use cost effectiveness critera in administering environmental and safety programs for urban transportation. Then the 1981 Airlie House Conference on Urban Transportation Planning for the 1980s[1/] called

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1/ Transportation Research Board, Urban Transportation Planning in the 1980s, Special Report 196, Proceedings of a conference held November 9-12, 1982 at Airlie House in Warrenton, VA (Washington, DC: National Academy of Sciences, 1982).

for greater flexibility in federal regulations, to facilitate cost effective adaptations of the planning process to the needs of particular urban areas. This approach was proposed to avoid uniform insistence on costly planning products such as comprehensive long range systems plans where not needed. Special efforts were urged to simplify planning in small urban areas having less intricate problems.

Many unnecessary complexities and costs of requirements in federal transit grant programs were documented in 1982 by TRB. Its report pointed out the excessive number of applications and amendments required, the burdensome staff commitments mandated upon transit agencies, the uneven administration of programs among the various UMTA regions, and the rigidities and delays involved in using these programs.[1/]

The Joint Urban Transportation Planning Regulations of 1975 attempted to streamline the planning side of these programs, but they could do little to simplify the implementation programs. Early in the Reagan Administration, these joint planning regulations were somewhat simplified, on an interim basis, to require less costly planning in areas under 200,000 population and to give state and local governments greater discretion in

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1/ Ellen H. Kret and Subhash Mundle, Impacts of Federal Grant Requirements on Transit Agencies, National Cooperative Transit Research and Development Program Report 2 (Washington, DC: Transportation Research Board, December 1982).

designating MPOs and choosing which planning activities to emphasize. This was the beginning of a major effort to bring cost cutting regulatory relief to state and local governments and to return greater authority to them.

The Reagan Administration's New Federalism philosophy was carried further with the enactment of a new transit block grant in 1982 and the 1983 revision of the urban transportation planning regulations. These actions allow still greater flexibility in the designation of MPOs, in determining the content of the planning process, in carring out the required planning, and in using implementation funds. They are examined in more detail below.

Recent Transit Program Reforms

Since 1981, the Reagan Administration has been urging rapid discontinuance of operating assistance for transit and eventual ending of all federal capital assistance for both transit and local highways (those not included in the interstate and primary highway systems). The Administration also withdrew the Carter Administration revision of the urban transportation planning regulations and substituted its own less intrusive version after more than two years of consultation with state and local transportation officials and others.

Meanwhile, recommendations to phase out federal aid for transit met opposition in Congress. After some initial cuts in funding for fiscal

year 1982, Congress increased its authorizations for transit in future years and retained the operating assistance program by enacting a new transit block grant to be used for capital, operating, and planning purposes at the discretion of recipients. UMTA regulations for administration of this new block grant were published in June 1983, the same month as the new joint planning regulations became effective. Together, these two federal actions very substantially reduced the federally imposed regulatory burden on state and local agencies involved with urban transit and related highway programs.

While these major changes have raised a number of intergovernmental issues, there is fairly widespread agreement that these changes will be beneficial. Of course, the funding cuts were the most controversial features of the Reagan proposals, but they did not materialize in the transit programs to the extent that they did in a number of other fields of domestic aid. The other intergovernmental issues are ones that have been under consideration for many years, so they are familiar to all concerned. This increases confidence that the broadened flexibility in the new federal regulations will be used constructively rather than abused.

Revised urban transportation planning regulations. Although the urban transportation planning process has been federally required and regulated for more than 20 years, joint regulations formally integrating highway and transit planning into a single process are less than 10 years

old.[1] These regulations have been controversial for two reasons: (1) highway programs are administered through the states while transit programs have been run mostly by metropolitan or local organizations, and (2) these federal regulations focused the decisionmaking process in the MPO as a cooperative forum rather than leaving state, local, and transit agency officials as independent decisionmakers. This federal effort to mandate collegial activity among major actors in metropolitan transportation affairs caused political and administrative stresses and strains from the beginning, but most actors have adjusted to the reality that such a process is needed at least for the bulk of routine planning and coordination tasks. Where major policy differences occur in this process, the actors remain free to elevate them into the political arena at whatever governmental level is appropriate for resolving them.

Between 1975 and 1983, the joint regulations were reviewed internally by the U.S. Department of Transportation several times -- once by Congressional mandate. They also were directly challenged in the courts on one occasion, but were sustained in both the federal district court and the U.S. Court of Appeals.[2]

1/ Vincent F. Paparella, "An Administrative History of the Development of the FHWA/UMTA Joint Urban Transportation Planning Regulations" (Washington, DC: U.S. Department of Transportation, Urban Mass Transportation Administration, Office of Planning Research and Evaluation, February 1982).

2/ Ibid., pp. 8-9.

The Congressional study mandated in 1976 was prepared by the U.S. Department of Transportation. Its purpose was to evaluate the urban system program enacted in 1970 and amended in 1973, giving special attention to the MPO planning process used in allocating program funds among competing projects.[1/] The study found that, despite the controversy over the relative roles of the MPO versus state transportation officials and local governments, the MPO process was working as intended to provide a forum for cooperative decisions within the metropolitan areas. State representatives were part of the process in most areas, although transit operators were rarely included at that time. The MPOs were found to be adequately staffed and funded in the 30 areas where case studies were carried out, and the level of local involvement and local interest in the urban system program was found to be increasing as intended. In light of these findings, the U.S. Department of Transportation "recommended that the Congress make no changes, for the present, in the legislation affecting the urban system program and the transportation planning and programming processes."[2/]

At that time, the joint planning regulations required that the governor of each state, in consultation with local officials, designate a single MPO in each metropolitan area for both transit and highway

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1/ U.S. Department of Transportation, Urban Systems Study (Washington, DC: U.S. Department of Transportation, December 1976).

2/ Ibid., p. 11.

planning, and urged that this organization be the one also designated as the federally required review and comment agency under OMB Circular A-95. The regulations also required that each MPO prepare annually a unified planning work program to indicate how and by whom the transit and highway planning funds in the region would be used to produce a long range transportation systems plan, as well as a shorter range transportation systems management element (TSME) and a multiyear transportation improvement program (TIP) with an annual element (AE) encompassing the first year funding priorities within the region for both capital and operating expenditures.

Proposed revisions to the joint regulations initiated in 1980 by the Carter Administration were aimed at giving the MPOs greater involvement in detailed corridor planning efforts that traditionally had been under the direction of implementing agencies. The purpose was to enhance local elected official leadership in such projects. This proposal proved highly controversial, and although issued in final form on January 18, 1981, the Reagan Administration postponed and then withdrew these revised regulations. This stronger role for the MPOs was felt by many states to be an unnecessary federal intrusion into the negotiation of workable relationships among cooperating parties within the planning program.

A 1981 evaluation of MPO effectiveness in carrying out the 3C process, based upon the joint certification reviews performed by FHWA and UMTA,

"found that while there is isolated controversy and some confusion over the MPO concept and functions set forth and the FHWA/UMTA joint funding and programming regulations, the process is working and promoting sound transportation improvements."[1/] This finding was corroborated by a contemporary study prepared by the Standing Committee on Planning of the American Association of State Highway and Transportation Officials, a summary of which was attached to the federal evaluation report.

The 1983 revisions of the joint regulations sought no changes in the existing planning process other than to remove unnecessary federal influence and leave greater discretion to the state and local officials and the publically owned transit agencies cooperating within each metropolitan area. In line with this intent, the new federal regulations are much less prescriptive than the former ones.

With respect to the organizations designated to carry out the metropolitan planning process, the regulations urge that there be only one per urbanized area or group of contiguous urbanized areas "to the extent possible," although it has no provisions to enforce that concept. The organization actually designated can be of any type agreed upon by the governor and the local elected officials of the metropolitan area. The purpose

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1/ Federal Highway Administration, Office of Planning and Policy Development, Urban Planning Division, "Metropolitan Planning Organizations in the Urban Transportation Planning Process" (Washington, DC: U.S. Department of Transportation, July 1981), p. 7.

of the organization is to serve as the area's "forum for cooperative transportation decisionmaking." Its membership is not specified. It must endorse the transportation improvement program (TIP) for the area, including an annual or biennial list of projects for near term federal funding under both the highway and transit programs.

As to the geographic extent of the planning area, the outer boundaries are to be established jointly by the governor and the elected local officials in the area. Federal officials will not become involved in that delineation.

As to the content of the planning program, the regulations require very little, although the Federal Highway Administration and the Urban Mass Transportation Administration "intend to continue to provide technical assistance to advance good planning and programming practices." The regulations require no special time horizons or specific planning elements except that (1) the TIP must cover a period of at least three years and be reasonably matched to expected levels of funding, and (2) the plan must include an "analysis of transportation system management strategies to make more efficient use of existing transportation systems." Beyond that, the planning process may include whatever is agreed upon among the participating state and local officials and publically owned transit agencies in the area. Planning tasks are to be pursued to the

degree that those parties deem them to be appropriate in light of the size of the area and the complexity of its transportation problems.

At the same time, there is a list of statutorily required concerns that must be met by the planning process, and the MPO and the state must jointly certify that their process meets those concerns. This certification must be included with each TIP submitted -- either annually or biennially at the discretion of the state and MPO. These statutory concerns include environmental impact assessments, involvement of appropriate public and private transportation providers, civil rights, minority business enterprise participation, special provisions for the elderly and handicapped, and compliance with clean air standards.

The contents of the planning process must be annually agreed upon and submitted for federal approval in a unified planning work program (UPWP) document for each area having a population of 200,000 or more. Agreement must be reached among the MPO, the state, and publically owned transit operators, and must show how the federal aid funds from different sources will be used in the program. For areas below 200,000 population, documentation of the planning work program may be supplied in any form deemed most appropriate by the state and local officials involved.

The regulations urge that state, MPO, and transit officials simplify their procedures for updating and amending the annual or biennial element

of the TIP. Small projects, as determined by the MPO, may be combined into broad program categories, rather than submitted as individual projects, in order to reduce the need for amendments of the annual or biennial element.

In the summer of 1983, shortly after these new regulations were issued, the National Association of Regional Councils (representing many of the MPOs) and the American Association of State Highway and Transportation Officials held four regional conferences around the nation in cooperation with FHWA and UMTA. While several issues were debated vigorously -- like the need for greater guidance in the self certification process and clearer definitions of what should be included within the TIP -- there was broad concensus in support of the reduced federal intervention in the planning process. 1/

> Representatives from MPOs, transit authorities, and states felt that in most cases, they wanted no more federal guidance or criteria than the general standards contained in the revised planning regulations. Problems that may arise as a result of the new regulations can be worked out between the state and local government and not in Washington. Little discussion was given to the issue of roles and responsibilities of states, MPOs and transit agencies under the new planning regulations. 2/

1/ Christina Kirk Steinman, et al., Final Report on the Regional Transportation Meetings Held by the National Association of Regional Councils and American Association of State Highway and Transportation Officials, draft (Washington, DC: National Association of Regional Councils, September 20, 1983).

2/ Ibid., pp. 48-49.

Neither the federal rulemakers nor the state and local participants in the MPO process expect major changes as a result of these new regulations. Nevertheless, they look forward to the potential offered for simplifying the process and adapting it to conditions under which funding for regional planning is becoming increasingly scarce.

The issue of scarce regional planning funds arises not from the transportation planning programs so much as from the withdrawal or reduction of federal funding in other regional planning programs that formerly supported related planning in the MPO process. As shown in Table 4-10, the 39 federal aid programs providing assistance to regional planning in 1979, had been substantially altered by fiscal year 1982:

- 12 had been terminated;
- 11 had suffered significant budget cuts or were being phased out;
- 9 had lost their regional or areawide features;
- 6 were in the process of being revised, thereby creating uncertainty about their future usefulness to regional organizations; and
- only 1 was left essentially untouched.

Of special significance to the urban transportation planning program was the termination of HUD's Section 701 comprehensive planning assistance program and major reductions in the economic development administration program in the Department of Commerce. Both of these programs had been mainstays of many MPO organizations, and the 701 pro-

TABLE 4-10
AVAILABILITY OF FEDERAL PROGRAMS SUPPORTING SUBSTATE REGIONAL ACTIVITIES
1977-79, FISCAL YEAR 1982

Name of Program	Availability of Program, 1977-79: Throughout the Nation	Availability of Program, 1977-79: Limited Number of Substate Regions	Fiscal Year 1982 Status
Rural Development			
• 1. Sec. 111 Planning		Rural areas only	Terminated
2. Rental Housing		Rural areas only	Reduced Funds
3. Energy Impacted Area Development		Inland areas w/major energy-related employment growth only	Terminated
4. Resource Conservation & Development		Rural areas only	Reduced Funds
Community & Economic Development			
• 5. Economic Development		Regions with distressed local economies	Reduced Funds (may be phasing out)
6. Sec. 8 Housing	X		Areawide Features Dropped
• 7. Sec. 701 Planning	X		Terminated
8. Community Development Block Grants	X		Areawide Features Dropped
9. Historic Preservation	X		Reduced Funds
•10. Appalachian Planning		Appalachian states only	Reduced Funds (phasing out)
11. Coastal Plains Planning		Coastal Plains states only	Terminated
12. Four Corners Planning		Four Corners states only	Terminated
13. Upper Great Lakes Planning		Upper Great Lakes states only	Terminated
14. Old West Planning		Old West states only	Terminated
15. Pacific Northwest Planning		Pacific Northwest states only	Terminated
Environmental Protection			
16. Coastal Zone Management		Regions along the Nation's coast only	Reduced Funds (phasing out)
17. Coastal Energy Impact		Certain impacted regions along the Nation's coast only	Reduced Funds (phasing out)
18. Air Pollution Control		Large urban areas mostly	Being Revised
19. Quiet Communities	X		Phased out
20. Water Pollution Control	X		Being Revised
21. Solid Waste Planning	X		Terminated
Transportation			
22. Airport Planning		Urbanized or metropolitan regions only	Terminated
23. Urban Highway Planning		Urbanized or metropolitan regions only	Being Revised
24. Mass Transportation	X		Being Revised
Health & Human Services			
25. Alcohol Abuse Control	X		Included in new block grants, no federal areawide requirements
26. Drug Abuse Control	X		
27. Emergency Medical Services	X		
28. Community Mental Health Centers	X		
29. Health Systems Planning	X		Reduced Funds (phasing out)
30. Special Programs for the Aging	X		Continuing
31. Title XX Social Services	X		Blocked, no areawide requirements
32. Comprehensive Employment & Training	X		Reduced Funds
33. Highway Safety	X		Being Revised
34. Community Action (Anti-Poverty)	X		Blocked, no areawide requirements after FY 1982
Protective Services			
35. Law Enforcement	X		Terminated
36. Juvenile Justice & Delinquency Prevention	X		Reduced Funds
General Purposes			
•37. Project Notification & Review Process (A-95	X		Being Revised
38. Intergovernmental Personnel Grants	X		Terminated
39. Excess Property Transfer	X		Reoriented to States
Total Number of Programs	23 (59%)	16 (41%)	

• Support comprehensive planning

SOURCES: Reid, Stem, Kastner, and Godsey, Federal Programs Supporting Multicounty Substate Regional Activities: An Analysis, ESCS Staff Report (Washington, DC: U.S. Department of Agriculture, May 1980).

Reid, J. Norman and Stem, Jerome M., "Funding Cuts Hit Substate Regions," Public Administration Times, January 15, 1982, p. 3.

gram especially had provided much of the land use planning upon which transportation planning has been based.

As a result of these federal cutbacks in regional planning, most regional planning organizations have experienced substantial reductions in staff and have been scrambling to increase their funding from other sources -- particularly from local governments. The consequence for their programs has been a major shift from comprehensive plannning activities toward specific services provided to local governments for a fee. Thus, urban transportation planning is increasingly left to pay its own way, including the expense of any necessary land use planning. The urban transportation planning funds must foot this bill not only for existing MPOs but also for the large number of new urbanized areas, created by the 1980 Census of Population. This double demand has absorbed the increased transportation funds made available by the 1982 Surface Transportation Act without providing any real increase in MPO resources.

The New Section 9 Transit Block Grant. The Section 9 block grant for transit capital, operating, and planning purposes enacted at the end of 1982 went into effect beginning with fiscal year 1984. It is designed as the primary federal aid program for transit purposes, but it is not the only one. By 1986, it will be distributing nearly three-quarters of all federal transit aid by formula with relatively few federal restrictions.

According to the UMTA regulations for this program issued in June 1983:

> This new program offers the opportunity to substantially reduce the Federal Government's role in grant development and approval processes, while enhancing the responsibilities of state and local governmental entities. State and local agencies will be able:
>
> a. to allocate and suballocate program resources among recipients in an urbanized area without Federal involvement;
>
> b. to identify and select the projects (planning, capital and/or operating) to be included in the program of projects;
>
> c. to self-certify that various statutory requirements have or will be met;
>
> d. to eliminate the need to submit individual project justifications;
>
> e. to submit a single grant application for a program of projects in lieu of many individual project applications, as has been the case; and
>
> f. to submit a program budget in lieu of project budgets, thus obviating the need to get Federal approval of budget revisions and most technical amendments.
>
> The overriding intent of the Act, with respect to section 9, is to simplify the grant application and review processes. However, the Act requires a recipient to have independent audits conducted on an annual basis and requires the U.S. Secretary of Transportation to conduct triennial post-grant reviews and evaluations of compliance with certifications and other requirements. The Federal role in these program management activities will, to the maximum extent feasible, be limited and non-intrusive. 1/

1/ Urban Mass Transportation Administration, "Section 9 Formula Grant Application Instructions," Circular UMTA C 9030.1, Washington, DC, June 27, 1983, p. I-1.

For urbanized areas of 200,000 or more population, the governor, responsible local officials, and publicly owned transit agencies are to jointly designate block grant recipients. To the extent possible, there should be only one recipient in each urbanized area or group of contiguous urbanized areas, but multiple designations are possible at the discretion of the above named officials. In practice, multiple designations do occur as indicated in Table 4-11. In the case of multiple block grant recipients in the same area, local officials and the designated recipients are to come together through the MPO forum for cooperative decisionmaking to determine the allocation of formula funds among the designated recipients.

For urbanized areas under 200,000 population, the governor or his designee is the recipient of the formula funds. The governor may designate a single recipient, such as the State Department of Transportation, or multiple recipients including transit operators or MPOs in one or more of the smaller urbanized areas.

Designated recipients may redesignate their funds to other organizations. To use its allocated funds, each designated recipient must develop and submit for federal approval a program of projects in a total amount not exceeding the formula allocation, although a supplemental list of contingency projects may be appended so that they might be advanced in the event that projects in the main program are delayed or dropped for some reason.

TABLE 4-11
METROPOLITAN AREAS WITH MULTIPLE SEC. 9 RECIPIENTS: 1983
(Incomplete listing of areas)

Hartford-New Britain, Middletown CMSA, CT
Boston CMSA, MA-NH
New York CMSA, NY-NJ-CT
Washington, DC-MD-VA
Baltimore, MD
Philadelphia CMSA, PA-NJ
State College, PA
Charlottesville, VA
Chicago CMSA, IL-IN-WI
Columbus, OH
Cleveland CMSA, OH
Cincinatti CMSA, OH
Milwaukee CMSA, WI
Dallas-Fort Worth CMSA, TX
Houston-Galveston CMSA, TX
Fargo-Moorhead, ND-MN
Seattle-Tacoma CMSA, WA

Source: Incomplete mailing list of Sec. 9 designated recipients supplied by UMTA, December 2, 1983.

Developing this program of projects follows the now familiar pattern of Reagan Era block grants. Specifically, a designated recipient is required to:

- Make available, to the public, information concerning the amount of funds available under section 9 and the program of projects that the recipient proposes to undertake with such funds;
- Develop a proposed program of projects concerning activities to be funded in consultation with interested parties, including private transportation providers;
- Publish a proposed program of projects in such a manner as to afford affected citizens, private transportation providers and, as appropriate, local elected officials an opportunity to examine its content and to submit comments on the proposed program of projects and on the performance of the recipient;
- Afford an opportunity for a public hearing to obtain the views of citizens on the proposed program of projects;
- Consider comments and views, particularly those of private transportation providers, and, if deemed appropriate, modify the proposed program of projects; and
- Make the final program of projects available to the public.[1/]

While this is a fairly simple and straight forward participation process, it tends to overlap the TIP development process and the intergovernmental consultation process under Executive Order 12372 (formerly OMB Circular A-95). Projects in the Section 9 applications must be drawn from the TIP endorsed by the MPO.[2/]

1/ Ibid., p. IV-1.

2/ "Urban Transportation Planning; Final Rule," Federal Register (Washington, DC: June 30, 1983), 450.210(a).

As shown in Table 4-12, designated recipients for Section 9 transit block grant funds are overwhelmingly transit providers -- mostly cities, counties, or transit districts. MPOs account for only 10% of the recipients.

Current Sources of Federal Transit Aid. Despite enactment of the new transit block grant, the U.S. Department of Transportation currently offers six sources of transit implementing funds, and four programs supporting the urban transportation planning process. These are summarized in Table 4-13. Both the implementation and planning programs draw upon the highway trust fund as well as general appropriations. Highway programs contribute significantly to meeting transit objectives by supplying both implementation and planning funds.

The Section 3 discretionary transit grant program formerly supplied the largest part of transit assistance, but it is now becoming a supplement to the block grant and is limited to major capital projects of an unusually capital intensive nature. The interstate substitution program serves a similar purpose. Transit funding from the federal aid urban system and other highway system funds are largely in the form of special bus lanes, commuter parking at transit or ridesharing pick-up points, and other highway related transit facilities. While the urban system funds may be used for such purposes as purchasing transit equipment or rehabilitating subway systems, such projects are rarely funded from this source. On the other hand, the interstate substitution funds, though not available for very many places, frequently are used for transit construction and acquisition.

TABLE 4-12
DESIGNATED RECIPIENTS: 1983
SECTION 9 TRANSIT BLOCK GRANT
(Incomplete Listing)

Type of Recipient	Number	Percent
Regional Council	13	4.8
City or County	109 1/	40.2
State	33	12.2
Transit District	113	41.7
Freestanding MPO	3	1.1
TOTAL	271	100.0%
MPO's (all Types)	27 2/	10.0%

Source: Incomplete mailing list of Sec. 9 designated recipients supplied by UMTA, December 2, 1983.

1/ A common practice in Arizona, Colorado, North and South Dakota, New Mexico, New York, Texas, and Wisconsin.

2/ A common practice in California, Nevada, and Texas. In Texas the MPO's receiving Sec. 9 funds are those where the city is the MPO except in one case.

TABLE 4-13
CHARACTERISTICS OF PRINCIPAL FEDERAL AID PROGRAMS SUPPORTING TRANSIT

Name of Program	Type of Transit Support	Source of Funds	How Allocated	Remarks
Implementation:				
Sec. 3 Discretionary	Major capital projects only	Highway Trust Fund	Project-by-project justification approved by UMTA.	Supplements Sec. 9 formula grants. Up to 1.5 percent may be used for special facilities for the elderly and handicapped
Sec. 9 Block Grant	Capital operating, and planning	General Fund Appropriations	Complex formula allocation to urbanized areas; transfers among urbanized areas allowed under certain conditions; amount available for operating is capped; within limits, local officials decide which transit agencies will be funded and which projects or programs will be funded; matching ratios are less favorable for operating programs.	May be administered by the states (Governors) for smaller urbanized areas (under 200,000 population)
Sec. 18 Rural Public Transportation	Capital and operating	General Fund Appropriations	Allocated to and administered by the states with a population formula; transfers with urbanized areas allowed under certain conditions.	
Federal-Aid Urban System	Capital and planning assistance	Highway Trust Fund	Allocated among the states according to their urbanized area population. States allocate funds among urban areas. This is by a fair and equitable formula for urbanized areas over 200,000 population. Allocations among smaller urban areas is at state discretion. Local officials decide how to allocate between highways and transit.	
Interstate Substitution	Capital and planning assistance	General Fund Appropriations	Local officials initiate deletions of interstate highway section; Governor requests it; U.S. DOT must approve. Then an equivalent amount of federal aid becomes available for highway or transit in the same urban area. Local officials decide allocation of funds among projects.	
Other Highway Systems	Capital and planning assistance for bus and ridesharing facilities	Highway Trust Fund	State officials decide on projects. Local officials may request projects. State cannot initiate projects within MPO jurisdictions unless included in a TIP approved by an MPO.	
Planning:				
Sec. 8 Transit Technical Studies	All types of long range and short range transit planning	Highway Trust Fund (part of Sec. 3 funds)	Administrative population formula allocates about 80% of funds to MPOs. (Rest of funds go to states and others). Use of funds is locally proposed in the UPWP approved by UMTA.	
Sec. 9 Transit Block Grant	All types of long range and short range transit planning	General Fund Appropriation	These funds are part of Sec. 9 funds allocated above. Use of funds is locally proposed in the UPWP and approved by UMTA.	
PL Funds for MPOs	Comprehensive metropolitan transportation and land use planning	Highway Trust Fund	One-half percent of federal-aid highway systems funds apportioned by law to states by population; states apportion funds among MPOs by formula of their own design (considering population, status of planning, and transportation needs). Use of funds included in UPWP approved by DOT.	
HPR Funds	Highway planning and research at statewide, regional and project levels	Highway Trust Fund	States decide use of these funds in amounts up to 1.5% of highway appropriations for all federal-aid systems and bridges.	Cash funding rare now from this source, since PL funding became available, but state contributed services to MPOs (especially the smaller ones) are supported from this source.

Among the planning assistance programs, UMTA and FHWA each have a grant program earmarked specifically for MPO use, and both have a planning assistance program available to other recipients who may pass some of their funds through to the MPOs. In the case of UMTA, these indirect MPO planning funds come from the Section 9 block grants allocated primarily to transit providers. The indirect highway planning funds go first to the states. The use of these four sources of funding for urban transportation planning is coordinated through the unified planning work program. Mutual agreement on the coordinated use of these funds must be worked out through the MPO cooperative decisionmaking forum and must be approved by the U.S. Department of Transportation. The process by which the MPO endorses the TIP coordinates the use of the six sources of transit implementation funds in a similar way.

Future Adaptations of Transit Related Organizations and Planning

Like the urban transportation planning process, metropolitan institutions responsible for providing transit services also are evolving. This portion of the chapter examines the developing trends in transit related institutions and decisionmaking processes, and presents the results of ACIR's survey research and interviewing concerning these institutional issues.

Evolving Institutional Issues Surrounding Metropolitan Transit

Over the past decade, a considerable degree of rethinking has taken place regarding the metropolitan process for urban transportation decision-making. This rethinking has moved beyond the traditional concerns with establishing a hierarchy for decisionmaking within the metropolitan area toward a realization that authoritative hierarchies are very unlikely in most metropolitan areas. This realization, then, directs attention to non-hierarchical ways of bringing about areawide coordination.

The Traditional Issue of Instituting a Metropolitan Hierarchy for Decisionmaking. The last time ACIR examined the topic of metropolitan transportation, in 1974, the general concensus was that the necessary institutional, procedural, and managerial framework for success in coordinating transportation programs within metropolitan areas included an authoritative metropolitan planning organization capable of planning areawide transportation strategies consistent with comprehensive growth management policies and capable of requiring that those strategies be reflected in the annual programs of the diverse organizations funding the necessary implementation activities. Along with this regional decision-making process, the consensus was that an areawide transportation authority was needed to carry out the urban transit portions of the transportation program in accordance with the planning organization's

adopted plan and program. This transit authority, it was agreed, should have adequate revenue raising powers, and be authorized to provide transit services itself or to contract with other public bodies or private service providers to secure the levels of services specified in the regional plan and program.[1/]

While it was recognized in the ACIR report that establishing such neat intergovernmental hierarchies would not be easy in most metropolitan areas, this was the institutional goal set to be achieved through state legislation and reenforced by a supportive federal role. The overall strategy was to incorporate the obviously areawide transportation function into an areawide governance system overseen by a politically accountable areawide governing body responsible for regional growth strategies and all of the other regional policies of a functional nature necessary to address metropolitan development issues on a comprehensive basis.

Other research on institutional requirements for metropolitan transporatation at that time also supported this concept. Such thinking, of course, was consistent with the institutional themes running through the consensus-building conferences on urban transportation planning held at Sagamore (1958), Williamsburg (1965), and Mt. Pocono (1971). Moreover,

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1/ Advisory Commission on Intergovernmental Relations, Toward More Balanced Transportation: New Intergovernmental Proposals, Report A-49 (Washington, DC: U.S. Government Printing Office, 1975).

much of that same thinking, had found its way into federal legislation and regulations, and conditioned the thinking of federal legislators and administrators.

A major study of metropolitan transportation institutions, carried out in 1974 by Frank Colcord of Tufts University, examined a number of metropolitan areas in the United States, Canada, and Europe, identified the types of policies needed to balance highway and transit mobility at the metropolitan level, and evaluated four types of institutional arrangements being used to attempt to implement such policies. Colcord found that authoritative arrangements based either upon a metropolitan organization or the use of state power -- or a combination of the two in some cases -- were adequate to the task, while the more fragmented institutional relationships found in most American metropolitan areas were inadequate.[1/] Colcord's study recommended continued encouragement of "more effective metropolitan institutions and stronger, more comprehensive state agencies" as positive steps. Under this scheme, the metropolitan bodies were to encompass the whole urban region, control the transportation programming function as well as the planning process, and exercise areawide powers over broad land use planning strategies. This increased centralization of power was to be balanced with an enhanced

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1/ Frank C. Colcord, Jr., Urban Transportation Decision-Making: Summary and Conclusions (Washington, DC: U.S. Department of Transportation, Office of Transportation Economic Analysis, September 1974).

citizen participation program working through normal political processes within the newly constituted metropolitan government . The report concluded that "requiring metropolitan review and approval of plans and positive metropolitan programming of funds will go a long way to enlarging the capabilities of metropolitan institutions in these policy areas."[1/]

When Colcord returned to this topic in 1979, after observing several years of vigorous federal encouragement of a more authoritative and comprehensive role for metropolitan planning organizations, he found that the dominant effect had been to restrict the autonomy of transit institutions.[2/] The growing role of metropolitan planning organizations in the transportation planning and programming process throughout the United States, and the strengthened transit role of some states (added to their strong highway roles) had brought about a more comprehensive view, greater involvement of the elected officials of general purpose local government, and enhanced citizen participation. Colcord concluded that:

> The continuing evolution of institutions toward a dual comprehensive system -- state and metropolitan -- seems a promising direction in which to move, completely consistent with the checks-and-balances tradition in the United States, but relieved of major roadblocks to

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1/ Ibid., p. xiii.

2/ Frank C. Colcord, "Public Transit and Institutional Change," in George E. Gray and Lester A. Hoel, editors, Public Transportation: Planning, Operations, and Management (Englewood Cliffs, NJ: Prentice-Hall, Inc., 1979), p. 595.

to comprehensiveness and responsiveness which have been present in our system in the past. 1/

Reformulation of Metropolitan Institutional Issues. Since Colcord's work in the mid-seventies, most research has taken a dramatic turn toward evaluating techniques that might bring about metropolitan coordination in spite of fragmented responsibilities. This redirection can be traced to the introduction in federal regulations of the transportation system management (TSM) concept that required short-term management of a wide array of transportation activities by many different public agencies.

Evaluating this TSM requirement at the end of its first year of implementation, Jones pointed out the mismatch between the hierarchical concept of developing long range plans and transportation management strategies at the areawide level for orchestrating activities of numerous implementors from above, and the reality that very little authority for such orchestration had been established at the metropolitan level. What Jones observed happening in 1976 was a TSM process in which most projects were initiated by local governments or by transit agencies that submitted lists of proposed projects to the metropolitan planning organization for relatively perfunctory review and approval within the limits of available federal funding. Those projects for which funds were unavailable in the

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1/ Ibid., pp. 595-596.

coming year usually were put on a list for future funding. Very little overall strategy was involved.[1/]

Jones concluded that "most MPOs will not offer a sufficiently robust political setting to accomplish the coordination and orchestration objectives postulated in the TIP and TSM regulations . . . and that State and city officials should be engaged in the process more actively."[2/] Under existing conditions of piecemeal negotiation of TSM projects, Jones suggested that successful implementation would be enhanced by redeploying planning manpower from the MPOs to the operating agencies and giving those agencies financial incentives to pursue low-capital and operational improvements in their own transportation systems.[3/] Jones' prescription included the creation of a more orderly hierarchy engaging state and local policymakers more actively in an urban transportation program management partnership at the county or metropolitan level.[4/] While this partnership would diminish the partner's individual autonomy, it would be designed to facili-

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1/ David W. Jones, Jr., The Politics of Metropolitan Transportation Planning and Programming: Implications for Transportation System Management (Berkeley, CA: University of California at Berkeley, Institute of Transportation Studies, November 1976), pp. 135-145.

2/ Ibid., p. 135.

3/ Ibid., pp. 138-140.

4/ Ibid., pp. 146-147.

tate (a) purchasing transit and paratransit services from private suppliers, (b) using incentives for employers to stagger work hours and promote ride-sharing, (c) allocating project funding in accordance with operating efficiency criteria, (d) sizing and staging transit and highway investments on the basis of systems planning, and (e) funding ameliorative activities to offset adverse impacts or costs of projects that otherwise would alienate key constituencies.

A 1977 study of ways to coordinate urban transportation found that fragmentation of responsibilities was the general case, 1/ and was unlikely to change greatly in the foreseeable future. Eight different models of institutional arrangements for coordinating urban transportation systems were examined, but none was found universally applicable. Each model sought to concentrate greater authority for the coordination task in one or more key actors like the state, a city or county, a metropolitan government, a regional funding or operating agency, or a balanced metropolitan/state power structure. In general, cities were found to have been the most effective coordinators, while county government and a few regional transportation agencies were found to be effective in a few places. Regional associations of governments were found to have opportunities for effective coordination where they adopted

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1/ Michael Petersilia and Arlee Reno, Operating Multi-Modal Urban Transportation Systems, prepared by System Design Concepts, Inc. (Washington, DC: U.S. Department of Transportation, December 1977).

a role as forums for joint decisionmaking by independent state and local actors -- rather than as independent decisionmakers in their own right.

Although this 1977 study spoke of the positive contribution that greater concentration of authority could provide, it laid its primary stress upon other factors influencing successful coordination. These included (a) financial and other incentives encouraging both public agencies and individuals to embrace more cost-effective transportation improvements, (b) the development of a more closely knit web of relationships and trust among key actors in the transportation community, (c) the use of specific coordination mechanisms to strengthen relationships among individuals and agencies, and (d) greater involvement of interest groups and the public during the project development process to strengthen non-governmental support. In the final analysis, the report stressed that successful coordination depended upon an individual coordinator committed to the task and operating in a public policy environment conducive to coordination by one means or another. Informal coordinating mechanisms were seen as being every bit as influential as the more formal institutional structures and coordinating assignments provided by law. The specific coordinating mechanisms identified included committees, professional societies, social/professional functions, permanent shared office locations, temporary project offices, training seminars, and the temporary assignment of staff from one agency to another.

A 1981 study elaborated upon this philosophy, emphasizing that there was no single structural approach that could suit all metropolitan areas best, but that there were a number of techniques for coordination that could enhance the integration of transportation programs into a unified system regardless of the particular structure developed historically in a given area.[1/] In all of the metropolitan areas examined, the designated metropolitan planning organization (MPO), state governments, city and county governments, one or more public transit authorities, and private operators were involved in the urban transportation process. Some of the areas also had a regional transportation funding agency.

The five structural models found to fit these existing situations were described in terms of the degree of dominance achieved by either the state, a city or county government, the regional transportation funding agency, or a balanced power structure involving the state and a metropolitan government. Areas lacking such dominance came under the heading of the fifth model in which a regional association of governments relied principally upon negotiating coordination agreements acceptable to all parties. Under any of the five models, involvement of all the

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1/ Jon E. Burkhardt, Mark J. Ramsdell, Arlee T. Reno, Joseph R. Stowers, Kathleen Kelly, and Debbie Fisher, Current Institutional Arrangements for Urban Transportation Decisions -- and Potential Changes, prepared by Ecosometrics, Inc., and System Design Concepts, Inc., for the Office of The Secretary, U.S, Department of Transportation (Washington, DC: National Technical Information Service, October 1981).

parties was found to be important and able to be enhanced by a number of techniques. To the extent that formal decisionmaking structures were with centralized decisionmaking powers were not established by state law, these coordination techniques were found to be all the more important.

The coordination techniques identified in this 1981 study fell into three categories: formal, informal, and personal. The formal techniques included interagency agreements or memorandums of understanding establishing procedures for (a) allocating funds among transit operators, (b) developing unified grant applications for federal funding, (c) sharing responsibilities for planning tasks, (d) interconnecting separate transportation systems at convenient transfer points and coordinating transit fares, and (e) providing mutual assistance among transportation providers during emergencies. Other formal techniques included committees to permanently oversee ongoing operations like those listed above, interlocal contracting for transportation services, and contracting-out the specific tasks to be performed by cooperating agencies (like planning, engineering, or management analyses). These formal arrangements were found to require political action within the metropolitan area, to be costly or time consuming to establish, and to be difficult to change once established.

The informal techniques of coordination included voluntary committees and task forces established for specific purposes (often on a temporary basis), regular meetings of the area's general managers of the various transit agencies or other key transportation officials (including meetings among the directors of adjacent MPOs), and designated liaison staffs within major agencies specifically charged with developing stronger communications channels among cooperating agencies. Usually, informal techniques such as these were found to be established administratively and yielded no formal minutes or decisions. Yet, they did establish a framework within which consensus was developed and personal relationships among transportation officials were melded into a "web of trust."[1/]

These close personal relationships often led to staff sharing and staff collaboration among transportation agencies that substantially smoothed the operation of both formal and informal coordination arrangements. The report stressed the importance of these techniques, concluding that "Integration of decision-making can occur successfully within any [institutional structure], if the mechanisms used for coordination are effective and the personal relationships among the key decisionmakers at different agencies are highly positive."[2/] All the areas studied were using some such techniques.

1/ Ibid., p. 39.

2/ Ibid., p. 34.

Finally, this 1981 study recommended the reduction of federal program requirements that served as barriers to effective coordination within metropolitan areas. Specifically, multi-modal transportation block grants and greater flexibility in planning requirements were recommended as means of allowing major transporation actors in metropolitan areas to focus their activities upon (a) implementation oriented strategies, (b) early involvement of all implementation agencies, (c) effective and timely involvement of the general public and special interest groups, and (d) incentives for the various implementation agencies to improve their services and to coordinate their actions.

Three recent reports prepared for the Transportation Research Board concerning the use of transportation system management (TSM) techniques and the preparation of federally required analyses of alternatives for major urban transit investments (UMTA's alternatives analysis requirement)[1/] have urged that each government or transportation agency with an ultimate implementation responsibility should be directly involved

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1/ John J. Roark, Experiences in Transportation System Management, NCHRP Synthesis 1981 (Washington, DC: Transportation Research Board, November 1981); J. H. Batchelder, M. Golenberg, J. A. Howard, and H. S. Levinson, Low-Cost TSM Projects: Simplified Procedures for Evaluation and Setting Priorities, Final Report and Users Manual (Washington, DC: Transportation Research Board, forthcoming); and System Design Concepts, Inc., Improving Decision-Making for Major Urban Transit Investments, NCTRP Synthesis (Washington, DC: Transportation Research Board, forthcoming).

in the planning process for the purpose of harnessing its governmental authority, political legitimacy, and staff capabilities to a cooperative effort aimed at implementing a consistent set of areawide objectives. The two TSM reports in this group emphasized the detailed nature of this operational type of planning, the limited geographic consequences of such projects, and the need to involve transportation agencies having the ability to prepare detailed project designs capable of implementation and to relate directly to the identifiable constituencies in the area who must be satisfied before project implementation will be allowed to move ahead. Among the factors leading to TSM successes were (1) coordinated team work among transportation organizations and (2) a creative person keenly interested in improving urban transportation and willing to take a strong leadership role in the project.[1/]

The forthcoming TRB report on TSM projects by Batchelder and others includes the results of a survey of state, regional, and local transportation agencies in 20 states. This survey probed these agencies' involvement in TSM planning. Respondents included 18 MPOs, nine transit agencies, 17 city or county transportation or traffic departments, and 38 state DOTs. The survey found that all had been involved in at least some form of TSM planning and that projects proposed by transit agencies, cities and counties, and state DOTs usually were implemented. On the other hand, many projects proposed by MPOs were not implemented. MPO

1/ Roark, p. 1.

involvement, however, often was quite wide ranging and usually limited to planning, whereas involvement by the other types of respondents was much more narrowly focused on particular types of projects and included implementation activities. The MPOs had the largest staffs available for TSM work, while the transit agencies had the smallest. The MPOs also had the greatest range of data available for TSM analysis and the greatest computational resources. The transit agencies had access to the fewest types of data, the most limited computational capacity, and the most meager policy staff resources. State DOT involvement varied greatly from state to state.[1/]

The alternatives analysis process for evaluating major transit investments, evaluated in the third TRB report, has a readily identifiable and limited geographic scope, like most TSM projects, and it requires relatively detailed benefit cost analyses (including environmental protection factors) before well informed choices can be made among alternative projects. This process usually was found to involve many different organizations, with significant variation in organizational arrangements from place to place. Based upon 16 case studies, this TRB report found that MPOs, transit agencies, and others partcipating in the analysis tended to bring different strengths to the analysis so that more than one agency (and sometimes consultants as well) needed

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1/ Batchelder, et al., Appendix A.

to be involved in the cooperative work program. Such multi-agency analyses were found to be most successful when one of the involved agencies had an authoritative lead role under a clear interagency agreement. Transit operating agencies and MPOs most often assumed this role, but the other types of participants also took the lead in some cases.

The alternatives analysis study also found that the responsible agencies have developed substantial experience with this type of activity in recent years and the quality of their studies has increased significantly. On the other hand, UMTA requirements were found to be so rigid that the resulting studies often had to include a broader range of alternatives and greater detail of analysis than were needed in particular circumstances. The study raised a number of additional issues concerning:

- the maintenance of a better balance between long range transit system planning and incremental corridor planning through the alternatives analysis process;
- avoiding major distortions in the planning and decisionmaking process resulting from the categorical structure of federal urban transportation grant programs and from the bias toward highway projects resulting from much more exacting requirements for alternatives analysis for major transit investments; and
- means of converting the chosen alternative into funding agreements as soon as possible after the choice so that political commitments can be made before the momentum for doing so dissipates.

Besides these specific studies of particular urban transportation planning techniques, more general evaluations of MPOs have been

performed by independent evaluators during the 1982-1983 period — one by the General Accounting Office,[1/] one by a team of researchers from the University of Wisconsin -- Milwaukee,[2/] and one by a University of Pennsylvania team.[3/]

The GAO study was based on visits to 12 metropolitan areas and interviews with federal, state, and local officials and MPO staffs involved in transportation planning for those areas. It concluded that there was general satisfaction with the long range planning adequacy of the MPOs, but there was a need to simplify the federal requirements for unified planning work programs and transportation improvement programs. The study also found some difficulties stemming from the different ways in which UMTA and FHWA interact with the MPOs, and the unwillingness of some state DOTs to abide by the results of the MPO planning process and the locally endorsed TIP.

1/ Letter report dated March 10, 1982 to Congressman John L. Burton and Ted Weiss from Henry Eschwege, Director, Community and Economic Development Division, U.S. General Accounting Office, Washington, DC.

2/ Robert Schmitt, Julie Weitman, and Edward Beimborn, An Examination of Methods for Coordination of Transportation Planning Activities (Milwaukee, WI: Center for Urban Transportation Studies, University of Wisconsin — Milwaukee, April 1982).

3/ Anthony R. Tomazinis, et al., A Study on the Role, Functions, and Effectiveness of Metropolitan Planning Organizations (Philadelphia, PA: Department of City and Regional Planning, University of Pennsylvania, January 1983).

The University of Pennsylvania study scanned the operations of 16 MPOs through an analysis of their documents by telephone follow-ups, and examined two through in-depth interviewing. While it found that almost all of the MPOs were successful in meeting federal urban transportation planning requirements, it also found that they varied considerably in their ability to satisfy the broader planning needs of their metropolitan areas. Those MPOs that concentrated most directly upon meeting the federal planning requirements and/or the needs of state DOTs were least successful in responding to locally felt needs and building independent local constituencies willing to supply financial support beyond that required to simply meet the federal matching requirements. For those MPOs without independent sources of local funding, the programatic boundaries and regulations of federal aid programs proved quite restrictive. This study concluded that, to be most effective, MPOs need (1) a significant amount of local funding over and above that required to match federal aid and (2) an independently guided strategic planning process capable of responding to locally generated issues, investment options, and demands for technical services. Only with such resources could they be of real service to participating governments.

This shift in roles was seen by the Pennsylvania study as the best way to develop closer relationships with local political and civic leadership and to increase the importance of the MPO sufficiently to induce the

local support necessary to guard aganist over-dependence upon federal aid or submission to state dominance. Moving away from federal and state dependence, according to the Pennsylvania study, requires the MPO to market its activities to the local governments and to increase their understanding of and appreciation for the contributions of regional planning to solving local problems.

The University of Wisconsin study surveyed the 100 largest MPOs, obtained usable profiles on 87, and investigated seven in greater depth through site visits. It found wide differences among these MPOs in their structure and operating styles, but concluded that most were effective.

The typical MPO was found to have broader planning functions than just transportation, but to consider itself primarily an advisory agency. While half were purely advisory, another 34% had some limited implementation powers and 15% had a fairly strong mixture of implementation and advisory powers. Only one MPO (a city government) viewed itself primarily as an implementation agency.

Over 90% of the MPOs had the lead role in long range planning, as well as in TSM and TIP planning, while two-thirds had the lead role in the federal aid review and comment process under OMB Circular A-95. About half also had the lead role for short range transit planning and ridesharing activities. Overall, about half of the MPOs handled the full range of planning responsibilities themselves while the other half shared work program responsibilities with other agencies and consultants.

MPO staff size and budgets varied closely with the size of the regional population. Half the funds supplied to MPOs were used directly by them, while the other half was shared with other transportation agencies in the region.

The study identified four basic types of MPOs: those exercising strong leadership over the whole process, those coordinating shared responsibilities among the various transportation agencies, those that allowed unclear relationships to develop in the region (especially with respect to the preparation of short range plans), and those that were out of touch with their region and were having their roles openly contested. Most, however, fell in the first two categories and were performing effectively.

Those MPOs that were performing most effectively had influential elected officials on their governing boards, were oriented toward serving the needs of constituent local governments and transportation agencies, delineated clear responsibilities for the various planning tasks in the work program, made appropriate use of the unique expertise in the various transportation agencies, and used interagency committees wisely for the development of action agendas and for the frequent exchange of information and policy views. Those MPOs that were having difficulty often suffered from political discord and had a tendency to view themselves as independent regional decisionmakers rather than as providers of information, policy

analysis services, and a forum for joint decisionmaking by others. MPOs in this situation also frequently experienced overlapping responsibilities with others, turf battles and conflicts that effectively neutralized their roles as conflict resolution forums, slow turnover among members of their governing boards (resulting from too many long term appointees rather than shorter term elected officials in their membership), and resistance to changing roles. Friction among local and state agencies also was likely to play a debilitating role in such MPOs.

MPO relationships with transit operators and local governments generally were found to be quite good, but relationships with state DOTs varied a great deal depending upon the state's approach. Some states took an aggressive approach but respected local autonomy, while others sought to tell locals what to do. Some of the nonaggressive states provided assistance when requested, but others were unable to shift from their highway orientation and were much less helpful with urban transportation problems involving transit.

The University of Wisconsin study concluded by stressing that MPO effectiveness is not related to organizational structure nearly so much as to the MPO's own philosophy. MPOs that view themselves as working for local governments, according to this report, were highly successful in maintaining good relationships with constituent local units of government

and transit agencies and in combatting fears that they represented a new layer of super government. This report also observed that:

> The changing emphasis in transportation to short-range planning and local decision making creates an increased need for MPOs to adopt a service-oriented philosophy. In such a situation the MPO can serve as a valuable source of technical expertise and data that assists local decision making. 1/

The power of objective fact finding and diplomacy in allowing non-authoritative metropolitan planning organizations to work toward conflict resolution and consensus on major regional planning issues is illustrated by a recent study of four major planning projects in the San Jose area. 2/ One of these projects concerned transit and highway options for linking San Jose with San Francisco while, at the same time, seeking to (1) relieve traffic congestion in the Silicon Valley corridor, (2) improve mobility for those with little or no access to automobiles, and (3) create a better balance between the locations of homes and jobs. By identifying and exhibiting the positions of all the major interest groups concerning these issues -- and the corresponding transportation and land use options for the future -- through some 200 meetings held before any plan was drafted, the Association of Bay Area Governments and the Metropolitan Transportation Commission were able to bring almost all of the major parties to agreement. This effort was guided

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1/ Schmitt, et al., p. 88.

2/ Donald N. Rothblatt, Planning the Metropolis: The Multiple Advocacy Approach (New York, NY: Praeger, 1982).

by a joint committee composed of local elected officials who represented the area affected as well as the two regionwide organizations.

The other three cases reported in the San Jose area also tended to confirm the benefits of (1) thoroughly involving all the interest groups from the beginning of the planning process, (2) providing staff to help articulate and respond to these groups' points of view, and (3) involving the political leaders ultimately responsible for implementing agreed upon policies. This technique, dubbed "the multiple advocacy approach," was found to help increase the satisfaction of diverse individuals and institutions and help resolve metropolitanwide conflicts despite the fragmented political structure in the area.

This long series of studies dealing with the new institutional issues surrounding metropolitan transit ends with several reports recommending strategic planning. This concept builds upon techniques of corporate planning in the private sector that recently have begun to be transferred into the public sector.

"Strategic planning differs from other planning activities in that it adopts a far broader perspective of the role of an agency."[1/] It does

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1/ Michael D. Meyer, "Strategic Planning in Response to Environmental Change," Transportation Quarterly, Vol. 37, No. 2 (West Port, CT: Eno Foundation for Transportation, Inc., April 1983), p. 297.

this by incorporating an assessment of external conditions into the agency's own planning effort and by examining the organization's own ability to respond to changes or to implement new programs better suited to changing conditions.

Both the Airlie House and Woods Hole conferences, described earlier, recommended strategic planning techniques as part of the urban transportation planning process. These two conferences identified at least four major outside forces needing creative responses by the urban transportation planning process over and beyond those supplied by traditional planning for new physical facilities:

1. Economic and fiscal forces calling for revised tax structures, fares, and other financial measures;

2. The pent up demand created by deferred maintenance in recent years on much of the public physical infrastructure in urban areas, calling for renewed commitments to maintenance and reconditioning of urban transit systems (as part of the nationwide infrastructure problem);

3. The revenue-cost squeeze calling for productivity improvements in transit through such options as innovative services, diversification of service delivery organizations, improved labor productivity, and better use of regulatory policies affecting traffic, parking, land use, and private transportation services; and

4. Federal devolution of transportation responsibilities spurring related adjustments in metropolitan institutions and processes.

Summation of the Current Institutional Issues. In a wide-ranging article published in 1980, Kenneth Orski summed-up many of the recent

trends affecting urban transportation today.[1/] He traced the rapid rise of highly segmented special interest groups, the diffusion of decisionmaking powers, and the waning public confidence in governmental institutions leading to much greater reliance upon the courts and a growing inability of metropolitan areas to achieve concensus on areawide transportation strategies. In his view, these developments have pushed the states and counties into more prominent roles in urban transportation while holding back the development of more effective roles for metropolitan planning organizations. The "rising tide of sentiment for more grassroots initiative and local control over planning and service delivery", he felt, was not necessarily incompatible with effective regional institutions that limit themselves to areawide issues, serve as a forum for conflict resolution among general purpose governments, and allow decentralized service delivery of public transportation services except where strong benefits from economies of scale might dictate otherwise.

In Orski's view, local community-based transportation systems often may be more efficient than regionwide ones, and portions of them may be

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1/ C. Kenneth Orski, "Urban Transportation: The Role of Major Actors," Traffic Quarterly, Vol. 34, No. 1 (West Port, CT: Eno Foundation for Transportation, Inc., January 1980), pp. 33-44.

contracted out to private service providers to good advantage. He cited examples of several areawide transit districts that had separated the overall management of the urban transportation system from system operations as a means of facilitating the diversification of service delivery mechanisms. Frequently known as the brokerage concept, this approach allows the areawide transit agency itself to provide unified marketing, fare setting, capital investing, and service coordination, while using service contracts to obtain the most effective and efficient types of transit services in different portions of the region from the most appropriate transit operators. This allows both public and private service organizations to participate in service delivery without fragmenting the system. Orski sees community based organizations, employers, and social service agencies all playing roles to best advantage under the brokerage concept. Transportation professionals in this setting, according to Orski, would satisfy several of communities of interest rather than some mythical single "public interest" that no longer seems to exist. In this role, the profession would facilitate debate, mediate, and help to resolve disputes through negotiation and bargaining. This, then, is the direction in which metropolitan transportation institutions seem to be headed.

A Framework for Evaluating Institutional Issues in Transit

The four major institutional issues raised by these previous studies are:

1. Organizing to increase transit productivity -- in light of the present revenue/cost squeeze in the transit industry;

2. Improving transit planning and coordination processes -- in light of the fragmented, complex, often frustratingly time consuming intergovernmental environment in which transit decisions must be made;

3. Negotiating stable transit funding in the intergovernmental context -- in light of tight budgets at all levels of government; and

4. Reallocating governmental responsibilities for transit -- in light of a number of recent federal actions to devolve responsibility to the state and local levels.

To help evaluate these issues, the Commission developed a questionnaire with a wide range of questions on all four issues, and administered it in 56 metropolitan areas. These areas included the 26 largest metropolitan areas and at least one metropolitan area in each state (except for Vermont and Wyoming where federal aid for urban transit, and the associated reporting of transit data have not been available until very recently). The questionnaire was sent to 302 officials of the MPOs, transit authorities, transit unions, cities, and counties in these 56 areas. Of those, 235 questionnaires were returned for an overall response rate of 78%.[1/] Many of the questions probed these four issues

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1/ See Appendix C for a fuller analysis of response rates.

to identify current approaches as well as future needs and anticipated difficulties in achieving transit goals. A copy of the questionnaire is reproduced in Appendix A.

Several transit service questions were asked to establish the setting for analyzing the institutional issues. These questions measured perceptions of needs for improved transit services as well as improved productivity and the difficulties that might be encountered in moving toward those goals. Additional questions probed:

- needs for and difficulties in adapting MPO structures and roles to meet future transit needs;
- needs for and difficulties in adapting metropolitan transit organizations;
- needs for additional planning and coordination techniques and the difficulties being experienced or anticipated among agencies with transit responsibilities and related policies;
- receptivity to the strategic planning and shorter-range TSM type planning;
- uses of informal coordination techniques;
- maximum utilization of local planning capabilities;
- potential effects of federal aid cutoffs;

- the means of increasing transit revenues locally;
- means of sharing transit subsidy responsibilities among local governments;
- difficulties arising from federal requirements in the transit field; and
- means of adapting state roles to meet metropolitan transit needs.

The results of the survey on these service needs and institutional issues are presented next.

Metropolitan Views on Organizational and Planning Adaptations for Transit

The Transit Service Setting for Institutional Adaptations. The transit industry in the United States does not view itself as a dying industry. Eighty-four percent of 224 respondents indicated a need for expanding regularly scheduled transit services (see Appendix B, Table B-1). Only 1% saw such increases as counterproductive. Expansions were deemed most needed in metropolitan areas under 200,000 population and in metropolitan areas in the South (Appendix Table B-2). Respondents from MPOs were least inclined in this direction, but still gave it a 77% endorsement.

Sixty-one percent of all respondents felt that it would be disadvantageous to cut transit services even if state and federal aid dropped off (Appendix Table B-1). However, 26% felt that such service cuts probably would have to be made. Respondents from small metropolitan areas (under 200,000 population) and the South were somewhat more

reluctant to cut services than most others, and almost all labor leaders opposed such cuts (Appendix Table B-2).

Strong endorsement was given to improving the quality and marketing of present transit services (Appendix Table B-1). Respondents from the MPOs felt most strongly about the need for these twin improvements, while respondents from the small metropolitan areas and the South emphasized improved marketing over service quality. Western respondents thought that service quality improvements were more necessary than additional marketing efforts (Appendix Table B-2). Nevertheless, all respondents were positive on both points, indicating that the transit industry is consumer conscious.

The transit industry also recognizes a need to change its service patterns with shifts in development. As shown in Appendix Table B-1, 60% of all respondents saw a need to orient transit services more toward the suburbs. Respondents from small metropolitan areas, the South, and the Great Lakes/ Plains region favored this reorientation most, while the transit agencies' support was weakest (47% in favor with 17% seeing such a move as disadvantageous). Responses on this issue were not significantly affected by rates of metropolitan population growth or decline, but were most likely to occur in metropolitan areas that favored local options for determining the levels of service individually for each city and county (Appendix Tables B-3A and B-3B).

These needs, then, for expanding and improving transit services

despite the revenue/cost squeeze in the industry, emphasize the need for productivity improvements. Such improvements, in fact, were supported by 87% of all respondents (Appendix Table B-4). Respondents from small metropolitan areas, local governments, and MPOs gave even stronger endorsements (over 90% in each case), while union respondents were significantly less unanimous (66%) as shown in Appendix Table B-5.

Specific productivity improvements that received 60% or greater endorsement included ridesharing, high occupancy vehicle (HOV) facilities and regulations, labor contracts tied to productivity, and route-by-route accounting for measuring the economic efficiency of services (Appendix Table B-4). As might be expected, labor respondents gave very little support to the ridesharing and labor contract proposals (Appendix Table B-5). Labor respondents also were less enthusiastic than other respondents about the route-by-route accounting mechanism. Their support focused on the use of HOV techniques to a much greater extent than any other group of respondents. At the same time, ridesharing drew its greatest support from small metropolitan areas, MPOs, and local governments. By geographic region, the Northeast saw less application of ridesharing while the West and Great Lakes/Plains saw greater potential. Although the South was about in the middle on ridesharing, it was very positive on the use of HOV facilities (which serve ridesharing). HOV was also very popular in the West and among the

larger metropolitan areas. The route-by-route accounting technique drew its greatest support from small metropolitan areas, MPO respondents, and the West.

The other economic efficiency proposal advanced in the questionnaire involved subsidizing only those transit patrons who were needy, essentially the voucher concept. This proposal drew a very mixed response from most types of respondents (Appendix Table B-5). The unions were the only group to register more support (44%) than opposition (34%) to the idea. Opinion was almost equally divided in the West (41% to 43%), but negative on balance among all other respondent groups. Overall only about 35% of respondents favored vouchers, while 43% opposed (Appendix Table B-4).

Respondents were asked about two types of difficulties they might encounter in trying to improve transit productivity: (1) the need to meet too many concurrent social goals rather than being free to concentrate on economic efficiency, and (2) the lack of information about alternative practices in the transit industry that might be used to improve productivity. The difficulty of concurrently achieving various social goals was seen as a serious impediment to improved productivity by 42% of all respondents, while the lack of information about alternative practices was called serious or intractable by only 24% (Appendix Table B-6).

As might be expected since these concurrent social goals are established by the federal government, there was little difference in how they were seen according to size of metropolitan area or region of the nation. However, the transit agencies as a group were much more concerned (54%) with the tension between social and economic goals than were the local governments and transit union respondents (33% and 32% respectively) as shown in Appendix Table B-7.

The lack of information about innovative methods was seen as a serious difficulty more often by union officials (38%) and respondents from the Great Lakes/Plains region (33%) than by others. Those seeing the least problem on this score were the transit agencies (17%) and respondents from small metropolitan areas under 200,000 population (15%).

The greatest hurdles in making productivity and service improvements were low density development patterns and high labor costs. Respondents complained of these factors in 59% and 58% of the cases respectively (Appendix Table B-6). The degree of concern with the population density problem was fairly consistent among types of respondents, with the exception that local governments were significantly more concerned (67%) while union officials and respondents from the Northeast were less concerned (46% and 35% respectively) as shown in Appendix Table B-7. High labor costs also were seen as a problem fairly consistently by most groups, the exceptions being a heightened

awareness of this problem in the Northeast (68%), less concern in the small metropolitan areas (40%), and the expected lack of much concern among union officials (16%).

The public physical infrastructure problem did not generate as much response in this survey as might have been expected from recent national publicity. Only 31% of all respondents saw the run-down condition of transit equipment and facilities as a major obstacle, and only 36% saw inadequate streets and highways as a critical obstacle to transit service (Appendix Table B-6). The most complaints about transit equipment and facilities were registered by the unions (42%) and respondents from the Northeast (40%), while the least came from the small metropolitan areas (5%) as shown in Appendix Table B-7. The greatest concern about inadequate streets and highways was in the West (41%), while transit agencies and small metropolitan areas were least bothered (24% and 15% respectively).

The last two transit service and productivity difficulties investigated in the survey also received serious or intractable ratings from only a minority of respondents. Low incentives for transit agency productivity improvements were viewed as major problems by only 35% of all respondents, while excessive regulation of private service providers registered 24% (Appendix Table B-6). The greatest anxiety about lagging incentives for transit agencies was expressed by respondents from the West (43%), from the MPOs (42%), and from the unions (40%) as shown in Appendix Table B-7. The least was registered by the transit agencies

(25%), the South (24%), and the small metropolitan areas (15%). Concern about excessive regulation of private providers was fairly consistent among the surveyed groups, except that more union respondents were bothered by this problem than others (42%) while fewer respondents from transit agencies and small metropolitan areas expressed serious concern (12% and 5% respectively).

Thus, the survey shows a strong commitment to increasing transit services, substantial resistance to cutting such services even if state and federal aid is reduced, strong support for seeking productivity improvements in a number of ways other than the use of voucher systems (which received rather lukewarm support at best), and a recognition of some serious obstacles to pursuing these goals. This, then, is the setting in which adaptations of MPOs and transit organizations, transit planning and coordination processes, new transit funding arrangements, and the allocation of responsibilities among the levels of government need to be considered.

Organizing to Increase Transit Productivity. The issue of adapting transit related organizations to meet current needs most effectively obviously must address the structure and roles of both the metropolitan planning organizations (MPOs) and the metropolitan transit organizations. ACIR's questionnaire included options for adapting both types of organizations, asking respondents to rate such options from "definitely needed"

to "definitely disadvantageous." The questionnaire also raised some possible difficulties that might be confronted in changing organizational structures and roles, asking respondents to rate these difficulties on a scale ranging from "intractable" to "not a significant problem."

With respect to the MPO structures and roles the two difficulties and three options for adaptation were:

- The MPO interferes excessively in transit matters.
- The MPO is ineffective.
- The scope of the MPO's urban transportation plan should be expanded to encompass such elements as pricing, taxing, parking, deregulation of service providers, or public/private partnership strategies.
- Representation on the MPO should be increased to give additional interests (like labor or private sector transportation service providers) greater influence on and understanding of major public policy issues.
- The MPO should be given greater authority to allocate public resources among transit service providers.

The difficulties with existing MPOs were not seen as serious or intractable by large proportions of respondents, although they were not unknown. About 14% of all respondents felt that the MPO in their area did interfere with transit decisions excessively (Appendix Table B-10). This feeling was most pronounced in the Northeastern part of the nation and among transit officials (31% and 32% respectively). None of the small metropolitan or MPO respondents, however, found such a problem, and local governments rarely saw this as a problem (7.5%), as shown in Appendix Table B-11. Among regions of the nation, the South generated

the fewest complaints on this score (10%). Complaints about ineffective MPOs came most frequently from transit unions (44%) and least frequently from small metropolitan areas and, not unexpectedly, from the MPOs themselves (10% and 6% respectively).

Options for modifying the structures and roles of MPOs received mixed reactions. About 53% of all respondents agreed that the scope of MPO planning should be expanded to meet some of the current financial, regulatory, and public/private partnership issues now becoming increasingly prominent, but 22% felt that such a move would be counterproductive (Appendix Table B-8). Expanding respresentation on the MPOs to give a voice to more of the parties directly affected by such an expanded scope of activity was favored by 37% but opposed by 27%. Giving greater authority to the MPOs was opposed by more respondents (34%) than by those approving of the idea (25%).

Expanding the scope of MPO planning clearly was the adaptation attracting the most positive interest. Seventy-five percent of the MPO respondents favored this move and support also was fairly solid among local governments and transit unions (Appendix Table B-9). Transit agencies, however, exhibited more opposition than support for this idea. Expansion was considerably more acceptable in the small metropolitan areas than in the large ones, and in the South. In geographic terms, support was somewhat less in the Northeast and Great Lakes/Plains region than in the South and West.

The desire to expand the scope of MPO planning was greatest in those areas where the MPO currently is state staffed (71%) or under the wing of a city or county government (67%), as compared with areas in which the MPO was a general purpose regional council (59%) or a free standing entity (42%) as shown in Appendix Table B-12. Expanding the scope of MPO planning also more frequently received support in those areas facing such challenges as having to increase ridesharing activities, to reflect costs and market values of services more fully in transit fares, to encourage greater private sector participation in financing transit, to use special benefit districts that capture revenues for transit, to deal with limits on local taxes or local debt, or to market transit services more effectively (see Appendix Tables B-13 through B-18 and B-55). These all are activities that would be included in the expanded scope of planning.

Expanding representation on the MPO to include labor union and private sector interests was supported by 90% of the labor union respondents but by only 20% to 30% of respondents from the local governments, MPOs, and transit unions. The idea was more popular in the small metropolitan areas than in large ones and in the South rather than in other regions of the nation (Appendix Table B-9). The stronger the MPO's role in its region (as rated by two other surveys not part of this study), the more likely respondents were to support an expansion in its respresentational structure (Appendix Table B-19). This expansion also was more likely to

be sought in areas supporting increased ridesharing, labor contracts tied to productivity, increased private sector participation in financing transit, and in those areas that perceived less support for transit among private employers (see Appendix Tables B-20 through B-23).

Giving greater authority to MPOs received a majority of support only among MPOs, union officials, and Southern respondents (Appendix Table B-9). A majority of respondents from metropolitan areas having between 100 and 149 local governments in the area also responded favorably (56%) as shown in Appendix Table B-24. Among the various types of MPOs, only those under the wing of a city or county government received majority support for greater authority (57%) as shown in Appendix Table B-25. Where respondents judged that their MPO was ineffective to a serious degree, they supported greater authority for it (72%) as shown in Appendix Table B-26. Respondents also supported greater authority, however, where they judged excessive MPO interference to be a major problem (77%) as shown in Appendix Table B-27. Thus, overall the survey seems to indicate that most MPOs have about the right amount of authority, but that there are some situations in which greater authority would be supported.

The present organization of transit provider organizations is not a major problem in the view of most respondents. Although about one-third of all respondents saw the fragmentation of responsibilities for transit as being excessive, only 20% thought that the ineffectiveness of the

transit authority was a major problem, and only 17% saw rivalries among transportation providers as a basic hindrance (Appendix Table B-30). These views did not vary greatly among the different types of respondents, although excessive fragmentation of responsibilities was more troublesome to transit unions (48%) and to respondents in the Northeast (37%), and less bothersome in the small metropolitan areas (25%) as shown in Appendix Table B-31. Ineffectiveness of transit authorities was judged a problem most often by the transit unions (48%) and by respondents in the Great Lakes/Plains region, but hardly at all in small metropolitan areas (5%) and, as might be expected, among transit agency respondents (7%). At the same time, respondents who judged their areas to have excessive fragmentation of transit responsibilities, excessive rivalries among transit providers, or inadequete coordination among agencies with transit responsibilities more often reported ineffective transit authorities (Appendix Tables B-56 through B-58). Complaints about rivalries among transit providers fell in the 10%-30% range for all types of respondents and regions of the nation.

The survey sought responses to five proposals for strengthening metropolitan transit organizations, including: consolidating existing organizations, separating the policymaking functions from the service provider organizations so that the latter could concentrate upon improving services, transferring the transit function to county or state government, and allowing individual local governments the option to set the level of transit

services (and consequent levels of subsidy) within their own jurisdictions. Among these options, the only one with a majority favorable response was the proposal to separate the policy function from operations. Of all respondents, 52% approved of this option, although 15% thought that it would be disadvantageous (Appendix Table B-28). A little better than one-third of all respondents favored the consolidation and local option proposals, though there also was substantial opposition in both cases. Hardly any support was registered for transferring the function to either a county or the state, while very substantial opposition was registered.

Sentiment for separating policy from operations was strongest in the Northeast and among transit unions, and weakest among respondents from the MPOs, the West, and the small metropolitan areas (Appendix Table B-29). Consolidation of transit providers was most strongly supported in the Great Lakes/Plains region, and least in the small metropolitan areas. Local options for setting the level of services were most strongly backed by MPO respondents and least strongly by transit unions. No strong support developed among any group for transferring transit responsibilities to either the county or the state.

Since changing the organizational structure or roles of MPOs and transit agencies depends upon the receptivity of the political environment in the metropolitan area and at the state level, ACIR's questionnaire asked respondents to indicate where the political trouble spots might

crop up. A majority of all respondents saw serious problems in gaining the necessary support in the state legislature (65%), among the general public (52%), and among private employers (52%) as shown in Appendix Table B-32. There was relatively little difference of opinion among the various types of respondents and regions of the country on these three questions, except that the small metropolitan areas and the South sense much less support in the state legislatures (75% and 80% respectively), and inadequate support by private employers is less keenly felt by transit agency respondents and respondents in the West (44% and 39% respectively) as shown in Appendix Table B-33. Lack of state legislative support was reported most frequently in areas where rivalries among local governments or transit providers was highest (Appendix Tables B-59 and B-60), suggesting that a unified front within a metropolitan area may be more likely to produce a sympathetic state response.

Inadequate media support, rivalries among local governments, and rivalries among transit providers are considered to be serious problems by far fewer respondents (34%, 39%, and 17% respectively) as shown in Appendix Table B-32. Again, there is relatively little difference of opinion on these questions among types of respondents or regions of the nation, except that unions and respondents from the Great Lakes/Plains region felt the lack of media support most keenly (62% and 43% respectively). MPO and transit respondents, however, claimed that difficulties

with local government rivalries were most troublesome (50% and 56% respectively), and the transit agency and Southern respondents found the least difficulties with rivalries among transit providers (12% and 10% respectively) as shown in Appendix Table B-33.

Obviously, there is work to be done in the political and bureaucratic environment in many metropolitan areas if transit adaptations are to be successful. The most serious challenge, though, appears to be in the state legislatures.

Improving Transit Planning and Coordination Processes. The ACIR survey asked whether the lack of four types of coordination was causing serious difficulties in the respondents' metropolitan areas. These four were lack of coordination with land development, parking, and auto tolls, plus inadequate coordination among agencies with transit responsibilities. None were thought to be a major problem by a majority of those replying, although lack of coordination with parking was considered serious by 43% of all respondents (Appendix Table B-36). Inadequate coordination with land use was a major factor in the view of only one-third of the respondents, with inadequate coordination among transit agencies identified as a major difficulty by 30% of respondents. Problems in using auto tolls to reenforce transit policies were seen as a major hurdle by only 16% of respondents. These views were fairly consistent among most types of respondents and regions of the nation (Appendix Table B-37) except that:

- parking coordination was seen as a much more difficult problem in the Northeast (52%) and by MPOs (50%), but less frequently by local governments (33%);

- land use coordination was seen as more of a problem by MPOs and by respondents in the South and West (38% each), but as less of a challenge in small metropolitan areas (25%) and by union officials (24%);

- the unions and respondents from the Great Lakes/Plains region perceived more of problem with coordination among transit agencies (54% and 37% respectively) in contrast to the fewer respondents from transit agencies and small metropolitan areas (20% and 15% respectively); and

- coordination with auto tolls was seen as more deficient in the Northeast (27%) and by the unions (24%), but with considerably less frequency in the West (12%), in small metropolitan areas (10%), and by local government respondents (6%).

Thus, there is a substantial, though not overwhelming need, for improved coordination affecting transit policies in metropolitan areas.

The ACIR survey asked respondents about four possible means of improving transit planning and coordination:

- Establish a strategic planning process for the area's transit industry to examine the nature of services that should be provided as the means of meeting future needs successfully.

- Place greater emphasis in the urban transportation plan upon relatively short-range transit needs (like maintenance of equipment and facilities as well as operational improvements).

- Encourage the use of informal techniques like intergovernmental task forces, committees, meetings, or staff sharing to facilitate interlevel, interorganization coordination and cooperation.

- When local government transit planning does not meet metropolitan or state objectives or standards, refer it back to the locality for revision.

Of all respondents, 59% indicated that their MPOs already were doing strategic planning, but 83% felt that greater efforts along these lines should be made (Appendix Table B-34). Emphasis on short-range planning was already taking place in their regions according to 56% of all respondents, but 62% saw the need for greater efforts of this type. Informal intergovernmental coordination already was being encouraged, according to half of all respondents, but 68% felt that greater attention should be given to this type of activity.

In sharp contrast to the strong support given the first three techniques, returning deficient local transit plans for further work received quite mixed reaction. Only 14% of respondents indicated that this technique was being used in their area currently; only 40% felt that it should be undertaken in the future, and 19% saw this refer-back procedure as distinctly disadvantageous.

Support for short-range planning was fairly consistent among the various types of respondents and sections of the nation, although respondents from the MPOs and the South were most strongly in favor (Appendix Table B-35). The range of views also was relatively narrow on the question of referring transit plans back to local governments for revision, although transit union and Southern respondents were more supportive than most, while local government and Northeastern respondents were least in favor.

By contrast, there were wide swings in the degree of support for strategic planning and informal coordination techniques (Appendix Table B-35). Substantially greater support was evident for strategic planning in the small metropolitan areas and the South, and among the MPOs but relatively low levels of support were found among local government, union, Northeastern, and Great Lakes/Plains respondents. The informal coordination techniques were supported most often by respondents in small metropolitan areas, the Great Lakes/Plains region, and MPOs, but substantially less often by those from transit agencies and the West. Such coordinative devices were sanctioned by 65% or more of the respondents regardless of how effective or ineffective they found their MPOs (Appendix Table B-61).

The data reported here on support for short range planning, combined with that presented earlier on support for an expanded scope of MPO planning, greater use of ridesharing and HOV techniques, improved marketing, productivity-based labor contracts, greater participation of the private sector in meeting the costs of transit, and route-by-route accounting methods to enhance transit productivity, taken together, add up to a rather substantial confirmation that TSM planning has taken hold quite firmly within the transit community. Even greater enthusiasm is being expressed currently for the use of strategic planning processes and informal intergovernmental coordination techniques, indicating that these two means of seeking enhanced implementation success without

greater concentration of governmental authority are solidly recognized as necessary adjuncts to the more formal structures and powers of existing transit related organizations.

Negotiating Stable Transit Funding in the Intergovernmental Context. In this era of tight budgets at all levels of government and with the serious squeeze between rising costs and lagging revenues in the transit industry, the dual questions of outside aid and interlocal sharing of needed transit subsidies command great attention. Both questions were probed by the ACIR survey.

The survey findings clearly indicate that the presence of federal aid for transit is a key to respondents' assessment of future transit mobility in their metropolitan areas. Of the total, 72% were optimistic about being able to maintain or improve their transit services if federal aid remained at present levels, but only 9% were optimistic about these chances without it (Appendix Table B-38). These relationships held fairly constant among all types of respondents and regions (Appendix Table B-39).

Local government and Southern respondents were most optimistic that present levels of federal aid would allow them to improve transit, while respondents from small metropolitan areas (under 200,000 population), the Great Lakes/Plains region, the MPOs, and the transit unions were somewhat less optimistic than the average respondent. Pessimism about about maintaining present levels of service without federal aid

was total in the small metropolitan areas and extensive among local governmental and union respondents. Only the MPO and Western respondents produced as many as 20% of their numbers who were optimistic about the future without such assistance.

Current or expected loss of state or federal aid was considered to be a serious or intractable difficulty by over 82% of all respondents (Appendix Table B-40). The seriousness of this problem was agreed to by at least 77% of all groups and regions responding (Appendix Table B-41). In the small metropolitan areas, the level of agreement reached 100%.

These attitudes on the need for outside aid were reenforced by respondents' views that the inability to raise transit fares without losing riders (79%) and existing limits on the local ability to tax (52%) are also crucial financial problems, as shown in Appendix Table B-40. Views about the inability to raise fares were quite consistent among all types of respondents and sections of the nation (Appendix Table B-41). There was only slightly more variation in the opinions on local tax constraints, with the small metropolitan areas, transit unions, and Northeastern respondents taking this position only 40% to 50% of the time in contrast to respondents from the transit agencies and the West who were more concerned (58% and 68% respectively).

Limits on raising local debt were seen as a major problem by less than one-third of all respondents (Appendix Table B-40), confirming the widely held view that it is easier to raise capital funds for transit

than to come up with the needed operating funds. Attitudes were quite consistent on this issue among all types of respondents and regions of the nation (Appendix Table B-41).

Despite these fiscal anxieties, respondents indicated a strong need to increase revenues at the local level. Drawing greatest interest was the possibility of encouraging private sector participation in financing transit (81%), followed closely by the need to establish or increase dedicated taxes for transit (78%) as shown in Appendix Table B-42. Private sector participation was felt most keenly to be a prime source of new revenue by local government, MPO, transit agency, and Northeastern respondents (Appendix Table B-43). The unions indicated least faith in this source (46% favoring it but 32% opposing it). Support for dedicated taxes was quite strong among all types of respondents and sections of the nation, and was particularly vigorous among transit agency, Northeastern, and Southern respondents.

Two additional measures receiving positive support were raising fares to more adequately reflect costs and the value of services, and using special benefit districts to provide transit revenues. Support for these measures was more marginal, however, than the two previously mentioned revenue sources. The idea of raising fares drew 62% support among all respondents, compared with 13% opposed (Appendix Table B-42). Benefit districts drew a 60% positive responses and 12% negative. The ratio of supporters to detractors was positive among all types of respondents and all sections of the nation for both of these sources of

funds. Greatest support for these two proposals came from the transit agencies and from Northeasterners.

These revenue sources all are aimed toward direct or indirect benefit capture, and contrast sharply with the decidedly negative response to relying principally upon local general revenues. While 32% of all respondents favored reliance on general taxes (like the property tax), 47% opposed (Appendix Table B-42). The unreliable and politically painful nature of funding transit year-to-year from the local general fund is reflected in this reaction. Net positive support for using the local general fund occurred only among respondents from the Great Lakes/Plains region (Appendix Table B-43).

In many metropolitan areas, transit is funded by an areawide dedicated tax (usually the sales tax), by state and local aid, or by an individual local government such as the major city or county. However, 47% of the respondents surveyed indicated that transit subsidies in their areas are shared among a variety of local governments by a variety of methods (Appendix Table B-44). The interlocal sharing methods varied according to the type of transit service (bus, rapid transit, and commuter railroad), as well as by the size of the metropolitan area and section of the nation (Appendix Tables B-44 and B-45). Since all of the metropolitan areas surveyed had bus service, while only 9% and 10% respectively had rapid transit or commuter railroad service, a much larger proportion of respondents reported on ways of sharing bus subsidies. Appendix

Table B-45 adjusts for that discrepancy so that the present practices in this regard can be directly compared among modes of transit.

Locally negotiated formulas are the most common means of sharing local subsidy responsibilities for all three types of transit. For bus systems, the second most frequently reported method was the negotiation of local dollar shares. A combination of local formulas and dollar shares was in second place for rapid transit, and local dollar negotiations tied for second place with state legislative determination of local shares in supporting commuter railroads.

Eight respondents reported interlocal subsidy sharing methods not mentioned in the questionnaire. These additional methods included (1) a local option dedicated sales tax, (2) a combination of state legislated formulas and local negotiation, (3) local government purchase of services from the areawide transit authority, (4) a formula established by the regional transit authority (negotiated through local representation on the authority's governing board), and (5) joint enactment of dedicated taxes by multiple localities (as agreed through negotiations). While most of these other methods are simply variations on the ad hoc dollar negotiation or formula techniques, the local option sales tax and purchase of services techniques allow for independent local choices outside a single areawide agreement.

The smaller metropolitan areas used only negotiation of local dollar shares or local formulas, with the former being reported somewhat more frequently. This applied only to bus systems, since the smaller areas had neither rapid transit nor commuter rail. The larger metropolitan areas used the full range of techniques for all three modes.

With the exception of the South, where no commuter rail and very little rapid transit was reported, there was relatively little variation among the means of interlocal subsidy sharing for transit among the major regions of the nation. With respect to rapid transit in the South, all cases reported used a combination of negotiated local dollar shares and local formulas. For commuter railroads, the Northeast placed more reliance upon state enactment of local shares; the Great Lakes/Plains focussed more heavily on locally negotiated formulas (40%), and the West leaned most heavily toward locally negotiated dollar shares (50%). For rapid transit, the state legislatures most commonly (40%) set the local shares.

These figures lead to the conclusion that many local governments in metropolitan America are willing to consider increasing local revenues for transit and sharing transit subsidy responsibilities among themselves rather than depending on outside sources of funding alone.

Reallocating Governmental Responsibilities for Transit. With recent

federal actions to move the largest share of federal transit assistance into a fairly flexible block grant, to loosen the federal urban transportation planning regulations, and to continue a fair degree of flexibility in using highway funds for transit related purposes, decisionmaking responsibilities are flowing increasingly toward the state and local levels. The ACIR survey produced limited evidence on the restrictiveness of federal transit programs and the degree to which such restrictions have caused serious or intractable problems at the metropolitan level.

As shown in Appendix Table B-46, the most troublesome federal restriction has been the one concerning the protection of transit labor rights and benefits. Sixty-percent of all respondents felt significantly restrained by this provision. Additionally, 50% felt excessively restricted in the use of federal funds for transit by the categorical structure of such programs. Smaller proportions of respondents also felt excessively shackled by the wide range of collateral social policies accompanying federal transit aid (42%), and the "buy-American" policy applying to the purchase of transit equipment and construction materials (35%).

As indicated earlier in this chapter, the excessive restrictions on the use of federal funds for transit planning, construction, and operations are being reduced currently by the new block grant and by the relaxed planning requirements that went into effect in 1983. Through the certi-

fication acceptance provisions in both the block grant and the new planning regulations, some of the collateral social regulations also may be rendered easier to meet. The labor and buy-American policies, however, remain unchanged.

Labor union respondents felt there was less difficulty with the labor, buy-American, and other social policies promoted by federal regulations than did any other group of respondents. The labor and buy-American requirements also were felt less keenly in small metropolitan areas.

In terms of groups and regions, the West felt most contrained by restrictions on the use of federal funds and by the labor requirements. The South was bothered more than other areas by the restrictions on using federal funds, while the Great Lakes/Plains region reported more than average difficulty with the labor restrictions. Transit agency respondents indicated more than typical trouble with the labor requirements, buy-American provisions, and concurrent social policies, although they were typical in their reactions to categorical restrictions on the use of federal funds. MPOs were proportionally most critical of the labor requirements (77% compared to the 71% registered by transit agencies).

In light of these survey findings, efforts to loosen the federal reins on transit programs could be expected to receive substantial support at the metropolitan level.

The loosening of the federal role, of course, leaves room for the expansion of state and local roles. As indicated earlier in this chapter with respect to developing more stable transportation funding, both local governments and the states are involved in this stablization task. Metropolitan respondents, however, feel that more support is needed from the state legislatures. According to ACIR's survey, 65% of all the respondents felt that the lack of state legislative support was a serious handicap to their programs (Table B-50). This lack of state support was felt most keenly in the South (80%) and among respondents from small metropolitan areas (75%) and from MPOs (73%) as shown in Appendix Table B-51. Transit agencies, on the other hand, were less concerned than other respondents (58%). Overall, negative views on the state legislative role were expressed more frequently in those states contributing fewer dollars to urban transit programs, and less frequently in those contributing more dollars (Appendix Table B-52).

Excessive interference by state transportation officials was felt to be a serious difficulty by only 21% of all respondents (Appendix Table B-50). Respondents in small metropolitan areas, MPOs, and the South felt this interference to be serious only half as often as the typical respondent. Northeasterners and union officials, however, cited it much more frequently (40% and 32% respectively) as shown in Appendix Table B-51. This interference was felt more frequently in states providing larger amounts of state aid for urban transit programs (Appendix Table B-53).

Almost no sentiment (7%) was found among metropolitan respondents for transferring transit responsibilities to the state, and opposition was quite substantial (69%) as shown in Appendix Table B-48. As might be expected, no local governmental respondents favored such a transfer, although labor respondents saw some need for it (with 22% in favor and only 48% opposed) as shown in Appendix Table B-49. There also was modest sentiment for such a transfer among respondents in the Northeast (17% in favor and 54% opposed). Sentiment for state takeovers was greater in states that provided larger amounts of state aid for urban transit programs (Appendix Table B-54).

From the above figures, it can be implied that officials in metropolitan areas want more state aid for their transit programs, and sense that states providing it deserve greater influence in metropolitan transit programs.

Implications of ACIR Field Work

To supplement the questionnaire survey, a series of interviews was conducted in each of three metropolitan areas, leading to the preparation of three case studies. The areas were Seattle, New York, and Chicago. The interviews included MPO, central city, county (except New York), transit union (except New York), and business/civic association officials. The case studies are found in Appendixes D, E, and F.

The case studies combine the interview results with special tabulations of the questionnaire survey from each of the three areas, along

with previous studies of these three areas and official planning documents. The purpose of the cases was to flesh out the picture of transit decisionmaking as seen by the various actors interacting with each other in their own political/technical environment.

As limited as this selection of three cases is, it indicates that a wide variety of circumstances and approaches exist within the nation's metropolitan transit community. All three of these metropolitan areas are large, although New York and Chicago are at the extremely large end of the scale, while Seattle is of a much more moderate size (with a population of about 1.5 million). The New York area is crossed by state lines at its core, while Chicago encompasses an Indiana appendage of about 650,000 population attached to the 7 million Chicago core, and Seattle falls completely within a single state.

All three areas face significantly different sets of transit problems. In Seattle, current transit finances are sound and policymakers are focusing upon such issues as expediting downtown transit through a transit mall, establishing several new high capacity high speed transit corridors for improved service, and locating needed new transit storage yards and maintenance facilities. The Chicago system is facing imminent bankruptcy in its operating funds despite major fare increases and temporary bail outs by the city and state. New York is now in the midst of a mammoth recovery program to dig its way out of many years of deferred maintenance that has caused deteriorating service and loss of riders.

Yet, these three diverse situations yield some common findings as well as distinctive attributes. The MPO process in all three concentrates largely on the technical process of compiling transit projects initiated by transit providers and negotiating project priorities to fit within the constraints of available funding, although the Seattle MPO is a partial exception in that it exerts some top-down influence to this mostly bottom-up process. All three areas have succumbed to pressures for subregionalizing their planning and funding processes, and they also have largely consolidated or interconnected their transit service systems. The greatest variation comes in the state roles, which are very different in the three areas. These similarities and differences are explored more fully below.

MPO Accent on Technical Roles. The MPO process in all three metropolitan areas was accepted as a useful one by all those interviewed, but it was looked upon primarily as a means of compiling transit agency requests for the use of federal aid dollars and setting priorities to bring the overall request within the limits of available federal funding. For the most part, regionally developed plans or policies from the federally required long-range planning process did not influence short-term programming decisions. The federally postulated process by which long-range plans are prepared first and then translated directly into five-year and one-year funding priorities was not the observed process. Nevertheless, all the affected transit agencies and local governments were in-

volved in the process and they found the negotiation of project proposals within the TIP and its annual (or biennial) element to be a satisfactory way of dividing up the federal transit funding.

In Seattle, the compilation of transit agency requests was routine for most projects, as in the two other areas. But there was acknowledgment that the MPO had initiated some proposals at the regional level that were influencing transit projects significantly in some cases. This degree of MPO influence was not found in the other two areas.

Recent reductions in federal aid for other types of regional planning had occurred in all three metropolitan areas. This was a significant factor in the collapse of the general purpose regional planning organizations in the New York region, and was cited in Chicago and Seattle as a major reason for regional planning becoming increasingly concentrated on transportation issues alone. This development is reducing the amount of long-range land use and other areawide planning being done, thereby tending to reenforce the compilation style of MPO operation rather than the independent analysis and stronger regional influence styles. The distribution of federal transit aid directly to transit providers, rather than to the MPO for pass-through purposes, also was found to reduce MPO leverage and to reenforce the more limited compilation role.

The flows of federal funding into the MPO planning process are shifting now because of the Section 9 block grant. Whereas the primary MPO planning funds in recent years have been allocated directly to the MPO organization through UMTA's Section 8 technical studies program and the PL grants from the highway programs, some of the major regional planning efforts in the future (especially for major new capital projects) are anticipated to be funded out of the Section 9 block grant. In contrast to the former practice of passing on some of the Section 8 funds from the MPO to the transit agencies for detailed follow-up planning within the framework of the long-range systems plan, the transit agency recipients of Section 9 funds now will be expected to carry out their own planning with their block grant funds as well as to supplement the MPO planning budget from that source. The MPO in Seattle has worked out such an arrangement, and feels that it could very well be a model for the rest of the nation.

Most of the planning funds coming to the MPO from the transit agencies probably will be for major corridor studies where transit improvements like new rail construction, busways, or added HOV facilities are contemplated. In Seattle, such studies are being assigned to the MPO, but in Chicago that type of study recently was carried out under the leadership of the city Department of Public Works, and in New York such studies are not being performed because of the almost total concentration upon rehabilitating the existing system and bringing service levels up to the

point at which lost riders might be reattracted to the system. Thus, the flow of Section 9 planning funds to the MPOs may occur (or not occur) differently in different metropolitan areas.

Policy leadership on major transit issues in the three case study areas varied considerably. In Seattle, the major initiatives over the years have been taken by temporary citizen study groups. More routine initiatives are taken by the transit authority, and current corridor studies have been assigned to COG by the collective decision of elected officials in the region who sought a less staff dominated and smaller governing body more directly composed of local elected officials as an alternative to the transit authority with its intimidating staff and its very large and amorphous governing body composed of many private citizens as well as elected officials. In New York, major initiatives come from the Mayor, the transit authority Chairman, and the Governor, sometimes with substantial competiveness among them. In Chicago, agreement between the Mayor and the Governor is essential for major initiatives, but lesser proposals are generated by the Regional Transit Authority and the relatively new Regional Councils of Mayors now included in the MPO policy-making structure. Thus, the MPO is a relatively important policy leader in Seattle, but exercises a much more subordinate role in the other two areas.

Transit union representatives were not significantly involved in MPO operations in any of the three case study areas, even though many

such organizations favored productivity improvements and mode shifts that could have considerable effect upon union members. The only union interview that could be arranged (the one in Seattle) indicated union receptivity to, and some initial steps toward, greater union involvement in policy issues. Union influence, according to non-union interviewees, very largely has been limited to formal contract negotiations and lobbying in the state legislature.

Pressures to Subregionalize. All three case study areas have experienced major pressures to deal with regional planning issues and the MPO process through a decentralized mechanism. In Seattle, this pressure took place several years ago along county lines. As the counties gained strength, they withdrew from the Council of Governments in an effort to exert greater control over their own affairs. The four-county COG -- covering three metropolitan areas built around three separate urbanized areas -- was in danger of collapsing until federal pressure to maintain an areawide approach for transportation planning brought about a compromise. Under that compromise, each of the four counties now has a subregional council that operates within the framework of the four-county Council of Governments. These four committee mechanisms, then, are the front line planning and programming groups through which transit and other transportation project proposals are worked out between local governments and transit providers before being brought to the four-county COG for

official inclusion in the TIP. Thus, federal pressure was used to maintain an areawide approach while accommodating local pressures to subregionalize.

In Chicago, separate regional planning groups were established long ago under state legislation for the Illinois and Indiana portions of the consolidated metropolitan area. In 1972, however, federal pressure was brought to bear to create an areawide mechanism to overview the whole bi-state commuting region. The compromise reached after a long struggle was the formation of the Illinois-Indiana Bi-State Commission whose purpose is to establish communications between the two regional planning groups previously established in the two states and to facilitate any coordination needed between two interlocking areas. That arrangement was very substantially weakened in the fall of 1983 when the Bi-State Commission lost its staff as a consequence of the city of Chicago withdrawing its large share of the matching funds that had been used to attract federal dollars into the Commission's budget. Whether the Bi-State Commission will continue to function is an open question at this time. The loosened federal planning regulations no longer require that MPOs be areawide, so the outcome appears to rest upon state and local discretion.

In New York, nine new MPOs now have replaced the single MPO that existed in the greater New York region for many years. Five are in

Connecticut, three are in New York, and one is in New Jersey. One of the three New York MPOs (the one including on New York City itself) in turn is subregionalized into three transportation coordinating committees (TCCs) -- one for the city itself, one for Long Island, and one for the two counties just north of New York City. These subregional TCCs and the other eight MPOs are the front line compilers of transportation projects for the TIP. In the case of the MPO for the New York City-Long Island-Northern counties area, the three TCCs resolve as many issues as they can among the local governments and transportation providers (suballocating the 10 Section 9 block grants within their respective areas) before bringing the projects forth to the executive committee of the MPO where remaining issues are worked out. In theory, then, most issues will have been resolved before the full MPO governing board is asked to adopt the TIP.

All nine MPOs in the New York region are structured within the boundaries of a single state to facilitate direct relationships between state and local officials. These new MPOs are composed primarily of local government representation, although state representation and secretariat services are provided. Missing, however, is any formal mechanism for interstate coordination of plans and programs. Although a series of service contracts, an interstate compact for railroad service to Connecticut, and the limited transit operations of the Port Authority provide transit

service linkages, policy coordination and data sharing are now taking place only on a very limited basis through informal contacts among the new MPOs.

It is clear from these cases that federal actions can have a significant bearing upon the areawideness or fragmentation of transportation planning for a region. The recent loosening of MPO planning requirements has allowed the areawide interstate mechanisms formerly insisted upon to be abandoned in the Chicago and New York areas. If this had been the federal stance in the early 1970s when the subregionalization push came in Seattle, the areawide body there also probably would have been dissolved.

The pressures to subregionalize are particularly strong where state boundaries cut across a metropolitan region, as in New York and Chicago. State action is essential to solving metropolitan transportation problems, but lacking positive federal incentives to cross these state lines, the natural tendency is for the local governments to rely upon their own state directly rather than on an interstate body. Conversely, a state is most likely to relate to its own local governments directly rather than choosing to go through an interstate body. Reenforcing these natural tendencies are federal practices oriented to the states, like the highway program and the new transit block grant for metropolitan areas under 200,000 population which may be administered by the governors if they so choose.

Another fragmenting influence from the federal government is its

legislatively based practice of allocating urban highway and transit funds on the basis of "urbanized areas." These areas of continuous urban development are defined by the Census Bureau but are not combined even where metropolitan areas have grown together and been consolidated. Thus, when these federal transportation funds are allocated, they may strongly subdivide a single region under the jurisidiction of a single MPO.

In addition to these federal forces, the tensions between central cities and suburbs also exert pressure to subregionalize the transportation planning and funding process. The proliferation of MPOs within the New York region clearly reflects this division of interests, and the restructuring of the Regional Transportation Authority in Chicago is based on the same tension. In Chicago, the RTA was evenly split with six city and six suburban representatives for its first decade. However, the 1980 Census shifted the balance to seven suburban seats and five city ones. This gave rise to the restructuring that divided RTA's operations into three divisions separately governed and separately funded by formula -- city transit, suburban transit, and commuter railroad.

Much of this central city versus suburban conflict revolves around unequal transit service levels between the city and the suburbs. The difference in density of development in these two types of areas makes it easier and more economically feasible to provide high levels of

transit service in the central city, but very difficult to do so in outlying areas with standard bus or rapid transit services. Thus, suburban services generally have been provided at a lower level, even though an areawide tax may be imposed equally throughout the region.

This equity issue was raised by interviewees in all three case study areas. It has not been addressed explicitly in the Seattle area, although that area does have a major ridesharing program that partially goes to the issue. The issue is a live one in the New York region, and is currently under study. Chicago has addressed this imbalance, as already mentioned, by separately funding, on a formula basis, transit serving its three major markets. It also has begun promoting innovative means of providing services in outlying areas through local government cooperation with RTA, and a sales tax supporting RTA is levied at the rate of two cents in the city of Chicago, one-cent in suburban Cook County, and only one-quarter cent in the outlying counties.

Thus, it may be concluded that citizen support for transit may be difficult to maintain in any region not sensitive to the need for equitable treatment of transit benefits and costs in its diverse sections. It also may be difficult to maintain areawide planning and policymaking in complex metropolitan areas (especially the interstate ones) where federal funding and planning requirements allow or promote fragmentation. In fact, such fragmentation exists in at least eight metropolitan areas, as noted earlier in this chapter (see previous Table 4-6).

Consolidated and Interconnected Service Systems. All three case study areas are served principally by large public transit authorities, although not by single operators. In the Seattle region, the Seattle and Takoma metropolitan areas each have their own large public transit systems, and they are perceived to be adequately interconnected with each other. The The two smaller counties also have transit service, though of less comprehensive coverage. In one of those counties, two somewhat overlapping city and county systems have been spoken of as candidates for consolidation, but that was the only suggestion for change in the existing arrangement of service providers.

In New York, about 90% of all transit service is provided by the Metropolitan Transit Authority (MTA) or its subsidiaries. Nevertheless, the Port Authority and the New Jersey Transit Corporation both provide additional services, and New Jersey Transit also contracts for services by private providers. MTA's New York city subsidiary also has franchised a number of subscription bus services for commuters that are essentially self supporting. None of those interviewed in the New York region recommended any restructuring of the present operators.

In Chicago, all transit in the Illinois part of the region comes under the umbrella of the Regional Transit Authority (RTA). Public funding for the city transit system, the suburban bus and ridesharing activities, and the commuter railroads all go through RTA. Although the RTA reorganization mentioned earlier would guarantee proportionate

funding for all three categories of service providers, the service providers themselves would remain in their present form. None of those interviewed in the region recommended any restructuring of present service providers.

Thus, there seems to be general satisfaction in all three regions with the way transit service providers are presently organized.

Varying State Roles. The states involved in each of the three case studies took widely differing approaches to metropolitan transit. In Seattle, the state role in transit is minimal but supportive. The legislature is sympathetic toward transit, and has provided an adequate local tax base for it in the metropolitan area. The state ferry system provides a major transit link across Puget Sound and is reasonably well coordinated with bus systems. State highway funds are used cooperatively for such transit related facilities as fringe parking lots and HOV lanes. The initiatives for these state projects, however, come from the local level.

In the New York region, of course, three states are involved. State support for transit from New York includes NY DOT membership on and support for the MPOs, state membership in MTA, legislative authorization of local taxes, the use of state bonding authority, and a long term state service contract with MTA that helps to underwrite long-term borrowing by MTA. MTA feels that the legislature has been responsive to its needs. Although MTA is legally a state agency for some purposes, a majority of its

members are local and it considers itself to be a local agency. The state DOT has very little control over it.

By contrast, the New Jersey Transit Corporation is a state agency. Yet, it goes out of its way to avoid dominating its MPO to the high degree that MTA dominates those on the New York side of the river.

Long standing efforts by the states of New York and New Jersey to involve the Port Authority more directly in transit have achieved that goal, but not without considerable difficulty. This allows surplus Port Authority revenues to be channeled into transit programs.

In Connecticut, there is no large state or regional transit authority for that state's portion of the New York region. Instead, the Connecticut Department of Transportation provides assistance through service contracts.

The Chicago region presents a rather stark contrast to the supportive state roles found in the Seattle and New York regions. The impending bankruptcy of transit operations within the Chicago region at the time of ACIR's interviewing, and the lack of state operating assistance in that part of the state (in contrast to such assistance for all other parts of the state) brought considerable criticism of the state in the Chicago region. Lack of support in the state legislature was the number one "intractable" difficulty cited in the questionnaire survey responses from Chicago, and was mentioned in several of the personal interviews in the Chicago region. This hot political issue overshadowed the positive contributions the state had made over the years, including:

- establishing the RTA umbrella for transit operators;
- authorizing dedicated taxes in the region for transit;
- providing 100% of the required match for federal funding of transit capital projects in past years, although this has dropped now to 50%;
- providing part of the match for federal transit planning funds;
- providing revenue anticipation payments and loans to RTA in its present financial crisis; and
- agreeing to the massive interstate transfer of funds from the Cross Town Freeway largely for the benefit of transit projects.

While the dollar amounts may not always have been adequate for the above purposes, the only obvious gap in state support for the Chicago region's transit activities has been the lack of operating subsidies, although that was part of the agreement with the legislature when RTA was established and given its own taxing authority. At the time of the interviewing, it appeared that this gap would be filled before the end of 1983 in a significant, if not fully adequate, way. Indeed, that did occur on November 9, 1983.

It is clear from these three cases that state action is essential for meeting transit needs in major metropolitan areas. Such actions include establishing transit authorities, authorizing local taxes for transit, providing state aid, and participating in the urban transportation planning and programming process.

Findings and Conclusions

This chapter has shown that the desire for greater leadership in transportation issues within metropolitan areas remains strong, but that there is little desire for further centralization of authority in regional organizations. To the contrary, pressures to decentralize the urban transportation decisionmaking process appear quite strong. Reliance on intergovernmental cooperation, then, is the preferred option for solving urban transportation problems. These central themes, emerging from the Commission's research, are summarized briefly below.

Desire for Greater Areawide Leadership

About 53% of all respondents in the ACIR survey supported expanding the scope of MPO planning to encompass such elements as pricing, taxing, parking, deregulation of service providers, or public/private partnership strategies. These topics would place the MPO squarely in the center of current issues in the effort to improve urban transportation.

About 83% of all respondents felt that MPOs should be doing more than at present to establish a strategic planning process for the area's transit industry in order to help it examine the nature of services that should be provided as the means of meeting future needs successfully. The recently held Airlie House and Woods Hole conferences reached consensus that such strategic planning, encompassing a broadened scope of topics like that described above, is needed if current urban transportation

challenges are to be met successfully. The federal planning requirements still reflect the concept that long-range areawide transportation planning, coordinated with land use policies and growth management strategies, should lead to areawide programming of major capital investments as well as shorter-term system management activities to meet overall transportation needs. The ACIR survey backed up the need for shorter-range (as well as longer-range) elements in the planning process, with an approval rate of 62%. Thus, MPO orchestration of the whole process, and the activities of the numerous actors taking part in providing urban transportation services and facilities still appears to be the goal that most participants see before them.

Little Desire for Further Centralization

This goal, however, is not matched by any strong support for structural changes in either the MPOs or the transit agencies. Overall, more respondents opposed increased authority for MPOs than supported it (34% to 25%). Support for expanding representation on the MPO to bring in the union and private sector officials, who might hold the keys to many needed innovative service and financing adaptations, was supported by a few more respondents than those opposing it (37% to 27%). This balance of forces would appear to leave MPOs structured pretty much as they are today. In most cases, they are likely to remain very largely in

the role of compilers of other's transportation projects and mediators of priorities needed to constrain investment strategies within available resources, rather than be moved into the role of initiators or implementors of urban transportation strategies.

Transit service providers, as presently constituted, also seem satisfactory to officials in the metropolitan areas surveyed. Only 20% of all respondents felt that transit agencies in their areas were ineffective to a significant extent, and even fewer (17%) felt that there were rivalries among transit agencies that were damaging to the region. Almost no respondents approved of transferring transit services to either the county or the state. The only change in transit agency structures that was favored by a majority was the concept of separating policymaking from the management of operations. Fifty-two percent of respondents approved, while 15% believed that such a separation would be disadvantageous. This practice, often referred to as "the brokerage concept," is much like the situation in Chicago where the Regional Transportation Authority is primarily responsible for financing and contracting for services, with the bulk of services actually provided by other transit authorities in the region.

Thus, it appears that most respondents in the ACIR survey prefer the existing MPO and transit agency structures to stronger or more consolidated areawide organizations.

Pressures to Decentralize

ACIR's case studies documented several forces presently fueling the pressures to subregionalize urban transportation planning: central city versus suburban tensions, state versus local tensions, and the loosening of federal requirements for an areawide approach. Suburban areas frequently feel that they pay for more transit service than they get. States and local governments often prefer working directly with each other, rather than working through interstate organizations in interstate areas. And federal funds frequently come into a metropolitan area already suballocated among a number of different transit agencies and urbanized areas. The MPO seldom has much leverage over such disparate funds. In Los Angeles and San Francisco, state authorized sales taxes dedicated to urban transportation also are subdivided, by formula, among the counties in those metropolitan areas, leaving little, if any, discretion to the MPO.

About 47% of all respondents in the ACIR survey indicated that responsibility for transit subsidies in their areas are shared among the various local governments. Locally negotiated formulas were the most common means of accomplishing this, and the second most frequently reported method was the negotiation of local dollar shares. Other methods included a combination of the first two and a determination of local shares by the state legislature. In addition to those

commonly used methods, write-ins on the ACIR questionnaire indicated that a few places use a local option sales tax and local purchase of services from transit providers to enhance local autonomy rather than to leave all jurisdictions locked into a single areawide agreement.

About one-third of all survey respondents approved the idea that individual local jurisdictions should be allowed to establish the levels of service they desire within their borders by providing some services themselves or contracting with regional, private, or other transit service providers. Seeking employer participation in providing or financing transit services received approval from 81% of all respondents, while 65% felt that more needed to be done with various types of ride-sharing. Thus, increasing local choice and breaking out of the tradition of a single monolithic transit system appear to generate considerable support.

As indicated in the three case studies, these decentralizing pressures have led to multiple or subregionalized MPOs and greater diversity of service providers.

Reliance Upon Intergovernmental Cooperation

With rejection of proposals to centralize urban transportation planning and transit service delivery structures, attention swings to non-structural proposals for coordinating urban transportation. These include state aid influence, informal coordination techniques, the MPO's compilation and mediation roles, the use of normal political channels, and technology sharing programs. Each seems to play an important role.

Although 65% of all respondents find serious difficulties in gaining adequate support in their state legislatures, the survey results can be read as indicating that officials in metropolitan areas want more state aid for their transit programs and believe that states providing it deserve greater influence in metropolitan transit programs. What little sentiment there was for state takeovers of transit was found chiefly in those states that provided larger amounts of urban transit aid. In addition, it was clear from the three case studies that state action was essential for meeting transit needs in those metropolitan areas. Such actions include establishing transit authorities, authorizing local taxes for transit, providing state aid, and participating constructively in the urban transportation planning and programming process. In all such actions, the state influence could be supportive of areawide coordination and cooperation.

Informal coordination techniques — like sharing staff and using informal intergovernmental coordination task forces, committees, and meetings -- were reported to be in use by 50% of all respondents in the ACIR survey. Their expanded use was urged by 68% of these respondents. Recent research performed for U.S. DOT has identified a number of such techniques that have been used successfully in a variety of metropolitan areas.

Despite the fact that ACIR's case studies found MPOs to be largely

concerned with compiling transportation projects initiated by others and mediating funding priorities within the region, rather than with initiating and managing a program designed to aggressively achieve area-wide goals, only 22% of all survey respondents found any serious problems with the effectiveness of their MPOs. This and other survey findings seem to indicate that most respondents feel the MPOs have about the right amount of authority, although there are some situations in which greater authority would be supported. None of the coordination problems that were postulated in the survey -- with land development, parking, auto tolls, or excessively fragmented transit responsibilities -- were thought to be a major problem by a majority of survey respondents. ACIR's interviewing turned up the unanimous belief that the current MPO process was an accepted and useful one. From this finding comes the conclusion that the present MPO process is about what is desired by officials in most metropolitan areas.

The MPOs generally are not the source of policy leadership, however. That leadership in the three case study areas comes primarily from other sources -- citizen movements in Seattle; a combination of the governor, mayor, and MTA chairman in New York; and agreement between the mayor and governor in Chicago, along with the RTA board and the recently established Councils of Mayors representing suburban areas in a subsidiary role. The lesson seems to be that normal political channels, rather than the

more technically oriented MPO process, define the locus of urban transportation leadership in metropolitan areas. This case study finding is bolstered by survey data showing that the only MPOs for which a majority of respondents supported greater authority (57%) were those staffed by city or county governments. This association with general purpose local government seems to supply the necessary political legitimacy needed to underpin concentrated governmental authority. The implication is that MPOs desiring to take a stronger leadership role in their region would have to become considerably more political. This may produce a dilemma, since a more politicized role might very easily conflict with the more neutral role of compiler and mediator under which the MPOs have become a common meeting ground for all parties. Thus, the decision to exercise greater leadership, or attempt to do so, may be incompatible with current useful roles.

Finally, the research into virtually all aspects of urban transportation technology and policymaking, sponsored by U.S. DOT, the Transportation Research Board, and the various related public interest groups, has been a powerful influence over the years in developing the urban transportation planning process and in spreading urban transportation innovations throughout the nation. One indication of the success of this research and information sharing effort is that the ACIR survey found only 24% of respondents who believed that lack of information

about the alternatives to present urban transportation practices was a significant problem. This effort is likely to continue[1/] and can be expected to serve the intergovernmental cooperation process well in the future.

1/ Ernst & Whinney in association with Robert J. Harmon and Associates, Technology and Planning Assistance Needs of State and Local Transportation Agencies, final report prepared for U.S. Department of Transportation, DOT-1-83-27 (Washington, D.C.: U.S. Government Printing Office, April 1983).