TRANSIT COOPERATIVE RESEARCH PROGRAM

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TCRP Report 21

Strategies to Assist Local Transportation Agencies in Becoming Mobility Managers

Transportation Research Board
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Strategies to Assist Local Transportation Agencies in Becoming Mobility Managers

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TRANSIT COOPERATIVE RESEARCH PROGRAM

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

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

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

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

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

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

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

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FOREWORD

By Staff
Transportation Research Board

This report will be of interest to individuals and organizations seeking to better understand the concept of mobility management and those seeking to make the transition from traditional transit operating agency to mobility manager. The report presents a useful compendium of mobility management functions; identifies barriers to mobility management; includes findings drawn from seven case studies, which are documented as Appendix A; presents actions to promote mobility management; and documents the results of technical assistance provided to two transit systems in Appendixes C and D.

A first important step in this research project was to develop a definition of mobility manager—a frequently used and often misunderstood term. The following definition emerged:

> ***A mobility manager is a transportation organization serving the general public that responds to and influences the demands of the market by undertaking actions and supportive strategies, directly or in collaboration with others, to provide a full range of options to the single-occupant automobile.***

This definition focuses on concrete actions and functions that may be pursued to expand the traditional mission of public transportation.

The objectives of TCRP Project B-7, *Strategies to Assist Local Transportation Agencies in Becoming Mobility Managers* were (1) to assess if, how, and why some transportation agencies have been able to become successful mobility managers; (2) to transfer that knowledge to the rest of the industry; (3) to identify means to advance beyond the current state of the practice; and (4) to document internal and external barriers that must be overcome.

The research team—led by Crain & Associates and supported by Pacific Consulting Group—conducted a two-phased research project. The first phase of the project prepared a compendium that identifies specific mobility management strategies and supportive actions in four different categories: operational, technological, informational/programmatic, and land use.

The compendium defines a broad range of actions that can and have been pursued by organizations seeking to serve as mobility managers and provides specific illustrations of generally successful initiatives in each category. The compendium constitutes more than half of the Phase I report. The balance of the Phase I report presents barriers to mobility management, case study findings, and suggested actions for transportation agencies. Seven case studies are presented as Appendix A.

In Phase II, the research team (1) provided technical assistance to two transit agencies: King County Department of Transportation (Seattle METRO) and Orlando LYNX, to help them in advancing mobility management and to refine the Phase I findings on the basis of the results of the technical assistance activities; (2) conducted a survey of transit industry staff on ways to advance mobility management; and (3) developed an action plan to advance mobility management.

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STRATEGIES TO ASSIST LOCAL TRANSPORTATION AGENCIES IN BECOMING MOBILITY MANAGERS

SUMMARY

THE NEED FOR MOBILITY MANAGERS

The public and policy makers often expect transit to serve a remarkable array of goals. The goals may include relieving congestion, improving air quality, serving disadvantaged populations, and supporting welfare reform. Mobility management can provide a flexible and even cost-effective approach for addressing those expectations.

Mobility management is also a logical response to changing travel patterns. Continued decentralization of metropolitan areas and changes in family and work patterns are steadily eroding traditional markets for transit and limiting opportunities for service expansion. As a result, there has been a steady decline in both the percentage and the number of passenger trips taken by transit. In private industry terms, public transportation agencies need to diversify their product lines. In public service terms, agencies need to broaden their missions if they are to be effective in maintaining the nation's mobility.

Mobility management provides a framework for transportation agencies to embrace the multimodal philosophy of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA). ISTEA mandates a multimodal planning process and allows for increased flexibility in the use of funds. ISTEA encourages agencies with a responsibility for public transportation to take a broad view of their missions, certainly going beyond traditional transit operations.

WHAT IS MOBILITY MANAGEMENT?

The definition of mobility management used in this research is based on the principle that transportation organizations should

- facilitate alternatives to the single-occupant automobile,
- provide new options to the public,
- expand on the traditional mission of transit, and
- go beyond mandates to address voluntarily the public's transportation needs.

A definition has emerged through application of this principle that relates to concrete actions and functions:

A mobility manager is a transportation organization serving the general public that responds to and influences the demands of the market by undertaking actions and supportive strategies, directly or in collaboration with others, to provide a full range of options to the single-occupant automobile.

MOBILITY MANAGEMENT FUNCTIONS

Whether the mobility manager provides options to the single-occupant auto directly or through collaboration with other organizations, being a mobility manager implies a range of activities that go beyond traditional transit service. Those activities have been divided into four categories:

- **Operational** functions are nontraditional methods of service delivery that are generally not fixed routes and may include collaboration with other partners. Examples include assisting customers with nontransit travel options, such as carpooling and vanpooling, and providing transit options that are not traditional fixed routes, such as subscription buses, shuttles, and demand-responsive services. Other strategies may include supplementing fixed-route transit with private jitneys or volunteer transportation services. Supportive actions are guaranteed-ride-home programs, schedule coordination, and installation of bike racks on buses.
- **Technological** functions increase travel options or convenience through use of technical advancements, including telecommuting centers, real-time rideshare matching, and multiprovider trip reservation and integrated billings. Supporting actions, such as the use of "smart card" fare instruments, increase convenience for customers.
- **Informational/Programmatic** functions expand mode choices through more complete information and broad-based marketing. When customers contact a transit agency, a mobility manager will provide them with all their travel options instead of information only on the bus or rail system the agency operates. The practice can include giving out rideshare information and being a one-stop center for all regional systems, including those operated by the private sector. Examples are assisting consumers with trip planning and forming partnerships with the private sector for joint marketing and participation in Transportation Management Associations.
- **Land Use** functions are techniques to foster transit ridership through links with land development. Mobility managers can attempt to change development patterns by taking an aggressive role in planning for housing and commercial development around a transit hub. The role goes beyond simply advocating transit-oriented development before the local government body. It may involve leasing land or participating in the financing. Developing transit villages is one example of a land use strategy. Supportive actions practiced by other agencies include siting intermodal facilities and providing reverse commute routing.

The full array of mobility management functions studied in this research is displayed in Table 1. Some of the functions are more clearly appropriate for transit operators than for others. In addition, other actions could be considered mobility management functions, but would be undertaken only rarely by a public transit operator. Examples of such actions include parking management, congestion pricing, and high occupancy vehicle lanes.

TABLE 1 Mobility management functions

	Mobility Management Strategies	Supportive Actions
Operational *Nontraditional methods of service delivery, which are generally not fixed routes and may include collaboration with other partners*	Ridesharing Subsidies to vanpoolers Subscription buses Subscription buses with paid, non-agency drivers Coordination with private shuttles Operation of shuttles funded by private sector Facilitation of casual carpooling Dial-a-ride for late night and low density trips Demand-responsive feeders Checkpoint dial-a-ride Service routes/community buses Service integration with jitneys Assistance for volunteer and community-based transportation services	Guaranteed Ride Home Schedule coordination with intermodal facilities (train depots, airports, ports) Supporting bicycle commuting Reverse Commute Programs
Technological *Increased travel options or convenience through use of technical advancements*	Telecommuting centers Real-time rideshare matching Multi-provider trip reservation and integrated billing	Integration of transit into traffic management centers Integrated fare media
Informational/ Programmatic *Expanded mode choices resulting from more complete information and broader-based marketing*	Collaborative arrangements with ridesharing agencies for trip planning Transit telephone center with information on all modes, providers	Trip-planning kiosks at activity centers Joint programs with the private sector Supporting Transportation Management Associations (TMAs)
Land Use *Techniques to foster transit ridership through linkages with land development*	Transit villages in joint ventures Influencing transit-friendly development	Intermodal facility siting

INSTITUTIONAL MODELS FOR MOBILITY MANAGEMENT

■ *Three Models for Mobility Management*

Full-service provider
Collaboration with other organizations
Extensive contracting

The mobility management functions can be provided directly or by means of collaborative action. An agency that takes on mobility management functions directly may be termed a full-service provider. Other agencies can promote mobility management by working collaboratively with other organizations to ensure that mobility management functions are carried out. This approach may not build the mobility manager's organization, but can result in efficient provision of service and allow the agency to be involved in the way services are planned, promoted, and delivered. A middle approach, taken by several of the case study agencies, involves extensive contracting of services. The contracting model allows for great flexibility in tailoring service to the needs and prefer-

ences of communities. The full-service provider model may be most appropriate for independent transit districts with generous funding. The collaborative and contracting approaches may be more appropriate for county governments and metropolitan planning organizations with public transportation responsibilities, as well as for transit districts with less secure funding.

THE STATE OF MOBILITY MANAGEMENT

■ *Mobility management is an institutional state of mind that emphasizes moving people instead of the mode of transportation.*

Mobility management is an ethos by which some agencies operate. It is an institutional state of mind that emphasizes moving people instead of the mode of transportation. Mobility managers are on the lookout for opportunities. How those opportunities are perceived is often a matter of the leadership's style. One style seeks partnerships to leverage other people's money. Another style may focus on harnessing technology to expand the agency's scope of services for the consumer. A third style takes advantage of governmental policies and regulations, such as congestion management ordinances or conditions on development, to nurture new transit stakeholders within the private sector.

Mobility management is an ethos that appears to be more readily adopted by newer agencies. Transit agencies with long histories have an institutional heritage that reinforces the status quo. They have been "the bus company" or "the train operator" in their own eyes and the eyes of the community. For these agencies, mobility management requires overcoming an image of what the agency has stood for over the years. Newer agencies have had to adapt more quickly to rapid growth in the suburbs. They have been able to take a "blank page" approach and draw their image on the community as they develop a menu of mobility management functions.

Mobility management has achieved considerable currency among transit agencies. A survey conducted for this project of 83 managers, planners, and marketing staff at 60 North American transit agencies found that 37 percent consider their agencies to be successful at mobility management (see Figure 1). This result is encouraging but should not be taken as representative, because the agencies surveyed were selected because of their interest in mobility management.

FACTORS THAT LIMIT AND ENHANCE MOBILITY MANAGEMENT

Depending on the characteristics of an organization, its leadership, and its environment, mobility management may be limited or enhanced. When the characteristics are limiting, they may be considered barriers to be overcome. The lack of enhancing characteristics may also be considered a barrier. The research for this study shows that barriers to mobility management are common and helps explain why the practice is not more widespread.

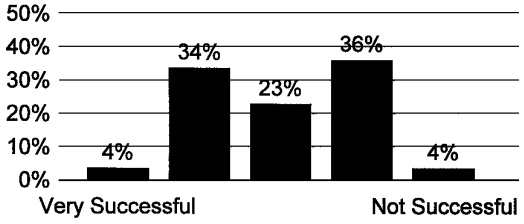

Figure 1. Overall success at mobility management.

Although mobility management is not broadly practiced, a rich variety of mobility management actions is in use by transportation organizations in the United States. Over 60 transportation organizations are cited as industry examples in a compendium prepared for this study. The research team also conducted case studies with seven agencies that illustrate various stages of mobility management.

The compendium and the case studies have revealed 10 factors that influence the extent to which mobility management can be successful. These are displayed in Figure 2 and Table 2, grouped according to the degree of control the transit agency has over each factor.

High-Control Factors

As suggested by Figure 2, the factors over which the agency has a high degree of control are largely internal, including leadership, organizational culture, and management.

Leadership

■ *Mobility management has been successful where there is a leader who can champion the cause, convince elected officials that new ideas are worth trying, and take risks.*

Top management has to be willing to let others in the organization try new ideas and to encourage this kind of experimentation by rewarding it with recognition and advancement.

Organizational Culture

Leadership that empowers others implies an organizational culture that is not strictly hierarchical and that encourages creativity and initiative within a cohesive vision and

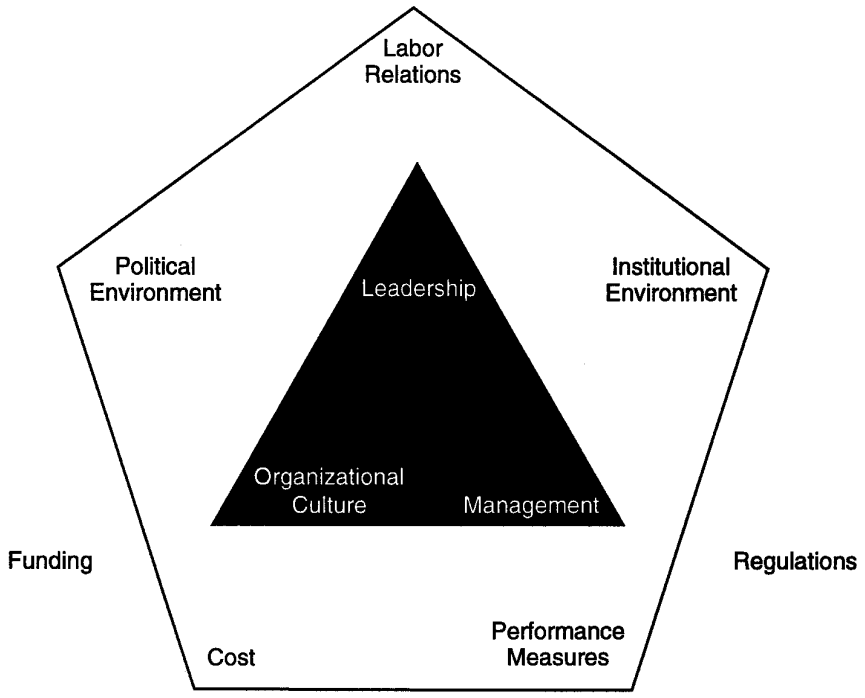

Figure 2. Factors affecting mobility management.

TABLE 2 Factors that limit and enhance mobility management

High-Control Factors	Limiting Characteristics (Barriers)	Enhancing Characteristics
Leadership	Discourages or does not recognize value of mobility management, not willing or unable to educate elected officials.	A champion in position of power, able to convince elected officials, willing to take risks, share power and recognition.
Organizational culture	Hierarchical, top-down, strictly segmented by mode, committed to traditional approaches.	Open to change, market-driven, cohesive internal vision and mission. Creativity and initiative encouraged and rewarded. No bias toward a single mode.
Management capabilities	Outmoded job descriptions, lack of new skill. Lack of staff time.	Understanding of service alternatives, roles and motivations of other organizations, funding possibilities.
Medium-Control Factors	**Limiting Characteristics (Barriers)**	**Enhancing Characteristics**
Labor relations	Fear of job loss, inflexible agreements.	Cooperative relationship, flexible agreements. Examples include two-tier wage rates, use of part-time drivers, ability to contract some services.
Political environment	Community leaders create pressure to keep unproductive services, inhibit creative services, promote local or non-transit interests over regional mobility.	Wide base of enlightened public support among elected officials, civic and business leaders.
Institutional environment	Agencies competing for funding, riders, and prestige; managers competing for control, personal recognition.	Strong ties with MPO, state DOT, cities, and county. Cooperative relations among local agencies, across jurisdictional lines.
Cost	Mobility management seen as drain on already tight budget, detracting from core mission.	Mobility management used as a way to leverage funds, increase efficiency.
Performance measures	Inappropriate measures of success applied to nontraditional services and programs.	Non-transit programs measured separately. Measures applied to new transit services with understanding of impact on mobility.
Low-Control Factors	**Limiting Characteristics (Barriers)**	**Enhancing Characteristics**
Funding	Proposals for new mobility management services overshadowed by unmet needs of traditional transit.	Adequate and predictable local funding sources; flexibility in use of funds; demonstration funds available for experimentation.
Regulations	Federal, state, and local regulations inhibit flexible, entrepreneurial approaches to mobility.	More flexible regulations. Regulations that promote alternative modes and programs.

mission that is widely shared within the organization. Because mobility management often involves new modes of operation, it can happen more easily in an organization that is not strictly segmented by mode or strongly biased toward a single mode. If staff are not assigned to specific modes, they are more likely to consider alternatives than if responsibilities are modal (e.g., rail planning or bus planning).

A key element of the organizational culture is whether it allows for *rewards* for mobility management approaches. Staff at all levels will be more likely to promote mobility management when they believe it will lead to rewards. In a public agency, rewards typically do not take the form of profit sharing or bonuses that may be available in the private sector. Instead, public servants are typically rewarded with promotion, recognition within the agency, training opportunities, and opportunities for recog-

nition and status in the community or among professional peers—for example, by making presentations at professional meetings or serving on national committees. Where transit is provided by other than a special district, advancement may be promotion to a job beyond the transit function— for example, in a county government. These rewards have been effective at encouraging the staff who promoted mobility management at the case study agencies.

Staff at many transit agencies mentioned "running the agency like a business" or "market-driven planning" as key elements of mobility management. This notion sets a high standard for a public agency, because it is often the private sector as a whole that responds efficiently to markets, while individual buisnesses thrive or stagnate depending on how well they seize market opportunities. The implication for a public agency may be that internal competition should be encouraged.

Management Capabilities

The third high-control factor is management capabilities, where "management" refers to all nonoperations staff, including top management, planning, marketing, and administration. Clearly, management functions must be defined in a way that allows people to work on new services. Further staff must have necessary skills, including an understanding of alternative modes and how to analyze them, ways to work collaboratively with other organizations, and sources of funding. Staff must have time to do more than respond to the latest emergency.

Medium-Control Factors

Many of the medium-control factors can be thought of as the interface between the agency and the rest of the world, including labor relations, the political and institutional environments, cost, and performance measures.

Labor Relations

In the area of labor relations, the research provides examples of ways workers' fear of job loss and inflexible labor agreements have limited a transit agency's ability to adopt mobility management approaches. Changing labor agreements can be a difficult and long-term task, requiring development of trust between management and organized labor. Education about the benefits of mobility management to the agency and to employees is also necessary. Neither the Board nor the general manager has control over how employees internalize a mobility management mission. Because control is dispersed throughout the agency and shared by all employees, ensuring that labor relations are a positive factor for mobility management must be a mutual goal of both management and labor. The research also provides examples of organizations that have been successful at developing cooperative relationships with labor and more flexible agreements that allow for two-tier wage rates, use of part-time drivers, and the ability to contract some services.

Political Environment

The political environment includes the governing body of the agency, elected officials, civic leaders, and business leaders who influence the degree of support the agency has in the community. If these people have a positive, realistic image of transit, includ-

ing the appropriate role of mobility management approaches, then transit agency management will have incentives to adopt those ap-proaches and the support to make necessary changes to respond to many of the barriers described here. The political environment can act as a barrier in many ways; for example, by creating pressure to retain unproductive services, promoting nontransit or local interests that conflict with improving regional mobility, and generally by withholding support for necessary changes to address barriers. Even a misguided "pro transit" attitude, for example, focusing exclusively on rail transit, can be a barrier to mobility management.

Transit managers do have some control over the political environment. In fact, top management can help educate elected officials and forge alliances with community groups, business leaders, and other organizations. Fostering a supportive political environment is one of the most effective roles that an agency's board of directors can play.

Institutional Environment

The institutional environment can act as a barrier to mobility management where agencies compete for funding and riders instead of cooperating to achieve efficient use of funds and maximize overall mobility. In a competitive environment, managers may see achieving control as the only way to obtain recognition and prestige for themselves and their agencies. However, where agencies have been able to establish cooperative relationships, it is also possible for managers and their agencies to create collaborative solutions for which multiple parties can receive credit. The institutional environment consists primarily of relationships among transit agencies, cities, counties, metropolitan planning organizations, and state departments of transportation. Where the relationships are competitive, mobility management suffers. But where managers have been able to establish good relationships, mobility management can thrive.

Cost

■ *Mobility management solutions are used to leverage funds and make possible new services that could not otherwise be afforded.*

If mobility management is seen as adding new services on top of traditional transit, then cost pressures can be an insurmountable barrier. However, the case studies include cases in which mobility management solutions—for example, partnerships with the private sector and other jurisdictions—were used to leverage funds and make possible new services that were not otherwise affordable.

Performance Measures

Management will be reluctant to try mobility management if they believe it will cause an agency's performance, as traditionally measured, to deteriorate. For example, adding a ridesharing function may add administrative expenses and lose riders, resulting in reduced efficiency and productivity based on traditional measures of cost per passenger and passengers per hour. Even promoting another agency's ridesharing efforts may have similar effects. Introducing demand-responsive services may also reduce systemwide productivity and efficiency. However, another point of view is possible. Arranging vanpools or providing demand-responsive service may be more cost-effective than traditional service for certain trips or areas. Partnerships with the private sector can be particularly efficient, reducing the cost of providing service and thereby boosting performance statistics. Other approaches are to exclude the cost of non-

transit activities from performance measures and to establish separate standards for various classes of service.

In the literature intermodal planning, performance measures are discussed which permit comparison of investments in different modes, for example comparing a transit service to a highway improvement.* Such measures can only encourage a mobility management perspective.

Low-Control Factors

The factors over which local agencies have the least control are funding and regulations.

Funding

Funding that is adequate, predictable, and flexible can allow for a great variety of innovative services. Where such funding is lacking, the ability to try new services will be severely limited by the unmet needs of traditional transit. Where many other enhancing characteristics exist, such as strong leadership, a supportive political environment, and a commitment to using mobility management as a way to be cost-efficient, it may be possible to attract funding, through partnership or even taxes earmarked to pay for specific services and projects. In some transit agencies, fiscal constraints have acted as an incentive to think creatively and have encouraged the development of mobility management solutions.

Regulations

■ *Changing state and federal regulations will typically require concentrated effort by many organizations working together.*

Regulations at the federal, state, and local levels may be the barrier over which local agencies have the least influence. Even private regulations, such as those imposed by insurance carriers, can be a problem.

Regulations can also encourage mobility management. Examples include state or regional land use planning rules, air quality regulations, trip reduction rules, and rules mandating inter-operator coordination. Where strong leadership and political support exist, it may be possible to change local regulations. However, changing state and federal regulations typically will require concentrated effort by many organizations working together.

ADVANCING MOBILITY MANAGEMENT

Actions that can advance mobility management are available to every level of government. Chapter 5 recommends actions through which organizations at all levels of government can address all ten factors that influence mobility management.

Actions by Local Transportation Organizations

Local transportation organizations have it in their own power to help themselves become mobility managers. On the basis of a survey of transit agency staff conducted

*For example, Meyer, M.D., "Alternative Performance Measures for Transportation Planning: Evolution Toward Multimodal Planning," Federal Transit Administration, *Report No. FTA-GA-26-7000* (December 1995).

for this project, an index of potential for increasing success at mobility management has been calculated for each factor influencing mobility management. Table 3 shows the factors arranged in order from highest potential to lowest potential and indicates the degree of control that the local transportation has over each factor. "High potential" means that changing that factor from limiting to enhancing would result in many transit agencies becoming more successful at mobility management. The highest priority actions are leadership development, finding ways to use mobility management to reduce the cost of transit service, and making the organizational culture more conducive to mobility management.

Additional actions which local transportation organizations can take include

- developing new relationships, roles, and partnerships with other organizations;
- education and outreach to the public and other organizations;
- staff and board development; and
- adopting new tools and a more customer-driven focus in service planning.

Actions by Local Governments

The survey of transit agency staff conducted for this research showed that increasing supportiveness by local governments, including cities and counties, is a key to promoting mobility management. Efforts aimed at increasing supportiveness at the city and county level has more potential for promoting success at mobility management than similar efforts directed at any other level of government. Such efforts will enhance the political and organization environment for mobility management. Desirable actions by local governments include

- changes in land use, development, and zoning policies;
- providing or cooperating on funding;
- coordinating better with transit agencies; and
- taking a regional perspective on transportation issues, including better coordination with other local governments.

Actions by State Governments

State governments influence public transportation organizations through their role in federal funding programs, through state funding programs, in their role as builder and

TABLE 3 Potential for increasing success at mobility management

		Degree of Transit Agency Control		
Potential	**Influencing Factor**	**High**	**Medium**	**Low**
Highest	Funding			x
	Leadership	x		
	Cost		x	
	Organizational Culture	x		
	Political Environment		x	
	Performance Measures		x	
	Labor Relations		x	
	Management	x		
	Institutional Environment		x	
Lowest	Regulations			x

operator of major highways, through the administration of state regulations, and through administration of certain human services. The most frequently mentioned actions for state governments in the survey of transit agency staff were

- more funding,
- more flexible funding,
- establishing and maintaining incentives and regulations that favor mobility management,
- adopting land use regulation,
- making non-highway solutions a higher priority, and
- coordinating across modes and between departments.

Actions by the Federal Government

The Federal government has a major influence on public transportation through its funding programs, regulations, research and information programs, and through the tax code. Priority actions to enhance the potential for mobility management include

- providing targeted funding for demonstrations and mobility management programs;
- maintaining and increasing funding overall;
- reauthorizing ISTEA;
- conducting research, technical assistance, and education; and
- revising the tax code so that transit receives treatment equal to that of other modes.

Actions by National and State Organizations

Organizations such as the American Public Transit Association (APTA) and the Community Transportation Association of America (CTAA) represent public transit agencies nationally. Similar organizations operate in many states. Many other organizations focus on alternative modes, and still others represent cities, counties, states, metropolitan planning organizations, private providers, and organized labor. All of these organizations can promote mobility management through actions such as

- providing information, education, and training to their members;
- spreading mobility management success stories;
- advocacy for legislation and funding; and
- outreach to diverse groups.

Many of these efforts may require a change in focus and priorities by some organization. Effective action will often involve joint programs among organizations representing various local entities.

CONCLUSIONS

This research has shown that mobility management is a viable concept that is being practiced with success by a limited but growing number of local transportation agencies. Mobility management can bring multiple benefits, as described in Table 4.

TABLE 4 Benefits of mobility management

- A more visible role in the community, one that can broaden transit's base of support, give transit a more effective voice on policy issues, and enlarge the circle of stakeholders in transit's future.
- A wider array of services and more mobility options for the public, tailored to the needs of diverse markets.
- Greater flexibility to address the multiple public purposes transit is expected to serve.
- More cost-effective service.
- Increased access to funding.
- A renewed sense of purpose and opportunity for staff.

Thirty operational, technological, programmatic, and land use strategies and supportive actions have been identified that can be undertaken as part of a mobility management approach. Clearly, no one agency can or should undertake all the actions. In addition, some mobility management strategies may not be appropriate for public transportation agencies at all.

Mobility management can follow multiple models. Some mobility managers provide a range of services directly. Those agencies typically receive relatively generous and secure funding and have extensive staff resources. Other mobility managers have pursued mobility management with small staffs and limited funding, making extensive use of private sector resources and collaboration with other agencies.

The particular mobility management strategies that are appropriate for each agency will depend on its local situation, including its regulatory, funding, political, and institutional environment. Internal factors, such as leadership style, organizational culture, management resources, and labor relations, will also determine what mobility management strategies can be successfully pursued.

■ *Where staff are rewarded for creativity and initiative, they often will find ways to bring about change. Such rewards need not go beyond the traditional rewards available in public service.*

Leadership is by far the most crucial factor that can limit or enhance an agency's ability to be a mobility manager. Leadership is also the factor that is the most under local control. An effective leader who champions mobility management, cultivates the necessary skills and attitudes among the agency's staff, and builds relationships with other organizations and the community can overcome major barriers. Another key factor under local control is the organizational culture and how it stifles or encourages innovation. Where staff are rewarded for creativity and initiative, they often will find ways to bring about change. Such rewards need not go beyond the traditional rewards available in public service, such as opportunities for career advancement, recognition within the agency, and opportunities for recognition in the community or among professional peers.

Adequate funding is important for providing an array of mobility management functions, especially if an agency is going to provide the functions itself. Demonstration money has frequently played a key role in starting up new services. However, some agencies with restricted funding have used mobility management techniques, such as partnerships with other organizations and the private sector, as a tool for leveraging additional funding and for keeping costs low. Therefore, although the efforts of transportation agencies to become mobility managers will be greatly advanced through adequate funding, lack of adequate funding should not be considered a reason for business-as-usual attitudes.

All levels of government as well as state and national organizations can play key roles in encouraging mobility management and reducing barriers to it.

CHAPTER **1**

INTRODUCTION

RESEARCH PROBLEM STATEMENT

The goals of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), the Clean Air Act Amendments of 1990, and the APTA *Transportation 2000* report call for an intermodal approach to mobility problems and needs. Local transportation agencies are encouraged to become flexible "mobility managers"—not just providers of traditional fixed-route services. The term "transportation agencies" includes both transit operating agencies and agencies that have responsibility only for managing public transportation services.

Effective mobility management requires viewing the passenger transportation system as a whole. Specifically, mobility management means brokering, facilitating, encouraging, coordinating, and managing both nontraditional and traditional services to expand the array of transportation services to diverse consumer groups.

Making the transition from a traditional transit operating agency to one with mobility management responsibilities is not easy because institutional barriers, both internal and external to transit agencies, can impede success. Internal barriers include organizational focus and objectives, organizational risk/reward structure, organizational inertia, attitudes of personnel, and restrictive regulations. External barriers include parochial attitudes by political subdivisions, the difficulty of obtaining regional agreements, and divided decision-making authority. Although not every transit agency faces all these barriers, if the visions of ISTEA and *Transit 2000* are to become realities, research is needed on ways to overcome institutional barriers.

OBJECTIVES

The objectives of this research are

- to assess if, how, and why some transportation agencies have been able to become successful mobility managers;
- to transfer that knowledge to the rest of the industry;
- to identify means to advance beyond the current state of the practice; and
- to document internal and external barriers that must be overcome.

ORGANIZATION OF THE REPORT

In addition to the Summary and the Introduction (Chapter 1), the report consists of four additional chapters (one of them endnotes) and five appendixes.

Chapter 2,	"A Compendium of Mobility Management Functions," provides a refined definition of mobility management, a typology of mobility management functions, and an extensive compendium of examples of ways transit agencies have implemented the functions.
Chapter 3,	"Barriers to Mobility Management," describes how 10 factors in transportation organizations or their environments can limit or enhance mobility management.
Chapter 4,	"Case Study Findings and Resulting Actions for Transportation Agencies," summarizes the results of seven detailed case studies of transit operators that are in various stages of mobility management. It compares the role of institutional structure, funding, partnerships with other agencies, leadership, culture, and the level of community support in the seven agencies. And the chapter provides a brief listing of actions that local agencies can take on their own.
Chapter 5,	"Actions to Promote Mobility Management," provides detailed recommendations for steps that transit agencies; local, state, and federal government; and national state organizations can take to promote mobility management.
Appendix A,	"Case Studies," provides descriptions of mobility management functions at seven transit agencies, including an assessment of why mobility management works at each agency.
Appendix B,	"Transit Profiles from the 1994 Section 15 Report Year," contains profiles of agencies mentioned throughout the compendium in Chapter 2 with information about the vehi-

cles in service and the size and population of the service area.

Appendix C, "Performance Measurement for Non-Traditional Transit Services," documents research conducted as part of the technical assistance provided to the King County (Seattle) Department of Transportation.

Appendix D, "Documentation of Technical Assistance to the Central Florida Regional Transportation Authority (Orlando LYNX)," describes technical assistance provided to help LYNX develop its commuter pass and vanpool programs.

Appendix E, "Mobility Management Survey," contains the questionnaire used in a survey of transit agency staff and documentation of the methodology used to compute potential for increasing success at mobility management.

CHAPTER **2**

A COMPENDIUM OF MOBILITY MANAGEMENT FUNCTIONS

THE NEED FOR MOBILITY MANAGERS

Mobility management provides a framework for transportation agencies to embrace the multimodal philosophy of the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991. ISTEA mandates a multimodal planning process and allows for increased flexibility in the use of funds. ISTEA encourages agencies with a responsibility for public transportation to take a broad view of their missions, certainly going beyond traditional transit operations.

Mobility management is also a logical response to changing travel patterns. Continued decentralization of metropolitan areas and changes in family and work patterns are steadily eroding traditional markets for transit and limiting opportunities for service expansion. As a result, there has been a steady decline in both the percentage and the number of passenger trips taken by transit. According to the American Public Transit Association (APTA), total expenditures on transit between 1980 and 1990 increased from $6.5 billion to $16.1 billion.(*1*) This is a 148 percent increase in nominal dollars and a 56 percent increase in constant dollars, controlling for increases in the cost of living. During the same period, the number of work trips by transit decreased from 6.1 million to 5.9 million, and the percentage of work trips by transit decreased from 6.1 percent to 5.1 percent.(*2*)

In private industry terms, public transportation agencies need to diversify their product lines. In public service terms, agencies need to broaden their missions if they are to be effective in maintaining the nation's mobility.

WHAT IS MOBILITY MANAGEMENT?

Years before the enactment of ISTEA, forward-thinking transportation agencies recognized that fixed-route transit could not serve all needs. Those agencies began to experiment by adding other modes, such as carpooling and vanpooling services, dial-a-ride, subscription buses, and shoppers' shuttles. They called themselves "full-service transportation agencies," "multiservice providers," and "transportation brokers."

Their concept of offering more than fixed-route services to the public has carried over to the new term "mobility manager." The term is imprecise, meaning many things to many people. For example, APTA, the Federal Transit Administration (FTA), and the problem statement for this research all have variations on the definition of mobility management.

In its report entitled "Managing Mobility: A New Generation of National Policies for the 21st Century," APTA states, "All forms of high-occupancy and shared-ride services must be incorporated in the broader definition of public transportation, including rail, bus, car-, and vanpools, preferential treatment for high-occupancy vehicles, employer-sponsored programs, and other forms of ride-sharing" (p. 13). FTA has granted demonstration funds to several agencies for "mobility management" projects that focus on new technologies, such as computerized scheduling and dispatching for multiple organizations activated by calls to a single telephone number. The problem statement for this research defines mobility management as "brokering, facilitating, encouraging, coordinating, and managing both nontraditional and traditional services to expand the array of transportation services to diverse consumer groups."

To crystallize the concepts, four principles were developed to guide this research. A mobility management organization embodies four principles:

- **Facilitates alternatives to the single-occupant automobile**. The focus of this research is public transportation—that is, transportation that moves people collectively rather than moving each individual alone and privately. Therefore, implicit in the words "*public* transportation" is a mission to provide alternatives to the single-occupant automobile. The mobility manager may do this by providing the services directly or by facilitating the alternatives through collaboration with other agencies. The alternatives could include fostering an environment where the trip need not be taken at all—such as telecommuting or compressed work weeks—as well as instituting new services such as custom bus routes, shuttles, taxi vouchers, ridesharing, and so forth.
- **Provides new options to the public.** Example: An operator that collaborates with the private sector to offer a new shuttle to its rail line is a mobility manager because it *augments the alternatives* available. A fixed-route operator that consolidates two existing services into one agency is not necessarily a mobility manager, even though the merger may have many positive impacts on service. However, if the consolidation requires new connections between the systems, becoming something more than what existed before and opening more travel opportunities and links to the public, then the operator would become a mobility manager.

- **Expands on its traditional mission.** Example: If an agency finds it too costly to serve a low density neighborhood within its service area, it may start a vanpool program to ensure the customers some level of transportation. In that way, the mobility manager views its responsibility for providing a transportation system *holistically* rather than focusing on only one element of the system.
- **Goes beyond mandates.** Many agencies that previously provided only fixed-route services are now instituting paratransit for seniors and people with disabilities under the requirements of the Americans with Disabilities Act (ADA). Although paratransit represents a new level of services to meet the mobility requirements of customers, it is not designed primarily as an alternative to the single-occupant automobile. Furthermore, transit agencies are required by law to provide this type of paratransit. Mobility managers are defined in this research as organizations that go beyond mandates to *voluntarily* address the public's transportation needs.

By applying these principles to the research underlying this compendium, a specific definition has emerged that relates to concrete actions and functions:

A mobility manager is a transportation organization serving the general public that responds to and influences the demands of the market by undertaking actions and supportive strategies, directly or in collaboration with others, to provide a full range of options to the single-occupant automobile.

There are degrees of mobility management. The highest degree of mobility management achievement would occur in an agency that employs most of the strategies and supportive actions listed in Table 1, in the Summary. An agency that provides only fixed-route service would not be a mobility manager. Between the extremes are agencies that represent varying stages of mobility management.

A model mobility management agency would offer the full range of services (or facilitate their provision by others), complemented by supportive actions and policies. These actions and policies might be technological, such as fare media integrated with other transportation providers; informational, such as providing trip-planning kiosks at activity centers; or physical, such as siting an intermodal transfer center. However, such supportive actions and policies must be accompanied by operational services that go beyond fixed-route transit.

PURPOSE OF THE COMPENDIUM

The compendium is a resource document that provides a menu of mobility management options suited to various settings. Table 1 summarizes mobility management functions and classifies them as strategies or supportive actions. The functions are divided into four categories:

- **Operational**: Nontraditional methods of service delivery, which are generally not fixed routes and may include collaboration with other partners.
- **Technological**: Increased travel options or convenience through use of technical advancements.
- **Informational/Programmatic**: Expanded mode choices resulting from more complete information and broader-based marketing.
- **Land Use**: Techniques to foster transit ridership through links with land development.

Each strategy or supportive action is briefly defined. Strategies are further defined by presenting an example from an agency that has tried or instituted the technique. The example gives some of the history behind the adoption of the strategy and how the agency has put the strategy into practice. Briefer references are given for each supportive action. Through this format, transportation agencies can comprehend the range of mobility options and how they have been implemented within the industry.

Mobility management functions have been divided between strategies and supportive actions. Strategies have been defined as actions that require the direct involvement and responsibility of the transportation organization. They differ from supportive actions in the greater magnitude of effort and budget resources strategies demand from the transportation organization. Strategies represent a commitment to a new way of serving the public. Supportive actions are important additions to an organization's menu of services, but they do not necessarily translate into a change in mission. Agencies who only add supportive actions have not yet embraced mobility management as a way of thinking, whereas agencies that introduce strategies are becoming proactive about mobility management. Strategies focus on providing expanded travel options for the public, whereas supportive actions, generally, enhance operations but do not introduce new mode choices.

The line between strategies and supportive actions is not distinct, however. For example, one transportation agency might compile a booklet for cities on how to require transit-friendly designs in new development. Another agency might actively change legislation not only to require transit-friendly designs but also to change densities to foster increased transit ridership. The first agency would be employing supportive actions; the second would be implementing mobility management strategies.

Note that the emphasis in this compendium is on *actions*—tangible activities whose degree of success can be seen and measured. Inherent in these actions are *attitudinal* mobility management functions. A mobility manager is **responsive to the marketplace**. Being alert to the needs of the customer and adopting a mission to address those needs is an underlying attitude necessary for designing services that succeed in the marketplace. A mobility manager also is willing to work with other institutions to take action. Thus, the attitude of a

mobility manager must be **collaborative**. A transportation organization that is a mobility manager views itself as a **leader** and a **change agent**. Although the compendium does not explicitly give examples of these attitudinal functions, they will be apparent in the actions represented by most of the agencies discussed. Attitudinal functions are discussed in detail in the analysis of seven case studies later in the report.

I. STRATEGIES

The compendium illustrates a rich variety of mobility management actions being practiced by transportation organizations in the United States. Because no survey was conducted, no statistical conclusion can be drawn about the extent to which mobility management is practiced. Instead, examples were derived from a literature search, from self-nominations as a result of press releases announcing this study, and from extensive telephone interviews. The result is over 60 agencies represented in the compendium. To illustrate the breadth of actions being practiced, the examples chosen represent a cross-section of transportation organizations. Therefore, agencies that embody several mobility management functions are not necessarily described in each example relevant to their activities. The examples are not exhaustive and have been limited by deadlines for completing the research.

Profiles of agencies mentioned throughout the compendium can be found in Appendix B. They were compiled from the *1994 Section 15 Transit Profiles*. Vehicles refer to that number operating in maximum service. Service area is reported in square miles, and population is number of people in the service area. No profiles appear for agencies that did not appear in the 1994 Section 15 reports.

OPERATIONAL STRATEGIES

Operational strategies are nontraditional methods of service delivery. They may include assisting customers with nontransit travel options, such as carpooling and vanpooling, or they may include transit options that are not fixed route, such as subscription buses, shuttles, and demand-responsive services. Other strategies may include supplementing fixed-route transit with private jitneys or volunteer services. The following section describes 13 variations of operational strategies with 34 industry examples to illustrate the strategies.

Ridesharing

In adding a ridesharing function, the transportation agency helps commuters organize carpools or vanpools, generally through computer ride matching. Carpools consist of two to five persons riding together regularly but not necessarily every day. Vanpools are 8- to 15-passenger vehicles in which passengers usually pay a monthly fee to ride together. The vans can be owned by the transportation agency, contracted through a leasing agency, or owned by the driver. The agency also may provide other services, such as personalized follow-up with ride matching applicants; promoting ridesharing at employment sites; and encouraging the creation of incentives, such as park-and-ride lots and high occupancy vehicle (HOV) lanes on highways. Ridesharing provides another option to commuters who are not served well by fixed-route service. Providing ridesharing also can allow the transit operator to address mobility needs in low density areas where frequent headways on fixed-route service are too costly to provide.

*Industry Examples**

The city of Seattle, Washington, operated the Commuter Pool rideshare program from 1974 to 1984. In 1984 the program was merged into the regional transit operator, then called **Seattle Metro**, to make it more regional and give it a stable funding base. For the first two years after the merger, the program existed as a separate division of the transit agency, but since then it has been totally integrated into the organization (since reorganized into the county government and called the King County Department of Transportation).

Metro has an in-house regional ride matching system that handled 10,153 new match requests in 1993. It owns 522 vehicles for its vanpool program. Vanpool fares are priced to recover all capital and operating costs and 45 percent of administrative costs. Commuters can get credit toward their vanpool fare with a Metro bus pass. Metro supplements its ridesharing activities with a wide range of supporting activities, including media campaigns, business community outreach, governmental advocacy, providing information on park-and-ride lots, and a guaranteed ride home program. It assists employers in meeting trip reduction ordinances, including preparing plans, processing surveys, and training on-site coordinators.(*3*)

The **New Jersey Department of Transportation (NJDOT)** operates PoolMatch, the statewide ride matching database, and has set up eight subregional Transportation Management Agencies (TMAs) to do the outreach. The TMAs are private, not-for-profit organizations supported by state grants and membership fees from businesses. However, near Newark, in Essex and Union Counties, **New Jersey Transit (NJT)** itself operates the TMA, dubbed Transit Plus. Transit Plus was begun in March 1993 as an outgrowth of the Business Transit Alliance, which promoted transit services statewide. Unlike the Alliance, Transit Plus promotes other alternatives to the automobile, such as carpooling and vanpooling, as well as transit services. Rather than charging a membership fee to the businesses with which it works, NJT underwrites the TMA. Services include supplying racks with timetables, conducting on-site ride matching events, setting

*Telephone interviews with agencies' staff were used extensively to research the Industry Examples and should be considered the source of the information presented unless otherwise footnoted.

up vanpools with a discount through a third party contractor, and providing a Guaranteed Ride Home program.

The state of New Jersey has adopted a "Transit First" policy, where the first information given to callers by the TMAs is supposed to be how to make their trip by transit. NJT is a statewide system of buses and rail lines. Because it has the highest level of transit available in Essex and Union counties, it runs the TMA there to ensure that ridesharing will complement rather than erode its transit services. It has a written Memorandum of Understanding outlining its responsibilities and its relationship with NJDOT.

The **University of Iowa** in Iowa City uses vanpools and carpools as part of its strategy to reduce automobile trips to campus. Individuals are given assistance in locating suitable members to form carpools with a Ridership Matching Program. There are three commuter lots with 2,500 spaces on campus in which individuals/carpools may park their vehicles and enter the campus by using the university's 27 buses. The university also administers an Employee Vanpool Program currently encompassing 43 vans and 645 riders. The university currently subsidizes about one-third of the total cost of operations. The program was recently opened to some students.

Subsidies to Vanpoolers

Whereas public funds subsidize transit fares, vanpoolers generally pay the full direct costs of vehicle acquisition, operation, and maintenance. However, some transportation agencies that provide vanpool services have treated vanpools as just another vehicle type within their fleet. They have used subsidized vanpools in low-density areas where fixed-route service would be much more costly, as substitutes for new service to employment sites, and for suburb-to-downtown business district work travel to conserve limited coaches for central city service. In those instances, part of the vanpooler's fare is underwritten just as the transit rider's fare is.

Industry Examples

Capital Metropolitan Transit Authority in Austin, Texas, provides subsidized vanpools to serve areas where fixed-route service would not be cost-effective. Rather than run buses in parts of their service district with low demand, Capital Metro charges approximately 750 passengers only $10 a month to ride in vanpools. Federal funding and city taxes are used to subsidize the other 90 percent of the operating cost. Over fifty 14-passenger Dodge maxivans are leased through VPSI, a private company, which insures and maintains them. Capital Metro provides the ride matching, administration, and marketing of the vanpool program, which has been in existence since 1986. The driver pays no monthly fare and may use the van during noncommute hours for personal travel at his or her own expense.(*4*)

Corpus Christi Regional Transportation Authority (RTA), also in Texas, offers area commuters computer-assisted rideshare matching services and a comprehensive vanpool program. Vanpools operating exclusively within the RTA service area receive a 50 percent subsidy of the operating cost. Vanpools that travel either to or from areas outside the RTA service area are not subsidized; however, RTA will provide the matching assistance and vanpool management for these groups.(*5*)

Subscription Buses

Subscription bus services are targeted toward a specific employment location. The passenger receives a reserved seat by paying a weekly or monthly fare in advance. A subscription bus is usually started only when sufficient passengers have committed to the service to ensure a minimum revenue. Subscription service may be organized by employers, employees, or the transit agency itself, with the transit agency providing the vehicle and a driver paid an hourly rate or by shift. Because subscription bus routes may cross transit district boundaries, interdistrict agreements may be needed.

Industry Example

The **Golden Gate Bridge, Highway, and Transportation District (GGBHTD)** in Marin and Sonoma counties, California, sponsors a subsidized subscription bus service provided by a private operator under contract. Both counties' transportation alternatives are restricted by topography. The buses travel from these low-density, suburban counties to San Francisco along the only major north–south corridor (US-101), which is severely congested at peak hours. Some continue about 4 mi into San Francisco Municipal Railway's service area to provide direct service from those adjacent counties.

The subscription buses are referred to as "club buses," because clubs of commuters have historically been responsible for organizing and administering them. Each club selected its own private operator based on competitive bids. In 1971, at the request of club bus leaders, GGBHTD approved a 50 percent subsidy for the six clubs administering 15 buses. Although GGBHTD began operating its own transit buses in 1972, the club bus program grew because of the lack of more conventional express bus service. By 1983, there were 15 routes and 27 daily runs.

In recent years, the program has declined. No new club buses have been formed since 1990. The clubs that remain exist in areas where GGBHTD provides limited service. In 1994, 13 bus runs served four commuter clubs with a membership of approximately 405 people. Fares are set by the club and must be paid one month in advance. Although the subsidy is now down to 30 percent, fares are similar to those charged for regular fixed-route service. There is a

disincentive to subscribe if the potential member is not a daily rider—for example, if the rider frequently is out of town on business. The advantage, however, is that subscription members are guaranteed a seat with people they know and with whom they often form friendships.

GGBHTD has only one contractor, instead of multiple ones, operating the service. Because vehicles are required to be ADA-accessible, the contractor leases 45-passenger buses from GGBHTD for $50 per service day. Private operators running charter buses generally do not have lift-equipped vehicles. Therefore, a limit on how many new club buses could be formed is imposed by the number of extra buses GGBHTD has available. GGBHTD also requires a waiting list of 30 persons before starting a new bus.

Although the club bus program is no longer in its heyday, it continues to offer transportation options to sections of the district where frequent fixed-route service could not be justified by ridership or economics. In another instance, the club buses provide direct service to a part of San Francisco that otherwise would require transfers onto another system. By using this mobility management technique, GGBHTD can meet the needs of a hard-to-serve segment of its constituency.

Subscription Buses with Paid Nonagency Drivers

A variation on the subscription buses described in the previous example involves paying one of the potential subscribers to drive the bus. In that case, the transit agency can provide customized service to special groups at a lower cost, because the driver's wages are paid only when the bus is actually in operation—that is, there is no guaranteed minimum paid schedule as with full or part-time union drivers. Nevertheless, subscription bus drivers are usually members of the union for the period of time they are operating the bus before and after their regular job.

Industry Examples

Kitsap Transit in Bremerton, Washington, coordinates the Worker driver subscription buses it inherited from the Bremerton Shipyard's World War II transportation program. When Kitsap took over the program in 1982, a private contractor to the shipyard was running ten 1948 coaches with 10 passengers in each. Paid shipyard employees drove buses. Today subscription buses fluctuate between 35 and 50 vehicles carrying 35–40 passengers in 40-ft suburban coaches. Fares for the subscription buses, as well as the 70 vanpools Kitsap sponsors, are distance-based rather than self-supporting, in keeping with the philosophy that they are extensions of the fixed-route services and should be subsidized accordingly. Worker drivers park the buses at their homes or at park-and-ride lots at night and on weekends. On work mornings, buses loop around the neighborhoods and then run express into the shipyard, which employees 25,000 people. Riders are dropped off at the door of their workplace and drivers return the vehicles to the bus barn. Subscription bus drivers are then taken back to the shipyard by Kitsap drivers. The shipyard builds in time for this shuttling with no late penalty for the worker drivers. Wages of the worker drivers, who are represented by the transit union during the time that they are driving the bus, are close to those of part-time union employees. Each bus has two trained backup drivers, and the safety record of the worker drivers is excellent. Kitsap hopes to expand the program to accommodate the 10,000 sailors who will soon be assigned to Bremerton as their home port. However, the Navy rule prohibiting union membership will have to be overcome to enable the sailors to become worker drivers.

A similar program with paid, nonagency drivers is operated by the **San Joaquin Regional District (SMART)** in northern California. SMART runs 14 subscription buses from San Joaquin County to four other counties in the San Francisco Bay Area. Half the subscription buses are funded from a countywide half-cent sales tax that emphasized development of alternatives to driving alone as an air quality measure. SMART worked with large employers and the air district to identify residents who were commuting out of San Joaquin County to job sites in the Bay Area. Passengers meet at park-and-ride lots to ride the luxury buses, which have high back seats and reading lights. Seats are rented by the month, although reservations for daily riders are accepted if the bus is not full. A minimum of 15 subscribers is necessary to start a subscription bus, and most are full with 39 passengers. Employers and the regional ridesharing agency both assist in marketing the services to new subscribers. Drivers are employees of the various Bay Area companies that are served by the subscription buses. They are also members of the transit union paid by the hour. Because the commute can be as long as 2 hr one way, SMART saves money with this driver arrangement; it does not have to pay wages for the deadhead time to the yard and out again midday. Because a number of the 40-ft buses have the Silicon Valley in Santa Clara County as a destination, SMART is developing a maintenance agreement with the Santa Clara County Transportation Agency in case repairs are needed during the day.

Coordination with Private Shuttles

Employers and developers often provide privately operated shuttle service to their clientele. A transit agency that coordinates with private shuttles can increase the level of service available to riders and encourage them to make complete trips by transit. For example, a shuttle from a company's downtown office to a satellite office could be interlined with the public bus. Such a service could provide a level of service not financially possible if either the company or the transit district tried to provide it alone. In a second example, if a developer's shuttle to commuter rail were

considered part of the overall system, it could alleviate pressure on the transit agency to add expensive new peak feeder service or give the district an opportunity to shift resources to underserved areas. However, schedule changes needed for coordination must not disadvantage the public, who are ineligible for private, closed-door shuttles. Another consideration before making significant schedule changes is the length of time the private shuttle operator is committed or required to run the service.

Industry Examples

A series of innovative partnerships has provided transportation between business parks and the commuter rail in San Mateo County, California. The partnerships involve

- The **Peninsula Corridor Joint Powers Board** (JPB), a consortium of three counties that operates CalTrain, the commuter rail service between San Francisco and San Jose.
- **San Mateo County Transit District** (SamTrans), the countywide bus operator that also staffs and administers the JPB.
- The **Multi-City TSM Agency** (MTSMA), a joint powers authority of eight cities in the northern county, which jointly implement trip reduction programs.

All three organizations have adopted policies encouraging private shuttles. By involving employers, it has been possible to leverage private dollars to provide transportation to areas that were not productive for SamTrans to serve with fixed-route buses.

MTSMA has developed a consolidated system of three shuttle services. The consolidated shuttle schedule has resulted in significant ridership increases with costs equal to or often below what an individual employer had previously expended.

Six individual employer shuttles often overlapped shuttle schedules to BART and CalTrain, experienced low productivity of fewer than 6 passengers per hr, and cost, on average, about $4 per passenger trip. The Bay Area Air Quality Management District awarded MTSMA $196,900 to consolidate the 6 private shuttles into a system of 3 shuttles in three suburban areas that adjoin each other that had no public bus service. The grant pays 50 percent of the shuttle costs, and employers contribute the remaining 50 percent. Two of the 3 consolidated shuttle services are provided by private contracted services. The 3rd shuttle service is operated by a property management company. The shuttles are all free to commuters.

An example is the Genentech/Homart shuttle service. Genentech, a 2,000-employee biotechnology firm, previously offered shuttle service to CalTrain with only 1 vehicle. Homart, a property management firm with a large suburban office building housing 2,500 employees, owned and operated a single 25-passenger minibus to both CalTrain and the Bay Area Rapid Transit (BART) train. Only 3 trips to CalTrain and 1 trip to BART were possible during the commute periods. The grant enabled MTSMA to consolidate the shuttles, providing 8 runs with 2 buses on 20-min headways to BART and 6 runs on $^1/_2$-hr headways to CalTrain. Average monthly ridership on the 2 shuttles is now 5,100 passengers on the BART shuttle and 2,200 passengers on the CalTrain shuttle.

The JPB already funds shuttles in southern San Mateo County and Santa Clara County in partnership with large employers. With the success of MTSMA's consolidated shuttle program, the JPB has agreed to continue the public subsidy when the Air District grant ends. SamTrans will then have a complementary system of private shuttles to supplement its bus system with little risk and no day-to-day operational responsibilities.

Operation of Shuttles Funded by the Private Sector

In this strategy, employers, developers, or business organizations contract with the transit operator to provide additional service beyond the basic public transportation available. For example, an employer who is relocating may offer a shuttle from a transit center to the new location as a retention incentive to existing employees. To be competitive for the labor pool, an employer located in the outskirts of a community may institute a noontime shuttle to shopping centers or restaurants. Other shoppers' shuttles may be funded by downtown businesses or the chamber of commerce. Developers may be required to provide shuttles from residential projects to a transit station as a traffic mitigation measure.

When the transit operator provides the shuttle service with federally funded vehicles, the service must be open to the public, even if the private party is paying the full cost. Some transit agencies have prorated the cost to an employer to account for use by the public. If the shuttle primarily serves an employment center, often the shuttle makes few stops on public streets, with the result that use by the general public is very low. Fares for the target group are frequently wholly or partially underwritten by the private sector sponsor. If a fare is charged to the public, a mechanism to distinguish the public from the target group must be developed for the driver.

Industry Examples

Diversifying the product line is an adopted goal of **Hillsborough Area Regional Transit (HART)** in Tampa, Florida. That goal and revenue losses leading to service cuts caused HART to institute new shuttle services in partnership with the private sector.

One new shuttle launched in December 1994 provides noontime service between the Westshore business park and

downtown Tampa, with its historic district, restaurants, and entertainment attractions. Because of the business park's campus-like setting, employees have heretofore had to drive everywhere at lunchtime. HART used a state energy grant to purchase compressed natural gas vehicles for the new service, which will be run by an independent contractor. It is also receiving a 3-year state Department of Transportation service demonstration grant. The remainder of the funding is coming from a tax assessment district formed by businesses four blocks on either side of the route. When the demonstration grant has ended, the assessment district will pick up the rest of those costs.

A second shuttle began in March 1995. A contractor operates the all-day shuttle running from the port, where the cruise lines and aquarium are located, to downtown hotels and restaurants. Forty sources provide for the unique funding mix underwriting the shuttle. Taxes from an assessment district formed by the Downtown Partnership, dollars to mitigate any adverse environmental impacts from a Port Authority development project, and contracts with 30 restaurants constitute part of the funding. HART is getting a state energy grant and a state service demonstration grant for this project also. Because standard coaches do not easily fit on some of the streets on the route, electric vehicles will be used. In keeping with HART's philosophy of being sensitive to the environment, the lighter weight electric buses will not drip petroleum nor harm the pavers in cul-de-sacs along the route.

These shuttles are overseen by independent steering committees composed of stakeholders in the projects. The steering committees created the routes, chose the contractors, and approved the color schemes and graphics. By building those coalitions, HART has attempted to create more ownership in the transit system and its long-term success.

In January 1985, Pacific Bell Telephone Company began to relocate 7,500 employees from its San Francisco, California, offices to a new administrative center in San Ramon, a suburban location about 30 mi away. It contracted with the **Central Contra Costa Transit Authority** (CCCTA) to shuttle employees from a Bay Area Rapid Transit (BART) commuter rail stop to the new center, a trip of about 10 mi one way. The fare was $1 per trip and the headways were 15–20 minutes during peak periods only.

The shuttle was a visible sign of the company's concern for the environment, energy resources, and its employees' well-being. It was used to retain the current workforce, by addressing worries about the inconvenience and length of the new commute. Its cost was offset by the forgone expense of training new workers. It also demonstrated the company's commitment to easing congestion by encouraging transit ridership.

Encouraged by the Pacific Bell shuttle, CCCTA aggressively pursued similar services with other employers. It started one other BART shuttle to the Concord Airport Plaza, took over an existing shuttle from a developer, and began a noontime shuttle for Pacific Bell and other employers in San Ramon.

As is typical of company relocations, some Pacific Bell employees began to find other jobs, while others relocated to San Ramon. In response to declining ridership, the service was reconfigured in 1989, but was eventually canceled in 1991. Like most shuttles, the Pacific Bell shuttle was an expensive operation compared with the number of riders transported.

The Concord Airport Plaza and the Pacific Bell noontime shuttles are still in operation, however. Thus, although the original contract did not last over time, the concept remains a successful one for CCCTA. The need to give employees mobility options to the auto, the desire to augment basic public transportation to their sites, and the positive image created in the community are reasons that companies will continue to contract with transit agencies for such shuttle services.

Facilitation of Casual Carpooling

Casual carpooling is an occurrence in which commuters spontaneously organize themselves to ride to work with strangers. It is not simply hitchhiking, because it is done daily by large groups of people at pickup points that have evolved around transit stations or stops. Drivers who want to take advantage of high occupancy vehicle (HOV) lanes or avoid a toll by carpooling pull up to these pickup points. By picking up two people, the vehicle qualifies as a carpool for these highway incentives. The two people usually have a bus or train nearby as a backup in case no driver comes along, but they prefer the casual carpool because it is a free ride and assures them of a seat. The trip is usually faster than transit for the riders and is definitely faster for the driver than commuting alone.

Because certain conditions must exist, casual carpooling does not occur everywhere. There must be significant time savings or a monetary incentive, and there must be a common destination or pickup point. Casual carpooling is popular in San Francisco and Washington, D.C., with some activity also in Denver and Pittsburgh.

No transit agencies are known to have embraced casual carpooling as a mobility option and attempted to facilitate it. However, for those transit operators affected, it is a phenomenon to be considered in their mobility management strategies and addressed in their operations.

Industry Example

In the San Francisco Bay Area, casual carpooling began in the 1970s as a way to get across the Bay Bridge from East Bay cities, especially Oakland and Berkeley, to San Francisco. Today it attracts 8,000 daily commuters, according to a 1993 survey by RIDES for Bay Area Commuters.(*6*) Casual carpooling is a one-way commute mode across the bridge to take advantage of the HOV lanes leading to the toll plaza during the morning peak. Because these incentives do not exist in the evening peak direction, and because com-

muters are not going to one central city but to many suburbs on the trip home, widespread casual carpooling does not occur during the evening commute.

By the 1980s, casual carpooling had become troublesome enough to the **Alameda-Contra Costa Transit District (AC Transit)** and to the **Bay Area Rapid Transit District (BART)** that they began to mount an active campaign against the phenomenon. Both transit agencies attributed ridership losses on their transbay service to casual carpooling. Yet, because of the one-way aspect of casual carpooling, AC Transit and BART needed to supply enough vehicles and drivers in the evening to get the additional 8,000 people home. Therefore, cost-saving adjustments due to fewer riders were not easy to accomplish when only one direction was affected.

Because casual carpoolers were using AC Transit bus stops as pickup points, AC Transit asked city officials to find other pickup places that would not encroach on bus operations. Today, the alternative stops are marked as carpool pickup points and are located near but not at bus stops.

AC Transit also changed its transbay fare structure. The total round-trip fare remained the same, but the morning fare was lowered and the evening fare was raised. In this way, casual carpoolers who used the bus only in the evening paid more to keep the bus available to them, but those who used AC Transit for the round-trip commute were not penalized. In August 1993, the fare differential was abandoned in an agencywide fare simplification program. The belief was that the complications imposed on transfers and monthly passes outweighed the benefits of the differential fare.

BART officials also were concerned about pickups in their facilities. Casual carpoolers would park in BART lots, get picked up outside the fare gates, and return home to their car in the evening on BART. Because BART has a parking shortage, BART discouraged casual carpoolers to make room for round-trip BART riders. BART's free parking lots are now numbered; riders have to enter their stall number in machines inside the paid area of the station to avoid a parking ticket.

Although these examples do not illustrate how transit officials have incorporated casual carpooling into their mobility management techniques, they do illustrate how they have made an effort to coexist in what the RIDES report calls "an uneasy truce."(*7*)

Dial-A-Ride for Late Night and Low Density Trips

As an alternative to canceling or continuing to operate fixed-route service where there is low ridership, a number of transit agencies have contracted with private operators and taxi companies to provide dial-a-ride transportation. When travel patterns are dispersed, this option costs less than fixed-route buses and maintains mobility within the community. Service capacity can easily be increased or decreased as demand changes.

If taxicabs are used for the dial-a-ride service, it is important for productivity to encourage shared rides. This may require a change in the local ordinances regulating taxicabs. Obviously, the viability of the strategy depends upon a sufficient number of available taxicabs within the service area.

In rural areas, which are low density by definition, dial-a-ride is usually the primary service delivery mode rather than fixed-route transit. Rural operators often coordinate a system that combines dial-a-ride for the general public with social services transportation to maximize the use of vehicles.

Industry Examples

During the 1970s, **Ann Arbor Transportation Authority (AATA)** in Michigan operated only dial-a-ride transit. However, as more riders used the system, the costs went up, sometimes at a higher rate than ridership. Dial-a-ride was abandoned in 1979 due to these diseconomies of scale. However, late night service from 10 p.m. to 6 a.m., dubbed Night Ride, continues to be operated as dial-a-ride through contracts with taxicabs. The taxi operator receives a per-passenger rate plus the fares. The city's taxicab ordinance requiring metered fares and prohibiting shared rides exempts taxis providing mass transportation services.(*8*)

Tidewater Regional Transit (TRT) in Virginia tried several versions of shared-ride taxis to shopping malls in low density areas before successfully implementing its current Maxi-Ride paratransit services. In 1979 TRT was awarded National Ridesharing Demonstration Program funds along with state funds to develop shared-ride taxi services in selected areas. Twelve experimental dial-a-ride routes were instituted by contracting with a cab company and an airport limousine company. Three routes that replaced fixed-route services succeeded and were integrated into TRT's budget after the demonstration ended. Maxi-Ride now operates in low density, high income areas where fixed-route service has been discontinued because of low ridership. TRT no longer contracts with taxicab owners but operates its own vans. Maxi-Ride substitutes for a former circuitous bus route, for the end of another route that had poor ridership, and for night service. Riders can call Maxi-Ride drivers directly via cellular phones on the vehicles to make trip reservations rather than going through central dispatch.(*9*)

After Hours is a program of **SpecTran,** a subdivision of **Palm Beach County Transportation Authority (CoTran)** in West Palm Beach, Florida, under contract with Yellow Cab. Riders who call 24 hr in advance can receive free rides between 6:30 and 11:30 p.m. if at least three people request the service. Another evening program, the Voucher Service, operates between 5:30 p.m. and midnight. Passengers pay $2 for a ride of up to 15 mi and $1.25/mi for greater than that distance. The services are designed to supplement CoTran, the fixed-route buses that do not operate after 9:30 p.m. The Voucher Service is underwritten by a 6-cent gas tax that was passed in the county a few years ago.

A sampling of rural and small urban systems that focus on dial-a-ride for low density areas are **Ottumwa Transit** in Iowa, **Cape Cod Transit Authority** in Massachusetts, and **Southeast Missouri Transportation Service, Inc. (SMTS)**. Ottumwa operates seven vehicles in a small urban system and coordinates the rural system in 10 counties. It delivers door-to-door paratransit to clients of social service agencies, such as senior centers, Headstart, and sheltered workshops, as well as scheduling trips for the general public. Cape Cod is a small rural transit agency serving 15 towns in a 400-sq-mi area. It operates 45 buses, primarily under contract for dial-a-ride services, although it also has one fixed route and partially funds a private contractor to operate an intercity route. SMTS is a private, nonprofit operator providing paratransit to 26 counties in the Ozark Mountains. Although the urbanized area has a population of 35,000, in some of its service area the density is less than 1 person per sq mi. SMTS operates about 60 vehicles and also contracts with volunteers to take riders. Volunteers turn in a record of the miles driven and SMTS pays them a mileage reimbursement. It hopes to expand the mileage reimbursement concept to workers, who would take passengers occasionally as they drive to and from work.

Demand-Responsive Feeders

Demand-responsive feeders also operate in low density areas, like the dial-a-ride systems described previously. In this case, their main purpose is to feed the fixed-route buses. Taxis, vans, or small buses collect passengers who call to be picked up at their door and delivered to transfer points connecting to fixed-route buses. The feeders can be a less costly extension to a fixed route or can be used to provide higher frequencies where there is limited fixed-route service.

Industry Examples

San Diego Transit Corporation operates a feeder service to fixed-route transit in five areas of this southern California community. Service began in 1982 as an Urban Mass Transportation Administration (UMTA) demonstration program. Taxicabs were used to transport riders from

- Paradise Hills, where a fixed route had proven unproductive because of the hilly terrain and discontinuous street network.
- Mira Mesa, where the taxi feeder service improves neighborhood coverage in an area with existing express bus service and establishes a market for fixed-route implementation when demand requires.
- Mid City, replacing part of a bus route to allow the route to be shortened and to improve recovery times.

Because the demonstration was so successful, San Diego Transit continued it with its own funds. It has since added two routes in high income areas that were not being served because of low ridership potential and long travel distances. These feeders give the new areas service without the costs of fixed-route buses.

A small family business now runs the feeder service with mini-vans. Taxicabs were discontinued in 1987 when the operators lost interest in the margin of profit they were making on the feeder routes compared to regular cab fares.

The ridership profile generally mirrors that of the fixed-route service. Riders can subscribe to the service or call 1 hr in advance of the trip. Overall, 30 percent of the riders are subscribers, although in the peak periods, subscribers make up the majority of the riders.

The feeders are scheduled to arrive at transfer points so that passengers have no more than a 10-minute wait to connect to the fixed-route bus. The fare, which includes a free transfer to the bus, is equivalent to that charged on express buses.

The **Central Contra Costa Transit Authority (CCCTA)** instituted Commute Link in a residential area of Walnut Creek, California. Because the service uses two of the vehicles that are also used for CCCTA's elderly and disabled paratransit operation, Commute Link is designed for commuters during the peak hours only. In this way, CCCTA enhances the use of its existing resources while increasing the level of service during commute hours.

Passengers are required to call 1 hr in advance of their curbside pickup to downtown Walnut Creek employment sites or to the Bay Area Rapid Transit (BART) commuter rail station in the morning. However, a stable ridership has developed who call to subscribe weekly. In the evening peak, Commute Link departs from the BART station every 15 to 20 minutes and no advance notice by passengers is required. The service receives funds from the California Department of Transportation to mitigate the adverse environmental impacts of a freeway reconstruction project as required by the California Environmental Quality Act. The passengers also pay a premium fare.

Checkpoint Dial-A-Ride

Checkpoint dial-a-ride is a variation of the demand-responsive services described in the previous section. Pick-ups and drop-offs take place not at curbside but only at specially designated checkpoints. When a passenger calls for service, the dispatcher finds the nearest checkpoint, located so that the passenger has only a short walk. Checkpoint service can be more efficient than curbside service, because drivers do not have to spend time searching for exact addresses, waiting for passengers, or driving into hard-to-reach areas such as cul-de-sacs and apartment complexes. Because passengers are required to wait at checkpoints, there is a greater need to make sure the vehicle arrives on time than is the case for door-to-door dial-a-ride.

Industry Example

The Valley Feeder is an example of a modified checkpoint dial-a-ride operated by **Rogue Valley Transit District (RVTD)** in Medford, Oregon. A passenger who lives more than ¼ mi from a bus stop can call for a ride to the nearest bus stop. The passenger then waits at a designated point to be picked up by a dispatched van or taxi, which will arrive within five minutes and transport the passenger to the fixed-route bus stop. On the return trip, the bus driver radios the cab company if a passenger will be dropped off at the transfer point, which is a gas station. The cab is then waiting when the passenger disembarks the bus, and the passenger is returned to the original neighborhood checkpoint. In the near future, drivers will need only to push a button on the dashboard instead of using the radio to call for a return taxi.

The Valley Feeder was implemented several years ago in response to declining operating revenues for the district's 17-bus system. The goal was to shrink the trunk lines without a loss of service. Checkpoints are bus stops formerly served by 10 of the fixed routes. The passenger does not pay for the taxi portion of the trip; the regular fare is collected when the passenger boards the fixed-route bus. Because the fixed-route service used to cost the transit district $48/hr and the taxi ride costs the district $4, the Valley Feeder is proving to be a cost-effective solution. Since its implementation, ridership has increased from 650,000 to 800,000 per year.

Service Routes/Community Buses (*10*)

The previous sections have described various dial-a-ride operations that bring pickup and drop-off services closer to the customer than traditional fixed-route buses. Service Routes, by contrast, are not demand responsive but are fixed routes designed to reduce the distances that people must travel to bus stops. Because the buses travel into neighborhoods or into congested pedestrian areas, such as shopping malls, often small paratransit vehicles or low floor buses are used. Usually patrons can flag buses anywhere on the routes. Exiting the bus is also permitted anywhere on the route. Some operators allow requests for route deviation, where the passenger can be picked up or dropped off a few blocks from the fixed route. One of the goals is to reduce the demand on paratransit by designing fixed service routes that are easy to use for the elderly and persons with disabilities. Service Routes have been used both as supplements to traditional fixed-route busing and as replacements for it in low patronage areas. Service Routes are so named by the Swedish, who introduced the concept in 1983 as a service option to paratransit users. In Canada, the concept is called Community Buses.

Industry Examples

Midday and local fixed-route services, formerly provided by Bi-State Development Corporation of St. Louis, are now operated as Service Routes by **Madison County Transit** in Illinois. More coverage is possible because the Service Routes cost about one-quarter as much as the Bi-State routes. Since the Service Routes were introduced in 1985 as replacements for fixed routes with low patronage, total daily ridership on both the Bi-State routes and the Service Routes has increased from 4,000 to 6,500 per day. Through marketing, the use of paratransit drivers on the Service Routes, and travel training programs, Madison County also has been able to reduce the demand on paratransit by an estimated 42 percent.

Madison Metro Transit System in Wisconsin added Service Routes to the existing fixed-route network in 1992. The routes were designed initially primarily to serve senior citizens and persons with disabilities. For example, a bus stop has been established off the main arterial at the front door of a large complex of senior citizens' housing. If the rider is ADA-eligible and has called in advance, the bus also will deviate from the fixed route to give door-to-door service. The routes are operated with low floor buses, and drivers give assistance to the passengers. The initial Service Routes have been realigned after some early routing problems, and Madison Metro now intends to expand the concept to a broader population. Madison is an isthmus between two lakes, and the agency is considering Service Routes in neighborhoods hard to serve because of the topography. The Service Routes will act as feeders to the regular fixed routes and be substituted for traditional late night and midday service.

Service Integration with Jitneys

A jitney is a cross between a taxi and a bus. Jitneys are privately operated shared-ride services provided in a 5-passenger car or 12-passenger van along a fixed route but without a fixed schedule. They survive on corridors with a high demand.

Far from integrating their services with jitneys, transportation agencies have fought the competition caused by jitneys. Jitneys first appeared in Los Angeles in 1914. Private operators in Model T Fords cruised streetcar routes. In just a few months, approximately 900 jitneys were operating in Los Angeles alone, and they were rapidly appearing in other cities across the country. After a long series of legal battles based on pressure from streetcar operators, most American cities strictly controlled jitneys or made them illegal. Jitneys remain a dominant mode in many developing countries.(*11*)

However, where jitneys do not compete for riders with fixed-route transit, they increase transportation services to the public without additional tax subsidies. They can serve specialized or low-density markets and relieve transportation agencies of providing expensive fixed-route service to areas with marginal ridership. Jitneys can also supplement existing routes by providing extra capacity. Passengers benefit by increased frequencies and fewer occurrences where they must stand the whole trip.

One major disadvantage of integrating jitneys is their potential lack of reliability. As private operators, they can

quit anytime, stranding the public—and there are cases when they have done so. The public transit agency then will be called upon to institute replacement service on short notice.

Industry Examples

Jitneys in Miami, Florida, can be traced to before World War II, when minority entrepreneurs served low-income neighborhoods without easy access to the streetcars. In February 1981, Dade County adopted an ordinance regulating jitneys "to ensure the orderly development of a safe and integrated transportation/transit system, responsive to the needs of the public." The three existing jitney companies were grandfathered in and three new applications were eventually approved. However, because the three new jitney services duplicated or paralleled major Metrobus service run by the **Metro Dade Transportation Administration (MDTA)**, the Board of County Commissioners ordered a study of the jitney ordinance. Whereas the 1981 ordinance spoke of reliance on market forces, competition, reduction of regulatory barriers, and recognition of a private sector role, the April 1985 ordinance effectively precluded any new jitneys by reserving high-density transit corridors for Metrobus.(*12*)

Despite the 1985 ordinance, unlicensed jitneys have sprung up. As a result, several attempts at integration have been discussed between MDTA and representatives of the jitney industry. In March 1992 the county executive proposed that jitneys be authorized to provide local service on certain heavily traveled corridors while Metrobus would provide limited-stop service. Because the transit union vehemently objected, the county Board of Supervisors rejected the proposal.

What discussions, negotiations, and Board proposals could not do, Mother Nature did. When a disastrous hurricane hit Miami in 1992, illegal jitneys were quickly legalized and called into action as emergency transit on 12 local corridors. The jitneys were funded by disaster relief funds from the Federal Emergency Management Administration. Although most of the jitneys have disappeared since the funding ended in August 1993, one new route, the South Dixie Jitney, continues to operate legally. The South Dixie Jitney travels 20 mi on local roads from the Metrorail station to Florida City. The jitney also has a transfer agreement with Metrorail for fares. Because Metrobus operates an express route in the same corridor, the two systems are *de facto* implementing the county executive's proposal—the jitney providing local service and Metrobus providing limited-stop, express service.

Legal jitneys do operate in other parts of Dade County. Jitneys may operate where 30 percent or less of the route is competitive with Metrobus and the bus headways are longer than 30 minutes. In Hialeah a jitney provides 15-minute service to and from the Metrorail station on the same route where Metrobus provides hourly service.

In Atlantic City, New Jersey, and San Diego, California, the integration of jitneys occurs through passive coexistence. Atlantic City's jitneys began in 1915 as a result of a transit strike. Their success forced the trolley operator into bankruptcy. Today 170 13-passenger vans provide 24-hr service on three main arteries. The city regulates the jitneys and charges a franchise fee, which was $160,000 in 1993. **New Jersey Transit**, which operates bus service statewide, does not serve the same corridors as the jitneys, thus avoiding redundant service and disputes over competition.(*13*) Jitneys have been legally permitted in San Diego since 1979. **San Diego Transit** attempted to coordinate the jitneys and transit routes during the early 1980s when there was competition for passengers. However, since the demise of the military presence in San Diego, jitneys have developed their own niche markets and the two systems no longer compete.

Jitneys in New York City first appeared in southeast Queens during the 1980 transit strike. There are now an estimated 2,400 to 5,000 jitneys, operating primarily in neighborhoods of immigrants from Jamaica, Puerto Rico, Haiti, and other West Indies islands, where jitneys are commonplace. **New York City Transit Authority** (NYCTA) has combined increased bus service with strong enforcement against jitneys that operate illegally on bus routes. The result has been large ridership gains on NYCTA buses. NYCTA has also increased its ridership on another jitney corridor by reducing the fare—increasing the one-way fare from $1.25 to $1.50 but giving a free ride home. Jitney operators claim that their competition spurs more efficiency and changes in outdated union rules at NYCTA. Politicians see integration of jitneys into the public transportation system as a long-term goal, perhaps by identifying separate markets for them, contracting with them for low-volume routes, or using them to supplement bus service.(*14*)

Assistance for Volunteer and Community-Based Transportation Services

Many communities have organizations, such as senior citizens' centers, churches, and social service programs, that run their own transportation programs. The organizations may have unpaid drivers who volunteer to take others to activities, or they may have paid drivers. Some employees—such as social workers—may have other responsibilities but drive clients as part of the incidental services they provide. The programs represent a large transportation resource that generally has little or no communication with the public transit system and operates separately from it.

Some mobility managers have begun to harness this resource to enhance the transit available for both the special interest groups served and the public at large. Their assistance can take many forms: operating or capital funding; coordination of scheduling; driver training; mutual aid in equipment breakdowns; or even takeover of the operations.

Such mobility managers have recognized that it can be in transit's best interests to assist volunteer and community-based groups. Keeping the programs alive can mean less of a demand for costly new fixed-route services. By coordinating with the programs, the public transportation agency can supplement its ADA-mandated paratransit. Vehicles that sit idle during parts of the day can be used as backups for public transit services. A new source of public transportation funding may be available by tapping into health and human services budgets. The public can benefit when clients receive safer transportation from transit's trained drivers, while social workers are freed to do the jobs for which they were trained.

Industry Examples

In the late 1970s, **Tri-County Metropolitan Transportation District of Oregon (Tri-Met)** in Portland, Oregon, created a nonprofit agency called Volunteer Transportation, Incorporated (VTI). The volunteer agency was eligible for special education dollars that Tri-Met itself could not access. It was also eligible to go after federal transportation capital and operating funds separate from Tri-Met. Today VTI has about 30 vans and station wagons that it assigns to a network of 25 private, nonprofit providers, such as the American Red Cross, Metropolitan Family Services, and Volunteers of America.

Most of the operating funds for Volunteer Transportation, Inc., come from Tri-Met. Because ADA-eligible clients use up most of the capacity on Tri-Met's own paratransit system, VTI's services ensure that there is transportation for those who do not qualify for ADA but who do not have fixed-route service available. In this way, Tri-Met has expanded service to a portion of the population without adding costly fixed-route buses.

VTI's service area comprises three counties and is larger than Tri-Met's. It has added substantial capacity in the three-county area by ensuring that vehicles are effectively used and do not sit idle. For example, two different organizations may share one vehicle. Some agencies that had no vehicle now have access to one. By offering participation in VTI's group insurance and maintenance pool, VTI has coaxed others to loan their vehicle when it is not in use. Besides vehicles, VTI provides training to volunteer drivers. It also pays mileage to those who use their own cars.

Another Northwestern operator, **Pierce Transit** in Tacoma, Washington, leases vans to social service groups, who then schedule and run their own trips. Because Pierce Transit operates more paratransit than is required under ADA, leasing vans is a less costly way to provide service while relieving demand on their paratransit system. Pierce Transit also has leased vans to community groups, but has discontinued doing so because of low use.

Metro-Dade Transit Agency in Miami, Florida, has given the community of West Miami a van, which Metro-Dade maintains, as a way of providing transit to the area. Because this community is only 2.5 sq mi, it is too small to be served by Metro-Dade's regular service. The van is used as a neighborhood circulator connecting to Metro-Dade's fixed route at three locations. West Miami operates the van as a route deviation service and also uses it to take senior citizens to a meals program.

TECHNOLOGICAL STRATEGIES

Technological strategies provide increased travel options through the use of technical advancements. Three types of strategies are discussed in this section:

- Telecommuting Centers, which can create new ridership when located on a transit line and can obviate the need for some travel in the neighborhoods where they occur.
- Real-time Rideshare Matching, which can increase auto occupancy or aid in filling vanpools by fostering single trips in high occupancy vehicles.
- Multiprovider Trip Reservation and Integrated Billing, which can match riders with vacant seats, increasing the rider's travel possibilities and the efficient use of vehicles.

The examples below illustrate how five agencies use these mobility management strategies.

Telecommuting Centers

Telecommuting involves linking people electronically with jobs or school. Most often that occurs when people work at home using computers, fax machines, and electronic mail to communicate with their offices or teachers. Telecommuting centers assemble the equipment needed in a central location where it can be shared by individuals or small businesses on a rental basis. Telecommuting centers can broaden use of the technologies without requiring capital outlays by or for each person. Thus, companies can defray the costs of providing office space daily for each employee; salespersons can avoid frequent travel to the home office; students can do library research without physically being at the educational institution. Some jurisdictions encourage telecommuting as a method of meeting trip reduction ordinances.

Transit hubs can be an ideal setting for telecommuting centers. Transit hubs provide convenient access to the centers, which can serve as subregional meeting points away from the home site. Telecommuting centers at transit hubs may also stimulate other activities which, in turn, will create new ridership. Mobility managers can be involved in this technique by joint development at transit hubs or by joint use of their facilities and equipment. On a policy level, mobility managers can promote telecommuting as part of a comprehensive approach to integrating land use, air quality, and transportation decisions.

Industry Example

The **Los Angeles County Metropolitan Transportation Authority (LACMTA)** will participate in a 20-month demonstration project to establish a Televillage at a rail station on its Blue Line, a light rail system that runs from downtown Los Angeles to Long Beach, California. The Televillage will use excess capacity on LACMTA's fiber optic cables, initially installed to provide a channel for video security camera signals and other operational functions.

The Televillage will be in South Central Los Angeles, an economically depressed area. One activity being discussed at the Televillage is a Telework Center. Companies located some distance away could hire local residents to do tasks that can easily be performed off-site, such as keypunching and billing. Distance-based learning through university extension courses may be offered using electronically accessed databases or lectures beamed in a teleconferencing format.

Other services being studied include

- government kiosks for activities such as program registration, payment of fines, and question and answers about services;
- outpatient medical clinics that link to central records and specialists;
- parent-teacher meetings; and
- community and political meetings.

Potential benefits for LACMTA are increased ridership from the new attractions in the Televillage and new revenue from land and equipment-sharing agreements. LACMTA will also participate in providing both transportation mobility and economic mobility to the community.(*15*)

Real-Time Rideshare Matching

Real-time ridesharing, sometimes called dynamic carpooling, is a hybrid of conventional carpooling and casual carpooling. In conventional carpooling, the passengers and driver make some level of commitment to continue riding together to work for a period of time. Casual carpooling is a spontaneous trip together by strangers, resembling white-collar hitchhiking. Real-time ridesharing combines spontaneity with the organizational elements of conventional carpooling. Mobility managers who have embraced ridesharing as part of their transportation mission may promote real-time rideshare matching as a variation of this same function.

In real-time rideshare matching, persons search a database of prequalified participants by using a touch-tone telephone or videotext system. The database can be maintained regionally, along one particular corridor, or within one or more adjacent businesses. Participants arrange the trips directly, not through a third-party ride matching agency. Occasional trips for work, shopping, or medical purposes can be arranged immediately—that same day or the evening before. To qualify for a high occupancy vehicle (HOV) lane, a conventional carpool may use the database to fill in for a regular rider who is on vacation or sick.(*16*)

Industry Examples

The **Metropolitan Transit Authority of Harris County (Houston METRO)** has a stated goal of providing alternatives to the single-occupant automobile that will relieve traffic congestion and air pollution. It is participating in the Houston Smart Commuter IVHS Operational Test along with the Texas Department of Transportation, the city of Houston, Harris County, the Houston-Galveston Area Council, and the Texas Transportation Institute at Texas A&M University. One goal is to increase the auto occupancy to three persons to better use an existing HOV lane and thereby decrease travel time for participants. Other goals are to reduce the need for more freeway expansion and to meet air quality mandates.

Commuters in the target area live along the western end of the Katy Freeway Corridor and work in Post/Oak Galleria businesses. This suburb-to-suburb commute is difficult to serve by fixed-route transit. Commuters will use touchtone telephones to access the corridor database. The first test site will be one 60-story office tower in the Galleria Center. The concept of focusing on neighbors or fellow employees is expected to address concerns about safety and reliability.

Because of the multiplicity of agencies, it has taken a year to review and approve the specifications for the technology to be placed in homes. This phase of the project was expected to be implemented in the first quarter of 1995. The actual real-time rideshare matching will follow when METRO completes a significant upgrade of the computer system it now uses for conventional rideshare matching. Requirements to call 12 hrs in advance will be necessary at the outset before instant ride matching can occur later in the demonstration.

The demonstration also includes real-time information on traffic conditions and bus schedules. The public sector and public funding will test these concepts as well as the real-time rideshare matching. If the concepts prove successful, it is expected that the private sector will offer the services for a fee after the public funding ends.

The **city of Ontario**, a suburban city in southern California, is designing a variation of real-time ridesharing using backlit personal digital assistants (PDAs). Dubbed Athena, the project will match riders with drivers who have empty seats available.

Drivers who register with Athena will receive a PDA, which they can take wherever they go during the work day or which they can plug into their car's cigarette lighter. Participating riders will receive a pager. When the participant needs a ride, he or she will signal the dispatcher, who can then contact drivers who are going in the same direction. This single-trip system eliminates the barriers of having to coor-

dinate schedules with others in advance or of having to commit to an ongoing carpool arrangement.

Athena is expected to be operational in March 1997. Before startup, the Athena project will hold focus groups to determine a nominal, flat fare, which the rider will pay the driver. Besides carpools and vanpools, shuttles to the airport and convention center will use the Athena system to coordinate pickups. Bus schedules for **Omnitrans**, the San Bernardino Valley's transit agency, will be entered into the Athena database so that real-time connections can be made between carpools or shuttles and the buses, using automatic vehicle locators.

Multiprovider Trip Reservation and Billing

In this concept, the mobility manager is similar to a travel agent, where through one telephone call the traveler can obtain information about all aspects of a trip and make advanced reservations and payment, if needed. The mobility manager may actually run the travel center or may be a participant through interagency agreements on funding and payment. The travel center could include all public ground transportation services, such as fixed-route schedule information and pass sales, ADA and social services paratransit scheduling and billing, rideshare information and matching, and taxi reservations and billing. Intelligent Transportation System (ITS) technology can support the concept through computer dispatching, automated billing, and tracking programs for record-keeping and reimbursement.

Industry Examples

A Transit Traveler Center in Atlanta, Georgia, is being developed by the National Association of Neighborhoods in conjunction with the **Metropolitan Atlanta Rapid Transit Authority** (MARTA). Center employees will take calls, schedule trips, dispatch vehicles, and handle billing for both MARTA's paratransit system and vehicles operated through social service agencies. To accomplish integrated scheduling, vehicles will be equipped with radios, data terminals for real-time verification of passenger loads, automatic vehicle locators, and "smart card" fare validators. The project will tap into transit capital funds and social services operating funds to provide maximum use and efficiency of vehicles. Although participating agencies will be billed separately, clients from various programs may be mixed on the same vehicles. New services, such as shuttles from low income areas to employment centers, are also expected to be offered. The Center will be located in the Mayor's Empowerment Zone and will offer job training credits to employees. Start-up is anticipated in 1996.

The **Potomac and Rappahannock Transportation Commission (PRTC)** is planning to consolidate human services transportation in Prince William County, Virginia, under its jurisdiction. Human services providers will transfer ownership of their vehicles to PRTC and buy back transportation services. As in the MARTA example, riders will call a central phone number where vehicles will be dispatched and agencies will be billed for their clients. PRTC expects to fulfill its ADA requirements by using the consolidated system and also will offer services to the public in areas that are not dense enough for fixed routes. Benefits will be higher productivity, reduction in personnel needed, smaller number of spares required, bulk purchasing and volume discounts, and potential for greater use of subcontracted services, such as taxis. Human services personnel will be freed to devote more time to their primary services.

Beaver County Transit Authority (BCTA), a rural/suburban operator in Rochester, Pennsylvania, is implementing Phase I of an FTA-funded Mobility Manager Pilot Project. The concept design envisions electronically integrating fixed route, paratransit, taxicab, and ridesharing services through Advanced Public Transportation Systems (APTS) technologies. Callers will be able to make trip reservations directly through BCTA for all participating operators, eventually even including airline trips at the Pittsburgh International Airport. BCTA also will handle most or all of the necessary financial transactions. To support the concept, BCTA has adopted the following definition of mobility management to guide its efforts: "A MOBILITY MANAGER integrates and disseminates transportation information on travel services offered by multiple providers involving a variety of travel modes using multiple funding sources. A MOBILITY MANAGER facilitates service development and delivery."(*17*)

INFORMATIONAL/PROGRAMMATIC STRATEGIES

Informational and programmatic strategies expand the customer's mode choices by providing more complete information. When customers contact a transit agency, a mobility manager will provide them with all their travel options, instead of information on only the bus or rail system it operates. The options can include giving out rideshare information and being a one-stop center for all regional systems, including those operated by the private sector. Six examples follow of agencies that are in various stages of implementing enhanced information programs.

Collaborative Arrangements with Ridesharing Agencies for Trip Planning

Many transit agencies do not have an in-house ride matching program but do support the mobility management function by collaborating with a regional ride matching agency. Some may market ridesharing with their fixed-route services, either in lieu of or in addition to the marketing done by the regional agency. To avoid duplication of effort, formal or

informal agreements may be necessary, designating responsibilities and territorial boundaries. Both the transit agency and the ride matching agency may jointly sponsor promotional events, such as Transportation Days, at employment sites. The two agencies may agree to give out information about each other's services. For example, the transit agency may take applications for ridesharing in its telephone information center and feed them into the regional database. The ride matching agency also may include transit information to callers who inquire about ridesharing.

Industry Examples

The **University of California at Berkeley** operates two fixed routes open to the public, one from downtown Berkeley to the campus and one to a science museum in the hills above the campus. Although the buses help people to circulate on and around the campus, the city of Berkeley requested that the university do more to alleviate traffic coming to the campus on city streets. The city and the university jointly formed the Berkeley TRiP project and located the nation's first Commute Store in downtown Berkeley. The Commute Store sells transit tickets and promotes all alternatives to driving alone, including ridesharing. RIDES for Bay Area Commuters, the regional ridesharing agency headquartered in San Francisco, does the employer outreach, ride matching, and vanpool formation in the Bay Area. To avoid duplication of effort, RIDES formulated an agreement for TRiP to do more intensive outreach in downtown Berkeley and on the campus. Eventually, RIDES also trained TRiP staff to do computer ride matching via an off-premise extension linked to the mainframe in San Francisco. Through this collaborative agreement, TRiP acted as a satellite office for RIDES in the East Bay. Instead of competing with each other, the two agencies are able to expand each other's staffing capabilities by defining territories and responsibilities.

TransIT Services of Frederick County, Maryland, is a member of the Washington Metropolitan Council of Governments' Ridefinders Network, the regional rideshare coordinator for the Washington, D.C., area. Even though the two are separate agencies, TransIT and Ridefinders act collaboratively to provide ride matching in Frederick County. TransIT staff provides carpool and vanpool information and takes paper applications within the county, which it then feeds to Ridefinder's computerized ride matching database. TransIT has applied for a state grant to computerize the county system and go on-line with the Ridefinders system in 1996.

Transit Telephone Centers with Information on All Modes, Providers

Whereas transit agencies give out information on their own systems, they seldom are able to give a passenger more than the most rudimentary information on a connecting system. Passengers are frustrated by having to make several calls just to plan a trip or to find out what options are available to them. A mobility manager considers the passenger first and assists with information about the best travel alternative, whether or not the telephone center staff works for that alternative system. In an urbanized area, it is necessary to computerize information about multiple systems because of the sheer volume of schedules and maps. Alternatively, the caller can be transferred directly to another agency for additional information. Under the option, the caller does not have to hang up and dial another number or pay for a long distance call, even when the call is transferred to an agency in another county. That concept of customer assistance requires retraining and rethinking of job responsibilities, just as travel agents are trained to present a variety of options to clients.

Industry Examples

LYNX, the **Central Florida Regional Transportation Authority** in Orlando, Florida, has received a grant from the Florida Department of Transportation to develop a Travel Planning Center. The Center will integrate bus and ridesharing information, which now is available to the caller in two separate LYNX departments. After coaches are equipped with global positioning technology, the Center eventually will be able to give out real-time bus schedules. As the Central Florida Regional Transportation Authority, LYNX's ultimate goal is to bring all mass transportation services under one roof and operate like a travel agency, assisting passengers with all their trips through only one call to their Travel Planning Center.

In California, the **Los Angeles County Metropolitan Transportation Authority** participates in a regional telephone number, 1-800-COMMUTE. Callers can get route and schedule descriptions on transit systems in Los Angeles County as well as carpool information.

The **Metropolitan Transportation Commission** in the San Francisco Bay Area is leading a project to install TranStar, a computerized database of route and schedule information for all the region's transit systems. The system will allow clerks in the various telephone information centers to give out accurate information about connections to other systems.

Winston-Salem Transit Authority (WSTA) is a recipient of a Federal Transit Administration demonstration Mobility Manager grant to test Advanced Public Transportation Systems technologies. In Phase 1, mobile data terminals, automatic vehicle locators, and "smart cards" will be installed on its paratransit system. During Phase 2, which is not yet funded, the same equipment will be installed on all fixed-route coaches, vanpools, and taxis. Their intent is to tie all systems into their information services to provide callers with "one-stop shopping."

LAND USE STRATEGIES

Land use strategies are techniques that foster transit ridership through links with land development. Mobility managers attempt to change development patterns by taking an

aggressive role in planning for housing and commercial development around a transit hub. Because transit agencies cannot implement the strategies unilaterally, they may need to advocate transit-oriented development before the local government body. For example, working with communities to ensure that the design of new construction and redevelopment does not discourage transit use is a way to promote alternatives to the single-occupant automobile. An even stronger transit role can involve leasing land or participating in the financing. Land use strategies have a long time horizon before realization of significant results. However, they can have a lasting influence on opportunities to increase transit ridership for successive generations.

Transit Villages in Joint Ventures

The Term "transit villages" refers to planned housing and commercial development clustered on or around a transit hub. Housing is usually mid to high density with supporting services, such as markets and dry cleaners, nearby. Some villages may also include job centers. The transit agency may lease its land to the developer, help to assemble adjacent property, participate as an equity partner, or assist in obtaining tax exempt financing. Even when the village is not on transit property but is nearby, the transit agency may also assist in the planning and financing of the development. Benefits can be increased ridership and new revenues from leases. Benefits to individual village residents may be the ability to forgo a second automobile and the opportunity for more affordable housing in a convenient location. Benefits to society can be reduced congestion and pollution resulting from fewer auto trips to the transit hub; inner-city redevelopment; and infill development, which reduces the loss of open spaces.(*18*)

Industry Examples

In the early 1980s, the **Bay Area Rapid Transit District (BART)** had aggressively pursued joint development at its station in suburban Pleasant Hill, California. In 1981 it joined with the Contra Costa County government to fund a master plan for the station area. The plan included high rise offices on BART's parking lots and on adjoining private property The county used its redevelopment powers to buy single-family homes surrounding the station and assemble the land for multiple-family housing. Although 1.5 million sq ft of office space and 1,600 units of housing have been built on adjoining properties, the BART office space has never been developed. A number of explanations have been offered—changes on the board of directors causing the loss of a champion for the joint development, hesitation on the part of developers to get involved with the complexities of a public agency partnership, and a downturn in the California economy. After many years without supporting retail uses and services, several have opened recently. Under discussion are changes to the BART Station Area Specific Plan that would allow condominiums to be built in place of some of the remaining 1 million sq ft of unbuilt office space. Thus, the framework of the transit village has been established and future buildout is expected as the economy improves and the market dictates.

BART also plans a transit village at the Fruitvale station in Oakland. However, in this case, the community took the lead. BART planned to build a parking structure on its surface lot at the station. The Spanish Speaking Unity Council objected, viewing the structure as a sterile barrier separating the station from the surrounding community. BART agreed to participate in a joint planning effort that resulted in a design for a transit village on its property. The design reconfigures the BART parking garage on the site and includes multifamily and senior housing, a community health clinic, a library, and a museum on current BART surface parking lots. A large public plaza links the station with neighboring retail in an effort to stimulate redevelopment. The joint planning effort has won an award from the Metropolitan Transportation Commission. In a visit to the site, then U.S. Secretary of Transportation Federico Pena announced a federal grant to further the planning. The Spanish Speaking Unity Council also has received federal housing funds and seed money from the city of Oakland.

To encourage more such transit villages, the California Legislature passed the Transit Development Planning Act of 1994. The bill allows redevelopment funds to be used for low- and moderate-income housing built in a transit village development district, defined as "all land within not less than a quarter-mile of the exterior boundary of the parcel on which is located a rail transit station designated by the legislative body of a city, county, or city and county that has jurisdiction over the station area." The bill also allows the jurisdiction to be eligible for transportation funding, to receive assistance in expedited permitting, and to enter into development agreements for density bonuses of 25 percent or more.(*19*)

Other areas in California with investments in new and expanded rail systems are specifically mentioned in the bill. The areas have transit districts actively involved in transit village planning and development: **Los Angeles County Metropolitan Transit Authority, San Diego Transit Corporation, Santa Clara County Transportation Agency,** and **Sacramento Regional Transit District**.

Notable examples outside California of transit agencies that are involved in planning transit villages include

- **New York Metropolitan Transportation Authority**, which has developed a specific plan for a transit village at the planned Wasaic station;
- **Tri-Met in Portland**, which is planning for its westside stations; and
- **New Jersey Transit,** which has completed a handbook to guide cities in concentrating residential development at transit stations.(*20*)

INFLUENCING TRANSIT-FRIENDLY DEVELOPMENT

A long-term strategy for mobility is influencing development patterns to promote transit use and other alternatives to driving, such as bicycling and walking. This strategy means taking an active role in local land-use decisions. Responding to Environmental Impact Reports (EIRs) on proposed developments is one action that can be taken. For example, the transit agency can request that cul-de-sacs that prevent efficient bus routing be minimized, pedestrian access to bus stops be well-paved and lighted, and large parking areas that encourage driving be scaled back or contain park-and-ride areas for ridesharers only. Other examples are testifying at public hearings on development plans, working with developers during the planning stage to include bus turnouts and appropriate turning radii on streets, and participating in cities' general plan updates.

Industry Examples

Pace, which operates in the suburbs of Chicago, Illinois, has sent out over 2,000 copies of its development guidelines to assist local municipalities in planning development that is sensitive to the needs of transit service. It has a technical review assistance program for city planners and consultants and an engineer on staff to review and comment on site plans.(*21*) **Maryland Mass Transit Administration (MTA)** has published "Access by Design," a manual that provides criteria and site drawings to enable transit to be accommodated in developments. In addition, MTA has entered into joint agreements with local jurisdictions that provide that MTA planners will be routinely consulted as part of the local development review and approval process.

Intercity Transit in Olympia, Washington, invested heavily in a planning staff, going from one full-time and one part-time planner to seven planners for this agency with 57 coaches and 50 paratransit vehicles. Planners worked with cities on developing site plan ordinances that emphasize good bus access and showers and lockers for bicyclists and walkers and that deemphasize automobile parking. They also helped develop the transportation elements of master plans for cities and for the state Department of General Administration.

Tri-Met in Portland, Oregon, is an example of the most aggressive approach in using this strategy. Tri-Met's board of directors has adopted this strategy as one of six goals in its strategic plan. It supports

"1. Containing growth within the existing urban growth boundary;
2. Substantially increasing development in transit corridors; and
3. Helping to assure that development is designed to be served efficiently by transit." (*22*)

The plan also states that "in making decisions on where to expand service, Tri-Met will give top priority to those areas that are compact and oriented to transit."

By stepping into an advocacy role in broad land-use matters and by tying its service expansion to specific land-use policies, Tri-Met has entered a political arena that traditional transit providers eschew. In this instance, it is acting as a mobility manager through direct influence on land-use development.

II. SUPPORTIVE ACTIONS

The strategies discussed in the previous section are stand-alone functions of mobility management. Transportation organizations that employ those strategies are, to some degree, mobility managers. The more strategies employed, the closer the organization is to being a model mobility management agency. Most mobility managers also have adopted supportive actions that, while not in and of themselves mobility functions, do enhance the mobility management strategies. This section provides a glossary of supportive actions and presents brief examples of organizations that practice them. The spreadsheet in Appendix B contains profiles of the organizations mentioned in this section.

OPERATIONAL SUPPORTIVE ACTIONS

Operational supportive actions augment the effectiveness of both traditional and nontraditional services. The actions described here include

- Guaranteed Ride Home programs that reassure transit and ridesharing patrons that they do not have to rely on their cars;
- activities coordination, that is, scheduling connections with other modes;
- policies and equipment that support bicycle commuting, especially as an access mode to transit; and
- Reverse Commute programs.

The following section describes 13 examples of industry actions.

Guaranteed Ride Home Programs

Guaranteed Ride Home (GRH) programs are like insurance policies for transit riders, carpoolers and vanpoolers, reassuring them that they will be able to get home in an emergency. For example, a mother with small children may worry that she may not be able to go home to a sick child if she joins a carpool. By participating in GRH, she would be eligible to rent a car or take a taxi in such an emergency. To guard

against abuse, a registration system is usually required, and participants must ride transit or rideshare a minimum number of days per week to be eligible. Some programs require a small fee to join; others are free. In return, the participant is given a maximum number of reimbursed trips. Evaluations of GRH indicate that the program is a real incentive to new riders and little abuse is evident.

The **Salem Area Transit District** in Oregon offers free taxi rides to pass holders at the state Mall in case of an emergency, if a bus is not available or is not operating at the time of the emergency. Although actual use of the emergency service is minimal, its existence has resulted in a doubling of pass sales at the state Mall since it began. Transit pass holders in the program also are given a parking pass that can be used three times a month for days when it is not convenient to ride the bus.(*23*) Commuters in King County, Washington, register with **King County Metro** and rideshare three or more days a week to be eligible for Metro's Guaranteed Ride Home program. Commuters are reimbursed for up to 40 mi of taxi travel, about four average trips. In a survey evaluating the program, 69 percent of the respondents indicated that the program was somewhat or very important in their decision to continue to take the bus, carpool, or vanpool to work.(*24a*) **Virginia Railway Express (VRE)**, which provides peak hour commuter rail service between Virginia and Washington, D.C., also uses taxicabs. Commuters who have emergencies or who miss the last VRE trains can call VRE and arrange for a taxi to take them back to their cars located at park-and-ride lots in Virginia. Verification of an emergency must be provided to receive taxi fare reimbursement. A unique Guaranteed Ride Home program is offered by **AMTRAK**, the operator of the **MARC** commuter rail service in Maryland. MARC commuters can ride AMTRAK back to Baltimore if they miss the last Baltimore-bound MARC train from Union Station in Washington, D.C. Commuters need only show their MARC farecards to ride the more expensive AMTRAK home.

Schedule Coordination with Intermodal Facilities (Train Depots, Airports)

One of the basic tenets of the ISTEA legislation is seamless trip-making between modes. It requires coordination of schedules so that the passenger can transfer easily from one mode to another without inordinate time lapses or unreasonable distances between them. Therefore, schedule coordination with other modes is not a mobility management function but a basic expectation of both the legislation and the public. Although the concept may seem like common sense to the public, it is not always as easy to accomplish operationally as it might seem. For example, a bus operator who attempts to meet a train or plane schedule may not be able to do so—without adding more equipment—except by changing existing routes. In rescheduling the bus, the operator may then have to inconvenience local bus riders to give train riders better service. A train operator who changes arrival times to coincide with another mode may be faced with a ripple effect on all the schedules in the system. Mobility managers recognize the difficulties but, nonetheless, face the challenges and work to overcome them.

Metro-North Railroad in New York has formed a partnership with **Connecticut Department of Transportation** to run buses to the trains, and Metro-North has changed its train schedules to provide good connections. The **Maryland Mass Transit Administration** contracts with several private bus companies to operate eight express commuter routes from Maryland counties into Washington, D.C. Many of the routes are timed to meet **Metrorail** at Maryland stations. Because the timed transfers and the fare were designed to support the bus-to-rail transfer, more than half the passengers on the Columbia, Maryland, bus route find it convenient to transfer to Metrorail at the Silver Spring station to continue their trip to D.C.

Supporting Bicycle Commuting

Bicycling is gaining increased recognition as a viable mode of transportation not only for recreation but also for commuting. The main opportunity for transit agencies to support bicycle transportation has been by providing bicycle parking and storage facilities at stations and adopting policies and installing equipment that permit bicyclists to take bicycles on transit vehicles.

Commuters who drive to park-and-ride lots or train stations to board transit contribute to air pollution, because the "cold start" of their engines releases gases and particulates. Bicycling is a more environmentally sound mode, because it does not negatively affect air quality. Nonetheless, riders have often run into opposition from transit managers when they lobby to take their bicycles on transit to continue their trip by bike after disembarking. Bicycles aggravate the crowded conditions on commuter trains. Bike racks on buses cause difficulty in going through bus wash equipment and cause perceived safety or liability problems. Bikes can slow down the schedule when they are loaded and unloaded. Mobility managers, however, view bicycling as a transportation option and accommodate it in their system.

Hillsborough Area Regional Transit (HART) in Tampa, Florida, equipped its fleet with bike racks in February 1995. HART shares its Downtown Commuter Center with the business community's Downtown Partnership, which provides a walking patrol for safety. The Partnership is installing showers and lockers for bicyclists and walkers in the Commuter Center, a service that will be managed by the YMCA. **King County Metro** in Washington is the first major U.S. transit agency to install bicycle racks on all 1,250 buses in its fleet. It has also installed bike lockers at some of its park-and-ride lots.(*25*) In Bremerton, Washington, **Kitsap Transit**'s buses have bike racks and the agency supplies lockers at ferry stations. To encourage bicycling to the fer-

ries, Kitsap plans to eliminate transfer time by building a check-in storage facility where 500 bicycles can be hung on hooks. Many transit systems, especially in smaller cities, permit bicycles to be carried inside the bus, typically on a space available basis. For example, in the **San Francisco Bay Area**, transit systems in Cloverdale, Central Contra Costa County, Livermore, Napa, Petaluma, San Mateo County, Santa Clara County, Eastern Contra Costa County, and Union City have such a policy.(*24b*)

Increasingly, transit agencies are allowing bicycles onboard rail vehicles. The **Bi-State Development Agency** in St. Louis, Missouri, has permitted bicyclists to board the MetroLink light rail system with their bicycles since the system opened in 1993. Bicycles are allowed on any train at any time of day. Bi-State has monitored bicycle use to learn if some restrictions might be necessary but so far none have been needed despite significant use. Bicyclists are asked to stand with their bicycles at the rear of the last car of the train. No permit or extra fare is required. In August 1996, Bi-State also installed bike racks on 75 buses and installed state-of-the-art, high-security locking bike racks at several MetroLink stations.

The **Peninsula Corridor Joint Powers Board** has been permitting bicycles on its CalTrain commuter rail service between San Jose and San Francisco since 1993. The program has expanded so that, as of late 1996, up to 24 bicycles were permitted on each train, and about 1,100 one-way bicycle trips were being provided each weekday in good weather. Each train includes one car, at the north end of the train, with six bicycle racks that can accommodate four bicycles apiece.

Reverse Commute Programs

Reverse Commute programs are fixed-route transit routes and vanpools bringing inner city workers to suburban jobs. On first consideration, the services appear not to fit the definition of mobility management, because they are just transit services operating in a nontraditional direction. What distinguishes Reverse Commute programs as supportive actions of mobility managers is the emphasis being given to them as strategies for economic development and for correcting past land use patterns. At a 1993 APTA Workshop, Gordon Linton, Federal Transit Administrator, said, “Reverse commuting expands the scope of transportation from vehicles to people and their lives.” He saw the programs as a “holding action” while the transit industry involves itself in the bigger picture, particularly poor land use decisions that have pushed the country toward a two-class society—with economic vitality in the suburbs and poverty and despair in the inner city.”(*26*) Because of the social services role transit is performing, it has been suggested by some that Reverse Commute programs should not be judged by traditional performance standards and should offer deeply discounted fares.

The **Southeastern Pennsylvania Transportation Authority (SEPTA)** negotiated with private employers to provide subsidies for six reverse commute routes to high employment areas with low transit service. SEPTA also worked with the Greater Valley Forge Transportation Management Association to implement routes from central Philadelphia to three new pharmaceutical facilities in Montgomery County. The business community raised $161,000 to begin the service. **Southwest Metro Transit Commission (SMTC)** began reverse commute service to an area in Eden Prairie, Minnesota, as a result of a request by an innercity employment agency. SMTC participates in a Reverse Commute Committee formed by the Chamber of Commerce and has cosponsored a job fair.(*27*)

In Allentown, Pennsylvania, **Lehigh and Northampton Transportation Authority (LANTA)** was able to stay within its budget yet serve new employment centers with Reverse Commute routes by creating a shuttle service wage scale. As part of LANTA’s privatization policy, the new Reverse Commute routes were put out to bid. The union bid on the service using the same starting wage as the regular routes, but with the caveat that shuttle driver wages would remain at the starting wage and go no higher. Work rules were also relaxed. As a consequence, the service was not contracted out and the union gained seven members. Community support was exhibited by good ridership and productivity on the Reverse Commute routes.

TECHNOLOGICAL SUPPORTIVE ACTIONS

Technological supportive actions increase convenience for the consumer through the introduction of technological advancements. Improved feedback on travel options, including real-time transit information, is being offered to consumers by the three transportation organizations whose descriptions follow. Fifteen examples are cited of industry leaders who are implementing “smart cards” to foster seamless transportation between systems.

Integration of Transit into Traffic Management Centers

Traffic Management Centers are located in various urban centers around the country to monitor freeway traffic with television cameras. Some suburban cities also monitor traffic on heavily congested arterials. Traffic signals can be programmed to extend the green light period to clear intersections. Changeable message signs warn motorists of traffic tie-ups and advise them of alternate routes. Plans are underway to include transit in these systems. Buses equipped with automatic vehicle locators (AVL) transmit signals by means of satellites or beacons along the bus route back to a receiving station. Information from the buses on traffic conditions can complement loop detectors in the roadbed and closed circuit television. Most of the plans focus on providing transit managers with real-time information to improve safety and

on-time performance.(*28*) However, a few of the centers eventually also will provide the public with the same information to enhance their mobility choices. For example, a caller, with access to real-time knowledge now only available to traffic engineers, may choose not to drive in a congested corridor when a bus is available that can preempt traffic signals or use a HOV lane. By offering the consumer such choices through its participation in the Traffic Management Centers, a transit agency adds a component to its mobility management functions.

The Travlink project operated by the **Minnesota Department of Transportation** uses pagers and other hand-held devices to deliver real-time transit and traffic information to travelers in the Minneapolis area. A toll-free number with real-time paratransit information will be available to rural residents in the Duluth area.(*29*) **Orange County Transportation Authority** plans to share a database with the city of Anaheim and the California Department of Transportation to provide a comprehensive traveler information system. Officials hope that real-time information will alter the perception that transit is inefficient and unreliable.(*30*) **Montgomery County Department of Transportation** in Maryland operates an Advanced Transportation Management System that blends computerized video traffic management with transit operations management. Customers can view live transportation broadcasts on the county's cable television.

Integrated Fare Media (*31*)

Technology has made it possible for passengers to use one fare instrument on many different modes and across the jurisdictional boundaries of transportation organizations. This technology further advances ISTEA's call for a seamless transportation system—one in which the passenger need only be concerned about the trip itself and not which carrier is providing it. Some of the technologies being used are stored-value cards with magnetic stripes and "smart cards." The stored-value cards are purchased in advance and the fare is deducted for each trip, even if the trips are on different vehicles—such as bus and rail—and operated by different properties. "Smart cards," which look like plastic credit cards, have a programmable memory chip. Some types have only to be held near the machine that reads them but do not actually have to make contact. "Smart cards" can be programmed for payment of services in addition to transportation.

The **Delaware Department of Transportation** expects to test "smart cards" for a variety of on-site services at employment sites. The employer could get state and federal tax credits by offering employees the "smart card" to use for bus fares. The card might also be used as a key to the building, as an identification pass, or as a cafeteria payment mechanism. Three other agencies are implementing fare instruments that can be used for both parking charges and transit fares: the **Northern Indiana Commuter Transportation District,** the **Ann Arbor Transportation Authority** in Michigan, and the **Washington Metropolitan Area Transportation Authority** in the District of Columbia.

Large urban systems that operate a number of modes plan to integrate the fare media so that passengers can travel from one mode to another on the same farecard. **Massachusetts Bay Transportation Authority** and the **New York City Transit Authority** will replace tokens with electronic farecards on their bus and rail systems. **Chicago Transit Authority**'s new magnetic stripe system will coexist with tokens, coins, and monthly passes at its rail stations and on buses.

In California, where not one but many agencies operate the multiple modes in an area, cards have been developed to allow seamless transfers between agencies. TransLink is an adaptation of a magnetic stripe card for **Bay Area Rapid Transit District** fares that is being tested on **Central Contra Costa Transit Authority** buses and may soon be available on the **Alameda-Contra Costa Transit District** buses. The **Metropolitan Transportation Commission**, which is spearheading the project, intends that similar cards will one day be used on all San Francisco Bay Area transit systems. MetroCard in southern California is similar to the TransLink card. **Culver City Municipal Lines**, **Foothill Transit** and the **Los Angeles County Metropolitan Transportation Authority**, Pomona division, are participating in Phase 1 of MetroCard, which is planned to serve eventually as a single ticket for any transit mode in the Los Angeles area. The **Ventura County Transportation Commission** is part of a California Department of Transportation demonstration that will test "smart cards" on its 65 buses serving 13 suburban cities. To address the melting pot of different cultures, the cards may be programmed to speak to people in other languages.(*32*)

INFORMATIONAL/PROGRAMMATIC SUPPORTIVE ACTIONS

Better marketing and public information is the goal of informational and programmatic supportive actions. Eight agencies described below are assisting consumers with off-site trip planning, primarily through the use of new technology. Partnerships with the private sector, through joint programs and participation in Transportation Management Associations, are other supportive actions. Ten agencies illustrate the partnerships.

Trip-Planning Kiosks at Activity Centers

Part of mobility management is making it convenient for the passenger to find information about transportation options. To do so, transportation organizations need to form partnerships with other community resources so that the information is readily available. Many transportation agen-

cies have for years placed route maps, schedules and carpool applications in racks at shopping malls, hotels, health clinics and employment centers. Recently, a high-tech, multimodal application has been developed for this activity. Electronic maps and free-standing kiosks can display schedule and fare information and real-time arrivals and departures. Traffic conditions, taxi reservations, and weather maps are other services that may be included. It is also possible to have interactive computers in public places where people can do their own ride matching. Major considerations are cost, potential vandalism and keeping the information current.

Digiplan, a touch-sensitive electronic map, is a project of the **Metropolitan Transit Authority of Harris County (Houston METRO)**. Individuals touch their origin and destination and are given bus routes, schedules and directions on how to use the bus in English, Spanish, French, and German. Maps are located in supervised building locations.(*33*) **Broward County Transit Authority**, Florida, has installed monitors in its terminals, similar to the monitors in airports, which display real-time bus arrival and departure information. The **Los Angeles County Metropolitan Transportation Authority** has kiosks in stations and a shopping mall that not only provide bus and rail information but also show congestion on freeways and arterials. Passengers on **Metro Transit** in Halifax, Nova Scotia, Canada, punch a code for their location into video terminals at malls and transit centers to find out real-time information on bus arrivals.(*34*)

Interactive kiosks are one element of the TransCal traveler information system being developed along the Interstate 80-U.S. 50 corridor between San Francisco, California and South Lake Tahoe, Nevada. Travelers will be able to access transit information as well as road, traffic, and weather conditions from the kiosks, by telephone, and through display devices in vehicles. The San Francisco Bay Area **Metropolitan Transportation Commission**, the **Tahoe Transportation District**, the **Regional Transportation Commission of Washoe County** in Nevada, and the **California and Nevada Departments of Transportation** are part of the team members for this $3.5 million test.(*35*)

Joint Programs with the Private Sector

Transportation organizations that team up with the private sector benefit by tapping into new markets and leveraging their resources. This section focuses on supportive actions that are not operational, such as private shuttles, but are creative partnerships for fare programs and public information campaigns. They often involve working with Transportation Management Associations (TMAs), which are groups of multiple employers organized to offer employees trip reduction programs and other benefits, such as child care.

Over 10,000 Bus Card Plus magnetic credit cards have been supplied by the **City of Phoenix Transit System** to 50 Arizona companies. Participating employees use the cards in computerized fareboxes and are billed monthly through payroll deduction at their work sites. The program is responsible for a 10–20 percent increase in ridership since it began.(*36*)

Metrocheks are vouchers available in denominations from $1 to $30 distributed by the **Washington Metropolitan Area Transit Authority** to 450 companies and 89 federal agencies in the Washington, D.C., area. Over 55,000 employees can exchange the vouchers for fares on 49 different transit organizations, including trains, buses, and qualifying vanpools.(*37*)

Riderlink is a joint project of the **King County Department of Transportation (Seattle Metro)** and the Overlake Transportation Management Association, an organization of eight employers in Washington. Kiosks at employer sites will permit the TMA's 20,000 employees to access information electronically via the Internet. Information includes the real-time status of Metro buses; schedules for Metro, Community Transit, Pierce Transit, and the ferries; a ridesharing application; information about bicycling, road construction, and freeway congestion; and TMA news.(*38*)

Three transit agencies linked up with the private, not-for-profit American Lung Association to multiply their budgets and staffing for the 1993 Try Transit Week. **Dallas Area Rapid Transit** in Texas and the **Greater Peoria Mass Transit District** in Illinois celebrated Clean Air Week activities in conjunction with the Lung Association. The **Regional Transit Service** in Rochester, New York, cosponsored a 5K "Run for the Bus" race with the Lung Association, attracting 400 runners.(*39*)

Supporting Transportation Management Associations (TMAs)

Assistance by transportation organizations in forming or supporting TMAs is a variation on Joint Programs with the Private Sector, the supportive action noted in the foregoing section. Although some transit agencies look upon services such as private shuttles as competitive, mobility managers use the resources of the employer organizations to supplement public services. Because they are better connected to their member companies than the transit agency can hope to be, TMAs can be particularly helpful in marketing to employees who may be potential riders. By using the resources of a TMA, transit agencies also can tailor programs to those specialized markets, as Seattle Metro did in the example cited.

A **LYNX** transit representative sits on the board of directors of two of the TMAs in Orlando, Florida. LYNX gives each TMA $20,000 as an extension of their marketing program. The Transportation Management Agencies then develop and implement their own marketing efforts with the approval of LYNX. LYNX also collaborated with one of the TMAs to start a shuttle to the TMA site. **Broward County Transit** used ISTEA funds to help fund a TMA in downtown Fort Lauderdale, Florida.(*40*) The **Los Angeles County**

Transportation Authority (LACMTA) is funding innovative Transportation Demand Management projects—such as feeders to rail, parking cash-out pricing, and telecommuting centers—in a demonstration program. A major piece of the funding has gone to TMAs, which are testing the concepts for effectiveness. LACMTA will evaluate the projects on reduced costs per vehicle trip, reduced vehicle miles traveled, reduced pounds of pollution and increases in average vehicle occupancy. Successful projects will receive ongoing ISTEA funds from LACMTA. **Milwaukee County Transit System** has formed a Business Services Division, which works with TMAs on developing transportation solutions to comply with the Clean Air Act. Twelve employers have agreed to subsidize an extension of a regular route into their formerly unserved area. Milwaukee County also administers a Guaranteed Ride Home program for employers who participate in the Commuter Check pass subsidies.

LAND USE SUPPORTIVE ACTIONS

Land use **strategies** attempt to *change development patterns* by constructing residential and commercial development that encourages transit ridership. Land use **supportive actions**, on the other hand, are less aggressive and aim to *promote* better links between transportation and land development. For example, constructing an intermodal facility instead of having different destinations for different modes scattered around the community is a way to promote alternatives to the single-occupant automobile. Plans of three agencies are highlighted below.

Intermodal Facility Siting

As cities grew, the links among various modes did not necessarily develop conveniently for travelers. Today, heavy rail stations may be located many miles from new office centers. Airports have been built on the fringes of metropolitan areas with local transportation to and from them only an afterthought. ISTEA mandates that all new facilities be planned to foster connections among the various transportation modes.

In keeping with ISTEA's vision of seamless transfers, **Jacksonville Transportation Authority,** Florida, is constructing a multimodal transportation center with ISTEA funds. Bus passengers will be able to meet **AMTRAK**, the People Mover, and Greyhound at the downtown center. The **Regional Transportation Commission** in Reno, Nevada, is planning an intermodal transfer facility to link its Citifare buses with AMTRAK. AMTRAK is also a service provider in the St. Louis Gateway Transportation Center in Missouri, now undergoing a feasibility study. Intracity and intercity bus services will be connected at the Center, which also will serve as a satellite airline terminal. MetroLink, light rail operated by the **Bi-State Development Agency**, will bring passengers from the Center to Lambert Airport. Greyhound, charter and tour buses, and a heliport also are included in the design for multimodal activity.(*41*)

CHAPTER **3**

BARRIERS TO MOBILITY MANAGEMENT

The compendium illustrates that transportation agencies around the country are engaged in a broad range of mobility management functions. Over 60 agencies are cited in the compendium for mobility management practices. Nonetheless, most of the agencies are involved in only a limited way and have not embraced mobility management as an essential element of their mission. Thus, although there is much discussion and interest in mobility management as a new way of service delivery and community participation, widespread action and success is not evident.

Agencies wishing to become mobility managers must overcome a number of barriers. Some barriers are external, such as regulations imposed by oversight organizations concerning limits on state or federal funding. External barriers are perhaps the most daunting, because they are out of the agency's direct control. Other organizations, with their own agendas, must be convinced to change if these barriers are to be removed. Sometimes legislation is necessary.

There are also many barriers over which the agency has some degree of control, including some that are entirely internal. Those are obstacles that could be surmounted by changes within the agency. Yet, they are often just as difficult to tackle. Examples are lack of leadership, inflexible labor agreements, and outdated management systems that hinder innovation and risk taking. The political and institutional environment of transit can be a barrier, because the exposure to public expectations and criticisms can further hinder new initiatives.

The cost to provide mobility management functions, combined with limits on traditional sources of funding, can be a barrier, because those functions may result in legal challenges, new capital purchases, or the need for staff training. However, cost is a barrier over which agencies have some control. In fact, mobility management can be used as a way to leverage new sources of funding and make more efficient use of subsidy funds.

Table 2 (see Summary, p. 6) summarizes 10 factors that can limit or enhance an agency's ability to be a mobility manager. The limiting characteristics shown in the table are barriers. The lack of enhancing characteristics also can be considered a barrier.

The following discussion elaborates on the types of barriers potential mobility managers face. Examples from various agencies describe why becoming a mobility manager can be slow, hard work. Although each barrier is described as if it were distinct, there are clearly important interactions among and between the different types of external and internal barriers. For example, if there is external competition, there are implications for internal labor relations and management direction. The internal costs of change certainly relate to the external funding potential.

Every agency does not face every barrier. This discussion is not meant to weigh down the reader with the sense that mobility management is an impossible task. By showing enhancing characteristics for each factor, the discussion shows that mobility management *is* possible. The seven case studies that follow in the next chapter expand upon the hope by demonstrating how some transportation agencies have implemented mobility management actions in spite of or *because of* the need to overcome barriers and how enhancing characteristics have promoted mobility management. The following discussion is organized according to the degree of control of each factor that can be exerted by a potential mobility manager.

HIGH-CONTROL BARRIERS

Leadership

The presence or absence of effective leadership may be the most significant factor preventing or promoting a change from a traditional transit organization to a mobility manager. Many general managers who have risen through the ranks in the transit industry have little experience with building the external constituencies and alliances necessary for mobility management. Leadership must exist at the board of directors' level and the national level as well.

"The problem with any government endeavor is not failure, but the fear of experimenting," said Jim Echols of Tidewater Regional Transit in Virginia. ". . . It's easier for them to do what they've always done."(*42*)

It takes leadership to experiment, especially when mobility management is not supported by the regulatory, funding, and political environments. "*I* will be left with the disruption if it doesn't work out," said one general manager in a northwestern state, explaining why he didn't accept a rec-

ommendation advocated by several other participants in a demonstration project.

A leader on the board of directors must create appreciation among constituents to get the backing of other board members. If constituents support innovation, it is much more likely to occur than when board members are faced with community opposition.

The board, in turn, must be fully committed for the general manager to take the risks of being a change agent within the organization. One general manager who implemented an ambitious program of mobility management services was fired because, he says, the board did not back him when employees who felt threatened by the changes complained.

The general manager who experiments with new services or agreements with other organizations may fail to meet traditional performance criteria. Board members must be prepared to accept alternative methods of measuring success in judging the manager's performance.

As a leader and change agent, the general manager also must reinforce and motivate employees who fear having to learn new ways of doing their jobs. "Because people in transit have come up through the ranks in the industry, they are inbred and narrow in their thinking," said a general manager in the South who has had to overcome staff resistance to changes being made. This manager admits that mobility management takes "an extraordinary effort." When the staff says, "We can't do this," the manager replies, "There are lots of different ways to skin a cat." The manager tells them they need to be more flexible and adaptive. "What other alternatives do (we) have? We don't want to just watch statistics on bus pullouts and missed trips."

Leadership also must be sustained for change to become institutionalized. A local transit agency and a regional ridesharing agency in California signed a joint agreement to cooperate in employer outreach and marketing on transit and ridesharing. Whereas the agreement was enthusiastically implemented at first, both agencies now agree that it has fallen by the wayside. That occurred because of "lack of attention," said one transit manager. "Other priorities" crowded it out, agreed a ridesharing manager.

A change in leadership can also mean a change in direction. One agency that has undergone downsizing and significant institutional reorganization has shed itself of ridesharing and dial-a-ride functions for which it was noted, deciding instead to concentrate on high occupancy vehicle facilities. The ridesharing activities are now being done by a regional agency. "We were a one-stop shop in the 1980s, but we feel it's no longer needed," said one manager. Mobility management does not mean that a transit agency must perform all the functions itself. Depending on the impact on the public, this leader's change may result over time in an abandonment of mobility management or it may simply be a more efficient way of providing the same service to the customers.

Leadership for mobility management on the national level is weak, according to a senior official in the U.S. DOT. Although APTA serves as an advocacy organization for transit, highways have lobbyists not only from AASHTO but also from the aggregate, cement, steel, and automobile industries. "Is it really possible to achieve a level playing field for the evaluation of intermodal decisions when there is such a skewed imbalance of power favoring highways over transit?" the official asked. Leadership is needed to change the focus from moving vehicles to moving people, according to this source, and both highway and transit professionals should stop compartmentalizing transportation but instead take a mobility manager approach.

Leadership is a personal quality. But the quality can be fostered by TCRP research that gives potential leaders ideas through dissemination of study results and case studies. Would-be leaders can be bolstered by the experiences of their peers. Additional training can also give emerging leaders the new skills and confidence necessary to broaden their missions.

Organizational Culture

Traditional hierarchical organizations can inhibit mobility management. Such organizations can stifle leadership that emerges from the middle or lower ranks. Customer service and marketing representatives, for instance, may see the benefit of providing a full range of options to callers and businesses long before top administrators with less daily contact in the community. Unless the agency is one that encourages innovation and communication up and down organizational lines, the new view of service will be thwarted. Similarly, organizations that require many approvals limit independent decision making and inhibit changes to respond quickly to the market.

One large agency that put in place many new types of service did not realize at the outset that the changes also called for a change in its corporate culture. The changes cut across departments that were organized functionally and had not worked together before as a team. No time had been built into the schedule for the necessary institutional reorganization. Neither had time been allocated to build a consensus with outside agencies. The schedule had to be readjusted to take into account the separate processes and bureaucracies of each of the partner agencies in addition to the transit agency's own process.

A general manager in another state reported that he ran into resistance in implementing some of his mobility management ideas if one of his key staff members could not take personal credit for them.

Another small agency experienced a variation of the problems that may arise when a traditional operation is reorganized to be a mobility manager. People who held certain positions within the hierarchy are suddenly in more expansive roles with more latitude to make decisions. Personnel issues have cropped up that had not previously been evident.

Because employees' comfortable niches have been disrupted, time will be needed for them to adjust to the new structure.

Another transit operator described the obstacles the state Department of Transportation was presenting because of its segmented organization. The transit operator wanted to restructure the radial routes serving a central city, which were no longer productive because of demographic changes. He suggested forming vanpools on routes with low ridership and deploying the buses to other unserved areas with high potential. "You'd think I had proposed an illegal act," he said. The state ridesharing department, transit department, and highway department do not talk to each other, he maintains, and the metropolitan planning organization talks to no one. With each state department run by a separate director as a mini-bureau, there is no flexibility to look at a problem and "undo a radial system that's not working." Another example he gave of the results of this institutional segregation is the installation of high occupancy vehicle lanes by the state highway department without ever consulting with the transit operator.

With the trend toward downsizing, reorganization is already taking place. Reorganizations give traditional bureaucracies an opportunity to anticipate the changes needed to become mobility managers. Employee training and education in new ways of delivering service will be a necessary part of the reorganizations. At the national level, a move to integrate the U.S. Department of Transportation (DOT) into an Intermodal Transportation Administration was intended in part to resolve issues of segmentation by modes. State DOTs also can reorganize to recognize mobility management as a goal of ISTEA.

Mobility management will be limited unless the organization encourages staff to take initiative and be creative and *rewards* them for doing so. Following private sector models, the best way to provide rewards would be through *compensation*.

TCRP Synthesis of Transit Practice 3, "Incentive Programs to Improve Transit Employee Performance," lists a number of challenges that transit compensation programs face:(*43*)

- Public sector programs lack profits, which are often used not only to measure program success, but also to fund tangible rewards.
- Taxpayers who pay the bills for public employment are also loathe to pay incentives, which are perceived as a bonus over and above what has to be paid when there is no improved profit margin to show for it, and when the services themselves rarely please everyone.
- Transit is inherently a team effort. Results emerge from the interdependent efforts of a number of people and success depends on how well-integrated these efforts have been. The relationship of one single employee's efforts to one set of results is often cloudy.
- Public agencies are particularly vulnerable to rapid changes in circumstances. . . . An employee who works hard to achieve an incentive payment can be greatly demoralized when a budget cut occurs.

Despite the challenges, the Synthesis concludes that incentive programs are needed in light of the many changes transit faces. The authors consider incentives as a bridge that connects the employee's personal success with the organization's goals.

Society frowns on bonuses or high salaries for public employees. Top managers of transit agencies are sometimes criticized for their salaries and perquisites. To a public frustrated with dwindling federal and state support for transit, management compensation symbolizes resources they want to be spent on service.

In a public agency, rewards typically do not take the form of profit sharing or bonuses that may be available in the private sector. Instead, public servants are typically rewarded with promotion, recognition within the agency, training opportunities, and opportunities for recognition and status in the community or among professional peers—for example, by making presentations at professional meetings or serving on national committees. Where transit is provided by other than a special district, advancement may be promotion to a job beyond the transit function—for example, in a county government. These rewards have been effective at encouraging the staff who promoted mobility management at the case study agencies.

This view is supported by APTA's Transit 2000 Task Force, which suggested a number of noncash ways to compensate employees in its report *Managing Mobility: A New Generation of National Policies for the 21st Century*.(*44*) These include

- training programs;
- nontraditional benefits, such as flextime and child care; and
- career and upward mobility programs.

The rewards are entirely consistent with public agency cultures and can be highly effective if they are available. The report states that the quality of transit services "is directly dependent on the skills that are brought to the job by both management and labor, the price paid for those skills, and the degree to which those skills are used to their full potential." It lists new organizational models and management techniques, as well as financial resources, as the means to develop the appropriate work force.

Management

Managers and management systems also may be an internal barrier to improved mobility management. Work rules, affecting both represented and nonrepresented employees, may have been developed decades ago and will need to be rewritten to accommodate an enlarged mobility management mission. Job descriptions and the performance evaluation sys-

tem may need to be revised. For example, schedulers may have to learn new ways to design demand-responsive routes timed to meet fixed routes. Preparing quarterly driver sign-ups that involve part-time and flex routes will be more challenging, because work must be pieced together to produce the greatest productivity and lowest labor cost. Managers may need to consider how an employee will be evaluated on tasks that require action on the part of another partner agency. A clerk who has been excellent in giving out information from paper timetables will need to be evaluated differently if she is expected to be computer literate in looking up information.

Managers and subordinates alike will need training in the new tasks. An illustration is the experience of Winston-Salem Transit Authority in North Carolina. WSTA is testing Advanced Public Transportation Systems (APTS) technology as a recipient of an FTA Mobility Manager grant. The intent is to tie their ridesharing, paratransit, and fixed-route systems into the information services to provide "one-stop shopping." During the process of installing the technology, the agency learned several lessons about managing staff training:

- Managers cannot *assume* that all the staff are proficient at using various computer programs.
- The training cannot all take place at once. There is a need to introduce a concept and allow practice before another training session is scheduled on a new concept.
- Temporary staffing may be needed during training so that learners are not expected to keep up with the normal flow of work at the same time they are integrating new technology into their work patterns.
- A realistic time for the project must take into account the learning curve of the staff involved.

Managers may need new skills to convince workers to adopt a new vision. But often the managers themselves feel uncomfortable with a nontraditional vision. Many have "grown up" in a particular mode. For example, an assistant to the operations director in one large system is a former bus driver. All his experience has been in buses, but mobility management asks him to look at different modal solutions to mobility needs. He needs training to broaden his understanding and supplement his single-mode background. In another example, one agency has resisted providing service to a suburban community where fixed-route buses are not cost-effective. Other alternatives are not being considered, because the managers always have worked in a fixed-route agency and do not visualize it as anything else. The general manager of another agency opposed use of various-sized vehicles in order to keep the spare parts inventory easy to manage and to simplify the skills needed by mechanics. When the agency took on paratransit, the attitude changed somewhat.

Mobility management succeeds under a management that communicates effectively with the employees and encourages them to be creative. Managers themselves may need training to operate in the new environment, as well as to provide training for their subordinates. Lack of skills and outdated management systems are barriers that can be overcome with education, new problem-solving tools, and individuals' willingness to expand their thinking.

MEDIUM-CONTROL BARRIERS

Labor Relations

Relationships with organized labor can be a barrier to mobility management. If mobility management means, in some cases, diverting passengers to other systems or modes and, thereby, calling into question some marginal service, labor unions may perceive the actions as also affecting their jobs. For example, when structuring its new vanpool program, Milwaukee County Transit in Wisconsin agreed to limit participation to areas not served by its bus routes. The program design was in response to its drivers' concerns about competition with bus ridership. In Florida in 1992, the Metro-Dade County Executive's proposal to deal with unlicensed jitneys by integrating them into Miami's total transportation system was opposed vigorously by Metro Dade Transit Agency's labor union. The proposal was defeated by the Board of County Commissioners by a vote of 6 to 1.(*45*)

Labor relations can be strained by changes in the work environment. For example, additions such as bike racks have been of concern for drivers, who have feared that they would be liable if bikes fell off or if their turning radius was hampered by the racks. HART in Tampa, Florida, addressed the drivers' concerns by running each route with the rack before passenger service began and by requiring bike riders to load their own bikes after being trained and certified.

Technological innovations may be feared as methods that will replace jobs or be used as disciplinary measures (e.g., installing bus locators to check on-time performance of drivers). Union work rules also can restrict an agency's ability to respond to new technology. The Metropolitan Transportation Commission in the San Francisco Bay Area is leading a project to install TranStar, a computerized database of route and schedule information for all the region's transit systems. This system will allow clerks in the various telephone information centers to give out accurate information about connections to other systems. However, clerks are not familiar with the other systems on a daily basis and finding the information requires struggling with paper maps and schedules. In addition, the union work rules of San Francisco MUNI protect clerks from having to give out information on other systems. Management hesitates to open negotiations on that one matter, because it may also allow the union to put other issues on the table.

Another volatile area in labor–management relations is the move by some transit agencies to more contracted services. Contracting with private operators for marginal or specialized services may raise a federal Section 13(c) challenge

from the unions. Section 13(c) was originally included in 1964 federal transit legislation to ensure the continuation of collective bargaining rights in public acquisition of private systems and to protect employees who might be harmed by technological innovations funded by federal grants. Transit agencies contend that the regulation, administered by the U.S. Department of Labor (DOL), hampers efforts to achieve benefits through contracting or other partnership efforts.

One illustration of the conflict is the dispute between the Regional Transportation Commission of Clark County, Nevada (RTC), and the DOL in 1993. In December 1992, RTC initiated a new public transit service in the Las Vegas community. In September 1993, DOL required RTC to enter into a Section 13(c) protective arrangement with the employee bargaining unit for Gray Line of Southern Nevada, Inc., a charter and sightseeing tour bus company. RTC, which contracts for all its services, contested the DOL's condition. During the dispute with DOL, $8.5 million of federal funds were withheld. RTC contended that Section 13(c) obligations are "inconsistent with important national objectives of increased productivity, greater competitiveness, and fostering labor management partnerships."(*46*)

The fact that Section 13(c) "effectively stifled the interest of the private sector from participating in the provision of transit services" and "inhibits market based incentives," according to RTC, has implications for mobility management objectives. For example, other transit agencies have been reluctant to replace late night service with taxi vouchers or provide midday shuttles with private contractors for fear of a Section 13(c) challenge from organized labor. Yet an effort by members of the transit industry failed to eliminate Section 13(c) in 1995. Many believe that a negotiated effort with DOL will be necessary. In the meantime, the rule will continue for another year.(*47*)

More flexibility in labor agreements is one solution that several transit agencies have implemented. Tri-Met in Oregon and LANTA in Pennsylvania have negotiated two-tier wage scales to provide minibus services with union labor. New Jersey Transit's labor agreement enables all newly inaugurated service and 10 percent of ongoing services to be contracted. When NJT receives bids from private sector carriers, it uses its own marginal costs as a benchmark to compare the bids. If the NJT costs are lower, the service is not contracted. The union is also able to make concessions, such as greater use of part-time drivers, to bring the benchmark costs down.

Management that communicates and builds a trusting relationship with its represented employees and their union leadership can work to educate the work force about the financial position of the agency and the presence of private sector competition. Often, the union has perceived that these agreements are in its best interests as well, because they preserve the agency's fiscal health and, thereby, ensure that most of the work will be done with union labor.

Political Environment

Because transit in North America is almost universally provided by public agencies, it is extremely sensitive to its political environment. That is particularly true when the transit agency is a special-purpose district or authority with its own board of directors. The board of directors' political involvements can inhibit innovations in mobility management. The 1978 *Final Report on the Knoxville Transportation Brokerage Project* found, "Since political leaders are responsive to the majority, and because mistakes can be politically fatal, many political regulators are reluctant to try something until it is proven fully."(*48*)

One example from Tidewater Regional Transit (TRT) in Virginia illustrates how political sensitivities can deter mobility management techniques. In the 1980s Chesapeake City Council decided to cut costs by eliminating a bus route that connected Deep Creek with downtown Portsmouth. TRT proposed that the bus route be replaced with a shared-ride taxi service. But the council vetoed the idea, believing the cab service was a *luxury* that should not be supported with *public* funds. (However, when Deep Creek residents objected to the lack of transportation, the council later agreed to shared rides with 15-passenger vans.)(*49*)

Because of its public nature, transit is also expected to continue service that would be considered unprofitable in the private sector. This social service aspect leaves fewer resources with which to experiment and develop new "product lines," like mobility management. In West Palm Beach, Florida, the private sector and nonprofit agencies providing paratransit service to the transit dependent and Medicaid patients are going out of business as funding becomes tighter. Riders are turning to SpecTran, the public agency, which must take on the additional passengers, but without a corresponding increase in revenues.

Whereas stockholders of private companies evaluate changes after the fact by looking at the bottom line, through the public hearing process transit stakeholders can prevent changes from ever being tried. "My numbers supported the service changes," lamented one planner. "But because eight people came to the public hearing and objected, the board ordered that the plan be redone to accommodate them." That planner's dilemma is nothing new. The 1978 report on *The Knoxville Transportation Brokerage Project* states, "The cold hard fact is that politically it is virtually impossible to abandon existing runs to control deficits, so the wisest course a transit authority can take is not to initiate any new service because it is impossible to ever abandon it unless alternatives exist."(*50*)

The political environment also can support innovation and risk-taking. Government funds provide at least a base of support for the budget, support that is not threatened by market factors and by competitors. For example, having the mayor of Tampa and a county commissioner on its board of directors was instrumental in getting the city and the county to

dedicate a portion of development impact fees to HART—a case in which the board was a positive force for the agency.

Political forces are particularly apparent whenever funding is involved. Observers of Congress are familiar with examples in which projects favored by powerful members of the transportation committees have a large competitive edge for funding. This type of political influence is played out at the state, regional, and local levels as well.

Political forces enter in when there is no regional agreement on how funds should be allocated to meet the public's needs. For example, the Central Contra Costa Transit Authority (CCCTA) in northern California is a joint powers authority of 11 jurisdictions currently faced with service reductions. When CCCTA was formed, the bylaws guaranteed each jurisdiction a basic level of service. Some board members now say that the basic level of service entitles their jurisdictions to a population-based pro-rata share of the available funds. Other board members say that, although no community should be without any service, service decisions should be made based on system ridership, not population. Some board members believe that their priority should be the constituents who elected them; others believe that their priority is the CCCTA system as a whole. Thus, political considerations resulting from different jurisdictional boundaries take precedence over mobility management.

Political forces also can allow the concerns of one community to stymie broader mobility needs. Siting an intermodal facility, for instance, could be vetoed by the land use authority of the local city council or other political jurisdictions. A transit system in California wanted to locate a timed transfer center on the grounds of a community college situated on a major arterial. Among other reasons, the college objected because the transfer center would bring people onto campus who otherwise should not be there. Streets with cul-de-sacs and weight limits that prevent buses and trucks are other ways a local government may elevate perceived neighborhood safety over mobility in its policies. After the Oklahoma City bombing, an article in *Engineering News Record* described an architectural movement entitled Crime Prevention through Environmental Design, which advocates curvilinear streets, gated communities, and speed bumps as preferable designs to combat burglars and quick getaways.(*51*) The designs, which are physical barriers to efficient transit services, may become more common in the Oklahoma City bombing aftermath. When decision makers have crime pitted against mobility, the result may be mobility barriers that literally are set in concrete.

Political forces can be a barrier to mobility management if they force strict adherence to jurisdictional lines. In a county in the Southeast, buses run up to the county line and turn around, regardless of whether there is a destination attraction beyond the artificial boundary. As noted earlier, buses in the state of Washington that travel a certain distance out of their jurisdiction must do so with "closed doors"—that is, the buses cannot pick up any people in the other jurisdiction. These are the types of political limitations that make no sense to the public, who simply want to travel on a route that makes sense geographically.

Worthy mobility management projects at all levels of the political spectrum may suffer simply because of political compromises made for other, unrelated, reasons. In an illustration at the local level, a hospital foundation board in a northeastern town declined to contribute toward a centralized telephone reservation system for its rural clients who rode the transit system's dial-a-ride buses to the clinic. According to the transit manager, the board found the reservation system worthwhile. However, the political concern that the board would offend its urban clients by favoring its rural clients overrode their interest in more efficient use of vehicles.

Within an organization, elected officials on the board of directors may opt for the status quo rather than mobility management when faced with objections from constituents. In New York City, where the Transit Authority has been struggling with how to handle competition with jitneys, constituents are split. "Users are very supportive; nonusers (especially senior citizens, who are not granted discounts on the jitneys, and residents of streets used by jitneys) are opposed, sometimes vehemently so. This split in public opinion adds to the difficulty in devising a workable solution." The political leaders hope to integrate the jitneys into the transit system, but transit personnel believe "there is a huge gap between philosophy and reality on this issue."(*52*)

Thus, political forces can put the interests of particular constituencies ahead of the broader goal of enhancing mobility. Those forces can act at all levels of government and are inherent in the democratic principles that require public accountability for publicly funded services. However, enlightened support (or even benign neglect) by public officials can create an environment that allows mobility management to thrive. Adept mobility managers have been able to work with community leaders to help create a positive political environment.

Institutional Environment

The institutional environment can thwart mobility management when there is damaging competition with other organizations for ridership and prominence in the community. For example, a ridesharing agency may exist in the same region as a transit operator. For the transit operator to take on the same function may be redundant and probably will not be well received by the ridesharing agency. But collaborating may mean "giving away" riders instead of being able to count them on each agency's own "report card," such as an annual report or performance audit.

Similarly, separate rail and bus agencies may compete for riders by running parallel service along segments of routes. As the segment is part of their larger systems, neither may want to withdraw service or cause passengers to transfer.

Both may also want to retain a community presence for various reasons—maintaining a presence as an influential player, proving service equity to ethnic groups, or simply having pride in the industry distinction of remaining a large, not shrinking, operator. One agency has bitterly fought the dissolution of part of its district by the metropolitan planning organization, which has given some of the routes to a new agency that contracts for all its operations at less cost.

In an example from California, AC Transit and the Bay Area Rapid Transit District have had public disagreements over whether AC Transit should continue its transbay buses across the Oakland-San Francisco Bay Bridge. BART maintains that the service is redundant to its transbay trains under the Bay, a redundancy the Bay Area can no longer afford. Because BART pays AC Transit to provide some feeder service to the trains, discontinuing transbay bus service would free some funds for AC Transit and, potentially, decrease BART's obligation. AC Transit maintains that customers should have options and that, as BART cannot penetrate into the neighborhoods like buses, customers should not be forced to make the time-consuming transfers that would be required to ride BART instead of buses. In this case, rivalry between the two agencies over riders and funding hampers a resolution that best meets the overall mobility needs of Bay Area commuters.

When transit organizations are vying for the same limited source of funding, mobility management can be stifled if managers are unable to work collaboratively. Managers consider themselves advocates for their own agencies. Unless there is a mechanism that dictates that unmet needs be evaluated as part of a regional system rather than agency by agency, competition for funds will continue as agencies struggle to balance their budgets. Similarly, where transit organizations use funds available to nontransit agencies, collaborative relationships can be required with metropolitan planning organizations, county government, state DOTs, and neighboring jurisdictions. Examples of funds requiring such collaborative relationships include CMAQ, local general funds, and numerous state and regional funding sources.

A competitive environment can make it hard for transit managers to integrate their efforts with private sector transportation in the name of mobility management, particularly when private efforts are perceived as undermining the public system. For example, when enforcement against illegal jitneys was undertaken, the ridership and revenue on the bus systems of both Metro-Dade Transit in Florida and New York City Transit increased. This result strengthened the hand of some factions in both systems who argue against integrating legal jitneys with regular service because of the deleterious effect it would have on the publicly financed buses. Similarly, AC Transit and BART have fought casual carpooling in the San Francisco Bay Area because it robs the public systems of ridership. Indeed, a report issued by RIDES for Bay Area Commuters states that only about 10 percent of the casual carpoolers used to drive alone, and three-quarters of them are former transit riders.(*53*) Nonetheless, the public is "voting with their feet" when they support the competition by choosing jitneys and casual carpooling as the preferred way to make their trips.

At the same time, private businesses can view mobility management as an attempt to invade their territory and drive them out of business. When Tidewater Regional Transit introduced shared-ride services after 7 p.m., several taxicab companies complained that it "hurts their profits and is a subsidized intrusion on private enterprise."(*54*) In West Palm Beach, Florida, the Metropolitan Planning Organization is considering taking over Medicaid transportation to consolidate trips and have more control over skyrocketing costs. Yet, many of the 81 different social service agencies and for-profit transportation companies now providing the service would no longer be able to survive. In another instance, private consultants questioned whether it was in the scope of a public agency when Milwaukee County Transit planned to train companies' commute coordinators as part of its business services division. Because the consultants now use Milwaukee County's materials, the transit agency has been able to meet its objective of marketing its services without stepping on the private sector's toes.

Mobility management has an element of selflessness in its emphasis on the public good as more important than the individual or the organization. However, it is only natural that public agency managers would compete for personal recognition and control. One MPO manager, who had been working on a project involving multiple agencies, suffered what may become a fatal blow to the project when two individuals in the other agencies left and were replaced by others who wanted to redesign the project to fit their own vision. A transit manager who wants to enlarge his agency's ridesharing efforts is running into opposition in the state Department of Transportation, which funds 50 percent of the program. The opposition is from a DOT administrator who does not want to lose authority over the ridesharing program. Both in West Palm Beach, Florida, and in Ottumwa, Iowa, administrators in several social services agencies were reluctant to coordinate services if it meant giving up some control over their vehicles. In Portland, Oregon, Volunteer Transportation, Inc., was able to solve the control issue by offering benefits such as group insurance, driver training, and maintenance assistance, while allowing agencies to keep control of the vehicles.

The institutional environment of transit will always include elements of competition. Ego, personal interests, professional pride—whatever the name, they are the very fundamentals of human nature and often can be the most intractable barriers to change. On the other hand, competition and desire for personal achievement also can fuel innovation. Further, effective leaders can develop collaborative relationships with other agencies and the private sector that let multiple partners get credit. As budgets become more restricted, cooperation and innovative multiagency approaches may become even more important to institutional survival than the desire for autonomy.

Cost

Becoming a mobility manager may involve costs associated with organizational change or with providing new services. The costs may be viewed as barriers, especially when budgets are tight and new functions would drain resources needed for the agency's core mission. A summary of the costs that may be involved for an agency undertaking mobility management appears below in the form of questions the agency will need to ask.

- Can we eliminate existing functions or will the change engender additional functions? Is there staff to take on additional functions?
- Are there funds for the staff training required and for making the changes in the agency's management systems?
- Can we find capital funding to implement technological strategies? Will we have the ongoing operating revenues to support the technology over the long term?
- Is the activity permitted with federal and state dollars or will we have to rely on local revenues?
- Will we face costly legal challenges from the union or from other agencies?
- How will the changes affect the funds available to operate our basic service?
- What is the cost of failure?

As will be seen in the case studies, however, mobility management can take root despite the costs involved. In fact, it can be used as a way to leverage funding from new sources and increase overall efficiency.

Performance Measures

One of the problems of implementing mobility management is lack of common understanding of what it is and why it is important. Although ISTEA encourages public transportation organizations to take a broad view of their missions, that encouragement does not translate into a set of actions to which people in the industry commonly ascribe. A federal program called Mobility Managers focuses on use of technology. Others view mobility management as the brokering of various modes. Still others think it means providing paratransit. Without an industrywide acceptance of what constitutes mobility management, it is hard to determine whether any agency has successfully achieved it.

Inflexible performance measures imposed by oversight agencies, especially funders, can chill a transit agency's motivation to stray from its traditional focus. According to findings in *TCRP Synthesis of Practice 6* "The Role of Performance-Based Measures in Allocating Funding for Transit Operations," "performance-based funding may not respond appropriately to the competing pressures upon public transit systems to take a hard-nosed business approach to service while also fulfilling its social mission."(*55*) Participants in a 1993 Reverse Commute Workshop hosted by APTA agreed. Their report states, "Reverse commute programs may not be seen as being successful if they are judged by traditional transit performance standards. Transit is an economic development tool and performance standards should be developed accordingly." (*56*)

In some instances, performance standards can actually promote the status quo over innovation. For example, in the funding formula set by the Pennsylvania Department of Transportation, a transit system that decreases its vehicle miles will also decrease its allocation. That formula discourages forming partnerships with other private or public operators to provide nontraditional service. In fact, it encourages retaining unproductive routes.(*57*)

Transit has traditionally been judged on measures such as fare-box recovery ratio and cost per passenger-mile. Therefore, some managers are reluctant to support other service delivery modes enthusiastically, fearing that they will erode the fare box returns and decrease the cost-effectiveness of the core fixed-route system. For example, managers in an eastern transit agency and in a suburban system in the Southwest reported that the systems' ridesharing elements were never embraced by the top administrators. Although the eastern agency's ridesharing program was fully staffed and enjoyed support during the two oil embargoes, it was never assimilated into the organization. A manager stated that senior managers and union leaders consider the program a threat to transit ridership and to job security. It remains a tangential part of the organization's functions. In the Southwest, the transit administrator is "an anti-HOV, pro-rail guy," said a manager, "who believes that promoting ridesharing is promoting *cars*."

Promoting alternative modes such as ridesharing, or even other transit options (e.g., a bus operator promoting a "competing" rail operator), can mean a loss of ridership, fares, and productivity. The performance measures can be linked to the agency's future funding. For example, a countywide agency administering sales tax revenues might refuse to fund a discretionary transit project if ridership declines. In the example, if there is no mechanism to include referrals to other modes in the transit operator's performance measures, both its reputation and funding opportunities may be affected. Therefore, inability to "get credit" for mobility management can be a strong disincentive for conventional transit agencies to consider the *passengers*' needs holistically rather than first to consider the agency's own survival. On the other hand, if another agency can actually provide a service more efficiently, then it should, in principle, be possible to develop a collaborative approach that benefits both agencies.

One solution that APTA has advocated in its *Transit 2000* report is a two-tiered concept of performance measures. Transit should be able to make a disaggregated analysis of performance at the corridor, subregional, or peak-hour level that "relates performance to both major national goals and to the varying local goals to be served by each of our transit and transportation systems."(*58*)

LOW-CONTROL BARRIERS

Funding

Lack of adequate funding to fulfill the unmet needs of traditional transit, let alone take on new responsibilities, is a barrier to mobility management. Indeed, in the American Public Transit Association's (APTA)1994 Transit Ridership Initiative, transit managers surveyed ranked the unavailability of "public funds to support day-to-day operations" as the most important of 14 factors affecting their ability to attract and keep customers.(*59*)

Two examples of the many anecdotes that could be chronicled are from Lehigh and Northampton Transportation Authority (LANTA) in Pennsylvania and TransIT in Maryland. LANTA has started introducing community circulator buses and feeders into the core urban system as part of its mobility management efforts. However, because it is facing funding cutbacks, LANTA may be forced to alter its direction, according to one manager, moving "from innovation to revenue enhancement." In Frederick County, Maryland, a community survey identified the lack of adequate public transit as a major issue. The bus system, TransIT, has ambitious plans to implement innovative service delivery. However, in a brochure to the community, TransIT states, "We do not have the resources to provide public transit in a number of rapidly growing communities in Frederick County . . ." and urges the community to make a stronger investment in public transportation.(*60*)

Although a new service may be an attractive option to the public, funding constraints require the transit agency to weigh the effects on existing service. Varian Corporation in Palo Alto, California, conducted a study to determine the feasibility of operating a shuttle from its location in Stanford Research Park to the CalTrain Station. The public transit operator, Santa Clara County Transit District, was unable to provide the shuttle because it meant abandoning the existing routes in favor of a dedicated shuttle, which "would dislocate transit service in the area because the routes serve other locations besides the CalTrain commuter rail station."(*61*) Partly because of the economic climate, employers in the Research Park were reluctant to fund the shuttle. On the other hand, Southeastern Pennsylvania Transportation Authority (SEPTA) was able to start its reverse commute routes with some of its own funds and still maintain existing routes to the central city through a negotiated compact with the private sector for subsidies. However, some of the routes were later terminated because of ridership losses from the recession and corporate relocations.(*62*)

Lack of funding to start or continue mobility management services not only affects the operations of the transit agency but also may affect the very success of the program from the outset. Participants in APTA's 1993 Reverse Commute Workshop said, "Employers are reluctant to hire employees who are dependent on bus transportation because transit agencies may change or remove these bus services. Transit must commit to the service so that employers will know that the service will be there over the long haul and will not be taken out because it did not meet ridership criteria."(*63*) The same concern can be raised when land use links are used as a mobility management strategy. A community is reluctant to approve reduced parking or higher densities for developments based on transit service when that transit service may disappear with funding cuts. The need for stability can create an additional barrier to experimentation and innovation.

The design of funding grants can either inhibit or enhance mobility management. For example, federal financing is directed more heavily at capital projects than at operating funds. That encourages mobility improvements focused on rolling stock rather than collaboration with other providers and reconfiguration of existing services. On the other hand, Congestion Mitigation and Air Quality (CMAQ) funds have encouraged a number of experimental programs that might not have occurred without them. New Jersey Transit developed Wheels, a new program of services that it had never been able to try before CMAQ grants became available.

Being innovative in service delivery also can require new ways of distributing costs. For example, the National Association of Neighborhoods is setting up centralized Transit Traveler Centers to respond to passenger trip requests. One of the challenges it needs to resolve is which agency pays for which costs when transit vehicles and social service vehicles are dispatched interchangeably based on the availability and location of vehicles rather than on funding source.

But funding cutbacks actually have spurred some transit agencies to take a mobility management approach to solving problems. In the case of the National Association of Neighborhoods, the cooperative effort to share resources is one response to the lack of funding. The compendium contains other examples of responses, such as HART in Tampa, Florida, which has tapped into business assessment districts for specialized services and Rogue Valley Transit in Medford, Oregon, which uses demand-responsive taxis in place of discontinued fixed routes. Given the high probability that funding will continue to be limited for transit agencies, more and more transit agencies will need to view mobility management not as an additional burden but as a tool to overcoming this major obstacle.

Regulations

APTA's *Transit 2000* report also faults federal regulations as barriers to mobility management. "Numerous federal program requirements adversely affect performance, including charter and school bus restrictions that reduce revenue and ridership, low-bid procurement processes that result in incompatible equipment, and increased costs to maintain it," according to the report.

Complying with regulations causes long lead times for capital purchases, inhibiting agencies' abilities to respond to shifting ridership and markets. In addition, the number of

buses for which a transit agency can receive federal subsidies is limited by FTA. A transit agency might wish to use a bus that could no longer hold up on an all-day route for one or two daily shopping trips for senior citizens. However, buses that have reached their useful life under federal rules cannot be recycled for such lighter, flexible uses without jeopardizing the replacement schedule for fixed-route buses. These and other regulations affect what a transit system can do and how long actions will take. Thus, they narrow the vision and receptiveness of transit agencies asked by ISTEA to be mobility managers.

Federal regulations can conflict, such as the Department of Labor's Section 13(c) protections for organized labor and the Department of Transportation's former emphasis on privatization opportunities. Using taxis to replace late-night, fixed-route service and using private jitneys to supplement existing fixed-route service are two examples of mobility management functions that could clash with Section 13(c).

Transit agencies also are hampered by regulations passed by states, local governments, and private enterprise:

- The Public Utilities Commission (PUC) in California could require vanpool and carpool drivers to be PUC-licensed "stagecoach" operators if they participate in a Southern California call-in program to match them with single-ride passengers. Such a licensing requirement for trips over 50 mi will undermine the program, which is designed to fill empty seats in vehicles already on the road.
- A similar obstacle faces Community Link, a program sponsored by the Southeast Missouri Transportation Service. The program seeks to fill empty seats of commuters by paying them to take along single-trip riders, especially social service clients. The insurance requirement for a physical exam and drug testing and the requirement for a chauffeur's license has dampened drivers' interest in participating.
- The state of Washington requires transit corporations to operate "closed door" if their routes extend 15 mi past their political boundaries.
- A North Carolina law prohibits governmental entities from negotiating with unions, narrowing the types of possible organizational structures for transportation.
- A Pennsylvania law prohibits headlights from being blocked, preventing Lehigh and Northampton Transit Authority from installing bike racks on the front of their buses.
- Kitsap Transit in Bremerton, Washington, wants to extend its worker driver program to sailors based at the Bremerton Shipyard, but the Navy prohibits the sailors from joining a union—and, thereby, becoming part-time subscription bus drivers to the shipyard.
- At Suwannee Valley Transit in sparsely populated north-central Florida, a program to share vehicles with the school district for demand-responsive trips had to be discontinued. Insurance company regulations caused the school district's insurance costs to rise when its vehicles were used during school hours instead of sitting idle.
- *The Knoxville Transportation Brokerage Project* found that the state of Tennessee was not authorized to erect signs on church park-and-ride lots. Legislation was necessary to allow the government to "spend $50 for a sign to accomplish the same purpose as spending $250,000 for a government-owned lot that would convert land permanently from being a tax generator to being a tax user."(*64*)

Several of the transit agencies involved in these examples are pursuing ways to overcome regulatory barriers to mobility management. As agencies resolve the issues, it would be useful to maintain a central clearinghouse where the information could be shared with others. In this way, solutions could be adapted across state lines instead of reinvented. At the federal level, the barriers illustrate the continued importance of a national organization such as APTA to seek changes in regulations that will benefit mobility managers. Such legislative initiatives may need to include partnerships with other entities, such as national organizations representing school districts and cities, to encourage efficient service delivery.

CHAPTER **4**

CASE STUDY FINDINGS

Seven case studies were conducted with agencies that are in various stages of mobility management. The case studies add depth to information gathered for the compendium and the section on barriers by tracing shared influences that have contributed to successful mobility management. The case studies look at

- the way each agency fits into the definition of mobility manager,
- events and opportunities affecting the change from a traditional agency to a mobility manager,
- ways barriers were or were not overcome, and
- features transferable to other transportation agencies.

This section of the report summarizes the results of the case studies and describes actions for transportation agencies based on lessons learned from the case studies. The case studies are presented in full in the Appendix.

METHODOLOGY FOR SELECTION OF CASE STUDIES

Twenty-eight agencies were nominated by the research team, by TCRP B-7 panel members, or through self-nominations. The research team then prepared a recommended list based on the following criteria:

- Range of mobility measures attempted;
- Mobility management mission or a project-oriented response to a specific opportunity;
- Representation from organizations of various sizes, operating environments, organizational structures, and geographic areas;
- Transferability;
- Degree to which mobility management objectives have been met, including agencies that vary from low to high in their achievements; and
- Response from the market.

The TCRP B-7 panel balloted and selected seven agencies, ranging in size from small to large, in operating environments from rural to urban, with various organizational structures, and located in various geographic sectors. Figure 3 is a map depicting the location of each of the case study agencies, described below.

Organization	*Size*	*Operating Environment*	*Structure*
Cape Cod Transit, Mass.	small	rural	regional transit authority created by state, with voluntary town memberships
HART, Fla.	medium	suburban	regional transit authority created by state
Houston METRO, Tex.	large	urban/suburban	countywide transit authority created by voters
Milwaukee County, Wis.	medium	urban	contractor to county
New Jersey Transit, N.J.	large	urban	statewide transit corporation
San Diego County, Calif.	small	suburban/rural	department of county
Tri-Met, Oreg.	medium	urban	regional transit district

RANGE OF MOBILITY MANAGEMENT FUNCTIONS PRACTICED

The seven case studies illustrate a variety of mobility management functions. Tri-County Metropolitan Transportation District of Oregon (Tri-Met), for instance, is a premier example of an agency successfully influencing transit-friendly development and jointly planning transit villages around its light rail stations. Hillsborough Area Regional Transit Authority (HART) and Milwaukee County Transit System (MCTS) have established shuttles, new routes and route extensions funded by the private sector. The Metropolitan Transit Authority of Harris County (Houston METRO) is a leader in new technology applications. METRO is working on the implementation of real-time traffic and transit schedule information in its traffic management center and a real-time ridesharing demonstration.

Demand-responsive feeders are an element of New Jersey Transit's (NJT) experimental suburban employment services, where flexible local routing based on ridership demand connects residential communities with nearby business

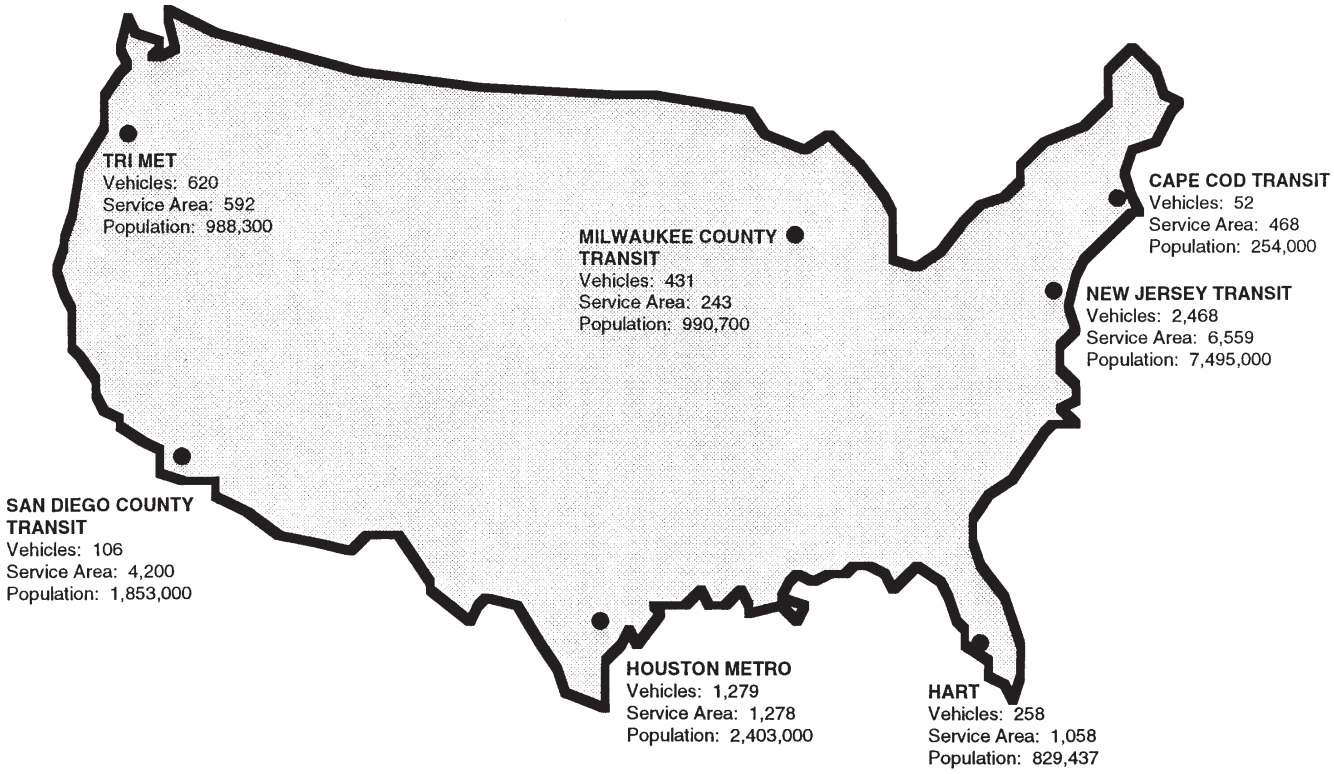

Figure 3. Case studies, TCRP Project B-7.

parks. San Diego County Transit System (CTS), which receives no federal funds and contracts out all its service, provides local circulator shuttles serving light rail stations and a Guaranteed Ride for Emergencies for riders of its express bus routes. Cape Cod Regional Transit Authority, which also contracts out all its services, blends the general public with Human Services clients on its dial-a-ride buses. Table 4 summarizes the range of mobility management functions practiced by the seven case studies.

ANALYSIS OF SHARED INFLUENCES

Although the seven case study agencies are disparate in their size and operating environments, common factors have influenced all of them. Those factors include **funding levels**, **partnerships with other agencies**, **institutional leadership for mobility management**, the **organizational culture**, and the **level of community support**. The case studies show that each factor plays a critical role in the degree to which a

TABLE 5 Range of mobility management functions

	Cape Cod	HART	Houston METRO	Milwaukee Co.	NJT	San Diego	Tri-Met
Ridesharing							
Carpool matching			X		X		X
Vanpools		X	X	X	X	X	X
Emergency ride home		X	X	X	X	X	X
Subscription bus			X				
Real-time rideshare			X				
Shuttles		X	X		X	X	
Jitneys			X				
Volunteer Transportation Assistance							X
Bikes on Buses		X					X
Non-ADA Demand Responsive	X				X	X	
Human Services Coordination	X						X
Transit in Traffic Management Center			X				
Reverse Commute			X	X	X		
Assist TMAs		X	X	X	X	X	X
Transit Villages							X
Influence Transit-Friendly Development		X					X
HOV Development			X				

transportation agency is also a mobility manager. Table 6 depicts how the factors are exhibited in each of the seven agencies.

A discussion follows of the analysis of shared influences and the implications for other transportation organizations.

Funding Levels

Tri-Met and Houston METRO, the two case study agencies that enjoy the highest level of funding, are, not surprisingly, the most developed in their mobility management functions. Both agencies are supported by dedicated sources of local

TABLE 6 Analysis of shared influences

Agency	1) Institutional Structure	2) Funding	3) Partnerships with Other Agencies
Cape Cod	Regional Transit Authority established by State. Administrator and 3 staff provide all services through contractors with 52 buses. Reports to 15-member Advisory Board composed of town Selectmen	6% from fares; 36% from contracts with Human Services Agencies; 41% from state contract assistance; 12% from local assessments; 3% from federal assistance; 2% from misc. income	Responded to member cities' needs in developing services. Cooperates with Cape Cod Commission on long-range planning. Strong linkages with Human Services agencies through contracts for service
HART	Regional transit authority chartered by State. Executive Director reports to 10-member appointed Board of Directors. 450 employees and 174 vehicles.	22% from fares; 50% from ad valorem taxes; 24% from state and federal subsidies; remainder from intergovernmental agreements and misc. income. Remainder category includes development impact fees and innovative funding partnerships with the private sector.	Formed strong cooperative partnerships with Florida DOT, the MPO, the regional ridesharing agency, and TMOs. The separate agencies often work as one team with the same mission on various projects, including new services and ridesharing programs.
Houston Metro	Transit Authority created by voters in 1978. General Manager reports to 9-member Board of Directors. 3,682 employees and 1,413 buses.	23% from fares; a 1% regional sales tax funds 47% of budget; remainder from federal, state and misc. sources	Formed strong cooperative partnerships with Texas DOT, City of Houston, Harris County, Houston-Galveston Area Council on HOVs, street improvements, ITS technology, and vanpooling.
Milwaukee	Private non-profit company contracting with Milwaukee County Dept. of Public Works. Policy set by Board of Supervisors and 5-member Mass Transit Committee of the Board. 1,500 employees and 535 buses.	37% from fares; 43% from state; 13% from county government ; 6% from federal government; 1% from other sources, including innovative partnerships with private sector, which have funded new routes.	Responded cooperatively to overtures for partnership from employers, the County Economic Development Department, a university, and the Wisconsin DOT, on new services, discounted fare media, and a vanpool program.
New Jersey	Statewide transit corporation. Executive Director reports to 7-member Board of Directors appointed by the Governor. 1,900 buses, 715 rail cars and 958 contracted buses	45% from fares; 29% from the state; remainder from federal and misc. sources	Responded to clean air regulations and funding availability by cooperatively designing new services with TMOs and by participating on their governing boards.
San Diego	Function of the San Diego County Department of Public Works. General Manager reports to Board of Supervisors. 12 employees and 106 contracted vehicles.	33.4% from fares; 66.6% from state subsidies. Receives no federal subsidy.	Responded to needs of contract cities by cooperatively designing new routes.
Tri-Met	Special district of the state. General Manager reports to 7-member Board of Directors appointed by the Governor. 2,076 employees and 620 peak period vehicles.	20.2% from fares; 66.9% payroll taxes; 3.4% from state and federal subsidies; 9.5% from misc. sources. Payroll tax of six-tenths of 1% is dedicated funding source.	Formed partnerships with the cities, TMAs, a volunteer paratransit agency, and neighboring transit district. Cooperative relationships with the Metro Council, City of Portland, and State of Oregon to bolster transportation/land use linkages

TABLE 6 Analysis of shared influences (*continued*)

Agency	4) Leadership	5) Culture	6) Level of Community Support
Cape Cod	Commonwealth of Massachusetts has fostered coordinated service among the general public and human services providers through legislation creating Regional Transit Authorities.	Emphasis is on managing transit services rather than operating them. Efficiency is primary, blending full-fare and human service passengers in the same vehicles. Services offered are defined by the community, rather than initiated by the transit agency.	Good support from major employers, community groups, and individual citizens.
HART	Executive Director is change agent, who provides strong leadership, backed by "can-do" staff in key positions.	Board of Directors has adopted mobility management as part of mission, which has been embraced by the organization. Agency turns problems into opportunities.	Good support and involvement from community leaders and businesses. However, most of general public does not take transit.
Houston Metro	Significant political leadership from mayor, who was also formerly the Chair of the Board of Directors. General Manager holds leadership positions in the transit industry.	Transit is part of larger strategy and broad definition of mobility management. Staff has freedom to experiment with nontraditional approaches to achieve objectives.	Public approval of a 1% sales tax generates strong financial support. Broader mission involving road projects solidifies public support for transit projects as well.
Milwaukee	Management has supported entrepreneurial ideas of a few key staff members.	Agency considers itself a business and responds to mobility management opportunities which further its business objectives.	Close community ties of Executive Director, a former elected official, build support for the agency. A number of businesses have formed supportive partnerships.
New Jersey	Management has supported entrepreneurial services originating in the planning department.	A traditional agency has added mobility management functions to its basic services.	As a statewide agency, has general public support. Involvement with individual communities varies.
San Diego	General Manager provides strong direction and has seized opportunities to develop new services.	Management has a free hand to experiment. Mobility management used for creative responses to customers.	Responsiveness to client cities has resulted in good community support.
Tri-Met	Significant political leadership from former mayor	Board of Directors has adopted mobility management as part of mission, which has been regularly communicated by the General Manager and embraced by the organization.	Strong community support is evidenced in future growth management emphasis on transit and on passage of past bond measures for light rail.

funds. They have used that funding to take on enlarged roles in their communities. Houston METRO has responsibilities for traffic management and street and road improvements in addition to transit service. Tri-Met is heavily involved in regional planning and community land use issues.

Because transit agencies such as METRO and Tri-Met have broader roles than the traditional transit agency, they cannot be evaluated in the traditional way. For example, Tri-Met invests in the staff needed to maintain its role as an important stakeholder in the region, even though this results in an administrative expense that lowers its fare box ratio. However, the payoff from investing resources in the community is that others take ownership and become advocates for transit. Transit becomes knit into the community's fabric and is considered an essential resource. This is an intangible but significant result of adequate local funding that cannot be easily quantified.

However, *inadequate* funding can provoke the same type of community involvement. Inadequate funding has been the stimulus for both HART's and CTS's mobility management efforts. HART has actively pursued supplementary funding from the private sector to expand services that it otherwise could not offer. CTS has had to be on its toes to ensure that its service is sensitive to the cities' needs, because client cities can choose an alternative service delivery provider or can manage the transit program themselves. The result of this market-driven approach has been mobility management approaches that are creative and responsive to CTS's customers. Both HART and CTS are active participants in their

communities, turning the problem of inadequate funding into an opportunity to become mobility managers.

HART, Milwaukee County Transit, and NJT have built innovative programs around the availability of Congestion Mitigation and Air Quality (CMAQ) federal funds. The demonstration funds have been instrumental in experimenting with innovative services. CMAQ funds have allowed the agencies to come to the table with seed money when approaching the private sector for contributions. CMAQ has not been the sole source of seed money. For example, MCTS also has used its base funding to support route extensions in which employers paid only the marginal costs of the miles added to existing service. But the existence of CMAQ has aided greatly in taking risks with nontraditional service approaches.

The case studies demonstrate that adequate funding is important for providing an array of mobility management functions. However, agencies with inadequate funding have used mobility management as a tool for increasing service, although the agencies most often have taken advantage of some demonstration money as leverage. Therefore, although the efforts of transportation agencies to become mobility managers will be advanced greatly through adequate funding, lack of adequate funding should not be considered a reason for business-as-usual attitudes.

Partnerships with Other Agencies

Without exception, the seven case study agencies had extensive interaction with other related agencies in their areas. At one end of the spectrum are CTS and Cape Cod, which have formed close relationships with the cities they serve, out of desire and interest but also out of necessity for survival. At the other end of the spectrum are Tri-Met, Houston METRO, and HART. Those three agencies not only are strongly supported by their major cities but also have significant ongoing alliances with major partners, such as their state Departments of Transportation (DOTs) and their Metropolitan Planning Organizations (MPOs).

The partnerships have paid off in creating an environment highly supportive of mobility management. In Oregon, the city of Portland has set parking caps to bolster transit use and the Metro Council has adopted a regional plan that emphasizes transit over highways. These types of policies undergird Tri-Met's important role in the community. In Texas, the 63.6 mi of HOV lanes began with an agreement to share responsibilities between METRO and the Texas Department of Transportation on the basis of a handshake. Today 80,000 persons travel in METRO's buses, carpools, and vanpools on these jointly managed contra-flow lanes.

Transportation agencies that do not have such strong partnerships with the DOTs and MPOs can find inspiration from HART's very local partnerships to build a mobility management environment. HART has contracted with the regional ridesharing program, Bay Area Commuter Services, Inc. (BACS), to run its vanpool program as well as a Guaranteed Ride Home (GRH) program. The GRH program will supplement an existing GRH program for both vanpoolers and transit riders that is administered and funded by a Transportation Management Association entitled the Downtown Partnership. HART, BACS, and the Partnership all will promote the programs, seeing their efforts not as redundant but as complementary. HART also has trained BACS staff to give out correct transit information and has housed the BACS staff in HART's Downtown Commuter Center, a remodeled former gas station owned by the city of Tampa. The Partnership will install showers and lockers in the Commuter Center for bicyclists and walkers, and perhaps a bike repair operation, and will contract with the YMCA to run the program. The example illustrates how the separate organizations are working as one team with the same mission in the efforts.

The case studies clearly point to an ability to form partnerships with other agencies as a key characteristic of a successful mobility manager. With cooperation from other community-based or governmental agencies, the transportation agency can go far beyond what it can accomplish alone. Some of the payoffs can be supportive policies, shared funding and responsibilities, and expanded financial resources. Being open to new ideas and responsive to other agencies' overtures is the first step. The most successful mobility managers have gone beyond that step and have aggressively sought out and nurtured partnerships with other agencies. The result can be a broader base of support and a new circle of stakeholders who will potentially rally to the side of the transit agency.

Leadership

Somewhere in the transportation organization there has to be a leader who will champion mobility management. As might be expected, the greater the person's stature, the more likely the organization will integrate the mobility management changes. In Oregon, the former mayor of Portland, Neil Goldschmidt, led the effort to build light rail as the alternative to new roads. The success of light rail has energized Tri-Met and given it confidence to take a larger role in the land use/transportation links. Similarly, Mayor Bob Lanier in Houston played a leadership role in METRO's mobility management program. A former state highway commissioner, he chaired the METRO board of directors in the late 1980s. His overall advocacy of the HOV system in lieu of rail and of METRO's role in road improvements and traffic management has been very important to Houston's mobility management approach.

At HART, Executive Director Sharon Dent's leadership is cited by multiple sources inside and outside the agency as one of the major forces in its transition from a traditional bus company to a mobility management agency. She views mobility management as a strategy to overcome funding problems and create a flexible, market-based, entrepreneurial

institution. In that new role, staff from HART are active participants in key community and governmental organizations.

Championing mobility management does not always have to start at the top. At MCTS and NJT the ideas developed with the marketing and planning departments. Top management itself showed leadership by creating an environment where the ideas and leadership of lower-ranked employees could flourish.

Perhaps the most important of all the influences on mobility management is the presence of leadership. Without leadership, agencies can waste funding, miss opportunities, erode community support, and create a culture of pessimism. The case studies have shown how leadership can instead attract more funding, turn problems into opportunities, capitalize on community support and create a "can-do" institutional culture. They also illustrate that the more involved top management and community leaders are, the greater the degree of mobility management the agency practices.

Culture

People in transportation organizations that have embraced mobility management as their mission think in new ways about their role in the community. They place emphasis on the travel *need* rather than the travel *mode*. For example, Houston METRO places customers in vanpools as an alternative to transit if vanpools suit riders' needs better or if transit is not available. Cape Cod Transit schedules customers from human services organizations in the same dial-a-ride vehicle as the general public, removing the need for separate vehicles dedicated by funding source. CTS even tries to eliminate the need to travel altogether by helping to start telecommuting programs.

Here again, leadership from the top determines how much a mobility management culture is embedded into the fabric of the organization. The board of directors of HART and Tri-Met have adopted mobility management as part of their mission and, consequently, employees integrate a mobility management approach into their implementation of various services. NJT and Milwaukee County remain more traditional transit agencies, but they are both experimenting with ways to add mobility management functions.

When mobility management is part of the culture, transit is often part of a larger strategy. In Houston, that strategy includes traffic management and road improvements that benefit all users of the transportation system and therefore enhance overall mobility for the entire populace. At Tri-Met, transit and land use planning are linked as a strategy to manage growth in the built environment.

The case studies illustrate that mobility management thrives in a corporate culture that encourages experimentation, enjoys management support for creative responses to problems, and maintains primary concern for customers. Equally important, the mobility management mission must be communicated often and well to the staff who implement the nontraditional services.

Level of Community Support

Because transit has been part of a larger strategy in Houston and Portland, the level of community support has been particularly high. Dedicated funding sources demonstrate that support. METRO receives revenues from a 1 percent sales tax passed by the voters. Tri-Met, which has 67 percent of its operating budget financed by a payroll tax, also has won voter support for light rail construction bonds. In addition, Tri-Met serves a metropolitan area in which the citizens largely share a unified vision. The region's plan for growth management incorporates Tri-Met as an integral part of that vision.

The community support for the other case study agencies is also good, although it is exhibited primarily through organizations rather than the broad-based support from the citizenry exhibited in Houston and Portland. The Southeastern Wisconsin Coalition for Transit Now, composed of businesses and individuals, is a strong advocate for Milwaukee County Transit. In addition, the executive director of MCTS, a former county supervisor, maintains strong ties in the community. Executive-level staff at NJT (New Jersey Transit) are involved with individual communities in the state by sitting on the boards of Transportation Management Associations. The executive director of HART plays a parallel role on the boards of TMAs in Tampa. Cape Cod Transit is linked to the communities it serves through the Selectmen of its member jurisdictions who also sit on its board of directors. Because membership in the Cape Cod Transit Authority is voluntary, the participation of the cities is evidence of their support. Similarly, the cities who have voluntarily contracted with CTS illustrate the community support for its services.

The case study agencies all have learned that being visible and involved in the community builds important relationships. Those relationships are vital for placing transit leaders in position to be invited to the table for discussions of policy issues concerning the community and its future. They also broaden the base of support and enlarge the circle of stakeholders in transit's future. At the highest level of support, transit becomes part of the community's vision.

CONTRACTING AND LABOR RELATIONS

The case study agencies have been able to provide nontraditional services by contracting with other private operators. Contracting is the most feasible way to provide services that operate only for part of a day or for specific needs except when the agency's labor agreements authorize ample use of part-time drivers. Contracting permits more flexibility by allowing unproductive services to be changed or canceled in short periods of time rather than coinciding with driver

sign-ups. Thus, contracting generally makes experimentation less risky.

In the case of the two smaller agencies, CTS and Cape Cod, all services are contracted. Their role is solely to manage the contracts and ensure quality delivery. In addition, because CTS receives no federal money, it has had no constraints to face in its competitive contracting practices, such as Section 13(c) regulations.

The larger agencies also have successfully contracted some of their services. NJT's labor agreement enables all newly inaugurated services and 10 percent of ongoing services to be contracted. When NJT receives bids from private sector carriers, it uses its own marginal costs as a benchmark to compare the bids. If the NJT costs are lower, the service is not contracted. The union also is able to make concessions such as greater use of part-time drivers to bring the benchmark costs down. Houston METRO offers a jitney service through private contractors with 4–5 passenger vehicles. Jitneys operate along existing bus routes and charge the same fares as METRO. METRO also operates its own vanpool program.

HART has agreed to use contractors whom its private-sector funding partners have selected for its shuttle routes. Because the shuttles were new services, there was no conflict with the labor agreement. However, because of budget shortfalls, some existing services will now be contracted. The executive director has met with employees to explain the agency's funding problems and has promised no layoffs. That collaboration has brought acceptance from the union.

Milwaukee County Transit has been able to offer its vanpool program, but only with some concessions to the union. Vanpools are restricted to areas where no bus service is available. The restriction was adopted in response to a concern by the union that vanpools could compete for riders and result in service cutbacks. Tri-Met, which formerly contracted some of its suburban services, has just negotiated a new labor contract that prohibits contracting. To offset potential cost increases, the agreement provides for reduced starting wages for new minibus drivers.

Because experimenting with nontraditional services has both cost and Section 13(c) implications, the relationship management has with its union is an important factor in mobility management. The case studies show that, to this time, all the agencies have been able to make accommodations that do not prevent mobility management, although some operate under more constraints than others.

ACTIONS FOR TRANSPORTATION AGENCIES

Based on the cross-cutting analysis of the seven case studies, transportation agencies can incorporate a number of transferable features to become mobility managers. None of them are startling new ideas. On the contrary, the actions will be found in any book on good management. Many of the actions also suggest the need for political acumen, useful for success in a public sector environment. All of them require management direction and leadership, with the board of directors' strong backing.

Within the organization, management can lead staff by

- fostering an entrepreneurial spirit that allows experimentation;
- developing a cohesive internal vision through communication and consensus-building;
- creating an understanding of what is meant by mobility management and the reason it is important;
- building trust with organized labor; and
- attracting and supporting good personnel through management training, teamwork, opportunities for creativity, and leadership in the industry.

In service development, management can

- build in systems that are market-driven and ensure responsiveness to the public;
- reduce the bias toward a particular mode by focusing instead on customers' needs;
- look for opportunities rather than simply react to problems;
- invest effort in single projects that can have long-term benefits, such as new partnerships;
- recognize the need for long-range planning and dedicate the necessary staff to the task;
- involve staff in community planning to influence transit-oriented developments and to respond to service needs;
- take advantage of demonstration funds for experimental services;
- set reasonable standards to compare new service with traditional services; and
- negotiate a union contract that allows for experimentation.

In the community, management can

- build trust with the citizens and with other leaders and organizations by maintaining a presence where policies and issues are being formulated;
- cultivate partnerships with other governmental agencies and with the private sector;
- share power and decision-making authority with partners;
- participate actively in community organizations; and
- create an understanding of what is meant by mobility management to build support for new ways of delivering service.

Transit agencies will be significantly more effective in carrying out the actions described if they obtain support from governmental agencies at all levels and from national organizations.

CHAPTER 5

ACTIONS TO PROMOTE MOBILITY MANAGEMENT

The research conducted for this project shows that there are many ways in which transit agencies, local and state governments, and the federal government either limit or enhance the potential for mobility management. A review of the limiting and enhancing factors, the case studies, and a survey of transit agency personnel suggest numerous actions that can be taken to remove barriers, create enhancing conditions, and promote mobility management.

THE LINK BETWEEN ACTIONS AND INFLUENCING FACTORS

Prevalence of Limiting and Encouraging Factors

Evidence about the extent to which the ten factors actually limit or encourage mobility management in North American transit systems is available from a survey of 83 transit managers, planners, and marketing staff conducted for this project (see Appendix E). The agencies were selected for the survey because of their interest in mobility management; 37 percent of the respondents consider their agencies already successful at mobility management (see Figure 1, in the Summary). The survey asked respondents to rate each factor on a five-point scale. As shown in the top half of Figure 4, the factors which respondents most often rated as limiting mobility management were funding, labor relations, the political environment, and regulations. As shown in the bottom half of Figure 4, the factors they most often rated as encouraging were management and leadership. The middle ground consists of organizational culture, cost, performance measures, and institutional environment.

Every factor, even the most limiting ones, is already seen as encouraging at numerous agencies. In fact, every factor is seen as either neutral or encouraging at most agencies. This result suggests that there is reason to hope that the remaining barriers can be successfully addressed at those agencies where they are a problem.

In the case of institutional environment, the survey provides additional detail about the influence of various levels of government on mobility management. Respondents were about equally divided in rating cities, counties, states, and the federal government as not supportive, neutral, or supportive toward mobility management. Metropolitan planning organizations (MPOs) are seen as the most supportive. Only 15 percent rated MPOs as not supportive, while 39 percent rated them as neutral, and 46 percent rated them as supportive toward mobility management.

Potential for Increasing Success at Mobility Management

If barriers were removed, that is, if specific factors were converted from limiting to enhancing, more agencies should become successful at mobility management. In order to project the effect of eliminating barriers, a methodology was devised using percentages derived from the survey results reported in the previous section. The methodology is described in Appendix E.

As shown in Figure 5, the factors with the greatest potential for increasing success are funding, leadership, cost, and organizational culture. Of these factors, two (leadership and organizational culture) are under the immediate influence of transit agencies themselves. Cost is also under agencies' influence because, as used here, it refers to whether agencies see mobility management as a source of added cost or as a way to provide lower-cost services.

Similarly, success at mobility management should increase if various levels of government were made supportive. As shown in Figure 6, the greatest potential for improvement appears to exist by increasing the degree of support among local governments, that is, counties and cities.

Actions Appropriate to Different Governments and Organizations

Some factors are largely under the control of transit agencies themselves. Therefore, those agencies and their state and national organizations are the entities which can take actions to address them. Other factors are only partially under the control of transit agencies and will require actions by other entities. Table 7 shows possible actions by each level of government to address each of the ten factors.

ACTIONS BY PUBLIC TRANSPORTATION AGENCIES

Public transportation agencies can take many actions to become more effective at mobility management. All of these

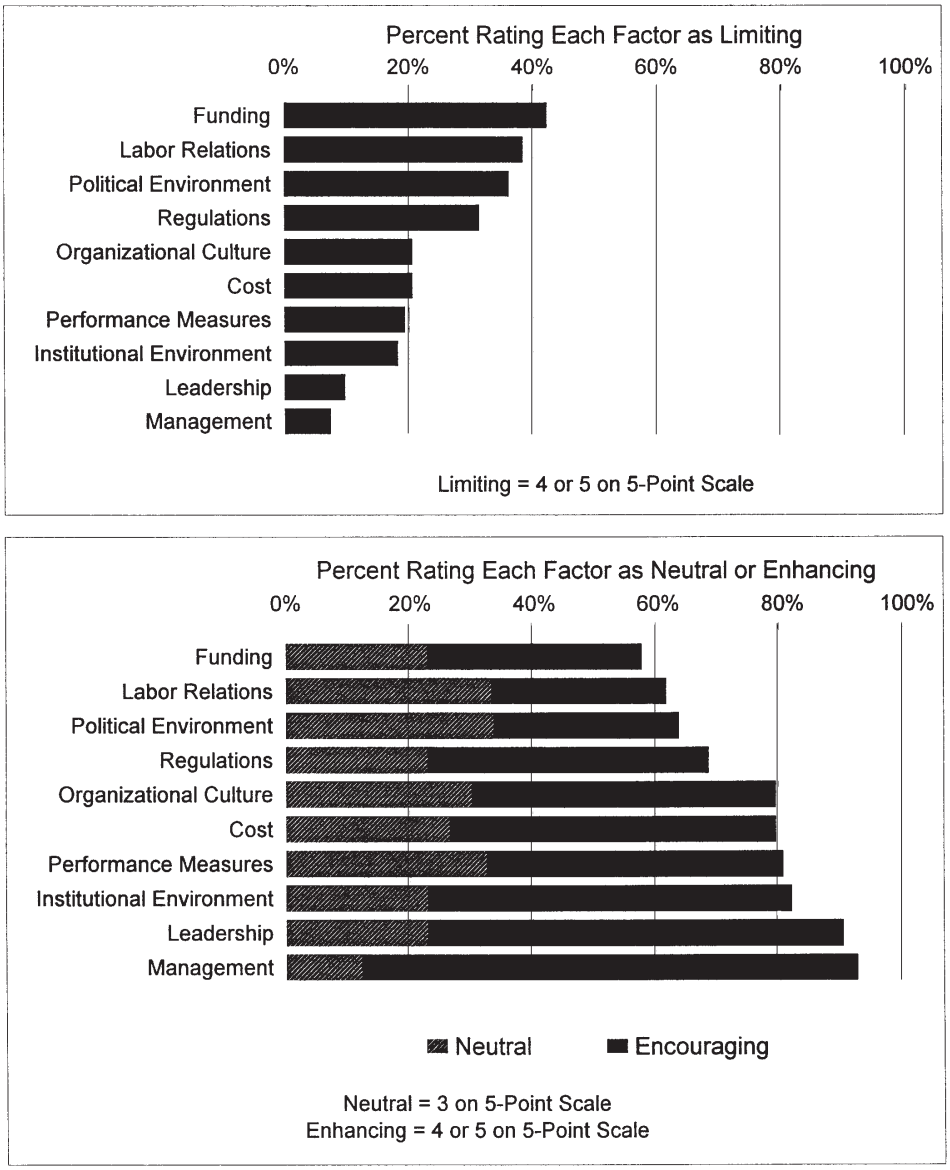

Figure 4. Prevalence of factors influencing mobility management.

actions require strong direction and leadership on the part of top management with the backing of the Board of Directors. The most frequent suggestions by respondents to the survey of transit agency personnel regarding actions their own agencies could take are as follows:

- Develop new relationships, roles, and partnerships;
- Educate and reach out to the public and other organizations;
- Provide staff development;
- Improve planning, using new tools, more customer-driven focus; and
- Provide Board development.

Leadership

Leadership development is the most effective and necessary single action needed to promote mobility management. Top management can enhance its own leadership skills taking advantage of resources available from universities, consultants, and management training organizations; through training available from national and state organizations; and through networking with other leaders. The leadership methods required to foster mobility management are not revolutionary, but are those appropriate for managing any medium-to-large sized organization. Top management can also create a positive environment for others in the organization, such as

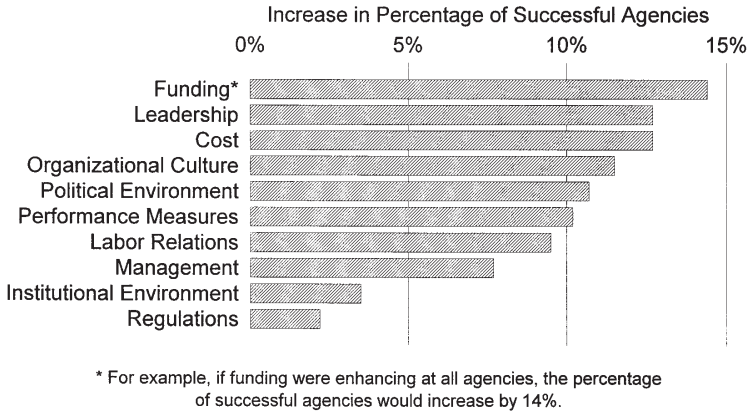

Figure 5. Potential for increasing success by eliminating barriers.

department managers, to exercise leadership and develop leadership skills. Toward this end, top management can provide training opportunities and one-on-one coaching and mentoring.

Organizational Culture and Management Capabilities

Changing the organizational culture and improving management capabilities go hand in hand. Actions can include

- developing a cohesive internal vision and mission, whether through a formal strategic planning process or through informal communication and consensus building;
- taking advantage of available information resources and training opportunities to ensure that staff have an understanding of mobility management techniques and why mobility management is important;
- attracting and supporting good personnel through management training and teamwork and providing opportunities for creativity and leadership in the industry;
- redefining roles and responsibilities, especially within service development and marketing, on the basis of customers' needs instead of modes of operation;
- establishing marketing, planning, and service review processes that are market-driven (i.e., ones that are designed to ensure responsiveness to the public); and
- encouraging staff to actively look for opportunities instead of only reacting to problems.

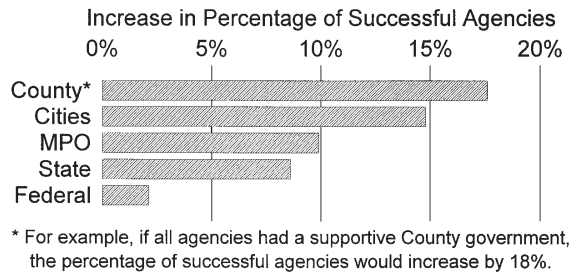

Figure 6. Potential for increasing success by making governments more supportive.

Labor Relations

Depending on the history of labor relations and the state of the economy in an agency's region, goals and methods with respect to labor relations will differ. In some agencies, it may be possible to obtain provisions favorable to mobility management through labor negotiations. Such provisions may include

- two-tier wage structures that reduce the cost of experimental services;
- greater use of part-time labor; and
- the ability to contract out some services or work cooperatively with partners, for example, by having agency personnel maintain vehicles operated by another entity.

In some agencies it will be important to build trust between management and labor so that, for example, operating personnel are not fearful that promoting ridesharing or telecommuting will endanger their jobs by reducing the need for transit service. Measures to build trust can include joint labor-management activities to build a common sense of mission and education to ensure that operating personnel understand the realities of the agency's position and how mobility management approaches can yield benefits.

Political and Institutional Environments

To create more positive political and institutional environments, a public transportation agency can

- educate the transit board and the general public to build understanding and support for new ways of delivering transportation services, including a full range of mobility management options;

TABLE 7 Actions by governments and organizations for each factor

Factor	Transit Agencies	Local Governments	State Governments	Federal Government	State and National Organizations
Leadership	Staff development				Training.
Organizational Culture	Staff development. Vision/mission planning. Restructuring.				Training.
Management Capabilities	Staff development.		Training.	Training.	Training. Spread information on mobility management.
Labor Relations	Creative negotiation. Trust building.			Legislative, regulatory change. Review 13(c).	Outreach and education. Coalition building.
Political Environment	Outreach by Board and Senior Management. Public education.	Regional outlook, coordination. Educate elected officials.			Public outreach. Coalition building. Joint programs with other organizations.
Institutional Environment	Outreach and partnership development.	Regional outlook, coordination.	More cooperative relationships. Internal integration.		Joint programs with other organizations.
Cost	Change in perspective.	Collaborate on service provision, facilities.		Research and demonstrations.	Spread information on low-cost methods.
Performance Measures	Adopt new measures.		Review state-imposed measures.	Refine Sec. 15 measures. Research.	Support research.
Funding	Advocacy	Participate in or support funding.	Increase funding. More flexible funding.	Increase funding. More flexible funding. Demonstration funding. Agency coordination.	Advocacy
Regulations	Advocacy	Transit-friendly land use rules. Trip reduction rules & programs.	Land use and planning rules. Trip reduction rules & programs.	Review Buy America, charter rules. Revise tax code.	Advocacy

- encourage board members to reach out to elected officials, civic leaders, and the business community to inform them about public transportation, mobility management options, and the advantages of a regional perspective (Many transit agency staff who provided information for this research noted that their supportive board is the agency's greatest asset for creating a more positive political environment);
- maintain a presence where policies and issues are being formulated (This may involve attending meetings, serving on committees and task forces, and making the case for why transit agency personnel should be involved);
- reach out to staff of other local, regional, and state organizations so that they understand transit's perspective and have a realistic understanding of what transit can and cannot do;
- cultivate partnerships with other governmental agencies and the private sector by looking for ways that transit can be helpful to them and by creating opportunities for joint action where all parties can take credit (It may be necessary to share power and decision-making authority);
- participate actively in community organizations; and
- involve staff in community planning to influence transit-oriented developments and to respond to service needs.

Examples of such actions are discussed in Figure 7.

Sometimes, creating a more positive environment may require a change of perspective and attitude on the part of the transit agency as much as on the part of other organizations. For example, if local jurisdictions require services that the transit agency cannot provide, it may make sense to take the initiative in helping the local jurisdictions to provide service themselves. By seizing the initiative, the transit agency can help plan service that is coordinated with regional service and share in credit for the new service.

Cost

Cost can be eliminated as a barrier by finding more funding (which is addressed under the topic of funding) or by creating a change in perspective. As long as mobility management options are always things to be added on top of traditional services—in effect, icing on the cake—they will

Sharing power and decision-making. *In developing shuttle services, the Hillsborough Area Regional Transit Authority in Tampa, Florida, has given major control over service design and delivery to private sector partners who have contributed a major share of the cost of service.*

Involving staff in community planning. *Portland Tri-Met has been particularly active in community planning, even loaning staff to local jurisdictions to help them develop specific plans for the areas around light rail stations.*

Figure 7. Examples of actions by transit agencies.

be seen as an added cost. But if mobility management options are seen as viable alternatives to traditional transit services or as ways to make traditional services more effective, then they may be seen as cost savers or investments in future productivity. For example, a neighborhood circulator service may substitute for some line-haul bus service and can also reduce demand for ADA paratransit. An effective vanpool program may be a better way of serving some work trips than bus service. Investments in land-use planning around transit stops can increase demand for transit service. Making the shift to mobility management as a cost saver may require a change in an agency's perspective and planning methods and a change in the attitude of local jurisdictions and the public. Making the shift may also depend on the state of labor relations.

Performance Measures

To the extent that performance measures and standards are dictated by funding or regulatory agencies, for example, in the form of a mandated farebox recovery ratio, a transit agency must live within those measures and standards. Certainly one measure, total cost, is a fact of life for every agency. To some extent, addressing performance measures requires the same changes as addressing cost, that is, finding ways to use mobility management to improve measures by reducing cost and public subsidy requirements.

Agencies can also adopt measures and standards that show the contribution of mobility management methods. For example, a partnership circulator service may have poor performance measured in terms of passengers per vehicle-hour, but much better performance in terms of cost per passenger or subsidy per passenger. Demand-responsive services typically result in fewer passengers per vehicle-hour than fixed-route services, but can provide coverage of low-density areas or low-demand time periods at lower total cost than fixed-route services. In general, measures should be reviewed to be sure that they do not contain biases in favor of one mode or another.

Standards can be adopted that vary according to service area or service type. These standards can take into account community preferences and realistic expectations based on experience. The research undertaken as part of the technical assistance for King County, Washington, found a number of transit agencies that had separate standards for suburban and urban service. Montgomery County, Maryland, has set peak-period standards of 15 passengers per platform hour for regular buses and 12 passengers per platform hour for small buses. (Appendix B provides more detail.)

Ultimately, however, creative use of performance measures and standards should not be used to justify poor performance or administrative waste. In particular, goals such as improving air quality, congestion relief, and customer satisfaction should not be used to perpetuate services which fail to justify their existence by attracting riders.

Funding

Increasing funding generally requires a positive political environment. Taking advantage of partnership opportunities may bring in funds from public and private sources. Partnerships, public outreach, education, and developing better relationships with other institutions can all help to build a constituency for increased funding and to increase access to existing funding, especially grant programs and flexible funding under ISTEA.

Regulations

Regulations may be the factor over which local agencies have the least control. However, it is possible to inform decision makers at all levels of government about the negative effects of certain regulations on mobility management and to promote regulations which promote mobility management.

ACTIONS FOR LOCAL GOVERNMENTS

Local governments, including cities, counties, special districts, and metropolitan planning organizations, make up an important part of the institutional environment in which most public transportation organizations function. The governments are also responsible for creating, maintaining, or regulating most of the physical environment of transit, including the road network, land use patterns, and development plans. On the basis of the survey of transit agency staff, most MPOs are already supportive of mobility management. The picture for cities and counties is much more mixed. As shown earlier in Figure 6, the support of cities and counties has the greatest effect on the success of transit agencies' ability to act effectively as mobility managers. Although state and federal actions can be very important, cities, counties and, in some

instances, regional governments have the most profound influence in creating an environment conducive to mobility management.

Actions that can be taken by local governments address six of the ten factors influencing mobility management as shown earlier in Table 7. The most frequent suggestions by respondents to the survey of transit agency personnel regarding the most important actions that local governments can take are as follows:

- Change land use, zoning, and development policies;
- Provide or cooperate on funding;
- Coordinate better with the transit agency; and
- Take a regional perspective and coordinate with other local governments.

Political and Institutional Environments

Local governments can improve the political and institutional environments for mobility management by developing a better understanding of transit and mobility management options, by taking a more regional outlook, and by improved coordination with transit on many issues (see Figure 8).

Regular meetings. *Executive staff of New Jersey Transit sit on the boards of Transportation Management Associations in order to provide linkages with the communities they serve. The Metro Council in Portland, Oregon has established Coordinating Transportation Committees in each county, where Tri-Met and staff from the jurisdictions meet regularly to discuss mutual concerns.*

Crossing jurisdictional boundaries. *At the Central Contra Costa Transit Authority in California, some board members representing member jurisdictions opposed sending buses across the county line to a major shopping mall. The representatives from the cities closest to the county line convinced the Board that their constituents shopped at the major mall and needed to be served by transit. The bus now crosses the county line and meets the buses of the neighboring operator at a transfer center at the shopping mall.*

Facility sharing. *HART in Tampa, Florida has set up a downtown Commuter Center in a former gas station owned by the City of Tampa. The regional ridesharing agency has an office there, and showers and lockers for bicyclists and walkers will soon be offered by the YMCA. Four agencies are pooling resources in this mobility management partnership.*

Joint sponsorship. *The City of Berkeley jointly sponsors a Commute Store with the University of California to reduce the impact of the 40,000 staff, faculty and students on city streets and to assist residents with options to the single-occupant automobile. Downtown businesses pay a mandatory transportation fee and, in exchange, receive Commute Store services for their employees.*

Development fees. *HART's Board of Directors in Tampa, Florida was instrumental in getting the City of Tampa and Hillsborough County to dedicate 1.5-3% of impact fees on new development to the transit district.*

Zoning around transit hubs. *Suburban communities that want a station on Portland Tri-Met's new light rail line must agree to adopt land use plans with appropriate densities, parking maximums, and a transit-oriented overlay zone to induce ridership. Tri-Met has signed an agreement to pay back the federal funds if the communities fail to adopt these plans within five years.*

Pedestrian amenities. *Workers, shoppers, and residents of apartment towers at the Ballston Metro Station in Virginia can exit the subway and travel to their destinations without ever going outside. A series of pedestrian bridges over several streets connects the office buildings, residential units, and a shopping mall. This design was the result of planning efforts by Arlington County with the Washington Metropolitan Area Transportation Authority.*

Development approval conditions. *The City of Berkeley, California has required Alta Bates Hospital to permanently provide an off-site shuttle for hospital employees and to sell discounted public bus and rail passes to them.*

Figure 8. Examples of actions involving local governments.

Some specific suggestions include regular meetings, long-range commitments, using transit as a resource, interjurisdictional service, and overcoming neighborhood opposition. These are discussed in the following paragraphs.

Regular Meetings

Local governments can set up regular meetings with the transportation organizations serving the area. Then, when an opportunity or a controversy arises, a base of understanding about each other's goals and processes will already exist.

Long-Range Commitments

Local governments can develop agreements that will allow long-range commitments to occur. Businesses and residents in the community need assurances that land use decisions based on the presence of transit will be upheld when funding tightens or when political changes take place.

Using Transit as a Resource

Local governments can work with the existing transit operator before introducing special services. A noontime shuttle or a business park circulator that is independent of the transit agency can skim choice riders and undermine revenues for basic bus services. A transit operator that is an entrepreneurial mobility manager will partner with local governments to meet the community's special needs.

Interjurisdictional Service

Local governments can support transportation organizations wishing to cross jurisdictional boundaries. Constituents will use cars if mass transportation vehicles are not allowed to travel to the same destinations that private automobiles can.

Overcoming Neighborhood Opposition

Local governments can work with the transit agency to overcome neighborhood opposition by choosing routes and vehicles that meet concerns about buses on local streets. Prohibiting bus service is a choice against mobility options and for the single-occupant automobile, along with the congestion and pollution it contributes.

Cost

Local governments can help to make mobility management a viable cost-saving approach by being willing partners in the provision of service, by understanding the merits of mobility management approaches, and by having realistic expectations about what transit can achieve. Partnership may involve financial assistance, service operation, or sharing facilities.

Funding

Financial assistance by local governments for mobility management services would make these services more feasible. In particular, it may be realistic to look for local government to cooperate with transit agencies on pooling funding to try out innovative ideas and to cooperate on seeking grant funds. Cities and counties can also help provide funding for mobility management by including support for transit and other commute alternatives when impact fees on development are levied and when special sales taxes or other assessments are being considered. Counties in California have used sales taxes to build HOV lanes, to create a trust fund for paratransit, and to support general transit services.

Regulations

Few of the regulations that limit mobility management are made at the local level. However, local governments can adopt regulations that enhance mobility management, primarily in the area of land use and transportation demand management.

Land Use

Land use regulation and review is the single most powerful tool local governments have to foster mobility management. These land use actions can have a long-term effect on transportation choices by influencing the shape of the community for generations.

The following land use actions emerged as a result of this research. Several examples are highlighted to illustrate how specific communities implemented these land use strategies.

- Zone for compact development around transit hubs.
- Require building configurations and site plans that allow residents and workers easy access to transit. Developers of large complexes, such as shopping malls, can be required to provide access for transit, including locations for bus stops. Street improvement made in connection with new developments can be required to have bus pullouts.
- Require street layouts that facilitate fast service by buses, jitneys, taxis, and other mass transportation vehicles. Transit-oriented design and neo-traditional planning describe some approaches that can facilitate transit service.
- Plan for pedestrian amenities, such as sidewalks, street trees and benches, and pedestrian bridges that connect buildings when new development occurs or rehabilitation projects are undertaken.

- Reduce parking requirements and set maximums for how much parking will be permitted where transit is a viable alternative to driving.
- As a condition of development approvals, require businesses, hospitals, and schools to form partnerships with transportation organizations to meet congestion or air quality goals.
- Identify appropriate sites for commuter park-and-ride lots.

Transportation Demand Management

Local governments can promote mobility management by adopting trip reduction rules, by requiring parking operators to offer discounts for carpoolers and vanpoolers, and by instituting trip reduction programs for their own employees.

Taxicabs and Jitneys

Local governments typically regulate taxicabs. Most taxicab ordinances prohibit shared-riding. Removing this restriction would allow for greater use of taxicabs in creating non-traditional transit services. Ordinances prohibiting jitneys can be revised or eliminated.

ACTIONS FOR STATE GOVERNMENTS

State governments influence public transportation organizations through their role in federal funding programs, through state funding programs, in their role as builder and operator of major highways, through the administration of state regulations, and through administration of certain human services. The most frequently mentioned actions for state governments in the survey of public transportation staff are as follows:

- Provide more funding,
- Make funding more flexible,
- Create incentives that favor mobility management,
- Adopt land use planning legislation,
- Make non-highway solutions a higher priority, and
- Coordinate across modes and between departments.

Management Capabilities

Some state governments offer training opportunities, often in conjunction with federally sponsored programs. Including mobility management concepts in training can improve the capabilities of staff at the state department of transportation, as well as at local transit agencies. Staff training can help ensure that the state department of transportation policies emphasize transportation rather than preferences for one mode over another. Hiring staff with skills and experience in the full range of transportation options can also help.

Institutional Environment

States can improve the institutional environment for mobility management by meeting regularly with public transportation agencies to establish a base of understanding and a process to deal with opportunities or controversies as they arise. Through the legislative process, states can change the institutional environment by creating special districts, in particular transit districts. Transit districts often have more latitude than municipal transit systems to act independently, create coordinated service, and seek funding. Several respondents to the mobility management survey thought transit district status would help their agencies act as mobility managers. However, special districts are usually created in response to local political consensus.

States can make their own agencies easier to work with. For example, they can better integrate state transportation departments so that mobility management efforts that cross modes will be treated consistently by the various state units. A transit agency that also promotes carpooling should not be subject to conflicting state directives from the state transit unit and the state ridesharing unit. Creating intermodal teams can also help achieve more balanced and consistent policies.

Competition among local entities can be addressed through state requirements for coordination, whether between neighboring public transportation agencies or between public transportation and human service organizations. Coordination between the state department of transportation and state departments responsible for social services will also facilitate coordinated transportation. Explicit recognition of the role of public transportation in welfare reform will also be helpful.

Performance Measures

Some states establish minimum requirements for transit, for example, in the form of farebox recovery ratios. Others use performance statistics as part of funding formulas. States can review these requirements to ensure that they do not penalize agencies which pursue non-traditional approaches. For example, the cost of providing ridesharing services can be exempted from inclusion in operating cost for purposes of calculating a farebox recovery ratio. Experimental services can be exempted from minimum performance standards for a specified period of time. States can review performance measures that may inadvertently reinforce the status quo over innovation (e.g., decreased state funding when unproductive miles are eliminated).

Funding

Short of increasing overall funding for transit, states can

- establish grant programs for experimental projects;
- make existing state funding programs more flexible by increasing the range of activities to which funds can be applied;

- examine the flexibility in categorical grants so that projects can address mobility needs, not funding criteria;
- develop project selection criteria that enable fair comparison of transit and highway projects for use of flexible funds; and
- identify funding amounts in human service budgets that are used for transportation and which can be coordinated with public transportation funding.

Regulations

State regulations that limit mobility management vary greatly from state to state. Whatever the regulation, the appropriate activity for state government is a review of the regulations to determine whether the regulation is still needed to serve its original purpose and, if so, whether flexibility can be created that allows mobility management activities to proceed. Potentially of much greater significance, based on the input from transit professions interviewed for this research, is the opportunity for states to create regulations, rules, and incentives which help promote mobility management. For example, states can

- institute state tax credits that reward individuals who commute by alternatives to the single-occupant automobile, if the state does not have such incentives already;
- institute land use standards that promote transit in local housing, transportation, and economic development plans statewide;
- maintain or implement rules mandating local trip reduction programs;
- require or encourage local entities that administer human services programs to coordinate both funding and services with public transportation operators; and
- review state legislation affecting developer impact fees or transit development districts.

Operational Actions

States can also help promote mobility management through many operational actions. Actions that can have a significant effect are as follows:

- Use busways or HOV lanes on state-operated highways and bridges to stimulate ridership on mass transportation;
- Implement transit priority treatments on arterial surface streets that are state routes;
- Identify appropriate sites for commuter park-and-ride lots along state highways; and
- Include standards for transit and pedestrian amenities in state highway manuals.

Examples of actions by state governments are provided in Figure 9.

ACTIONS FOR THE FEDERAL GOVERNMENT

The federal government has a major influence on public transportation through its funding programs, regulations, research and information programs, and through the tax code.

Coordination. *The Commonwealth of Massachusetts established 14 Regional Transit Authorities. Each RTA is to be a single point of contact for general and specialized transportation. For example, the Cape Cod RTA schedules Medicaid recipients and full fare clients in the same vehicle. More controversial is legislation being considered which would transfer funding used by human service transportation agencies to the RTAs.*

Land use regulations. *Oregon, Florida, and New Jersey have adopted statewide growth management plans. Growth is contained in urbanized boundaries to reduce vehicle miles travelled and encourage non-auto trips.*

HOV Facilities. *The 63.6 miles of HOV lanes around Houston carry 80,000 person-trips daily. Each HOV lane is a reversible one-lane facility, allowing travel inbound during the morning and outbound during the afternoon. The Texas Department of Transportation collaborated with Houston Metro to design and manage the HOV program.*

State design standards. *HART in Tampa worked with the Florida Department of Transportation to write a transit section for the state's highway engineering manual. The section includes considerations for roads with bike lanes, ADA-compliant landing pads for bus stops, and pads for future bus shelters and benches.*

Figure 9. Examples of actions involving state government.

Staff of public transportation agencies focused strongly on funding as the most effective thing the federal government can do; however, other actions mentioned are as follows:

- Provide targeted funding for demonstrations and mobility management programs;
- Maintain and increase funding overall;
- Reauthorize ISTEA;
- Support research, technical assistance, and education; and
- Revise the federal tax code.

Management Capabilities

The federal government can help increase management's understanding of mobility management options and how to promote them by sponsoring research and helping to disseminate the results of that research as much as possible. The government can also continue to support training programs, such as those offered through the National Transit Institute and other organizations, and information sharing programs, such as the Transit Research Innovation Program (TRIP) Ambassador program of APTA.

Labor Relations

To reduce the extent to which labor relations limit mobility management, the federal government could address current rules regarding labor protection. It is widely perceived that protection for transit workers under Section 13(c) conflicts with the desire and need of transit agencies to diversify their services. Examples of mobility management strategies that could clash with Section 13(c) include certain forms of coordination with private shuttles, using taxis to replace late-night fixed-route service, and using private jitneys to supplement existing fixed-route transit service.

Cost

The federal government can support research and demonstrations that focus on mobility management options that reduce cost. The review of labor regulations, if fruitful, could increase the range of cost-saving mobility management approaches open to local agencies.

Performance Measures

The government can expand or refine Section 15 reporting procedures and measures so that they better capture the benefits and costs of non-traditional services. Allowing agencies to separate out the cost of ridesharing and other non-operating mobility management activities would at least avoid making agencies that pursue these activities look inefficient. Beyond that, the federal government can support further research on practical performance measures that capture the benefits of mobility management activities and allow meaningful calculation of their efficiency and effectiveness.

Funding

At this time there appears to be little likelihood of increased levels of federal funding for public transportation overall. Even so, there are ways that federal funding programs can support mobility management; these include targeted funding programs, flexibility in transit funding, reauthorization of ISTEA, and federal agency coordination.

Targeted Funding Programs

Mobility management will benefit from an ongoing source of funds for innovative projects. Many agencies are using Congestion Mitigation and Air Quality (CMAQ) funds for innovative programs. However, these funds are limited to 2 years for a given project and end if a region attains air quality standards. Some agencies believe that a 2-year demonstration is too short to prove the merits of a project and put in place alternative funding. Most agencies do not have excess general operating funds with which they can experiment and take risks with new services.

Flexibility in Transit Funding

Mobility management activities often do not fit well within traditional categories. Federal funding has historically emphasized capital projects, whereas mobility management functions more often require operational funds for collaboration and partnerships. Partnership programs can sometime stretch the limits of current federal rules regarding the use of funds. Allowing more flexibility in the use of funds may benefit mobility management.

Reauthorization of ISTEA

Maintaining the ISTEA framework is key to continued development of mobility management. With its emphasis on multimodalism, ISTEA has encouraged transportation organizations to think anew of a broader mission emphasizing their market rather than their product. ISTEA's flexible funding and the funding linkage between air quality and transportation created by the Clean Air Act have provided new opportunities for experimentation in service delivery and operations. The enhanced role of regional planning agencies in transportation planning and programming under ISTEA can also help promote a mobility management perspective.

Federal Agency Coordination

Mobility management would benefit from more effective coordination among those federal agencies involved in funding public transportation for special needs, including transportation connected with social service programs, welfare, education and training, and rehabilitation. Many public transportation organizations, especially in small cities and rural areas, either provide this type of transportation or need to coordinate closely with the organizations that do. Every public transit operator is responsible for paratransit service for people with disabilities under the Americans with Disabilities Act (ADA). Many of the riders of ADA paratransit are also eligible for other programs. As a result, mobility management in all localities would benefit from a federal effort to identify the funds used for transportation for special needs programs and provide incentives or requirements for coordination.

Regulations

Transit agencies have identified the following regulations as obstacles to the flexibility they need to practice mobility management policies: Buy America, low-bid requirements, prohibitions on charter service, bus replacement schedules and timeframes, categorical grants, and oversight procedures that do not distinguish between very large and very small projects. Reviewing these requirements would benefit mobility management.

The federal government can adopt rules that provide incentives for mobility management. For example, one change that would benefit transit is to equalize the tax-free fringe benefits permitted for parking compared to those for transit and other commute alternatives.

ACTIONS FOR NATIONAL AND STATE ORGANIZATIONS

Organizations such as the American Public Transit Association (APTA) and the Community Transportation Association of America (CTAA) represent public transportation organizations nationally. In addition, many public transportation operators participate in similar organizations at the state or regional level. Many agencies involved in alternative forms of transportation participate in the Association for Commuter Transportation (ACT). Local, state, and regional governments with an interest in public transportation participate in still other organizations such as the National League of Cities (NLC), the National Association of Regional Councils (NARC), and the American Association of State Highway and Transportation Officials (AASHTO). Private providers of transportation and labor unions representing transit operating personnel also have national organizations. All types of agencies and private researchers participate in the Transportation Research Board (TRB). All of these organizations have a role to play in improving conditions for mobility management. The actions for national organizations most frequently mentioned by transit agency staff are as follows:

- Provide information, education, and training;
- Promote legislation and funding;
- Spread success stories;
- Change focus and priorities; and
- Reach out to diverse groups.

Leadership, Organizational Culture, and Management Capabilities

Training and information dissemination provided by national and state organizations to their members can help promote leadership quality, organizational culture, and management capabilities conducive to mobility management.

Labor Relations

More flexible labor agreements can be promoted through outreach and education targeted to public transportation organizations and organized labor alike. Formal efforts to build coalitions with organized labor may also be useful. These efforts should be focused on creating greater understanding of the possibilities and benefits of more flexible labor agreements and a practical appreciation of how such agreements work. For example, in late 1996, the California Transit Association (CTA) organized the first Joint Union/Management CTA meeting. The group identified common areas of interest, including funding, legislation, and education. A subcommittee was formed which recommended actions in these three areas.

Political and Institutional Environments

National and state organizations can help to foster supportive political and institutional environments through education and outreach efforts targeted at local officials and the general public or by providing assistance to local agencies in these activities. These efforts should attempt to enhance the image of traditional transit and increase understanding of the full range of viable mobility options.

One way to work toward better relationships between transit agencies and other local entities is through joint programs among organizations representing the various types of local entities, for example traditional transit agencies (APTA), agencies serving rural areas and people with special needs (CTAA), cities (NLC), and agencies promoting commute alternatives (ACT).

Cost

National and state organizations can help spread awareness of the cost-saving potential of mobility management through participation in the many transportation-related programs existing at the local, state, and national levels.

Funding

The most established role of national and state organizations is making the case for maintaining and increasing funding with legislators and others in positions to influence legislation. Effective political action of this type requires a joint effort which is only possible through a national or state organization. With respect to mobility management in particular, this effort can promote the federal funding initiatives suggested in the previous section. One method of building support for funding which is particularly well suited to the case of mobility management is building coalitions with other groups. Such organizations can include those already mentioned in connection with improving political and institutional relationships, as well as organizations related to education, health, seniors, disabilities, and the environment.

Regulations

Regulatory changes were suggested in the sections on state and federal actions. As with funding, making the case for these changes is best done through cooperative action within the framework of national and state organizations.

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APPENDIX A

CASE STUDIES

CAPE COD CASE STUDY
June 1995

Cape Cod Regional Transit Authority (CCRTA) is one of 14 Regional Transit Authorities, known as RTAs, established by the Commonwealth of Massachusetts in 1984. The legislated purpose of RTAs is specific and emphasizes privatizing transit services. The emphasis on privatization stems from the period during the 1980s when the Federal Transit Administration (known at that time as the Urban Mass Transportation Administration) strongly advocated reliance on the private sector to replace or reduce the level of government involvement in providing public services, that is, transportation, trash removal, road repair, and so forth.

Consistent with that federal emphasis, RTAs are legislatively responsible for developing, financing, and contracting with private transit providers for the provision of coordinated general public and specialized transit services throughout their defined districts.

Towns within all RTA service areas have the option of receiving RTA services. Towns that receive services ultimately constitute the "RTA membership." Those member towns pay only for the service that their area receives. Towns choosing not to receive RTA service are not required to render funds to the RTA operating in their geographic area. The only exception to the rule relates to the Massachusetts Bay Transportation Authority (MBTA), which directly manages and operates a range of transit services. In that case, membership and financial support of the MBTA by towns within its defined service district are required.

MOBILITY MANAGEMENT FUNCTIONS

Cape Cod Regional Transit Authority is a public agency that operates under an Advisory Board and is managed by an Administrator appointed by the Board. The Advisory Board consists of the chairmen of the Boards of Selectmen of the Authority's 15 member towns or their designees.

The Authority is responsible for developing, financing, and contracting with private companies to meet transportation needs throughout Cape Cod. Primary sources of funds are the federal government, the Commonwealth of Massachusetts, and member towns.

In 1994, CCRTA managed services that operated 52 peak-period vehicles to serve an area of 468 square miles and a population of almost 254,000 people. During fiscal year 1994, CCRTA's weekday boardings were 1,263. In FY 1994, new and expanded services and new vehicles allowed the CCRTA to post a 3.5 percent ridership increase over FY 1993.

The following summarizes CCRTA's ridership over the past four years:

	FY 1991	*FY 1992*	*FY 1993*	*FY 1994*
Total ridership	321,706	322,184	337,841	349,749

CCRTA contracts with numerous private transit operators to provide a combination of general purpose and specialized transportation. CCRTA's four-person staff approach their management role as an opportunity to coordinate varying types of transit services and to consolidate trips as a means of providing comprehensive transportation management services that are convenient in the delivery of transit services and efficient in their cost. In regard to specialized transit service, the CCRTA Administrator indicated that "We provide transportation programs where we (CCRTA) blend riders into the same vehicle. No one knows that a Medicaid recipient is sitting next to a full fare client."

The nature and purpose of the RTA concept fosters the coordination of services. The legislative intent of the RTA is to establish a single point of contact for the provision of general and specialized transportation within each RTA district. It is through adherence to the concept of service coordination and consolidation that true operating and cost efficiencies result. From users' perspectives, the RTA concept optimizes the general public and specialized public transit choices that might not otherwise be available to them under a traditional "one-agency, one-service type" transit provider. Consequently, the legislation serves as the foundation that sets the stage for the true management of mobility. This is indeed a unique situation when compared with the many public transportation agencies that have attempted without success to consolidate numerous area transit services to provide more efficient and coordinated services.

The focus on the *management* of transit services as opposed to the direct *operation* of transit services enables the CCRTA staff to place a significantly greater level of staff effort on managing the mobility needs of its clientele. According to staff, "This enables us to focus considerable attention on meeting customers' mobility needs." Consequently, although CCRTA contracts with the transit providers to operate the services, CCRTA staff determines

the scheduling of the services. Telephone reservations from passengers are taken from the dispatcher and are computer processed for scheduling. An appropriate vehicle is dispatched to pick up and later to return passengers.

The services provided by the contract operators include these:

- ***b-bus Service***
  The b-bus is a door-to-door, ride-by-appointment, paratransit service available to all Cape Cod residents for any purpose.
- ***Fixed-Route Service***
  Known as SeaLine, this regularly scheduled bus service operates six days a week serving local communities, malls, colleges, hospitals, and intermodal transfer points linking passengers with Boston and other areas.
- ***Specialized Services***
  The Authority contracts with several organizations for specific client services. Costs for the services in most cases are fully reimbursed by the funding agency and there is no charge to the rider. A description of the many specialized services follows.
  - ***Department of Mental Retardation*** – Transportation for eligible DMR clients to workshops and special day care centers five days per week;
  - ***Purity*** – Transportation from designated senior housing projects in Orleans to Purity supermarket one day per week;
  - ***Department of Public Health*** – Transportation for mothers and infants to early intervention programs;
  - ***Medicaid*** – Rides to qualified clients to special day care programs and medical appointments;
  - ***Cape Cod Child Development Program*** – Transportation for elementary school children from school to afterschool day care programs.

In addition to the services listed, CCRTA contracts to provide Cape residents with transportation on a space available basis to medical facilities in the Boston area.

CHANGING CIRCUMSTANCES AND NEW CHALLENGES

Past: Adjustment to New Service Methods

When the Cape Cod Regional Transit Authority assumed its transportation coordination and management role in 1984, some degree of concern and resistance by user groups occurred. Before the assumption of the responsibility, the majority of transit services, particularly those that served specialized transportation needs, were operated by organizations with little or no coordination. That approach fostered inefficiencies relating to service delivery and associated costs. From a customer perspective, however, it often meant very personalized service was provided. Customers feared that the new management approach provided by the RTA would result in a diminution in service quality, a loss of flexibility, and an overall reduction in convenience.

Initially, some riders were displeased with the loss of personalized service that they were accustomed to receiving, and some naturally complained. After a one-year adjustment period—both for RTA staff and their customer base—many of the difficulties and inconveniences associated with the transition in service delivery responsibility were resolved. Both CCRTA staff and their customers grew more comfortable and accepting of the manner in which service was being provided and the level of attention offered in meeting customer needs.

CCRTA staff contended that even during the start-up of their operation the quality of service remained the same. Bus customers, it was felt, needed an adjustment period to become accustomed to new procedures and new service providers. From a cost efficiency standpoint, during the first year of RTA involvement, CCRTA saved about 25 percent over previous operating expenses, primarily through the coordination and consolidation of transit services.

Meeting the needs of its customers is CCRTA's primary concern. A recent community transportation issue illustrates the focus on meeting customer needs.

A community located in Lower Cape Cod recently lost personalized special transportation service that provided one-on-one transportation from the Lower Cape to Cape Cod Hospital. The service, which was funded by a one-year demonstration grant, ceased operation when the funds were exhausted. Recognizing the loss in service, CCRTA is working with the community to design a replacement service. The nature of the replacement service proposed resembles the quality shared-ride services that CCRTA currently provides. The community has voiced reluctance in accepting the replacement service, indicating that it is a step down in the service they received during the demonstration period. CCRTA, Cape Cod Hospital, and the affected community continue to work toward an affordable, equitable, and acceptable solution.

Present: Human Services Transportation Coordination

Coordination of human services transportation on the Cape and throughout the Commonwealth could change dramatically with the passage of the pending human services coordination legislation. The legislation would expand the responsibilities of many RTAs including CCRTA. It would specifically grant authority to RTAs to manage and coordinate human services transportation. The legislation would not impact "Town Membership" requirements pertaining to

financial responsibilities. The legislation would transfer funding currently used by the current human services transportation agencies to the RTAs. The shift in funding has prompted human services transportation agencies to question the value of the legislation. According to RTA officials, human services transportation agencies are *encouraging* an administrative rather than legislative remedy to coordinate human services transportation. It is their hope that the administrative approach will not result in a loss of funding for the agencies—funding that could be used for purposes other than transportation. Legislated assignment of the transportation services to the RTA would most certainly result in a legislated transfer of funding. Regardless of the process used, the responsibility will generate significant growth and responsibility for all RTAs. Service areas might expand, the number of operators and fleets will certainly be greater, and the coordination function needed in managing service providers and filling rider trip requests will expand as well. Additional funding, whether it comes from existing human services funding or from a new funding source, will most likely be required to properly administer the new responsibility.

Under the existing arrangement, riders using human services transportation must individually call one of several transit providers, depending on the type of trip and its origin-destination. Transition of this responsibility to the RTAs would centralize the trip reservation responsibility. RTAs would serve as the single point of contact for human services trip requests.

The percentage of human services transportation being provided by the Authority continues to grow and will increase even more if this legislation passes. While this has added revenue to the Authority's budget and has improved efficiency in providing human services transportation, it has put a tremendous burden on the Authority's time and resources in carrying out these projects. Although CCRTA believes that coordination of human services transportation is important and should be done, CCRTA intends to take necessary actions to ensure that basic public transit services remain strong. Such actions might include increased staff, fleet expansion, and additional contractors in order not to overtax the existing transportation delivery structure.

Future: Long-Range and Strategic Planning

The Cape Cod Regional Transit Authority is one of the organizations working with the Cape Cod Commission to develop a long-range transportation plan for the Cape.

The idea behind the plan, known as "2020 Vision," is to create a long-range plan to respond to Cape Cod's ever-increasing traffic problems. Without some type of long-range Cape-wide plan, the Commission and Authority believe that gridlock will be forever in Cape Cod's future.

In FY 1994, a Preliminary Long-Range Transportation Plan was released. The preliminary plan used concepts of ISTEA to develop an efficient transportation system to move people and goods, reduce dependence on single-occupant automobiles, create transportation alternatives, and promote bicycle and pedestrian facilities.

Public participation was invaluable in the development of the preliminary plan. The alternatives will be refined and developed for publication in the final "2020 Vision" report. Following the completion of this plan, the CCRTA will use the long-range plan as a guide to develop a five-year strategic CCRTA action plan.

WHY MOBILITY MANAGEMENT WORKS AT CCRTA

Mobility management at the Cape Cod Regional Transit Authority is primarily focused on serving the needs of transit-dependent riders rather than attracting commuters. That limited focus reflects the needs as well as the scale of the area served. The rural characteristics of Cape Cod do not lend themselves to large scale vanpool or carpool programs, nor are approaches such as employer-based transit pass sales appropriate. Cape Cod residents who commute to urban areas outside the Cape receive those services through programs of the metropolitan planning agencies and the state Department of Transportation.

With the exception of the SeaLine service, CCRTA maintains an intra-area focus as it relates to travel needs and the provision of transportation service. In that context, the scope of CCRTA's "mobility management" activities are indeed appropriate and appear effective. Based upon the case study interviews, the services are successful and in demand. CCRTA has successfully elicited continued support from major employers on the Cape and from community groups and individual users. In effect, they maintain positive external support.

The services offered by CCRTA are the services that are needed and that are in demand—both by citizens and employers. Unlike some mobility management agencies that develop a menu of services and wait for the public to take advantage of them, CCRTA has defined the services based on known community needs.

TRANSFERABILITY

The CCRTA example of a rural mobility manager highlights one end of the mobility management continuum. Within the small rural area of Cape Cod, CCRTA has in effect instituted "one-stop" shopping for those who choose not to walk or use their automobiles to travel to their destinations. CCRTA is an excellent example illustrating how the separation between transit system management and the provision of transit service can achieve quality service and operating and financial efficiencies.

The CCRTA approach is one that can be successfully transferred to other rural areas. Consideration should also be given to applying the RTA mobility management method within defined travel sectors within urbanized areas.

Mobility management is applicable in rural areas as well as in urban areas. Although the range of mobility options provided by transit authorities in urban areas might be broader—carpool matching, employer pass sales, land use/transportation advocacy—the mobility management activities in some rural areas, nonetheless, are equally important to contributing to the mobility of citizens, the efficiency of the local transportation system, and the overall quality of life that they experience.

CASE STUDY ON MOBILITY MANAGEMENT HART, TAMPA, FLORIDA June 1995

Hillsborough Area Regional Transit Authority (HART), located in Tampa, Florida, operates 32 local bus routes and 13 express bus routes with a fleet of 174 vehicles. It serves Hillsborough County, an area of 1,072 square miles on the west coast of Central Florida with a 1992 population of 829,437. Sixty-two percent of the population lives in the unincorporated area. By the year 2000, the population is expected to grow by 15 percent and the employment by 22 percent. The county is traditionally considered a working class community.

HART is chartered by the state of Florida as a regional transit provider. It has an11-member board of directors: two appointed by the state, five appointed by Hillsborough County, three by the city of Tampa, and one by the city of Temple Terrace. The 425 employees are organized into eight units headed by Executive Director Sharon Dent.

Despite a decrease in vehicle miles traveled resulting from service cutbacks, HART (which uses the name HARTline in its customer information materials) has increased its ridership and lowered its cost per passenger. The following numbers represent HART's fixed-route service; demand-responsive paratransit service numbers are not included here.

	1990–91	*1991–92*	*1992–93*	*1993–94*
Ridership	8,338,543	8,323,705	9,427,128	9,896,649
Vehicle miles	5,668,564	5,630,683	5,263,670	5,550,745
Cost per passenger	$2.52	$2.52	$2.19	$2.32

In 1993 HART received $20,616,800 in operating revenue: 22 percent from fares, 50 percent from ad valorem taxes, 11 percent from the state, 13 percent from federal subsidies, and the remainder from intergovernmental agreements and miscellaneous income. It is, in fact, the drive to enlarge this latter category in the face of shrinking federal funds that has produced a number of HARTline's mobility management innovations.

MOBILITY MANAGEMENT FUNCTIONS

Partnerships

HART operates three shuttles that are partially funded by the private sector: (1) the Westshore Circulator, which serves a business district; (2) the University Mall Shuttle, which will eventually access a $1 million transfer center in the planning stages; and (3) the Visitor Crescent Trolley, a rubber-tired bus linking downtown Tampa and its convention center, the Port's cruise terminals, the Florida Aquarium, and the historic Ybor City district. Each of the three shuttles was developed in a consensus-building process that allowed the private-sector partners major input into service design and delivery. For example, the contractor, the route, and even the bus colors of the Visitor Crescent Trolley were chosen by the trolley's Steering Committee. In return, Harbour Island Development Incorporated; small merchants in Ybor City; and the Downtown Partnership, which is an organization of the 28,000 downtown Tampa employers, all contribute to the trolley's funding. The Partnership, which manages funds from a downtown business assessment district, uses some of these funds for their contribution. Other funding comes from the Florida Department of Transportation (FDOT), the state Department of Community Affairs, the city of Tampa, and mitigation funds provided by the Port Authority. In all, HART manages 40 funding sources for the Visitor Crescent Trolley, yet it has not had to use any of its general operating funds for the service.

To put together the funding partnerships for a relatively small piece of its operations "creates a lot of extra work," according to HART's executive director. Yet she outlined many nonquantifiable returns on the time investment:

- The diversification of funding sources makes the shuttles less vulnerable to cancellation if one of the funding mechanisms is discontinued.
- HART can increase its market share—a term the transit agency uses—without committing its own financial resources to any large degree.
- By responding to specific needs, HART is positioned as a major player and problem-solver in the community. Because of its presence, HART is not viewed as irrelevant but instead is consulted in policy discussions on the area's future.
- Developing the shuttle partnerships has created a broader base of support and a new circle of stakeholders who will potentially rally to HART's defense on other issues.

In working with the private sector, HART's management has viewed obstacles as opportunities. The Westshore Alliance businesses had pursued legislation to form a transportation corporation to receive transit funds to run their own shuttle. By being willing to give up part of the control and decision making, HART instead manages the Westshore Circulator's contract and remains the community's transit provider. The executive director is further integrated into the transportation partnership by sitting as a board member of the Westshore Alliance.

In another example, HART is working with the Downtown Partnership to create a solution for six building man-

agers who need more parking for their sites. Rather than fight a battle pitting parking against transit, HART is proposing that the managers lease space in a peripheral lot and charge the users a surcharge. HART will then deviate the Visitor Crescent Trolley route to serve the lot and provide free rides to the parkers during the work week.

Contracting

Certainly, the moves toward contracting have not been lost on the union. In preparation for a move from contracting out only business-sponsored routes to privatizing some of the existing routes, the executive director held 11 group meetings with existing employees in one week. Her message was that the very survival of HART in a demanding consumer market and an era of federal cutbacks required such moves. Her promise was that there would be no layoffs. She coupled that promise with a hiring freeze on both drivers and management. As one manager put it, "Sharon puts her cards face up." Consequently, the new union leader is also taking responsibility for helping employees face the realities.

Bikes on Buses

Late in 1994, HART began installing mountings to put bike racks on all its buses. Effective February 13, 1995, every bus appeared with a bike rack. Leading up to February 13, HART management developed a program to address the union operators' concerns about this change. The operators were worried about the impacts on their schedules, their responsibility if the bikes fell off, and the turning radius on some of the routes with the 4-ft extension of the front-mounted racks. Management responded by making sure that every route in the system had a trial run with a rack on the bus, assigning smaller coaches to routes with tight turning radii, and training the operators to drive with a rack on the bus. The public is required to be trained also, by viewing a 5-min video and practicing how to load the bike before receiving a permit. Experience has shown that the 30-sec loading procedure does not affect the schedule—and no bike has ever fallen off. Usage grew from 113 boardings in February to 1,067 by April 1995.

Information Technology

Not all HART's mobility management innovations have gone as well. To facilitate trip planning, HART has installed a real-time bus information display along its Marion Street Transit Parkway, a bus-only transitway downtown. However, although it displays when the bus is coming, it does not tell when it will be late. HART's goal is to link an Automatic Vehicle Locator System with the Bus Information System not only to allow the display to work as intended but also to allow Telephone Information Representatives to give out real-time information. But first, HART must implement a Geographic Information System (GIS) that matches the county's, so that the two mapping networks will be the same. Right now, not only do the county's and HART's networks differ, but the county's GIS system also does not match the state's. The obstacles are not simply technological, however. According to the director of planning, the issues also involve developing new policies on the ownership of information by the various levels of government involved and developing trust in allowing others access to the information.

Transit-Oriented Development

Information needs can be more basic than the technology obstacles cited above. To implement its Trees for Transit program, which involves planting shade trees on state roadways near bus stops, HART first had to survey its 4,000 bus stops and develop a priority list. Trees for Transit represents part of HART's belief that transit ridership begins and ends with a pedestrian; consequently, the whole environment in the community is important to HART's business. It has submitted an application to Hillsborough County to be a required reviewing agency for development proposals. When the builders and realtors objected because of the potential new costs, HART agreed to provide more certainty by writing a handbook outlining the guidelines. The *Transit Friendly Planning and Design Standards Handbook* covers not only such bus-related items as turning radius design and shelter locations, but also discusses land use guidelines that encourage mixed use, neighborhood commercial areas, infill development, and increased residential densities along bus routes. When the handbook is adopted, HART expects that projects above $500,000 along future transit corridors will be required to put in amenities such as bus bays, shelters, landing pads, and Americans with Disabilities Act (ADA)-compliant sidewalks.

HART itself intends to practice what it preaches in its planned intermodal terminal downtown. It will sell air rights to a developer to include offices and retail in the terminal, transforming the terminal into a transit-oriented development with employment and shopping opportunities. Taxis and Greyhound buses will be located at the terminal along with HART's buses.

WHY MOBILITY MANAGEMENT WORKS AT HART

The executive director's leadership was cited by multiple sources inside and outside the agency as one of the major forces in HART's transition from a traditional bus company to a mobility management agency. When the current executive director arrived at HART four-and-one-half years ago, she faced an agency that did not have the dollars to expand its basic product. She viewed mobility management as a

strategy to overcome the funding problem and create a profound institutional change. "We don't say, 'We can't do that.' We look at the need, not the product that we have now," she says. Needs are not systematically identified; rather a flexible, market-based, entrepreneurial approach is taken. "We actively insert ourselves in places where we can't be ignored," according to the executive director.

There are other factors as well that contribute to HART's mobility management bent:

- Several other staff in key positions back up the executive director with their own "can-do" attitudes.

  What these people share are commitment, management skills, energy, community awareness, and varying complementary private and public sector backgrounds, rather than an emphasis on *transit* experience. One example of their energy and community sensitivity is the format for public workshops on the proposed University Area Transfer Center. The director of planning held the meetings on a HART bus brought into the low income area instead of expecting the affected neighbors to get themselves to a meeting hall elsewhere.
- HART has strong cooperative partnerships with FDOT; the Metropolitan Planning Organization (MPO); Bay Area Commuter Services, Inc. (BACS), the ride sharing organization; and the Transportation Management Organizations (TMOs), such as the Downtown Partnership and the Westshore Alliance.

  For example, FDOT has given HART funding for vanpools, which will be promoted as commuting options particularly in potential future transit corridors and in corridors that have experienced service cutbacks. HART has contracted with BACS to run the program as well as a Guaranteed Ride Home (GRH) program. The GRH program will supplement an existing GRH program administered and funded by the Downtown Partnership for both vanpoolers and transit riders. HART, BACS, and the Partnership all will promote the programs, seeing their efforts as complementary, not redundant. HART has also trained BACS staff to give out correct transit information and has housed the BACS staff in HART's Downtown Commuter Center, a remodeled former gas station owned by the city of Tampa. The Partnership will install showers, lockers, and perhaps a bike repair operation in the Commuter Center for bicyclists and walkers and will contract with the YMCA to run the program. This example illustrates how the separate organizations are working as one team with the same mission in those efforts.
- The Board of Directors has adopted mobility management as the definition of what business they are in.

  Diversification of the product line is a major initiative within HART. Employment is a primary emphasis, leading to support and economic leverage with the business community. Board members are involved in many of the small decisions leading to big decisions and are willing to give away part of the control—as in the trolley vehicle type and color. When a Board vacancy occurs, a profile is developed for the appointing agency to ensure that a good cross-section of experience is represented on the Board. Having the mayor of Tampa and a county commissioner on the Board was instrumental in getting the city and the county to dedicate a portion of development impact fees to HART.
- FDOT has a "nonhighway" mentality, at least on a relative basis.

  As the Intermodal Surface Transportation Efficiency Act envisioned, transit is "at the table" in Florida when planning and funding decisions are being discussed, according to a staff member of a key county agency. She indicated that, by comparison, other DOTs represented at a national conference on the Institutional Aspects of Transportation Planning "are dinosaurs." A DOT employee said that the Florida Secretary of the Department of Transportation "truly believes in alternatives, so it is slowly coming from the top that DOT means *transportation*, not highways only." As evidence, when the executive director testified at a statewide DOT meeting about the importance of "livable roadways"—roads that have bike lanes, ADA-compliant landing pads for bus stops, and pads for future shelters and benches—the result was a full transit section in "the green book"—the engineers' bible. DOT staff developed the section by going through the green book page by page with HART staff.

"BEATING OFF THE ALLIGATORS"

Certainly all is not rosy for HART. A recent HART survey indicated that 89 percent of the population in Tampa owns a car, and regionwide the percentage rises to 93 percent. Parking costs are low, averaging only $15.20 per month downtown in 1993. Hillsborough County has been classified as a marginal nonattainment area by the U.S. Environmental Protection Agency. Neither air quality nor congestion is as bad as in many parts of the country. Thus, the car is the competition and HART faces an uphill battle.

The car has temporarily won at two shopping centers where the centers' management has required HART's buses to move off the sites. Fighting these battles "wears you down and you could focus all your attention on beating off today's alligators," says the executive director. The banks have required a certain amount of parking for the malls' financing and will give no break for transit access or the parking spaces the bus displaces. Mall managers are more supportive of transit, because of the customers it brings, than the absentee mall owners. However, it is the owners who deal with the banks. Therefore, there is no one to work with at the mall to convince the banks to change their requirements. "Who do we talk to at the mall?" asked one HART staff member. "It's a headless horse."

Other "alligators" that emerge as obstacles to mobility management besides funding, which was at the top of the list, include

- Rapid growth in the area, which makes planning difficult despite Florida's growth management law mandating that infrastructure be put in place concurrent with development.
- The Federal Transit Administration's reliance on two-year demonstration projects rather than ongoing funding for successful projects that achieve FTA goals. ("Do they stop building highways after two years?" asked one county representative to make the point.)
- Use of standards applicable to large, dense, northeastern cities as benchmarks for making funding decisions and evaluating the success of projects in other parts of the country.

TRANSFERABILITY

Hillsborough County is fairly small as an urban area and does not appear to be politically intertwined with many of the surrounding cities as is the case in the New York, San Francisco, Chicago, or Los Angeles metropolitan regions. Also, as HART is not funded through the MPO, it has more independence than those agencies that have the additional regional level of government with which to negotiate. Despite these distinctions, HART is a good model for a case study because the types of mobility management functions it practices are not so sophisticated, expensive, or extensive that they are beyond the reach of most transit agencies.

An organizational lesson from HART is to orient the institution toward the market rather than the product. This orientation results in devising solutions based on listening and responding to *needs* rather than on the *equipment or personnel* immediately at hand. It leads to cooperation rather than competition or duplication, particularly with other transportation organizations.

The key transferable lessons from HART revolve primarily around **people**:

Leadership

- in developing new ideas
- in communicating ideas internally and externally
- in looking for opportunities rather than reacting to problems
- in envisioning long-term benefits that can be derived from single projects

Relationships

- building trust with the community and other leaders and organizations
- maintaining a presence where policies and issues are being formulated
- sharing power and decision-making authority

As the executive director advises, "Everything we have done is transferable; it just starts with the right mindset."

CASE STUDY ON MOBILITY MANAGEMENT HOUSTON METRO June 1995

In 1978 the city of Houston owned 400 buses, 75 percent of which were more than 15 years old. A regional explosion in population and traffic growth provided a strong impetus for an expanded transit system. In late 1978 the Metropolitan Transit Authority of Harris County (METRO) was voted into existence by Houston area voters. METRO began operations on January 1, 1979, with the charge to find solutions to "congestion problems." A 1 percent sales tax supports METRO operations and generates about $250 million per year in revenues.

There are 15 separate cites included in METRO's service area in the western two-thirds of Harris County, with Houston being the largest city. The METRO service area is 1,279 square miles with a population of 2.4 million residents. The eight-county region, a severe nonattainment area for ozone, is a significantly larger geographical area with a population of 4.0 million.

Today, METRO owns a fleet of 1,413 buses, with 1,054 buses operating during the peak period. Of these peak-period vehicles 967 operate on fixed-route services, including 74 METRO-owned and contractor-operated vehicles. There are 122 bus routes, including 90 local routes, 22 commuter routes, and 10 express routes. There are 22 park-and-ride lots, 14 transit centers, and 5 bus operating facilities. A network of 63.6 miles of high occupancy vehicle (HOV) lanes operate in the peak period direction on five of the area's extensive radial freeways. METRO has 3,682 employees.

During the 16 years of METRO's existence, ridership levels have more than doubled but, as shown in the chart below, ridership in the past four fiscal years has been relatively stable at around 60 million passenger-trips.

	1990–91	*1991–92*	*1992–93*	*1993–94*
Total ridership* (000s)	61,634	60,251	59,999	59,645
Revenue miles (000s)	37,708	39,771	40,843	40,843
Subsidy per passenger-trip**	$2.34	$2.58	$2.90	$3.20

* For total ridership, a passenger trip is a passenger boarding less transfer.
** Including depreciation.

MOBILITY MANAGEMENT FUNCTIONS

METRO has been in the business of mobility management since its inception. A revised mission statement was adopted in 1994:

> "METRO's mission is to meet the public's diverse need for improved mobility by providing public transit, traffic management, and infrastructure improvements in partnership with other public and private entities. METRO returns value to the region through the delivery of reliable, safe, clean, efficient and progressive transit services; through the construction of top-quality and beneficial transportation infrastructure; and through intelligent management of general traffic flow."

The mobility management concept in the Houston area is significantly broader than responding to the demands of the market by providing alternatives to the single occupant vehicle beyond traditional fixed-route services and paratransit mandated by ADA. Mobility management in Houston is more inclusive of all modes, including single-occupant drivers. METRO has a perspective that improved traffic management and strategic street and road improvements benefit all users of the transportation system and therefore enhance overall mobility management for the entire populace. METRO plays a significant role in enhancing efficiency of the surface transportation system and provides information for making better choices on the mode and route of the trip the user is about to make.

Agency partnerships, leadership, substantial financial resources, highly competent staff, and a willingness to experiment are key themes of METRO's mobility management mission. Many of the institutional partnerships that are so important to METRO's mobility management program were originally forged in development of the transitways, now called the high occupancy vehicle lanes or HOV system.

Development of HOV System

In 1983 the electorate voted down a starter line heavy rail system with a vote of 66 percent against. Of the $200 million Congress had earmarked for the rail project, $100 million was reallocated to other regions. Approximately $100 million was left for the Houston area if METRO could identify and approve a replacement project within six months.

However, in the mid–1970s, METRO had already begun experimenting with contraflow lanes and together with the Texas Department of Transportation (TxDOT) identified a nine-mile contraflow lane project along the North Freeway. With only 20 percent of traffic going in the off-peak direction, the North Freeway was an ideal demonstration site. The initial demonstration was limited to buses and vanpools. During this post energy crisis era, Houston was the "vanpooling capital" of the country with about 2,000 vanpools on the road. The initial demonstration was very successful, and within 12 months the contraflow lane was carrying between 3,000 to 4,000 persons per peak hour. Initial success led to large scale commitment to the one-lane reversible concept in the future design of the HOV lane network.

From the beginning the HOV program was a joint effort between METRO and TxDOT. To expedite project implementation, TxDOT agreed to undertake engineering and design tasks, and METRO offered to undertake the project management tasks. The partnership created results because key players at both TxDOT and METRO felt the other party had credibility and competence to perform the necessary work. Indicative of the trust between the agencies is the fact that all initial agreements for the project were accomplished between the parties with a handshake. As the HOV program proceeded to construction, formal contracts were executed to meet all legal and regulatory requirements. Another important factor during the demonstration was a willingness to experiment. For example, TxDOT ignored many of its own traditional design standards in planning the contraflow demonstration project.

The initial demonstration has led to 63.6 miles of barrier-separated HOV lanes today, with 80,000 daily person-trips. Each HOV lane is a reversible one-lane facility, allowing travel inbound during the morning and outbound during the afternoon. The partnership arrangements appear to have flourished. Funding has been provided by METRO, the Federal Transit Administration, TxDOT, and FHWA. Facilities are jointly managed by TxDOT and METRO. METRO is responsible for daily operation and enforcement, while both METRO and TxDOT share responsibility for maintenance. Major maintenance such as pavement and barrier repair is performed by TxDOT. Operations management is handled by a METRO/TxDOT team.

The ultimate seven-corridor, 104-mile HOV system is estimated to cost $655 million, or approximately $6.3 million per mile. The expansion of the HOV system has been timed to coincide with freeway reconstruction projects to avoid the elimination of existing lanes. About $284 million is being provided by METRO's 1 percent local sales tax.

Mobility Management Also Means Streets and Road Improvements

METRO's road-building role is unique among the country's transit agencies. Referred to as the general mobility program by METRO, the function evolved out of recurring discussions by the METRO Board on how the 94 percent of METRO service area residents that do not ride the bus can benefit from the 1 percent sales tax. Approved by a 1988 vote by the public, METRO devotes at least 25 percent of METRO's 1 percent sales tax receipts to the improvement of streets so that both buses and automobiles can move around the greater Houston area in a more efficient manner. One billion dollars will be spent over 20 years between 1984 and 2005 for streets and roads improvements and expansion.

The intermodal function of METRO has significant political support as a means of addressing traffic congestion issues in Houston. According to Robert MacLennan, METRO's general manager, the results of the effort have been positive: "Houston is the only major metropolitan area in the nation to have had continuously declining traffic congestion since 1984."

For the general mobility program, partnerships with the city of Houston, Harris County, and the 14 "other cities" have been established. METRO pays for a significant portion of the street improvements undertaken by the city of Houston, Harris County, and 14 other cities in the METRO service area. Interviews with both city of Houston and Harris County representatives revealed a high degree of cooperation between the agencies. Of course, the financial incentives of cooperative traffic management have been appealing to both the cities and county.

METRO also has significant involvement with pedestrian facilities including the improvement and expansion of sidewalks throughout the region to provide improved pedestrian mobility and access to the bus system for all transit riders.

Houston Intelligent Transportation System

The partnerships and leadership exhibited in the development of the HOV system and the general mobility efforts described have also enabled Houston METRO to use emerging technologies aimed at improving mobility for all Houston residents. The overall traffic management system is called "Houston TranStar." When fully developed, Houston TranStar will gather traffic information from embedded sensors in highways and intersections, from automatic vehicle locators, and from computerized traffic signals as well as from radio, video, telephone, and personal computer sources. Houston TranStar is a cooperative effort between TxDOT, METRO, the city of Houston, and Harris County.

In November 1994 the four partners began construction of an $11.4 million Houston TranStar central control center. The roles and function of Houston TranStar evolved over a 10-yr period, with implementation efforts concentrated over the past two years. In a unique institutional arrangement, Houston TranStar will be staffed by personnel from each agency under one management structure. The four agencies have hired an executive director of Houston TranStar who is responsible for overall program development, agency coordination, and oversight of staff responsible for day-to-day operations. The executive director reports to an Executive Committee, which comprises of a representative from each of the agencies.

During the detailed planning of Houston TranStar, all parties were invited to brainstorm on what they wanted to accomplish. During this planning process, the city of Houston and Harris County came forward with the idea of consolidating emergency management functions under one roof. While the permanent home of Houston TranStar is under construction, an interim management center is providing several services. Ultimately, Houston TranStar will coordinate the following:

- *Motorist Assistance Program* (*MAP*) monitors the freeways and is able to respond to incidents and clear them quickly. Closed circuit television has been installed to assist staff in validating the reported incident and to respond accordingly. During a site visit, a private traffic monitoring service for local radio stations was using the zooming capability of the cameras to report the nature of incidents to client radio stations. (Currently in operation)
- *Smart Highway Program*. Because the Houston area has a tollway on its outer beltway, many residents have electronic toll tags in their vehicles. With detectors installed at selected intervals in the freeway system, Houston TranStar is currently able to monitor traffic speeds in real time on a large TV screen. The 300-mile freeway management system will use incident management, ramp metering, closed circuit TV surveillance, and changeable message signs to keep traffic flowing as smoothly as possible and provide information on alternative routes as necessary.

  An important component of the traffic management system is the Regional Computerized Traffic Signalization System (RCTSS), a network of 2,800 major intersections that feature a centrally controlled traffic light system that coordinates signalization and maximizes traffic flow. In the first phase, some 1,300 key arterial intersections will be coordinated under a $120-million program. As part of the system, METRO buses will receive automatic signal prioritization with the capability of altering the traffic light system. This is another "win-win" example where METRO bus riders receive improved travel time while at the same time the general population benefits from the service in both travel time savings and air quality benefits. METRO management has indicated that this project will have a benefit/cost ratio of 20 to 1.
- *Smart Commuter*. A demonstration project is being developed by METRO and TxDOT for about 700 north Houston residents who work in downtown Houston by linking electronic communications systems in homes and in downtown office buildings that alert commuters to real-time traffic conditions as well as transit schedule information for their planned route. A contractor is currently being selected for the project who will be required to supply a computer or personal digital assistant device for home use. A second demonstration in west Houston will enable workers in the Galleria area to test an "on demand" carpool matching service that will enable users to take advantage of the travel time saving of the Katy HOV lane to the Galleria. METRO is working out several key institutional issues such as unresolved personal security and data security issues associated with giving participants instantaneous access to METRO's new ride matching database. Ultimately, the Smart Commuter program will enable the "bundling" of real time traffic and alternative route information, real-time bus schedule information, and carpool matching services to enhance travel options. Through this information, commuters can make informed decisions about whether they

should board a bus or carpool and use an HOV lane to improve their own travel time, or drive a car in traffic.

- *Smart Bus Program*. METRO is planning to install automatic vehicle locators on buses that will allow the transmission of bus locations to Houston TranStar. Traffic management personnel at Houston TranStar will monitor traffic flow based on the mobility of buses on the street, check whether service is running according to schedules and, if not, make adjustments. Ultimately, passengers may be notified of impending arrival of buses on overhead message signs and/or traveler kiosks.

  Electronic fare boxes will be linked to automatic vehicle locators that can register the location and time of passenger boardings to aid with service planning functions.
- *Smart Car Program*. Ultimately, Houston TranStar plans to combine all of these technologies together in personal automobiles equipped with computers, location devices, and video displays. The devices will be able to communicate vehicle locations on a map; provide weather advisories and real time traffic information; and even assist with automated trip planning. The system will help the motorist avoid traffic delay situations by using alternate routes.

REGIONAL BUS PLAN

Although the HOV lanes, general mobility program, and intelligent transportation system programs have evolved out of a series of individual decisions and opportunities, the METRO Board of Directors developed a comprehensive long-range mobility plan in 1986. The Regional Bus Plan approved in 1992 goes well beyond a traditional fixed-route bus system by meshing together HOV lanes, traffic management, intelligent transportation programs, and an array of traditional and nontraditional transit services into a comprehensive mobility management system.

Traditional Transit Services

To address significant increases in employment outside the central business district (CBD) in Houston's numerous activity centers, the Regional Bus Plan calls for expansion of transit service to the major activity centers in all three fixed-route categories: local, express, and commuter routes. When fully implemented, the Regional Bus Plan will dramatically increase service from park-and-ride lots and regional transit centers to major activity centers other than the CBD. According to METRO planning documents, the Regional Bus Plan represents an evolution away from the current system where most mainline routes radiate from the CBD.

As interim steps to full implementation of the Regional Bus Plan, a number of nontraditional transit services have been planned for short-term implementation as part of the Five Year Service Plan.

Nontraditional Transit Services

The driving force for nontraditional services in Houston is a desire to reduce METRO's subsidy per passenger trip. METRO managers do not appear to be constrained to a particular mode to achieve cost efficiency objectives. In addition to traditional transit services, METRO offers a subsidized vanpool program, a new experimental jitney service, subscription bus services, and a ride-matching service.

Company operated vanpool programs have declined substantially since the energy crises of the 1970s. The total number of vanpools today is less than 200 compared with a peak of 2,000 vans. To encourage a revitalization of the vanpool mode, METRO offers a relatively new subsidized vanpool program for trips with both an origin and destination in the METRO service area. METRO has qualified four vanpool providers that display the METRO logo on each van. METRO provides a subsidy of from $10 to $35 per month depending on the employer subsidy level provided. The $10 subsidy is offered if the employer provides a guaranteed ride home program or if the employer provides a start-up subsidy for new vanpools. METRO will offer a dollar-for-dollar match, up to $35 per month per rider, if the employer matches the subsidy. The Houston-Galveston Area Council (H-GAC) and METRO, with funding provided by a CMAQ grant, are currently working out a program to offer a similar subsidy program for vanpools that have an origin or destination outside the service area. Together, H-GAC and METRO hope to place 300 new vanpools on the road over the next three years. Today METRO subsidizes 98 vanpools.

In 1994, the METRO Board of Directors adopted a subscription bus program that would provide a $2.50 per trip subsidy, with fares based on METRO's distance-based fare structure. As originally approved by the METRO board, the subscription service would need to have a minimum of five morning and five evening trips, with an assurance from a sponsoring organization such as an employer or transportation management association that the average trip is at least two-thirds full. The 10 trips a day criterion is deemed by METRO as a threshold to achieve the desired flexibility of being able to arrive and depart from work at several different times. The sponsor would be responsible for the difference between the METRO subsidy and passenger fares.

Since the 1970s, METRO has offered ride matching services, primarily to employers located in its service area. METRO is in the process of implementing a new ride matching system to replace its limited existing system. The new system is based on GIS technology, which will enable operators to see graphically the locations of the home and work end for matching purposes. The system will enable modem hook-ups to transportation management associations.

Initially, ride matching capabilities will only be available in the METRO service area, but efforts are being made with the Houston-Galveston Area Council to extend the service to the other seven nonattainment counties.

In early 1995, METRO began to experiment with jitney services, a program they are calling FasTrak. The primary rationale for starting the program was to reduce the subsidy per passenger, especially during the peak periods. METRO has identified six service areas, along several major arterials in Houston with existing METRO bus service and high boardings per route mile. A private contractor provides the vehicles with a seating capacity of between 4 and 15 passengers, and METRO requires safety and vehicle condition certifications. The contractor can pick up all passengers who flag the jitney along a designated corridor and transport passengers to their destination within the same permit area. Drop-offs may occur only within one-quarter mile of the corridor. The jitney operator is required to operate between 6:00–9:00 a.m. and 3:00–6:00 p.m., but the jitney operator can also provide additional weekday or weekend service. The operators are paid $25 per day per vehicle by METRO, charge a set fare (currently $1.50, which is slightly higher than METRO local fare), and keep the fares.

After putting out an extensive bid packet for the jitney service, METRO received only one bid. It awarded one contract and conducted research on why it did not receive more bids. The city of Houston was in the process of revising its jitney ordinance, and some potential bidders decided to hold off bidding until the opportunities of the revised city ordinance were clearer. Insurance coverage requirements were another barrier to bidding, since most taxi companies in the area are self-insured. METRO is continuing to explore why they have not received more private sector participation in the bidding process.

WHY MOBILITY MANAGEMENT WORKS AT METRO

METRO has developed a unique approach to mobility management that (*1*) emphasizes improving the general mobility for all residents in its service area; (*2*) uses emerging technologies to improve real-time information residents have in making travel choices; and (*3*) experiments with an array of modal solutions that minimize the subsidy per passenger. METRO measures its performance by relieving congestion and has developed the authority and partnerships to address congestion issues in a comprehensive way not available to most traditional transit agencies.

Six key factors have contributed to METRO's mobility management innovations:

1. *Cooperative agency partnerships.* Cooperative agency partnerships were developed early in METRO's history, and many of the personnel originally involved are still working for one of the several agencies involved (many examples were given on how an individual, who used to work for METRO, now works for one of its partners or vice versa). Elements of the partnership approach have included clear delineation of roles and responsibilities, trust among agencies, special efforts to ensure that "win-win" situations evolve, and the willingness to do what works best to get a project underway. A case in point is the exemplary interagency cooperation in planning, designing, building, and operating (even on an interim basis) Houston TranStar.
2. *Significant political leadership.* METRO management and key external stakeholders both give significant praise and credit to Houston Mayor Bob Lanier for providing leadership in developing METRO's general approach to mobility management. A former State Highway Commissioner appointed by the Texas governor, he chaired the METRO board of directors in the late 1980s before being elected mayor in 1992. His overall advocacy of the HOV system in lieu of rail, METRO's role in street and road improvements, and overall traffic management has been very important to Houston's mobility management approach.
3. *Substantial financial resources.* METRO opened its doors with a 1 percent regional sales tax that has provided significant financial resources to work toward achieving its mission. Generating $250 million per year, it has provided the leverage to attract significant federal funding for capital improvement projects and has provided an ongoing incentive for METRO's partners to work closely with the agency. The early stockpiling of funds for rail has given the agency large historical reserves and provided significant leverage for its overall mobility program.
4. *Street and road involvement.* The 1988 vote to allocate 25 percent of the 1 percent sales tax to street and road improvements was a pivotal point in the agency's mobility management initiatives by adding traffic management and infrastructure improvements to its mission. Widening the benefits to all METRO service area residents has provided significant political support to its overall mobility management strategy.
5. *Highly competent and innovative staff.* METRO has been able to attract good people, many from the private sector, with a variety of backgrounds and skills both inside and outside the transit industry. Agency management encourages its employees to provide industry leadership. The general manager is the vice president of ITS America. Several other examples were provided of how METRO staff is actively providing leadership in the industry.
6. *Culture that encourages experimentation.* METRO's top management has created a culture that actively encourages experimentation to achieve its objectives. The jitney program, for example, is driven by an overall objective to reduce subsidy per passenger. METRO

managers appear to have the freedom to experiment with nontraditional approaches to achieve such broader objectives.

CHANGING CIRCUMSTANCES AND NEW CHALLENGES

As with most Sunbelt cities, significant employment and residential growth is occurring in the suburbs. Between 1970 and 1980, central business district employment grew from 137,500 to approximately 155,000 and has fallen back to 137,500 in 1990, while employment outside Harris County (and the METRO service area) increased from 92,400 to 390,400 during the same time period, a 325 percent increase. Within METRO's service area, employment growth occurred at a rate five times greater in suburban areas outside Loop 610 than inside Loop 610, the urban center of the Houston area. The significant suburban growth rates have influenced travel behavior. A 1992 household survey of 5,000 residents in the eight county nonattainment area found that the average vehicle occupancy (AVO) for work trips was 1.17. Employers inside Loop 610 such as the Texas Medical Center have an AVO of 1.20, and employers in the central business district have an average AVO of 1.34. In areas outside Loop 610 such as the Energy Corridor, the AVO averages 1.10 and in many cases lower. Relatively fewer transit trips are being made to the newer employment areas. In fact, one of the fastest growing areas is Fort Bend County, which is mostly outside the METRO service area and currently has no public transportation services.

The radial HOV system had its origins when there was significant single direction peaking—when, for example, the North Freeway was experiencing an 80 percent/20 percent split in the peak direction, and a high percentage of trips were to downtown Houston. Changing suburb-to-suburb trip patterns have increased demands for increasing the number of access points to major activity centers as well as a need for bidirectional HOV lanes. METRO's long range plans do respond to increased access points, but existing median constraints limit the potential for bi-directional HOV lanes unless either the freeway is widened or elevated or at least one general traffic lane is converted to a HOV lane, a politically unpopular choice.

Based on extensive discussions with employers during the preparation of a recently completed *Regional Ridesharing Study*, employers located within the METRO service area and outside downtown or the Texas Medical Center do not feel that they are receiving their fair share of METRO service. In the past, METRO has experimented several times with local circulator services in the Galleria area, but service has been cut due to low ridership. Generally free or very low parking costs, auto-oriented building access, and street configurations impede successful transit services in those suburban locations. The Regional BusPlan is designed to improve services to these suburban activity centers over the next two decades, but the suburban development patterns of the activity centers may continue to impede significant generation of transit ridership even with innovative nontraditional approaches.

The lack of zoning and land use controls is a well known attribute of the Houston region. Historically, there have not been significant efforts to control or manage growth to enhance transit services. According to a regional planner, efforts are underway to evaluate land use implications on access in a Major Investment Study in the I-10 West corridor. Leap-frog development continues to move outward beyond METRO's service area and most of the residents have no mobility options other than the private automobile.

As significant population and employment growth in the eight-county nonattainment area occurs outside the METRO service area, increasingly large areas do not have basic transit services. The Houston-Galveston Area Council has commissioned transit feasibility studies in Galveston, Brazoria, and Fort Bend counties to evaluate the need for new or expanded transit services. The availability of even "lifeline" transit services outside the METRO service area will continue to be a challenge in the greater Houston region.

Interviews with different agencies revealed that there may be a trend toward increased involvement from TxDOT headquarters in Austin with major capital projects. This could have an impact on the partnership that has been fostered between METRO and the local TxDOT office.

TRANSFERABILITY

The institutional framework that enables Houston METRO to address both transit and street and road needs is unique to Houston. The presence of a significant, dedicated local funding source significantly enhances METRO's mobility management capabilities and provides an important incentive for the various agencies to work together as partners. A notable leader has provided the vision and political support to the agency's mobility management mission. While those factors are not easily replicated in other jurisdictions, the following features of METRO's mobility management program should be helpful to other locations:

- **Cooperative agency partnerships** can be created when there are identifiable benefits to each party involved. METRO and its partners have worked hard to ensure that "win-win" situations evolve. Significant financial participation has been very important in METRO's case.
- **An agency culture that encourages experimentation** to reduce the subsidy per passenger without a preconceived bias to a particular mode can be achieved with sufficient management and board support. METRO management has done an exemplary job of communicating new ideas both inside and outside the agency.
- **Use of emerging technologies** has enabled METRO to be at the leading edge of technology development that will provide better mobility choices for their clients.

- **Leadership qualities at all levels** have helped METRO to build the trust and support to implement its mobility management strategy. Attracting good personnel, training management, and fostering teamwork are all important METRO attributes that are transferable to other agencies.

CASE STUDY ON MOBILITY MANAGEMENT MILWAUKEE COUNTY TRANSIT SYSTEM June 1995

The Milwaukee County Transit System (MCTS) is a function of the Milwaukee County Department of Public Works. Service is provided through a contract with a private nonprofit corporation, Milwaukee Transport Services, Inc. (MTSI). MTSI operates under a short-term contract that is periodically rebid. However, MTSI has operated the service since 1975 when the private for-profit operator went out of business. Policy guidance is provided by the 25-member county Board of Supervisors, which generally follows the recommendations of its five-member Mass Transit Committee.

MCTS serves the county of Milwaukee, a 242 square-mile area with a population of 962,000. Milwaukee County includes 18 separate municipalities; the largest is the city of Milwaukee, which has a population of 617,000 living in an area of 96 square miles. Very limited service, under special contractual arrangements, is provided into neighboring Waukesha County, an area of rapid growth.

MCTS's annual operating expenses in 1994 were $86.5 million, funded as follows:

Source	*Amount*	*Percent*
State of Wisconsin	$37,219,000	43
Fares	32,006,000	37
Milwaukee Co. General Fund	11,056,000	13
Federal	5,132,000	6
Miscellaneous	1,116,000	1
	$86,529,000	100%

MCTS operates a fleet of 535 buses, with 417 buses operating during peak periods on 70 fixed routes. The contractor, MTSI, employs 1,464 people. In recent years ridership has been declining while service levels have been stable.

	1991	*1992*	*1993*	*1994*
Revenue riders (000s)	53,025	51,082	48,843	48,777
Revenue miles (000s)	18,907	19,589	19,448	19,579
Cost per passenger	$1.39	$1.51	$1.64	$1.77

MOBILITY MANAGEMENT FUNCTIONS

For the most part, MCTS has focused on efficient, effective operation of traditional transit services. This statement is particularly true from the perspective of the private management company, which has as its mission statement:

> Milwaukee Transport Services, Inc., exists to provide reliable, convenient, and safe public transportation services that effectively and efficiently meet the varied travel needs of the community and contribute to its quality of life.

Because transit competes with other local government functions for local general fund support, efficient operation of services is always a major consideration. However, as opportunities have arisen, the system has been able to respond by taking on a variety of mobility management functions.

Direct Marketing to Businesses

MCTS is actively marketing three programs to business: a vanpool program, Commuter Checks, and Guaranteed Ride Home. Two staff people, one funded by a grant, work full time on marketing the services, primarily as a means to increase ridership and help companies comply with clean air requirements.

The MCTS vanpool program was created as a result of strong interest on the part of individual MTSI staff members combined with encouragement by the Wisconsin Department of Transportation to apply for funding under the state Transportation Demand Management (TDM) program and the federal Congestion Management and Air Quality (CMAQ) program. Until this time, MCTS had had no involvement in ridesharing activities. A field trip to the Pace Suburban Bus Division of the Chicago Regional Transit Authority, which operates a vanpool program in suburban Chicago, helped convince staff that a vanpool program could be successful. At the time the vanpool program was developed, the state transit subsidy program would pay for 42 percent of the cost of fixed-route transit services and of the vanpool administrative expenses. As a result it was possible to provide assurance to the board that available funding combined with user charges would result in no net cost to the county.

With the TDM and CMAQ grant funding, MCTS acquired 20 vans and also added a staff person to plan and market the new service and to market the related Commuter Check and Guaranteed Ride Home programs. The vans were ready for service in September 1994. As of June 1995, despite intensive marketing efforts, only two vanpools were operating. (By October of 1995 staff expected to have seven more vanpools operating.) Staff pointed to several factors that have limited the success of the vanpool program:

- Employers have not been as eager to promote vanpools to their employees as had been expected. Statements by public officials regarding the Employee Commute Options (ECO) program have given the impression that companies do not really need to take strong measures to promote commute alternatives.
- The vanpool program was implemented early, while companies were still gearing up to implement their employee commute option plans.

- To avoid opposition from the drivers' union, MCTS agreed to a condition in its grant application specifying that vanpools would not compete with existing bus service. In practice that condition has meant that the main opportunities for vanpools are to carry central city residents to jobs in the suburbs. Serving the reverse commute has also been the primary area of interest among employers, some of whom have had difficulty finding low-wage labor in suburban areas. Although several potential vanpools of this type have been identified, so far it has not proved possible to find drivers who meet insurance requirements. MTSI staff stated that there were four additional vanpools ready to go if qualified drivers could be found.
- The Milwaukee area lacks some of the features that have contributed to successful vanpool programs in other areas, such as very large employers, long commutes, and preferential lanes for high occupancy vehicles.

MCTS's most successful business marketing program has been Commuter Checks. As of May 1995, 53 companies were purchasing Commuter Checks. During 1994, about 23,000 vouchers, each worth $7 or $9 toward the purchase of transit tickets or passes, were sold to participating companies and about 19,000 vouchers were redeemed. According to MTSI staff, many companies have reported significant increases in transit use as a result of the Commuter Check program.

The Guaranteed Ride Home program is entirely employer-funded. MCTS has agreements with taxi companies and one rental car company. Vouchers are provided to participating companies that the companies can give to employees who need a ride home. MCTS then bills the company for the cost of the taxi ride or car rental. As of June 1995, three companies were participating and one ride had been provided. According to the marketing staff, many companies have provided such a service to their employees informally. After hearing the program described by the transit marketing representatives, the companies formalize the program as part of the ECO plans.

Aside from the measurable results, the staff believe that the activities have had the result of increasing contact with the business community, creating greater awareness of transit, and increasing political support for transit in the business community.

Partnerships

MCTS has established several new or enhanced routes in partnership with businesses and other agencies. All the routes provide connections to businesses in suburban areas that were poorly served by existing transit routes. The employers cite labor shortages for low-wage jobs as a key motivation for participating in establishing transit service that would help central city residents reach their plants.

MCTS's involvement in partnership service began when the agency was approached by employers in the Butler/Menomonee Falls Industrial Area, located partly in Milwaukee County but mostly in neighboring Waukesha County to the west. The employers were experiencing a labor shortage that they believed transit service might help to alleviate. They had already identified CMAQ as a potential source of funding, and also had the active support of Waukesha County. A new shuttle route connecting to two existing MCTS routes was established under contract to Waukesha County. Waukesha County agreed to pay part of the remaining subsidy cost of the service, along with a portion employers would pay, after deducting the 42 percent state subsidy, CMAQ funding, and a credit for revenue passengers. The net subsidy cost for Milwaukee County is zero.

The Butler/Menomonee Falls service was established for a 1-year trial period running from January 1995 to December 1995. At the end of the trial period the service may be continued for a further trial or discontinued. MCTS's objective is to have the service generate sufficient ridership that it can be operated without any local subsidy after 2 years, which is the maximum extent of CMAQ funding. Under the arrangement MCTS and the employers have cooperated to promote ridership.

Similar arrangements have been developed with a second major employer, Quad Graphics, and the Granville Woods Industrial Park. In the case of one Quad Graphics plant, located well to the west of Milwaukee County, the company is providing the funding guarantee. In the case of a second Quad Graphics plant and the industrial park, both located in suburban Milwaukee County, the employers were able to obtain commitments from the Milwaukee County Economic Development Division for all or part of the "employer share." In that way, the Economic Development Division has become another MCTS partner.

As of June 1995, planning was under way for partnership services to a new regional medical center. The service began operation September 1, 1995.

Representatives of the businesses involved in the partnerships were interviewed for this case study. They gave MCTS high marks for responsiveness and indicated that the transit system had become much more open to new ideas in the last two years. They particularly noted the marketing staff's help in kicking off the new services and helping to market them with on-site activities.

University Passes

In May 1994, MCTS reached an agreement with the University of Wisconsin-Milwaukee (UWM) under which all registered students can obtain a semester pass good for unlimited rides on MCTS buses. MCTS receives $29 per semester from all registered students out of the "segregated fees" that are added to tuition fees to support student activities. A similar agreement was reached with Marquette Uni-

versity in June 1995. As part of the agreement with UWM, MCTS increased bus service to the university. Two routes were added providing limited-stop service from suburban park-and-ride lots, and trips were added to a third route serving another park-and-ride lot.

UMW is a commuter campus located north of downtown Milwaukee. The campus has severe parking problems typical of many urban universities. According to the director of parking and transit at UWM, 90 percent of students live off-campus. Although 12 routes already served the campus, many students, especially the 40 percent who live within 6 miles of the campus, viewed the bus service as too expensive. (The basic MCTS fare is $1.25, or a weekly pass or 10 tickets for $10.) MCTS expects that the revenue from having all students pay through tuition fees will at least offset the lost revenue from students who were already riding transit. It is also hoped that some students will continue to ride transit after they graduate.

The UPass program is being evaluated by the University of Wisconsin-Milwaukee Center for Urban Transportation under a grant from the Wisconsin Department of Transportation. Preliminary results from the evaluation show that the program is very popular among students and has stimulated a significant increase in student bus ridership. Total ridership for fall 1994 on routes serving UWM was up by 26 percent compared to the previous fall. MTSI staff estimate that UPass ridership accounts for approximately 4 percent of total ridership, and was a significant factor in keeping ridership stable during 1994 despite a major fare increase. Ridership on the university's own shuttles to park and ride lots has fallen, allowing the university to cut back on that service.

The UPass program was developed after several years of work on the part of senior MTSI staff and the UWM director of parking and transit. The university administration, which feared criticism about increasing tuition and fees, did not support the concept and successive student governments, which have to approve the use of student fees, supported, then opposed, and then again supported the idea. The program was finally approved with the strong support of a new student government following a referendum, required by the university administration, which passed with 70 percent voting in favor.

Transit NOW

Transit system staff started a local chapter of Transit NOW to build support for transit among the business community. The organization is now independent and very active. It has over 150 members and recent presidents have included the chairpersons of Goodwill Industries and the League of Women Voters. The Transit NOW formation conference held at Marquette University and a subsequent Transit NOW conference on clean air both attracted 300 participants. Transit system staff continue to provide some staff support.

WHY MOBILITY MANAGEMENT WORKS AT MILWAUKEE COUNTY TRANSIT

MCTS is an example of a system that has responded well to opportunities for mobility management, even though mobility management is not part of the agency's formal mission. Various employees helped develop service ideas. They credit the general manager with being willing to listen to anyone and having the political skills to win necessary approvals and funding. The employees are keenly aware of MTSI's status as a private company even though the public views it as a public agency. Being a private company means that there is little bureaucracy, so executives are accessible and it is possible to try out new ideas.

The existence of clean air programs and funding, especially CMAQ funding and the state TDM program, have clearly played a major role in the system's efforts to promote services to business. Without these funds, neither the vanpool program nor the new routes developed in partnership with businesses would have been possible. The availability of state formula funds paying for 42 percent of new services was also extremely important.

While the availability of state and federal funds has been important, the scarcity of local funds seems also to have played a positive role. Since transit competes with other county functions for general fund revenues, the agency has been mainly successful in sticking to a policy of providing service only where ridership will meet productivity standards. This helped the agency in insisting on employer participation in new services in outlying areas.

CHALLENGES AHEAD

Both the vanpool program and partnership services are threatened by loss of funding. CMAQ funding will expire, so the partnership routes will need to come up to established productivity standards if they are to survive. The loss of CMAQ funding would also force a cutback of marketing staff. The state transit subsidy program has been changed from paying 42 percent of total operating cost to a "sum certain" available to each operator. Whereas, under the percentage system, the state provided additional funds to support the cost of new services, now experimental services will have to be supported out of a fixed amount. If this method of funding had been in place before, it would have been far more difficult to develop either the vanpool program or the partnership services.

MCTS will continue to face the challenges it has dealt with in past years. Decentralizing population and employment erode the ridership base of transit. Because much new growth is occurring beyond the limits of Milwaukee County, serving the new growth centers is complicated by jurisdictional issues in addition to the usual difficulties of serving low-density development. Service contracting, which has enabled

some systems to serve low-density areas, has not so far proved to be an option for MCTS.

TRANSFERABILITY

The case of Milwaukee County Transit demonstrates that, even under conditions of tight funding, it is possible for a transit system to achieve limited mobility management objectives. Factors that have contributed to the agency's success have included

- Leadership that is open to new ideas and that has the political skills to maintain support for transit and obtain necessary approvals and funding.
- Active solicitation of corporate customers and other potential partners.
- An organizational culture that allows staff to develop new ideas and that does not stifle new ideas in bureaucracy. Resulting from these ideas are a variety of products and services directed to corporate customers and other partners.

CASE STUDY ON MOBILITY MANAGEMENT NEW JERSEY TRANSIT August 1995

New Jersey Transit (NJT) provides public transit services statewide, linking major points in New Jersey, New York, and Philadelphia. Covering a service area of 5,325 miles, the agency provides transit service throughout a state of 7.5 million people. NJT provided 179 million passenger trips in fiscal year 1994 or about 307,000 daily passenger round trips. NJT operates 177 bus routes with 1,900 buses. It also operates 12 rail lines with 715 rail cars to 157 stations, plus a light rail line. In addition, NJT provided over 1,000 buses to the state's private operators, and it contracts for a sizable number of bus routes.

While NJT was created as an agency in 1979, the array of private sector services it inherited has a long-standing tradition of well over 100 years. NJT has invested significantly in its traditional bus and rail services and plans to spend over $500 million per year in its capital program for infrastructure upgrades, rolling stock purchase and renewal, rail right-of-way improvements, and passenger facility improvements over the next 5 years. Its adopted mission is "to provide safe, reliable, convenient and cost-effective transit service with a skilled team of employees, dedicated to our customers' needs and committed to excellence." The Executive Director of the agency is Shirley DeLibero.

A total of 95 percent of New Jersey's population and 94 percent of the employment is in a severe nonattainment area for ozone. Only three of 21 New Jersey counties are attainment areas for ozone. During the development of NJT's mobility management programs, 3,000 employers of 100 or more employees were required to implement trip reduction programs (commonly called Employer Commute Options or ECO) with the objective of increasing average vehicle occupancy to a level 25 percent higher than the prevailing average. The regulatory requirements provided a significant driving force for mobility management efforts over the past few years, but enforcement efforts by the Environmental Protection Agency have stalled as Congress discusses modification or elimination of the ECO requirement.

MOBILITY MANAGEMENT FUNCTIONS

There are two primary mobility management functions at New Jersey Transit:

- Experimental Suburban Transit Services: WHEELS Program.
- Transportation Management Association services.

WHEELS Program

As with most transit agencies, efforts to serve the emerging suburban transit market have been discussed and proposed for a number of years. "Wish lists" of a number of potential services were developed by NJT staff or local elected officials. Funding proposals were submitted for experimental services in the normal budget process in the late 1980s, but were not adopted in the final budget because of other budgetary priorities. The advent of Congestion Mitigation and Air Quality (CMAQ) funding, however, provided new resources to experiment with an array of nontraditional suburban employment services.

NJT worked with transportation management associations (TMAs), New Jersey Department of Transportation (NJDOT), and employers to develop a list of potential projects. After the list was culled, a consultant was retained to evaluate suburban employment services in 10 distinct areas during a year-long planning effort. The bus service planning and rail planning units assisted with designs of the reverse commute, park-and-ride, and weekend and expanded evening services. For example, rail projects had to be accomplished through complex adjustment of schedules rather than requiring any fleet expansion. A new small unit in the planning department, service development, provided the institutional focal point for planning and implementation. Significant efforts were made to forge new working relationships with TMAs and local jurisdictions. NJT staff was responsible for detailed planning and troubleshooting, development of an overall marketing strategy that could be implemented locally by TMA staff, and procurement of service contracting.

A total of 40 bus and rail projects with first year costs totaling $7.3 million was initially approved in four categories: (*1*) reverse commute services; (*2*) suburban employment transit services; (*3*) new Saturday, Sunday, and expanded

evening services; and (*4*) new park-and-ride express routes. The first two types of WHEELS services are nontraditional approaches to mobility management and are presented first. The latter two services are enhancements to traditional types of fixed-route services that were also included in the overall WHEELS program.

Reverse commute services were originally identified in an Urban Supplement Project that addressed transportation problems of inner-city residents who are employed by, or seeking employment with, employers located in suburban areas of New Jersey. Specific gaps were identified in Newark, Elizabeth, Jersey City, Atlantic City, Paterson, Camden, and Trenton. Four bus and two rail reverse commute services have been implemented. An example of rail reverse commute service is extending the Raritan Valley line train schedule from Newark (with New York connections) to five suburban stations with one new reverse commute run in the morning and two in the evening. Major employers such as Merck and Exxon are located in these suburban locations. Previously, these suburban stations had train service to Newark and New York in the peak direction only. An example of reverse commute bus service is five reverse commute runs from urban Newark to suburban business parks in Parsippanny in both morning and evening. Five of the six reverse commute services are either approaching or exceeding the 20 percent fare-box recovery goal set by NJT. One service had only a 3.5 percent fare-box recovery and will be eliminated.

Experimental *suburban employment services* have been introduced in an attempt to tap the growing suburb-to-suburb market. In the New Jersey Transit service area, commuting between suburbs is now more than double the volume of traditional downtown-oriented commutes. Existing NJT transit services were not effectively serving those sites and needed new types of transit solutions. Fifteen new suburban employment services have been implemented in the first phase. Up to an additional 10 services are planned to be initiated in the near future. The suburban employment services typically use minibuses and combine a mix of innovative design elements like shuttles to rail stations, circulators from park-and-ride lots, lunchtime shuttles, and flex-routes services connecting residential communities with nearby suburban business parks. The flex-routes are demand response services that provide flexible local routing within a defined pickup zone and then usually continue on a defined route to their destinations.

An example of a successful (47 percent fare box recovery) flex-route is the connection between the residential area of Lawrence and Princeton Junction rail station, a distance of about 4 miles. In the morning and evening, six shuttle bus runs provide demand response service to and from the train station and are timed to meet trains destined to New York's Penn Station. Parking shortages at the train station and a significant existing ridership base were important driving forces for the service.

An example of suburban flex-route that has been eliminated because of poor ridership (3.6 percent fare box recovery) is demand response service available every 30 minutes during peak periods from the suburban residential communities of Jackson and Howen to suburban employers and business parks in Freehold, about 8 miles away.

NJT staff had to overcome significant obstacles during the implementation of the suburban employment services. For example, NJT staff originally anticipated that they could contract with local private providers to both provide services and vehicles for minibus routes. NJT soon discovered that the private carriers could not provide the needed minibus vehicles. Because the program was experimental, NJT did not want to purchase a fleet of minibuses and had to make arrangements with a leasing company to provide vehicles to their specifications. The minibus specifications were not something that NJT could take off the shelf, so staff tailored specifications to meet the needs of the program and its participants. NJT provides the leased vehicles to private carriers who operate the services under contract to NJT. The lack of available minibuses delayed suburban employment services by 6 months in most areas.

Extended evening and weekend services were implemented in response to significant increases in weekend and evening employment opportunities. A growing number of employers have been seeking employees to work the second and third shifts in hotels, for example, when limited or no transit service is available. NJT implemented a total of 15 extended-hours bus services and two extended-hours rail services. An example of extended rail services is the Main/Bergen County rail line that has extensive connections to transit and ferry service at the Hoboken terminal for New York City and Liberty State Park destinations. Two additional trips were added on Saturday, six round trips were added to Sunday service, and two existing Saturday trips were extended to seven suburban stations. An example of expanded evening bus service is additional evening runs to a community college in Middlesex County. The majority of the services have received favorable ridership responses. The Main/Bergen weekend rail service had a farebox recovery of 74 percent after 10 months of operations. Six of the new services were below fare box recovery goals, and NJT is awaiting service changes to determine if the services will continue.

Two *park-and-ride services* have also been introduced. One service connects a number of suburban activity centers such as hospitals, community colleges, and high schools to a major park-and-ride lot. The other service provides new express service to downtown Newark from a suburban park-and-ride lot. Both services have received very low ridership responses, with fare box recovery below 10 percent.

Near the end of the first year of full implementation NJT conducted an overall evaluation of WHEELS progress. At that time, the 40 WHEELS services provided 93,000 passenger trips per month and averaged a 20.2 percent fare box recovery. The evaluation recommended retention of 21 services, revision and re-evaluation of 14 services, and elimination of 5 services. In general, the WHEELS services that

have been most successful are in areas that extend or enhance existing transit route services. The evaluation report concludes that "WHEELS services that are new, but link to the existing transit network in New Jersey, show the quickest ridership growth patterns." Services with the lowest ridership are those where there were no prior transit services, and those where the new services do not link up with the existing transit network.

Transportation Management Association Services

The state of New Jersey has a network of nine transportation management associations (TMAs) that provide transportation demand management services throughout most of the state. The TMAs have distinct territories in the state and are the primary service delivery organizations for promotion of both traditional and nontraditional transit services, provision of guaranteed ride home programs, ride matching services, and promotion of alternative work schedules. New Jersey Transit has played a significant role in TMA development, funding, and coordination.

The TMAs take a number of organizational forms, including one staffed by NJT employees. A majority of the other TMAs are sole purpose nonprofit organizations. One of the TMAs is part of a countywide multipurpose nonprofit involved with traffic management, housing, open space, and dependent care. Another TMA is part of a county Planning Department.

All TMAs have adopted a "transit first" policy to receive both NJDOT and NJT funding. Adopted on the prompting of NJT to ensure that duplication of services is minimized, the "transit first" policy requires that the TMA

- evaluate all existing transit services in the area;
- assist with recommendations to enhance existing transit, such as altering traditional services or the more innovative WHEELS program;
- evaluate potential new nontraditional services; and
- provide relevant transit information to all individuals requesting rideshare information.

TRANSIT PLUS is a TMA that is housed within the NJT organization. This is a unique organizational structure in that most TMAs are independent or part of a larger private nonprofit corporation. NJT proactively took on the TMA function when no private entity stepped forward to be the TMA for Essex and Union counties. A TMA manager reports to the director of corporate sales. The TMA has a 20-person advisory board that advises staff on product and service development and includes the agency's executive director, chamber of commerce, business, and local transportation planning representatives.

Founded in 1993 in response to clean air mandates for employer-based trip reduction programs, TRANSIT PLUS serves 295 employers in the Newark, Elizabeth, and surrounding suburban areas. The TMA's service area has a dense network of existing transit services. In forming the TMA, NJT management wanted to offer employers a full range of commute alternatives, including the promotion of existing transit services, special work-site promotions called "transportation days," transit pass sales, subsidized transit vouchers, ride matching, vanpools, and guaranteed ride home services. In keeping with NJT's "transit first" philosophy, as employers enroll in the TMA, research is conducted to ascertain exactly what transit serves their destination and what other alternatives may also be applicable.

TRANSIT PLUS has been productive in promoting NJT services to local employers. TMA staff analyze what transit services are available and provide appropriate timetables on a regular schedule to that employer. NJT conducts over 50 "transportation days" at work sites a year; 45 employers have enrolled in the transit pass program.

After contracting with a third-party vanpool provider, TRANSIT PLUS launched a new vanpool program in March 1995. Similarly, TRANSIT PLUS has promoted a guaranteed ride home program that allows employers to purchase two or four $60 vouchers for $5 or $10, respectively, to provide to their employees in case of an unexpected family emergency. The employer pays another $10 for each voucher when it is actually used. In a recent sample month, TRANSIT PLUS received only 26 ride matching applications for carpools and vanpools. Other active TMAs in more suburban areas with less transit service averaged 140 ride matching applications during the sample month. Ride matching applications are provided at company transportation fairs and through a statewide toll-free number. The recent implementation history of the above programs and the announcement that the ECO clear air mandates would not aggressively be enforced are significant reasons for the low initial response rate for these services. In addition, with the high level of existing transit services, many employers may feel there is little need to promote other alternative modes.

Both New Jersey DOT's Office of Suburban Mobility and New Jersey Transit have a member on the board of directors of the other eight TMAs. Different NJT senior managers at the director or assistant executive director level sit on the board of directors of the nine TMAs, giving them first-hand experience with the broad range of mobility issues that TMAs face in different communities. Interviews with TMAs revealed that NJT staff play an active role in the organization. NJT representatives keep private sector and community members of TMAs informed of NJT plans and services as well as of "large picture" issues such as changes in federal funding of transit.

Budgets for the TMAs range from $275,000 to $975,000. In 1994, NJT provided a total of $350,000 in grants to six of the TMAs or about 10 percent of the total TMA revenues. The NJT grant covers the general promotion and advocacy of transit options assistance in development and marketing of

WHEELS and other transit services, compiling of performance reports for WHEELS services, and assisting NJT staff with ongoing service planning efforts. In Somerset County, for example, the Ridewise TMA has used NJT funds for a radio campaign to promote new WHEELS services and an e-mail message system with local employers.

WHY MOBILITY MANAGEMENT WORKS AT NEW JERSEY TRANSIT

New Jersey Transit is a very large organization with a long tradition in conventional bus and rail transit services that generate significant ridership. The transit market shares for trip destinations to Manhattan and Newark are 75 percent and 50 percent, respectively. In contrast, the market share of trips to high growth suburban areas is less than 1 percent. NJT's institutional history and organizational structure have been geared to serve its primary markets, and nontraditional transit services in growing suburban areas is a peripheral area for the organization. In addition, NJT has a board of directors consisting of state administrators and four members appointed by the governor with no geographical constituency; all board members are appointed at large. Local elected officials have advocated suburban employment services, but budgetary pressures did not allow the board to experiment with suburban services in a comprehensive way until the Intermodal Surface Transportation Efficiency Act (ISTEA) was approved in 1991. ISTEA included a new funding source, the Congestion Mitigation Air Quality (CMAQ) program, that NJT has used to fund the WHEELS program.

The availability of CMAQ monies enabled the agency to develop a comprehensive package of traditional and nontraditional experimental programs. Without the new funding source, it is unlikely that the agency would have been able to implement the array of 40 new services. The infusion of $18 million over two years to implement such a large number of suburban services enabled NJT to respond institutionally with a new way of doing business.

A small, dedicated, and competent staff created new partnerships with outside organizations, a critical factor in the successful implementation of the WHEELS program. Significant input was provided from established TMAs, businesses, local elected officials, and others to provide experimental services intended to meet local needs. The substantial efforts at outreach and implementation planning with these new partners have created significant goodwill for the agency. TMA staff members and NJDOT staff interviewed for this case study gave high marks to NJT staff for their expertise in getting the new suburban services underway. The service development unit was able to implement two new services a month, a very ambitious schedule for such a small staff. With the TMA grants for local marketing, NJT has been able to leverage available marketing dollars to local groups that have a vested interest in promoting the WHEELS services. Because of successful implementation of the first cycle of WHEELS services, and the departure of key employees of the service development section, the WHEELS service planning duties are in the process of being consolidated under the bus and rail services planning units. The TMA support and liaison function is being continued by remaining staff members.

NJT was candid from the beginning in stating that the WHEELS program was experimental and would be subject to rigorous evaluation. Senior management felt that there should be no double standard between the WHEELS service and other comparable traditional suburban services operated by NJT. The primary evaluation standard selected was a 15 percent fare box recovery objective for new services and a 20 percent fare box recovery for extensions of existing services. After the first year of operation, NJT has been willing to look at trends in ridership and make service adjustments before deciding to terminate a service that does not meet the fare box recovery objectives. The fare box recovery standards will increase as services mature and the two year CMAQ operating fund eligibility expires. The TMAs are understandably nervous about the availability of ongoing long-term funding for popular new services, and the fact that NJT management staff is on each TMA board of directors helps to facilitate ongoing discussion.

NJT's long-standing history of contracting with private operators provided an important mechanism for using available CMAQ monies in a cost-effective manner. NJT's union agreement enables all newly inaugurated service and 10 percent of ongoing services to be contracted. For contracted service, NJT typically establishes a cost benchmark that only includes the NJT marginal costs for operating the service. When they receive bids from private sector carriers, NJT is able to compare the private sector bids with the NJT marginal costs. If the NJT costs are lower, the union is able to operate the service. The union is also able to make concessions such as greater use of part-time drivers to bring the benchmark costs down. In general, private carrier bids have been lower than NJT benchmark costs. This equitable procurement process has enabled NJT to provide more WHEELS services in a cost-effective manner.

CHANGING CIRCUMSTANCES AND NEW CHALLENGES

NJT anticipates losing $10 million in operating funds next fiscal year based on proposed congressional cutbacks. Because the experimental WHEELS services are funded with CMAQ monies for only a 2-year period, the program has no permanent funding source. WHEELS services that achieve fare box recovery objectives will eventually need to be included in NJT's general operating budget. Changing budgetary pressures may increase the fare box recovery requirements for service retention. After investing heavily in creating new partnerships with TMAs and their private sec-

tor membership, NJT management faces some tough decisions on what services will survive the budget cutbacks.

Land use patterns in different geographical regions of the state have created some suburban areas that are difficult to serve with effective transit service. Townships in suburban areas are competing for commercial development throughout the state and are attempting to lure economic development with significant tax breaks. In northern New Jersey, suburban commercial development densities are about four times greater than the lower density corporate campuses being developed in southern New Jersey. Several suburban employment services in southern New Jersey that are not an extension of existing NJT transit services have received a very low response in ridership. The lower density suburban areas of the state that are generating many of the new (mostly auto) trips may not be able to achieve the ridership and fare box recovery standards established by NJT.

TRANSFERABILITY

New Jersey Transit has implemented an innovative mobility management program as part of a very large traditional transit agency. The following features are transferable to other such agencies:

- Taking advantage of a new funding source has enabled NJT to experiment with a comprehensive array of non-traditional transit services.
- Suburban employment services that expand the reach of the existing transit network have the greatest chance of success.
- NJT has sustained partnerships with TMAs to provide local outreach and marketing services by providing grants for services provided. Having a senior manager on each TMA board of directors has sustained good working relationships with local communities and the private sector.
- NJT's union agreement and procurement capabilities have provided very cost-effective service that stretch available dollars.
- Fare-box recovery standards have provided a means to compare the experimental services with other comparable suburban services. This has helped decision makers evaluate which services to retain, revise, or eliminate.

CASE STUDY ON MOBILITY MANAGEMENT SAN DIEGO COUNTY TRANSIT June 1995

San Diego County Transit System (CTS) operates an array of fixed-route and demand-response contracted services throughout the 4,200 square-mile county of San Diego. Within the San Diego region, there are actually 9 different service providers and 22 different services, with the San Diego Transit Corporation and the San Diego Trolley being the 2 largest service providers. CTS provides services in 9 cities in San Diego County and the rural unincorporated areas of the county.

CTS is managed by the county's Department of Public Works, and the Board of Supervisors serves as the policy board. Within San Diego County, the Metropolitan Transit Development Board (MTDB) sets fares and plans, coordinates, and provides service in the South County. The North County Transit District (NCTD) has responsibilities for these activities in the North County. The county of San Diego provides those functions in the unincorporated rural area outside the MTDB and NCTD service areas. In addition, CTS currently also manages local fixed-route and dial-a-ride services for client cities predominantly in suburban areas; funds transit services provided by other agencies in unincorporated areas; provides commuter express service between the transit districts; and is responsible for funding and developing transit centers of regional significance in strategic locations throughout the county. The majority of CTS's service falls within the jurisdictional boundaries of MTDB. All transit services are contracted.

CTS began operating in 1976 in response to needs for "lifeline" rural transportation services in unincorporated East County. A full-time staff of 12 county employees, headed by General Manager Larry Watt, handle funding administration, public information, transit operations, contract administration, and transit facilities development. The staff administers a total of 10 different contracts for transit services with a net annual contract cost of $7,274,473. A total of 106 vehicles are used in the following six types of service:

- *Suburban fixed-route services* include 13 routes in suburban Eastern San Diego County and two bi-directional loop routes in upscale suburban Poway.
- *Suburban general public demand response* services are provided to communities of Spring Valley and El Cajon.
- *ADA complementary paratransit* service is available in Eastern County, Mid-County, and South San Diego Bay areas.
- Four "lifeline" *rural route deviation* routes are available in the expansive northeast and southeast portions of unincorporated East County.
- *Commuter express bus service* is available on five routes linking suburban communities with employment centers.
- *Special services*, including a guaranteed ride home program, is available for riders of express route services and an "airporter" service for residents of Poway.

Ridership levels have grown significantly over the past 10 years, increasing from about 800,000 passengers in FY 1985 to 3,522,585 in FY 1995. Revenue miles have increased from 1,319,000 in FY 1985 to about 3,580,000 in FY 1995. The operating cost per passenger trip for services varies widely depending on the nature of the service. In FY 1994, operating cost per passenger varied from $1.44 for the East County suburban service to $12.92 for the rural bus services.

CTS does not receive federal funds. It has two primary funding sources: state Transportation Development Act (TDA) monies from a ¼ percent of the statewide sales tax account for 66.6 percent of the budget, and passenger fares account for 33.4 percent. The overall CTS fare-box recovery rate has steadily improved from 21.1 percent in FY 1985 to 33.4 percent in FY 1995. CTS's suburban transit services have an even higher fare-box recovery ratio of 42 percent.

In California, individual cities are eligible to receive the state TDA monies or authorize another entity to claim the monies on their behalf. CTS uses its allocation of TDA funds to provide service in unincorporated areas. In addition, six different cities in the county have retained CTS to manage transit services. The state monies are claimed by CTS on behalf of the cities and CTS manages the transit services.

MOBILITY MANAGEMENT FUNCTIONS

CTS has been in a unique position of significantly expanding services to meet different needs. Its mission statements are broad:

1. "Carry out Board of Supervisor's policy by providing safe, effective, and efficient public transit services in those areas designated by the Board"; and
2. "Develop Transit Centers at those locations designated by the Board in accordance with transportation improvement program."

In a recent strategic plan conducted by Booz Allen & Hamilton, Inc., two strengths were identified that characterize the hallmarks of the CTS operation and its mission:

1. "Responsiveness to customer needs as the number one priority and critical success factor for CTS.
2. Provision of cost-efficient service."

Responding to customer needs in a cost-effective manner while actively searching for opportunities for improved transit options have been the driving forces for CTS's development of several mobility management functions.

Illustrative of this service orientation was the planning and implementation of two shuttle routes in the city of El Cajon. El Cajon is a small suburban community that is served by the recently extended San Diego Trolley light rail service. A city council member was concerned about the costs and service delivery of a general public demand-response service operated by a local taxi company. The city had been receiving service complaints and the subsidy per passenger in 1991 was about $4 higher than the city council desired. The city council member presented a concept for a circulator shuttle that would serve the El Cajon Trolley station and other major downtown locations. After convening a meeting with CTS and the MTDB staff, CTS staff suggested a revised route structure that would serve a major mall, a high school, several large multifamily dwelling units, and the El Cajon Trolley station. Using 21-passenger small buses operating on 30-minute headways and a $0.50 fare, the shuttles have been near capacity since the day they opened. A second shuttle route was added after the initial favorable ridership response. City staff credit CTS with developing well-conceived routes, scaling the bus size for community acceptance, and obtaining a highly qualified and reliable service contractor (DAVE Transportation) as significant contributing factors to the success of the shuttles. CTS handles the detailed service planning, contracting administration, marketing, and funding claims through a contract with the city of El Cajon. *Including* the vehicle capital costs, the contract cost per vehicle service mile is $2.05, significantly below other local service providers. By adding the shuttles to a larger contract of general suburban services, CTS management believes that they have been able to "leverage" a cost-effective service for a client city.

Poway is a bedroom community about 20 miles from the San Diego airport. The city council had identified the need for a Poway-San Diego Airport link as a high priority transit need. Implemented in 1983 as a general public user-side subsidy program, the Airport Shuttle has become a popular service with Poway residents. Although MTDB raised questions initially about the use of state transit funds for airporter service, the service was determined to be a permissible use of TDA funds. When CTS competitively bid the service and a new contractor won the service, the old contractor continued offering service at $0.50 below the subsidized rate. The competition reduced the public subsidy amounts because the old contractor retained some market share but does not receive public subsidies. Finally, Poway residents now have a choice of the lowest-priced airporter providers in the region.

CTS had run a route to serve Lake Poway, a recreational lake in the area. Due to intermittent ridership, CTS came up with the idea to operate a route deviation service, with a cellular call box at the lake's bus stop. The route deviation service has enabled Poway to improve productivity and be more cost-effective in service delivery. Ridership to the lake has tripled, while revenue miles operated to the lake have decreased by one-third.

CTS provides a Guaranteed Ride for Emergencies program for riders of its peak-hour express buses. The program was initiated in response to nonpassenger comments that a significant reason for not using the commuter services was the inability to respond to family emergencies and unexpected overtime. Emergency rides home provided by CTS are limited to four during a 12-month period. Valid uses of the emergency ride home include illness of the passenger or family member, an unexpected crisis, or unanticipated overtime. CTS uses the contractor that provides the Poway airporter service. It has proven to be a very cost-effective service with only 10–15 rides per month being provided. The service has attracted a new market segment, those who would

not ride for fear of being stranded at work. CTS staff reports a positive impact on express bus ridership due to the program.

Several of the express bus routes that CTS currently operates are based on former successful vanpool routes established by CTS. About 10 years ago, CTS started a vanpool program that used county-owned vans. With the emergence of Commuter Computer, the regional rideshare agency that provides carpool and vanpool matching, and private vanpool vendors such as VPSI, CTS decided to get out of the business of directly providing general public vanpools. CTS is still involved in the *promotion* of ridesharing services in a number of ways. When a new commuter rail service started in North County, it duplicated an existing commuter route. CTS terminated the commuter route, but not all bus passengers could be adequately served by the new rail service. CTS promoted carpool and vanpool opportunities to the former bus passengers and helped process ride matching applications. CTS also manages a vanpool program for county employees.

CTS has an employer transportation coordinator (ETC) who started in a position to coordinate commute alternative programs for county employees. The ETC now works at marketing CTS services with the transportation management associations in the county. The ETC, formerly in charge of the county's telecommuting project, now provides local agencies with advice on how to start their own telecommuting programs and provides advice to transportation management associations.

Finally, route deviation services are provided between the desert and mountain areas of eastern San Diego County to the urban areas. Four routes operate on different alignments on various days of the week so that all rural communities are served. Only one round trip is made per day between rural and urban areas. All routes require a mid-day layover in the urban area before the trip back to the rural areas. Route deviation service is available by reservation.

WHY MOBILITY MANAGEMENT WORKS AT CTS

CTS's management competence and responsiveness were cited by several external stakeholders as key factors in meeting their communities' mobility needs. Although the refrain "listen to your customers" is a fundamental tenet of many transit agencies, CTS practices what it preaches. Its client cities and rural transit organizations are pleased with what CTS provides and continue to use their services year after year. CTS makes special efforts to understand the transit needs in a community and provide solutions that its clients are looking for.

The extensive use of rider comment cards is also an effective way to receive rider feedback and respond to changing rider needs. CTS receives about 80 cards per month and uses the cards to monitor contractor performance as well as for input to the potential route and schedule changes. The appropriate contractor receives a copy of the comment card and follow-up actions are taken as needed.

CTS's ability to provide cost-efficient service is important to their mobility management strategy. Through competitive contracting, CTS has been able to keep costs below the industry average. For example, in 1989 CTS's East County Suburban Transit Service provided 40,350 hours of service at an operating cost per passenger of $2.01 and an operating cost per vehicle service hour of $33.97. In FY 1994, vehicle service hours increased to 131,900, and operating costs per passenger and operating costs per vehicle service hour both declined substantially to $1.44 and $28.11, respectively. Improved productivity and competitive bidding are the two primary factors for this decrease. Another important factor is that CTS has taken away major maintenance repairs from the contractors, and includes those major costs as capital expenditures. Client cities are pleased with the results and the efficient use of their state transit monies.

The decentralized distribution of state transit monies to individual cities in the MTDB service area provides an incentive for CTS to find effective mobility decisions in suburban areas of the county. It is an annual funding process, and CTS needs to be alert to make sure service is responsive to the cities' needs. Individual cities can choose an alternative service delivery provider including management of the transit program themselves.

The San Diego County Board of Supervisors has not been heavily involved in the daily operations of CTS services. Transit provision is a relatively minor function of county operations and does not necessitate a large amount of board attention. CTS management makes one major presentation a year to the board of supervisors, when making the request for state funding. This has given CTS management a relatively free hand to experiment and seize opportunities for improved and enhanced services. As a result, CTS has historically faced few institutional barriers in providing mobility management services.

Finally, the expansion of the San Diego Trolley to suburban cities has significantly improved the image of transit services in the region. Mobility management efforts to improve access and connectivity are looked at favorably by the suburban residents they serve. The El Cajon shuttles described are examples of improved transit services that were created, in part, by the popularity of the Trolley service.

CHANGING CONDITIONS AND NEW CHALLENGES

In recent years, the board of supervisors has looked at consolidating and coordinating public services, including transit. A basic policy question was whether the CTS structure was the best institutional format for achieving transit service goals. In response, CTS commissioned Booz, Allen & Hamilton, Inc. to conduct a seven-year Strategic Plan that asked the basic question "Where should CTS be in the year

2001 and what steps are needed to get there?" The Strategic Plan work scope included an evaluation of different institutional formats to achieve transit goals, including keeping the existing structure, modifying it, or eliminating CTS. The board of supervisors accepted the consultant's recommendation to keep the existing institutional relationships by keeping CTS intact. The consultant concluded that "from the perspective of the riding public, consolidating CTS's services with those of NCTD and MTDB would probably not improve service due to the high level of coordination and cooperation that currently exists."

Although CTS itself shows a balanced budget through the year 2001, significant budget shortfalls hold true for the region as a whole. During CTS's strategic planning process, the regional shortfall for transit throughout the San Diego region was projected at $1.2 billion after the year 2000. In addition, a poor economy has had an impact on sales tax revenues that support transit services. These changing financial conditions, if they persist, could lead to new institutional arrangements that may affect the transit and mobility management roles that CTS now plays.

TRANSFERABILITY

As is true in all regions, unique circumstances make direct replication of innovative service delivery difficult. In San Diego, the institutional arrangements are unique in that CTS operates a majority of its services within the jurisdiction of MTDB. In addition, the San Diego Trolley service to suburban areas provides a transit image that is not always present in suburban communities. San Diego's vast rural areas provide the opportunity for route deviation "lifeline" service that in many areas may not be present. Finally, CTS has a free hand in its contracting practices that might be constrained by federal regulations such as 13(c) if it used federal funding. Nevertheless, the following four attributes of CTS's mobility management approach would appear to be transferable to other locations.

CTS management has an **entrepreneurial spirit** that (*1*) encourages a small staff to actively identify key opportunities and to **experiment with new ideas** for improved transit services; (*2*) identifies needs by **listening to customers** (both riders and community representatives); (*3*) selects the mobility solution and appropriate service delivery mode based on **market and cost considerations**; and (*4*) provides cost-efficient service through extensive **competitive contracting.**

What is the priority? The CTS management group all agree: "Listen to the customers."

CASE STUDY ON MOBILITY MANAGEMENT TRI-MET, PORTLAND, OREGON June 1995

"Tri-Met's mission is to assure people increased mobility in our growing, compact urban region." This mission statement, adopted by the board of directors of the Tri-County Metropolitan Transit District of Oregon in March 1993, provides the foundation for Tri-Met's activities as a mobility manager and incorporates its key strategy of linking land use and transportation.

Tri-Met is a special district of the state created from two bankrupt private operators in the early 1970s. It has a seven-member board of directors appointed by the governor of Oregon. Because almost 67 percent of the operating budget is financed by a payroll tax of six-tenths of 1 percent, the board composition is oriented toward business representatives. Its primary focus is on financial matters.

In 1994, Tri-Met operated 620 peak-period vehicles to serve an area of 592 square miles and almost 1 million people. The ethnic makeup of the population served is 88 percent Caucasian, 3 percent North American Indian, 2.3 percent African-American, 2.2 percent Asian-American, 1.1 percent Hispanic, and the remainder other ethnicities. During the 1994–95 fiscal year, Tri-Met's weekday boardings were 205,000, an increase of 3.4 percent over the previous year. Weekly fixed-route service hours grew by 1.4 percent to 36,122 hours. Ridership is concentrated in downtown Portland, where nearly 40 percent of the work trips arrive on transit. Only 1 percent of suburban-to-suburban trips are on transit.

Tri-Met operates 89 bus routes and 1 light rail line (the Eastside), with the Westside light rail line under construction and the South/North in the planning stages. The following operating statistics represent Tri-Met's fixed-route bus and rail services over the past four years:

	FY 1991	*FY 1992*	*FY 1993*	*FY 1994*
Ridership (boardings)	54,960,000	57,108,000	57,132,000	58,908,000
Vehicle miles	22,319,040	22,777,320	23,460,840	24,572,880
Cost per boarding	$1.33	$1.37	$1.49	$1.53

Its 1995–96 operating budget is $153,702,000: 66.9 percent from payroll taxes; 20.2 percent from fares; 2 percent from federal subsidies; 1.4 percent from state operating funds; 2.3 percent from service reimbursements; 1.3 percent from interest income; and 5.9 percent from other sources. This budget supports 2,076 employees organized into 6 divisions headed by General Manager Thomas Walsh.

MOBILITY MANAGEMENT FUNCTIONS

Tri-Met is a central part of the region's land use strategy. In the 2040 Regional Framework Plan, recently adopted by the directly elected Metro Council to support the state's growth management plan, a high-capacity transit network is required instead of any new freeways to serve future development. The plan anticipates that a 6 percent increase in land use will accommodate a 77 percent increase in population by the year 2040. Tri-Met plans to go to the voters as soon as November 1996 with a $45 million operations levy to finance the improvements envisioned in its Strategic Plan.

Transportation investments are seen in the region as tools to shape growth. As a consequence, Tri-Met has taken an active role in ensuring the link is made between transportation and land use. For example, not only has it published a guidebook for transit-oriented development, it also ensures that the guidelines are adopted in planning documents and development approvals along light rail and express bus corridors by providing funding to jurisdictions for planning staff. The guidebook discusses traditional transit needs, such as the location of stops, shelters, and pedestrian connections, as well as more aggressive concepts such as housing design, densities, zoning requirements, and education of consumers, constituents and developers.

There are five full- and part-time land use planners on Tri-Met's staff working on transit-oriented development. They work not only with the agency's own property around future light rail stations but also with private property owners surrounding the stations. For example, Kaiser Hospital changed the orientation of its site plan to face a future light rail station based on intervention from the Tri-Met staff. In another instance, a new 20,000-seat sports arena is being built with only 3,000 parking spaces because of the proximity of the Tri-Met light rail line supported by outlying park-and-ride lots.

Tri-Met follows the land use policies it advocates when developing its own property as well. After completing construction, Tri-Met could have sold its excess station area property to replace local funds used to match the federal grant for the property. Instead, Tri-Met will retain the property to build high density housing around the new light rail station. The Federal Transit Administration (FTA) has agreed with this land use strategy and will not require that the land be sold to reimburse the federal grant. FTA has also awarded funds for the Hillsboro extension of the Westside light rail line with the caveat that the suburban communities to be served will support the projected ridership by adopting land use plans with appropriate densities, parking maximums, and a transit-oriented development overlay zone. In exchange, Tri-Met has signed an agreement to pay back the federal funds if the communities fail to adopt the plans within 5 yr.

In addition to the land use partnerships it has developed with other governing agencies, Tri-Met is working out agreements with the private sector through partnerships with businesses and transportation management associations (TMAs). In one instance, Tri-Met helped obtain a Congestion Mitigation and Air Quality (CMAQ) grant for a group of suburban employers to operate electric vehicles as part of a transit-oriented development. Tri-Met is also a partner with businesses that are relocating, giving their employees 3 mo of free passes if the businesses agree to continue the transit subsidy for 9 mo afterwards.

One of its most ambitious partnerships involves a plan to provide a higher level of bus service and a new vanpool program for three adjoining hospitals suffering from parking problems. In exchange, the hospitals will underwrite 70 percent of the costs of the service by purchasing bus passes for all 10,500 employees. The largest hospital, Oregon Health Sciences University (OHSU), has been spending $600,000 a year from parking fees to run a shuttle from an off-site, state-owned lot that is slated to close. The city of Portland has also placed a lid on new parking construction at OHSU, where parking rates now range from $43 to $180 a month. Motivated by these events, OHSU and two smaller, adjacent hospitals met with Tri-Met and a task force of city staff and neighbors. The task force set measurable performance standards for new service; collected origin-and-destination, parking, and bus ridership data; conducted mode split surveys; and held focus groups. Six public workshops were held on the task force's plan to add 3 new routes, 6 new vanpools, and an Emergency Ride Home program using hospital vehicles with taxis as backups. Employees will no longer have to transfer between buses downtown to get to the hospitals' hill site and will receive free or discounted all-zone bus passes to use the services. City staff will make sidewalk improvements and assist in the creation of a new TMA. The cost to Tri-Met for this package of services will be funded from a reserve created for such new strategic initiatives. OHSU will spend less on the new services than they did on the shuttle.

Other businesses and their employees also benefit from the active Transportation Demand Management (TDM) program Tri-Met offers in addition to its fixed-route buses and rail. The TDM program is part of a multi-departmental effort composed of 6 full-time employees and others who work part time on outreach, park-and-ride development, and other TDM activities. The TDM program includes

- carpool matching, with 1,385 people in the database and a 20 percent match rate;
- discounted carpool parking in downtown garages, ranging from $40 to $80 per month compared with $100 per month for solo drivers;
- start-up of a vanpool program in October 1995;
- training for Employee Transportation Coordinators at over 38 businesses in the area;
- an Emergency Ride Home program using taxi vouchers funded by a federal CMAQ grant;
- transit subsidy programs at 116 businesses and TransitChecks, printed with the company's name and dollar amount of subsidy, at an additional 21 sites—subsidies have resulted in a 7 percent increase in transit ridership;
- New Employee kits containing information and two free passes;
- TMA technical assistance;
- employer mode-choice surveys; and
- bike racks on buses, which produced 41,000 boardings in 1994 and increased to 44,000 boardings in the first 8 mo of 1995.

Tri-Met's partnership efforts extend beyond its work with the TMAs, employers, and local governments. Because ADA-eligible clients use up most of the capacity on Tri-Met's own paratransit system, Tri-Met provides operating assistance to a nonprofit agency called Volunteer Transportation,

Incorporated (VTI). VTI's services ensure that there is transportation for those who do not qualify for ADA but who do not have fixed-route service available. Tri-Met is exploring the labor issues and operational feasibility involved with having VTI provide midday dial-a-ride service to an industrial park, where there is only peak-period, fixed-route service. Another partnership example is in Clark County, Washington, where Tri-Met shares service responsibilities with the local transit authority, C-TRAN. C-TRAN operates the express buses into Portland while Tri-Met operates the local service.

Why Mobility Management Works At Tri-Met

Underlying the land use and transportation connections in Oregon is the citizens' interest in sustaining the livability of the area. In the early 1970s, citizen opposition to a proposed freeway led to state and regional regulations supportive of transit. A parking strategy for downtown Portland was adopted in 1974, capping the number of spaces that could be built. In 1979 statewide urban growth boundaries were adopted, followed by the creation of a directly elected regional government, the Metro Council, in 1980. In the early 1980s, the state legislature passed a Housing Rule requiring densities of at least 6 dwelling units per acre and requiring 50 percent of the housing stock to be multiple family. In 1990 the Metro Council was given tighter controls on local land use decisions. The combined regulations have created a climate that reinforces transit's role in the community.

Yet, Tri-Met could have failed to capitalize on this environment. A previous board of directors in the 1970s was removed by the governor because their focus on efficiency and "the bottom line" prevented them from planning for expansion. During the planning for the Eastside light rail line, the board president believed that getting involved in land use planning was too controversial for Tri-Met. To ensure that the land use and transportation connections were being made, Tri-Met instead assigned its land use planner to the Metro Council. According to an outside observer, before the opening of the light rail line in 1986, Tri-Met was "a hesitant agency which kept its nose clean." The light rail's resounding popularity "has energized the agency and given it great confidence" to take on a mobility management role.

But even with new confidence, there have been obstacles to overcome. Internally, skeptical engineers responsible for efficiency of the light rail service have had to be convinced that the "big picture" involving land use and transportation interfaces was important enough to redesign some segments. The cities also felt threatened early on by Tri-Met's entrance into land use matters and hired a lobbyist to derail its Strategic Plan. Tri-Met slowed down its process and took the cities' concerns more seriously. It built consensus by assuring the cities that it was not trying to tread on their land use authority.

Now Tri-Met has formed partnerships by helping to pay for planners in the cities; the cities retain control, yet transit links are implemented in general plans and conditions of development. Building the partnerships with cities has proved less expensive and more effective than hiring internally to ensure links are made. On the Westside rail line, Tri-Met itself budgeted for the community planning functions because FTA did not consider them an allowable expense. However, in the grant for the South/North rail line, FTA will now allow community planning as part of the overall budget. Even if their transit ridership is not as high as other areas in the district, jurisdictions that link land use and transportation planning are given special priority "as a reward to reinforce land use planning," according to the Tri-Met board's adopted land use policy.

By experimenting with the best way to collaborate in land use matters, Tri-Met has become a player in land use decisions. According to a senior staff member, when transit is a player, it changes transit's role in the community. When transit is seen as part of an overall strategy in the community, others will also take ownership and become advocates for transit.

Communicating transit as part of an overall strategy is an ongoing effort. The agency has regular newsletters for its employees, including the weekly "Express Line" sheet dropped on all desks. The general manager holds quarterly Hot Topics meetings to which all employees are invited. There are lots of interdepartmental teams, composed of interested staff volunteers, working on various projects. "We have an exceptional level of dialogue within the agency," says one transit planner. The only drawback, she and others noted, is the amount of time needed for the internal consensus-building before action can take place.

Communication with its various external constituencies is also a very important Tri-Met activity. Whereas the TDM staff works primarily with the business community, other planners are assigned to work with the jurisdictions through the coordinating transportation committees formed by the Metro Council in each county. Tri-Met participates in the region's Joint Policy Committee on Transportation, a forum for funding decisions, and the senior managers also hold informal weekly meetings. The various meetings help participants understand what each other's problems are and build a sense of trust. This level of communication takes a high level of administrative staffing. Despite the lower fare box ratio that results, Tri-Met invests in the staff needed to maintain its role as an important stakeholder in the region.

In addition, Tri-Met's market research staff of five people measures the public's opinion with attitude awareness surveys and with focus groups. With the 1994 Attitude and Awareness Survey, Tri-Met has begun to survey residents three times a year, instead of the annual survey it has conducted since 1977. Survey questions focus on service evaluation, measurement of public attitudes, key commuter characteristics, and awareness of promotions. Recent focus groups have been used before new buses have been ordered and in the design of new services for the suburbs. In preparation for the 1996 vote on an operations levy, Tri-Met conducted a random sample of 1,004 registered voters in April 1995. When

asked about specific transit service improvements, respondents said that of least interest were mobility management functions such as personalized subscription bus services, carpool matching, and more neighborhood bus service. However, 91 percent of the respondents agreed that "Good planning for public transportation now will help prevent problems later," and 66 percent said it is important enough that they would be willing to pay an additional $20 a year.

Tri-Met's staff acknowledges that the agency did not create its advantageous operating environment. The city of Portland, the state of Oregon, and the Metro Council did. They all built upon a common vision shared by the citizens. But Tri-Met pursued this vision by knitting itself into the fabric of the community and by offering diversified products to meet the community's vision.

CHANGING CIRCUMSTANCES AND NEW CHALLENGES

A number of changes are occurring that may affect the introduction of mobility management measures and will bring new challenges to Tri-Met's positive operating environment. One troublesome circumstance is the emergence of a central city-suburban/rural political split in the state legislature. Even though voters in the region approved the bonds by a 64 percent margin for the South/North light rail line, the state legislature concluded its regular 1995 session without approving the funds needed to match the federal grant. Observers report that a caucus of rural legislators believe that Portland gets too many state dollars and that the light rail service will primarily benefit downtown Portland. As a concession to Tri-Met, the legislature agreed to reconvene in a special summer session to continue its consideration. The staff attributes this concession to the phone calls to legislators from business leaders and elected officials in surrounding jurisdictions in favor of the project. Nonetheless, when a Governor's Task Force heard testimony on the proposed rail line, there was some strong opposition, including economists from out of state who said that light rail did not make sense financially.

Because light rail is inextricably linked to the transit and land use strategies for the region, one member of the citizens advisory committee fears that the challenges to the light rail plan may indicate a change in attitudes toward growth management as well. This change could negatively affect the importance of Tri-Met's role in the region.

Another change is a shift from traditional service standards in evaluating and allocating funds for routes. To get voter support for the 1996 revenue measure, Tri-Met has developed a Strategic Plan. To implement the Strategic Plan, $5 million has been reallocated from other areas of the budget, including employee incentives and award programs. Because of the reallocation, the adopted service standards, which are aimed at correcting deficiencies on existing routes and evaluating new route proposals, have been relaxed. Although ridership is heaviest in the central city, suburban residents must experience transit benefits in their car-oriented communities if Tri-Met is to maintain its positive regional base. Thus, Tri-Met now has to balance the needs of existing riders in the urban core with the new service demands in outlying areas. Among the components of the Strategic Plan is a Suburban Partnership Strategic Initiative, which may include mobility management functions such as reverse commute routes, vanpools, route deviation services, and new demand-responsive feeder buses. Tri-Met's leadership believes that the new approaches to service priorities are necessary to maintain public support for the long-term financial health of the agency.

The parking cap in downtown Portland, which has been a strong policy to support transit ridership, is also being changed. Although downtown Portland has maintained its retail and employment predominance, suburban centers are challenging this role. Downtown merchants have been lobbying for more customer parking to compete, and a compromise under consideration is to retain the cap for office developments but allow more retail parking. Although downtown employment has continued to increase, it has not kept pace with employment in other parts of the counties. According to statistics compiled by the Metro Council, employment in the central city rose 2 percent between 1992 and 1994 to 148,400 jobs. However, Clackamas County rose 10 percent to 143,000 jobs in the same period, while Clark and Washington counties grew 13 percent to 124,000 and 210,000 jobs, respectively. According to an advisory committee member, this growth is partially due to high-technology factories in the suburbs, whose managers do not view transit with the same priority as the downtown employers.

There are recent operational changes as well. Under a new labor contract, no more routes will be contracted out to private companies. To offset potential cost increases, the agreement provides for reduced starting wages for new minibus drivers. However, because senior drivers are choosing the minibus routes during signups, some staff are concerned that costs will instead rise, thus limiting the possibilities for new initiatives.

TRANSFERABILITY

Tri-Met serves a metropolitan area where much of the citizenry shares a unified vision. Through the statewide growth management policies, land developers and environmentalists have formed a workable alliance. The efforts are not to stop growth but to manage it, which has been possible at the pace of growth so far, and Tri-Met is perceived as an integral part of that vision. The ethnic composition of the Tri-Met service area is relatively homogeneous, and the central city/suburban split is only beginning to be an issue that could affect transit service in the state legislature. Tri-Met recognizes the potential split and is aggressively trying to address it with its Suburban Partnership Strategic Initiatives, although whether the split will be successfully mended cannot yet be known. Tri-Met enjoys a dedicated funding source, and other govern-

mental agencies are Tri-Met's supporters, not obstacles to be overcome. Other agencies' policies reinforce Tri-Met's transportation services, rather than undermining them.

Transit agencies alone cannot duplicate this operating environment, which is so important to Tri-Met's success. However, transit agencies that actively work with willing governmental partners to develop supportive policies will take a big step toward creating a similar environment. The Portland region demonstrates that land use and transportation policies can be successfully linked to enhance the overall quality of life if constituents and the political leadership are willing to agree on a unified long-range vision.

In addition, there are important lessons that other transportation agencies wishing to be mobility managers can replicate from the Tri-Met case study:

- *The need for a cohesive internal vision*. Regardless of the external environment, the agency will not move forward unless the staff understands and shares the same vision of where it is going. Building the vision takes a lot of communication and internal consensus-building. Once the framework is in place, the agency can actively respond to opportunities rather than missing them because of lack of a focused agenda.
- *Staffing for long-range planning*. Although today's ridership statistics demand an immediate response, attention to long-range planning builds a permanent place in the community that can ameliorate the short-term problems. This may require an increased investment in staffing. But by addressing land use issues now, even in a less hospitable environment than Tri-Met's, transit agencies can help shape a better future for transit ridership.
- *Building partnerships*. Partnerships are ways to increase service and create new advocates. Implicit in building partnerships is the need to diversify the product line and be open to new service delivery methods.
- *Attention to public opinion*. Tri-Met relies heavily on market research and interactions with surrounding jurisdictions to have confidence in the paths it takes. It views the public at large—not just its riders—as its customers, and tailors its messages and service to their priorities. Transit agencies that adopt similar actions and philosophies understand that citizen support is critical to an agency's expansion, if not its survival.

Tri-Met hopes that through its vision, long-range planning, and partnerships, citizens will know it has been listening to them and will back the statement in its Strategic Budget Plan: "Our mission is regional mobility. We will need $45 million of new operating revenue to fully implement our Strategic Plan." Appealing to the agency's "collective commitment and organizational values," the statement concludes with a rallying call appropriate for any mobility manager:

"None of us can succeed unless each of us believes we can."