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State Role in Public Transportation

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PREFACE

This report summarizes a National Conference on the State Role in Public Transportation, conducted by the Transportation Research Board in cooperation with the American Association of State Highway and Transportation Officials. The conference, which was held June 1-3, 1988, at the Sheraton Hotel in Fredericksburg, Virginia, examined the state role in four major public transportation issues: performance monitoring, technical assistance and research, funding, and interagency/intermodal coordination. The nearly 100 attendees included selected state transportation officials and professionals from transit agencies, local government, regional bodies, the federal government, and the academic community.

Executive Summary

The states and their local governments, anticipating increased demand for public transportation, and expecting continued decreases in federal funding, are seeking ways to improve the management of their transit programs. They realize that if these programs are to be successful, states, in partnership with the federal and local governments, should take a more active role in implementing, supporting, and monitoring them.

To address this issue, the Transportation Research Board, in cooperation with the American Association of State Highway and Transportation Officials, conducted a conference entitled "The State Role in Public Transportation." The attendees included state officials and transportation professionals from transit agencies, local governments, regional bodies, the federal government, and the academic community.

The conference was organized to serve as a forum through which the major participants could examine increased state involvement in public transportation and identify ways to improve state management of transportation programs. Workshops were organized to address four topics:

- performance monitoring
- technical assistance and research
- funding
- interagency/intermodal coordination

To focus the discussion, resource papers were presented in a plenary session at the start of the conference.

This executive summary, as well as the conference proceedings as a whole, addresses the general issues and findings identified by the workshops. It should be recognized, of course, that because each state faces different circumstances, it is difficult to generalize findings that are applicable in all cases.

PERFORMANCE MONITORING

Issues

Public transportation performance is usually monitored by one of three basic methods: peer comparison, which compares like systems; time-series analysis, which compares the present and past performance of one system; and evaluation of performance against pre-established objectives or standards.

Performance is monitored in terms of cost effectiveness, service effectiveness, and resource efficiency. States should deal with certain issues in conducting their own performance monitoring:

- the purpose of performance monitoring
- the types of performance data to be monitored
- the way performance monitoring is done

Findings

- Performance monitoring is important to states because it provides guidelines for improving the quality and efficiency of service and provides information on the different characteristics of operations and the importance of understanding the results of these differences.
- Performance data to be monitored should include reliability of equipment, safety of system, quality of service, and economic efficiency of services being consumed.
- Transportation systems can effectively use any or all of the three methods to monitor performance, taking into account the drawbacks of each method. The three methods—Peer Comparison, Longitudinal or Time Series Analysis, and Evaluation Against Prescribed Performance Objects or Standards—are described in the resource paper.
- The purpose of monitoring and its relationship to local goals and objectives should be clearly stated.
- Only data that are used should be collected, and collection should be consistent.
- Peer comparison should be undertaken with care to be sensitive to individual system differences.
- To reduce the burden of unnecessary data, smaller systems need to be evaluated by more simplified methods, while still producing useful information for funding agencies and management.
- It is important to understand the complexities of various monitoring techniques, and that no single measure is adequate by itself.

TECHNICAL ASSISTANCE AND RESEARCH

Issues

The federal government traditionally has concentrated on research rather than on technical assistance. Recently, cutbacks in transportation research funding have narrowed the federal research focus, and less attention is being directed to solving local operator problems. As a result, state transportation agencies are now faced with directing their own technical assistance and research programs. They should consider these issues:

- funding
- roles
- goals
- mechanics, strategies, implementation
- future research topics

Findings

- Funding for state technical assistance and research should be scaled to the mainline capital and operating assistance programs of the federal and state governments.
- States should handle their own technical assistance programs, but states could cooperate with the federal government, other states, the private sectors, and universities in conducting research and providing training.
- State goals should focus on the need to develop technical assistance, research, and training programs that promote flexible, responsive transportation services and ensure well-trained transportation personnel.
- Mechanics, strategies, and implementation of technical assistance and research should include—
 1. developing state technical assistance by—
 - clearly identifying eligible participants and their roles
 - developing objectives for technical assistance and research
 - organizing an evaluation mechanism
 - publishing a description of tasks and activities
 - setting budgets
 2. maximizing effectiveness of state technical assistance and research by—
 - encouraging peer-to-peer exchanges within states
 - evaluating and targeting good research results
 - customizing training to front-line users
- Research topics for states on technical assistance and research could include—
 1. designing criteria for flexible and responsive transit services
 2. coordinating transit and highway planning aimed at influencing decisionmakers
 3. investigating alternative techniques for training drivers, mechanics, and engineers
 4. developing techniques for influencing land use decisions in order to make land use and transit more compatible with each other
 5. quantifying and developing procedures to assess the economic and social benefits of transit

6. evaluating the effectiveness and benefits of various technical assistance and research activities
7. reviewing, assessing, and developing local system management techniques
8. developing methodologies, guidelines, and procedures to assess the viability of transit services
9. developing techniques to link market research with improved service quality, and image

FUNDING

Issues

With the decline in federal mass transit funding, the burden of transportation funding—and therefore transportation program management—has fallen more and more on state and local governments. In light of this, states are questioning whether to increase financial support and impose state requirements, or to decrease involvement by deferring financial responsibility to individual localities. This decision should be evaluated separately for each of the following issues:

- earmarked funds vs. block grants
- different state share for capital/operating expenses
- all state vs. state/local combination match for federal funding
- state monitoring vs. self-certification
- state authority vs. federal guidelines in administering the governor's apportionment
- financial or demographic/operational criteria for financial need
- consideration of federal funding when giving state money
- state restrictions vs. local control of fares

Findings

- Earmarked state funds are preferable to block grants of state funds.
- There should be different state shares for capital and operating assistance.
- State and local governments should share the match for federal funding.

- Self-certification is preferable to state monitoring.
- States should use their authority, within limits, in distributing the governor's apportionment of federal formula funds.
- Financial need should be determined by easy-to-understand methods based on operating criteria.
- Federal funding should be taken into account when allocating state grants; however, it should not be the determining factor.
- The balance between fares and local subsidy is a local decision, therefore states should not have to make up any deficits caused by fare levels that they deem to be insufficient.

INTERAGENCY/INTERMODAL COORDINATION

Issues

States can manage public transportation programs more effectively by encouraging coordination and cooperation with other agencies such as—

- other transportation modal agencies
- state economic and/or industrial development interests
- human service agencies
- land use planners

Findings

- States should move toward evolving truly intermodal departments of transportation, instead of perpetuating departments where each mode acts independently.
- More research is needed on the public transportation impact on state economic development.
- Transportation agencies should take the initiative in coordinating with human service organizations, and these agencies and organizations should identify program differences and encourage the pooling of resources where appropriate.
- Although land use is generally locally controlled, states can increase their impact on the interaction between land use planning and transportation improvements by developing coalitions with economic development and environmental groups.

Workshop Summaries

INTRODUCTION

The states and their local governments, anticipating increased demand for public transportation, and expecting continued decreases in federal funding, are seeking ways to improve the management of their public transportation programs. They realize that, if these programs are to be successful, states should take a more active role in implementing, supporting, and monitoring them.

This conference was organized to establish a common ground of understanding for dealing with this issue. A Transportation Research Board task force was established to define conference guidelines, and resource papers were commissioned to serve as a basis for the conference. The papers were mailed to the participants in advance and summarized in a plenary session on the first day of the conference. Each resource paper addressed one of four major topics: performance monitoring, technical assistance and research, funding, and interagency/intermodal coordination. Conferees were organized into groups that participated in a workshop on one of the subjects. The workshops were round-table forums that began with presentations by the resource paper authors, continued with directed group discussion of the topic, and ended with a summary of the major issues and findings of the discussion.

The following summarizes each general topic, the associated issues discussed, and the results of the conference group. A complete list of the workshop findings can be found in the Executive Summary, and therefore will not be repeated in this section.

PERFORMANCE MONITORING

Public transportation performance is affected by a variety of controllable and noncontrollable factors. Controllable factors are those items within the control of system management, such as pricing policies and the level of service offered to the public. Those factors not within the control of system management, such as environmental and economic conditions, are considered noncontrollable.

Useful criteria in monitoring public transportation performance are cost effectiveness, service effectiveness, and resource efficiency. Data from these categories are combined into ratios to develop performance measures or indicators.

Three general approaches can be used to evaluate public transportation performance: peer comparison, time series analysis, and evaluation against prescribed performance objectives or standards:

- The peer comparison method uses statistics and performance indicators to compare peer systems, which are usually defined by size and geographic location. Since different factors influence each system, the conditions under which performance is achieved, rather than performance information itself, should be comparable. National peer groups provide relevant diversity for useful comparisons.

- Time-series analysis compares current and past performance by evaluating a single public transportation system over time. The two most important issues for consideration are efficiency and effectiveness.
- Evaluation against prescribed objectives or standards measures actual performance against previously established objectives or standards. These objectives or standards may be fixed values, such as a maximum number of accidents per service hour, or they may be values related to improvements, such as a specified reduction in unscheduled absenteeism. They can be set either by governments or by individual systems.

A thorough approach to public transportation performance monitoring should include an understanding of the differences between large and small transportation systems. Large transportation systems, mainly urban in nature, tend to be concerned with economic development, long-term capital investment, and urban/suburban congestion. Small transportation systems, usually found in rural and small urban areas, focus on short-term operating programs and human service needs.

Workshop participants divided into two groups. One group addressed large systems, the other small systems. Each discussed three major topics:

- the purpose of performance monitoring
- the types of performance data to be monitored
- how performance monitoring should be done

Five major points were identified to define the state's role in measuring the performance of large systems:

- **Strategic Planning** — To reinforce statewide objectives for public transportation (by improving land use and economic development programs), to mitigate traffic congestion, and to provide affordable mobility.
- **Regulation** — To monitor safety and quality of service, encourage fiscal responsibility, and monitor adherence to established state or local standards.
- **Technical Assistance** — To help the state and localities improve service aspects of transportation in regard to efficiency and effectiveness.
- **Funding** — To remain aware of statewide needs and equity of funding, establish incentive programs, judge project accountability, and justify capital expenditure as a return on investment.
- **Communication** — To facilitate the flow of information regarding the effectiveness of public transportation to legislators, elected officials,

special committees, community representatives, and the general public.

The following common practices were identified in a discussion on the purposes of monitoring small systems:

- Local service providers—
 - use spending data to stay within state-authorized budgets
 - use maintenance records to meet state-established requirements
- States compile descriptive data—
 - to prepare reports to the legislature, local officials, and the general public
 - to justify programs
 - to identify emerging problems and policy issues
 - to give to local service providers
 - to help administer programs (by setting spending priorities, checking eligibility of proposed projects for funding, and plugging data into funding formulas)

Performance data should be checked and validated on a regular basis to ensure accuracy. Data collected by small systems could be expanded, but care should be taken to avoid collecting unnecessary and unusable information.

States should be acutely aware that small systems can be overburdened very quickly with administrative overhead. Therefore, states can be most helpful by streamlining data requirements and offering technical assistance. The following are the types of performance data that should be monitored in small systems:

- physical capacity, reliability, and condition of equipment
- safety of system
- economic efficiency of services being consumed
- quality of service
- indirect community benefits

Although time-series analysis was identified as a very reliable and less controversial method for monitoring the performance of small systems, this approach provides little incentive for improvement. Peer comparison is difficult to achieve, simply because finding comparable systems is difficult. Evaluation of performance data against established standards could be the best method for monitoring small system performance. However, this method is rarely used because of the difficulty in identifying realistic standards and determining who should set them. Standards set by the state may be too rigid; those set by the service provider may not be sufficiently challenging.

The findings of this workshop are listed in the Executive Summary and therefore are not referenced here.

TECHNICAL ASSISTANCE AND RESEARCH

Technical assistance and research provide communication and interaction essential to the success of a public transportation project. The two are most effectively used together—technical assistance programs disseminate the information provided by research. This can provide local operators with invaluable information from federal and state program managers. Smooth operation of any project is difficult without close communication.

While there have always been strong training programs and strong information dissemination efforts initiated at the federal level, the federal government historically has concentrated on transportation research rather than on technical assistance. Research subjects in recent years have reflected strong federal concern with transit funding and were selected with little or no state or local involvement. Recently, reductions in funding for research and development have resulted in even less attention being directed to problems associated with local program operation. Research programs are now being focused on narrowly defined topics, such as transit safety and the protection of federal capital investment in transit.

Perhaps in answer to federal cuts in research programs, local operators have become more vocal about their need for locally controlled research programs. Rural transportation operators have increased their involvement in setting agendas and in informing both state and federal governments of their need for technical assistance and research. State transit associations have emerged, exhibiting the willingness of local operators to cooperate in facing issues such as effective technical assistance, training, and research.

Although state involvement in technical assistance and research is relatively new, it is necessary in order to improve local services and achieve state transportation goals. State implementation of technical assistance programs depends on—

- organizational structure and procedures for disseminating information from state to local operators
- procedures for building agendas or identifying subject areas for technical assistance and research
- methods of developing or identifying materials of use to local operators
- techniques for transmitting information or providing assistance to the local level

Workshop participants divided into three sections:

- program level and structure
- mechanics, strategies, and implementation
- specific research topics

The first group discussed funding, roles, and goals. They felt that funding was the most important issue and that a concerted effort is needed to justify and articulate the importance of research and technical assistance to decisionmakers at all levels. The group believed that the level of funding for state technical assistance and research should be scaled to the mainline capital and operating assistance programs of the federal and state governments and that the mechanism for the delivery and use of funding should be related to the defined roles of the levels of government with respect to each activity.

It was agreed that there was a need for a clearer definition of the relative and cooperative roles of federal, state, local, and private sectors in relation to research, technical assistance, training, and support services. Roles should include—

- federal government — research, technical assistance, training, and support
- state and local governments — technical assistance and support
- private sector — research and support
- universities — research

States should consider pooling efforts and program resources (both within each state and in collaboration with others) to conduct more effective research and technical assistance. A modest state-sponsored national transit research program, similar to the National Cooperative Highway Research Program, should be considered.

The group felt that goals should focus on the need to develop a continuous program of research, technical assistance, training, and support services to promote flexible and responsive transportation services and to ensure well-trained personnel for transportation operations. Current programs should be reviewed with these goals in mind.

Recommendations on mechanics, strategies, and implementation included—

- developing state technical assistance by—
 - clarifying participants and their roles
 - developing objectives for technical assistance and research
 - organizing an evaluation mechanism
 - publishing a description of tasks and activities
 - setting budgets
- maximizing effectiveness of state technical assistance and research by—
 - enlarging peer-to-peer exchanges within states by types (for example, general managers meet with general managers)
 - evaluating and targeting good research results
 - customizing training to front-line users

Nine specific research topics were defined:

- designing criteria for flexible and responsive transit services (including coordinated transportation services) in urban, suburban, and rural areas
- coordinating transit and highway planning and programming aimed at influencing and responding to decisionmakers
- investigating alternative techniques for training drivers, mechanics, and managers
- developing techniques for encouraging land use and transit decisions to be more compatible with each other
- quantifying and developing procedures to assess the economic and social benefits of transit
- evaluating the effectiveness and benefits of various technical assistance and research activities
- reviewing, assessing, and developing local system management techniques
- developing methodologies, guidelines, and procedures to assess the viability of transit services in different settings
- developing techniques to link market research with improved service, quality, and image

FUNDING

The federal government has been providing the major portion of public funds for transit, in particular for capital investments. In recent years, however, federal funding has decreased and state funding has increased so that, since 1985, state funding for transit has exceeded federal funding. This shift has raised questions regarding the appropriate management role of the states:

- Should states increase their involvement in the administration of funds by imposing more requirements and standards on local governments?
- Should states decrease their involvement by passing responsibility to the local transit agencies by providing funds through block grants and relying on grantee self-certification procedures to assure program and policy compliance?

Transit systems obtain operating and capital funds from four major sources: user fees (fares), federal, state, and local governments. User fees contribute about 43 percent of total operating costs; local governments contribute the next largest

share—about 31 percent of the total. The federal share has declined from about 17 percent of total operating costs to about 10 percent while state aid has increased from about 10 percent to 16 percent. The general consensus of participants in the two state funding workshops was that federal aid would remain relatively constant or decline slightly while states would increase their funding of operating assistance. As demonstrated by their increasing support for transit, states are willing to accept greater responsibility for assuring the mobility of their residents by providing increased operating assistance to local transit systems.

Even though the federal capital assistance has declined in recent years, the federal government continues to be the dominant source of funding for capital projects and provides for about 61 percent of the total capital needs of local transit systems. States provide about 16 percent of the capital funds while local governments contribute the remaining 23 percent. Generally, state and local governments jointly contribute to the nonfederal share, although the relative share of costs contributed varies from state to state. Some states provide the entire nonfederal share while other states require that the local government provide this portion.

Although federal funding for all transit programs has steadily declined in recent years, transit officials at both the state and local levels are most concerned about reduced federal operating assistance. As a result of federal cutbacks within the past six to eight years, transit systems have raised fares significantly; however, fares in many urban areas have reached levels that discourage ridership so that future revenue increases from this source may be limited. State and local governments are willing to share in the increased subsidies required by transit systems although participants in the two funding workshops agreed to the need for a continuing federal role at least at the present funding level.

The shift in funding responsibility from the federal government to state governments raises a number of state policy issues including:

1. The most effective way to distribute funds to local transit agencies, i.e., the use of block grants that provide for wide latitude in local decisionmaking versus categorical grants that allow the state to specify priorities and program objectives.
2. The appropriate state share of capital and operating assistance. Should the state share be greater for one type of aid than for the other?
3. The proper amount of state and local matches for capital assistance. For example, should states provide the entire match for capital grants?
4. The ability of transit agencies to self-certify compliance with state and federal requirements versus stronger state monitoring of individual agencies.
5. The state's role in administering the Governor's Apportionment. Should the states use their own methodology to distribute funds to

small urban areas, or use the federal formula for the allocation of funds to those systems?

6. The criteria used to determine the amount of state aid provided to each transit agency. Should funding be based on need (deficit) or a more complex formula based on demographic or operational characteristics?
7. The consideration that should be given to federal funding available to a local transit agency when allocating state aid. Should state aid be calculated before or after considering the transit system's federal operating funds?
8. The role states should play in controlling transit fares.

Workshop participants addressed all eight of these issues. Their findings are as follows:

1. Earmarked funds are preferable to block grants because block grants allow too much local control that may result in transit funds being diverted to non-transit purposes.
2. State shares for operating and capital assistance should be different. Furthermore, the exact ratio will likely vary from state to state depending on local conditions.
3. Generally, states should not provide all non-federal transit funding; some local share should be required.
4. Self-certification of program compliance is favored over state monitoring. However, states should have the right to review records.
5. States should use their authority to distribute the UMTA Section 9 Governor's Apportionment in ways to best meet local needs.
6. Funding allocation formulas should be based on simple measures such as passengers or passenger-miles of service provided. Allocation formulas should be easy to administer, provide for predictable funding, and should not explicitly include performance measures.
7. Federal funding should be taken into account when allocating state grants.
8. Fares should be locally controlled, but states should not have to make up deficits that result from insufficient fare levels.

INTERAGENCY/INTERMODAL COORDINATION

State public transportation programs use many different resources to provide effective service. One important resource at their disposal is coordination with

other state agencies. In many instances, the state can play a decisive role in aiding cooperation between public transportation programs and other groups, including—

- transportation modal agencies
- state economic and/or industrial development interests
- human service agencies
- land use planners

The importance of coordination with agencies and groups representing these interests is to provide the most efficient and effective service possible given limited resources; and to develop and use coalitions with political constituencies that support the goals of public transportation.

The workshop addressed the state role in facilitating cooperation between public transportation and these groups.

The workshop participants asserted that cooperation with transportation modal agencies was an important issue. States must encourage the organization of a truly intermodal department of transportation, instead of a department in which each mode acts independently. Intermodal discussions should include outside groups (such as the private sector and constituency groups) to reap the benefit of their different perspectives.

Coordination between state public transportation programs and economic or industrial development interests, especially cooperation with economic development agencies, was viewed as a high priority. Although the state could facilitate that cooperation, workshop participants concluded that more in-depth research is needed to provide evidence of public transportation's actual impact on state economic development.

Public transportation coordination with human service agencies is important because of its mutually beneficial characteristics. The workshop participants decided that transportation agencies, either at the state or local level, should take the initiative in sponsoring human service coordination. Also, it was felt that a line item transportation budget should be required in all human service budgets to help identify possible areas for coordination and to identify the extent of spending for transportation.

The workshop members generally agreed that land use planning is mainly a local concern. However, state involvement in land use planning is valid because of the states' sizable investment in transportation and the equally sizable impact land use planning has on transportation. Before developing any transportation program, the state must be thoroughly familiar with existing land use plans and controls to protect its investment. A few states exercise some land use control when critical state concerns are at issue. However, state control is limited because land use is locally controlled. Two suggestions for state involvement were made:

- educate the public, both at state and local levels, on interaction between land use and transportation improvements, which are generally misunderstood

- develop coalitions with economic development and environmental groups so state transportation agencies can have a greater impact on interaction between land use and transportation improvements

For each of the four areas of coordination discussed, committee members were aware of examples of "success" stories or new innovative initiatives underway. However, this information is not well known, even in the public transportation community. It was suggested that the AASHTO Intermodal Committee expand its role to include both intermodal and interagency coordination, and that the committee examine ways to collect and disseminate case study and research findings related to intermodal/interagency coordination.

Public Transportation Performance Monitoring

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INTRODUCTION

The objective of this paper is to provide background, raise issues, and stimulate discussion on the topic of transportation monitoring.

CONCERN FOR PERFORMANCE

Since the mid-1970s, local officials, the federal government, state governments, and transit systems have had an increased interest in public transportation performance. This interest is the product of several economic, social, and political forces—

- escalating public transportation industry costs
- greater competition for limited public funds
- new fiscal conservatism at the local, state, and national levels
- public transportation revenues out-of-step with inflation (despite fare increases in most communities)
- continued demand for clean, safe, on-time, affordable public transportation services

As public transportation monitoring procedures have evolved, three general aspects of performance have proven useful to public officials, system managers, and researchers. These aspects are—

- **Cost Effectiveness** — The consumption of public transportation services in relation to resources expended. This performance measure attempts to answer the question, "How much public transportation service is used or passenger revenue is received per dollar or resource expended?" Consumption is measured by passenger trips or revenues received and, as above, costs are measured in terms of resources expended to provide the public transportation service. The more passengers carried or revenues received in relation to resources expended, the more cost effective the service.
- **Service Effectiveness** — The consumption of public transportation service in relation to the amount of service available. This performance measure attempts to answer the question, "How much public transportation service is consumed (or revenue received), at an established fare, in relation to the amount of service available?" The

more service consumption (or passenger revenue) in relation to service output or availability, the higher the level of service effectiveness. Factors reflecting service quality and influencing the use of and perceptions about public transportation services by the public are important elements of service effectiveness. Service quality indicators include availability, reliability, attractiveness, safety, and comfort of the public transportation services. In many respects, these are qualitative issues in which performance is less easily prescribed than other areas.

- **Resource Efficiency** — The amount of public transportation service produced for the community in relation to the resources expended. This measure attempts to answer the question, "How much public transportation service is produced per dollar or resource expended?" Service is measured in terms of outputs such as vehicle hours or vehicle miles. Resources expended include labor, capital, materials and services. The more service produced per resource expended, the greater the resource efficiency of the public transportation service.

All three aspects are integral to public transportation performance monitoring systems. Figure 1, a performance evaluation tree, shows how the aspects are related: cost effectiveness results from doing things right (resource efficiency) and doing the right things (service effectiveness).

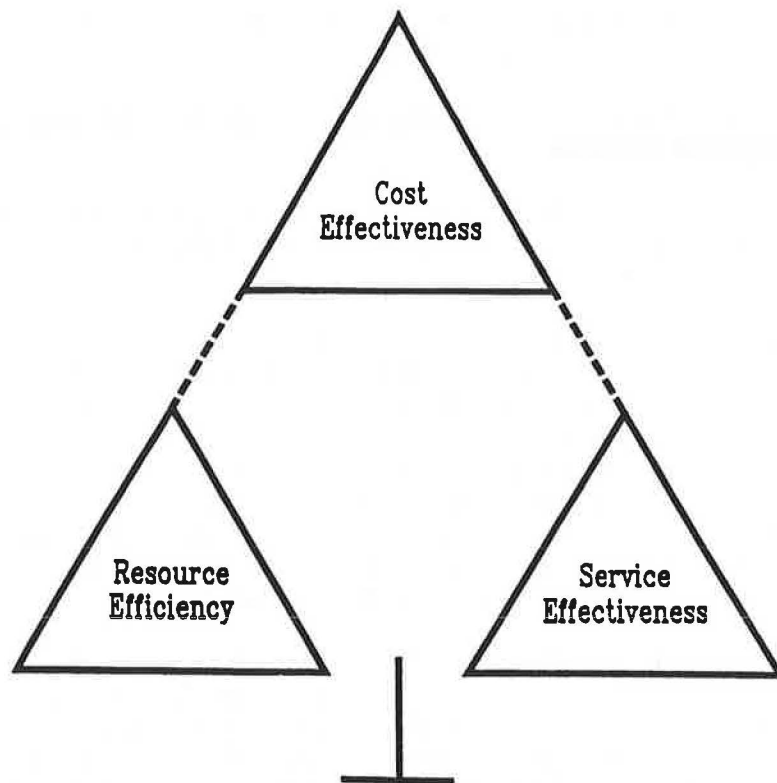


FIGURE 1 Performance Evaluation Tree

According to a 1984 AASHTO survey on the use of UMTA Section 15 data, 25 of 40 states that reported collecting transit operating and/or financial data use the data to evaluate performance. A comparative analysis of five state DOTs (California, Michigan, New York, Pennsylvania, and Wisconsin) conducted by the author in 1983 showed that only seven "performance indicators," out of the five-state total of 132 indicators, appeared in a majority of the reported information. These were—

- total operating expense per vehicle mile (resource efficiency)
- total operating expense per vehicle hour (resource efficiency)
- revenue passengers per vehicle mile (service effectiveness)
- revenue passengers per vehicle hour (service effectiveness)
- total operating revenue per total operating expense (cost effectiveness)
- total operating expense per revenue passenger (cost effectiveness)
- vehicle miles per vehicle hour (performance descriptor)

While the above indicators show a balance between resource efficiency, service effectiveness, and cost effectiveness, the five DOTs focused mainly on resource efficiency as the preferred measure.

FACTORS THAT INFLUENCE PUBLIC TRANSPORTATION PERFORMANCE

Numerous factors influence public transportation performance. Table 1 lists some of these factors in two categories: controllable and noncontrollable factors. Controllable factors are those influenced by the decisions and actions of the public transportation board and its executives, managers, and employees. Factors that cannot be influenced by system managers, their boards, or other local decision-makers are noncontrollable.

Certain features of public transportation service are largely determined by the public transportation board, reflecting public need for transit services and the willingness and ability of the community to support these services. For example, the level and extent of service provided (determined by service area coverage and frequency) and pricing or fare policies are generally determined by board decisions. These decisions are critical to performance since they influence ridership, passenger revenues, and the cost of operating the public transportation system.

Public transportation performance is also affected by shared decisions made by system executives, board members, and, in some cases, other local elected officials and the public. Examples of matters on which such decisions are made are—

- safety and security of patrons, to the extent this can be maintained through transit system or community law enforcement

TABLE 1 FACTORS THAT AFFECT PUBLIC TRANSPORTATION PERFORMANCE**Controllable Factors¹**

- Overall mission of the transit system
- Level and extent of service offered to the public including—
 - days and hours of operation
 - service area coverage
 - frequency or level of service
 - directness and speed of service accessibility, e.g., stop spacing
- Pricing policies, including—
 - full fares
 - transfer charges
 - reduced fares
 - special events fares
- Quality of transit service, including—
 - reliability and schedule adherence
 - comfort, seating availability, and climate control
 - cleanliness and repair
 - interior lighting
 - passenger shelters
 - driver courtesy
 - safety
 - information services, including—
 - telephone assistance
 - public schedules
 - public image
- Labor conditions, including labor agreement provisions, work rules, and/or employee policies and procedures
- Equipment and facilities
- External administrative and managerial support and maintenance, e.g., accounting system and payroll functions

Noncontrollable Factors

- Environmental conditions under which transit systems operate including—
 - urban area structure and configuration
 - population size and density
 - locations of employment and urban activities
 - roadway topography conditions
 - weather and climate
 - historical transit riding habits and/or propensity toward public use
 - competitive advantages of other modes of travel including private automobiles, taxis, etc.
- Economic conditions of the urban area (i.e., unemployment rates and disposable income)

¹The final three controllable factors (labor conditions, equipment and facilities, and external administrative and managerial support) are generally only controllable over a long period of time.

- labor costs for the wages and benefits of vehicle operators, maintenance employees, and, often, clerical staff, when these costs are determined through the collective bargaining process
- equipment and facilities that may require long-term commitment through bonds or other funding mechanisms to fleet procurement, construction of facilities and buildings, or, in some cases, fixed rail rights-of-way

Often, decisions on these matters have a long-term influence on public transportation performance, requiring a multiyear commitment to a course of action. These decisions generally result in costs that affect the quality or effectiveness of system performance.

Some factors affecting public transportation performance are largely within the control of a system's managers and supervisors and are affected by their daily decisions and actions. These factors clearly influence efficiency, because they affect the management and utilization of available resources, and effectiveness, because they affect the quality of public transportation services (reliability, on-time-performance, vehicle cleanliness, and accident record). However, some experts in the evaluation of public transportation management and performance believe the decisions of transit managers have only a marginal influence on the efficiency or effectiveness of performance. By and large, service levels and total funding have the most significant influence on performance, and decisions on these matters are generally not made by public transportation managers.

Some factors that are critical to performance cannot be controlled or influenced by system managers, their boards, or other local decisionmakers. For example—

- Bad weather is likely to decrease the reliability of public transportation services.
- Changes in the urban environment (including population density, workplace location, and congestion) are likely to affect ridership and the ability of existing public transportation modes to serve local travel needs.
- Swings in the local and national economy also affect ridership, the cost of providing services, and the availability of revenue for a public transportation system's operating budget.

Consequently, in many cases communities and transit managers must simply accept the strengths and limitations of their system's performance. There will usually be some aspects of performance that are determined by noncontrollable factors, not by ability to manage or willingness to support the services. Public transportation managers have often put forth this view, stressing that each system is a unique amalgam of controllable and noncontrollable factors.

BASIS FOR EVALUATING PUBLIC TRANSPORTATION PERFORMANCE

In evaluating performance, some standard must be set against which to measure performance. The determination of that standard depends on numerous factors, many of which may be subjective. At least three general approaches can be used to establish the basis for evaluation of public transportation system performance. These approaches can be used alone or in combination.

Peer Comparison

Peer comparison is one of the procedures most commonly used for evaluating public transportation performance. Procedurally, statistics and performance indicators of one system are compared with the same statistics and indicators of another system that is considered a peer. Size and geographic location are often the characteristics used to define peer systems. This comparison of statistics and indicators leads to conclusions about the performance of the public transportation system being investigated.

The development of uniform data definitions and statistical reporting formats that provide comparable information on all public transportation systems is an important consideration when using peer comparison procedures. While establishing uniform definitions and reporting formats may be relatively easy, comparing information between transit systems requires some care.

As previously discussed, numerous factors influence transit performance. Some factors are controllable, while others are not. Although noncontrollable factors may be difficult to quantify, they have a significant influence on the performance of public transportation service. Therefore, the question is not whether performance information is comparable but whether the conditions and restraints under which performance is achieved are comparable.

Longitudinal or Time Series Analyses

A second and increasingly popular procedure for evaluating performance is longitudinal or time series analyses. This procedure avoids some of the difficulties associated with peer comparisons by evaluating the performance of a single public transportation system over time. This method provides a way to evaluate current performance against past performance. The weakness of this approach, however, lies in having sufficient confidence to positively answer the questions—

- Are we doing things right? (efficiency)
- Are we doing the right things? (effectiveness)

Evaluation Against Prescribed Performance Objectives or Standards

This approach to evaluation requires that standards or objectives for transit performance be set in advance and that actual performance be measured by them. The standards or objectives may be established in one of two ways:

- **Fixed Values** — such as "no more than X accidents per 1,000 hours of transit service"
- **Values in Relation to Improvement of Past Performance** — such as "5 percent reduction in incidents of unscheduled employee absenteeism"

These types of standards can be used alone or in combination with others in an evaluation system.

At least two approaches can be used to evaluate public transportation performance against prescribed standards or objectives. One approach requires that government, i.e., the state, set standards or objectives for public transportation systems. In this case, the standards may be tailored to each system, established for groups of systems, or set uniformly for all systems. The second approach requires that each public transportation system set its own objectives or standards. The first approach significantly increases the role and involvement of government in providing and/or determining the type of local public transportation services. The second approach is more consistent with local control of public transportation service policy and management.

STRUCTURING APPROPRIATE PERFORMANCE INDICATORS

Gathering and reporting data on performance and using this data for management and policy decisionmaking is a well-established practice in the public transportation industry, as it is in other public and private sector organizations. Many aspects of performance can be quantified using available data. Such information can capture current performance levels, changes in performance, and progress on meeting the goals and objectives established for the system as a whole or for its various responsibility centers.

Data Requirements

The following categories can be used to describe and measure public transportation system performance:

- **Resource Inputs** — Resources expended in providing public transportation service. These include labor, materials, services, and other measurable items. Inputs may be classified as either financial or nonfinancial.
- **Service Outputs** — Nonfinancial operating results of resource expenditures. These may be expressed as service quantity outputs such as miles or hours of service or service quality statistics such as accidents, road calls, or delays.
- **Public Consumption Statistics** — The actual results of service outputs and the pricing or fare structure. Such information can be expressed in financial or nonfinancial terms. For example, the number of

passenger boardings is nonfinancial, while passenger revenue is financial.

In any performance monitoring system, it is important that the financial and nonfinancial data used be defined consistently over time. Data quality is critical, since the accuracy and reliability of data determine the usefulness of any conclusions drawn. Problems in the data should be eliminated as a first step in any data-intensive process.

Performance Indicators: Structure and Content

Figure 2 shows how the three categories of data are combined to develop performance measures or indicators of resource efficiency, service effectiveness, and cost effectiveness. By combining the data into ratios, performance is normalized and can be more usefully considered over time, as performance changes, and among transit systems. For example, dividing total passenger revenue by total operating expense provides an important measure of transit service cost effectiveness, often called the farebox recovery ratio. This indicator measures how effectively passengers cover transit system costs. Clearly, it is important to understand how the numerator and denominator of each ratio are related—i.e., whether improvements in the operating ratio reflect additional revenue or lower cost.

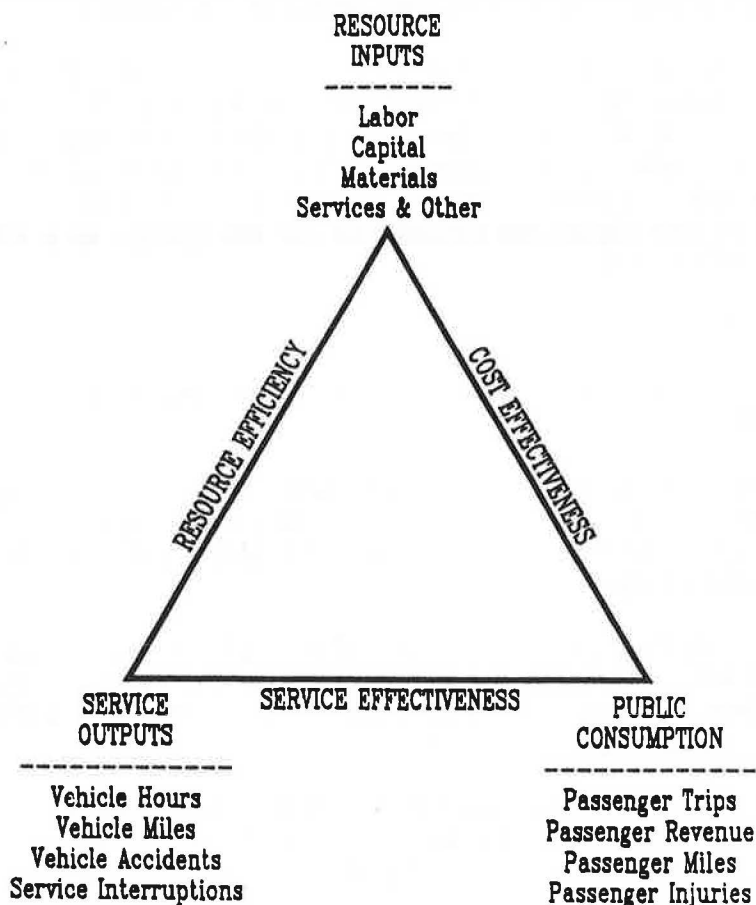


FIGURE 2 Transit Performance Indicators

Developing performance indicators that divide outputs by inputs imposes a managerial perspective in that performance or results are always considered in relation to the resources needed for their attainment. Higher or increasing values for these indicators imply better or improving performance. Similarly, lower or decreasing indicator values suggest poorer or declining performance. The consistent application of this approach eases the interpretation of performance; the simple rule "higher is better" can generally be applied.

Transit managers and monitoring systems that use performance indicators traditionally have not prescribed the development or use of performance indicators at this level of precision. Performance indicators have been developed inconsistently. In some cases, outputs are divided by inputs; in other cases, inputs are divided by outputs, such as operating costs per vehicle service mile.

The disadvantage of an inconsistent approach is that users of the indicators must continually interpret the indicator values and their trends, distinguishing when higher (increasing) vs. lower (decreasing) indicator values reflect better (improving) or worse (declining) performance. This interpretive burden is particularly difficult when there are many indicators and when indicators are being considered by individuals who are not familiar with detailed issues of transit performance, for example, public transportation board members, budget analysts, and elected officials. Developing performance indicators with the same structure significantly simplifies interpretation.¹

Performance Descriptors vs. Performance Indicators

Many ratios can be developed from transit operating statistics. Such ratios can describe an aspect of the transit system, such as the operating characteristics or environment, but they do not measure requirements against resulting outputs, as do the performance indicators used in this system. Such indicators are descriptive but are not measures of performance. For example, vehicle miles divided by vehicle hours measures average speed. Although average speed may be related to the efficiency of transit operations, it usually reflects other factors, i.e., the extent of congestion in the area and whether the service is express (higher speed results from making fewer stops).

Another such ratio is labor cost divided by labor hours. This ratio measures average wages. Although potentially useful in understanding public transportation performance, this ratio is not recommended since it does not divide outputs by inputs to measure performance. Instead, a measure such as vehicle service hours divided by labor expense should be used. This measure relates the production or delivery of transit services to labor costs. This indicator would be considered with measures of labor utilization, such as vehicle service hours divided by employee labor hours. Together, these ratios measure the efficiency and productivity of the transit system workforce, as a whole or by function.

¹In several cases, indicators are developed with inputs divided by outputs to maintain a "higher is better" structure. In these instances, the outputs are negative aspects of performance (i.e., accidents, injuries, etc.) that a transit system should reduce or control to attain better performance.

PROSPECTIVE CHANGES IN UMTA SECTION 15 REPORTING

Many states currently use information from UMTA Section 15 reports for monitoring the performance of public transportation systems. Other states use partial information or terms and definitions provided by UMTA. While basic reporting forms and definitions have undergone only modest change since their development in 1971, a 5-year comprehensive review of Section 15 requirements by the American Public Transit Association has resulted in recommendations for extensive changes, which are being submitted to UMTA. If adopted, these recommendations may affect the amount and type of information available for performance monitoring. A summary of recommended changes to Section 15 reporting requirements is given in Appendix A.

PERFORMANCE MONITORING ISSUES

Both states and public transportation systems have expressed opinions and concern over the state role in performance monitoring (and evaluation) of public transportation systems. Some of these concerns include—

- collecting more data than necessary
- adequacy and reliability of reported data
- use of reported data and information

The remainder of this paper presents public transportation performance monitoring issues in the form of questions with discussion by the author.

Are states trying to monitor or evaluate the performance of public transportation systems?

This is an interesting question because it relates to the appropriateness of the state role in public transportation. Monitoring performance implies a role as an overseer or viewer of public transportation efficiency and effectiveness—a guardian of public funds who provides checks and balances as well as enforces the rules and regulations of state government. Evaluating performance invokes a different perspective—one who judges the value or worthiness of public transportation investments and activities.

Based on the quantity of data and information being requested of public transportation systems, it appears many states are attempting to evaluate performance rather than simply monitor performance. Unless the data are needed by states for other purposes, the requirements for monitoring performance seem unnecessary and burdensome. If states feel they must evaluate performance to fulfill their public accountability role, they should consider procedures such as those used in California, where independent performance audits are conducted of each public transportation system. It is not realistic for states to believe they can make value judgments from their offices in state capitals based on the receipt of reported data and information.

Can states rely on the data and information being reported to be accurate and reliable?

Experienced users of UMTA Section 15 have learned they must always approach reported information with caution. Today, there is general consensus among these users that data and information are being more accurately reported than in earlier years, but errors and improbable information still persist. While reported financial statistics appear to be more reliable than nonfinancial statistics, problems associated with allocation and depreciation procedures still remain (e.g., passenger fares and administrative expenses by mode).

Inaccuracies in nonfinancial statistics are still the focus of most reporting problems by public transportation systems. Terms that are commonly used by the public transportation industry are not always defined in the same manner. Despite attempts by UMTA to provide clear definitions, public transportation reporters often continue to use other definitions, sometimes through choice or habit and sometimes because of misunderstandings. Additionally, many nonfinancial statistics that are reported are not actually collected data but are derived through inappropriately designed sampling techniques, formulas, or other algorithmic methods.

States and other users of public transportation data and information should use a validation or screening process to assist in developing consistent and reliable statistics. It is also prudent to request that public transportation systems periodically report on their data collection methods and techniques to ensure acceptable procedures.

Although states provide significant aid and assistance to public transportation systems, is it appropriate for them to impose standards that may constrain local initiatives?

States that require public transportation systems to perform in accordance with prescribed standards seem to overly restrict local jurisdictions in providing appropriate services. For example, a number of states require that a specified percentage of operating expenditures be covered by passenger or farebox revenues. This requirement means that the states are fundamentally establishing pricing policies for services and that user fees must be part of the way local government pays for such services. It would seem that pricing policies, like other operating policies, are a local prerogative and that the way communities pay for services should be their choice, not the state's. Under a state standard, for example, if a community chose to pay for its fair share with general or tax revenues, and not from the farebox, it would be precluded from doing so even though it might meet state funding and matching requirements.

Some states have considered imposing operating standards on public transportation systems to maintain eligibility for funding assistance. Standards such as stop spacing, route spacing, frequency of service, etc., often do not consider the unique character of local operating environments and may cause excessive expenditures.

Many local government decisions do not result in the most efficient or effective public transportation service. Often, such decisions are viewed as being political. Alternatively, such decisions might be considered part of the democratic process. After all, whose money are the states using to assist local public transportation systems? States should influence public transportation performance through procedures that recognize need based on principles of equity and fairness, not by establishing standards that impose external value judgments.

Should states modify their approaches to monitoring the performance of public transportation capital improvements?

Past methods employed to distribute capital funds by federal and state governments have traditionally led local governments and their public transportation systems to seek new equipment and facilities under very attractive terms. There is little documented evidence that shows the benefits of public transportation capital investments exceed their costs. Because of the financing arrangements, public transportation systems generally do not maintain capital recovery accounts because it is almost always more favorable to purchase new equipment or construct new facilities than it is to maintain or refurbish them. Consequently, federal and state governments, through current financing arrangements, may be encouraging local governments and their public transportation systems to adopt a "throw-away" philosophy for certain capital items, particularly vehicles.

The performance data and information collected and used by states is quite often insufficient to address capital investment strategies. Therefore, the issue is whether states should become more actively involved in the business of collecting life cycle cost performance information or begin to rely more on block grants, thus deferring capital investment decisions to local governments.

Do states collect enough data and information to measure the quality of public transportation performance?

This question is particularly relevant in light of current privatization initiatives. The answer is generally no, although it may be argued that the results of performance such as passengers per vehicle service hour, farebox recovery ratios, etc., do implicitly measure the quality of service. However, it is imprecise to compare the performance of public transportation systems using miles and hours of reported service when the quality of those miles and hours is unknown. Quality, in this example, refers to on-time performance.

Should performance measures based on reported data be used by states to allocate assistance through incentive/disincentive formulas?

About 20 percent of states that provide operating assistance to public transportation systems use financial incentives to distribute funding. Each incentive financing approach is intended to induce public transportation systems to stabilize or improve the efficiency and/or effectiveness of their services. The incentive funding procedures of these states include three general objectives:

- those that encourage stable or improved performance through financial rewards
- those that deter performance degradation through reduced financial allocation or penalties
- those that encourage improved performance by requiring transit systems to compete for available resources

The most frequently used method for incentive financing requires that a pre-established farebox recovery ratio be reached or maintained annually. This ratio is composed either of farebox revenues divided by operating expenditures or farebox revenue plus local operating assistance divided by operating expenditures. While the performance standard for funding eligibility and the specific use of ratios varies among states, and even within certain states for systems of different sizes, the general intent of this method is to encourage transit systems to stabilize or improve effectiveness through increased ridership and improve efficiency through controlled costs.

The central issue, of course, is not whether performance measures should be used, per se, but whether the concept of financial incentives (or disincentives) for operating performance is an effective method of allocating state operating assistance. This issue is difficult to address because such funding methods are not widely used nor has there been sufficient experience at this time to judge the success or failure of existing methods. The conclusions contained in this section of the paper are, therefore, principally based on the author's perspective of the incentive methods currently used.

Whether the concept of incentive financing is an effective method of allocating operating assistance may depend on several factors, including—

- the overall level and general availability of funds beyond farebox revenues that are not dependent on operating performance
- the overall level of patronage and the potential for increased revenues through changing the fare structure or level
- how the incentive (or disincentive) financing procedures are structured

General Availability of Funds — The effectiveness of incentive financing for allocating state operating assistance seems to depend in large measure on the overall level and general availability of funds beyond farebox revenues that are not conditional on operating performance. In cases where sufficient funds are received by public transportation systems through federal assistance and dedicated state or local revenues, there may be little opportunity for incentive financing to improve performance.

During 1985 in California, for example, 53 public transportation systems were provided with 9.3 percent more operating assistance than their counterparts in the rest of the United States, primarily due to favorable state legislation that provides dedicated revenues to transit. Despite their apparent ability to charge lower fares to the public for services, California systems attracted about the same number of passengers per vehicle service hour as the rest of the U.S. transit systems. While it may be argued that California transit systems operate in urban environments somewhat differently than the rest of the United States, the data may also suggest that higher levels of funding might possibly cause public transportation systems to be less sensitive to sustaining or improving performance.

Levels of Patronage — Large public transportation systems with relatively high levels of patronage may not be as sensitive to incentive financing as smaller systems because of their ability to leverage large amounts of operating revenue through modest fare increases. In 1985, for example, the 10 largest U.S. transit systems (i.e., those operating more than 1,000 vehicles in maximum service) received 41.3 percent of their revenues from passenger fares; the rest of the U.S. systems received only 30.4 percent in the same manner. The larger systems, while charging 4.2 percent higher fares per passenger trip, were able to operate more effectively than the other U.S. transit systems by attracting 31.2 percent more passenger trips per dollar of expenditure.

Although the 10 largest systems are over 46 percent less efficient than the rest of the U.S. transit systems, when measured by cost per vehicle service hour, the service provided by the larger systems attracted nearly twice as many passenger trips for each vehicle service hour. Therefore, it may be generally concluded that, despite the overwhelming differences in efficiency, smaller systems are likely to be more sensitive to incentive financing than larger systems because of their inability to leverage additional revenues through passengers.

Incentive Financing Structure — If incentive financing is used to allocate state operating assistance, several issues should be addressed when determining methods and procedures:

- **Should incentive (or disincentive) financing be the basis for all or only a portion of the funding allocation?** After reviewing incentive financing procedures from several states, the author's conclusion is that allocations of operating assistance should be based only partially on incentives. This approach provides transit systems and local governments more assurance and stability in transit funding, regardless of those performance factors that management cannot always control.
- **Should incentive procedures rely on the comparisons of peer transit systems or on the performance of the individual transit system over time?** The dissimilarity of public transportation systems and their operating environments, coupled with the difficulty of grouping such systems into peer classes within states, leads the author to believe that, if incentive financing were used to allocate state operating

assistance, it should be based on the performance evaluation of individual transit systems over time. Peer comparisons are often valid when the factors affecting performance are controlled by management and when the conditions and constraints under which performance is achieved are comparable. However, using performance indicators over time at individual systems allows each local government, in coordination with its public transportation management, to establish performance goals and objectives and to work toward their achievement without the potential loss of incentive funds through state allocation procedures that could penalize a system in spite of improved performance.

- **Can enduring standards of performance be established that serve as equitable thresholds of funding eligibility?** This issue relates to the use of incentive financing to discourage the degradation of performance below certain standards. As stated above, several states require that public transportation systems meet prescribed levels of performance, defined by operating statistic ratios, to be eligible for matching funds. Alternatively, financial penalties may be used that reduce funding. In either case, the funding method requires enduring and equitable performance thresholds that induce efficient and effective service without becoming unduly restrictive in distributing funds.

While the establishment of standards for funding eligibility is a complex issue, this incentive concept has potential merit. The funding donor (in this case, the state) should expect a reasonable return on its investment. This return should be in terms of results, such as patronage or operating revenues, together, if necessary, with a commitment of local government through local operating assistance.

Appendix A

FINAL RECOMMENDATIONS OF THE APTA SECTION 15 COMMITTEE

Two Reporting Levels, One Common Set of Forms

There would be only one set of forms, and two required reporting levels, depending on system size. The final committee recommendations make a distinction between "high" (more detailed) and "low" (less detailed) levels of reporting, but this only applies for the three expense forms (Forms 301A-B-C). All other forms are required for all reporters. This ensures maximum consistency and comparability across operators.

For small reports, only the existing four functional expense categories would be reported, while larger operators would report in nine functional expense categories. For operators with fewer than 100 peak vehicles, fewer columns on the expense forms would be filled out. Otherwise, there would be no difference in the reporting requirement across operators.

Correct the "Administration" and "Operations" Functions

The current system includes ticketing, security, marketing, and planning under "general administration." A survey of similar industries revealed that this was not the usual practice. This results in a serious overstatement of administrative costs for many agencies, while understating operating costs. The result is inaccurate and misleading comparisons with overhead costs of other industries.

The recommendations are—

- for all reporters, move the ticketing and security functions from the administration to the operations function
- for larger reporters, identify the marketing and planning subfunction separately from other administrative functions

Clarify Expense Reporting

The basic display of expenses by mode is retained, cross-classified by object and function. A new joint cost form (301B) is added to clarify the derivation of joint cost allocations across functions. A purchased service provider operating 25 or more vehicles for a "large" reporter would file a complete report. This will provide much more information than at the current form on the costs of contracted services but will take time to phase into contract provisions.

Simplify Revenue Reporting

Fare and other operating revenue data are combined on one form with all tax and subsidy revenue (Form 201). Capital funding is reported on a separate form (Form

103), revised to include the types of assets purchased. This addition was specifically requested by the UMTA committee.

Simplify Operating Data

The "Service Supplied and Consumed" form (406) would be substantially revised in content and concept. Much of the detailed time-of-day data would be eliminated, and the remainder would be based on the operators' estimates for their maximum season schedule, rather than sampled or computed averages. Only the passenger-mile data required for the Section 9 formula would be subject to statistical sampling requirements.

Clarify the Major Labor Expense Forms

Reporting of labor expenses is one of the most important topics in the national database. Two forms (321, Operators' Wages Subsidiary Schedule, and 404, Transit System Employee Equivalent Schedule) supplement the basic expense reporting forms in this area.

Form 321 would be reduced from 30 lines of information to only nine lines. Many of the 30 categories on the existing form are helpful. However, there are numerous problems in interpretation due to the complexity and unique factors governing individual labor contracts. The current format of the 321 form forces reporters to make their contracts fit the mold of the 30 categories. The existing form was judged to be too detailed for national reporting, yet not detailed enough for accurate, in-depth analysis of labor cost factors. The result has been a lack of comparability in the data across operators, which defeats the major purpose of the form. The proposed simplified form will be much more easily filled out by reporters and will result in much more comparable data.

The focus of the current Form 404 on employee equivalents now requires a transformation from actual data (labor hours) into an artificial construct (employee equivalents) not normally used by transit management. To complete the form, the actual data are hidden and an arbitrary conversion factor (2,080 hours) is applied. In addition to ambiguity between "total work hours" and "total paid hours" as the numerator, the choice of the denominator may have nothing to do with what the actual standard hours in a work year are for a particular reporter. The proposed form would restrict reporting to actual hours from payroll records and leave any conversions to the specific needs of subsequent analysts.

Major Additions and Deletions

While many forms would be eliminated by consolidation, three forms (101, 331, and 402) were identified as warranting elimination on their merits.

The balance sheet (Form 101) is easily prepared as part of each operator's fiscal audit, but it violates many of the committee's principles:

- It is not comparable across operators because of the widely varying governmental settings for provision of transit services.

- It is misleading to use the "tangible property" valuation as a measure of transit assets.
- The data are not easily summarized and are not generally available to Section 15 users.
- The relevance of a public balance sheet for national analysis has never been established.

The pension plan (Form 331) is both difficult to complete and of questionable utility. On the one hand, it requests details that many transit reporters cannot provide because the plans are administered by third parties. On the other hand, the form contains insufficient detail to allow a meaningful analysis of pension provisions. This is a case where a special study, not aggregate national data, is required for useful analysis.

The maintenance performance part of Form 402 should to be eliminated because the accuracy of the principal data item, roadcalls, is highly suspect. The committee's survey indicated that there is little or no consistency across reporters on the definition of roadcalls. Until this problem can be resolved, the recommendation is to suspend reporting of these inaccurate and misleading data.

Two major additions are recommended. The first (uses of capital funds, Form 103) was mentioned above. The second is the addition of a form (409) to break down the vehicle fleet information into useful summary categories. This provides—

- an explicit basis for judging "large" or "small" reporting level
- new information on which to monitor fleet ownership composition
- precise definitions for spare ratios or other fleet analyses.

Presented by Joel E. Markowitz at the APTA Western Education and Training Conference, Monterey, California, April 1988.

The State Role in Technical Assistance and Research

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INTRODUCTION

Effective communication and interaction between state program managers and their public transportation projects is often the key to the project's success, both from the state perspective and the local service delivery perspective. Technical assistance and research are integral to this communication and interaction. A state's technical assistance and research programs are important to both the state and local properties. They ensure the state is sponsoring or funding programs that meet state goals for public transit and also improve a local project's chances of success.

The purpose of this paper is to explore the subjects of technical assistance and research in general and then the state's role in providing technical assistance or conducting research.

The paper begins by addressing the question of what activities are defined as technical assistance and research and how, traditionally, these activities have been accomplished within national and state organizations. Next, the paper explores how this role is changing and what factors affect a state's ability to provide assistance. Finally, the paper poses a number of questions that individual states can ask to plan an effective technical assistance and research program.

Interactions aimed at improving the way public transit services are provided can be categorized into four general categories:

- **Research** — aimed at generating new ideas, new technologies, or new ways of doing things
- **Demonstrations** — aimed at implementing new ideas on the local level; can be grouped into the demonstration of ideas that are still experimental in nature and the demonstration of ideas that have been implemented in only a limited manner
- **Technical Assistance** — aimed at improving local services by sharing experience, knowledge, and information generated, in part, by research, demonstration, and training activities
- **Training** — aimed at training local operators and their staffs to perform a variety of functions more efficiently

WHAT IS TECHNICAL ASSISTANCE?

Technical assistance can be loosely defined as information sharing that helps solve a problem. Regardless of the approach, technical assistance efforts share the common desire to solve or prevent problems. Persons providing technical assistance often act as a resource for local operators, who may be overworked and unable to investigate new areas or learn new procedures. Technical assistance may be providing hands-on problem solving, either in person or over the telephone, or relaying information through workshops or lending libraries, or it may involve the state assuming some functions for local grantees (such as procuring insurance or vehicles). Although training appears to be a subject in itself because it is the focus of so many state technical assistance activities, it is actually only one method of transmitting information through a technical assistance program.

Technical assistance is certainly not new to public transit. Once a federal or state program is created, support in the form of technical assistance or research soon follows. Traditionally, the flow of assistance in transportation and most governmental programs has been from the top down—from the federal level to the state level and from the state level to the local level.

Throughout this long history of engaging in research and technical assistance activities, transit professionals have been highly reflective on the substance of their efforts. However, there has been less reflection and little written about the process of providing technical assistance in an effective manner. Yet, the process is the key to the success of any technical assistance or research program.

There are many impediments to providing technical assistance effectively or conducting research that will help improve local programs. First, the giver and the receiver are usually located in different cities and, often, in different environments. Second, the farther removed in governmental levels the giver of technical assistance or initiator of research activities is from the people who need the information, the harder it is to anticipate and meet their need for assistance. For example, it is hard for people on the federal level to develop an effective assistance and research program without continued interaction with local grantees. Third, effective interaction is often inhibited by the fact that the "assistor" (whether at the state or federal levels) may also have oversight and monitoring responsibilities, which local grantees may see as intrusive or authoritarian.

WHAT IS RESEARCH?

What is research and how does it fit into an overall plan for interacting with local operators? For the purposes of this paper, research is defined as those activities intended to result in ideas that solve problems faced by local operators (as distinguished from research activities that might be undertaken by states to solve their internal administrative problems). Research can be performed with a number of purposes in mind. It can be aimed at generating solutions that advance federal or state policies or goals. It can also be focused on developing technological or nontechnological remedies to local problems.

Research goes hand-in-hand with efforts to demonstrate the validity or success of the innovative ideas generated by the research. Demonstrations can be grouped into the demonstration of ideas that are still experimental in nature (never been used before) and the demonstration of ideas that have been implemented but only in a limited manner. Experimental demonstrations are aimed at determining whether the idea is successful; exemplary demonstrations further the concept by implementing it in a number of sites and then evaluating its success in a variety of settings.

Research activities aimed at solving local problems often are not distinguishable from technical assistance activities since most research projects result in materials (usually written) that are used in the technical assistance process. What makes research distinct from technical assistance is that research is often an attempt to demonstrate a new idea or a new approach to a problem and then measure or evaluate the results of that effort. Technical assistance tends to be the sharing of methods or techniques that have already been demonstrated as successful solutions to local problems.

There is an integral interaction between research and technical assistance. Research provides information on new methods, while technical assistance disseminates this information and tailors it to local needs. Without research, technical assistance is less meaningful; similarly, without effective technical assistance, many research results would go unused. This does not mean research and technical assistance have to be done by the same organizations, or even at the same level of government. What it does mean is that there should be an effective flow of information from the providers of technical assistance to the researchers in terms of what is needed and from the researchers to the assistants in terms of research results.

WHAT HAS BEEN THE FEDERAL OR NATIONAL ROLE IN TECHNICAL ASSISTANCE OR RESEARCH?

Any review of technical assistance and research on the state level requires an understanding of how states interact with the national or regional perspective from above and the local perspective from below. On the national level, a role is played by a variety of agencies:

- The Urban Mass Transportation Administration (UMTA) through its Office of Technical Assistance, its Rural Transit Assistance Program (RTAP), and the involvement of its many program offices that are involved in research and technical assistance.
- The American Public Transit Association (APTA) through its efforts to provide assistance to its members and its continuing efforts to have an effective research program. This includes the emergence of the Strategic Transit Research Program (STRP).
- The Transportation Research Board (TRB) through its continuing efforts to foster research and sharing of information through publica-

tions, conferences, workshops, committees, and the National Cooperative Transit Research Program (NCTRP).

- The American Association of State Highway and Transportation Officials (AASHTO) through its efforts to share information among states, particularly its new Multi-State Technical Assistance Program (MTAP).
- The National Association for Transportation Alternatives (NASTA) through its efforts to provide information to specialized transit providers.

Federal Government Role

While there have always been strong training programs and strong information dissemination efforts initiated on the federal level, the federal or national role has centered on conducting research rather than providing direct technical assistance. The exceptions to this have been the PPTN (but this focused on providing technical assistance in the narrow area of privatization) and the newly created RTAP program (applicable only in nonurban areas). In addition to the development of national training materials, the RTAP program is providing direct technical assistance through its national hotline and, soon, through its peer-to-peer network. While this effort is subsidized by UMTA, it is described below as a cooperative national effort because of the nature of the program.

Most transit research activities have been focused at the federal level, centered around UMTA, where agendas have been set and states and local operators have had a more distant involvement. (One notable exception to this observation was the NCTRP program, in which research agendas were set cooperatively by federal, state, and local operators.) One reason the federal government has played a predominant role in transit research is that, from the beginning of federal subsidies for public transit, the federal government recognized the need to fund research on how to make transit services better. While funds for this research have been reduced and the focus of this research has changed over time, the federal government continues to be the major force in transit research.

During the 1980s, federal funding for research and development has dropped dramatically (UMTA research spending dropped from \$60 million annually in the 1970s to approximately \$22 million annually in 1987). Even more important than this reduction in federal funding for research is the recent orientation of federal research efforts toward more narrowly defined topics of federal concern. In 1985, UMTA reorganized its research to reflect changing federal goals for transit (specifically the desire to make transit safe, reduce dependence on federal subsidies, and protect the federal capital investment in transit). In addition to reducing the overall scale of the program, the new program consolidated research activities into "lead programs" that UMTA felt were directly related to its mission: ensuring the safety and security of passengers, creating competition in and privatization of public transit services, protecting the federal financial investment in transit, and monitoring the state of the industry so federal policies and programs remain responsive to industry needs.

As a result of this change in focus, less federal research is being performed that is initiated on the state or local level to meet their needs or concerns. The federal research program provides less support to problem-solving research directed toward the needs of local operators. This leaves a serious gap in the development of information on basic needs of local transit operators and in the development of research findings and materials that are available to states for technical assistance to local transit agencies. This gap can be filled in a number of ways, one of which is being furthered by APTA and TRB through their efforts to put the STRP program in place and another that is being implemented by UMTA through its RTAP program. Both are discussed below.

Funding for federal involvement in research and training is possible under a number of federal programs. Section 6 of the UMTA Act of 1964 authorizes DOT to undertake research, development, and demonstration projects. Funding under this program has provided more than 90 percent of all federal assistance for transit research. Section 11 funds the university research program for basic research projects and for training researchers in the field. Section 10 authorizes training of transit managers, and Section 20 authorizes funding to address human resources issues, including manpower and training needs.

In efforts to develop new technologies, Section 3(a)(1)(c) (part of the discretionary grant program) provides for introduction of new technologies and improved products. Section 4(i) authorizes grants for innovative technologies. Finally, Section 22 authorizes the Secretary to investigate transit systems for safety, and Section 15 includes funds to maintain the DOT database developed under the S.15 reporting system.

Other National Research and Technical Assistance Efforts

There have been other national efforts to research transit issues or provide technical assistance to state or local governments. Many national organizations of state and local transit officials are active in these efforts, which include TRB's NCTRP program, APTA's STRP program, UMTA's RTAP program, and AASHTO's MTAP program.

National Cooperative Transit Research Program (NCTRP) — This program is the best example of a cooperative effort among federal, state, and local levels in transit research activities. It was created to help the transit community work together to address the problems of the transit industry. The program is managed by three parties. APTA manages the Technical Steering Group (TSG), which is responsible for setting the research agenda. The TSG is comprised of transit operators, state transit officials, and UMTA staff. TRB administers the program, and UMTA provides the funding.

Research problems are submitted by local operators or states to the TSG, which creates an annual program of projects. The program is approved by UMTA and administered by TRB (the TRB staff and panels of experts define specific projects from the broad problem statements developed by the TSG). The intent of the program is to provide a mechanism within which local operators can influence a

portion of the federal research program. Although funding for the program has been curtailed in recent years, UMTA recently approved funding for the NCTRP FY 1985 annual program. This effort will include five projects: two research projects (on the cost/benefits of vehicle standardization and the incremental ridership impacts for bus route service changes) and three synthesis studies (on supervision strategies to improve reliability of major bus lines, collection of ridership data on rapid transit, and local versus regionally operated bus service). It is anticipated that this may be the last year funding is available for the program.

Strategic Transportation Research Program (STRP) – In reaction to changes within UMTA's program focus, UMTA asked TRB to examine the current need for transit research and recommend how these research needs should be met. The study committee recognized a need to establish an operator-oriented, problem-solving research program focused on topics relevant to local operators. Of particular interest were seven broad research topics reflecting the basic issues faced by local operators:

- human resources management
- service configuration and marketing
- service delivery models
- internal inefficiencies
- maintenance
- equipment
- innovative financing

The study recommended that the new program be funded through a mandatory set-aside of 1/2 percent of their federal formula grants (Sections 9 and 18) on which the required local match would be waived. Funding would be approximately \$10 million annually. It was further recommended that the transit industry seek legislation to authorize the set-aside and clarify that research by local agencies is an eligible activity under Sections 9 and 18. Modelled administratively after the NCTRP program, the effort would be dominated by local transit agencies and state DOTs. To date, APTA has taken the lead in seeking legislation necessary to create the program.

Rural Transit Assistance Program (RTAP) – The RTAP program is another national effort, funded by UMTA, to assist in training, technical assistance, research, and other support services for transit in nonurbanized areas. The program has two components. The state-oriented component provides an annual allocation to each state to develop and implement training and technical assistance programs for operators who serve nonurbanized areas (most of the RTAP funds are allocated directly to states). The program also has a national component, which is guiding the development of information and materials for use by local operators and within state programs. The national RTAP program is being administered by a consortium of four organizations: the American Public Works Association (APWA), Rural America, the National Association for Transportation Alternatives (NASTA), and International Support Services (ISS). The national component is guided by an advisory committee comprised of representatives of state agencies and local

operators. FY 1987 RTAP funds were derived from the mass transit account of the highway trust fund; starting in 1988, RTAP funds will be authorized from the general fund rather than the trust fund.

The RTAP program has a number of objectives, one of which is particularly important to state DOTs: "to foster the development of state and local capacity for addressing the training and technical assistance needs of the rural/small urban transportation community." It is significant to note that one of the program's goals is building the capacity on the state and local levels to provide technical assistance on a continuing basis. Unfortunately, many of the state RTAP programs have focused exclusively on one-time training activities or assistance efforts that do not build state-level capacity to continue technical assistance efforts outside the RTAP program funds.

Multi-State Technical Assistance Program (MTAP) — The purpose of the MTAP project is to facilitate information sharing on successful state technical assistance efforts or practices among state transit officials. This is the only effort aimed at technical assistance that focuses on state-level activities. One of its primary objectives is to increase the ability of state transit officials to interact effectively with local operators. For the 1988 program year, 16 states from all areas of the country are involved. There are three major tasks slated for the first year:

- compile and showcase exemplary state practices
- create networking opportunities among state transit officials
- hold regional meetings

In the first task, a showcase of exemplary state practices is being developed in the areas of cost containment, revenue/ridership gains, and training. Information on state technical assistance programs is being collected, and a catalog of state involvement in technical assistance is being prepared. Once exemplary practices have been selected and materials developed, a plan to promote the showcase will be developed.

In the second task, MTAP hopes to create opportunities for effective sharing of information among the MTAP states. State officials can travel to a state that has a practice of interest, choosing from among the descriptions of exemplary practices. By requiring the preparation, dissemination, and archiving of site reports on how the practice was or was not useful, the MTAP project will be furthering the state of the art.

The final task for 1988 will be to hold three regional meetings to provide a forum for states to develop solutions to common problems or concerns. The meetings will be informal to facilitate highly interactive discussions. Participants from each region will set the agenda for the meetings.

WHAT HAS BEEN LOCAL OPERATOR INVOLVEMENT IN TECHNICAL ASSISTANCE OR RESEARCH?

In addition to being the recipients of most technical assistance efforts, local operators have also provided the sites for most of the research activities. They have also provided the forum for identifying solutions and, through national organizations such as APTA and NASTA, have been involved in identifying problems.

A number of interesting developments are taking place in technical assistance and research as it pertains to the involvement of local operators. First, local operators are becoming more vocal and active in operator-initiated efforts to affect the national research agenda. With the scaling back of many federal research programs, local operators are voicing their need for problem-solving research in areas of interest to them (such as service alternatives and human resource management), especially through the APTA/TRB STRP program and the national RTAP program described above. Second, local operators in rural areas are becoming more involved in setting technical assistance agendas on the state level. This appears to be happening in part because the RTAP guidelines suggest the involvement of an advisory committee of local operators in the agenda-setting process. The other part of the explanation leads us to the final point: local operators in many states have become more vocal on a variety of issues through the emergence of state transit associations. Local providers are joining together to work on many issues, including responsive and effective technical assistance, training, and research.

In summary, local operators are beginning to express the need for a national research program in which they have significant influence. In rural areas, local operators are more involved in setting agendas and making their needs known for technical assistance and research activities on both the state and national levels. This has not happened to date in the urban areas.

WHY AND HOW SHOULD STATES BE INVOLVED IN TECHNICAL ASSISTANCE OR RESEARCH?

Why do states provide technical assistance or engage in research activities? One reason is to improve local services. Another reason is that technical assistance and research are often integral to a state meeting its own goals for transit services. There are many other ways to meet state transit goals, such as active requirements (e.g., local operators will recover 50 percent of their operating costs through the farebox), incentives, or general oversight/monitoring activities. However, technical assistance, in spite of being the mildest alternative, is often the most effective and can achieve things that requirements or oversight activities often cannot. It is useless to set performance standards that local operators do not have the information or experience to achieve. Further, technical assistance can help local operators achieve marginal increases in efficiencies rather than just meet minimum requirements.

It also can be argued that states are better able to know the needs of their localities, their local context, and political realities, and that direct technical

assistance is better provided from the state level than the federal level. However, when thinking about a particular state's role in technical assistance, it is important to realize that public transit agencies, UMTA, and their state counterparts are relatively new organizations. Further, while the federal role in public transit emerged as a marriage between financing and research activities, this was not necessarily true for most states. Until recently, many states have had little or no involvement in any aspect of public transit. Thus, technical assistance has not been of primary concern to many states.

It is interesting to note that few states report that they have a formal technical assistance program. In the 1987 AASHTO survey of states, only six states reported that they "have a state public transportation technical assistance program independent of UMTA." However, while many states do not call it that, almost all states provide technical assistance to local transit operators. It also appears state involvement in technical assistance activities is increasing. RTAP has had a dramatic impact on technical assistance at the state level. For the first time, states have developed a written technical assistance program (albeit exclusively for nonurbanized areas) with funds available to implement the program. For some states, this is the first time they have considered technical assistance as an activity separate from other grant management or planning activities. It is also the first time many states have solicited ideas for technical assistance from local operators.

A formal technical assistance program generally consists of—

- the organizational structure and procedures for information flow from the state level to local operators (this includes the institutional placement of technical assistance and research in the state organization and the policy or posture of the state regarding technical assistance and research)
- procedures for building agendas or identifying subject areas for technical assistance or research
- methods of developing or identifying materials of use to local operators
- techniques for transmitting information or providing assistance to the local level

Organizational Structure

There are a number of models for how states organize to provide technical assistance to local properties. The most common seem to be—

- state program managers, who have responsibility for various state or federal programs and provide assistance to local operators in the course of their daily interactions with these operators

- a separate division of persons responsible for technical assistance who interact both with state program managers and local operators (Some states have taken this a step further and have assigned or hired staff to specialize in certain assistance areas, e.g., computers or coordination with human service agencies.)
- decentralized responsibility for all or some portion of technical assistance activities to the regional or district level, often using either regional planning boards or their own district offices (The ability to use this model depends on how the state administers grant programs and whether the regional structure exists.)

Within any of these institutional arrangements, states often use individuals in other state departments or outside the state government (e.g., consultants or research organizations) to develop materials or, sometimes, to provide the technical assistance directly. Some states have strong relationships with universities, particularly in the areas of training and database management. Other states accomplish technical assistance activities through their state transit association. They also rely heavily on nationally developed materials and materials that are developed by one local operator and shared with others.

Agenda Setting

States have a number of alternatives for determining what subjects warrant research or technical assistance. On one hand, the state will have its own objectives for technical assistance or research activities, which are generally aimed at furthering state transit goals or correcting inefficiencies in local operations. These areas are important since state program managers may have insights into local problems that are impossible from the local perspective. On the other hand, states can rely on local grantees to identify issues they think are important to meeting local needs and aspirations for transit services. The ideal way to set agendas at the state level would probably be a combination of the two approaches so both the state program managers and local managers can influence the assistance.

Development or Identification of Materials

One of the most important aspects of a technical assistance or research program is developing or identifying materials to be used on the local level. Many states are engaged in the development of training programs, model agreements or contracts, or planning guidelines. While some of these materials will be generated on the state level, many will be the product of federal, national, or state research or technical assistance efforts. An integral component to any state assistance program is the continuing process of identifying and compiling information generated by other sources that can be used in the technical assistance process.

Techniques for Transmitting Information or Providing Assistance

There are innumerable techniques for sharing information or providing direct assistance, ranging from hands-on sharing of information from state to local

operators (either in person or over the telephone), through relaying of information via more formal means (such as workshops or dissemination of written materials), to the state assuming direct responsibility for some transit management functions. Common techniques have included—

1. hands-on assistance
 - hot lines
 - site visits to local projects
 - tours of existing projects
 - peer-to-peer networking
 - revolving "transit aid" for multiple projects
 - circuit riders
2. written materials
 - informational bulletins on priority subjects
 - case studies of other projects
 - papers/study reports
 - "how to" manuals
 - audiovisual programs
 - lending library
 - model documents (contracts, forms, etc.)
3. training group interaction
 - training workshops (developing, sponsoring, or giving scholarships)
 - seminars/conferences
 - speaker's bureau
 - on-the-job training for staff
 - internship and apprenticeship programs for managers
 - policy board orientation programs
4. direct state involvement
 - statewide vehicle purchasing program
 - statewide vehicle rehabilitation program
 - statewide marketing program
 - statewide vehicle leasing program
 - state insurance pool

Each of these techniques has its place, and the use of a particular technique is dependent on the subject, materials, and characteristics of local operators and state managers.

Research Activities

While many states engage in activities to develop general materials for local operators (e.g., model contracts or driver training manuals), very few states have a formal research program. Those that do tend to provide direct funds to local

operators to demonstrate a new concept or a new approach to solving a problem identified in the state. The results of these efforts are distributed to other local operators or used to modify state guidelines or requirements.

DETERMINANTS OF HOW TECHNICAL ASSISTANCE AND RESEARCH ARE APPROACHED ON THE STATE LEVEL

The determinants of effective technical assistance are the shapers of performance—what is needed, when it is needed, and in what form it is needed. Technical assistance is shaped by a series of factors that determine what finally emerges. And, because these determining factors are usually changing, a state's approach to technical assistance must also change to be continually effective. The determinants are clustered into three groups. Whether a state has a formal technical assistance and research program, how its technical assistance or agenda is built, and methods of providing assistance will depend in large part on—

- factors external to a state agency that affect technical assistance (most have to do with the availability of external forms of support for the state-level efforts):
 - availability of research results from national efforts
 - national-level technical assistance or training
- factors pertaining to the provider of the assistance (in this case, the state agency):
 - a state's posture toward transit in general and technical support in particular
 - the history of the state's involvement in transit and traditional forms of interaction with local activities
 - formalization of technical assistance or research activities within the state organization
 - the organizational structure for how individual transit programs are managed in the state
 - state-level staff and capabilities
- factors pertaining to the recipient of technical assistance (in this case, the local operators):
 - size and capability of operators
 - level of development of operators

Each of these factors is individually shaped by a number of issues. Without making the subject overly complicated or burdensome, it is informative to at least review the range of issues that might affect a state's ability to provide effective technical assistance.

External Determinants

The availability of research results in a usable form on issues of interest to the state or local operators is a key determinant of how a state approaches technical assistance or research. If materials are already available, the state can concen-

trate on the dissemination or interpretation of the materials rather than using resources for development activities. If, on the other hand, national research activities are not producing the necessary materials, the state will have to start its assistance with costly development activities.

Closely tied to this consideration is the existence of national technical assistance efforts that parallel state assistance efforts. The existence of a national technical assistance program can take some of the burden off states to be experts in all subjects and can be a key resource to state technical assistance providers when questions arise that they cannot answer. Without such a national support network, each state technical assistance provider is faced with building expertise in all aspects of public transit or developing a list of experts to call on.

State Posture — A state's attitude toward transit in general and the appropriate role for state/local interactions (or interference) can also affect the state technical assistance provider's ability to effectively impact local operations. The state can either have a reactive posture or a proactive posture toward local recipients. Whether there is a history of hands-off or active interaction in transit can either foster or inhibit the managerial role in responding to questions or problems since it dictates whether the state can take the initiative for providing information. While not always possible, the ideal way to channel information to those who need it is for the state program manager to be viewed in a helping role to assist local operators in achieving new levels of understanding.

History of Involvement in Transit — A state's role in technical assistance will also affect its historical involvement in transit, including whether it has made a financial investment in transit services or properties. If the state has had a vested interest in local transit, then the relationship between the local operators and the state will be different. The length of time the state has been involved also affects this relationship. If state involvement is relatively new, the relationships will not be as strong, which will affect both the ability of the state to provide technical assistance and the techniques that are most appropriate. For example, if state involvement is relatively new, hands-on technical assistance may be needed until relationships are established.

Formalization of Technical Assistance and Research at State Level — Another determinant of the effectiveness of state technical assistance and research programs is the degree of formalization of the program at the state level. This includes whether the state has a clearly stated mandate to provide assistance, whether it has a formal policy regarding technical assistance or research, and whether it has set formal goals for assistance activities. In general, the more formal the state program for assistance, the more legitimate it becomes, not only in the eyes of local operators but also in the eyes of state administrators (particularly as state resources are planned).

Organizational Structure — The organizational relationship between assistance efforts and other grant management activities will also affect the state's ability to provide effective technical assistance. How other grant management functions are organized and the role for technical assistance relative to these other state

functions (funding, monitoring and evaluating, grant management, and administration) will determine who within the state organization is responsible for technical assistance and who will influence their relationship with local operators. For example, if the technical assistance function is performed by program managers or planners, they may be more in touch with the daily needs of operators. On the other hand, if the state has a separate division for technical assistance and research, staff in that division can concentrate on this activity and can be hired for skills necessary to interact effectively with grantees. Technical assistance can also be more effective if the results of state evaluation efforts are used to identify problem areas and needs.

State Staff Level and Capacity — An effective technical assistance program depends on the expertise, abilities, personality, personal style, and preference of persons involved. One of the key determinants of a state technical assistance program is the people involved—both the number of staff available and their abilities. Obviously, if the state is short-staffed, it will be more difficult to provide technical assistance in addition to all the other functions the staff must perform. And, unfortunately, technical assistance often will not seem as important as keeping the funds flowing or meeting mandated reporting or accounting requirements. Also, if state staffs are more proficient in managing programs than in operating transit systems, they are less able to provide expert assistance on operating issues.

The personality of staff members also affects performance. Interaction with a variety of groups causes the program manager to assume different roles at different times. Sometimes, the manager will be a friend, confidant, or encourager; at other times, the manager will be the advisor, watchdog, or enforcer. The ability of state assistance providers to wear all these hats is significant to their effectiveness.

Local-Level Determinants

Size and Capability of Local Operators — In designing a technical assistance or research program, a state should be influenced by the size and capabilities of the staff at local levels. A state's interaction with larger systems, which often have large, diversified staffs, will probably be limited in nature. On the other hand, systems that have small staffs will look to the state for more types of assistance on a wider range of topics. Without the benefit of a full-time planner or the time to devote to solving specific problems, smaller systems may benefit the most from a state technical assistance program.

Stage of Development of Local Operators — There are many ways in which a state program manager will interact with local projects—from the initial contact for information about state programs through the ongoing contacts with local recipients. It is important to focus technical assistance to meet a project's specific needs at various stages of its development (project planning, initial operations, and ongoing project management). Differences can be seen in both the techniques that are appropriate and the subjects of interest. Techniques will depend on the transit system's stage of development, since certain technical

assistance techniques are best suited to certain stages in a project's development (in general, more personal contact is appropriate in the early stages). Also, the specific information needed will differ. For example, during the grant application process, more guidance is needed on planning and capital needs. During ongoing service, information is needed to monitor funds and to manage the service effectively.

SO NOW WHAT?

Given this history of technical assistance and research, what issues are states now facing? As federal efforts to perform research have been scaled back and focused away from local problems, local operators have become more vocal in expressing their need for such research. The state response to this situation is to develop RTAP programs to provide technical assistance on locally initiated topics in the manner prescribed by local operators. In general, states have considerably increased the amount of technical assistance they are providing but continue to look to national efforts to conduct research activities. While some states are developing new materials, they also continue to look to the national level for the development of materials and training courses for their local constituents. As states become more involved in technical assistance, it is important to ask questions regarding the appropriateness of their role in both research and technical assistance activities. These questions include—

1. What have we learned through technical assistance or research efforts in the past that can guide future efforts? Have we learned what works and what doesn't? Should we begin evaluating the effectiveness of technical assistance activities? As operating funds have been cut back, we have taken the attitude that something is better than nothing and have begun to concentrate on technical assistance and research as a means of doing better with less. But just because local areas appear to need help, is technical assistance appropriate or should we be putting these resources into more operating funds?
2. Is it possible to move a state toward an appropriate and useful technical assistance posture? How can each state sort out the best method of interacting with local operators based on the determinants discussed above? If a state cannot be moved to an appropriate posture, might it be better not to offer technical assistance at all?
3. What is the appropriate relationship of state technical assistance or research efforts to federal or national efforts? Should states be performing research or is this function best served at the national level? How should states relate to national technical assistance efforts to achieve local goals?
4. What is the appropriate relationship of state technical assistance or research efforts to efforts by other states or regions to solve common problems? How can states create an ongoing mechanism

within which to share information so that resources are used effectively (e.g., creating regional calendars for workshops or training courses)?

5. How can state technical assistance managers remain aware of new assistance techniques, approaches, and research results? How does a state make participants familiar with or aware of sources or types of technical assistance on the state and federal levels?
6. How can state technical assistance providers build agendas that are appropriate to state goals and yet responsive to local needs for information?
7. Where does state monitoring end and technical assistance begin, and how can they relate to improve both functions? Interactions with local projects will include monitoring to determine whether they are using funds appropriately and are in compliance with program guidelines and also providing them with assistance and guidance to allow them to operate effectively. How can a state take the results of monitoring and translate them into needs for technical assistance? While an effective and consistent supervisory or monitoring role keeps the paperwork and funds flowing, how can it relate to the advisory or educative role to help achieve excellence in local transit service?
8. What is the appropriate institutional structure for effective state technical assistance? How do state technical assistance activities relate to planning and other grant management activities on the state level? Who should be responsible for technical assistance in the state? Should the function be integrated into the program managers' responsibilities or should it be a separate function cutting across the modes? An advantage of using program managers is that they have relationships with local operators, and know the programs, the operations, and the local contexts. Program managers may feel more responsibility to meet state goals for their programs and may use technical assistance to meet those goals. The disadvantage of this approach is that program managers have many other duties and may not be able to keep abreast of materials, the state of the art, and what is happening in other state areas/programs. Also, separate technical assistance persons can be trained in human relations skills, can monitor and filter national studies, and can run separate specific assistance activities.
9. How much money should be spent on the state level for technical assistance? For research? And, how should these efforts be funded? Should some federal program money be retained on the state level for these activities? Should the state try to dedicate money for this purpose? Should some money be passed through to the local areas for site-specific technical assistance? Should the burden of payment be

on the operator who is being helped, and, if so, should payment for the technical assistance be performance based?

10. How can state transit staff generate support for technical assistance and research efforts within their departments? Is it possible to coordinate highway research and technical assistance with transit?
11. How can a state add desirable qualities to its technical assistance program? What can be done to make it motivating, imaginative, innovative, believable, responsive, credible, and continuing?
12. How can states ensure current and accurate technical assistance materials if they are not generating their own research or resource materials? How can states influence the federal level to ensure that the state has access to the best information?
13. How can a state build its capacity to provide technical assistance? Should resources be aimed at products, short-term needs, or capacity building for long-term carryover? While local operators will probably be interested in the immediate product or assistance, states should also be concerned with the lasting ability to continue assistance efforts. Are the individual staff members available to provide needed assistance? Do they have the appropriate capabilities and sufficient individual and collective capacity to make a difference? Or should we be concerned with developing a new corps of technical assistance professionals?
14. Is it important to monitor state technical assistance efforts? If so, who should do this, what should they look for, and what will we do with the findings?

State Transit Funding Issues

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INTRODUCTION

State funding for public transportation now exceeds funding provided by the Urban Mass Transportation Administration (UMTA) for this purpose. From 1983 to 1987 federal public transit assistance declined from \$4.5 to \$3.2 billion. During this same period, state transit assistance increased from \$2.7 to \$4.0 billion. AASHTO indicates that, based on its annual surveys of state public transportation involvement, state funding has exceeded federal funding for public transportation since 1985.

Despite increasing state investment in public transportation, many state transit funding programs merely clone federal transit funding programs. States often limit their role to providing all, or part of, the local (nonfederal) match for these federal program grants and rely on UMTA to establish transit policies and grant program requirements.

However, many states are beginning to reconsider whether their traditional role of just providing matching funds for federal grants is still appropriate given the significant increase in their financial commitment for public transportation. Some states, such as Wisconsin, are considering adopting performance standards to help assure that state funds are more productively used. Other states, such as Pennsylvania, are beginning to require that local transit systems adopt service standards to achieve this same objective. Furthermore, a number of states have increased their financial reporting requirements beyond that required by federal Section 15 to help them monitor the use of state public transportation funds.

At the same time states are beginning to increase their role in the management of public transit funds, the federal government is reducing its role. UMTA has placed a greater emphasis on modified block grant funding, giving local systems more flexibility in the use of these federal monies. Also, UMTA now relies more on local self-certification to assure compliance with federal grant requirements. UMTA previously relied on discretionary grants to more directly manage how federal transit funds were used. Similarly, UMTA directly determined whether grantees complied with federal grant requirements.

This change in the federal role in managing public transportation funds makes it timely for states to rethink their position in the federal, state, and local public transit funding partnership. Should states fill the void left by UMTA and take a more active role in the management of public transportation funds? Or, should states follow UMTA's lead and rely on block grants and self-certification, and pass down the responsibility for managing public transportation funds to local governments? Each approach has advantages and disadvantages, and no single approach is

likely to be appropriate for all states, all transit programs, or all types of transit expenditures.

For example, the appropriate state role for New York, with its substantial financial and human resources, is likely to differ significantly from that of Nevada. The appropriate state role in managing urban transit funds may differ from the appropriate state role in managing nonurban transit funds due to the difference in the maturity of these two programs. Likewise, the appropriate state role in managing transit operating funds may differ from the appropriate state role in managing transit capital funds due to the difference in federal involvement in these two programs.

Therefore, defining the appropriate state funding role is an extremely complex task. There is no single solution. Rather, each state has to make its own decision on a case-by-case basis, taking into account its own past experience and future statewide funding objectives.

SOURCES OF TRANSIT FUNDING

Operating Assistance

The operating revenue received by public transit systems through user fees (fares), plus the miscellaneous revenue from advertising, charter work, school contracts, and other sources, has always been the single most important form of transit income to fund operating expenses. Before 1965, the aggregate amount of operating revenue earned by the nation's transit systems actually exceeded their costs of operation. However, even then, there were a number of individual transit systems that had revenue/expense ratios below 100 percent and needed government subsidies to balance their budgets. Now, every major transit system must supplement operating revenue with government subsidies to cover operating costs. From 1965 to the present, the relative importance of transit operating revenue as a source of overall transit income has diminished almost every year with a couple of minor exceptions. In 1985, aggregate transit operating revenue constituted less than 43 percent of total transit income. As recently as 1983, this figure was as low as 41 percent! (See Table 1). Fortunately, this annual decline in the share of total transit income composed of operating revenue has leveled off in recent years as fares have risen to keep up with inflation.

The second most important aggregate source of transit income for most transit systems is local operating assistance. This assistance made up only 20 percent of total income in 1978, but in 1984 local subsidies accounted for approximately 31 percent of aggregate transit income for the nation's public transit systems.¹

Until recently, the third largest portion of total transit income for most transit systems consisted of federal operating assistance. Federal aid increased from 8.7 percent of total transit income in 1978 to a peak of 17.3 percent in 1980. Since

¹ Urban Institute, The Nation's Public Works: Report on Mass Transit, p. 2.

**TABLE 1 TREND IN TOTAL OPERATING REVENUE
(IN MILLIONS)**

<u>Calendar Year</u>	<u>Total Transit Operating Revenue</u>	<u>Total Transit Income (Revenue and Subsidies)</u>	<u>Transit Revenue as a Percent of Transit Income</u>
1975	\$2,043.0	\$ 3,450.8	59.2%
1976	2,236.1	3,883.4	57.6
1977	2,353.6	4,257.7	55.3
1978	2,449.9	4,681.5	52.3
1979	2,647.8	5,558.2	47.6
1980	2,805.1	6,510.2	42.7
1981	3,045.2	7,366.0	41.3
1982	3,457.0	8,044.3	43.0
1983	3,504.1	8,525.7	41.1
1984	5,232.7	11,838.1	44.2
1985	5,377.7	12,621.0	42.6

then, this trend has been reversed, and federal operating assistance now makes up only 7.8 percent of total transit income (see Tables 2 and 3). Based on this year's federal budget, it appears this downward trend will continue.

The final major source of transit income is state operating assistance, which now accounts for approximately 16 percent of total transit income and represents the third largest aggregate source of transit income. This percentage has steadily increased since 1975 when state transit subsidies made up only 10 percent of total income. This upward trend is likely to continue as the federal government continues to reduce its participation in the transit funding partnership.

The combination of federal, state, and local subsidies has provided almost 60 percent of total transit income since 1980 (see Table 1). The decreases in federal transit assistance have caused state and local subsidies to increase at a faster rate than inflation. While federal transit operating assistance has declined as a proportion of total transit income by approximately 10 percent from 1980 to 1985 (see Table 3), state and local transit operating assistance as a proportion of total transit income has increased by about 10 percent over this same time period (see Table 4). It is not clear how long this trend can continue. If the decline in federal aid does not level off, transit systems may be unable to generate sufficient income to cover their rising operating expenses unless they institute major service reductions to hold down costs. It does not appear that major fare increases can be counted on to generate large enough increases in operating revenue to offset losses in government subsidy money.

**TABLE 2 TREND IN TOTAL TRANSIT OPERATING SUBSIDIES
(IN MILLIONS)**

(1)	(2)	(3)	(4)	(5)	(6)
Calendar Year	Federal Transit Subsidy	Combined State and Local Transit Subsidies	Total Federal, State, and Local Transit Subsidies	Total Transit Income (Revenue plus Subsidies)	Total Subsidies as a Percent of Total Transit Income (Col. 5 minus Col. 4)
1975	\$ 301.8	\$1,106.0	\$1,407.8	\$ 3,450.8	40.8%
1976	422.9	1,224.5	1,647.3	3,883.4	42.4
1977	584.5	1,319.5	1,904.1	4,257.7	44.7
1978	689.5	1,542.1	2,231.7	4,681.5	47.7
1979	855.8	2,054.6	2,910.4	5,558.2	52.4
1980	1,093.9	2,611.2	3,705.1	6,510.2	57.3
1981	1,095.1	3,225.7	4,320.8	7,366.0	58.7
1982	1,005.4	3,582.0	4,587.4	8,044.3	57.0
1983	827.0	4,194.6	5,021.6	8,525.7	58.9
1984	1,024.0	5,581.4	6,605.4	11,838.1	55.8
1985	980.6	6,262.7	7,243.3	12,621.0	57.4

**TABLE 3 TREND OF FEDERAL TRANSIT OPERATING ASSISTANCE
(IN MILLIONS)**

Calendar Year	Federal Transit Subsidy	Total Transit Income (Revenue plus Subsidies)	Federal Subsidy as a Percent of Total Income
1975	\$ 301.8	\$ 3,450.8	8.7%
1976	422.9	3,883.4	10.9
1977	584.5	4,257.7	13.7
1978	689.5	4,681.5	14.7
1979	855.8	5,558.2	15.4
1980	1,093.9	6,510.2	17.3
1981	1,095.1	7,366.0	14.9
1982	1,005.4	8,044.3	12.5
1983	827.0	8,525.7	9.7
1984	1,024.0	11,838.1	8.7
1985	980.6	12,621.0	7.8

**TABLE 4 TREND IN NONFEDERAL TRANSIT OPERATIONS ASSISTANCE
(IN MILLIONS)**

<u>Calendar Year</u>	<u>Combined State and Local Transit Subsidies</u>	<u>Total Transit Income (Revenue plus Subsidies)</u>	<u>Combined State and Local Subsidies as a Percent of Total Income</u>
1975	\$1,106.0	\$ 3,450.8	32.1%
1976	1,224.5	3,883.4	31.5
1977	1,319.5	4,257.7	31.0
1978	1,542.1	4,681.5	33.0
1979	2,054.6	5,558.2	37.0
1980	2,611.2	6,510.2	40.0
1981	3,225.7	7,366.0	43.8
1982	3,582.0	8,044.3	44.5
1983	4,194.6	8,525.7	49.2
1984	5,581.4	11,838.1	47.1
1985	6,262.7	12,621.0	49.6

Capital Assistance

Unlike federal operating assistance, federal capital assistance has been, and continues to be, the dominant source of funding for transit capital projects. For example, in 1985 UMTA provided approximately \$2.5 billion of the \$4.0 billion, or 60 percent of the funds provided for this purpose.² The importance of federal aid in meeting total transit capital funding needs is not likely to change in the near future. However, the absolute amount of federal capital assistance will probably decline as the federal government continues to reduce its annual apportionments for public transit.

Local governments are the next most important source of capital funding. In 1985, local governments provided approximately \$.9 billion, or about 23 percent, of total transit capital assistance.³ However, the percentage of local funding varies greatly among transit systems. In some states, local governments provide the entire nonfederal share, while in others the state pays the entire local share. In most cases, both the local government and the state government jointly contribute nonfederal matching funds for capital assistance. In some large states, such as New York and California, the local governments provide more than the minimum required nonfederal match for selected projects in the state's larger cities.

²Ibid.

³Ibid.

The last important source of transit capital funding comes from state governments. In 1985, states provided approximately \$.8 billion, or about 16 percent, of total transit capital assistance.⁴ However, like local funding, state participation in capital aid varies greatly among states. Some states with large urban area populations such as New York, Massachusetts, and New Jersey, provide the entire 20 percent nonfederal share; in states with relatively low urban area populations, such as Idaho and Wyoming, there is no state capital assistance program. In most states, local and state governments jointly provide the non-federal share for capital projects.

Of the \$2.5 billion of federal capital funding provided in 1985, approximately 90 percent consisted of Section 3 and Section 9 funds, while the remaining 10 percent came from other federal capital grant sources, such as Interstate transfers and the Federal Aid Urban Systems Program (see Table 5). This federal capital funding made up approximately 60 percent of the total government funding provided for this purpose, and this proportion of federal capital funding has remained relatively

**TABLE 5 SUMMARY OF TOTAL FEDERAL CAPITAL ASSISTANCE
(IN MILLIONS)**

<u>Calendar Year</u>	<u>UMTA Section 3</u>	<u>UMTA Section 9</u>	<u>Other Federal Capital Assistance</u>	<u>Total Federal Capital Assistance</u>
1975	\$1,196.6	\$ 9.1	\$ 81.4	\$1,287.1
1976	1,346.1	32.3	576.5	1,954.8
1977	1,250.0	39.4	434.3	1,723.7
1978	1,400.0	50.1	586.8	2,036.9
1979	1,255.0	255.6	620.9	2,101.6
198-	1,655.0	431.2	701.0	2,787.1
1981	1,925.0	361.1	659.6	2,945.7
1982	1,634.5	297.7	611.8	2,554.1
1983	1,640.9	863.1	657.7	3,161.6
1984	1,096.0	1,339.2	440.8	2,876.0
1985	727.7	1,491.6	291.1	2,510.3

constant since 1975. However, although total UMTA capital grants have consistently accounted for over 60 percent of total capital assistance for the nation's transit systems since 1975, there has been a dramatic change in the composition of federal capital assistance. Section 3 discretionary grants, which made up about 93 percent of total federal capital aid in 1975, now account for only about 30 percent of total federal capital assistance (see Table 6). Federal Section 9 formula capital grant assistance, which accounted for less than 1 percent of federal capital aid in 1975, now accounts for about 60 percent of federal capital aid (see Table 7).

⁴Ibid.

DISPARITIES IN FEDERAL TRANSIT OPERATING ASSISTANCE

One of the greatest difficulties in defining an appropriate state role for funding public transit is the disparity in the importance of federal transit aid among different size transit systems. This problem is a result of the federal transit assistance formula, coupled with the fact that the federal authorization for transit capital assistance differs significantly from the federal authorization for transit operating assistance. This situation is further complicated by the fact that all transit systems, regardless of size, need operating assistance annually but not all transit systems need capital assistance annually. The result is that most large transit systems tend to place a relatively higher priority on federal capital assistance, and most small transit systems tend to place a relatively higher priority on federal operating assistance. Since state transit funding programs complement federal transit funding programs, this dichotomy in the relative importance of federal capital and operating assistance to different size transit systems makes it difficult for states that have both large and small transit systems to reach a consensus on the optimal state transit funding role.

The forenamed dilemma is primarily a result of the federal transit assistance allocation formula. This formula is mainly based on demographic factors such as population and population-density. Although these variables are partly intended to be proxies for financial need, they primarily serve to distribute available transit assistance to as many urbanized areas as possible. However, the actual need for federal transit assistance is determined mainly by a transit system's level of

**TABLE 6 SUMMARY OF TOTAL FEDERAL SECTION 3 CAPITAL ASSISTANCE
(IN MILLIONS)**

Calendar Year	(1) UMTA Section 3	(2) Total Federal Capital Assistance	(3) Section 3 Funds as a Percent of Total (Col. 2 - Col. 1)
1975	\$1,196.6	\$1,287.1	93.0%
1976	1,346.1	1,954.8	68.9
1977	1,250.0	1,723.7	72.5
1978	1,400.0	2,036.9	68.7
1979	1,225.0	2,101.6	58.3
1980	1,655.0	2,787.1	59.4
1981	1,925.0	2,945.7	65.4
1982	1,634.5	2,544.1	64.3
1983	1,640.9	3,161.6	51.9
1984	1,096.0	2,876.0	38.1
1985	727.7	2,510.3	29.0

**TABLE 7 SUMMARY OF TOTAL FEDERAL SECTION 9 CAPITAL ASSISTANCE
(IN MILLIONS)**

Calendar Year	(1) UMTA Section 9	(2) Total Federal Capital Assistance	(3) Section 9 Funds as a Percent of of Total (Col. 2 - Col. 1)
1975	\$ 9.1	\$1,287.1	.7%
1976	32.3	1,954.8	1.7
1977	39.4	1,723.7	2.3
1978	50.1	2,036.9	12.2
1979	255.6	2,101.6	12.2
1980	431.2	2,787.1	15.5
1981	361.1	2,945.7	12.3
1982	297.7	2,544.1	11.7
1983	863.1	3,161.6	27.3
1984	1,339.2	2,876.0	46.6
1985	1,491.6	2,510.3	59.4

service and fare structure—not population or population density. A transit system's need for federal aid can be most accurately determined by measuring the size of its net operating deficit (operating expenses less operating revenue). However, since these figures constantly change, indirect proxies of financial need such as the number of vehicle miles or the number of peak vehicles are often used to estimate the relative funding needed by different size transit systems.

There is a wide disparity between the amount of federal aid provided to urbanized systems and their actual need for federal aid. Generally, large transit systems are allocated far less federal assistance relative to their actual funding need, while small transit systems tend to be allocated more federal aid relative to their financial need. In absolute terms, federal aid is insufficient to meet the financial needs of both large and small transit systems, but the gap between resources and needs is wider in the case of larger systems.

This dilemma is further aggravated by the dichotomy in federal limits on operating versus capital assistance. UMTA can pay "up to 50 percent" of the federal deficit for operating assistance but can reimburse transit systems for 75 to 80 percent of project costs for capital assistance.⁵ In isolation, this discrepancy in federal funding limitations creates an incentive for transit systems to use available federal aid for capital assistance rather than operating assistance. This federal bias toward capital assistance is intensified by the federal provision of "caps" on operating assistance. Federal law places a ceiling on the amount of federal transit aid that can be used for operating assistance.

⁵The federal share for Section 3 discretionary capital assistance is 75 percent, while the federal share for Section 9 formula capital assistance is 80 percent.

This amounts to a double ceiling on the amount of federal aid that can be used for federal operating assistance. For all but small urban transit systems, the first federal ceiling—the cap on transit operating assistance—is reached before the second federal ceiling—not to exceed 50 percent of the federal deficit limit—is reached. Thus, the imposition of the federal cap impedes many transit systems from using as much federal aid for operating assistance as they would otherwise. The effect is to take away the flexibility in funding choice that a block grant is intended to provide. Fortunately, the 1987 STURA provisions largely removed this obstacle for small urban areas, and the Section 9 program now can function as a block grant for these systems.⁶

DISPARITIES IN STATE TRANSIT FUNDING

In addition to the forenamed disparities in the federal transit funding program, there is a great deal of disparity among the 50 states in transit funding programs. Last year, in its 1987 Survey of State Involvement in Public Transportation, AASHTO reported that 42 states provided some form of direct state transit assistance in FY 1986-87.⁷ The term "direct transit assistance" refers to revenues generated by a statewide tax and returned to local entities in the form of grants from the state. Some of these same states also provided indirect transit assistance, which means revenues generated by a state-level tax and retained at the local level for transit purposes. Generally, direct state transit assistance appears on annual state budgets and requires annual state appropriations by legislators while indirect state transit assistance does not. At times, the distinction between direct and indirect state transit assistance can be rather fuzzy, but, in most cases, state transit aid clearly fits into one category or the other. Table 8 summarizes direct state transit assistance from FY 1981-82 to 1983-84 based on AASHTO's 1984 Survey of State Involvement in Public Transportation. Table 9 summarizes direct state transit assistance from FY 1984-85 to 1986-87.

The form of this direct state transit assistance last year included state aid for at least one of the following purposes: operating assistance for urban and/or nonurban areas; capital assistance for urban and/or nonurban areas; operating and/or capital assistance for intercity bus service; operating and/or capital assistance for specialized transportation service; operating and/or capital assistance for rideshare service; state planning and/or technical assistance; state research and development assistance; and state financial support of administrative costs for the federal Section 16(b)(2) and/or Section 18 programs. Most states participated financially in a number of these transportation assistance programs.

Of the 42 states that provided direct transit assistance in FY 1986-87, 34 provided direct operating and/or capital assistance to urban and/or nonurban areas. In

⁶This federal legislation provided a one-time 16 percent increase in the "caps" for small urban areas in FY 1987-88.

⁷AASHTO, 1987 Survey of State Involvement in Public Transportation, November 1987.

addition, the state of Washington provided indirect state transit assistance for these purposes. Only 15 did not financially participate in at least one of these four transit assistance programs (see Table 10).

As shown in the table, many states were financially involved in all four transit funding programs. A few states, such as Wisconsin and West Virginia, limited their state involvement to operating assistance, while others, such as Georgia and Kentucky, restricted their financial involvement to capital assistance. Likewise, a few states, such as Rhode Island and Louisiana, restricted their state transit programs to urban areas. No state restricted its transit assistance programs to non urban areas. One state, North Carolina, provided capital assistance to both urban and nonurban areas but limited operating assistance to nonurbanized areas. Illinois provided capital assistance to both urban and nonurban areas but limited operating assistance to urban areas. Overall, there is a great deal of variability among the states in terms of which funding programs they were financially involved in last year.

There was also a wide variation in the amount of direct state operating assistance provided for transit operating and/or capital assistance in FY 1986-87. Direct state aid varied from the \$794 million provided by New York to the \$70,000 provided by Montana. Table 11 summarizes the amount of direct transit assistance provided by each state last year based on AASHTO's 1987 Survey of State Involvement in Public Transportation.

As noted in the table, most of the direct state transit assistance provided in FY 1986-87 was provided by six states—New York, Pennsylvania, New Jersey, Massachusetts, Maryland, and Illinois. It should be noted that California provided an extremely large amount of indirect state transit assistance (\$444 million) last year. Over one-half of these 34 states, 20 states, provided less than \$10 million of total direct state transit assistance last year, and many of these states provided less than \$1 million of direct state transit assistance in FY 1986-87. However, the absolute level of direct state transit assistance is not necessarily an indicator of state commitment to fund public transit, since these states differ tremendously in terms of size, wealth, population, and population density. Also, the amount of local transit funding varies greatly among these states, as many large cities have dedicated funding sources to supplement available direct state transit assistance. Tables 10 and 11 show that states vary greatly in terms of the transit funding programs they use and the degree of their financial participation in these programs. This variability makes it extremely difficult for states to agree on funding programs and policies.

SOURCES OF STATE TRANSIT OPERATING ASSISTANCE

In 1987, most of the states that provided direct and/or indirect transit assistance last year provided state operating assistance. The Wisconsin Department of Transportation did a survey of these states last year and found that, of the 30 participating states, 15 exclusively used general fund proceeds, while 6 more used a

**TABLE 8 SUMMARY OF HISTORICAL AMOUNT OF
DIRECT STATE TRANSIT FUNDING—PART I
(IN MILLIONS)**

	<u>FY 1981-82</u>	<u>FY 1982-83</u>	<u>FY 1983-84</u>
Alabama	--	--	--
Alaska	3.7	2.0	--
Arizona	--	--	--
Arkansas	--	--	.2
California	65.2	69.9	88.0
Colorado	--	--	--
Connecticut	56.7	55.6	61.9
Delaware	4.2	4.3	4.1
Florida	36.9	31.8	33.6
Georgia	1.2	.7	.8
Hawaii	--	--	--
Idaho	--	--	--
Illinois	66.3	65.2	173.8
Indiana	10.3	9.9	10.8
Iowa	1.7	2.0	1.9
Kansas	--	--	--
Kentucky	.5	.5	.5
Lousiana	12.5	8.6	8.6
Maine	.4	.4	.4
Maryland	87.1	111.8	115.8
Massachusetts	158.7	166.9	174.7
Michigan	58.9	62.4	88.5
Minnesota	20.3	18.0	23.0
Mississippi	--	--	*
Missouri	1.1	.9	.9
Montana	.2	.2	.2
Nebraska	2.9	2.8	2.8
Nevada	.4	.4	.4
New Hampshire	*	*	*
New Jersey	104.5	124.0	149.0
New Mexico	--	--	--
New York	342.3	672.3	800.0
North Carolina	1.3	1.3	1.3
North Dakota	--	--	--
Ohio	17.9	16.2	31.2
Oklahoma	--	--	--
Oregon	1.0	1.0	.2
Pennsylvania	178.2	201.3	223.7
Rhode Island	6.6	7.2	8.3
South Carolina	.4	.6	1.0
South Dakota	--	--	--
Tennessee	1.8	1.8	1.9
Texas	14.0**	14.0**	14.0**
Utah	.5	.5	.6
Vermont	--	--	.1
Virginia	15.8	31.8	31.8
Washington	.9	1.1	1.1
West Virginia	--	.5	1.1
Wisconsin	24.6	40.8	36.2
Wyoming	.1	.1	.1

* Some direct transit provided but equalled less than \$.1 million when rounded.

**Annual average of 2-year appropriation.

Source: AASHTO, 1984 Survey of State Involvement in Public Transportation,
September 1984.

**TABLE 9 SUMMARY OF HISTORICAL AMOUNT OF
DIRECT STATE TRANSIT FUNDING—PART II
(IN MILLIONS)**

	<u>FY 1984-85</u>	<u>FY 1985-86</u>	<u>FY 1986-87</u>
Alabama	--	--	.5
Alaska	--	--	--
Arizona	--	--	--
Arkansas	.2	.3	.3
California	167.0	104.1	93.9
Colorado	--	--	--
Connecticut	64.9	71.5	76.2
Delaware	4.8	4.3	7.5
Florida	34.8	11.9	9.8
Georgia	.7	1.2	1.0
Hawaii	--	--	--
Idaho	--	--	--
Illinois	174.6	173.4	173.0
Indiana	11.9	12.4	13.0
Iowa	1.9	2.9	3.6
Kansas	--	--	--
Kentucky	.6	.7	.9
Louisiana	7.2	7.0	3.5
Maine	.4	.4	.4
Maryland	158.7	204.0	212.0
Massachusetts	201.0	239.7	300.7
Michigan	90.7	89.4	98.4
Minnesota	32.5	27.9	24.6
Mississippi	**	**	**
Missouri	.9	1.0	1.1
Montana	--	--	.1
Nebraska	2.8	1.0	1.4
Nevada	.4	.4	.4
New Hampshire	--	**	**
New Jersey	224.0	221.7	290**
New Mexico	--	2.6	1.6
New York	805.2	826.9	800.8
North Carolina	1.3	1.6	1.7
North Dakota	--	--	--
Ohio	31.8	32.4	33.5
Oklahoma	.2	.3	.2
Oregon	.2	3.0	5.9
Pennsylvania	345.0	310.0	343.2
Rhode Island	8.8	9.9	11.6
South Carolina	1.1	1.3	1.1
South Dakota	--	--	--
Tennessee	1.9	2.2	7.6
Texas	14.0	4.9	4.9
Utah	.6	.6	.4
Vermont	.1	.1	.3
Virginia	31.8	31.8	43.6
Washington	.9	1.2	1.2
West Virginia	1.3	1.2	1.2
Wisconsin	39.8	46.7	47.9
Wyoming	.1	.1	.1

* Funding includes all state transit assistance—not just operating and capital assistance—for urban and nonurban areas as reflected in Table 11.

** Direct state transit assistance equalled less than \$.1 million when rounded.

*** Corrected survey figure.

Source: AASHTO, 1987 Survey of State Involvement in Public Transportation, November 1987.

**TABLE 10 URBAN AND NONURBAN OPERATING CAPITAL
ASSISTANCE INCLUDING REDUCED FARE PROGRAMS**

<u>State</u>	<u>Urban Operating Assistance</u>	<u>Urban Capital Assistance</u>	<u>Nonurban Operating Assistance</u>	<u>Nonurban Capital Assistance</u>
Alabama		No Direct Financial Participation		
Alaska		No Direct Financial Participation		
Arizona		No Direct Financial Participation		
Arkansas		X	X	X
California	Indirect Financial Participation in All Four Programs/Direct Financial Participation in Urban Capital Assistance			
Colorado		No Direct Financial Participation		
Connecticut	X	X	X	X
Delaware	X	X	X	
Florida	X	X	X	X
Georgia		X		X
Hawaii		No Direct Financial Participation		
Idaho		No Direct Financial Participation		
Illinois	X	X		X
Indiana	X	X	X	X
Iowa	X	X	X	X
Kansas		No Direct Financial Participation		
Kentucky		X		X
Louisiana	X	X		
Maine	X	X	X	X
Maryland	X	X	X	X
Massachusetts	X	X	X	X
Michigan	X	X	X	X
Minnesota	X		X	
Mississippi		No Direct Financial Participation		
Missouri		No Direct Financial Participation		
Montana	X			
Nebraska	X	X	X	
Nevada		X		X
New Hampshire		No Direct Financial Participation		
New Jersey	X	X	X	X
New Mexico	X	X		
New York	X	X	X	X
North Carolina		X	X	X
North Dakota		No Direct Financial Participation		
Ohio	X	X	X	X
Oklahoma		No Direct Financial Participation		
Oregon		X	X	
Pennsylvania	X	X	X	X
Rhode Island	X	X		
South Carolina	X	X	X	X
South Dakota		No Direct Financial Participation		
Tennessee	X	X	X	X
Texas		X		X
Utah		No Direct Financial Participation		
Vermont	X	X	X	X
Virginia	X	X	X	X
Washington	Indirect Financial Participation in All Four Programs			
West Virginia	X		X	
Wisconsin	X		X	
Wyoming		No Direct Financial Participation		

Source: AASHTO, 1987 Survey of State Involvement in Public Transportation, November 1987. (Tables were modified in some cases to reflect updated information received by telephone.)

combination of general fund revenues and dedicated transportation fund revenues.⁸ The remaining 9 states used dedicated transportation funds and/or miscellaneous other dedicated funds, and, in one case, tolls, to finance their state operating assistance programs. Table 12 summarizes these alternative funding sources for state transit operating assistance last year.

It is anticipated that more states will establish dedicated transportation funding sources to substitute for, or supplement, general funds to finance transit in the future. This will be largely due to the increased demand in state transit assistance funds both to keep up with inflation and to make up for reduced federal transit funding. Proposals to create dedicated state transit funding sources are already receiving serious discussion in some states, such as Pennsylvania and New Jersey.

Another important reason for the increased demand for state transit funding relates to the nation's serious infrastructure problem. In 1985, AASHTO reported in its Study on Future Directions report that anticipated transit capital needs are more than double authorized capital funding levels.⁹ Due to a combination of reduced federal transit assistance, and progressively increasing capital needs as transit capital facilities deteriorate, the gap between future capital needs and available transit financial resources grows each year. If these trends continue, a transit funding crisis is highly likely in the next decade since failure to replace or restore these capital assets will have a major impact on transit service, especially commuter rail service.

A current example of this problem can be seen in Philadelphia. SEPTA projects that its current capital needs for the next 8 years will be approximately \$2 billion—about \$250 million per year. SEPTA anticipates approximately \$90 million in combined Section 3 and Section 9 federal capital funding this year, which, when matched by state and local funds, will result in approximately \$110 million.¹⁰ Therefore, the expected capital funding will cover only about 40 percent of SEPTA's current capital needs this year. Although the capital funding situation in many of the nation's larger cities may not be quite this severe, virtually all of these cities are experiencing a serious capital funding problem.

FUTURE OPTIONS FOR STATE TRANSIT FUNDING

Given the disparity in federal government funding of public transit operating and capital costs and the diversity among states in funding these programs, it is clear there is no simple way for states to develop a uniform funding program that would

⁸ Wisconsin Department of Transportation's Division of Budget and Planning, An Overview of State Mass Transit Assistance Programs: Financing and Distribution Methods, November 1987.

⁹ AASHTO, Study on Future Directions of Public Transportation in the United States, February 1985.

¹⁰ SEPTA, Staff Report on SEPTA Capital Needs and Available Funding, March 1988.

TABLE 11 SUMMARY OF THE APPROXIMATE AMOUNT OF DIRECT STATE FUNDING PROVIDED FOR URBAN AND NONURBAN OPERATING AND CAPITAL ASSISTANCE INCLUDING REDUCED FARE PROGRAMS (ALL FIGURES ABOVE \$1.0 MILLION ROUNDED TO NEAREST MILLION)

State	Approximate Amount of Direct State Assistance (in millions)
New York	\$ 794
Pennsylvania	318
New Jersey	292
Massachusetts	245
Maryland	210
Illinois	173
California	94*
Michigan	89
Connecticut	76
Wisconsin	43
Virginia	42
Ohio	32
Minnesota	19
Indiana	13
Rhode Island	11
Florida	9
Tennessee	7
Texas	5
Delaware	5
Iowa	4
Lousiana	4
Oregon	3
Nebraska	1
North Carolina	1
South Carolina	1
Georgia	.9
Kentucky	.9
West Virginia	.6
Maine	.4
Nevada	.4
Arkansas	.3
Vermont	.2
New Mexico	.1
Montana	.1
Washington	**

* In addition to this direct aid, California provided approximately \$444 million of indirect state assistance for these programs.

** Although no direct state aid was provided for these programs, Washington provided \$85 million of indirect state assistance.

Source: AASHTO, 1987 Survey of State Involvement in Public Transportation, September 1987. (Tables were modified in many cases to reflect updated information received by telephone.)

**TABLE 12 SUMMARY OF WISCONSIN SURVEY OF SOURCES
OF STATE OPERATING ASSISTANCE
(INCLUDED MOST STATES THAT PROVIDED EITHER DIRECT AND/OR
INDIRECT STATE OPERATING ASSISTANCE IN FY 1986-87**

<u>State</u>	<u>Source(s) of State Operating Assistance</u>
Arizona	General lottery fund proceeds
California	General sales tax funds
Connecticut	Fuel tax and vehicle registration fee proceeds
Delaware	Turnpike toll revenue
Florida	Fuel tax proceeds
Illinois	General funds and general obligation bonds
Indiana	General sales tax proceeds
Iowa	Motor vehicle sales and use tax proceeds and oil overcharge funds
Louisiana	General funds
Maine	General funds
Maryland	Vehicle title fees
Massachusetts	General funds, fuel tax, and cigarette tax proceeds
Michigan	General funds, fuel tax, and vehicle registration fee proceeds
Minnesota	General funds, including proceeds from motor vehicle excise tax
Montana	Fuel tax proceeds
Nebraska	Fuel tax proceeds
New Jersey	General funds
New York	General funds plus proceeds from a number of selected taxes
Ohio	General funds
Oregon	General funds, including lottery fund proceeds
Pennsylvania	General funds
Rhode Island	General funds using proceeds from motor fuel tax
South Carolina	General funds
Tennessee	Fuel tax proceeds
Texas	General funds
Vermont	Fuel tax and vehicle registration fee proceeds
Virginia	General funds and earmarked sales tax and vehicle registration fee proceeds
Washington	General funds using proceeds from dedicated vehicle excise tax
West Virginia	General funds
Wisconsin	Fuel tax and vehicle registration fee proceeds

Source: University of Wisconsin, Division of Planning and Budget, An Overview
of State Mass Transit Assistance Programs: Financing and Distribution
Mechanism, November 1987.

satisfactorily meet transit funding needs. The constraints of the federal public transportation program complicate and greatly restrict what states can do to address this problem. Furthermore, the demographic variations among states make it difficult for them to develop a single concept for an appropriate state role for public transportation.

However, one option that appears to have merit for all states is greater reliance on block grants. One current opportunity that most states have to apply this concept is management of the governor's apportionment. Unlike federal aid to large- and medium-size urban areas, which is provided directly to local designated recipients, each state's governor is the designated recipient for federal aid to small urban areas. The governor has the authority, after consultation with local officials and publicly owned transit systems, to make apportionment decisions for this block of funds. States are not obligated to apportion funds to urban areas based on the traditional federal bus-vehicle-mile, population, and population density formula published annually in the Federal Register. Also, the individual operating assistance caps published for each urbanized area are not applicable on a syshas been greatly enhanced by the recent 16 percent national increase in caps for small urban areas. In most states, the statewide cap on this block of funds is a high percentage of the total statewide apportionment.

Another option, which is related to the governor's apportionment, is to transfer funds from this block grant to larger urban or nonurban areas. Like the transfer of funds within the governor's apportionment, consultation with local officials and public transit systems is required.¹¹ The authority to transfer funds to urban areas with populations over 300,000 is a relatively new feature of the Section 9 program. States have had the ability to transfer funds to nonurban areas for a number of years.

Currently, some states exercise this discretion in managing the federal governor's apportionment block grant. For example, Wisconsin and Ohio do not use the conventional Section 9 formula in apportioning these monies. Each of these states has developed its own apportionment methodology in distributing federal funds to small urban areas to help overcome some of the inequities and disparities in the federal transit funding program. In addition, Wisconsin routinely transfers funds from small urban to nonurban areas to help overcome Section 18 funding shortfalls.

The benefits of increased funding flexibility and increased local option are applicable to all government transit assistance, not just the governor's apportionment. For example, UMTA's Section 9 program gives large- and medium-size urban areas more discretion in the allocation of federal formula funds. Unfortunately, the current caps on federal operating assistance greatly impede areas from exercising as much discretion as is afforded small urban areas. States should consider providing more funding flexibility in their transit assistance programs, as

¹¹ States may unilaterally make governor's apportionment transfer decisions if affected funds are within 90 days of lapsing.

UMTA has done to some degree with its transit funding programs. A few states, such as Indiana, Iowa, and South Carolina, currently allow grantees to use a significant portion of their state transit funding for operating or capital assistance.

Besides the pragmatic advantages of block grant funding, there is strong theoretical justification for this concept. Transit operating and capital assistance should complement each other. It is inappropriate to artificially place a higher priority on capital assistance than on operating assistance through a higher matching ratio as the federal government has done. The removal of as many of these arbitrary obstacles as possible would enhance the optimal use of available financial resources for transit assistance.

Most of the other options for the administration of state transit assistance programs depend on whether a state desires to increase direct oversight of its program or decrease direct oversight by passing more administrative responsibility to grantees or local governments. Those states that prefer the latter approach may want to consider more self-certification by grantees that applicable grant policy conditions and legislative requirements are met. This could potentially reduce the grant administration expenses for these state agencies as well as expedite the release to state grant funds.

States that want to increase their role in administering public transit funds have the option of imposing more state grant conditions of their own now that selected federal grant conditions have been relaxed. Among the alternatives these states may want to consider are increased state financial reporting beyond the level required by Section 15, basing some state transit funding on the achievement of financial and/or operating performance standards such as minimum revenue/expense ratio standards, or basing some state funding on demonstrated improvement in selected financial and/or operating performance standards. There is a significant amount of state experience with these alternatives that other states can draw upon if they wish to do so.

CONCLUSION

Unfortunately, it is difficult for states to make these deliberate choices as long as the current federal/state/local transit funding partnership remains unstable. The continued reduction of federal transit funding forces states to respond in a crisis environment. States must not only increase transit funding to cover ongoing annual inflationary cost increases but also must make up, at least in part, reduced federal funding to avoid further fare increases and/or service decreases. It is not clear how long states can meet this challenge. Already, some states, such as Louisiana, have reduced their state transit funding programs due to their inability to keep up with these funding pressures. It is essential for the federal government to accept its traditional funding role in the transit funding partnership to stabilize this situation and head off the potentially devastating spiral of higher fares, reduced ridership, and reduced service that led to federal transit funding in the first place.

Both the changing federal role in its funding and administration of public transit programs and the large increase in state funding of these public transit programs provide states with a need to reexamine their role in administering public

transportation funding programs. States have the option of increasing their involvement in public transit funding through greater financial reporting requirements, establishing service standard criteria, and providing more direct technical assistance. On the other hand, some states may want to emulate the federal program and pass more administrative responsibility to grantees or local governments and reduce their own direct involvement in these programs. There are important pros and cons with each approach, and there is no right answer as to which role is most appropriate for a given state. Rather, each state must define its own appropriate state role in funding public transportation on a case-by-case basis, taking into account the trends, their own experience, and the experience of other states in administering state transit funding programs. Some of the major policy issues each state should consider are listed below.

STATE FUNDING POLICY ISSUES FOR DISCUSSION

- Should states provide transit funding in the form of a block grant to be used for operating or capital assistance at the grantee's discretion or should states earmark a portion of transit funding for operating assistance and a portion for capital assistance?
- Should the state share for transit operating assistance grants be different than the state share for transit capital assistance grants? If so, what should the state match for each type of grant be?
- Should states provide the entire nonfederal match for federal capital grants or should local governments be expected to provide a portion of the nonfederal match for these capital grants?
- Should states directly monitor the compliance of grantees with state transit funding program requirements or should states have grantees certify their compliance with these requirements as is generally done by UMTA in administering federal transit funds?
- Should states take an active role in managing the governor's apportionment and allocate these funds its own way or should states treat small urban areas as it does other urban areas, and accept the federal formula allocation of funds to these systems as specified each year in the Federal Register?
- Should states base the level of transit funding to grantees on more complicated (but more accurate), determinants of financial need, such as a portion of transit operating expenses or a portion of transit operating deficits, or base the amount of state transit funding on less accurate (but simpler and more predictable) determinants of financial need, such as population, number of vehicles, or the historical share of past state funding?
- Should states take the amount of federal funding into account in determining the amount of state grants for grantees or should the state base its funding independently of the amount of federal transit aid?

- Should states require revenue to cover at least a minimum percentage of expenses as is done in some states or should local governments have total discretion in setting fare levels?

Interagency/Intermodal Coordination

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INTRODUCTION

What is the role of states in promoting cooperation among transportation modes, in promoting coordination of resources between agencies that support transit and human service client transportation, and in providing incentives for local land use guidelines that promote rational and efficient planning? Should these roles include building coalitions, allocation of resources, generation of revenues, and planning for future needs?

States are confronted with making critical decisions about selecting roles and the use of resources to carry out these roles. Therefore, establishing a state's role agenda should be accomplished by looking at the desired comprehensive result and the corresponding best use of resources. All relevant data and interests should be included in this identification of roles, and all available resources should be used to support each activity assigned to achieve the state's mission.

The overall mission of public transportation should be to deliver effective service in the face of known limited resources. To adequately respond to this mission, states must evaluate the possible roles, identifying and selecting those necessary and appropriate to accomplish each state's specific mission and its corresponding roles.

In most states, public transportation has less political and constituent support and fewer financial resources than most other state transportation programs. Yet public transportation is in a strategic position to aid other programs in accomplishing their service goals. In the following pages, a series of possible state roles are presented.

STATE ROLE: Promote cooperation among transportation modal agencies (air, rail, water, highways and transit)

States have developed a wide array of organizational structures to respond to the administration and management of the various modal programs. These organizational structures range from a centralized transportation cabinet agency containing all modal programs to the completely decentralized arrangement of separate commissions or boards, each controlling one modal program function with no single focus of administrative oversight.

Obviously, having all modes controlled by a single board or cabinet secretary allows easier and more continuous cooperation among modes than does a more

decentralized arrangement. When such a division of modal authority exists, the effort required to bridge this separation becomes important to cooperation efforts. Public transportation must adequately analyze the value of cooperation versus the expense in time and effort to accomplish the desired cooperation. This evaluation will most likely be based on a "what's in it for transit" attitude. It should be anticipated that all other modal programs will view their involvement in the cooperation effort based on an overall benefit to their mode. Exceptions to this bias occur when transit and other modal programs are directly managed by the same director. To aid in this evaluation, a matrix could be established that ranks the potential value of cooperation with other modes and compares this value with the costs associated with the cooperation effort. Values might include such items as the potential of the other modal programs to assist in achieving transit's funding and program goals, as well as the potential for using the other modal program's constituents to expand transit's constituent base. Costs could include the level of resources that would be consumed to accomplish the desired values and the possible loss of flexibility to the administration of the transit program. Table 1 presents an example of such a matrix.

TABLE 1 PUBLIC TRANSPORTATION RATER MATRIX FOR COOPERATION/COORDINATION

Modal Programs	Value Analysis			Cost Analysis		
	Assist In Achieving		Build Support Groups	Man Hours Needed	Loss Of Program Integrity	Budget Loss
	Prog. Goals (+2)	Fin. Goals (+2)	(+2)	(-2)	(-3)	(-3)
Rail (Freight)						
Highways						
Aeronautics						
Ports & Waterways						

Note: (+/-) denotes possible range of value, the total of each line's value provides that mode's rated cooperation index. Any positive value should be considered an opportunity for cooperation.

The questions regarding this issue are—

- Is cooperation-building among a state's modal programs a state public transportation role?
- If this is a valid state role, how is it to be undertaken and, in priority order, which modal agencies should transit cooperate with and why?

STATE ROLE: Promote cooperation between the state public transportation program and the state's economic and/or industrial development interests

The economic viability of any state is directly linked to the transportation network made possible by the various transportation modes. Public transportation is a viable partner in this network, providing work trip transportation for millions of workers daily. A question commonly asked by industries evaluating new industrial site locations is, "What is the availability of transit service to my potential employees?" For industry, the availability of transit service broadens the geographic area of the potential employee pool, reduces congestion around the plant site, reduces the need for expensive parking facilities, and has been proven to reduce employee tardiness. The dollar savings transit can bring to an industry are compounded by the development density of the area. However, real values are also present in the most rural of industrial locations.

The importance of transit as an employer and local business should not be overlooked. The volume of salaries paid and the amount of services and commodities purchased locally makes transit an important partner in the local economy.

The questions regarding this issue are—

- Does the state's public transportation program view a cooperative relationship with the state's economic and industrial development interests as a worthwhile effort?
- If this role is selected, how can it best be carried out?

STATE ROLE: Promoting the coordination of services and resources among agencies that support transit and human service client transportation

A great deal of study, literature, and experience has occurred on this topic. For years, state public transportation agencies have been aware that state health and human service programs spend large sums of money, many times that spent by the typical state transit program, for passenger transportation. These client-oriented services are usually specific to categorical programs. As a result, each local health or human service delivery agency usually operates its own program with its own vehicles. This multiplicity of service delivery agencies produces low productivity factors and excludes many transportation dependents—those not qualifying as a client of one of the categorical programs. In cases where states have supported coordinated efforts, productivity factors have improved, resulting in the availability of more client service. Where states have supported the coordination of health and human service programs with general public transportation services, transit has been made available to new geographic areas. This type of coordination role can be labor intensive, depending on the number of different health and human service agencies that must be included in the coordination effort. Here, as in attempting to cooperate with the transportation modal programs, coordination is easier when there are fewer state agencies administering the state's health and human service programs. A rate matrix,

similar to the one presented earlier, could be used to evaluate the values and cost of a coordination effort. The chief values to transit are the potential to expand transit's geographic area of coverage, enhanced productivity on existing systems, new contract revenue sources, and, perhaps most important, the building of transit's constituency to include large new groups of the handicapped and elderly.

The questions regarding the issue are—

- Should the state assume the role of promoting coordination between the general public and health and human service client transportation activities?
- How should this coordination activity be implemented?
- Can the coordination be phased in, agency by agency or by geographic area, and, if so, which agency or area should be first, second, and so on?

STATE ROLE: Providing incentives for local land use guidelines that promote rational and efficient planning

This role, more than any other discussed above, has equal relevance to each of the modal programs. Land use conflicts are frequently experienced with the placement of transportation facilities and corridors of all types. Public transportation can play a significant role in preserving the quality of life in areas beset by rapidly increasing population, rampant development, and highway gridlock. Such conflicts could be easily remedied with adequate planning, use of appropriate land use controls, and adequate enforcement of the controls. Public transportation is greatly dependent on the location and density of transportation-dependent individuals and their destinations (i.e., health and personal services, shopping, and jobs). Through proper land use, planning, and development, these individuals could be served more efficiently. Land use planning combined with the other components of the comprehensive planning process can produce rural and urban areas that are more effectively designed to use transit's services. Since few states have an adopted land use policy and since local governments are the source for land use planning and related controls, the state's public transportation program must build a cooperative network with local governments if fulfillment of this role is to be achieved. Success associated with this role is greatly dependent on the state's ability to offer incentives to local governments for their support or to enforce penalties for the lack of local government support. Of course, the use of incentives is always preferred. Whether incentives or penalties are used, the state public transportation program must develop an ability to recognize supportive and nonsupportive land use actions and respond accordingly. This ability is usually readily available and inexpensive relative to the potential long-term transit productivity gains. To evaluate the importance of this role to transit service delivery and development, consideration should be given to—

- ease of transit facility expansion
- opportunities to increase the occurrence of ridership density corridors
- potential reduction of route miles via the contiguous planning of residential and employment uses
- disincentives for auto ownership and the resulting increased transit system dependence/utilization
- potential gains in transit system productivity

The questions regarding this issue are—

- Should the state public transportation program provide incentives or penalties to encourage local land use planning that rationally and efficiently supports transit programs?
- How can these incentives or penalties best be administered?

All states take an active role in guiding the development of their economies. In the past 30 years, this role has included staffing, planning, promotional efforts, and tax incentives to industry. States have not acted as seriously when it comes to organizing and coordinating public transportation resources. It is time for public transportation to begin considering new and expanded roles to enhance its mission. By simply posing potential state roles as set forth above, the value of public transportation and related improvements and/or costs in lost opportunities is immediately brought forth. Examples of such opportunities include the ability to influence development to reduce the cost of providing and expanding public transit services, the creation of coordinated modal projects that produce networks to improve the movement of people and goods, and the elimination of multiple independent public transportation providers. Several rapid growth states, such as Florida and California, have clearly recognized the need to define and implement a state role in promoting cooperation between transportation modes and state economic interests. While the growth problems in every state may not be as burdensome and complex, the value of defining the state role and developing a program to ensure its implementation is critical to public transportation interests.

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