U.S. Department of Transportation

State and Local Financing of Public Transit Systems

June 1983

The cover shows one of the buses of Raleigh, North Carolina's Capital Area Transit (CAT) system, one of the case study systems discussed in this volume. The photo was provided courtesy of Barton Barham of the City of Raleigh Department of Transportation.

State and Local Financing of Public Transit Systems

Final Report
June 1983

Prepared by
Erskine S. Walther
The Transportation Institute
North Carolina A&T State University
Greensboro, North Carolina 27411

Prepared for
University Research and Training Program
Urban Mass Transportation Administration
U.S. Department of Transportation
Washington, D.C. 20590

In Cooperation With
Technology Sharing Program
Office of the Secretary of Transportation

DOT-I-84-31

TECHNICAL REPORT STANDARD TITLE PAGE

1. Report No.	2. Government Accession No.	3. Recipient's Catalog No.
DOT-I-84-31	PB83-261 065	

4. Title and Subtitle	5. Report Date
STATE AND LOCAL FINANCING OF PUBLIC TRANSIT SYSTEMS	June 1983
	6. Performing Organization Code

7. Author(s)	8. Performing Organization Report No.
Erskine S. Walther	A&T-TI-49-RR-82

9. Performing Organization Name and Address	10. Work Unit No.
The Transportation Institute North Carolina A&T State University Greensboro, N.C. 27411	11. Contract or Grant No. NC-11-0009

12. Sponsoring Agency Name and Address	13. Type of Report and Period Covered
U.S. Department of Transportation Urban Mass Transportation Administration University Research and Training Progaam Washington, D.C. 20590	Final Report - Project 1 June 1983
	14. Sponsoring Agency Code UMTA

15. Supplementary Notes

Dr. Charles Hedges (UBP-10), Technical Monitor. This document is being distributed in cooperation with the Technology Sharing Program of the Office of the Secretary of Transportation.

16. Abstract

This study examines the sources and uses of funding by five case study transit systems in four states. While all sources of funds are considered, emphasis is placed on non-federal governmental sources. Non-government funds such as farebox revenues are also examined. The uses of these funds and any usage restrictions upon particular funds are detailed. The study examines the advantages and disadvantages of dedicated funding sources, farebox requirements, forecasting techniques utilized, potential additional funding sources, legal restrictions upon funds usage, and the organizational and political environment surrounding the case study systems.

17. Key Words	18. Distribution Statement
Finance, Farebox recovery, Transit financing, Forecasting, Dedicating funding, political factors, Sources and Uses of funds, sales taxes State and local financing, fuel taxes	Availability is unlimited. Document is being released to the National Technical Information Service, Springfield, Virginia 22161 for sale to the U.S. public.

19. Security Classif. (of this report)	20. Security Classif. (of this page)	21. No. of Pages	22. Price
unclassified	unclassified	163	A10

Form DOT F 1700.7 (8-69)

ACKNOWLEDGEMENTS

The advice, assistance, and professional skills of numerous individuals were invaluable in the completion of this project. The Principal Investigator wishes to acknowledge and thank the following:

The case study respondents who so generously gave of their time and expertise: Mr. Nat Gauge of AC Transit, Oakland, California; Mr. Bart Barham of Capital Area Transit, Raleigh, North Carolina; Mr. Kenneth Gregor of MARTA, Atlanta, Georgia; Mr. Dennis Cole of MUNI, San Francisco, California; Ms. Lori Lewis of NJ Transit; Mr. Ron Hollis of CALTRANS; Mr. David King of the North Carolina Department of Transportation; Mr. Steve Kisk of the Georgia Department of Transportation; and Mr. Gary Cornell of the Atlanta Regional Commission;

The project's Technical Monitor, Dr. Charles Hedges of UMTA, who so willingly provided advice, assistance, and moral support;

Dr. Lalita Sen of the Transportation Institute, for her valuable reviews and criticism;

Dr. Alice E. Kidder of Syracuse University, for her early work on the project;

Dr. Quiester Craig, Dean of the School of Business and Economics at North Carolina A&T State University, for critical financial and moral support, without which this project would not have come to fruition;

Ms. Joyce Johnson, Administrative Officer of the Transportation Institute, for her valuable administrative support;

Ms. Phyllis Smith, Ms. Deborah Underwood and Ms. Bettie Holley for their irreplaceable word-processing skills.

Any errors or omissions which remain after the excellent assistance and support of these individuals are the responsibility of the author.

PREFACE

The material in the report derives from site-visit case studies, documents and reports provided by respondents. These research activities occurred during 1981 and 1982. The results reported herein are as accurate and complete as possible as of the above time period. Transit financing is a rapidly changing area and the time frame of this study should be kept in mind while reviewing this report.

TABLE OF CONTENTS

TABLE OF FIGURES

TABLE OF TABLES

I. INTRODUCTION TO THE STUDY

The problem of financing mass transit differs fundamentally from traditional private-sector financing. With the exception of some long-term capital projects, transit systems cannot use debt financing as may private-sector enterprise. For example, the most immediate financial need of a transit system is the ability to pay production costs, i.e., operating expenses. A private-sector firm in similar circumstances could use various types of short-term debt financing with the expectation of retiring the debt from future profits. However, transit services are not priced so as to provide a profit. Thus, funds used for transit operating expenses cannot be derived from traditional debt funding methods.

This situation should hold for long-term financing of capital projects as well. However, many transit systems do utilize bonds for such purposes, retiring the bonds out of future transit operating revenues or from public-sector funding. This approach to bond-debt retirement may reduce future operating revenues available to meet future operating expenses, and thereby increase the need for future short-term operating financing.

Thus, with debt financing not a viable short-term option, and somewhat questionable as a long-term option, the traditional financial management concerns with debt structures, interest rates, rates of return on investment and the like are not dominant themes for the financial manager of a transit system. As transit systems are predominantly public-sector operations, equity financing considerations are less relevant than in private industry.

Under these conditions, the major financial management problem for public transit is cash-flow management, and especially sources of funds. The sources of funds may be divided into two broad classes: public-sector funds, i.e., tax revenues, and user charges, i.e., farebox and/or toll revenues.

FOCUS OF THE STUDY

The present study examines sources of financial support currently in use or under consideration for public transit systems. The study examines funding arrangements and institutional interactions in case studies of five systems in four states. Financing activities at the local and state level are explored. Forecasting and planning activities are included as they bear upon funding and resource allocation decision making. The present role of UMTA funds is included in the discussion. Only slight attention is addressed in the case-study reports to the impact of eliminating UMTA operating subsidies. The reason for this is straightforward: only one system studied had computed the expected impact of loss of UMTA Section 5 subsidies upon its

fare and funding structure at the time of the case study interviews. The other systems were engaged in assessing the potential impact and in discussions with the appropriate state and local officials. Some insights can be obtained from the discussions of sources of operating funds as to the probable impact of eliminating operating subsidies.

Much of the literature in the area of transit financing approaches the topic from the economic perspective of public finance theory. The impacts of subsidy policies, the distribution of transit benefits and costs, and related topics have tended to dominate past research.

The present investigation derives from a financial management perspective. As such it is more concerned with questions of sources and uses of funds than with the subsidy, cost-benefit and equity topics of public finance theory.

The main thrust of the present study is an examination of financial resources currently utilized or under serious consideration, as well as the relevant institutional arrangements, policies, and laws which impact upon alternative financing options, present resource-allocation decision making, and the future planning and decision making of the case study systems.

The objectives of the study are:

1. to examine existing funding sources utilized by the systems studied;

2. to examine current uses of funds and levels of service provided by the systems studied;

3. to list additional funding sources available to and under consideration by the systems studied; and

4. to capture information relating to funds and service forecasting and planning.

These objectives are examined in Chapters 5 through 10 on a system-by-system basis. The findings are summarized and evaluated in Chapter 11.

SUMMARY OF MAJOR FINDINGS

1. Systems with dedicated funding sources are capable of devoting more managerial time to long-run planning activities and can undertake more reliable long-run forecasting activities than can managers of systems without dedicated funding. Managers of systems without dedicated funding sources tend to devote more time to solving short-run financial problems and tend to place

less reliance on the accuracy of their long-run forecasting and planning activities.

2. Systems with dedicated funding are insulated from the political decision-making process once the funding source has been dedicated. This is a key trade-off: improved managerial efficiency and improved long-run planning for future isolation from changing political priorities.

3. Dedicated funding sources tend to be initially dedicated by obtaining voter approval. The California systems and the Georgia system are examples. Additionally, California requires voter approval before certain funds may be dedicated to particular highly specific transit purposes.

4. Long-term dedicated funding combined with sound financial management (the two are interrelated), can produce efficient and effective long-term planning and project execution such that long-term capital and operating costs are minimized. Of the case-study systems, MARTA is the best example of these benefits. The changes in the California systems studied following Proposition 13 are also illustrative of the long-term stability advantages flowing from dedicated funding arrangements.

5. New Jersey Transit Corportation is utilizing its capital expenditure program in a unique manner to reduce its future maintenance costs. This includes centralized facilities which permit consolidation of labor force and, of somewhat lesser, importance, consolidation of inventories.

6. New Jersey Transit is also innovative in its involvement of the private sector in the construction of rail capital facilities and pre-development planning for the transit needs of new industrial facilities.

7. The state of North Carolina has proposed several innovative approaches to involvement of private transportation providers in public transportation service. Innovative proposals for sharing transit facilities with the private sector have also been made. However, none of these proposals have become active programs.

8. With respect to the various forecasting activities undertaken by the case study systems, several notable observations emerge:
    a. only relatively simple forecasting techniques are utilized;

    b. existing data bases will not support more sophisticated techniques;

c. a lack of stability in the economy as well as in UMTA policy has been forecasting more difficult and the forecasts somewhat unreliable;

d. while removing the difficulties noted in b) and c) above would make current forecasting results more reliable and permit the use of more sophisticated forecasting techniques, it is not clear that the more sophisticated techniques would in fact produce results worthy of the additional costs of such techniques.

9. Mandated farebox recovery ratios have not been a major factor in increasing operating efficiencies, rather a perceived general inadequacy of funding has provided the major incentive to increased efficiency.

10. Mandated farebox recovery ratios do insure that users pay a pre-set percentage of operating costs; however, the recovery ratios which have been established by law appear not to reflect any economic or philosophical principles.

11. In sizable metropolitan areas which embrace multijurisdictions and numerous transit providers, a compelling case exists for a strong regional transportation authority with funds allocation authority. The key role played by the MTC in ensuring the continuity of service in the Bay Area following Proposition 13 is an excellent example of the stability benefits from such an organization. However, for most transit systems, a strong regional planning authority would be an impediment to efficiency. Most transit systems are either the only system or the clearly dominant system in their service areas. The need for coordination among transit providers is either non-existent or minimal. For such systems, the presence of a regional body with the same level of authority as the MTC would produce an inefficient and unnecessary additional level of decision-making. The additional bureaucracy would all more to instability than to stability.

12. Of the case study respondents, the system with the fewest financial problems, CAT, has no dedicated funding and no mandate farebox recovery; however, the system does have the clearest philosophical and political view of the role of public transit.

ORGANIZATION OF THE STUDY

The present chapter provides background and an overview of the study, and includes a review of the literature of public transit financing*. The literature review points out the need for studies concentrating on the institutional and resource-allocation structures surrounding the financing of public transit services by local transit systems and state and local governments.

Chapter 2 describes the methodology of the study. The primary methodology was that of personal interview case studies with five transit systems in four states. A secondary methodology was a mail survey of selected transit systems, regional planning organizations and state departments of transportation.

Chapter 3 reviews public finance theory in the context of financing public transit services. A general model for discussion purposes is proposed.

Chapter 4 presents a summary of results obtained from the supplemental mail survey of financing activities in ten states.

Chapters 5 and 6 report the case-study interviews with respect to state and regional level financing and planning activities for public transit systems. Chapters 7-10 present the case-study interviews with respect to the management of the five systems examined.**

Chapter 11 summarizes the case-study findings and presents an evaluation of those findings.

LITERATURE REVIEW

The danger of dependence on federal financing (Bonnell, 1981) has been obvious to most transit planners and managers, and much has been written about alternative sources of financing. However, most of the literature explores the need for alternative financing only in terms of defraying the anticipated increasing annual operating deficits, and of the reluctance of local governments to provide larger amounts of funding each consecutive year. The problem posed by the phased withdrawal of federal funding is compounded by the many financial demands from competing urban services faced by most city and state

---

*In addition to this literature review, a partially annotated bibliography on the financing of public transit, compiled by Richard S. Watt, Research Associate and Publications Officer of the Transportation Institute, is included as Appendix A. This bibliography was developed independently of this project.

**Because of the unique scope of operations of one system (NJ Transit), both state and local activities are examined in Chapter 8.

governments. These competing funding demands are also increasing in response to reductions in other federal funding programs.

A wide variety of materials have been published in the transit financing field. They range from site-specific studies (Workshop Report ..., 1976; Metropolitan Planning Commission, 1977) to catalogs of alternative financing techniques (Gladstone Associates, 1978; Institute of Public Administration, 1979), to cite but a few. Often handbooks on transit management include sections dealing with transit financing (e.g. Institute for Urban Transportation, 1980). Other financing works have examined the distributional impacts of financing arrangements upon various jurisdictions (McHugh and Puryear, 1979), or methods of fairly allocating costs across multiple jurisdictions (Kidder, 1980).

Also represented among the works in transit financing are analyses and reports of expenditure trends (U.S. Congress, 1978, and Pucher, 1980, to cite but two examples). Since 1981, USDOT has published an annual report of transit financing sources derived from the Section 15 required reporting system (National Urban Mass Transportation Statistics, 1981, 1982.)

Several works examine the effects of subsidy policies on financing structures. One such study, which examined these impacts in several areas of transportation, was prepared for the Office of the Secretary of the U.S. Department of Transportation by Porter et. al.(1979). Burbank's 1976 study indicates that federal operating subsidies resulted in the substitution of federal dollars for state and/or local funds.

Recent research publications have reviewed the current financial difficulties of public transit systems (e.g. Bonnell, 1981). While the majority of the works such as those cited above examine funding for conventional transit systems, other researchers are questioning the viability of conventional transit as currently practiced and the incentives to viability in current subsidy policies (Oram, 1982). Additionally, there is an extensive literature on financing paratransit and specialized transit for the elderly and handicapped (e.g., Charles River Associates, 1980).

Some of the above-cited works and the literature of which they are representative investigate the tax incidence and tax impacts of alternative financing methods (e.g. Institute of Public Administration, 1979). However, most works on transit financing include only passing mention of regressiveness concerns.

One of the above-cited studies (Pucher, 1980) provides some insights into the magnitude of the replacement funds needed if all federal operating subsidy dollars are to be replaced. According to this study, 26 systems in large metropolitan areas received $566.8 million in federal operating subsidies in 1978 out of a total

operating subsidy of $2,389.4 million. Table 1.1 displays the percentage values by source of subsidy for these systems, grouped into five regions. The federal subsidy accounts for 23.7% of all operating subsidies when the five regions are viewed as a group. The federal share of total operating subsidies ranged from 21.4% to 33.6% when viewed by individual region.

SUMMARY

The literature in the transit financing field represents a broad range of concerns. To date those works dealing with state and local governmental financing have tended towards the listing of current resources and discussions of alternative sources of financial support. The emphasis in the literature has been on alternative sources of support with the objective of expanding the total pool of available resources. The current financial environment calls for greater emphasis upon maintaining current levels of support, adjusted for inflation, by means of a changed mix of sources of financial support.

The present study examines the existing financial resources, alternative sources under consideration, and the legal and institutional frameworks surrounding public transit, in five case-study systems in four states. Chapters 5 through 10 of this report detail the current environment while Chapter 11 summarizes the report findings, examines alternative institutional structures for providing financial support to public transit, and provides policy recommendations and suggestions for future research deriving from the study results.

Table 1.1

SOURCES OF TRANSIT OPERATING SUBSIDIES FOR 26 LARGE METROPOLITAN AREAS AGGREGATED BY REGION, 1978[a] (Percentages)

Type of Funding	Region					Total, All Regions
	Northeast[b]	Great Lakes[c]	Interior River[d]	South[e]	West[f]	
Federal	22.4	26.7	33.6	25.6	21.4	23.7
State	27.1	9.8	26.1	1.5	0.1	18.1
Regional[g]	11.3	61.9	30.5	40.7	58.8	30.7
Local	27.1	1.5	9.7	25.7	15.5	19.8
Total Government Aid	87.9	100.0	100.0	93.5	95.8	92.3
Total, Other Sources	12.8	0	0	6.5	4.2	7.7

[a]Source: Pucher, 1980; calculated from data provided by individual transit agencies.

[b]Includes Boston, New York, Philadelphia, Baltimore, and Washington.

[c]Includes Buffalo, Cleveland, Detroit, Chicago, and Milwaukee.

[d]Includes Kansas City, St. Louis, Pittsburgh, Cincinnati, and Minneapolis-St. Paul.

[e]Includes Miami, Houston, Dallas, Atlanta, and New Orleans.

[f]Includes Los Angeles, San Diego, San Francisco, Denver, Seattle, and Portland.

[g]Funding was classified as regional if there existed an explicit (or nearly so) metropolitan-wide financing mechanism.

II. METHODOLOGY OF THE STUDY

This study was undertaken in order to increase the information available to decision makers with respect to sources and uses of funds, funding agreements with state and local governments, labor-management reltions affecting cost and fare structures, and other financial variables confronting public transit systems. The study's objectives were stated in the previous chapter. Personal interview case studies and two mail survey instruments were used to obtain data and information. The primary study is a set of case studies of five public transit systems in four states.

THE CASE STUDIES

The primary information-gathering technique utilized in the present study was the personal interview. The interview format contained both structured and unstructured elements. The interviews were conducted within a case-study framework. Respondents were selected using a combination of a judgement sample and a convenience sample. The selected respondents embraced as much diversity in financial arrangements as possible, given research funding constraints.

The interview itself was conducted in an open-ended manner, with the questionnaire instrument providing a frame of reference and a springboard for discussion as well as a series of specific questions. Responses were obtained to the specific questions. These responses, in turn, led to additional questions and further exploration of the respondent's specific situation. The specific questions used in the site visits are listed in Appendix D. In addition to the interview the interview results, the case-study discussions include information obtained from printed documents, reports, system-authorized studies, and other relevant materials provided by the case-study respondents. Respondents were selected to provide an array of alternative financing arrangements and institutional interactions. The case studies were conducted during 1981 and 1982. The state of California was selected due to its unusual system of local-option dedicated taxes and regional planning and allocation activities. Within California, AC Transit (Oakland) was selected because it is an operations-oriented company which is currently making a transition to a system with a stronger emphasis on capital planning. Prior to Pro- position 13, AC Transit was predominantly funded from property taxes. Hence the system has undergone a major revision in its funding sources. AC Transit provides service both to predominantly urban counties and to predominantly non-urbanized counties.

MUNI (San Francisco, California) was selected because it provides service to a highly urbanized area operating a variety of types of service: light rail, bus, and cable car. It also provides interesting insights into the difficulties inherent in population-based allocation formulas.

New Jersey was selected because of the newly-created New Jersey Transit Corporation which provides for state-level assumption of most formerly local-level activites. North Carolina was selected because it is representative of the relatively limited role played by many state governments. The Raleigh, N.C., Capital Area Transit (CAT) system was selected because of the City Council's strong commitment to public transit as well as other institutional arrangements.

Georgia was selected in part because the state provides few funds for transit and, in part, because of the unique non-relationship between the state and the Metropolitan Atlanta (MARTA) system. MARTA was selected because of this arrangement and the accompanying dedicated sales tax funding source.

Other factors such as efficient management, current system revisions, and/or expansions were also factors in the case-study selection process. The preceding provides a brief summary of some of the diversities captured by the case-study responses.

THE MAIL SURVEYS

To supplement the case-study research, two mail survey questionnaires were utilized. The first questionnaire, the Person and Activity Identifier (Appendix B), asked respondents to identify by name, title, and address persons acquainted with transit financing techniques at various specified levels of state and local government. Respondents were also asked to indicate at which levels of government and transit system management responsibilities for a specified set of transit financing and allocative decisions were vested.

Respondents to this survey were selected from among those attending the 1980 Transportation Research Board annual meeting. Only individuals associated with state or local governments or agencies or public transit systems were included. The response rate was 41.67%. The set of individuals identified by this questionnaire provided the set of potential respondents to the main mail questionnaire.

The main mail questionnaire sought to capture relatively detailed information concerning transit financing: sources of funds; incentive systems; forecasting and planning techniques, and cash flow difficulties. The response rate was 40%. The main mail questionnaire is reproduced in Appendix C.

The respondent selection process utilized for the mail surveys was not a random process nor was it intended to be a rigorous one. It was an attempt to obtain a 100% sample of a small, narrowly defined universe. Methodological rigor was not required, since the intent of the mail survey was to test the ability of this survey approach to capture essentially the same level of detail as the core sections of the case-study personal interviews, as well as to supplement the case-study findings. The results of the testing process are evaluated be-

low. The results of the data collected are summarized for a number of key variables and presented in Chapter 4 of this report.

EVALUATION OF THE MAIL SURVEY

Because of the diversity of activities among states and local areas, the quality of the mail survey responses tended to depend upon the respondent's enclosure of requested supplemental materials. In the absence of such materials, the questionnaire responses often raised as many questions as they answered. The primary source of this difficulty was the tendency of rules, regulations, and requirements to vary with the source of funds and/or the type of program. It is very difficult, if not impossible, to capture this diversity in a pre-set format questionnaire without an a priori knowledge of the details of the diversity. Such knowledge would have greatly facilitated the construction of the survey instrument, but would also have served to lessen the need for the instrument. A simple example will serve to illustrate this problem. One question asked for a "yes", "no," or"don't know" response to the use of part-time drivers/operators by the transit system(s) of which the respondent had knowledge. One respondent responded both "yes" and "no;" one program operated by the respondent permitted the use of part-time drivers while another did not. While this example presents no difficulty for interpretation, it does illustrate that instrument design difficulties exist even for relatively straightforward questions.

This problem was compounded by the use of the same survey instrument for transit system operators, regional planning officials, city or county government officials, state transportation department officials, and state legislative staff members. The same instrument had to be used because there was not sufficient uniformity in the location of transit finance decision-making to permit the effective development of individualized questionnaries for various levels of government. Among its other intents, the Person and Activity Identifier questionnaire was designed to indicate the presence or absence of sufficient uniformity to permit the development of specialized survey instruments for the main mail survey.

One case-study respondent, a frequent recipient of mail questionnaires on this topic, was asked to review the main questionnaire in advance. The respondent felt it was one of the better such instruments she had seen. This respondent remarked during the case study that many of the mail questionnaires she had received requested information in a form incompatible with the accounting records. Additionally, many questionnaires did not distinguish between operating activities and capital acquisition activities. The present questionnaire was designed with these difficulties in mind.

The mail survey technique is frequently utilized to collect transit finance data. The present experience indicates that this technique has severe limitations when a high level of detail regarding

programs and institutional relationships is sought. Difficulties are also present when dollar values are sought, but can be partially overcome by careful instrument design.*

Even with these difficulties, quality information was obtained on most questions from all respondents. Very high quality information on all questions was obtained from those respondents who included the requested supplemental materials.

SUMMARY

The primary information-gathering technique for the present study was the personal interview of knowledgeable persons in five case-study public transit systems in four states. This technique permitted the collection of situation-specific variables in funding sources, allocative requirements, decision-making procedures, and other concerns. This approach produced a large amount of high-quality information. A supplemental study utilizing a mail questionaire approach was also undertaken. While this approach produced much high quality information, results were not uniform for all respondents. Other difficulties noted above limited the usefulness of this data-gathering approach when highly detailed institutional data were sought. This approach is, by its nature, not a preferred approach when information on institutional interactions is desired. However, it is useful and cost-effective for the collection of less detailed and less subjective data.

---

*Dollar estimates captured by mail survey instruments should be viewed with suspicion because of significant difficulties with definitions and measurement.

III. PUBLIC-FINANCE THEORY CONSIDERATIONS

The primary concern of this report is with financial management, especially sources of funds, rather than with questions arising from the public-finance theory of economics. Nevertheless, some consideration of public-finance concerns is appropriate. This chapter will briefly review a few basic elements of public-finance theory. It is not intended as a full discussion of the topic nor does it attempt to touch upon the many aspects of concern with respect to public funding of mass transit. These topics have already been addressed by numerous previous researchers.

This chapter will, however, present a model for discussion which places emphasis upon the sources of public funds and user charges which finance mass transit. The model provides a means for examining the contributions to these sources of various segments of the population and the potential benefits derived from mass transit accruing to the contributing population segments.

PUBLIC-FINANCE THEORY AND MASS TRANSIT

Many of the concerns raised by public funding of mass transit systems revolve around which segment(s) of the public should provide financial support for the systems. This question may best be addressed by dividing it into a series of more narrow questions. First, is public transit a function best suited for public-sector delivery? Second, if there is a proper role for the public sector in public transit financing, at what level(s) of government is the role most properly vested? Third, if there is a public role, regardless of the proper level(s) of government involvement, what is the fairest allocation of the financial burden among the general benefit groups and the transit system users? Answers to these questions rest on an understanding of the nature of the good, public transit, and an identification of the direct and indirect beneficiaries of the provision of this good.*

PUBLIC GOODS vs. PRIVATE GOODS

Musgrave and Musgrave (1976, Chapter 3) approach the division of goods into those most efficiently delivered by the public sector (public goods) and those most efficiently delivered by the private sector (private goods), by first examining the goods with respect to rivalry in consumption and the excludability of consumers. Pure private goods are those for which consumption is rival and from which consumers may be excluded. By rival consumption is meant that A's consumption of the good prevents B's consumption of the good. The Musgraves use the

---

*The term "good" in this context refers to the "service" provided by public transit systems, i.e., transportation.

example of a hamburger. Once A has consumed the hamburger, B cannot consume the same hamburger; thus, consumption is rival. But rival consumption is insufficient in and of itself to permit the proper functioning of a private goods marketplace. The nature of the good must be such that consumers who are unwilling to pay the established market price of the good can be excluded from consumption of the benefits of that good. The consumption by A of the above hamburger effectively excludes B from consuming that particular hamburger. The ability to apply the exclusion principle is the cornerstone of effective market exchange.

The pure public good, on the other hand, is one for which consumption is nonrival and exclusion is not feasible. A's consumption of the good does not decrease B's consumption, and B cannot be excluded from consumption by the fact of A's consumption. National defense is perhaps the best example of a pure public good.

Between the pure public good and the pure private good are two broad classes of goods which may be provided by either the public or the private sector, but not usually with the same level of efficiency. These classes are frequently termed mixed goods.

The first class arises when consumption is nonrival but exclusion is feasible. In such a case, A's consumption does not reduce the benefits available to B even though it is technically possible to exclude B from consumption. However, the marginal cost of B's consumption in such a case is zero, and exclusion would be inefficient. Public transit during non-peak travel times is clearly a good with nonrival consumption where exclusion is possible. During peak travel times, on the other hand, consumption is perceived as rival, but to the consumer willing to wait for the next bus or subway train, the rivalry is not necessarily severe.

The second class of mixed goods comprises those where consumption is rival but exclusion is not practical nor in some cases possible. City streets and highways during peak travel times are generally cited as examples of a class of goods where exclusion is not practical in most cases.* While most goods in this class are now provided by the public sector, private turnpikes and private canals are part of America's history. These services ceased to be provided by the private sector, in part, due to the difficulties and inefficiencies associated with exclusion. The public sector assumed the provision of

---

*It can be argued that changes in the "pricing" of street and highway usage through tolls, parking fees, parking taxes, and the like, which bring prices closer to marginal costs, would affect usage levels. While this is correct, it does not alter the consideration here, that direct exclusion is not practical in most cases.

goods of this type, in part, because of perceived positive externalities.

Peak-time travel via public transit may be viewed as rival or, as indicated above, it may be viewed more as a time-preference rivalry than as a space-availability rivalry. However, public transit is generally perceived as generating several positive externalities which argue for public sector provision of the good.

Exclusion from these externalities is not possible. Reduced traffic congestion, reduced air pollution and improved energy conservation are some of the major positive externalities. It can be argued convincingly that the benefits from the above externalities are negligible if in fact they exist at all. For the present discussion, the assumption that the externalities exist, even when negligible, is sufficient.

The above discussion indicates that public transit could be provided,* and in some cases is provided, by the private sector. However, public provision is more efficient due to the non-excludable external benefits and the generally non-rival consumption. Thus, some level of public-sector provision of public transit services is, in the main, supported by the above brief considerations. Consideration of the remaining questions noted above requires an examination of the benefit recipients.

BENEFIT RECIPIENTS

Benefit recipients may be divided into three groups: those who benefit directly by riding public transit, those who benefit indirectly through the consumption of the positive externalities generated by public transit, and those who benefit indirectly from the increased mobility and reduced travel times experienced by the riders of public transit.**

The first group of beneficiaries are the riders of public transit. Members of this group receive transportation services for which they pay a direct fee or user charge. The user charge is not normally equal to the average cost of service provision, although in some cases (not normally during peak service hours), it exceeds the marginal cost

---

*The terms "provide" and "provision" are used to indicate the financially responsible sector, and not as indicators of the organizational entity operating the service.

**In one sense, the last named group is simply a subset of the general group of beneficiaries of the positive externalities of public transit. They are treated separately here to facilitate later discussions.

of service provision. In addition to the directly measurable benefit of transportation services, members of this group receive intangible benefits in the form of increased freedom of mobility and, frequently, reduced travel time and costs over competing modes. They are also recipients of the external benefits of reduced air pollution and increased efficiency in energy utilization attributable to public transit.

This group of beneficiaries is the most readily identified and consists predominantly of local residents. However, a precise definition of "local" is important. They are local to the transit system area from a national perspective, but they may or may not be in residence in the local governmental area. Thus members of this group contribute diectly to the operating revenues of the system via user charges, but may or may not contribute to local tax revenues which defray part of the costs of the transit system in most all cases.

The second group of beneficiaries comprises those non-riders who benefit from the positive externalities generated by public transit. Reduced congestion on local streets and highways is one such externality. The primary beneficiaries of this externality are the users of private vehicles on public streets and highways, including commercial and non-commercial vehicles as well as vehicles of governmental agencies at all levels of government.

However, traffic volumes frequently achieve an equilibrium which approaches the old (pre-transit) level. Under such conditions, the congestion externality benefit tends to be so small as to be imperceptible. Reduction in the level of air pollutants benefits all consumers of the less polluted air. This class of externality beneficiaries is predominantly local, but not exclusively so. As air flows are both regional and national in nature, citizens in very distant parts of the nation may benefit from the local reduction in air pollution. The extent of the benefit received by distant localities is, of course, arguable. Thus, the beneficiaries of the air-pollution-reduction externality will be viewed as local residents with the understanding that "local" embraces all nearby communities whether or not part of the governmental unit (state or local) in which the public transit system operates. Reduction in air pollution does provide national benefits when reductions in medical costs and lost productivity are counted; however, again, the extent of these benefits is arguable.

Increased efficiency in the utilization of energy resources has little local-only impact. The impact of a local reduction in energy consumption is predominantly national and future-oriented. The energy saved by the greater efficiency of public transit impacts upon current and future demands for petroleum products. By lessening that demand, future supplies are increased, as petroleum is a storable resource, and upward pressure on future prices of these products is lessened. To the extent that these factors hold, all consumers of petroleum

products benefit. To the extent that domestic supplies are conserved, the nation as a unit benefits. Thus, the beneficiary group for this externality is national in scope. However, the extent of benefit is questionable, as petroleum products are not marketed in a truly competitive environment. Additionally, some researchers argue that because of dead-heading and low-volume routes, conventional transit service does little, if anything, to reduce total fuel consumption.

The third group of beneficiaries embraces those commercial concerns and public activities that benefit from accessibility to the general public. This group would include employers who benefit from increased access to the area's labor force (the labor force can more cheaply and readily reach the employer's location), and commercial establishments which benefit from the public's ability to reach their places of business. Ready accessibility generally leads to greater store or restaurant traffic flows and increased market penetration and sales. Public museums, educational facilities and offices benefit in the same manner as employers and commercial establishments. This class of indirect beneficiaries is predominantly local. National firms benefit to the extent that they have operations within the local service area. The federal government and state governments benefit to the extent that provision of government services and conduct of policy is facilitated.

While the owners of real estate in transit service areas would benefit as indicated, it can be argued that the community as a whole derives little net increase in real estate values. Increases in real estate values in transit service areas are frequently offset by decreases in values in other areas of the community. If these values do not actually decline, it can be argued that they exhibit lower rates of growth.

The above discussion serves to identify in broad terms the potential direct and indirect beneficiaries of public transit. Identification has involved several types of characteristics: individual as well as commercial beneficiaries, direct and indirect benefits, and local, regional and national extent of benefits. Potential beneficiaries include members of both the public and private sectors. The apparently predominant beneficiaries are individuals and commercial concerns located in the service area of the public transit system. This group includes the direct beneficiaries who use the system and the indirect beneficiaries, the commercial entities who serve the user group*. Secondary beneficiaries in the local area are those individuals and commercial entities who benefit from the

---

*It should be noted that a strictly additive approach is not intended by the above discussion. Such an approach would result in double counting of benefits in deriving total benefits. A value-added approach avoids the double counting difficulty.

externalities of reduced traffic congestion, air pollution and energy utilization. A third level of beneficiaries of the positive externalities are residents of more distant regions who benefit from decreases in air pollution and in energy utilization, positive but less noticeable benefits than those to local residents. In practice, these benefits may be marginal at best. However, their existence, at some non-zero level, is assumed for the purposes of the present discussion.

BENEFIT RECEIPT AND REVENUE CONTRIBUTIONS

Public-finance theory indicates that the costs of public goods provision should be assessed to those individuals and commercial entities who receive the benefits of the provision of public goods.* Additionally, any one individual's contribution to the support of public goods provision should bear a relationship to the extent of benefits received. This point reflects Adam Smith's First Canon of Good Taxation in that "taxes should be equal or equitable, falling upon individuals' like the expense of management to the joint tenants of a great estate, who are obliged to contribute in proportion to their respective interests in the estate'" (Groves, 1962, p. 11). The above discussion serves to identify broadly the beneficiaries of public transit and to provide a general ranking of the extent of benefits received. Accepting the approach that contribution to the support of public services should bear some relationship to the benefits received leads to the question of allocation of that support in a fair and equitable manner among beneficiary groups. At this point a note of caution may be in order. It is generally agreed that public provision of streets, highways, fire and police protection and public health services is a right and proper function of government. These services are funded from general tax revenues and user charges where appropriate. However, some taxpayers may never use the provided services. Indeed, in the case of fire protection services, the majority of taxpayers never directly use the service. For these taxpayers, benefits derive from the knowledge that the service exists should the need arise. Much of the debate over public funding of public transit systems tends to ignore this point.*

---

*It can be argued that this condition only holds where exclusion is possible. Where exclusion is not possible, the ability-to-pay principle applies. However, exclusion is not required for the computation of cost-shares where approximate or exact benefit levels can be computed.

*It is worth recalling at this point that, historically, fire protection has been provided by private-sector for-profit firms, and in many rural areas is still provided by non-profit private organizations. While exclusion from this good may be viewed as morally improper, it is most certainly possible.

A BENEFIT-CONTRIBUTION MODEL

Returning to the allocation of public transit costs among benefit recipient groups, two divergent lines of analysis present themselves. In the first, the beneficiaries of public transit may be identified as above, and the dollar value of benefits received computed and mapped into an appropriate share of total service provision expenses. The difficulties of this approach are well known. In particular, it is practically impossible to place dollar values on the external benefits received. Additionally, the beneficiaries have no incentive to admit to being beneficiaries. They would prefer to be free riders as their benefit consumption cannot be prevented through exclusion. While direct and certain indirect beneficiaries can be identified and dollar values of benefits readily computed, this represents only a partial solution.

The second approach is less scientific in its present form, but may accomplish certain objectives just as well. The benefit groups identified above may be analyzed with respect to their contribution to sources of funds available to governments at all levels. Only those public funds which contribute to public transit funding need be considered. Reasonable dollar amounts may then be computed and attributed to the ultimate source of funds, the taxpayer group. Then a test of reasonable relation of contribution to benefits received may be undertaken. In this manner, relative contributions to the public goods provision expenses may be viewed as in line or out of line with relative benefits received. Thus the need for exact-dollar benefit measures is avoided. A general analysis along these lines is undertaken below. As dollar contributions to various tax sources are beyond the scope of the present study, an allied approach is used.

Table 3.1 presents sources of public-sector revenues by level of government. These sources are now being used to generate funds for public transit, or are currently under serious consideration as future funding sources. The listing is not exhaustive; rather it represents the major sources cited by the case-study respondents in this study. Some revenue sources may be tapped at both the state and local levels of government. User charges are intentionally omitted from Table 3.1.

Figures 3.1 and 3.2 examine the contributions to various public revenue sources by individual users and non-users of public transit. Users, the direct beneficiaries of public transit, and non-users, the indirect beneficiaries, are further divided into residents and non-residents of the local governmental area. Non-resident non-users are additionally subdivided into residents of the state and out-of-state residents.

Funding sources listed in Table 3.1 are grouped and displayed in Figures 3.1 and 3.2. The funding sources to which each of the benefit recipient subgroups may reasonably be expected to contribute are

Table 3.1

POTENTIAL SOURCES OF REVENUES FOR PUBLIC TRANSIT BY LEVEL OF GOVERNMENT

Federal:	Personal Income Tax
	Corporate Income Tax
State:	Personal Income Tax
	Corporate Income Tax
	General Sales Tax
	Gasoline Gallonage Tax
	Motor Vehicle Excise Tax
	Motor Vehicle License Tax or Fee
	Highway, Bridge and Tunnel Tolls
	Business License Fee
	Mineral, Oil and Gas Extraction Fees
	Bond Sales Revenues*
Local:	Local Income Tax
	Payroll Tax
	Local Option Sales Tax
	Bridge and Tunnel Tolls
	Property Tax
	Motor Vehicle License Tax or Fee
	Business License Fee
	Value-Capture Tax
	Business Development Tax
	Parking Fees
	Bond Sales Revenues*

*Must be retired from revenues generated from taxes and fees

Figure 3.1

INDIVIDUAL BENEFICIARIES

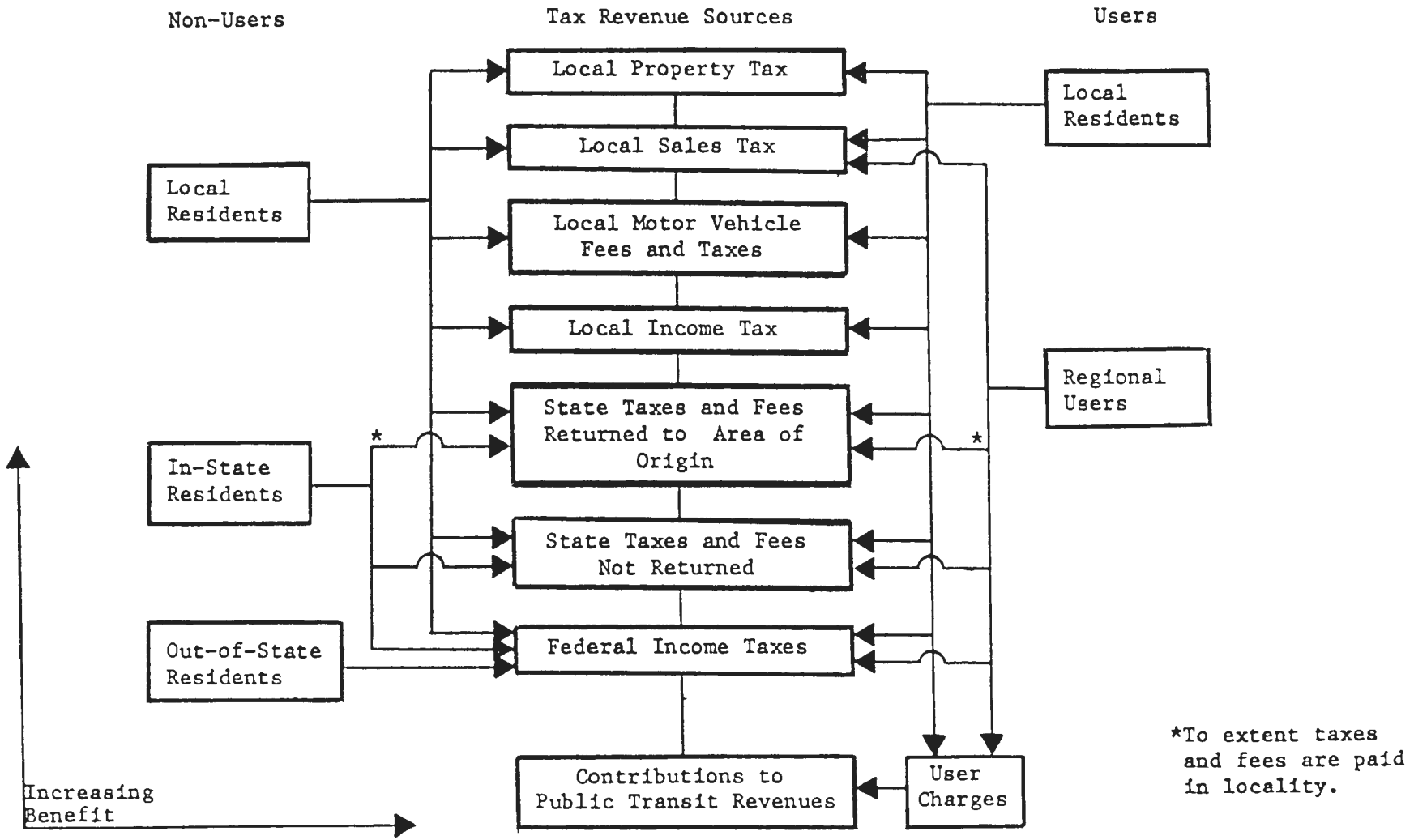
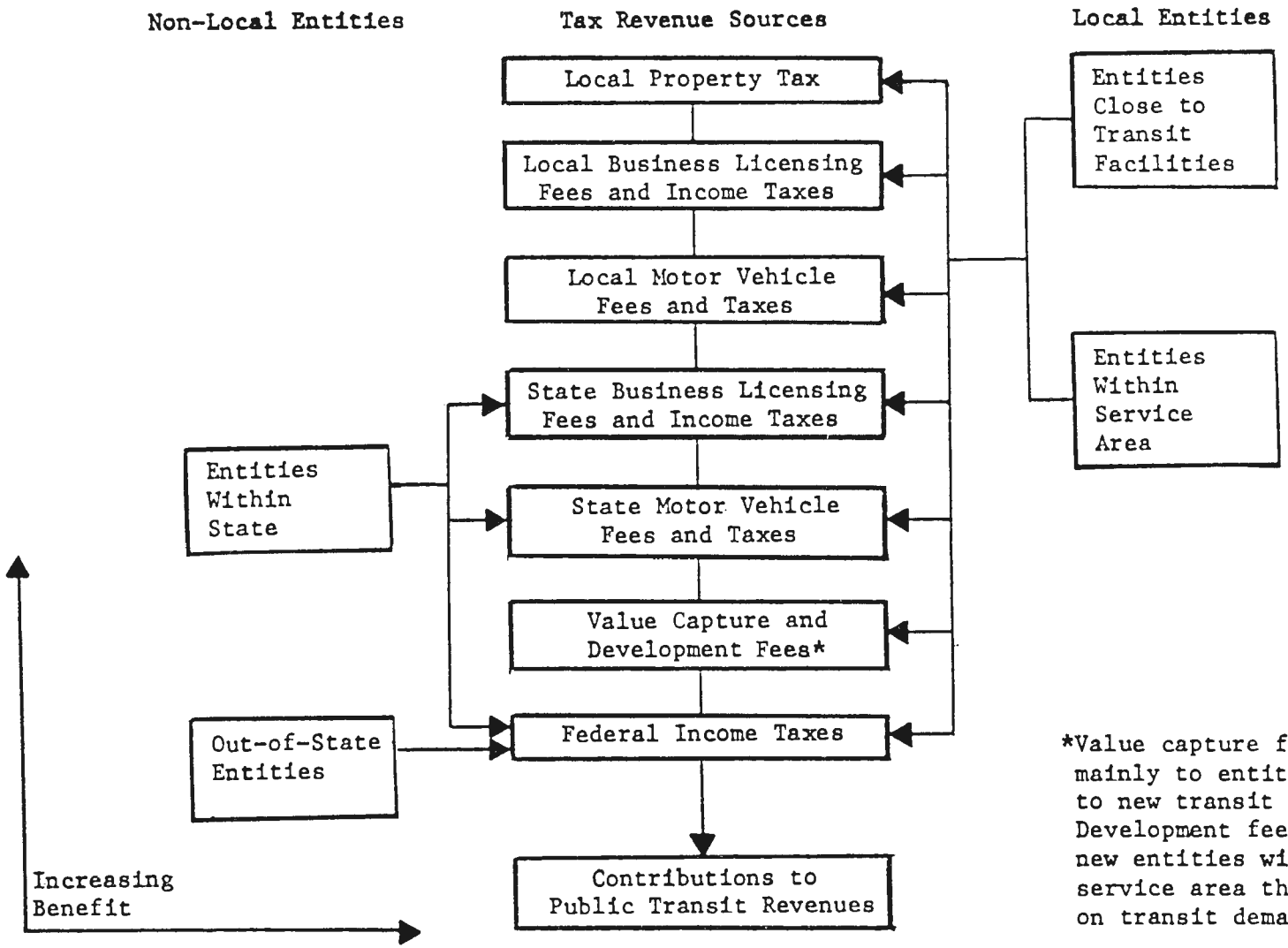


Figure 3.2

CORPORATE BENEFICIARIES



*Value capture fees apply mainly to entities close to new transit facilities. Development fees apply to new entities within the service area that impact on transit demand levels.

indicated. Any individual's contributions to any specific source of funding is, of course, dependent upon situational specifics such as ownership of taxable property. The figures indicate that direct beneficiaries of public transit can be reasonably expected to contribute to a greater number of the listed funding sources than can be expected of the indirect beneficiaries. Resident non-users contribute to more sources than non-resident non-users from within the state, while out-of-state non-users contribute to the fewest revenue sources (federal income taxes only). This is in line with the extent of benefits received.

The present analysis makes no attempt to correlate the value of benefits received with the value of tax source contribution. That activity would require data of a detail presently unavailable. The present analysis does indicate that the number of tax sources to which beneficiaries can reasonably be expected to contribute declines with the decline in level of benefit reasonably expected to be received. This is in keeping with the objectives of tax equitability. Commercial entities most likely to be recipients of a relatively larger share of benefits, namely those within the transit service area and physically close to transit facilities, contribute to a larger number of tax revenue sources in those cases where value-capture or development fees or similar approaches are used. In cases where these revenue sources are not used, the establishments so positioned do not contribute to any more tax sources than do establishments within the service area in general. In such a case, an inequity exists. Commercial entities more distant from the benefits generated by public transit contribute to a smaller number of tax sources. Again, a rank-order equity exists, in that those entities receiving relatively greater levels of benefits also make a relatively greater number of contributions to the support of benefit provision.

Thus, the analytical approach suggested here, in the absence of detailed data permitting a testing of the model, implies that present techniques for funding public transit exhibit a direct relationship between tax contributions (as measured by the number of tax sources to which contributions are made) and the level of benefits received. The existence of received benefits is most questionable and of the lowest potential dollar value at the national and distant regional level of beneficiary location. However, beneficiaries at the national and distant regional levels contribute to only one potential tax source, federal personal and corporate income taxes, while the beneficiaries contributing to the greatest number of tax sources are those receiving the most direct and highest level of benefits. The user group contributes to the greatest number of tax sources and in addition pays user charges.

A question of critical importance is the appropriate level of contribution by each level of government. As most benefits are realized at the local level of government, the greatest share of the

financial burden should fall upon contributors to local tax sources. The next level of greatest beneficiaries are those located within the same state or immediate region as the public transit system. Generally, beneficiaries in this group contribute to the next largest number of tax sources. However, in those situations where public transit systems are located close to state lines this statement would not hold unless a regional tax contribution system was in effect.

However, the states show considerable variation in the level of financial support given public transit. Thus, this group of beneficiaries may contribute to an appropriate number of potential tax sources, but unless those tax sources are used in turn to fund public transit activities, an inequity exists.

SUMMARY

The model described above indicates that there is an approximate match between the number of financing sources to which various segments of the population contribute and the potential benefits derived by those segments from the provision of mass transit services. However, this is only a rough indication at best. Actual dollar values for contributions and imputed dollar values for benefits received are required for proper evaluation of the model's implications. The model does, however, provide a conceptual framework for viewing the discussion of sources of funds in this report. Beyond that immediate application, its fuller development awaits future research.

IV. RESPONSES TO THE MAIL SURVEYS

To supplement the data collected during the case study interviews, two mail surveys were used. The first survey, the Person and Activity Identifier, sought to identify individuals at various levels of state and local government who were knowledgeable of public transit financing issues. Additionally, this questionnaire sought to identify the organizational locations of particular decision-making activities relating to public transit financial management tasks.

The second questionnaire was sent to those persons identified as knowledgable in public transit financing by the respondents to the first questionnaire. This second questionnaire sought detailed information comparable to that sought in the case-study interviews. An additional objective of this questionnaire was to test the ability of a mail questionnaire design to capture the diversity and subtlety inherent in the various financial arrangements supporting public transit across the nation.

This chapter presents the major findings from the two mail questionnaires. The mail questionnaires are reproduced in Appendices B and C of this report. Their effectiveness was reviewed in Chapter 2.

THE PERSON AND ACTIVITY IDENTIFIER QUESTIONNAIRE

In an effort to learn which individuals in various states are the most knowledgeable on transit financing issues, a questionnaire was mailed to 60 persons in 43 states. Twenty-five responses from twenty-three states were received.

Organizational Location of Decision Making

In addition to requesting the identification of persons knowledgeable of transit financing matters, information was requested concerning the organizational placement of various finance-related, decision-making responsibilities. Table 4.1 displays the percentage distribution of the responses.

Forecasting of revenues, operating and capital expenses, and operating deficits is primarily the responsibility of the transit system management team. Forecasting activities at the state level are most heavily devoted to revenue forecasts. Forecasting at the local governmental level (city or county) is undertaken by approximately 40% of the respondents' local governments. Approximately the same percentage of state governments are involved in the three forecasting activities other than revenue forecasting. The regional levels of government are notably involved in the forecasting of capital expenses, reflecting various regional planning activities.

Table 4.2 displays responses to questions concerning the sources and allocation of funds for operating and capital expenditures. A

Table 4.1

LOCATION OF VARIOUS FORECASTING ACTIVITIES
(As Percentage of Respondents*)

FORECASTING ACTIVITY	Transit System Management	City or County	Regional	State
Revenues:	96%	36%	28%	60%
Operating Expenses:	92%	40%	20%	44%
Operating Deficit:	92%	40%	20%	40%
Capital Expenses:	88%	36%	40%	44%

*Totals exceed 100% due to multiple-locational responsibility for the same activity.

TABLE 4.2

LOCATION OF VARIOUS DECISION-MAKING ACTIVITIES
(As Percentage of Respondents)

	Transit System Management	City or County	Regional	State
State or Local Matching Allocation Decisions				
For Federal Capital Grants:	48%	76%	28%	72%
State Capital Grants:	20%	28%	8%	24%
Federal Operating Grants:	40%	64%	16%	48%
State Operating Grants:	24%	28%	-	16%
Allocation of State or Local Funds For:				
Capital Expenditures	28%	64%	28%	68%
Operating Expenditures	28%	64%	24%	56%

potential ambiguity in the sources-of-funds questions presents some difficulty in interpretation, but, surprisingly, does not lead to an unreasonable description of the decision-making process. The ambiguity arises in the distinction between the sources of matching funds and the decision-making surrounding requests for and allocation of such funds. With respect to matching funds for federal capital grants, the responses reflect the anticipated heavy involvement of the local (city or county) and state levels of government. The expected pattern is repeated for federal operating grants with a lower level of state involvement than local involvement. The degree of transit system management involvement in the matching-share process for federal grants is consistent when viewed as involvement in the decision-making process. In some cases, the transit system management involvement may also indicate a source of funds for matching purposes. Some transit systems involve special governmental districts which often have taxing powers.

The pattern found with respect to matching shares for federal grants is repeated for state operating and capital grants. Again, the ambiguity between source of matching funds and decision-making is found. The low percentage values are a result of the relatively few such state programs.

Table 4.2 also shows responses to the questions concerning the allocation decision-making process. Not surprising is the dominant position of state-level and local-level decision making. The state level of government is more heavily involved in allocative decisions for capital expenditures than for operating expenditures. The states are somewhat more heavily involved in the matching share for federal capital grants purposes. The level of involvement of the transit system management in the allocative process indicates a lower level of activity than that found in the forecasting of activities tabulated in Table 4.1.

Regional involvement in all of the processes considered tends to be relatively low. The one meaningful exception is in the capital planning or forecasting process. Some respondents noted that regional involvement was limited to the OMB A-95 Clearing House process.

Tables 4.1 and 4.2 display the total responses. However, this method of presenting the data obscures the various combinations of involvement of the various levels of decision making. These variances in the pattern of decision making tend to reflect variances in the sources of funding. For example, Washington State returns a portion of the state motor vehicle excise tax revenue to the jurisdictions in which it is collected. This is considered a local tax even though it is collected by the state Department of Revenue. The decision-making process reflects the predominantly local nature of this funding process. The involvement of the state government is limited to the fore-

casting of revenues and operating expenses. This pattern appears to be typical of states where funding is predominantly local, including dedication of a state-collected tax, or where the state provides little or no funds for transit. States with metropolitan areas covering several jurisdictions indicated a more extensive involvement at the regional level of government.

Another pattern which emerges is the almost universal involvement of the transit system management in the forecasting process. Transit management involvement in the decision-making process is notably less. In many cases, there is no further involvement by the management beyond the forecasting stage.

STATE AND LOCAL FINANCING METHODS QUESTIONNAIRE

The following sections report the major findings of the main mail survey, the State and Local Transit Financing Methods questionnaire.

Financing Alternatives

Table 4.3 displays responses to a list of possible financing alternatives. This list is part of a larger questionnaire sent to 30 agencies in 14 states. Of the 12 responses representing 10 states, 11 indicated that financing alternatives have been explored. The percentages in Table 4.3 are based on the 11 responses. At this point, it is important to, once again, note the need for caution in interperting the results of the survey. Due to the small sample size, the responses can not be taken as representative of the larger universe from which the sample was drawn. Thus, the information presented below must be taken as suggestive of that universe but not, by any means, conclusive. The results presented below are representative of the respondents only and no inference to portions of the universe not responding or not sampled can or should be made.

A dedicated sales tax has been explored by the largest number of respondents (45.5%). The dedicated gasoline tax was the next most widely investigated financing alternative (36.4%). The dedicated payroll tax and the dedicated auto tag tax were each explored by 27.3% of the respondents.

The dedicated gasoline tax is currently being used by 81.8% of the respondents. The other tax-oriented financing alternatives are currently being used by 9.1% of the respondents. Only the leasing of air rights is not now being used by any respondent.

Advertising inside the transit vehicle is currently being used by 81.8% of the respondents, while 72.7% of respondents currently advertise on the outside of their buses. Advertising inside a transit shelter is the most widely explored advertising-oriented financing alternative, with 36.4% of the respondents indicating that this option has been investigated. Currently, 27.3% of the respondents used in-

Table 4.3

FINANCING ALTERNATIVES*
(As Percentage of Respondents)

Alternatives:		Explored (%)	Adopted (%)	Already used (%)
Dedicated Sales Tax		45.5	-	9.1
Dedicated gasoline tax		36.4	9.1	18.2
Dedicated payroll tax		27.3	-	9.1
Dedicated excise tax		18.2	-	9.1
Dedicated auto tax tax		27.3	-	9.1
Value capture tax		9.1	-	9.1
Leasing air rights		9.1	-	-
Advertising:	inside vehicle	9.1	-	81.8
	outside bus	9.1	-	72.7
	inside station	-	-	18.2
	inside shelter	36.4	9.1	27.3
	benches	-	9.1	-
School bus operations		9.1	9.1	9.1
Charter Services		18.2	9.1	54.5

*Based on 11 responses. One respondent explored no alternatives.

shelter advertising as a revenue source, and an additional 9.1% have adopted this alternative for future use.

A majority of respondents (54.5%) currently derive revenue from charter services. However, only 18.2% have explored charter services as a potential revenue source.

Funds Flow Concerns

The questionnaire included three questions addressing cash-flow concerns which arise from federal, state, or local funding sources. One question addressed difficulties arising from the differing fiscal years of the various levels of government. Of the 11 responses to this question, 54.5% reported no difficulties due to varying fiscal year timetables. The remaining 45.5% reported that some difficulties have arisen. In the case of Wisconsin, the federal, state, and local governments each have a different fiscal year timetable. This has presented some budget preparation difficulties for the local governmental units. These difficulties have not yet been resolved. Other difficulties cited by various respondents include coordination of federal and state allocations and the often lengthy lag times in obtaining federal grant approvals.

Another question directly addressed the time lags between approval of funds and disbursement and/or receipt of funds. Two respondents indicated the question did not apply to their situation. Of those responding, 70% indicated that no difficulties had arisen, while 30% reported difficulties. All of these respondents noted the need to borrow funds during the interim and that the costs of borrowing increased the costs of operation. One system noted that it had experienced the need to borrow from its City Council due to delays in federal funding; one such delay continued for 18 months. This respondent also noted that the federal authorities had tentatively disallowed payment of the associated interest costs. Hence, other sources of funds had to be found to cover the interest costs arising from the funding flow delay.

Of the 11 respondents to a question concerning the predictability and stability of state funds for transit support, 45.5% rated their state funds as "very stable". A "somewhat stable" situation was reported by 27.3% of respondents, with another 27.3% indicating they could not rate their system. This last group includes respondents in states without regular transit-support programs. No respondents rated their support systems as "not stable." What conditions constitute "very stable" and "somewhat stable" were not specified in the survey instrument.

Respondents were asked to evaluate the frequency of cash-flow problems with transit assistance funds. As Table 4.4 indicates, a majority of respondents to this question experience some cash-flow difficulties with all sources of funds. What is notable is the low

percentage (10%) reporting no problems with federal funds. This response is reinforced by the 30% reporting that they always experience cash-flow problems with federal funds. No respondents reported a similar level of difficulty with state or local sources of funds. The length of delay in the receipt of funds was not captured by the survey instrument.

Cash-flow problems present transit operators with the same set of difficulties such problems pose for private-sector firms. Commitments for funds expenditures must still be honored even when incoming funds are delayed past promised payment dates. The transit system facing cash-flow problems must resort to short-term borrowing, diversion of financial resources from other designated uses, postponement of payments where possible, and various other techniques for meeting expenditures commitments. All the alternatives for overcoming cash-flow

Table 4.4
RESPONDENTS RATING OF CASH-FLOW PROBLEMS BY SOURCE OF FUNDS

	None	Sometimes	Always
Federal	10%	60%	30%
State	44.4%	55.6%	-
Local	22.2%	77.8%	-

difficulties have costs. Most carry explicit interest costs, while others can be associated with the implicit costs of postponing of inflation-sensitive equipment and/or materials purchases when funds are diverted for other uses. These implicit costs become explicit when the postponed purchases are realized. The net effect of cash-flow problems is to raise the costs of providing public transit services.

The notably lower incidence of reported cash-flow problems with non-federal sources of funds would seem to argue for the "new federalism" approach to transit financing, whereby much of the current federal role in transit financing would be transferred to the states. Assuming that the states will, in fact, have financial resources adequate to the assumption of the present federal role, the transfer of financial responsibility should reduce the cash-flow problems now experienced by the survey respondents. However, some or all of the potential reduction in cash-flow problems may go unrealized if state bureaucracies are inadequately staffed to meet the increased demands that would be presented by a return to the states of the federal transit program.

Cost-Control Incentives and Farebox Recovery Rates

One-half of the respondents indicated that their states had no

state-level cost-control incentive systems, including mandated farebox recovery rates. Two of these reported that incentive program decisions are made at the local governmental level.

The remaining six respondents reported a variety of direct and indirect cost-control techniques. The City Council governing one responding system has mandated a 30%-40% farebox recovery rate, and monitors service level trends and various performance measures on a daily basis. Delaware has established a 50% farebox recovery rate as a state goal. The state of Wisconsin utilizes an indirect approach by limiting state operating assistance to $1 per passenger per year. Other respondents noted the limited amount of funds at both the state and local levels of government as strong efficiency motivators. One respondent also noted voter concern as a factor influencing operating efficiency.

When asked to evaluate the effectiveness of cost-control programs, two states and one local system rated their state programs as "somewhat effective." Only two state programs, Delaware and Virginia, are represented by these three responses. Two local systems reponded to this question with respect to local-level incentives; both the Tidewater Transportation District in Norfolk, Virginia, and the City of Phoenix Public Transit Administration in Phoenix, Arizona, rated their local incentive program as "very effective." The question was deemed not to apply by the remaining respondents. Determination of what behaviors constitute "effective" was left to the respondents.

The limited number of respondents to the questionnaire, and the inability to question those respondents in depth with respect to incentive programs, places restraints upon the interpretation of these responses. These limiting factors render answers to important questions concerning incentive systems difficult if not impossible in the present context.

The differences, if any, made by incentive programs, and which combination of incentives is preferable, cannot be answered from this survey. Nor was the survey intended to provide the necessary level of detail. The impact of various incentives could be examined within a broader personal-interview case study, or by means of a mail survey concentrating upon incentive programs.

Part-Time Drivers/Operators

Eight respondents indicated the use of part-time drivers/operators. Four respondents stated that they did not use part-time drivers/operators. Delaware is counted as both using and not using part-time drivers/operators: the DASH program uses part-time drivers/operators while the DAST program does not. One respondent failed to respond to this question.

Inflation

When asked if subsidies or dedicated tax sources increased with inflation, two respondents answered "yes," four "no," and six did not respond; however, when asked if this increase kept up with inflation, one responded affirmatively, four negatively and seven did not respond. When asked if these funding sources were sensitive to business cycle fluctuations, four stated they were sensitive to such fluctuations, three responded that their funding sources were not sensitive, and five did not respond.

Sources of Funding

Five states reported the use of non-dedicated General Fund revenues to support public transit. Three of these states have both operating and capital assistance programs. The remaining two states have capital assistance programs only.

Two states have special dedicated transportation funds which obtain revenues from various tax sources. One of these states uses some funds from its General Highway Fund in addition to the dedicated funds; the other has a dedicated state funding source arising from the sale of state bonds.

Dedicated funding sources, which provide predictable levels of annual funding, improve the long-run planning and forecasting ability of transit system operators. Depending upon the revenue-source of the dedicated fund and upon the sensitivity of the source to economic fluctuations, the transit operator may undertake planning and budgetary decisions for future time periods with greater confidence than can an operator who must rely upon appropriations processes at the state and/or local governmental level.

Transit systems receiving dedicated funding are insulated from changing political priorities. This fact reduces the ability of state and local governments to alter, especially to reduce, the public transit command of public resources in response to changing voter priorities.

Three states have no operating or capital assistance programs. In these states, transit systems are dependent upon federal and local governmental assistance and farebox revenues. Ten states are represented by the twelve responses. Three states draw funds for transit from multiple sources.

At the local level, the predominant source of funding is the city or county General Fund. All seven users of General Fund revenues utilize this source on a non-dedicated basis. Four states utilize sales tax or other ad valorem taxes for funding at the local level. In two cases the taxes are collected by the state and returned to the local governments for allocation. Three of these four states have dedicated

the derived revenues to transit usage. Additionally, two states report the use of property tax funds for the support of transit activities.

Seven other local financing techniques were reported by individual respondents. Examples of these responses include transit bonds for capital expenditures only, issued by a city government; use of revenue sharing monies, and an occupational tax. Seven states reported multiple sources of local funds used for transit purposes.

Matching Funds: Operating Grants

In six states the state and local shares of UMTA operating grants are met entirely from local sources. One of these states returns state-collected tax revenues to local transit district officials for their allocation.

The four states with operating support programs vary in their levels of support. Oregon provides 15% - 20% of operating expenses with state funds, while local government provides 50% of the support. However, no state monies may be used to match federal money. Wisconsin will provide state funding for up to 72% of the non-federal share of operating expenses. Connecticut will provide state funds for 99% of the local matching share. Delaware will provide 25% of the operating expenses from state funds; no local funds are required.

From the data captured by the survey, no clear arguments for or against any particular matching funds arrangement emerge. As would be expected, the higher the state-assumed percentage of the local match requirement, the lower would be the percentage required from local funding sources. As state governments traditionally have greater revenue-generating capabilities than local governments, the greater the state role in providing match funds the lesser will be the demands placed upon local revenue sources, predominantly property tax and sales tax revenues. However, transit service benefits are predominantly local. Therefore, such an allocation of transit costs and benefits may be inequitable.

Matching Funds: Capital Grants

Three states have no matching-share programs for capital expenses. One of these states returns state tax revenues to local transit districts for their allocation.

Seven states have varying programs for capital assistance. Delaware and Connecticut pay all of the matching share and Oregon and Kentucky one-half of the matching share, from state funds. Virginia uses state funds for 95% of the 20% local share, and Texas will provide state funds for 65% of the 20% matching share. Wisconsin will supply state funds for 50% of the local matching share but only for bus purchases. The local match for all other capital purchase grants must be met entirely from local sources.

Forecasting

Forecasting techniques reported by respondents vary in frequency of forecasting and the nature of the variables included. The forecasting technique used most frequently by all respondents is linear trend analysis. Three states reported that all forecasting is done at the local level of government. Two states reported that only the state assistance programs are forecast at the state level; all other forecasting is done at the local level. The remaining respondents reported some mixture of state and local forecasting activity.

The only exception to the use of linear trend analysis for forecasting operating revenues is the Kentucky DOT, which uses the Burkhardt and Lago modeling process when developing planning studies at the request of local systems. All local systems use linear trend analysis for their revenue forecasting activities. No advantages or disadvantages of model approaches vis-a-vis linear trend analysis are evident from the survey responses.

Forecasting of operating expenses is also done by linear trend analysis by most respondents. Some respondents report explicit adjustments for inflation and for fuel cost increases. One system projects total mileage and multiplies this value by the estimated cost per mile. Another system develops operating expense forecasts as part of their line-item budget preparation process. A third approach breaks operating expenses into independent fixed-cost and variable-cost projections.

Revenues are forecast for one-year periods by seven respondents, for five-year periods by three respondents, and for one-, two-, three-, four-, and five-year periods by two respondents. Costs are forecast for one-year periods by five respondents, for five years by three respondents, for one, two, three, four, and five years by one respondent and for a ten-year period by one respondent.

Forecasts for capital acquisitions display more variability. Three respondents base capital-expense forecasts upon locally developed Transportation Development Plans (TDP's). How the TDP's are developed was not reported. One system utilizes cost estimates provided by equipment manufacturers and suppliers, while another system uses linear trends of past equipment prices. Two systems project vehicle replacement on the basis of expected future service levels and the condition of the existing capital stock, and use this projection as the basis for capital acquisition forecasts. Three respondents forecast capital expenses for a one-year period and three do so for a five-year period. One state reported that forecasts are undertaken by local governments at approximately four-year intervals.

Forecasting of local support is highly individualized. Of the respondents, only Connecticut reported the use of a formula approach.

In those cases where a local share is required, the local share is 40%. One state reported the projection of state and federal support for operations with the difference between these values and total operating costs being the local share. Local share forecasts for capital expenses, in this case, are based on locally developed TDP's. One city reported that local support is based on the costs of current service plus the annual addition of 3,000 miles of daily service through 1985; there is no state program in this case. Two systems reported that local funding decisions are made by local governmental officials. For one of these respondents, the level of local support determines the level of service provision. One system respondent operates a multijurisdictional system, in which each city independently determines the level of service desired and "purchases" that service level. Forecasts of local support are conducted for a one-year period in three cases, for a five-year period in one case, and were not reported by the other respondents.

Reported techniques for forecasting operating deficits show little variation. One system reported forecasting based on the line-item budget preparation process. Others utilize forecasts of revenues and other funds and forecasts of expenses to compute the deficit forecast. Deficit forecast periods correspond to the projection periods for revenues and expenses.

Projections of state level assistance are relatively simple. In the states without state assistance programs, no projections are required. Forecasting is straightforward in states which provide a predetermined percentage of the local matching share of operating and/or capital grants. In these cases, the state-level forecasting is a simple sum of local-level requests for state matching funds. The projection horizons vary. Four respondents reported one-year projection periods, three reported five-year periods, one a ten-year period, and one projects for one-, two-, three-, four-, and five-year periods.

The accuracy of the forecasts was reported as "somewhat accurate" by eight respondents, "not very accurate" for capital projections by one respondent, and three reported no forecasts made. No respondents reported the forecasts to be "very accurate". One noted a $\pm$7% variation. No objective measure of accuracy was included in the question.

SUMMARY

This chapter has presented the major findings of two mail surveys of persons knowledgeable in transit financing matters. The surveys' results indicate that forecasting activities are predominantly the responsibility of transit system management. Decisions with respect to federal matching-funds requirements occur at the local and state governmental levels, as do allocative decisions for state and local funding for capital and operating expenses.

The most frequently explored financing alternatives are the

dedicated sales tax, the dedicated gasoline tax, the dedicated payroll tax, and the dedicated auto tag tax. The most frequently explored non-tax source of revenue (other than the farebox) is advertising inside transit shelters.

A majority of respondents reported some cash-flow problems with all governmental sources of financial support; fewer problems were reported with state than with federal sources. The reported cash-flow problems result in increased operating costs for the systems affected.

Incentive systems are not widely utilized by the respondents. Farebox recovery requirements are the dominant form of incentive for those respondents reporting the use of incentive programs.

A majority of respondents reported the utilization of part-time drivers/operators. The ability to use part-time operating personnel is a significant factor in controlling service delivery costs.

A variety of tax-revenue-derived transit funding sources were reported by survey respondents. Non-dedicated funding sources predominated. However, most states report the availability of several funding programs. Some states report a mixture of dedicated and non-dedicated funding sources.

The respondents vary with respect to allowable uses of state or local funding sources. Three respondent states reported both operating and capital assistance programs, while two states provide operating assistance only. Three responding states provide neither operating nor capital-expenditure assistance.

The seven responding states with federal capital-grant matching-share programs reported a variety of percentage share splits between the state and the local governments. The four states with federal matching-share programs for operating subsidies also reported a wide variety in the levels of state support.

Forecasting techniques and forecast periods tend toward uniformity among the respondents. Linear trend analysis is the predominant analytical device used. Forecasts of one and five years tend to be most common in all forecast categories.

The results of the mail surveys provide useful insights into transit programs and decision-making processes. However, the limited number of responses (as opposed to the response rate) make the results less precise and reliable than would be the case with a larger survey.

The present survey is a supplemental component to the main research effort. The survey had two objectives: first, the obtaining of data relevant to transit financing concerns; and, second, a testing of the instrument's ability to clearly capture the desired information. The instrument performed well and, with minor revision, is suitable for use in a survey with a larger sample population.

V. STATE AND REGIONAL ACTIVITIES: NORTH CAROLINA AND GEORGIA

The state-level financing arrangements and legislative processes for funding public transit systems in North Carolina and Georgia are explored in this chapter, and those of California in Chapter 6.

North Carolina and Georgia share many similarities in the type and extent of financial support provided by the state government to public transit. Neither state is heavily involved in financing public transit, beyond provision of one-half of the local matching share for UMTA capital grants. Both provide planning and technical assistance to transit operators and both compile performance data on system operations. For Georgia, the financing and planning activities of a regional planning organization, the Atlanta Regional Commission, are also examined.

In the discussion of North Carolina state-level activities, attention is devoted to the state legislative budgetary approval process. The process in Georgia is essentially similar; therefore, the same level of detailed attention is not found in the written discussion.

NORTH CAROLINA

At present, mass transit financial support at the state level in North Carolina is limited to providing funds for the one-half of the local matching share requirement of UMTA capital grants, for some demonstration project funding, and for ridesharing programs. The Public Transit Division of NCDOT and the Governor's Blue Ribbon Commission have recommended increased levels of state involvement in mass transit, especially in matters which can be coordinated with private sector transportation firms. Under the present financial environment, and especially if increased financial responsibilities for non-transit public services are returned to the states, there is little likelihood that financial resources will be available for an expanded state role in mass transit in North Carolina.

THE STATE FUNDING DECISION PROCESS

North Carolina uses General Fund revenues to provide the state share of matching funds for capital grants and, where appropriate, for demonstration projects. For capital and planning grants, the state's share is one-half of the 20% local match requirement. No operating expenses are currently paid from state funds.

The funds for the state share are appropriated by the legislature from the General Fund, which derives from general income-tax revenue and sales tax revenue. No funds are earmarked for public transit. The only use of dedicated funds by the Public Transportation Division (PTD) of the North Carolina Department of Transportation (NCDOT) is

for some staff salaries which are paid from the Highway Fund, a dedicated revenue source derived predominantly from the gasoline gallonage tax. The PTD is currently trying to substitute general fund revenues for those positions.

To determine the mass transit budget proposal for a given funding period (fiscal year, July 1 to June 30), the Public Transportation Division surveys the transit systems in the state with respect to their needs for matching funds for the coming fiscal year. Individual system needs are determined by the system's grant application plans. These plans flow from the system's Transportation Development Plan (TDP). The individual system needs are totaled to compute the matching state funds needed. This relatively unsophisticated process has worked quite satisfactorily to date. Historically, the absolute dollar amounts required have been small, relative to other NCDOT budgetary needs; thus, the Public Transportation Division has experienced no difficulty in obtaining approval for its matching-fund budget requests.

The origin of state-level public transit funding in North Carolina is directly tied to the availability of federal funds. In order to capture federal mass transit dollars, the state established the current program. The funding of the program, as has been indicated, comes from General Fund revenues rather than the dedicated Highway Fund. Many supporters of mass transit believe there are flexibility advantages in General Fund financing, while other persons supportive of mass transit feel that mass transit should compete for general revenue funds like other state services. In this way, mass transit is not insulated from the social goals of elected officials. Additionally, the political realities of Highway Fund usage are such that non-highway uses of the fund are not probable.

Allocation of Limited Funds

To date, sufficient state funds have been available to meet all requests for state matching funds. Thus, allocation of limited funds has not been an issue. However, a back-up formula allocation process does exist for rural programs. In the event of the need for allocation of state funds to rural programs, 60% of the available funds would be allocated to the regional Councils of Government (COG's) on the basis of percentage of non-urbanized population, while the remaining 40% of the available funds would be allocated by the Public Transit Advisory Council of NCDOT. For urban systems, no formula allocation system exists. In the event that allocation becomes necessary, the appropriate Public Transportation Division staff would rank proposed projects according to criteria to be developed at that time.

Review of Project Proposals

At present, proposals submitted by local systems are reviewed at

the staff level within the Public Transportation Division, at the department level by the Public Transportation Advisory Council, and at the state level by the Board of Transportation. Following these project reviews, the Department of Transportation's budget as a whole is reviewed by the State Budget Office.

The State Budget Office Review

The State Budget Office, among its other duties, reviews all budget requests from state government agencies and departments prior to their submission to the state legislature. Analysis is not performed at the specific program level except in cases of new programs. The review process consists of a general projection of anticipated state revenues and requests for state funds.

Approval of state matching funds for public transit purposes is more or less routine. In cases where the state may, in the future, be required to pick up a program upon termination or exhaustion of federal funds, the proposed use of the federal funds will be reviewed in greater detail. In some cases (none involving public transit), state funds have been recommended only on the condition that the state not pick up the program in the future should federal funds be exhausted or terminated. The review process is geared towards the proposed usage of the funds, the total availability of state funds, the indirect costs of the project and, very importantly, future requirements for state funds. Any project which may require future expenditure of state funds above the $100,000 to $200,000 range must go to the Advisory Budget Commission for approval. The budget office prefunding reviews are heavily keyed towards preventing situations where the state is "forced" to commit additional funds when federal funds are already in hand.

Public transit projects involving federal grants must also complete the OMB A-95 Clearing House process.* All state or local agencies which might be affected by the grant award must approve or disapprove, with specifics, the proposed grant application. Additionally, all grants must be reviewed by the Division of Policy Development of the State Budget Office. This review is oriented towards the Governor's overall development plan for the state. Proposals must be consistent with the overall thrust of the Governor's policies. Public transit proposals have encountered no difficulties either with the A-95 Clearing House process or with regard to compatability with the state development plan.

*The A-95 process is common to all sites included in this study. Unless the requirement has produced notable difficulty, the A-95 process will not be discussed again in this report.

The Legislative Review Process

The Fiscal Research Office of the state legislature provides an independent opinion on and review of the Governor's budget proposals. Attention is paid to the proposed use of requested funds with respect to equity of expenditures, rationale for expenditure and total dollar amounts. Where formula allocations are used, the formulas are examined to see if they will actually accomplish what is intended. Again, equity and rationality concerns are important. The Fiscal Research Office also compares the budget and program proposals submitted by the Governor with practices in other states.

This office also conducts a post-expenditure review to ascertain that the funds were spent in accordance with the law and for the purposes stated, and to see if the legislative intent has been fulfilled. Not all programs receive this level of review at all times. Members of the staff are familiar with the historic spending patterns of various agencies and programs, and can readily identify departures from historical trends which call for particular review.

To date the public transit programs have presented no particular concerns. Again, the absolute dollar amounts are relatively low, the programs are carefully administered, and public transit has attracted no particular political opposition. One topic of concern is the lag time between appropriation of public transit funds and the actual expenditure of the funds. The lag is due to the delivery time lapses for buses and other capital equipment and the time required for federal approvals. The research staff understands the reason for the time lag, but some members of the legislature question the need for new appropriations when sizeable amounts of unexpended funds remain. So far, no solution has been found for this concern other than education and explanation. Other offices involved in the public transit program did not feel this was a particular problem even though they acknowledged that it does exist.

UMTA Section 5 Funding*

The usage of UMTA Section 5 funds is worthy of note even though not directly linked to any state funding policy. In the past the availability of federal funds has exceeded the demand for these funds by North Carolina's eighteen public transit systems (eleven publicly owned, seven privately owned). Recently the Charlotte and Winston-Salem systems have fully utilized their Section 5 allocations. Both systems have undertaken sizeable capital improvement programs. Two privately-owned systems (Burlington and Durham) have never used their Section 5 allocation. Greensboro has used only a small amount

*Drawn from Public Transportation Revenues, 1980, and site-visit interviewed.

of the available funds, for services to the elderly and handicapped. The public transit system in Greensboro is privately owned and has not taken advantage of available federal funds.

The privately-owned transit firms are not currently profitable operations. The operators of these systems have expressed a desire to sell their systems to local governments. To date these overtures have been declined. The operators appear to have little or no interest in continuing service, much less in up-grading service from its present levels. They remain in the transit industry due to local government regulations.

User Contributions

In North Carolina, farebox revenues average 40% of total operating costs of urban transit systems, ranging from a low of 28% to a high of 58%. Urban systems also draw revenues from charter services, investment income and advertising fees.

Human service agencies accept donations for transportation services but do not require contributions or charge fares. As these services evolve into general public transportation systems in response to UMTA Section 18 funding, regular fares may be charged. Some human service agencies subsidize clients who use private transportation services such as taxis. Other agencies purchase transit services from private suppliers with federal funds.

Ridersharing in the form of carpools, vanpools and buspools is completely user-supported. Government at all levels has limited involvement in these programs to rider-matching services and promotion.

Ridesharing and taxi subsidies are reviewed more fully in later sections. Both ridesharing and taxi subsidies have performed well in North Carolina with the NCDOT funding several demonstration projects in both areas.

Productivity Measures*

The Public Transportation Division collects monthly operating statistics from the state's transit systems, and publishes and distributes them monthly. The Division's staff works with individual system operators to overcome any adverse trends revealed by these data. The ratios collected and the activities measured are shown in Table 5.1.

*Annual Report . . ., North Carolina Department of Transportation, Public Tranportation Division, 1978, and site visit interviews.

Table 5.1

OPERATING STATISTICS COLLECTED BY
PUBLIC TRANSIT DIVISION, NCDOT

Ratio	Measure of
Ridership per bus mile	Productivity per unit of service
Net cost of service per rider	Cost per user of providing transit service
Riders per capita PSA*	Transit usage in service area
Operating cost per bus mile	Cost per unit of service
Revenue per rider	Average cost to user
Operating cost per rider	Cost per user
Revenue per mile	Financial productivity per unit of service
Net cost of service per mile	Cost per unit of service
Annual bus miles per capita PSA	Service level per capita PSA
Net cost of service per capita PSA	Cost per capita PSA of providing transit service

*PSA = Population of service area.

FUNDING ACTIVITIES FOR SPECIAL SERVICES

Rural and Human Services Transportation*

Table 5.2 indicates various sources and uses of public transportation funds in North Carolina. Funding sources for urbanized areas, also displayed in the table, have been discussed above and will not be reviewed at this point.

A 1978 report of the Governor's Committee on Rural Public Transportation listed twenty federally-funded programs with rural transportation components which are in use in the state. These programs are administered by fourteen different state agencies. The majority of the approximately $10 million devoted annually to rural transportation is channeled through the Department of Human Resources.

Table 5.3 provides data on the transportation elements of various human services programs in use in North Carolina. These programs are administered by the Department of Human Resources. The usage allowed by each funding source is also shown.

The Taxi Industry**

NCDOT has a strong interest in maintaining a viable private taxi industry in North Carolina. Recently the Department co-sponsored with the University of North Carolina a Taxicab and Transit Conference (Proceedings ..., 1978) whose aim was "to highlight methods of more fully integrating taxis into the provision of public transportation."

Two demonstration projects involving elderly and handicapped citizens and subsidized taxi services have been highly successful. The Kinston, N.C. demonstration project (Charles River Associates, 1980) employs a user-side subsidy; elderly and handicapped persons may buy tickets at half price for use with any participating taxi company. Ridership under this program has been strong and growing. In fact, one taxi company now specializes in transportation services for the handicapped.

A supply-side subsidy is used in a Macon County demonstration project. Elderly riders pay half fare and the county reimburses the taxi operator the balance. The county maintains a dispatcher who receives the service requests and relays them to individual taxi companies. The system has worked so well that other counties in the region are initiating similar programs. The project is funded under Title III of the Older Americans Act.

*Drawn from Annual Report . . . North Carolina Department of Transportation, Public Transportation Division,1978.

**Drawn from Public Transportation Revenues, 1980.

Table 5.2

PUBLIC TRANSPORTATION FUNDING PARTICIPATION
BY SERVICE TYPE

	Urban Transit: Urbanized area	Urban Transit: Small urban	Rural public transportation	Human service agency transport.	Ridesharing	Taxicab	Intercity bus
User (fares)	X	X	X		X	X	X
DOT-UMTA							
Section 5	X						
Section 8	X				*		
Section 16				X		*	
Section 18		X	X			*	*
Other[a]	X	*			X		*
HEW[b]			X	X		*	
Other Federal[c]			X	X			
NCDOT: Matching	X	X	X		*	*	*
Transp. Devel.	X	X	X		X	*	*
NCDHR: Matching			X	X			
Local:							
City	X	X			*		
County			X	X	*		
Other[d]				X			
Private firm[e]	X				*		X

X = major portion; * = minor portion (conditionally eligible).

[a] Demonstration programs; research and training grants; Section 3 capital.

[b] Vocational rehabilitation; Older Americans Act; Social Security Act; Child Development; Mental Health; Blind Services, etc.

[c] Dept. of Labor, CETA, Work Incentive Program; ARC; CSA.

[d] Membership fees, donations, organization income, United Way, etc.

[e] Cross-subsidization from other activities (utilities, charter revenue, parking).

Source: North Carolina Department of Transportation.

Table 5.3

OTHER FEDERAL FUNDING, HUMAN SERVICES TRANSPORTATION

Program	Eligible Applicant	Allowable Expense	State Source	Federal Source	Matching Ratio (% Fed/state /local)
CETA*	County	Work trip reimbursement	-	DOL	100/0/0
Voc. Rehab.	Workshops, Clients	Service purchase; Capital; lease; Staff/ lient reimbursement	DHR/ DVH	HEW	80/20/0
Title III OAA*	PNP* or public agency	Capital; Drivers; Service purchase; taff/client reimbursement	DHR	HEW	90/10/0 75/25/0
Title II SSA*	DHR agency, PNP, or public agency	Lease; Service purchase; Staff/ client reimburse-ment	DHR	HEW	75/10/15
Title XIX SSA	Medicaid recipient	Emergency medical	DHR/ DSS	HEW	68/27/5
WIN*	Participant	Client payment or staff reimburse-ment	ESC	DOL	90/10/0
ARC	County, City, Transp. body	Capital; Operating; Service purchase; Staff/client reim-bursement; planning	DHR/ DOA	ARC	50-100/0-/10-25
CSA	CAP* agency	Capital; Operating	DNCRD	CSA, DOL, Action	60/0/40
Appala-chian Child Develop.	PNP or public child care	Capital; Operating; Service purchase, lease; Staff/client reimbursement	DHR	HEW, ARC, Agric.	75/10/5
Mental Health	PNP or public group home	Capital; Operating; Service purchase, lease; Staff/client reimbursement	DHR	HEW	Varies

* CETA = Comprehensive Employment Training Act; OAA = Older Americans Act; PNP = Private Non-profit; SSA = Social Security Act; WIN = Work Incentives Program; CAP = Community Action Program agency.

Source: North Carolina Department of Transportation.

Technical Assistance to Local Systems

The Public Transportation Division of NCDOT provides technical assistance to local systems for the forecasting of revenues, expenses, ridership, etc. A key element in the assistance provided is a ridership survey. Data from this survey provide the basis for revenue projections by route segment. The survey is undertaken every two years as part of the planning process which projects two years of the five-year Transportation Development Plan. The projection techniques are not sophisticated. They utilize linear trends of historical data and results from the ridership survey to develop average revenues and costs per mile, per hour and per passenger. These in turn are used to estimate costs and revenues for specific sytem changes. The cost and revenue estimates are intended for order-of-magnitude judgments, not for budget development. The continuation of current fare structures is assumed for these purposes. The Division also provides inventory control, preventive maintenance and, to a lesser extent, driver training assistance to local transit system operators.

The Division would like to see more local planning which includes the impact of vanpooling. At present, this impact is largely absent from the planning analysis process.

PROPOSED NEW SOURCES OF FUNDING*

Powell Bill Funds

The Powell Bill returns 1 cent of the state's tax of 12 cents per gallon (on all motor fuels) to local governments. Allocation of Powell Bill funds is based primarily on population, and to a lesser degree on road mileage. Allocation does not include consideration of where the tax funds are collected. Currently these funds may only be used for streets, highways and bikeways.

Legislation to permit usage of Powell Bill funds for public transit has been unsuccessful in the General Assembly. The proposal was opposed by the North Carolina League of Municipalities and most local governments. However, this opposition does not reflect an opposition to mass transit. Rather it results from a desire to prevent Powell Bill fund allocation at the local government level from becoming a source of local political contests. One transportation lobbyist expressed the view that local politicians were comfortable with the the present system, which creates little if any political controversy, and would prefer to keep it that way, while finding other sources of funding for public transit. It is unclear whether or not

*The following discussions are drawn from publications of the Public Transit Division (PTD), from reports of the Governor's Blue Ribbon Commission on Transportation Financing, and from site-visit interviews.

future efforts will be made to include public transit as an allowable Powell Bill fund usage.

Expansion of Local Property Taxing Authority

Currently North Carolina cities and counties are authorized to levy property taxes for several specified purposes. A maximum of $1.50 per $100 valuation is specified in the law. Public transit services are not among the specified activities for which property tax revenues may be used. In addition to the specified activities, however, property tax revenues may be used for non-specified purposes, provided the voters pass a referendum so specifying. This requirement holds for any ad valorem tax in North Carolina.

The Public Transportation Division has recommended that the appropriate laws be amended to include public transit as a specified usage of ad-valorem tax revenues. The language recommended is "to provide urban bus services, ridesharing service and public transportation terminal facilities." Thus, ridesharing along with bus services is envisioned as a proper use of public funds from ad valorem sources.

Local Motor Vehicle License Tax

North Carolina law permits cities to place a license tax of not more than $1.00 per year on motor vehicles. Several communities have requested and obtained specific legislation enabling them to increase the motor vehicle license tax to not more than $5.00 per year. There are no restrictions on the usage of the revenues obtained form this source. Some of the communities imposing the motor vehicle license tax use the funds generated to support public transit services.

The Public Transportation Division has recommended that all cities and towns be allowed to levy a motor vehicle license tax of up to $5.00 per year. These revenues would still be usable for any purpose; however, it was also recommended that authority to elevate the tax to $7.50 per year be granted, provided that at least $2.50 of the $7.50 tax is devoted exclusively to public transportation purposes. The Division acknowledged that this funding method has a drawback, in that it provides no incentives for increasing service efficiency or for expanding available service. Additionally, the funding source would be unavailable to counties, which are not permitted to levy motor vehicle taxes under the existing law. Thus, rural transportation programs would not benefit from this proposal.

Other Tax Revenue Sources

The Public Transportation Division has noted other potential tax revenue sources which are not currently available to local-level governments. The PTD notes these potential sources more as possible suggestions rather than as firm recommendations. All would require changes in state law.

Currently counties, but not cities, may impose a sales tax of 1% in addition to the 3% state sales tax. This authority could be extended to cities. Additionally, cities and counties could be empowered to raise the local option sales tax above the 1% level for the purpose of financing public transit services.

At present, local governments may not impose income taxes. The PTD noted that local income taxes for mass transit funding could be "piggy-backed" on the state income tax.

Finally, the importance of parking spaces to the work-travel mode decision was noted. Permitting municipalities to tax parking spaces would serve to raise revenues for public transit usages as well as to encourage ridesharing and the use of mass transit.

PRODUCTIVITY AND EFFICIENCY PROPOSALS

Efficiency Incentive Proposals

Currently the state provides no funds for operating expenses other than subsidizing some Park-and-Ride routes and some demonstration projects. The Public Transportation Division of NCDOT has proposed that the state undertake funding of operating deficits. Key elements in the proposal are the use of farebox requirements and allocations based on ridership and ridership increases. The proposal would provide funds to any fixed-route system, demand-responsive service, or shared-ride taxi service which receives UMTA Section 5 or Section 18 operating assistance, and which serves a population of 10,000 or more. Currently no system serves a community below this size.

The proposal includes efficiency incentives in the form of both penalities and rewards. For urban systems, the state operating assistance fund would function in the following manner. The allocation of funds would be based on ridership and ridership increases, or, more technically, revenue passengers. One-half of the system's funding would be determined by the system's ridership over the previous year, relative to the ridership experienced by all systems eligible for funds. The remaining one-half of the allocation would be based on the system's ridership increase relative to the total increase in ridership shown by all eligible urban systems. The allocation would be subject to several qualifications:

1. No system would receive state operating assistance in an amount greater than one half of the nonfederal share;

2. For each percentage point below 40% to which a system's ratio of revenues to expenses falls, a penalty of 2 percent of the sum determined on the basis of revenue passengers and increase in revenue passengers would be

deducted. This penalty would not apply to the first 24 months of an urban area's public involvement in the transit system;

3. No city would receive more than one third of the total share funds;

4. Each participating urban transit system must perform a comprehensive annual route and schedule evaluation in cooperation with the NCDOT;

5. The maximum paid per additional rider would be $.75; and

6. The Board of Transportation would develop such rules and procedures as might be necessary to implement this program.

The program suggested for rural systems would operate in the following manner. All counties receiving UMTA Section 18 funds, excluding any areas receiving state urban transit operating assistance (described above), would be eligible for state operating assistance. All forms of general public transit are included (buses, vans, taxis, intercity bus) as long as Section 18 operating funds are received and the program is part of an approved Transportation Development Plan (TDP).

The program envisions the distribution of state funds in the following manner:

1. During the first twelve months of general public service, the state funds shall provide 25 percent of the net cost of service (operating expenses less operating revenues); and,

2. Following the first twelve months of general public service, state funds shall provide 15 percent of the net cost of service.

The rural program is intentionally simple in nature and broad in scope. It contains no incentives at present. After two years, the program is envisioned to be revised and incentives added as appropriate.

Bus Pool

The Public Transportation Division has proposed the development of a state-owned bus pool, which would function as a source of short-term leases of buses to local operators. The proposal arises from the long lag times in bus delivery which have hindered the upgrading or expansion of service by many local systems. Additionally, the buses would be available to meet short-term "crises" faced by operators. For example, the small system in Gastonia suffered a

garage fire which virtually destroyed all of the system's eight buses. If the bus pool had been in operation, the Gastonia system could have obtained temporary replacement buses quickly and minimized service disruption.

The proposal envisions purchasing buses with funds from several different sources, thereby increasing the allowable uses of the bus pool and thus its flexibility. An initial fleet of fifteen buses has been recommended. Five of the buses would be purchased with UMTA Section 5 funds, five with Section 18 funds and five entirely with state funds. Additionally, the legislation defining the powers of the Board of Transportation would have to be amended to allow for the bus pool operation.

Intercity Bus*

North Carolina is served by twenty-seven intercity bus comnpanies which provide regularly scheduled fixed-route service. In 1975,these companies served over 370 communities in 94 of North Carolina's 100 counties and carried 3.4 million passengers. The Public Transportation Division is currently studying ways of strengthening the state's intercity bus industry, especially in terms of rural and small-town service. Part of this examination includes a review, in connection with the North Carolina Utilities Commission (NCUC), of state regulation with a view towards identifying potential beneficial revisions in the regulations.

Transportation Terminals**

North Carolina's intercity bus and train terminals are generally in poor condition. Most intercity bus companies, as well as Amtrak, have lacked the necessary financial resources to upgrade their terminal facilities. The Public Transportation Division holds the view that public involvement in surface transportation terminal facilities can be justified along the same lines as public involvement in airport terminals.

The Division plans to undertake a survey of the condition of surface transportation terminals in the state. Once such a survey is completed, the Division will prepare the necessary recommendations. A combination of public and private involvement in new facilities is envisioned. Integrated multimodal facilities which would house intercity bus, train, commuter bus, local bus and taxi services in one central terminal, to the extent feasible, are under consideration.

*Drawn from Public Transportation Revenues, 1980; Public Transportation Policy Options, 1980, pp. 4-5.

**Public Transportation Policy Options, 1980, pp. 11-12.

Additionally, the integrated transportation facility could be combined with office and shopping areas.

PRIVATE SECTOR INVOLVEMENT: HIGH-OCCUPANCY VEHICLE PROGRAMS

Vanpooling*

The Public Transportation Division began its statewide vanpool program in 1977. The program is funded at approximately $45,000 annually through the North Carolina Energy Conservation Plan. Statewide there are approximately 170 operating vanpools. The first program began operation in March 1978 and is directed by the Ridesharing Program Manger of the PTD.

The Division assisted in the development of the State Employee Vanpool Program. Under this program, individually-owned vans are financed without down payment through the State Employees Credit Union. To support this effort, the Department has developed a policy giving priority parking to carpools and free parking to vanpools for state employees.

Ridesharing**

The North Carolina Department of Transportation encourages the development of ridesharing programs at the local and regional levels. Currently six major ridesharing programs are receiving federal funds and Department technical support (Table 5.4). North Carolina has the third largest ridesharing demonstration project in the nation.

Funding derives from several sources. Approximately 75% is from energy conservation grants funded through the North Carolina Energy Conservation Plan with funds from the Energy Policy and Conservation Act of 1975. Other funding comes from UMTA Section 9 monies and Section 112 of the 1973 Federal Highway Act. These latter sources are used for planning and technical assistance.

Most of the programs concentrate on particular high-volume areas and target populations. Among these are the state employees' program in Raleigh and the Chapel Hill program which focuses on the University of North Carolina, the University Hospital complex, and the downtown Chapel Hill area. One program, however, embraces four counties. This program, the Land of the Sky Regional Council of Governments'

---

*Public Transportation: Current Status and Short-Term Needs, 1980, p. 20.

**Annual Report . . . North Carolina Deprtment of Transportation, Public Transportation Division, 1978, and site-visit interviews.

Table 5.4

SUMMARY OF NORTH CAROLINA LOCAL
RIDESHARING ACTIVITIES FOR 1979

Locality	Funding Source			Total Budget	Staff Size	Match List Size
	FHWA PL-112	UMTA Sec. 9	Energy			
Chapel Hill	-	-	$11,965	$11,965	1/2	1,500
Durham	$ 4,000	-	7,513	11,513	1/2	1,100
Greensboro	-	$10,000	-	10,000	1/2	5,000
Land-of-Sky (Asheville)	-	-	27,000	27,000	1	1,000
Mecklenburg Co.	-	-	37,000	37,000	2	3,000
Raleigh	$17,000	$15,700	3,300	36,375	2	1,700

Source: North Carolina Department of Transportation

(Asheville area) Skypool program, works with over 79 firms with 100 or more employees each. The Skypool program offers specialized computer matching programs and promotional assistance to participating employers.

The Public Transportation Division has recommended that the state law specifying the powers of the Board of Transportation be altered to include the authority to construct and maintain or lease regional ridesharing parking lots. The PTD also recommended that the expanded powers include the right of condemnation, an authority already held by cities, towns and counties, for the purpose of off-street parking. The PTD believes that the benefits from ridesharing are such as to cross jurisdictional lines and, therefore, the benefit distribution justifies state-level involvement.

GEORGIA

STATE-LEVEL ACTIVITIES

State Funding

The State of Georgia allows local governments to pass local-option sales taxes, the proceeds of which may be dedicated to local transit. So far this option has been exercised only in the Atlanta metropolitan area. For systems without the local-option sales tax, the state can provide no more than 10% of any capital costs. This is true for all UMTA funding programs including Section 16(b)2. With respect to Section 8 planning funds, the state will provide 10% of the transit portion of each MPO's Unified Work Planning Program. All state funds are derived from general revenue sources and allocated to the Georgia DOT through the legislative process.

Additionally, the state will provide funds equal to 50% of the local share of any transit marketing program. Some transit systems utilize funds from the marketing program support as part of the required UMTA matching funds for grant applications.

State and local public funds for MARTA (Metropolitan Atlanta Rapid Transit Authority) operations are limited to the 1% state sales tax levied in Fulton and DeKalb Counties. The enabling legislation for the 1% local-option sales tax precludes receipt of state discretionary allocations.

Forecasting

The Public Transportation Bureau of the Georgia DOT uses the regional Transportation Improvement Plans to project transit capital needs of the upcoming 2-3 years. The Georgia DOT then computes 10% of the total projected capital needs and requests the appropriate level of funding for the state matching shares. To this amount would be added any requested marketing program assistance and 10% of the

transit portion of the MPO's Unified Work Planning Program (Section 8 planning assistance funds).

Using this information, the Public Transportation Bureau prepares a zero-based budget for the appropriate fiscal year(s). The zero-based budget for public transit is incorporated into the overall department budget request. The legislature acts to approve the state budget. The Department has not encountered any particular difficulties in the funding of public transit.

Funds Allocation

UMTA Section 18 funding is distributed by formula. Of the total amount of Section 18 funds received, 15% goes to Georgia DOT for administrative expenses. Of the 85% remaining, 70% is distributed to congressional districts by population. The other 30% is distributed by the Georgia DOT on the basis of system needs.

All other UMTA funding involving allowable state matching funds (i.e., for capital expenses) is allocated on the basis of approved TIP requests. The transit systems develop the UMTA grant application to be submitted by the state. They request the appropriate state matching funds (10%) from the Georgia DOT through a resolution.

Efficiency Standards

The state does not currently impose efficiency or productivity standards on transit properties. All transit properties, including MARTA, submit quarterly reports on operations, ridership, farebox revenues and the like to the Georgia DOT as part of the Department's Management Information System. This information is then fed back to the transit system management via informal personal contacts from the Public Transportation Bureau personnel and formal annual transit fact books. The Georgia DOT conducts annual on-board rider surveys as part of its Management Information System program. In general, the overall tightness of funding provides the necessary incentives for operational efficiencies. (See Chapter 7 for the MARTA situation, which differs in some meaningful details.)

Concluding Comments on State Activities

In summary, all Georgia state funding for local transit is from general revenue sources; there are no dedicated state funds for this purpose. The state has not provided operating assistance, but does provide 10% of capital acquisition costs. Additionally, 50% of any transit marketing program can be supported by state funds (25% if federal share exists).

For FY 1980-1981, all state transit assistance for all purposes totaled approximately $638,890.

The Georgia DOT is the designated recipient for UMTA Section 5 funds, both operating and capital assistance, for systems in urbanized areas between 50,000 and 200,000 population. The systems involved are Albany, Augusta, Macon and Savannah. These funds are distributed on a formula basis, which includes a portion of the funding to be distributed on a discretionary basis using a system need criterion. The Columbus and Atlanta systems deal directly with UMTA since the urbanized areas served exceed 200,000 population. The Athens and Rome systems serve populations of less than 50,000 and thus use FHWA Section 18 funding.

REGIONAL-LEVEL ACTIVITIES

The Atlanta Regional Commission (ARC) is the designated regional planning organization (MPO) for the seven-county Atlanta metropolitan area. The ARC coordinates all regional transportation planning--transit and highway--by means of the Atlanta Regional Transportation Planning Process (ARTPP). All transportation planning is under the aegis of the ARC even though some technical activities are conducted by MARTA or Georgia DOT staff.

In 1973, an outside consultant developed a model of the Atlanta region which predicts such variables as housing, employment and transportation (transit and highway) needs to the year 2000. This model is updated annually and is part of the ARTPP, and has enabled the ARC to provide technical support for MARTA as well as fulfill the UMTA regional planning requirements. In this manner, MARTA impacts are assessed and the coordination of MARTA planning is enhanced.

MARTA is the recipient of UMTA Section 5 monies for the Atlanta Metropolitan region. The monies received are split according to a formula whereby MARTA receives 83% of the funds. The remaining 17% is split among four other counties in the region on the basis of population and population-density criteria. Currently these four counties have no transit operations. The funds are, in part, an inducement to the counties to undertake transit activities. Up to three years' worth of funding may be accommodated. Funds unspent after three years revert to MARTA for operational expenses. The long-range plan for the Atlanta region envisions MARTA service to all seven counties in the region.

The ARC receives indirect state funding. While the ARC does not receive a direct state contribution to its budget, the state does fund a planning unit within the Georgia DOT which works exclusively on ARC projects.

VI. STATE AND REGIONAL ACTIVITIES: CALIFORNIA

STATE LEVEL ACTIVITIES

California has a complex set of transit financing arrangements. While the most important of these are both philosophically and legally based on local tax sources, the programs were initiated at the state level and are subject to varying degrees of state-level oversight, either from the Department of Transportation (CALTRANS) or the state legislature. Thus, they are examined as part of the state-level financing activities. These programs appear again in discussions of activities at the regional and local governmental levels where the allocation and usage decisions are made.

Due to the local nature of the major California funding sources and the extensive use of formula allocation, the California legislature's role is minimal once the funding programs are in place. This is not to say that the legislature is inactive with respect to transit financing issues. Rather the legislature does not annually approve or consider allocation of the major funding sources, as these are, in the main, distributed by previously approved formula allocation mechanisms. The legislature does have an annual involvement in funding levels for the State Transit Assistance Fund and this role is discussed.

THE STATE ATTITUDE TOWARD TRANSIT FUNDING

The philosophy underlying California's transit funding policy is the development of a self-regulating system with local accountability --a system whose members know they cannot turn to the state for additional money. The system is designed with incentives to be prudent with the available monies. State officials generally view the incentives in the federal funding programs as incentives to spend more money.

The original Transportation Development Act (TDA) legislation was passed when Ronald Reagan was Governor of California. The act reflects his belief in local taxes to support local activities. This preference for local funding, local control, and accountability is widely held by governmental officials.

The use of local sales taxes as the major funding sources reflects this view. The same can be said for the use of part of the state highway allocation to counties for fixed guideways (Proposition 5). Heavy reliance is also placed on decision-making by referendum. The 1/2% sales tax and the Proposition 5 fixed-guideways funding both require prior approval by the voters.

In addition to the belief in local funding and local accountability, there is the view that while public transit deserves and should receive public subsidies, the users must also pay a share.

This view is expressed in the required farebox recovery rates. Currently there is a trend toward increased user charges. This trend is expected to accelerate in light of anticipated tight state budget and the belief that the state budget will be unable to grow even within the limits established by Proposition 4 (discussed below). However, the potential loss of federal operating funds, combined with the limited ability to look to the state and local governments for relief, will be a more profound incentive to increase user charges than will be the tight budget situation at the state level.

THE TDA FUNDING PROGRAMS

The 1/4% Sales Tax

California's first real involvement in mass transit financing began in 1971 with the passage of The Transportation Development Act (TDA)*. This Act provides that 1/4 of 1% of the state's share of sales tax revenues shall be returned to the counties for the purposes of financing local mass transit systems. The Act also adds gasoline to the list of items subject to the sales tax. It is important to note that the 1/4 of 1% is not simply a tax on gasoline sales, but is 1/4 of 1% of the sales tax revenue from sales of all taxable items. This sales tax on gasoline must also be distinguished from the 7-cent-per-gallon tax on gasoline, which goes to the Highway Trust Fund.

In 1971, California had a 5% sales tax, of which 1% went to the local governments (counties) and 4% went to the state. After the passage of TDA, the local governments' share amounted to 1.25% out of the 5% rate, with 3.75% being retained by the state. Computations prior to the passage of the bill indicated that with the extension of the sales tax base to include gasoline, the state would receive the same level of revenue from the 3.75% share as it had received from its 4% share of the sales tax with gasoline excluded.

The 1/4% revenues are disbursed to the counties, with each county receiving only that amount collected within its boundaries. This in turn is allocated to local transit systems via the Regional Transportation Planning Agencies (RTPA's) (MPO's for federal purposes). In counties of less than 500,000 population, these funds may be used for streets and highways, if the local RTPA determines that there are no unmet transit needs within the county. Thus, transit has first claim on the 1/4% sales tax funds. There are no state-wide criteria for determining unmet transit needs; this (1) reflects the philosophical belief in local decision making; (2) acknowledges the wide variance in local transit needs among California counties, and (3) recognizes the practical difficulty of establishing hard-and-fast criteria for defining unmet transit needs.

---

*As this report was being prepared, a major revision of the TDA was being discussed. Hence, the material in this section, while accurate at the time of writing, may be out-of-date in the near future.

It is worthwhile to note that the law specifies the population count as that of the 1970 U.S. Census of Population. Thus, a county's classification with respect to ability to use 1/4% sales tax funds for streets and highways will not change as the population changes.

The funds generated by the 1/4% sales tax may be used for either capital or operating expenses, provided that at least 15% is used for capital needs, including usage as UMTA matching funds*. The fund currently generates approximately $350 million, of which approximately $60 million is being expended on streets and highways. To receive these funds, the local governments are required to maintain their previous (pre-TDA) levels of financial support for public transit. Thus, funds for the 1/4% sales tax may not be substituted for other local funds allocated to public transit.

Spillover Funds

The legislation also provided that if the state's share of sales tax revenues generated from gasoline sales exceeded what the state would have received in the absence of the gasoline sales tax computed at the old rate of 4%, then the excess or spillover would go into a Transportation Planning and Research Account of the State Transit Assistance Fund, or into the general fund at the discretion of the legislature.

In 1971, the state sales tax increased from 5% to 6% but the spillover was still computed at the old 4% rate. In 1979, the spillover calculation was increased to 5%, and a cap of $110 million plus adjustments for inflation and population increase was placed on the amount of spillover funds available for transit. Currently the State Transit Assistance Fund receives approximately $125 million from the spillover funds. This fund is more accurately viewed as a state-legislated fund rather than a dedicated fund.

Of the spillover funds, approximately one half is distributed to the RTPA's according to a population-based formula. This distribution is known as the State Transit Assistance Fund. The state has no discretion over this allocation. However, the RTPA's do have discretion in their allocation of these funds to the local transit operators. The other half of the funds comprises the State Transit Program and is appropriated to the California Department of Transportation (CALTRANS) for transit usages upon allocation by the California Transportation Commission. Currently the CALTRANS share is predominantly devoted to commuter rail and inter-city rail projects, including the planning of local transit guideway projects and intermodal interface projects.

---

*The law provides for several exceptions to the 15% capital usage requirement. Thus, the 15% requirement is not a firm constraint on the usage of these funds.

Highway Trust Fund and Proposition 5 Programs

The State Highway Trust Fund is mainly funded by motor vehicle registration taxes and by the state gallonage tax on gasoline. The gasoline tax is 7¢ per gallon, of which approximately 3.5¢ goes to the state, and 3.5¢ goes to the cities and counties by formula. In 1974, the legislature decided that some of these funds could be used for the fixed-capital portion of fixed-guideway systems. The funds from this source could not be used for "anything that moves." However, the counties had to pass Proposition 5 by local referendum to be eligible for funds for this purpose. Proposition 5 indicates the county's desire to use up to 25% of the state gallonage tax allotment for fixed guideways. Additionally, before the funds became available, the county must have an approved guideway program and an agency to administer it.

To determine the dollar value involved, the state first determines the amount it is spending for highways and guideways in each county from the state's share of the gallonage tax. For those counties which have passed Proposition 5, an amount up to 25% of this value is appropriated to CALTRANS, and from there is transferred to the appropriate county fixed-guideways development agency. Approval of Proposition 5 implies a county's willingness to divert up to 25% of its state highway funds, as well as the state's share, to fixed guideways. In practice, an amount equal to the diverted 25% has been drawn from the state's share of the Highway Trust Fund reserves. Thus, counties have received 100% of their highway allotment plus 25% of this allotment for fixed guideways. As the Highway Trust Fund reserves are falling, the future may turn the implied tradeoff of highways for fixed guideways into a real rather than a theoretic one.

Currently allocations under this program are between $50 and $55 million. Projects to be funded in this manner are approved on a pro- ject-by-project basis by the California Transportation Commission as a part of a transportation improvement program process. These funds flow only to those nine counties which have passed the fixed-guideways referendum.

TPDA Fixed Guideways Funds

The Transportation Planning and Development Account has a guideways program whereby part of the state transit program funds can be used for rolling stock for fixed-guideways systems. However, this funding may not be used for operating expenses. Currently approximately $35 million are available from this source.

In 1980, the legislature transferred $25 million from the tax on Tidelands Oil Revenues* into the TPD account for fixed guideways. The legislature approved these funds on a lump-sum basis rather than on a project-specific basis. The California Transportation Commission allocates funds from this source to specific projects. In this re-

gard, the Commission has statewide authority for funds allocation but, at present, can allocate funds only to those nine counties which have passed the fixed-guideways referendum (Proposition 5).

Expenditure Lags and Fixed-Guideway Funds

California law requires that state fixed-guideway funds be encumbered within one year of allocation and expended within two years of allocation. If funds are not spent within the stated period, they revert to their original source. Because of lags in the UMTA approval process, difficulties have arisen in expending the funds within the required period. As a practical matter this has necessitated a repeat of the entire budgetary allocation process.

A potential partial solution is the so called Banking Bill. Under the Banking Bill, San Diego County and Los Angeles County can put their state funds into a reserve account earmarked to the county's credit, for up to five years for San Diego and up to three years for Los Angeles County, without actual expenditure. However, at present, this applies only to funds for San Diego County and Los Angeles County, and can only be done with funds in the State Highway Account. During the "banking" period, the state receives the interest earnings and from the state's viewpoint the banked monies are counted as encumbered. If the funds are still unexpended at the end of the allowed "banking" period, they revert to the original funding source and the entire process must be repeated.

THE LOCAL OPTION 1/2% SALES TAX

Another source of transit funding is a county option of adding 1/2% to the sales tax. Any county with a transit district, desirous of utilizing this dedicated tax source, must first obtain a two-thirds affirmative vote in a county-wide referendum.** An exception to the referendum requirement was the three counties comprising the Bay Area Rapid Transit District (BARTD). For these counties, San Francisco, Contra Costa and Alameda, the state legislature mandated the 1/2% sales tax addition. The legislature also specified the allocation

---

*These funds were earmarked for higher education capital expenses, and state water projects. This allocation represented the first time these funds had been approved for any other purpose.

**The two/thirds affirmative vote requirement was established by Proposition 13 and does not apply to votes taken prior to the passage of Proposition 13. In the Bay region, Santa Clara and San Mateo Counties voted prior to Proposition 13, when only a simple majority affirmative vote was required.

procedure for the revenues generated in the three-county BARTD area. Of the revenues generated, 75% must go to BART, with the remaining 25% to be allocated by the Metropolitan Transportation Commission (MTC), the region's RTPA, among the AC Transit, MUNI and BART systems.

Three other counties in the Bay Area--Santa Clara, San Mateo, and Marin--have voted on the additional 1/2% sales tax referendum. The referendum passed in the first two counties, but failed in Marin County. San Mateo County plans to impose the tax beginning in October, 1982, unless it is litigated. In 1979, Los Angeles County in southern California obtained a simple majority in the referendum but failed to obtain the required two-thirds affirmative vote. At last report, the issue was still in litigation. Santa Cruz County and Sacramento County have recently held 1/2% sales-tax referenda. The issue passed in Santa Cruz but failed in Sacramento County.

FAREBOX COLLECTION REQUIREMENTS

In an effort to establish efficiency incentives, CALTRANS proposed that in order to receive any transit funding including the 1/2% and 1/4% sales tax revenues, transit systems must obtain one-third of their operating revenues from the farebox and/or local tax funds. Systems receiving federal rural program funds may count these funds toward the one-third requirement. This proposal did not receive legislative approval in its entirety. What the legislature did adopt is outlined below.

For systems serving the general public, as opposed to special client populations such as the elderly and handicapped, the state legislature adopted the following requirements. In order to receive any state funds, including the 1/4% and 1/2% sales tax funds, urbanized counties must receive 20% of operating expenses from the farebox collection, exclusive of any local tax subsidies. For the three transit systems (AC Transit, BART, MUNI) comprising BARTD to receive the 1/2% sales tax funds, 33% of the operating expenses must be met from the farebox, exclusive of any local tax subsidies. This requirement applies only to the three Bay Area counties and only for the 1/2% sales tax funds. For rural or non-urbanized counties, the required farebox recovery rate is 10%. For urbanized and non-urbanized counties with 1978-1979 farebox recovery rates, including local tax subsidies, above the mandated levels, the actual recovery rate for 1978-1979 becomes the minimum required rate. Thus, counties with higher-than-mandated farebox recovery, including local tax subsidies, were required to maintain the previous rates.

For specialized services such as those for the elderly and handicapped, 10% of operating costs must be covered from farebox revenues, regardless of whether or not they are in an urbanized county. This has caused a general fare increase for such services. An additional complication arises should such a service provide service to even one member of the general public. In such an event the farebox require-

ment rises to 20% of operating expenses if the service is in an urbanized area.

The statewide average ratio of farebox revenues to operating costs for service to the general public was 25% in 1980. For the BART system recovery was approximately 50%, while the Southern California (Los Angeles County) system recovered approximately 60% from the farebox.

For systems failing to meet the statutory farebox recovery rates in a given fiscal year, the difference, i.e. the shortfall as expressed in percentage points, is added to the required recovery rate for the following fiscal year. In this manner the funds continue to flow. In essence, the cut-off of funds for failure to maintain the prescribed farebox recovery rate is a non-penalty as the ratio can continue to grow, under the above procedure, for an indefinite period of time. However, the RTPA's can require that the system be able to project meeting the increased ratio within a given period of time. For example, the MTC will not allocate funds unless they can project that the system can meet the farebox recovery ratio.

For systems in existence prior to 1975, an alternative to the above farebox requirement exists. The original requirement to obtain the 1/4% sales tax funds was that such funds could not exceed 50% of total system expenses (capital and operating), less any federal capital expense funds. The remaining 50% of total expenses must be met from farebox revenues and other local sources. This requirement did not apply in the first five years of operations. When the farebox rules discussed above were adopted during the 1979-1980 legislative session, the 50% rule was left as an alternative method for computing state funds eligibility for systems in operation before 1975, i.e., the first five years of the 1/4% sales tax funding.

It is believed that the farebox requirement has aided efficiency in route determination. Some routes are now being judged by ridership criteria rather than political criteria. Proposition 13 has, of course, also assisted this shift towards non-political criteria in route determination.

ALLOCATION FORMULAS

The allocation formulas used in California are either determined in detail by the state legislature or determined by the RTPA's within guidelines established by the legislature. The TDA funds (1/4% sales tax) are returned to the county of origin. Within the county of origin, the funds are allocated by formulas primarily based on population distribution criteria. An exception is the use of bus mileage in the Los Angeles area. Another exception is the Bay Area, where the MTC allocates these funds with full discretion within the county of origin. One limitation which applies to the TDA funds regardless of allocative method is the requirement that 15% be used for capital

expenditures, subject to certain allowed exceptions, as noted previously.

A related concern which applies primarily to federal funds allocation formulas is the absence of a universal correlation between transit ridership and population and/or population density. A case in point is the MUNI system of San Francisco. The MUNI system alone accounts for between 35% and 40% of the Bay Area transit ridership. Additionally, a sizable portion of the BART system is in San Francisco. However, San Francisco represents only approximately 15% of the Bay Area population. Moreover, San Francisco's population is heavily transit-dependent. Thus, for funds allocated by population and/or population-density-based formulae, the MUNI system tends to receive fewer funds that its ridership would seem to warrant. The MTC allocation formula is designed in such a manner that this is not a problem with MTC-allocated funds. However, it remains a concern with federal funds.

VALUE CAPTURE AS A SOURCE OF FUNDING

The use of value-capture taxation requires legislative enabling action. To date this approach has not been used in California, although in some isolated instances an approach similar but not identical to value capture has been used. At present, in light of Proposition 13, it is not clear that a strict value-capture approach can be used. The few cases where something similar has been used have been limited to assessments for capital expenditures such as waiting areas and special transit lanes. The Embarcadero station in San Francisco was not financed through value capture, although such has been reported in the literature. A somewhat similar technique was used to finance a portion of the station's cost and this is discussed elsewhere in this report (see Chapter 9).

THE IMPACT OF INFLATION

To date no funding source has been discovered which keeps up with inflation. As the discussion of Proposition 4 below indicates, inflation is only one of the problems facing state transit assistance programs. Another difficulty is the total level of funding available. Naturally, the limited funds would command greater amounts of goods and services if the inflation rate was lower than it now is.

COST CONTROL ACTIVITIES

Productivity Advisory Committee

The state legislature has mandated the formation of Productivity Advisory Committees at the RTPA level, with all operators involved. The Committee must include a representative of labor, of management and of the riding public. The system is only in its second year, and at present is is unclear how well these committees are working state-

wide. The MTC Bay Area experience with the Productivity Committee is discussed later in this chapter.

Use of Part-time Drivers and Common Carriers of Persons

In 1979, the legislature amended the eligibility requirements for receipt of TDA funds. A major change involved the employment of part-time drivers and the use of common carriers of passengers. Under the amended requirements, no system will be eligible for TDA funds which include the 1/4% sales tax funds, if the operator is ". . . precluded, by any contract entered into on or after June 28, 1979, from employing part-time drivers or contracting with common carriers of persons operating under a franchise or license . . ." (TDA, Section 99315(c)). This change in the Transportation Development Act requirements greatly increases the flexibility of the operators to meet peak-hour demand while more efficiently using the available labor force.

Current full-time employees are protected by the changed eligibility rules in that they may not be terminated or their regular hours reduced due to the system's employment of part-time drivers or contracting with common carriers of persons for transit services. Overtime hours are specifically excluded from the protective arrangement.

VOTER-IMPOSED LIMITS ON TAXATION AND PUBLIC SPENDING

Proposition 13

Proposition 13 is generally viewed as having only limited impact on transit systems since most operators made no use of property tax funds. What few systems were dependent on property taxes found alternative sources of funding. Some systems continue to receive some property tax funding, where property taxes are placed into a city's or county's general fund and the transit system receives general fund revenues. The BARTD receives a small amount of property tax funding for administrative expenses. One county had established a special property tax district to fund its public transit system; Proposition 13 wiped this out. The case of AC Transit, which was heavily dependent on property tax funds, is discussed below, at both the regional level and the local level of activity. The MUNI system was also heavily dependent on the property tax revenues of the San Francisco municipal government's general fund. However, the city government had the flexibility to choose among several city services to cut as a result of Proposition 13.

Proposition 4

Proposition 4 places limits on what state agencies can spend. The Proposition limits state agency expenditures to then current levels plus an escalator for inflation. If additional revenues are available over and above the escalated amount, they cannot be spent.

The state legislature realized that funds appropriated but not spent would be included in the Proposition 4 base year. Therefore, the legislature appropriated the funds into a reserve account, thereby meeting the expenditure requirement for the base-year computation. This proved to be an important action with respect to transit funds.

To date the inflation adjustment has been sufficient to meet funding needs. No state programs in general, and no transit programs in particular, are growing at a rate faster than the inflation rate. However, the state is moving into a period of very tight budgets. In some non-transit areas, the inflation adjustment has been ignored due to an absence of sufficient funds. In 1981, the state transit programs may face the same problem, in which case program growth will be below that allowed by Proposition 4.

REQUIRED AUDITS OF TRANSIT PROPERTIES

California requires an annual fiscal audit of all recipients of transit funds. In addition, an annual fiscal compliance audit and a tri-annual efficiency audit are also required. These audits are filed with the Secretary of Business and Transportation. The audits are available for public inspection. Failure to submit the required audits can lead to a cutoff of all TDA funds.

Only the compliance and efficiency audits are discussed here. The fiscal audit does not differ notably from fiscal audits used nationwide.

The Efficiency Audit

Starting in 1980, transit operators must also submit a tri-annual efficiency audit (also termed a performance audit). The efficiency audit must include the following five factors:

1. Operating costs per passenger;
2. Operating cost per vehicle service hour;
3. Passengers per vehicle service hour;
4. Passengers per vehicle service mile; and
5. Vehicle service hours per employee.

As are all required audits, the efficiency audits are filed with the Secretary of Business and Transportation and are available for review by interested parties. However, there is no formal state-level review procedure and no penalties for inefficient performance. Indeed, there are no established guidelines for ascertaining inefficiency.

As was noted above, failure to submit the required audits on time is supposed to result in a cutoff of all TDA funds. As a

practical matter this has not occurred with the efficiency audit. The first efficiency audits were due July 1, 1980; as of January 1981, none had been received*. The Regional Transportation Planning Agency is the enforcement agency in this regard. The California DOT is attempting to enforce compliance by means of an executive order indicating that the State Transit Assistance Funds will not be fully allocated if the required efficiency audits are not submitted.

From the perspective of the legislature, the efficiency audit is viewed as a potentially important source of information. This audit will provide the legislature with an idea of how the transit funds are being spent and whether they are being spent in line with the law and the legislative intent. This is the first year of the required efficiency audits. Therefore what actions will be taken by the legislature, if any, in response to the new information cannot be predicted per se. The action will depend on what problems, if any, are revealed by the efficiency audit information.

The Compliance Audit

The fiscal compliance audit now requires a positive statement from the auditors that the system is in compliance, rather than the previously required weaker statement that non-compliance was not found. This requirement has produced a reluctance on the part of the large auditing firms to undertake transit system audits, which has led to a rise in costs for such audits. One reason for this reluctance is the lack of clear, established criteria for judging compliance. At present Compliance Audit Guides are being developed at the regional level. As each region is different, the state prefers that each region develop a compliance guide appropriate to its activities. This matter is still under debate.

REGIONAL-LEVEL TRANSIT ACTIVITIES: THE SAN FRANCISCO BAY AREA

The Regional Planning Organization for the nine-county San Francisco Bay area is the Metropolitan Transportation Commission (MTC), created in 1970. Prior to this time, the regional Council of Governments (COG) undertook transportation planning activities. However, the emphasis was mainly on highways, and the Bay Area wanted a body which would address a broader range of transportation concerns.

---

*There was some disagreement among the case-study respondents on this point. CALTRANS reports receiving no reports from any system in the state; the MTC reports having filed several such audits. Apparently, the audit reports are still somewhere in the state government or with the RTPA's and have not yet reached the appropriate state offices.

Thus, the MTC was created. The MTC is also the MPO, for federal purposes, for the Bay Area.

PLANNING AND BUDGETING ACTIVITIES

Of the nine counties in the San Francisco Bay Area, three are non-urbanized and six are urbanized. For the three non-urbanized counties, the MTC makes the unmet transit needs finding required before the 1/4% sales tax (TDA) funds may be used for nontransit purposes. This task is accomplished by requiring the three counties to prepare transit plans, which serve as the basis for identifying any unmet needs.

All transit operators within the nine-county MTC area must prepare and submit 5-year plans. These plans are revised annually and include budget projections for the 5-year period. To assist in the planning process, the MTC allocates UMTA Section 8 planning funds to operators, and maintains a "Rent-A-Planner" program whereby an MTC planner will be provided on a temporary basis to an operator, at no cost to the operator, to assist in preparing the 5-year plans.

The MTC requires the operators to submit their 5-year operating budgets each April. The MTC staff analyzes the budgets and in June allocates funds to the various operators. The following December the staff does a quick analysis of the second-year budgets, and in January informs the operators of the projected allotments for the subsequent June. These projections are then incorporated into the operator's projected budgets submitted in April.

The operators do the necessary cost projections for preparing their budgets. Linear trend analysis techniques are most commonly used. The MTC staff performs both trend analysis and program analysis on the submitted budgets.

Annual sales-tax revenue projections are made by each county auditor. The MTC and the operators work from these projections in formulating budget projections. For the Bay Area, sales-tax revenues are the major revenue source. Non-sales-tax revenue projections are made in connection with the operators.

ALLOCATION ACTIVITIES

BART automatically receives 75% of the 1/2% sales-tax revenues of the three Bay Area Rapid Transit District (BARTD) counties. The MTC allocates the remaining 25% among BART, AC Transit and MUNI. Originally this allocation followed a plan adopted in 1977 under which the 25% share of the 1/2% sales-tax funds was to be used only for expanded service. Following the passage of Proposition 13 an Interim Plan was adopted, and remains in effect, which permits the 25% share of the 1/2% sales-tax funds to be used to support existing service. To

obtain the 1/2% sales tax funds, the three systems must maintain a 33% farebox recovery rate.

Responses to Proposition 13

The impact of Proposition 13 upon the three major systems in the Bay Area was severe for AC Transit and MUNI which were heavily dependent on property-tax funds. The property-tax funding received by BARTD was a relatively insignificant amount, used only for administrative costs. BARTD also has $792 million in outstanding bonds for capital construction, funded by property-tax revenues. However, Proposition 13 had no effect on existing issued bonds.

As part of an overall financial package developed by the MTC, which included passage of the 1/2 cent sales tax by the legislature for the three BARTD counties, the MTC increased tolls on the Bay bridges, exluding Golden Gate, by 25 cents. This increase realized approximately $8 million annually in additional funds. This is now the major source of funding for the local matching share of UMTA capital grants for bridges and bridge corridor projects. Tolls from the Bay bridges are used only for capital projects located within the bridge corridors. The Golden Gate Bridge is operated by the Golden Gate Bridge Highway and Transportation District (GGBHTD), which also operates two ferry routes. The GGBHTD relies upon excess bridge tolls, TDA (1/4% sales tax) funds, and federal funds for its capital needs. The financing of AC Transit and MUNI is detailed in Chapter 6.

Proposition 5 Projects

To date, the MTC area has used Proposition 5 fixed-guideway funds primarily for a new BART line, for capital expenses in San Francisco, and for improvements to the Southern Pacific commuter rail service between San Francisco and San Jose. The next 5-year plan calls for increased usage of Proposition 5 funds, between $70 and $100 million. Usage is planned in the three BARTD counties and in Santa Clara and San Mateo Counties.

UMTA Section 5 Funds

The MTC receives and allocates UMTA Section 5 operating assistance funds. The operator submits the UMTA application but must have MTC approval prior to submission to UMTA. MTC approval requires a rigorous examination of the application by the MTC staff. The process is notably more rigorous than the OMB A-95 process which is also required.

Paratransit Funding Activities

Of the 1/4% sales tax funds, the law allows up to 5% to be used for paratransit. In the MTC region all 5% is used for paratransit in the form of service to the elderly and handicapped and taxi subsidies.

To receive these funds a paratransit operator must be a member of the county Para-Transit Coordinating Council. Each county has such a council. The operator submits the funds request to the MTC after receiving the Council's approval of its funding request. The MTC allocates the 5% of the TDA funds earmarked (by the MTC) for paratransit.

PRODUCTIVITY IMPROVEMENT PROGRAM

The operators' 5-year plans now incorporate a Productivity Improvement Program which, prior to 1980, was a separate document. The Transit Operating Coordination Council, which comprises the six largest operators plus the MTC, nominates three persons from labor and three from management to the Productivity Committee. The Committee's composition is such that all six major operators are represented by either a labor or a mangement person. In addition, there is representation by citizens including transit professionals.

The Productivity Committee in connection with each operator selects the top one or two productivity improvements from the operator's Productivity Improvement Program. To these items are added any top ranking concerns of the Committee itself. Currently the Committee is predominantly concerned with security and marketing considerations. The Committee meets annually with each operator on the operator's property to set priorities, and monthly to monitor progress. Some examples of productivity improvement priorities are the capital planning process for AC Transit, and reduced employee absenteeism for the Golden Gate Bridge Highway and Transportation District. As this is a relatively new activity within the transit industry in general, the Productivity Committee has devoted considerable time and effort to determine how one goes about making productivity improvements and agreeing upon which improvement efforts seem to be the most promising.

THE IMPACT OF INFLATION

Federal sources of funding, both capital and operating assistance, have not kept up with inflation. Historically, farebox revenues have also failed to keep pace with inflation. Currently operators are more willing to raise fares to help meet rising costs. It is increasingly clear to the operators that they must deal with inflation-induced cost increases on their own, and that the federal government cannot be relied upon for increased assistance. The farebox is the major resource available to operators in their efforts to deal with inflation. Improved efficiency, while useful, has only a marginal impact in most instances. The danger is that capital maintenance will be deferred and the savings used to meet inflation-induced cost increases. To guard against this possibility, the MTC staff closely examines the operators' budgets for adequate reserves for capital replacement over the following 15 years. This analysis includes projection of capital equipment lifespans and replacement costs, or "life-cycle" costing.

VII. LOCAL LEVEL FINANCING ACTIVITIES: ATLANTA, GEORGIA

This chapter is a case study of the Metropolitan Atlanta Rapid Transit Authority, one of five systems at which public transit financing activities at the local level of government were examined. The other four systems (MUNI, San Francisco, California; AC Transit, Oakland, California; Capital Area Transit, Raleigh, North Carolina, and NJ Transit, Newark, New Jersey) will be examined in subsequent chapters.

NJ Transit differs from the other systems examined in that it is a semi-public corporation which oversees all public transit in the state of New Jersey. None of the other systems examined has statewide responsibilities.

THE METROPOLITAN ATLANTA RAPID TRANSIT AUTHORITY

The present Metropolitan Atlanta Rapid Transit Authority (MARTA) is the product of special enabling legislation passed by the Georgia legislature, which authorized a 1% local-option sales tax dedicated to transit services. In 1971, the voters of Fulton and DeKalb Counties and the City of Atlanta approved the local-option 1% sales tax, the first in the State of Georgia, to be dedicated to MARTA.

Prior to the 1971 sales tax referendum, a proposal to fund MARTA by property taxes was put before the voters of the four-county area in 1969, and was overwhelmingly rejected. This prompted the exploration of alternative forms of dedicated funding. With the property tax no longer a viable contender, three alternative tax sources received primary attention: a value-added tax, an earnings or payroll tax, and a sales tax. In a 1970 report, the sales tax emerged as the most practical alternative. Concern over the regressive nature of a sales tax, in combination with the concern for low-income transit dependent riders, led to the seven-year, 15¢ fare arrangement as a means of reducing the regressiveness of the sales tax.

MARTA'S FUNDING SOURCES

The Sales Tax Referendum

MARTA was originally established in the early 1960's to provide transit service to four counties (Fulton, DeKalb, Clayton, and Gwinnett) in the Atlanta region. Of the four counties that voted on the 1971 referendum, only the voters in Fulton and DeKalb counties (which includes the City of Atlanta) approved the local option sales

tax. Currently, MARTA only operates in Fulton and DeKalb Counties*. Long-range MARTA planning envisions expansion of service to other counties in the Atlanta region as additional counties approve the sales tax and thus make funding available.

As an inducement to the voters, especially low-income transit-dependent voters, MARTA agreed to maintain a 15¢ fare with free transfers for seven years if the sales tax was approved. The 15¢ fare was below the then current 40¢-plus-5¢-transfer fare. Following the expiration of the seven-year period, fares were raised to 25¢. In July, 1980, fares were raised to 50¢, and in July of 1981 to 60¢. There continues to be no charge for transfers.** However, low-income transit-dependent riders are a continuing concern of MARTA management. In recognition of this concern, MARTA offers a weekly unlimited-ride pass for $5 and a monthly unlimited-ride pass for $21. According to research undertaken by MARTA, the transit dependent rider averages 13 trips per week. Thus, the average fare for such an individual using a weekly pass is only 38¢ per trip.

The availability of local sales-tax funding is critical to the existence of MARTA service. The enabling legislation explicitly precludes any state funding for MARTA operations or capital purchases. Thus MARTA expenses are funded from three primary sources: local sales-tax revenues, farebox revenues and federal (UMTA) funds. As will be noted later, some revenues are derived from other non-fare sources, but the dollar amounts are very small.

Sales Tax Revenues

The original legislation establishing the MARTA local-option sales tax set the tax rate at 1% for 10 years, with the rate falling to 1/2% thereafter. In 1979, the state legislature extended the life of the 1% rate for an additional 15 years. Under the present legislation, the 1% rate will continue through 1997, falling to 1/2% in 1998. The legislation further specified that no more than 50% of the sales tax revenues could be used for operating expenses.

Additionally, operating deficits may not be planned. However, should an operating deficit occur due to unforseen circumstances,

*This statement is not absolute in that some service from other counties into Atlanta is provided, but at a higher fare. For example, the fare from Clayton County into downtown Atlanta is 30¢ higher than the bus fare within Fulton or DeKalb Counties.

**Again there are certain exceptions; for example, a passenger using the bus from Clayton County into downtown Atlanta would pay 5¢ for a transfer, if the passenger transferred to another bus once reaching downtown Atlanta.

such as union wage increases, the amount of the deficit may be "borrowed" from the sales-tax revenues dedicated to capital expenditures. Any such borrowings must be repaid to the capital account within three years.

Potential cash-flow problems are avoided by monthly payment of the sales tax revenues. In early 1981, these revenues averaged approximately $8 million per month. If these revenues were paid only once or twice a year, as is usually the case with property tax recipients, cash-flow problems would exist.

The presence of the dedicated sales tax has enabled MARTA to undertake long-range planning for operations and capital expansion. Since MARTA management does not have to devote valuable time and resources to handling short-term crises brought about by funding shortfalls, management time and resources may be more efficiently utilized and concentrated on daily operations and on long-term planning, with such results as the efficient and timely manner in which the MARTA rail system is being brought into service.

The sales tax as a funding source also has the advantage of being directly related to inflation. It has the disadvantage of a direct relationship to the business cycle. Thus, MARTA sales-tax revenues tend to rise with inflation and with positive economic growth, and to fall under recessionary economic conditions. The impact upon revenues under conditions of simultaneous recession and inflation would depend upon the depth of the economic downturn and the strength of the inflation rate.

Farebox Recovery

The local sales-tax-option-enabling legislation specified a farebox recovery rate. The farebox must produce revenues equal to 35% of the previous year's operating expenses. The legislation did not specify any efficiency requirements other than the indirect requirement of the 35% rule.

Fares are determined by projecting operating expenses, sales-tax revenues and UMTA Section 5 funds. The computed fare is subject to the 35% requirement stated above. The sales-tax revenues usable for operations are limited to 50% of total revenues, as noted previously. UMTA Section 5 funds are utilized to fund the remaining deficit.

In Atlanta, there is tremendous community pressure for low fares. The fare limitations stated above, combined with the community pressure for low fares, create pressure to keep operating costs low through good management and operating practices.

Other Current Revenue Sources

In addition to the sales tax and farebox receipts, MARTA obtains

revenues from inside-the-vehicle advertising in buses, and from sightseeing and charter services. However, these sources generate relatively small amounts of revenue (just under $1 million in 1980). All funds generated in this manner are devoted to operating expenses.

Until the 1980-81 school year, MARTA operated a school bus service for the local board of education. The contract was lost to a private firm which employed non-union drivers at a wage rate less than half the average MARTA driver wage rate.

MARTA derives some rental income from properties acquired prior to their need for future expansion projects. Most such properties were acquired in connection with the rail project. Until such time as the property is to undergo construction activities, it is maintained as income-producing rental property.

A highly innovative approach to generating in-kind support is shown by MARTA's utilization of its radio-equipped bus fleet. Drivers collect and report traffic condition information which MARTA, in turn, provides to local radio stations. In return for this information, the stations provide free advertising air time which MARTA utilizes in its marketing program, and which is especially useful in announcing new service.

REVENUE SOURCES UNDER CONSIDERATION

Non-fare sources of revenue have been explored by MARTA officials. Although inside-the-vehicle advertising is utilized, as noted above, outside-the-vehicle advertising has been rejected on the grounds that the aesthetic costs would exceed the revenue gains. There is also the feeling that outside-the-vehicle advertising is closely identified in the minds of many current and potential riders, especially the choice rider, with unclean buses and poor service, a perception which dates back to the situation prior to the 1971 referendum and the subsequent revitalization of the MARTA system.

Value-capture and park-and-ride lot fees have been considered. These potential revenue sources require strong local political support. Since this support is lacking at present, MARTA has not pursued these alternatives. Concession stands inside MARTA rail stations are another possible future source of revenue. However, concerns over clean-up costs and methods have not been satisfactorily resolved.

MARTA has also examined revenue-generating activities used in Europe but not currently in America. The two most interesting ones are a catering service operated by the London Underground, and a transit counsulting service of the Paris Metro. Neither operation is under serious consideration now or in the foreseeable future in the United States. However, they do point out possible new directions for revenue generation.

Any consideration of non-fare, non-tax revenue sources, such as those noted above, must include a realization that the revenue potential of any single source, and often of all such sources as a group, is small relative to the total dollar needs of a large mass transit system.

WITHDRAWAL OF UMTA SECTION 5 FUNDING

The current proposals to terminate UMTA Section 5 funding in stages, beginning in fiscal year 1983 and ending in fiscal year 1985, will produce fare increases independently of any other upward pressure on fares. In 1981, Marta estimated that a loss of Section 5 funding would increase fares by 5¢ in each of the three years for a total fare increase of 15¢. MARTA is in a relatively stronger financial position than many large urban transit systems. Thus, the total impact on fares of terminating Section 5 funding would be relatively less than that which many other systems anticipate. It must be understood that the estimated fare increase of 5¢ per year for three years does not include potential fare increases arising from other causes. Therefore, the total fare increase over the three-year period is likely to be in excess of 15¢.

LABOR COST CONSIDERATIONS

Labor costs constituted approximately 76% of MARTA operating expenses in 1981. The union contract requires a quarterly cost-of-living adjustment (COLA). Other COLA arrangements in the Atlanta area tend to be annual adjustments. Additionally, the contract prohibits the use of part-time drivers or operators. Thus, the average driver/operator works a 48-hour week and earns approximately $25,000 a year. In 1981, a driver with three years MARTA employment earned approximately $10.13 per hour.

The legislation permitting the local option sales tax also specified that every six months MARTA must publish in the local newspaper the names, titles, and salaries of all employees earning over $20,000 per year. The current earnings of MARTA's unionized employees are higher on average than other skilled labor in the Atlanta region. The relatively higher wages derive primarily from the union practice of basing wage demands on national transit worker salaries rather than on prevailing local labor rates. The net result of the higher wage rates and the publication-of-salary requirements is a rising level of dissatisfaction with MARTA wage levels and, most importantly, with MARTA fare increases, on the part of many workers in the Atlanta area.

Thus MARTA management is attempting to establish a generally clear and well-perceived linkage between wage increases and fare increases. In particular, an explicit recognition of the impact of wage increases on fares is sought from the unions involved. The objective is to make this linkage an intergral part of future wage negotiations.

The present union contract includes a no-lockout, non-strike provision whereby disputes automatically go to binding arbitration. In 1981, MARTA was supporting a bill before the state legislature which would mandate that arbitrators in union-management disputes be required to consider the existing financial situation, including fare impacts of wage settlements, in reaching their decisions. Additionally, the proposal would require that the neutral arbitrator be selected from the local area. This latter point should enhance the arbitration panel's understanding of prevailing wage rates in the local area and existing local concern over future fare increases.

VIII. LOCAL LEVEL FINANCING ACTIVITIES:

NEW JERSEY TRANSIT CORPORATION

The New Jersey Transit Corporation was created by the state legislature in 1979. NJ Transit is charged with "overseeing, improving and operating" public transit in the State of New Jersey, excluding operations conducted by the Port Authority of New York and New Jersey. In the Philadelphia-Camden area, NJ Transit operates a New Jersey-to-Philadelphia bus service; otherwise, it coordinates activity with the Port Authority Transit Corporation (PATCO). Prior to the 1979 legislation, the New Jersey Department of Transportation"s Commuter Operations Authority administered the bus and Conrail subsidy programs. The Authority was prohibited by the state constitution from purchasing private entities.

OVERVIEW OF OPERATIONAL RESPONSIBILITIES

NJ Transit is currently charged with overseeing and improving all public transit in New Jersey. Additionally, NJ Transit directly owns and operates two bus companies comprising a sizable portion of total ridership. The bus and Conrail subsidy programs are now administered by NJ Transit. Sixteen private bus companies are currently subsidized under the program. NJ Transit also purchases equipment for these privately-owned companies.

On October 14, 1980, NJ Transit acquired Transport of New Jersey (TNJ), the state's largest private transit company. In addition to TNJ's 2,600 buses and 4,000 employees, NJ Transit acquired the Newark subway. The subway is approximately 43 miles in length and is a trolley system.

The long-run objective of NJ Transit is to end the subsidy program either by acquiring currently subsidized private carriers or by realigning routes so that the smaller firms can be profitable. This is to be done in such a manner as not to endanger the remaining non-subsidized private bus firms. NJ Transit has the right of condemnation of companies. This tool may be utilized in acquisition of failing properties.

Rail service is provided under contract by Conrail. Most of the trackage, rolling stock and stations are owned by NJ Transit. Conrail provides labor only. The service is predominantly provided in North Jersey. Rail carries 20% of the passengers served by NJ Transit, but consumes 40% of its labor budget.

In light of Conrail's plans to leave the passenger business, the Board of Directors of NJ Transit has decided that NJ Transit will become the direct operator of commuter rail service. Additionally, the Board decided to continue commuter rail service in South Jersey on the Atlantic City branch.

Of the service operated by NJ Transit in 1981, approximtely 50% was interstate and 50% was intrastate. Interstate commuter service is within the jurisdiction of the Interstate Commerce Commission (ICC) rather than the New Jersey Public Utilities Commission.

REGIONAL COORDINATION

NJ Transit coordinates with two regional planning organizations. The Tri-State Regional Planning Commission located in New York City is the MPO for North Jersey. The MPO for South Jersey is the Delaware Valley Regional Planning Commission, located in Philadelphia. These two MPO's handle the A-95 Clearing House Process for their respective sections of New Jersey. They also have responsibility for the TIP planning process for North and South Jersey respectively. In addition, there is also a high level of interaction between NJ Transit and the UMTA Regonal Office in New York City. All interactions at the regional level are considered to be of high quality and usefulness.

OPERATIONS FUNDING SOURCES

Funds for operations derive from several sources. The state provides approximately 28% on a non-dedicated basis, while 55% derives from the farebox, 16% from federal government UMTA funds, and 1% from miscellaneous sources. The state's funds are purely discretionary. NJ Transit's budget is submitted as part of NJ Department of Transportation's (NJDOT's) budget. These funds are subject to the legislative decision-making process. NJ Transit is empowered to introduce legislation independently of NJDOT, provided a sponsor is found. As in many states, New Jersey's transit and highway needs exceed currently available tax revenues.

Farebox Recovery

New Jersey has no farebox recovery requirements, nor is there a standardized fare structure. In 1981, the fare structure reflected the historic patterns of numerous private firms establishing fares independently. In 1982, NJ Transit will implement a standardized fare structure for rail and bus operations. This fare policy will be based on zones that are designated by distance.

In early 1981, the farebox was returning 66% of bus operating expenses and 39% of rail operating expenses, for a system average of 55%. Following a planned fare increase on July 1, 1981, the farebox recovery rates are expected to be approximately 71% for bus and 44% for rail, for a system average of 61%.

State Funds

As has been indicated, New Jersey has no dedicated transit funding. All non-federal funds are state funds. There is no local funding. All state and most federal funds for public transit come

directly to NJ Transit, which then distributes the funds to individual carriers. The one exception is UMTA Section 18 funds, part of which go directly to local systems.

Annual budget requests for state funds are determined on a "fill-the-gap" basis. That is, operating expenses, farebox recovery, and federal funding levels are projected, and the difference between projected costs and projected revenues determines the size of the annual budget request for state funds. State funding is not viewed as particularly stable or predictable.

CAPITAL FUNDING SOURCES

NJ Transit funds for capital expenditures derive from UMTA Section 3 and Section 5 funds, various bonding programs, Interstate Transfer funds, and a special arrangement known as TRANSPAC (discussed below). Currently, NJ Transit is not receiving funds from the state for capital purposes, even though there is a provision for receipt of such funds.

State Bond Issues

From time to time, New Jersey voters are asked to approve the issuance of state bonds for particular transit and highway improvement packages. The last such bond approval was in 1979. The 1979 package included $150 million for transit. These funds are used as matching funds for UMTA grants. Currently, approximately $60 million in bonding authority is still available. However, this available bonding authority has been programmed, and the bonds will be issued at the appropriate time.

Income Taxes

New Jersey taxes income earned in New Jersey by residents of New York and Pennsylvania. In South Jersey, the commuter tax is pegged to the Philadelphia tax rate. In North Jersey, the Emergency Transportation Act, which established the tax, keyed the rate to the New York tax structure. Currently, the tax is being collected but not spent, as it is under litigation. Once the legal questions are settled, the funds will be used for capital projects.

TRANSPAC

TRANSPAC is a unique one-time arrangement between New York and New Jersey with the concurrence of UMTA. The Port Authority of New York and New Jersey wanted to increase its bridge and tunnel tolls. Such increases may occur only with the approval of the governors of both states. To obtain the required approval, the Port Authority agreed to provide each state with approximately $220 million in capital funds for public transportation. The Port Authority will spend the funds and retain title to the vehicles purchased, as required by their statutes. The New Jersey share of these funds will

be spent on buses and bus facilities. The facilities must be located within the Port Authority District, i.e., a 25-mile radius from the Statue of Liberty. The buses may be operated only within the Port Authority Service Area, a 75-mile radius from the Statue of Liberty.

UMTA agreed to accept the buses as the 20% matching share of a program grant. The program grant included $600 million for various bus and rail capital projects, of which $100 million is accounted for by the TRANSPAC buses. It is important to note that the buses were accepted as a local match on a program grant, i.e., a set of diverse capital projects, rather than as a match on a project grant.

Interstate Transfer Funds

Approximately $343.7 million in Interstate Transfer funds has been deobligated, and there are plans to deobligate an additional $273 million. However, only $32.7 million has been received. The total amount of the deobligated Interstate funds has been programmed, but the projects cannot be undertaken until the U.S. Congress appropriates sufficient funds to pay the deobligated amounts. This problem is a common one with the use of Interstate Transfer funds. The USDOT recently rejected a request to designate I-95 for deobligation. The rejection of this deobligation eliminated a substantial amount of Interstate transfer funds that could have been used for public transportation improvements.

Small Capital Projects

Some capital projects are funded entirely with state bond funds. These are for small capital items such as bus shelters, signs, and the like. Such small projects are not considered worth the trouble of UMTA paperwork to justify seeking UMTA funding.

NJ Transit's capital program is a very ambitious one. The program calls for expending $1.7 billion over the next five years. The funds to support the projects have been identified and the funding programmed.

THE CAPITAL REPLACEMENT PROGRAM

The major problem facing NJ Transit is one of a history of poor maintenance and an elderly fleet of buses and rail cars. The long-term aim is the implementation of the "Capital Replacement Program" with replacement of equipment phased so that the average fleet age will be 6.1 years. The movement to implement this program involves phased purchases of capital equipment and a major rehabilitation program.

Over the next three years, NJ Transit will spend approximately $14 million to completely rebuild 500 buses (175 per year), at a cost of $10,000 to $50,000 per bus, depending upon age of vehicle. This

will produce a fleet of mixed ages in top condition. At this point, the phased-replacement program can begin. A phased-replacement program avoids a major future problem by removing the need to replace entire fleets at the same point in time. Rail cars are also included in the phased-replacement program. One hundred five new railcars were purchased in 1980.

The capital replacement program must be viewed in combination with a maintenance program designed to prevent the fleet deterioration which occurred under private ownership*. A major aspect of this program is the development and construction of centralized maintenance facilities. At present maintenance facilities are scattered across the state, resulting in costly and wasteful duplication of personnel and inventories. NJ Transit is currently utilizing capital dollars to build a maintenance program designed to reduce future operating costs. A key facility, planned for completion by the end of 1982, is the centralized rail maintenance facility at Kearney, New Jersey.

PRIVATE-SECTOR INVOLVEMENT

NJ Transit is currently exploring joint development of public transit facilities with private-sector firms. The objective is to get the private-sector firms involved in planning for employee transit before building new plants; for example, including the planning of a subscription bus service in planning for a new plant.

An additional objective is to obtain private-sector involvement in the funding of transit facilities. The Meadowview Development Corporation has built a rail station, on an existing rail line, as part of a commercial development project. The corporation retains title to the station, but has turned station management over to NJ Transit.

FINANCING PROPOSAL APPROVAL PROCESS

The NJ Transit budget is submitted to the state legislature as part of the budget of the State Department of Transportation. The NJDOT budget is first approved by the Governor.

Financing proposals, such as special bond issues, can be submitted independently of NJDOT. In such a case, the NJ Transit

---

*Deterioration of the fleet under private ownership was the direct result of inadequate funding and the resultant need to cut current ex-expenses. This activity only serves to transform present maintenance costs into future capital costs. Publicly-owned transit systems are in no way protected from the dangers of deferred maintenance, as the primary cause of such deferral is financial and not managerial.

staff prepares a financing proposal which is submitted to NJ Transit's Citizen Advisory Board and other interested groups around the state. Following this review, the proposal goes before the NJ Transit Board, which includes the Commissioner of the Department of Transportation and the State Treasurer. The Board minutes must be approved by the Governor. During the period of proposal consideration, the Governor receives informal reports of the activities. By approving the Board minutes, the Governor is also indirectly indicating agreement with the financing proposal. At this point in the process, NJ Transit seeks a sponsor in the state legislature. The legislature then accepts or rejects the proposal. Accepted proposals require the governor's signature before becoming law. In the case of state bond issues, voter approval is also required. While this process is independent of the NJDOT budget process, cooperation with DOT is maintained throughout the process.

CASH FLOW

To date, NJ Transit has not experienced any cash-flow problems. Such difficulties have been avoided by the routine use of letters of no prejudice, for example. Additionally, advance monies on state funding commitments and bond sales revenues have been available from the State Treasury. This source of advance funds may not be available in the future, due to an increasing shortage of state funds in general. The advance programming of capital expenditures and funding sources has also helped to reduce the probability of cash-flow problems occurring.

SUBSIDY PROGRAM

At the beginning of each fiscal year, the sixteen subsidized bus carriers and Conrail provide NJ Transit with estimates of their anticipated operating deficits for the new fiscal year. NJ Transit then provides the requested funds. At the end of the fiscal year, there is a reconciliation audit. If the carrier has been oversubsidized, the amount is deducted from the next year's subsidy; if undersubsidized, NJ Transit provides the additional funds.

NJ Transit places limits on the amount that a subsidized carrier may pay its officers. This requirement is clearly an effort to control the administrative portion of operating costs. Currently, NJ Transit is suing several subsidized carriers for overpayment of their officers.

OTHER FINANCE AND FUNDING CONCERNS

UMTA Paperwork

NJ Transit reports no real problems with UMTA paperwork requirements. The working relationship with UMTA's New York Regional Office is considered to be particularly strong and helpful. However,

Section 15 reporting requirements were cited as particularly costly, while not producing usable data.

Auditing

NJ Transit performs an annual fiscal audit on all subsidized bus carriers. Conrail is also audited annually. NJ Transit itself is annually audited by an outside CPA firm and by the State Treasurer, in addition to the normal UMTA audits.

Inflation

Neither state nor federal funding rises along with inflation. Thus, the only remaining technique for meeting inflation-induced cost increases is to raise fares.

FORECASTING

Forecasting of revenues, operating expenses, and capital expenses utilizes standard trend-line analysis. The projections for operating expenses and revenues are computed annually as part of the budgetary process. Capital expenses funding is projected over a five-year planning horizon as part of the TIP process.

Forecast accuracy for operations has not been very satisfactory. The key element is the forecasting of ridership, which has proven to be difficult. Difficulties with ridership projections are discussed below.

Ridership Stability

Ridership is the key element in the accuracy of any financial forecasting activity. NJ Transit has found ridership to be unstable due to variables beyond the control of the transit management. Ridership varies with the price of gasoline, the state of the economy, and the unemployment rate.

Transit strikes tend to reduce ridership during and following the strike. Fare increases also tend to reduce ridership. NJ Transit projects a 12% ridership decline for each 50% fare increase. The Southeast Pennsylvania Transportation Authority (SEPTA) increased fares 79% in three stages, and experienced a 20% ridership decrease. In time, barring other offsetting economic factors, some but not all of the lost riders returned. The implication is that transit ridership is price inelastic.

Loss of transit ridership does not necessarily imply a return to private automobiles. Some ridership is lost to private bus companies, especially during striks at public transit companies. Additionally, New Jersey has experienced a great growth in ridersharing, and NJDOT

administers a ridersharing program. The Garden State Parkway, for example, has a high-occupancy vehicle lane. Some of the rail ridership loss has also been to ridersharing.

SERVICE TO SPECIAL CLIENT GROUPS

School Bus and Charter Operations

NJ Transit is precluded by law from any school bus operations except those that were in existence at the time the transit company in question was purchased. Thus, NJ Transit anticipates a decline of involement in, and eventual termination of, its school bus operations.

Subsidized carriers are expected to run a total transit operation, which includes charter services. Charter service profits are expected to be used to offset part of the commuter service operating deficit. NJ Transit subsidizes the total company deficit, not just the commuter services deficit. Nevertheless, some firms have spun their charter operations off into separate companies.

NJ Transit directly operates a charter service via the firms it has purchased since 1979. Due to UMTA requirements, the charter rates are high and not particularly competitive. However, some revenues are generated from charter services.

Elderly and Handicapped Program

NJ Transit provides a half-fare program for elderly and handicapped (E/H) bus riders. Some bus companies participating in the elderly and handicapped fare program also receive operating subsidies; others do not.

Currently, the E/H program issues identification cards to persons 62 years and older. The individual takes the card to a bank and purchases coupons for one-half the normal fare. These coupons are submitted to the operator, who then submits them to NJ Transit for a full-fare payment. The coupons are usable only between 9:30 a.m. and 4 p.m.; thus, it is an off-peak subsidy program. Travel demand by the elderly and handicapped is largely induced by the reduced-fare program.

This E/H subsidy program operates only on fixed-route systems. The demand-responsive system is presently administered by NJDOT, but will be transferred to NJ Transit in the future. Coupons are not used on Conrail, as NJ Transit already pays the total deficit.

A proposed revision in the E/H program would eliminate the use of coupons. Under the proposal, operators would receive an E/H subsidy equal to the 1981 subsidy, plus an adjustment for inflation. The reasoning is that the marginal cost of an additional elderly and/or handicapped rider is essentially zero, as the program is an off-peak

fare-reduction program. During peak-times, full fare is charged to riders in this group under both the present and the proposed programs.

The half-fare program is not usable in conjunction with other bonus programs offered by private firms. Atlantic City, for example, has a parking problem, and the casinos offer a $12 bonus to persons using public transit to get to Atlantic City. Many individuals were making a habit of traveling to and from Atlantic City on the half-fare program, collecting the $12 bonus and making a profit. Neither the half-fare program nor the bonus program was designed for this purpose. Thus, the half-fare does not apply in such a case.

EFFICIENCY CONCERNS AND MEASURES

Efficiency Incentives

New Jersey has no mandatory efficiency or farebox recovery requirements. However, implicit in the establishment of NJ Transit was the assumption that NJ Transit would be more efficient than previous service delivery systems. Thus, NJ Transit believes there is a legislative mandate for increased efficiency. NJ Transit is developing efficiency incentives to be included in new contracts with the subsidized carriers. The details are currently being reviewed.

Aside from the implicit legislative mandate, the main incentive for efficiency is public pressure. Additional pressure for efficiency is the knowledge that state and federal funds are either static or declining.

Labor Concerns

Labor costs, union work rules, and UMTA Section 13(c) are major areas of concern for NJ Transit management. Union work rules are considered a major factor in keeping labor costs high. To illustrate this area of concern, rules applying to maintenance personnel, bus drivers, and rail personnel are noted below.

An example from the maintenance area is the number of persons required to change the air conditioner compressor in a bus. This activity requires the participation of persons from three craft unions: plumbers, electricians, and heavy labor. Each maintenance facility must include personnel from each craft union. The move to centralized maintenance facilities would serve to reduce the present duplication of personnel. The easing of work rules would permit one person to change the compressor, in the illustration above, rather than the present three persons.

The union contract prohibits the use of part-time bus drivers. Thus, a system of split shifts has been developed. The system known as Spread Time pays the driver at a lower rate when the driver is not

operating a vehicle. The non-driving time is the Spread Time. Drivers select routes on the basis of seniority; drivers with seniority select those routes having the greatest Spread Time.

Rail operators do not use the Spread Time concept. In rail operations, the personnel are paid overtime or two crews are used. A full day is constituted by 100 miles of travel. This rule permits some rail personnel to operate a morning train into New York City from South Jersey, work at another job in the City, and operate an evening train back to South Jersey. The staffing of a train is not within the control of management. Rather the union determines the number of conductors, brakemen, etc., on each train. Passenger trains still operate with firemen.

In order to better control operating costs, NJ Transit desires better control over personnel assignments and tasks. Thus, NJ Transit is requesting a one-shot binding arbitration on work rules. It is hoped that the proposed process will produce better management control over the labor component of operating cost.

The UMTA Section 13(c) requirement also works for reduced management flexibility. Every new bus purchased, for example, requires a 13(c) form signed by the union agreeing that the bus purchase does not harm labor. The contribution of this form-signing process to operating efficiency is questionable.

Route Revision

NJ Transit is currently involved in a systematic review and revision of present route structures. Some of the intrastate bus routes have not been altered since World War II. A major component of the review is an wxamination of who is not served by the present structures.

The review process has been completed for South Jersey, for Newark, and for Elizabeth. Service not used has been removed, and new service added where needed. To date, more service has been removed than has been added. The operating funds saved by these changes are put back into the system in the form of increased street supervision. For example, traffic checkers, which had not been utilized in the past, have been added to NJ Transit's operations.

As part of this route-revision process, NJ Transit conducts an analysis of the demand level. Emphasis is placed on the relationship between present ridership and existing excess capacity. These studies have resulted in changes in bus headways, bus service hours, and the number of buses on particular routes. Similar studies for rail service have resulted in changes in train scheduling and composition. For example, prior to a demand-level study, one route studied had four trains of six cars each. After the study, the route was given three trains of eight cars each.

PUBLIC RELATIONS

NJ Transit communicates with the public as a corporation does with its stockholders. When the July 1, 1980, fare increase was in the proposal stages, NJ Transit held a series of public meetings and solicited mail-in comments, of which over 2,000 were received. Attendance and participation at the public meetings were very high. The comments made at the public meetings were prepared in report form for public distribution. In general, the public has been very supportive of NJ Transit.

NJ Transit is committed to keeping its patrons informed on major decisios such as fare increases. This commitment is based on the premise that a well-informed rider will better understand the decision-making process at NJ Transit, and thus be more receptive to such decisions. Promotional efforts, on the other hand, are meant not only to develop a sense of identification between the transit rider and NJ Transit, but also to improve the image of the corporation and of public transportation. An improved imge could result in increased ridership.

Materials explaining the particulars of service and fare charges are distributed on the buses by NJ Transit. The day Transport of New Jersey ws purchased, fliers were distributed with the message, "Congratulations, You Now Own This Bus." Clearly these efforts are aimed at developing a sense of identification between the transit rider and NJ Transit.

IX. LOCAL LEVEL FINANCING ACTIVITIES: SAN FRANCISCO AND OAKLAND, CALIFORNIA

MUNI (SAN FRANCISCO MUNICIPAL RAILWAY) SAN FRANCISCO, CALIFORNIA

The San Francisco Municipal Railroad (MUNI) receives major funding from the California Transportation Development Act (TDA) and related local option sources discussed in Chapter 6. These funds are, in part, formula-allocated and, in part, a discretionary allocation by the MTC. Here attention will be devoted to funding concerns specific to MUNI, including the TDA and related funds.

OPERATING FUNDS

In the past, MUNI's share of the region's TDA funds was split between operating and capital expenses. More recently, increasing portions of the TDA funds have been devoted to operating expenses. It is anticipated that in the near future all TDA funds will be devoted to meeting operating expenses, subject to 15% capital usage requirements (See Chapter 6).

To be eligible for the 1/2% sales tax funds, MUNI must recover one-third of its operating expenses from the farebox. This places long-term upward pressure on fares. In 1979, the fare increased from 25¢ to 50¢. The farebox recovery rate in 1980 was approximately 34%, up from the previous year's 28%-29% rate. MUNI is experiencing increased use of its FASTPASS, an unlimited ride card, purchased monthly. FASTPASS tends to reduce revenues while increasing ridership.

The San Francisco city government provides funding for MUNI from general revenues. While these funds are primarily for operating expenses, occasionally funds from this source may be utilized for a specific equipment purchase.

CAPITAL EXPENDITURES

In the past, some TDA funding has been used to finance capital expenses. With TDA funds being increasingly devoted to operating expenses, other revenue sources are being used to finance capital programs.

Tolls collected in excess of maintenance and operating costs on the bay bridges (excluding Golden Gate) are given to local transit operators whose service works to reduce bridge traffic. These funds may only be used for capital expenses.

The Transportation Planning and Development Act (TPDA; see

Chapter 6) makes funds available for fixed guideways. MUNI has received $7 million from this source for its fixed-guideways program, the first contract awarded in the state.

FORMULA ALLOCATION CONCERNS

From MUNI's perspective, population-based allocation formulas are not desirable, due to the relatively small population base of San Francisco. MUNI carries approximately 35%-40% of the Bay Area population. Additionally, San Franciscians are heavily transit-dependent. Thus, an allocative formula with greater emphasis on transit ridership would be preferred.

CASH FLOW POSITION

The MUNI system does not experience cash-flow problems due to its relationship with the city-county government. A MUNI spokesperson indicated that although the system may wait one to two years for a check from the state government, its position as part of the city-county governmental budget permits coverage of the shortfall. Monies received from the local government to make up for unreceived state or federal dollars are repaid upon receipt of the delayed state or federal funds.

INFLATION

Funding does not keep up with inflation. Operating costs are rising at an annual rate of 10%-12%, and capital costs are rising at a 15% annual rate. Revenues from the gasoline gallonage tax are falling just when transit needs the funds most. Fortunately, funding has remained adequate to date; however, this may be a source of future problems. Sales tax funds do increase with inflation, but are also sensitive to economic cycles.

SPECIAL REVENUE SOURCES

While UMTA is an important source of capital expenditure funds ($15-$16 million annually), the increased competition for the decreasing number of UMTA dollars is acting as an incentive for MUNI to fund projects from non-federal sources. Thus, more projects are being funded entirely from state and local sources.

Special Bond Issues

In 1969, the San Francisco Municipal Railroad Improvement Corporation was formed with $95 million in bonding authority. These funds have not been utilized as rapidly as originally anticipated, and a sizable amount is still invested at interest. These funds are used as local matching funds for federal grants as well as for capital improvements to the MUNI system.

Cable Car Program

The cable car rebuilding program is expected to cost $58 million. Because of the uniqueness of the cable car system, MUNI has received several donations from private sources, including $1 million from a major oil company. Additionally, a private committee has been established to solicit donations to the program. It is not anticipated that such a degree of private-sector support could be obtained for transit systems with less historic value or potential for tourism than the cable car system.

Alternatives Under Consideration

At present, MUNI is considering the possibility of a downtown development fee. New apartment and office buildings and the like would be charged a fee based on their contribution to the downtown population and the need for transit. This concept has yet to be developed. Another potential revenue source under consideration is the construction of an apartment building on top of one of MUNI's garages. Any action on this concept is several years in the future.

Charter Revenues

MUNI receives approximately $75,000 a year in charter revenues. However, UMTA restrictions on competition, and the limited service area, tend to constrain revenues and revenue-growth potential from this source.

UMTA

Funding and policy uncertainties at the federal level lead to planning uncertainties at the state and local level. Even though California is ahead of other states in putting together long-term transit packages, local planning is adversely affected by policy and funding uncertainties at UMTA.

Uncertainties are not limited to funding concerns. With each new UMTA administrator has come a new set of priorities and a different idea of what transit would be. These regular but unpredictable changes in policy have made planning and long-term decision making highly difficult. These difficulties affect equipment manufacturers as well as operators. A long-term consistent policy would be of advantage to both.

Additionally, UMTA grant application forms are viewed as burdensome and needlessly time consuming. Having the forms designed by those who complete them was suggested as one possible approach to reducing the paperwork burden.

CALTRANS

Administration of state funds has been a disappointment.

CALTRANS does not have the staff to properly carry out its duties. This leads to a lack of stability at the state level. A major problem is in the types of activities funded. Research and development projects can obtain funds, but frequently operators cannot get the monies to actually bring systems on line.

PLANNING

The five-year planning process is complicated by a lack of stability and predictability at the state and federal levels, in funding as well as policy priorities. A transit system is required to plan over a five-year horizon; however, the planning must occur without a commitment from the state or the federal government on specific funding levels for the five-year period. The problem is predominantly in operations planning rather than in capital planning.

FORECASTING

Trend-line analysis is used to forecast operating expenses. The results have been mixed, with the forecasts tending to be conservative. The first five-year capital improvement program was developed without a great deal of analysis. The next five-year program included a priority ranking of capital projects.

Local funds forecasts are, again, trend lines based on past allocations. However, the MUNI share of the regional allocation of TDA funds is a more important source of funding (See Chapter 6).

MUNI's share of the formula-allocated regional funds is projected by trend-line analysis, as are other state transit assistance funds. The projections tend to be conservative. Multi-year projections are extremely difficult. One recent study included a four-year budget forecast which was reached in approximately two year. Predictions beyond one year are difficult and not particularly accurate.

AC TRANSIT, OAKLAND, CALIFORNIA

FUNDING SOURCES

Prior to Proposition 13, AC Transit received approximately 40% of its funding from a special transit district property tax. Proposition 13 reduced property tax funding by 66%-75%. AC Transit survived through a combination of additional funding, including an increase in UMTA Section 5 funding which occurred in the same year as the passage of Proposition 13. Additionally, AC Transit increased revenue by means of a fare increase. A somewhat increased number of dollars were received from the 1/2% sales tax, and the MTC made some previously unallocated funds available. Through this combination of factors, AC Transit was able to begin the transition to the post-Proposition 13 funding conditions.

Currently, AC Transit's funding derives from farebox revenues (38%), MTC allocated funds (40%), property tax funds (13%), and miscellaneous other sources.

COST CONTROL

With increasing tightness of funds, AC Transit is placing additional emphasis on cost-control measures. Each route undergoes a cost and revenue analysis at least annually, usually more frequently. Changes in routing, headways, service hours, and the like are made where appropriate.

A new farebox is being installed in AC Transit buses, and is expected to save $1 million per year in operating costs. The new farebox will count riders, thereby providing better and more timely ridership data. New transfer machines are also being installed. These devices are expected to reduce operating costs by an additional $1 million a year.

As labor costs account for 80% of total operating costs, a great deal of attention is focused on contract negotiation. The current contract allows the use of part-time drivers; this change from previous contracts permits improved efficiency in labor utilization.

INFLATION

Local funding sources do tend to keep pace with inflation. AC Transit derives funds from property tax revenues and both the 1/4% and 1/2% TDA sales taxes. Additionally, there have been recent increases in federal funding which tended to offset some of the inflation-induced erosion of purchasing power.

FORECASTING

Operations

Operating costs are forecast by trend-line analysis. The trend-line projections are modified for differences in fuel costs and adjusted for inflation. Forecasting has been made more difficult by such exogenous factors as strikes, ridership growth, and new propositions affecting funding. Thses factors limit the usefulness of modeling.

Labor costs account for 80% of operating expenses. By projecting the number of miles and hours of operation in the future, reliable multiyear forecasts can be made. After labor, fuel and tires are the largest components of operating costs. With this information, reliable projections of these components can be made. Maintenance projections can be off by a sizable percentage without having a meaningful effect on the total operatihg costs projection.

Capital

AC Transit is just beginning to plan and forecast long-term capital needs. Previously, AC Transit had been an operations-oriented company. Long-term capital forecasting is more difficult than operations forecasting, as no data base exists. As part of the MTC capital improvements planning process, AC Transit has developed a 10-year, $150-million capital program. This program is in addition to new bus purchases. Uncertainty over the availability of federal funding has adversely affected the capital planning process.

Cash flow problems with UMTA Section 5 funding have been greatly reduced recently. UMTA has removed some of its bureaucratic concerns and simplified the role of the MTC. The funds are also flowing in a more timely manner. AC Transit uses a letter-of-credit approach with all UMTA Section 5 funding, which reduces cash flow concerns.

X. LOCAL-LEVEL FINANCING ACTIVITIES: RALEIGH, NORTH CAROLINA

CAPITAL AREA TRANSIT

Capital Area Transit (CAT) is the city-owned bus system in Raleigh, North Carolina. The city government purchased the system from City Coach Lines, Inc., in 1975. City Coach Lines conducts the day-to-day operations of the system under contract to the city. This arrangement is necessary due to UMTA 13(c) requirements and the North Carolina law prohibiting public bodies from recognizing or negotiating with unions. Planning, marketing, and financial matters are conducted by the Raleigh Transportation Director's office.

The Raleigh city council views public transit as a public service which the local government should provide. The policy-making body for CAT is the Raleigh Transit Authority (RTA). RTA members, all unpaid volunteer citizens, are appointed by the city council for two-year terms. The RTA has the broad authority for establishing fares, initiating or terminating routes and related activities. The city council retains financial control, in that actions by the RTA which would require additional city funds must be approved by the council. Actions which do not require additional city funds do not need council approval. The city relies upon the staff of the Raleigh Transportation Director for planning and marketing activities. There is some input into the planning process by the management firm (City Coach Lines). These activities are discussed separately below.

OPERATIONS FUNDING

No state funds are available for operating expenses, except as noted below. Operating expenses are funded primarily from three sources: UMTA Section 5 funds, farebox revenues, and city council allocations.

The city council allocations derive from property tax receipts; no sales tax funds are used. City council funds are not dedicated funds. However, the city council is strongly supportive of public transit. These funds, along with charter profits and state subsidy,* are used for the local share of the operating deficit. UMTA Section 5 monies fund the remaining deficit.

The Cary and Garner Service

Two nearby communities, Cary and Garner, receive service from

---

*State subsidy funds are used only for CAT's Cary and Garner routes, part of the state's Park-and-Ride program.

CAT. The funds for these services derive from several sources. The Cary city government contributes part of the operating expenses for present services; requests for expanded service would have to be paid exclusively by the city government involved.

The state has no direct operating subsidy program, but will subsidize part of the operating expenses of specific routes under the Park-and-Ride Program or under its Demonstration Project Program. The state subsidizes current service to both communities under its Park-and-Ride program. Additionally, North Carolina State University pays part of the expenses of the Cary service, but not of the Garner service. Raleigh taxpayers do not subsidize the direct operating costs of either of these services.

CAPITAL FUNDING

Funding for capital needs is entirely from UMTA Section 5 monies. The state provides 50% of the local matching share (10% of total). Funds provided by the city council are used for the remaining local match requirements (10% of total).

CHARTER AND SCHOOL BUS ACTIVITIES

CAT does not operate any school bus service. Charter services are operated and are a meaningful source of revenue. CAT does not compete with intercity bus companies, but local state universities and the state government provide a strong demand for local charter services. Charter profits are used as a local match for UMTA funds.

ALTERNATIVE FUNDING SOURCES

Only two additional sources of funds have been explored. One, exterior advertising on vehicles, is not currently used. This option is under consideration, but the aesthetic costs are not felt to be justified by the relatively small revenue that it would generate.

A more promising alternative is to increase the city automobile registration fee above its present $1 per year, making the resulting revenues available for transit uses. This would require enabling legislation from the State Legislature (see Chapter 5). The additional monies that would be raised by this measure are envisioned as non-dedicated increases to the general fund. The city council, at its discretion, would then allocate some or all of these monies to transit.

EFFICIENCY MEASURES

Efficiency Incentives

Currently, no efficiency incentives are included in the management contract with City Coach Lines. This firm owned the system prior

to the city's purchase of it, and historically they have operated in a very efficient manner. Thus, the city does not feel there is a need to contractually provide efficiency incentives. Should the firm's performance be unsatisfactory in the future, the city always has the option to contract with a different management firm and/or include efficiency standards in a new contract.

Performance Measures and Route Revisions

Routes are regularly reviewed for ridership, revenues per mile, and revenue-to-cost ratios. Other performance measures are computed, but these are the major ones for evaluative purposes.

Routes with unsatisfactory performance measures are revised or eliminated. Before any route is eliminated, it may be revised, and it will be target marketed. No routes have been eliminated since a general system-wide revision in August of 1979. To date, the revisions coupled with the target marketing have been successful in building ridership to satisfactory levels. Performance measures are constantly monitored as part of the day-to-day management routine.

UMTA

Past problems with delays in the UMTA approval process are viewed as improving. The major concern with UMTA procedures is the annual operating application. As the bulk of the information required does not change annually, the application process would be greatly simplified if a master form could be filed and amended annually as appropriate. Alternatively, applications covering a two-year rather than a one-year period would also be an improvement.

FINANCIAL AUDITS

CAT is audited by three agencies. The usual UMTA audits are performed, and the State Budget Office (See Chapter 5) audits capital expenditures annually. The city auditors also review both operating and capital expenditures each year.

FORECASTING

Operations

Operations expense forecasting is done on an annual basis with a one-year planning horizon. The management firm provides forecasts of operating expenses within the scope of their contract. The city then adds its own forecast of administrative expenses to produce the total operating expense forecast.

Farebox revenue forecasts are made by the city staff. These forecasts are linear trends based on the past 12 months, with special weight given the last two months. The revenue forecasts tend to be

conservative; however, fares have remained very stable. When the city purchased the system, the fare was 40¢. After purchase, the fare dropped to 30¢, but on April 1, 1980, increased again to 40¢. On April 1, 1982, the fare increased to 50¢. Current planning calls for an increase to 60¢ for peak-hour travel beginning January 1, 1983. The fare for off-peak travel will remain 50¢.

Capital

The Transit Development Plan (TDP) follows the city's comprehensive plan. The comprehensive plan gives the city's growth plan over a 20-year horizon and includes transit planning. The TDP examines the transit portion over a five-year planning horizon. CAT's needed fleet size is projected accordingly. Benches, shelters, and the like are projected on the basis of fleet size and service area projections. Projections of future bus prices utilize UMTA forecasts.

Projections of ridership on current and future routes are made using linear trends and judgmental adjustments for such items as gasoline prices. These projections are utilized with the above information to determine projected fleet size. Bus replacement projections assume a 12-year useful bus life.

XI. SUMMARY AND EVALUATION OF CASE STUDY RESULTS

A major interest of the case study respondents is in more and better information on alternative funding sources. This need is not fulfilled by simply listing potential funding sources. Rather, the respondents desire specific information concerning each proposed funding alternative. For example, one respondent reported a strong interest in detailed information on the revenue and regressivity potential of a very specific array of tax revenue alternatives. Others expressed this same interest, but with the narrower focus of taxes and fees imposed only on the immediate beneficiaries of transit: users, employers and commercial enterprises near transit facilities. This phase of the present study is unable to offer detailed answers to these questions. However, some observations on the funding environment, which impact upon these concerns, are possible on the basis of the present findings. This chapter will summarize and evaluate certain key aspects of the case study results.

ORGANIZATIONAL ENVIRONMENT

The case-study systems are all publicly-owned systems, although the form of ownership varies: MUNI and CAT are part of their respective city governments; MARTA and NJ Transit are public corporations with, respectively, regional and statewide responsibilities.

AC Transit and MUNI are part of a regional planning area which contains several major and numerous minor transit systems. The other case-study systems, while involved with regional planning organizations, are either the only urban public transit system or the dominant system within the region. NJ Transit, however, is unique in that its responsibilities are statewide.

An important distinction among the case-study systems lies in the role the regional planning organization plays in the allocation of transit funds. Only AC Transit and MUNI interact with a regional planning organization which plays a major role in fund allocation. For these systems, the Metropolitan Transportation Commission (MTC) allocates the 1/4% (TDA) and the 1/2% sales tax funds subject to certain restrictions (see Chapters 6 and 9). The MTC also takes an active role in system grant applications for federal UMTA funds and for state funds. In the past when systems have encountered unexpected financial difficulties, as occurred after the passage of Proposition 13, the allocative powers of the MTC were used to increase the funding available to a particular system, subject to funding availability and any usage restrictions on the source of funds. The sales tax funds noted above are dedicated sources. Thus a strong, well-developed regional organization with access to dedicated sources of funds can provide an important and perhaps critical element of stability to a transit system's sources-of-funds management task.

The foundation sources* of non-federal funding for AC Transit and MUNI are farebox revenues and 1/4% and 1/2% sales taxes. The sales-tax sources are local-option taxes which are collected by the state but returned to the county of origin. These revenues must be spent within the county of origin.

MARTA's foundation sources of non-federal funding are farebox revenues and the 1% sales tax. The sales-tax revenues are collected by the state in Fulton and DeKalb Counties and paid directly to MARTA on a monthly basis. Funds from this source may be utilized in either county.

Neither CAT nor NJ Transit has an on-going foundation source of non-federal funds other than farebox revenues. Both systems must rely upon discretionary allocations from non-federal public-sector sources of funds. In the case of the CAT system, the allocations are from the city's general fund, while NJ Transit receives allocations from the state's general fund.

DEDICATED-FUNDING CONSIDERATIONS

This brief overview of the organizational structures defining the foundation sources of non-federal funds for the case study-systems again focuses attention on the differences between systems with dedicated sources of funds and those without dedicated sources. As has been noted elsewhere in this report (Chapter 4), dedicated sources of funds tend to increase the predictability of funding, thus easing the task of funds management. However, the impact of dedicated sources of funds upon a system's ability to generate new non-federal sources of funds to replace UMTA funds is unclear. The dedicated source does provide a predictable level of funds inflow, but the existence of a dedicated source of funds may reduce the willingness of state and local governments to make available new sources of non-dedicated funds or to increase levels of funding from existing non-dedicated sources. Such an outcome would increase the pressures to replace UMTA funds with increased farebox revenues.

Systems without dedicated funding sources must rely upon farebox revenues as their foundation source of non-federal funds. A withdrawal of UMTA funds would place direct and immediate upward pressure on the fare structure of such systems. However, state and local governments may be more willing to assist such systems with new sources of funds or increased levels of funding from present sources. This hypothesized willingness depends upon the strength of the political support for public transit, as well as the overall financial

---

*The term "foundation source of funds" is used to denote major sources of funds which are automatically received by transit.

strength of the state or local government. Such state and local governmental financial assistance would ease, but would not remove, the upward pressure on fare structures.

Underlying the hypothesized willingness of state and local governments to assist transit is the assumption that governments tend to continue support to programs involving sizable capital investments which are not easily liquidated. This assumption would hold for systems with dedicated sources of funds as well. However, systems with dedicated sources of funds would be in relatively stronger financial positions than systems lacking dedicated funding sources, in the event of the withdrawal of UMTA funding.

Dedicated funding sources permit more reliable revenue projections, and thus add a desirable element of stability to the transit management and planning process. Dedicated funding sources, however, serve to insulate transit-funding decisions from changes in social service priorities, in that transit funding is removed from the political decision-making process. There appears to be an implicit trade-off between dedicated funding, which can serve to increase managerial efficiencies, and non-dedicated funding, which keeps transit management answerable to the voters through their state and/or local government officials.

An additional factor is labor's wage and benefit demands in the presence of dedicated funding sources. In the presence of an assured source of funds, labor unions may press wage- and benefit-increase demands more vigorously. While the case studies did not show any difference in union wage and benefit demands by type of funding, such an outcome in the presence of dedicated funding is not inconceivable.

The proposed phase-out of UMTA operating subsidies and the potential return of the capital grants program to the states will place severe pressure upon the case-study systems if additional sources of financial support, dedicated and non-dedicated, derived from local-level taxes, are generally unavailable to replace present federal funds.

Those systems with dedicated sources of public financial support (AC Transit, MARTA, MUNI) are in better planning position than those without dedicated funding sources (CAT, NJ Transit). The latter systems lack the assured financial support of dedicated funding and, as such, are unable to undertake firm contingency planning. The potential financial demands which may be placed upon state and local governments where dedicated funds are not utilized will probably be larger and more essential to basic system survival. In such a circumstance, dedicated funding has some system-survival value. However, the existence of a dedicated funding source may reduce the willingness of state and local governments to provide public revenues for transit. This reluctance may be compounded by the numerous competing demands for increased state and local public funds which may

be expected to follow the return to the state governments of financial responsibility for various social programs. This proposed return of federally funded programs to the states will also increase the difficulties faced by systems without dedicated funding sources in competing for state and local financial support.

FAREBOX RECOVERY

Three of the case-study systems must recover a specified percentage of operating expenses from farebox revenues. The MARTA system must recover 35% of the previous year's operating expenses from farebox revenues. The California systems, AC Transit and MUNI, must recover 33% of operating expenses from farebox revenues in order to receive the 1/2% sales-tax funds. For receipt of the 1/4% sales-tax revenues a formula, specified by law, is used to determine the required recovery percentage (see Chapter 6). For the case-study systems, this recovery rate is approximately 33-35% of operating expenses.

Neither CAT nor NJ Transit has a legally specified farebox recovery rate. In 1981, NJ Transit's farebox recovery rate was approximately 66% for all operations. CAT recovers approximately 40% of operating costs from farebox revenues.

The intention of farebox recovery requirements is to force the user to provide at least a minimum share of operating expenses. In states which mandate a recovery rate, the rate itself appears to be the product of a political process, rather than an economic or philosophical determination of the appropriate user share of operating expenses. A determining factor may be whether transit is viewed as a necessary public service or as an optional public expenditure. In the former case, user charges would be set with regard to the income levels of the users, and special attention would be paid to the needs of the transit-dependent. In the latter case, production costs and the availability of tax revenues (from all levels of government) would be dominant factors. The present financial support structures of the case-study systems indicate that reductions in the availability of federally provided transit funding would place strong upward pressure on fare structures. For systems with a large number of low-income, transit-dependent riders, this possibility raises important questions of regressivity.

Farebox recovery requirements do not appear to have been responsible for improvements in efficiency*. The incentives for increased efficiency among the case-study systems derive from the perceived insufficiency of transit financial support in general. Thus, while farebox recovery requirements may be useful in insuring that user charges provide at least a preset level of operating costs, it is the general insufficiency of funds for operations which provides the incentives for greater operating efficiency.

LOCAL TAX FUNDING

The nature of local-tax-derived financial support received by the case-study systems varies markedly among the systems. NJ Transit receives no local-level-tax-derived revenues. The MUNI system receives financial support from the San Francisco City-County Government General Fund, whose revenues derive predominantly from property taxes. MUNI may use these funds only for operating expenses, except on are occasions when the City Council approves their use for a specific capital equipment purchase. AC Transit received approximately 40% of its funding from a special transit property tax district prior to Proposition 13. It currently receives approximately 13% of its funding from property tax revenues. Both MUNI and AC Transit receive funds from the 1/4% and 1/2% sales taxes.

The CAT system's local-tax-derived funding is allocated by the City Council from the city's property tax revenues. MARTA receives the revenues from the 1% sales tax. These sales tax funds are dedicated and MARTA receives no other local-tax-derived funding.

Of the case-study systems receiving local-level tax revenue financial support, only CAT receives no dedicated funds. All of MARTA's local-level funding, the 1% sales tax is dedicated to MARTA usage. The 1/4% and 1/2% sales tax funds received by AC Transit and MUNI are dedicated to transit usages. The funding allocated by the City Council to MUNI is non-dedicated.

STATE TAX FUNDING

With the exception of some indirect support to the planning activities of the Atlanta Regional Commission (ARC), the state of Georgia provides no financial support to the MARTA system. The enabling legislation for the dedicated sales tax explicitly excludes future state assistance for systems receiving the local-option sales tax revenues.

---

*The concern here is with operating efficiency, i.e., cost-effective service delivery. This should not be confused with economic efficiency, i.e., the allocation of scarce resources among alternative uses. The former is clearly a financial management concern, while the latter is broader in scope and entails questions of pricing policy and government subsidy policy.

North Carolina uses state funds for one-half of the local-matching-funds requirement for UMTA capital grants. Otherwise, state funds are not currently available for capital expenses. Neither does the state provide any direct operating subsidy to transit systems. However, it subsidizes part of the operating expenses of specific routes under the Park-And-Ride program or under its Demonstration Project Program. Some of the funds so utilized derive from federal sources.

State funding received by NJ Transit is on a non-dedicated basis. The budget request for NJ Transit is submitted to the legislature as part of the New Jersey Department of Transportation's budget request. As of 1981, all state-provided funds were for operating expenses only. At that time, no tax-derived funding at the state level was available for capital expenses.

In California, the Transportation Development Act (TDA) 1/4% sales tax and the local option 1/2% sales tax available to transit systems (AC Transit and MUNI in this study) are local tax funds, even though they are collected by the state. True state-level funding sources include the Transportation Planning and Development Account of the State Transit Assistance Fund, which derives revenues from the spillover funds from the state sales tax; other accounts within the State Transit Assistance Fund; the tax on Tidelands Oil Revenues which was approved for fixed-guideway programs; and that portion of the State Highway Trust Fund that may be used for fixed-capital expenditures of fixed-guideway programs under Proposition 5. While these funds are dedicated to transit uses, subject to the limitations found within the laws creating each funding source, no individual transit system has a dedicated commitment that the funds will be approved for its projects. Thus, from the system's perspective, the funds are non-dedicated, while they can be viewed as transit-dedicated from the state's perspective.

Unlike the other case-study states, California provides a variety of sources of financial support for transit. However, particular state-level sources are often restricted to narrowly defined usages. The 1/4% and 1/2% sales-tax funds, which are viewed as local funds, are not subject to the same degree of usage restriction. Thus, the basic public support for transit in California may be viewed as deriving from local sales-tax revenues, with the state making available further sources of funding for transit activities of particular interest to state-level policy objectives.

Because of the variety of sources of financial support and the high level of commitment to public transit in the metropolitan areas, the California transit systems studied are in the most favorable position, among the case-study systems, to survive drastic reductions in the level of available federal funds. This does not mean, however, that these systems would not be affected in meaningful ways.

NON-PUBLIC REVENUE SOURCES

All of the case-study systems realize some revenues from non-public sources. For example, all provide some level of charter service. Due to UMTA regulations which restrain the competitiveness of the charter services, the revenues generated from this source are not generally significant. The CAT system is an exception, in that it derives a sizable amount of charter business from state government agencies and a major state university located in Raleigh.

School bus service is not a source of revenue for the case-study systems. NJ Transit is prohibited by state law from providing school bus services. MARTA has provided this service in the past, but recently lost the contract to a low-priced, non-union bus company. The CAT system does not offer this service.

Advertising revenues are generated by all the case-study systems. Advertising may be inside the vehicle, on the outside of the vehicle, or both. MARTA and CAT restrict advertising to the inside of the vehicle, as both systems believe that advertising on the outside of the vehicle presents a poor public image of transit.

MARTA receives rental income from property purchased for future expansion. Until the property is needed, it is maintained and rented. Such properties stem from purchases for future MARTA rail construction.

MARTA exchanges information on traffic conditions, collected from its radio-equipped buses, for free advertising time on local radio stations. This in-kind service is used to announce service changes, new service, and the like.

MUNI has received sizable amounts of private-sector contributions for renovation of the cable car system. The uniqueness of the cable car system is a major factor in attracting such contributions.

The revenues derived from these sources generate a relatively small volume of dollars. Thus, funds from these and similar sources cannot be viewed as significant contributors to meeting system costs. These sources of revenue do not exhibit additional revenue generation potential, and cannot be expected to offset a reduction or withdrawal of federal transit funding.

POTENTIAL FUNDING SOURCES UNDER CONSIDERATION

The case-study transit systems have considered various new sources of funds. MUNI has considered a downtown development fee for new office and apartment buildings. The amount of the proposed fee would bear a direct relationship to the contribution to transit demand from the building's occupants. A longer-term possibility is the construction of an apartment building above a MUNI garage.

The MARTA system has examined value capture fees, park-and-ride lot fees, and concession stands in the rail stations as possible sources of additional funds. The political support necessary for the implementation of value-capture fees as a source of funds are only a long-term possibility.

The CAT system has considered requesting an increase in the city automobile license-tag fee from its present $1 a year. Should the increase be requested, a recommendation on the amount of increase would be made at that time. The increased revenues would go into the city's general fund on a non-dedicated basis. An increase in the automobile license-tag fee requires the passage of enabling legislation by the state legislature. The legislature has passed such enablements before, and no difficulty is expected from this requirement.

At the time of the case-study interviews, none of these possible sources of funds were being pursued with an anticipation of implementation. Rather they had been examined as possible future sources. Efforts to implement the possible sources of funds noted above may be expected to produce varying degrees of political opposition.

FORECASTING

The case-study systems reported using a variety of techniques for forecasting financial and finance-related variables. In the main, the techniques used were relatively unsophisticated linear-trend analyses. Linear-trend projections, however, represent about the highest level of sophistication the available data bases will support. Several case-study respondents, knowledgeable in various forecasting techniques, explicitly stated that the costs of more sophisticated forecasting techniques could not be justified until more reliable, detailed and timely data bases were available. Even with better system data, the advisability of more sophisticated forecasting techniques is questioned until such time as there is greater stability in the economic environment, most notably in the rate of inflation. Many case-study respondents also added the need for greater stability in long-term UMTA policy. Other respondents noted that without long-term funding commitments from their various finding sources, long-term forecasting and planning was not a particularly reliable or worthwhile activity.

These concerns argue for longer financial planning horizons for state and local government commitments to public transit. These concerns are also arguments for reliable dedicated funding sources for public transit at the local or state level.

CONCLUDING COMMENTS

The results of the five transit-system case studies indicate that a withdrawal of federal operating subsidies would place severe upward

pressure on transit fares. The ability of these transit systems to increase the amount of funding available from no federal governmental sources was highly uncertain at the time of the case studies. Systems with dedicated funding sources are in a better financial management position than systems lacking dedicated funding sources. However, the ability of systems with dedicated funding to generate additional funding from state and/or local governments may be more limited. Much depends upon the level of public support for transit and the political influence of transit supporters versus other competitors for limited state and local government revenues.

If transit is viewed as a necessary public service, then the case-study findings tend to argue for the use of dedicated public-sector funding sources and against the withdrawal of federal operating subsidies. If transit is viewed as a service which the public sector may or may not provide, depending upon local preferences as expressed through the political process, then the findings tend to argue against dedicated funding sources and, to a lesser extent, for the withdrawal of federal operating subsidies. Transit financing appears to be at an important crossroad. If transit is to maintain present levels of service, not to mention providing expanded service, greater stability in funding sources appears to be required. From a funds-management viewpoint, the source of the funds is less important than the reliabiliy of the funds and the absolute dollar-level of the funds generated. The fundamental political decision, at each level of government, is whether or not transit is a necessary public service. If the decision is affirmative then the study results suggest several possible approaches to improving financial-management efficiencies. If the decision is negative, then the study suggests some alternative approaches which financial managers may entertain.

BIBLIOGRAPHY

Annual Report, Fiscal Year July 1977-June 1978. [Raleigh:] North Carolina Dept. of Transportation, Public Transportation Division, Office of the Assistant Secretary for Planning, 1978.

Bonnell, James R. "Transit's Growing Financial Crisis." Traffic Quarterly 35, No. 4 (October, 1981), pp. 541-556.

Charles River Associates, Inc. User-Side Subsidies for Shared-Ride Taxis in Kinston, North Carolina. Final Report, No. UMTA-NC-06-0002-80-1. Washington: USDOT/UMTA, October, 1980.

Cooper, Thomas A.; Flynn, S.; and Bloomfield, P. The LIFT: Special Needs Transportation in Portland, Oregon. Final Report, No. UMTA-OR-06-0004-79-1. Washington: USDOT/UMTA, August, 1979.

Gladstone Associates. Innovative Financing Techniques: A Catalog and Annotated Bibliography. Prepared for USDOT/UMTA/Office of the Secretary. Washington: U.S. Government Printing Office, January, 1978.

Groves, Harold M. Financing Government. 5th ed. New York: Holt, Rinehart and Winston, 1962.

Huse, Edgar F. Organization Development and Change. St. Paul: West Publishing Co., 1975.

"Impact of Federal Funding Cuts." Bay Area Monitor (Oakland, Calif: League of Women Voters for the Bay Area, Transportation Alternatives Project, November, 1981), p. 1.

Institute for Urban Transportation. Mass Transit Management: A Handbook for Small Cities. 2nd ed., revised. Part I: Goals, Support, and Finance. Washington: USDOT, Technology Sharing Program, September, 1980.

Institute of Public Administration. Financing Transit: Alternatives for Local Government. Washington: USDOT/UMTA/Office of the Secretary, July, 1979.

Karr, Albert R. "Mass-Transit Riders are Facing Prospect of Higher Fares to Keep Systems Running." Wall Street Journal, March 17, 1981, p. 35.

Katz, Daniel, and Kahn, Robert L. The Social Psychology of Organizations. 2nd ed. New York: John Wiley and Sons, Inc., 1978.

Kidder, Alice E. Sources of Non-Federal Support for Transportation Programs in Non-Urbanized Areas. Washington: USDOT/UMTA, June, 1978.

Kidder, Alice E. The Financing of Multijurisdictional Public Transportation Services. Greensboro: North Carolina A&T State University, Transportation Institute, March 30, 1980.

LaPlant, S.; Silverman, F.; and Jones, Curtis. Use of Taxicabs for Transporting the Handicapped: the Dade County Experience. Miami, Fla.: Dade County Office of Transportation Administration, 1977.

McHugh, Richard, and Puryear, David. Regional Financing Alternatives for Mass Transit. Vol. 5: The Construction of Metropolitan Income Distributions for Atlanta and New York. Final Report, UMTA-NY-11-0003-81-5. Washington: USDOT/UMTA, October, 1979.

Metropolitan Planning Commission. San Francisco Bay Region Transit Financing Study: Summary. Berkeley, Calif.: The Commission, January 10, 1977.

Musgrave, Richard, and Musgrave, Peggy. Public Finance in Theory and Practice. 2nd ed. New York: McGraw-Hill, 1976.

National Urban Mass Transportation Statistics: First Annual Report, Section 15 Reporting System. Washington: USDOT/UMTA, 1981.

National Urban Mass Transportation Statistics: Second Annual Report, Section 15 Reporting System. Washington: USDOT/UMTA, 1982.

New York State Department of Transportation. Public Transportation Operating Assistance Program in New York State: 1979 Annual Report. Albany: The Department, December, 1979.

Nineteen Community Case Studies of Existing Services. Washington: USDOT/UMTA, Office of Planning Assistance. In press.

Oram, Richard L. "The Role of Subsidy Policies in Modernizing the Structure of the Bus Transit Industry." Transportation (Netherlands) 9, No. 4 (December, 1980), pp. 333-353.

Porter, Alan L. Effects of Federal Transportation Funding Policies and Structures; Appendix A: Mass Transit. Washington: USDOT, Office of the Secretary, December, 1979.

Porter, Alan L., et al. Effects of Federal Transportation Funding Policies and Structures; Overview. Washington: USDOT, Office of the Secretary, December, 1979.

Proceedings of the North Carolina Taxi and Transit Conference: Integrating Taxis into Local Transportation Services. Asta C. Cooper, ed. Chapel Hill: University of North Carolina, Dept. of City and Regional Planning, 1978.

Public Transportation: Current Status and Short-Term Needs. [North Carolina. Governor's] Blue Ribbon Commission on Transportation Needs and Financing, Public Transportation and Rail Committee. [Raleigh: NCDOT,] Public Transportation Division, January 9, 1980.

Public Transportation Policy Options. [North Carolina. Governor's] Blue Ribbon Commission on Transportation Needs and Financing, Public Transportation and Rail Committee. [Raleigh: NCDOT,] Public Transportation Division, June 19, 1980.

Public Transportation Revenues. [North Carolina. Governor's] Blue Ribbon Commission on Transportation Needs and Financing, Public Transportation and Rail Committee. [Raleigh: NCDOT,] Public Transportation Division, February 19, 1980.

Pucher, John. "Transit Financing Trends in Large Metropolitan Areas, 1973-1978." Transportation Research Record 759 (1980), pp. 6-12.

Sen, Lalita, and Benjamin, Julian. Impacts of Regulations on the Use of Taxicabs for Paratransit Services. Final Report, A&T-TI-39-RR-79. Greensboro: North Carolina A&T State University, Transportation Institute, June 30, 1978.

Sen, Lalita, and Benjamin, Julian. Travel Behavior and Market Segmentation of Low- and Middle-Income Residents of Richmond, Virginia. Final Report, DOT-RSPA-DPB-50-79-40, -41. Washington: USDOT, December, 1979.

"Small Transit Firms Worry About Future." Greensboro (N.C.) Record, January 4, 1982, p. A-2.

Teixeira, Diogo; Varker, Frank; and Bowlin, Robert. Accessible Bus Service in St. Louis. Final Report, UMTA-MA-06-0049-80-6. Washington: USDOT/UMTA, February, 1980.

U.S. Congress, Congressional Budget Office. Transportation Finance: Choices in a Period of Change. Washington: U.S. Government Printing Office, March, 1978.

Walther, Erskine; Sen, Lalita; and Benjamin, Julian. Institutional Structures and Transit Service for the Handicapped. Presented at 8th National Conference on Transportation for the Elderly and Handicapped, Sarasota, Fla., October 11-14, 1981.

Workshop Report: Financing Public Transit in New York State. Report of workshop held in Albany, New York, September 20-22, 1976. Brooklyn, N.Y.: Polytechnic Institute of New York, Transportation Planning and Research Center, 1976(?).

APPENDIX A

FINANCING OF LOCAL PUBLIC TRANSIT:

A BIBLIOGRAPHY OF LITERATURE SINCE 1975

Richard S. Watt

Publications Officer

The Transportation Institute
North Carolina A&T State University
Greensboro, N.C. 27411

FINANCING OF LOCAL PUBLIC TRANSIT:

A BIBLIOGRAPHY OF LITERATURE SINCE 1975

INTRODUCTION

In the late 19th century and the early decades of the 20th, urban public transit in the United States was generally plentiful and in general use, and even rural areas were regularly served by railroads and inter-urban streetcars. With the onset of America's "love affair" with the private automobile, demand for public transit declined and systems could no longer sustain themselves from fare revenues. Many went out of existence, and even in the larger cities where demand and traffic conditions justified their continuance, the quality of service and the condition of equipment and facilities rapidly declined.

In the past two decades, the survival and revival of public transit has become a major public policy concern. It has attained increasing importance as part of the solution to several problems:

1. The provision of transportation to those who, for reasons of age, physical condition, or economic circumstances, are unable to provide for their own transportation;
2. Shortages and rising costs of automotive fuels;
3. Air pollution by autbmotive exhaust; and
4. The congestion of urban areas by automobile traffic.

It is now generally recognized that adequate public transit can no longer be expected to be financially self-sustaining, and that it must be subsidized or supported as a public good from private and/or public funds. Federal legislation in the 1960s and 1970s supported this view, and

federal funding stimulated state and local efforts.

With the advent in 1980 of a fiscally conservative administration, it seems probable that federal support of local public transit will be drastically reduced and that the shortfall will have to be made up, if at all, by local and state funding. It is to these and related issues that the following bibliography is addressed.

The references cited below pertain mostly to the specific issues of finance and funding. However, since these concerns inevitably touch on related matters such as planning, management, and marketing of public transit, some references to the literature on these subjects are included.

This bibliography emphasizes the literature from 1975 through 1981. However, a few references published earlier than 1975 are included in the belief that they provide valuable background.

******

The following bibliography is divided into topic sections, as follows:

Transit Finance and Funding--General

Federal Policy

Allocation Methods

Marketing

Fare Policies and Demand for Public Transit

Rural Public Transportation

Case Studies

BIBLIOGRAPHY

TRANSIT FINANCE AND FUNDING--GENERAL

Allen, Gary R. "An Analysis of Subsidy Issues in Public Transportation." Traffic Quarterly 30, No. 4 (October, 1976), pp. 595-614.

Bhatt, Kiran. "Comparative Analysis of Urban Transportation Costs." Discussion by E. L. Tennyson. Transportation Research Record 559 (1976), pp. 101-125.

Bonnell, James R. "Transit's Growing Financial Crisis." Traffic Quarterly 35, No. 4 (October, 1981), pp. 541-556.

Boyd, J. Hayden. "Benefits and Costs of Urban Transportation: He Who is Inelastic Receiveth and Other Parables." Proceedings, Seventeenth Annual Meeting, Transportation Research Forum (1976), pp. 290-297.

Burke, Fred B., and Jamieson, John R. "The Transit Operator's Role in Federally Funded Planning and Programming." Transit Journal 2, No. 1 (February, 1976), pp. 3-9.

Crowell, William H. "Local Transportation Goals and Financing Realities: the Urban Transit Example." Transportation Research Record 759 (1980), pp. 1-6.

Dunbar, Frederick C., and Kuzmyak, J. Richard. "Cost Effectiveness of Area-Wide Integrated Transit." Proceedings, Eighteenth Annual Meeting, Transportation Research Forum (1977), pp. 549-558.

Forkenbrock, David J. "Factors that Influence Local Support for Public Transit Expenditures." Transportation Research Record 761 (1980), pp. 14-17.

Gambaccini, Louis J. "Transit in Perspective." Transit Journal 3, No. 3 (Summer, 1977), pp. 5-12.
Includes a review of financing policy.

Gladstone Associates. Innovative Financing Techniques: A Catalog and Annotated Bibliography. Prepared for U.S. Dept. of Transportation, Urban Mass Transportation Administration, Office of the Secretary. Washington: Government Printing Office, 1978.

Gray, George E., and Hoel, Lester A., eds. Public Transportation Planning, Operations, and Management. Englewood Cliffs, N.J.: Prentice-Hall, 1979.
Part V, "Managing and Operating Public Transit Systems" (Chapters 20-25), and especially Chapter 25, "Financing Public Transportation," by Robert G. McGillivray and Ronald F. Kirby, are relevant.

Institute of Public Administration. Financing Transit: Alternatives for Local Government. Washington: U.S. Dept. of Transportation, Urban Mass Transportation Administration, Office of the Secretary, 1979.

Kidder, Allce E. "Alternatives Analysis in the Financing of Multijurisdictional Public Transportation Services." Transportation Research Record 759 (1980), pp. 12-30.

_____. The Financing of Multijurisdictional Public Transportation Services. Greensboro: North Carolina A&T State University, Transportation Institute, 1980.

Lieb, Robert C. Transportation: the Domestic System. 2nd ed. Reston, Va.: Reston Pub. Co., 1981.
Chapter 21, "Problems of Metropolitan Transportation," reviews the recent history; Chapter 22, "Solving Metropolitan Transportation Problems," reviews federal legislation and other proposed solutions.

Morrall, John, and Finn, Nicholas. "Transit Policy and Operations in Europe and Canada." Traffic Quarterly 29, No. 3 (July, 1975), pp. 385-402.
Includes summary of financing policies.

Navin, Francis P. D. "Urban Public Transit Subsidies in Canada." Proceedings, Twenty-Second Annual Meeting, Transportation Research Forum (1981), pp. 644-657.

Pagano, Anthony M.; McKnight, Claire; Johnson, Christine; and Robins, Leonard. "The Costs of Providing Paratransit Services." Proceedings, Twenty-First Annual Meeting, Transportation Research Forum (1980), pp. 79-85.

Pegrum, Dudley F. Transportation Economics and Public Policy. 3rd ed. Homewood, Ill.: Irwin, 1973.
Chapter 23, "The Urban Transportation Problem," includes finance considerations.

Pignataro, Louis J.; McShane, William R.; Wiener, Anthony J.; Block, Arnold J.; and Crowell, William H. "Future Directions for Public Transportation: a Basis for Decision." Transportation Research Record 797 (1981), pp. 5-11.
Advocates an emphasis on articulation, system efficiency, and balanced transportation, in the light of population demographics and dispersion, energy cost and availability, overall economics, and technological change.

Pikarsky, Milton J. "The Public Transportation Investment." Transit Journal 1, No. 2 (May, 1975), pp. 5-14.
Potential public benefits of subsidized public transit.

Pucher, John. Equity in Transit Finance: a Quantitative Assessment of the Impacts of Transit Subsidies on Low-Income and Minority Groups. Report No. UMTA-NJ-11-0010-82-1. Washington: U.S. Dept. of Transportation, Urban Mass Transportation Administration, 1981.

_____. "Transit Financing Trends in Large U.S. Metropolitan Areas: 1973-1978." Transportation Research Record 759 (1980), pp, 6-12.

Ronan, William J. "Financing Public Transportation." Traffic Quarterly 29, No. 2 (April, 1975), pp. 203-209.
A review of problems and policies to date, advocating a greater federal role in transportation funding.

Ross, Harry. "The Developing of Community Support for Public Transit Systems," in Essentials for Success in Transit (Bloomington, Ind.: Indiana University, School of Business, Division of Research, 1979), pp. xv-xviii, 1-190.

Rothenberg, Morris J. (JHK & Associates). Public Transportation: an Element of the Urban Transportation System. Technology Sharing Report, FHWA-TS-80-211. Washington: U.S. Dept. of Transportation, Federal Highway Administration [and] Urban Mass Transportation Administration, 1980.
Chapter III, "Public Transportation Financing," pp. 25-37. Other chapters on history, legislation, planning, management, marketing, evaluation, political considerations, etc.

Schwarzwalder, James J. "Traditional, Contemporary and Radical Views of Transit." Transit Journal 3, No. 4 (Fell, 1977), pp. 43-50.
Views on public vs. private ownership and financing.

Shortreed, John H., and Crowther, Richard F. "Programming Transport Investment: a Priority-Planning Procedure." Transportation Research Record 574 (1976), pp. 48-57.
A mathematical treatment.

"Small Transit Firms Worry About Future." Greensboro (N.C.) Record, January 4, 1982, p. A-2.
A review of concerns raised by pending cutbacks in federal funding.

Smerk, George M., ed. Readings in Urban Transportation. Bloomington, Ind.: Indiana University Press, 1968.
A selection of articles including several on economic and financial problems and issues in urban public transit.

Tennyson, Edson L. "Economic Relationships Among Urban Transit Modes." Transportation Research Record 552 (1975), pp. 19-30.
A quantitative treatment, to determine where operating economy justifies intensive capital investment in permanent facilities.

Transit Operating Subsidies. Transportation Research Record 573. Washington: Transportation Research Board, 1976.
Six papers.

U.S. Dept. of Transportation, Urban Mass Transportation Administration, Office of the Secretary. Innovative Transit Financing. Washington: the Department, 1979.
A report "designed primarily to assist government decision makers in identifying the full array of transit financing techniques and chooding the appropriate alternative(s) in light of local conditions."

Urban Transportation Finance. Transportation Research Record 589. Washington: Transportation Research Board, 1976.
8 papers.

Wells, John D., et al. Economic Characteristics of the Urban Public Transportation Industry. Prepared for U.S. Dept. of Transportation. Washington: U.S. Govt. Printing Office, 1972.

FEDERAL POLICY

Coupal, Joseph R., Jr. "A Progress Report in National Transportation Policy." Traffic Quarterly 29, No. 2 (April, 1975), pp. 196-203.
Includes summary of federal funding policies.

Hammond, Harold F. "Urban Transit and Federal Support" (Editorial). Traffic Quarterly 30, No. 4 (October, 1976), pp. 487-488.

"Impact of Federal Funding Cuts." Bay Area Monitor (Oakland, Calif.: League of Women Voters of the Bay Area, Transportation Alternatives Project, November, 1981), p. 1.

Porter, Alan L. Effects of Federal Transportation Funding Policies and Structures; Appendix A: Mass Transit. Washington: U.S. Dept. of Transportation, Office of the Secretary, 1979.

_____, et al. Effects of Federal Transportation Funding Policies and Structures; Overview. Washington: U.S. Dept. of Transportation, Office of the Secretary, 1979.

Smerk, George M. "Federal Transit Policy: Speculations on the Future." Transit Journal 1, No. 3 (August, 1975), pp. 5-20.

U.S. Dept. of Transportation, Secretary of Transportation. A Study of Revenue Mechanisms for Financing Urban Mass Transportation: Report to Congress. Washington: U.S. Dept. of Transportation, 1974.
A review of revenue sources.

U.S. Congress, Congressional Budget Office. Transportation Finance: Choices in a Period of Change. Washington: U.S. Govt. Printing Office, 1978.

Wheeler, Porter K., and Mudge, Richard R. "Alternative Strategies for Federal Mass Transit Assistance." Proceedings, Eighteenth Annual Meeting, Transportation Research Forum (1977), pp. 594-603.

Woodward, Clifford W., Jr. Trends in Federal Domestic Transportation Programs, Revenues and Expenditures by State, Fiscal Years 1957-1975. Report No. DOT-P-10-78-46. Washington: U.S. Dept. of Transportation, Office of the Assistant Secretary for Policy and International Affairs, 1979.
Includes figures for mass transit expenditures.

ALLOCATION METHODS

Diercks, Paul A. "An Accounting-Oriented Method for Allocating Transit Operating Deficits." Transit Journal 4, No. 3 (Summer, 1978), pp. 19-26.

_____. "Financing Urban Mass Transportation Systems: A Study of Alternative Methods to Allocate Operating Deficits." Transportation Research Record 735 (1979), pp. 31-39.

Fielding, Gordon J., and Lyons, William M. "Performance Evaluation for Discretionary Grant Transit Programs." Discussion by G. Gray. Transportation Research Record 797 (1981), pp. 34-40.
Case studies of state aid programs in California and Minnesota.

Institute for Urban Transportation. Mass Transit Management: A Handbook for Small Cities. 2nd ed., revised. Part I: Goals, Support, and Finance. Washington: U.S. Dept. of Transportation, Technology Sharing Program, 1980.

Levine, Harvey A. "Using Efficiency Incentives to Allocate Transit-Operating Deficits." Traffic Quarterly 32, No. 1 (January, 1978), pp. 87-104.

Miller, James H. "The Use of Performance-Based Methodologies for the Allocation of Transit Operating Funds." Traffic Quarterly 34, No. 4 (October, 1980), pp. 555-574.

Pierce, Ira N. "A Formula for Sub-Allocating Operating Assistance Funds." Transit Journal 2, No. 1 (February, 1976), pp. 31-42.

MARKETING

Hauser, John R., and Koppelman, Frank S. "Designing Transportation Services: a Marketing Approach." Proceedings, Eighteenth Annual Meeting, Transportation Research Forum (1977), pp. 638-652.

Lovelock, Christopher H. " A Market Segmentation Approach to Transit Planning, Modeling, and Management." Proceedings, Sixteenth Annual Meeting, Transportation Research Forum (1975), pp. 247-258.

Preferences, Perceptions, and Market Segments in Travel Behavior. Transportation Research Record 649. Washington: Transportation Research Board, 1977.
Seven papers on transit-marketing-related subjects.

Reed, Richard R., and Ingram, Kenneth R. "Starting the Transit Industry on a Search for Affluent Markets." Transportation Research Record 590 (1976), pp. 9-13.

Schneider, Lewis M. Marketing Urban Mass Transit: A Comparative Study of Management Strategies. Boston: Harvard University Graduate School of Business Administration, Division of Research, 1965.

Transit Marketing. Transportation Research Record 590. Washington: Transportation Research Board, 1976.
Seven papers on marketing and finance.

Weiss, David L. "Citizen Opinions on Public Transportation Roles, Service, and Financing." Transportation Research Record 590 1976), pp. 5-8.

FARE POLICIES AND DEMAND FOR PUBLIC TRANSIT

Barton-Aschman Associates, Inc., R. H. Pratt & Co. Division. Traveler Response to Transportation System Changes. 2nd ed. Washington: U.S. Dept. of Transportation, Federal Highway Administration, 1981.
Impacts on revenues and costs of changes in travel demand.

Doxsey, Lawrence B. "Elasticity Measures of Behavioral Response to Off-Peak Free-Fare Transit." Transportation Research Record 761 (1980), pp. 7-14.

Ferrerri, Michael G. "Transit Price Elasticities Revisited." Transit Journal 5, No. 3 (Summer, 1979), pp. 65-71.

Greenspan, H. P. "The Case for Prepaid Transit." Transit Journal 1, No. 1 (February, 1975), pp. 57-63.
Arguments in favor of fare-free transit.

Karr, Albert R. "Mass Transit Riders are Facing Prospect of Higher Fares to Keep Systems Running." Wall Street Journal, March 17, 1981, p. 35.

Lago, Armando M.; Mayworm, Patrick D.; and McEnroe, J. Matthew. "Ridership Response to Changes in Transit Services. Transportation Research Record 818 (1981), pp. 13-19.

Scheiner, James I. "The Patronage Effects of Free-Fare Transit." Traffic Quarterly 29, No. 1 (January, 1975), pp. 19-27.

_____. "Exploding the Myths of Prepaid Transit." Transit Journal 2, No. 1 (February, 1976), pp. 57-64.
A case for fare-free local urban transit.

Transit Fare Policies. Transportation Research Record 799. Washington: Transportation Research Board, 1981.
Eleven papers.

RURAL PUBLIC TRANSPORTATION

Burkhardt, Jon E. Planning Rural Public Transportation Systems: a Section 147 Demonstration Program Technical Manual. Washington: U.S. Dept. of Transportation, 1979.
This manual is one of five based on experience with rural public transportation demonstrations funded by the Federal Highway Administration under Section 147 of the Federal Aid Highway Act of 1973. Chapter 5: "Financing Rural Transportation."

Kidder, Alice E. "Economics of Rural Public Transportation Programs." Transportation Research Record 578 (1976), pp. 1-7.

_____. Sources of Non-Federal Support for Transportation Programs in Non-Urbanized Areas. Washington: U.S. Dept. of Transportation, Urban Mass Transportation Administration, 1978.

_____. "Use of Revenue Sharing for Public Transportation in Rural Areas." Transportation Research Record 813 (1981), pp. 6-10.

Larson, Thomas D., and Lima, Peter M. "Rural Public Transportation." Traffic Quarterly 29, No. 3 (July, 1975), pp. 369-384.
Experience in Pennsylvania; includes information on federal and state funding.

McKelvey, Douglas J. Evaluating Rural Public Transportation. Report No. DOT-TST-77-42. Washington: U.S. Dept. of Transportation, 1977.
Case studies of four rural systems, including details of funding.

Public Transportation in Rural and Suburban Areas. Transportation Research Record 661. Washington: Transportation Research Board, 1978.

Eight papers on planning, financing, and managing public transit in low-population-density areas.

Rural Public Transportation. Transportation Research Record 696. Washington: Transportation Research Board, 1978.

Twenty-eight papers on rural public transit planning, management and finance.

Transportation Planning Techniques for Small Communities. Transportation Research Record 638. Washington: Transportation Research Board, 1977.

Twelve papers on transportation and transit planning in small towns and rural areas.

CASE STUDIES

Bloomfield, Pamela; Koffman, David; and Bruno, Larry. "The Runaround: User-Side Subsidies for Fixed-Route Transit in Danville, Illinois." Transportation Research Record 761 (1980), pp. 1-7.

Burkhardt, Jon E., and Millar, William W. "Estimating Cost of Providing Rural Transportation Service." Transportation Research Record 578 (1976), pp. 8-15.

Based on experience in Pennsylvania.

Charles River Associates, Inc. User-Side Subsidies for Shared-Ride Taxis in Kinston, North Carolina. Final Report, UMTA-NC-06-0002-80-1. Washington: U.S. Dept. of Transportation, Urban Mass Transportation Administration, 1980.

Collura, John; Male, James W.; and Mobolurin, Ayodele. "Examination of Regional Transit Cost Allocation Among Towns: Five Case Studies. Transportation Research Record 813 (1981), pp. 10-15.

Corsi, Thomas M.; Schmitt, Robert P.; and Beimborn, Edward A. "Voter Response to Highway and Transit Referenda: A CAse Study in Milwaukee County, 1974." Proceedings, Sixteenth Annual Meeting, Transportation Research Forum (1975), pp. 80-90.

Durker, Tracy E. "Partnership in Funding Public Transit: Seattle Metro." Transportation Research Record 813 (1981), pp. 28-32.

Hall, Edward M. "Urban Transportation Financing: the Phoenix Program." Traffic Quarterly 31, No. 2 (April, 1977), pp. 275-286.

Harmatuck, Donald J., and Dodge, William H. "Economic Analysis of Public Response to Urban Transit Issue." Proceedings, Seventeenth Annual Meeting, Transportation Research Forum (1976), pp. 298-306.

Case study of referendum in Madison, Wisconsin.

Howe, Robert T. "Public Ownership of Mass Transit in Cincinnati." Traffic Quarterly 30, No. 1 (January, 1976), pp. 121-141.

Kendall, Donald; Misner, Joseph; and Waksman, Robert. "Cost and Service Characteristics of Small Community Transit Operations." Proceedings, Seventeenth Annual Meeting, Transportation Research Forum (1976), pp. 122-129.
Case studies of thirteen small communities.

Kern, Joseph J., and Works, Robert M. "Implementation of a New Transit Funding Procedure in Minnesota." Transportation Research Record 797 (1981), pp. 31-33.

Metropolitan Planning Commission. San Francisco Bay Region Transit Financing Study: Summary. Berkeley, Calif.: The Commission, 1977.

Miller, Gerald K., and Kirby, Ronald F. "Constrained Matching Procedure for Allocating Public Transportation Assistance in Minnesota." Transportation Research Record 797 (1981), pp. 49-52.

Morlok, Edward K., and Viton, Philip A. "Self-Sustaining Public Transportation Services: Lessons from the C&NW Experience." Proceedings, Twenty-First Annual Meeting, Transportation Research Forum (1980), pp. 116-124.

Nelson, Gary. "FAIRTRAN: Operation of a Credit-Card Transit Fare System." Transportation Research Record 590 (1976), pp. 27-30.

New York State Department of Transportation. Public Transportation Operating Assistance Programs in New York State: 1979 Annual Report. Albany: the Department, 1979.

Shunk, Gordon A., and English, Wayne. "The Burdens and Benefits of BART: a Preliminary Case Study of Rapid Transit Impacts." Proceedings, Seventeenth Annual Meeting, Transportation Research Forum (1976), pp. 281-289.
About the San Francisco Bay Area Rapid Transit system.

Small City Transit: Summary of State Aid Programs. Report No. UMTA-MA-06-0049-76-15. Washington: U.S. Dept. of Transportation, Urban Mass Transportation Administration, 1976.
A review of financial (capital and operating) and technical assistance for transit provided by states to small cities.

Veatch, James F. "An Evaluation of a Downtown Circulation Bus Service." Traffic Quarterly 29, No. 4 (October, 1975), pp. 615-629.
Experience in Kansas City, Mo. Includes information on revenues and costs.

Workshop Report: Financing Public Transit in New York State. [Report of workshop held in Albany, N.Y., Sept. 20-23, 1976.] Brooklyn, N.Y.: Polytechnic Institute of New York, Transportation Training and Research Center, [1976?].

Wulkan, Alan C. "Funding Dade County's Transportation Improvement Program: the Citizen's Role." Transportation Research Record 813 (1981), pp. 26-28.

APPENDIX B

TRANSIT FINANCING ACTIVITY AND PERSON IDENTIFIER QUESTIONNAIRE

TRANSIT FINANCING ACTIVITY AND PERSON IDENTIFIER QUESTIONNAIRE

Please supply the information on the following types of activities associated with the transit financing process.

1. Person(s) responsible for developing the initial public transportation financing proposals at the state level:

   Person 1:

   Name:_____

   Title:_____ Phone:_____
   (Area Code)

   Address:_____ _____
   (Zip Code)

   Person 2:

   Name:_____

   Title:_____ Phone:_____
   (Area Code)

   Address:_____
   (Zip Code)

2. Persons responsible for reviewing the financing proposals:

   A. Staff person in the Governor's Office:

   Name:_____

   Title:_____ Phone_____ _____
   (Area Code)

   Address:_____
   (Zip Code)

   B. State Budget Office staff person(s) most knowledgable about public transportation financing issues:

   Person 1:

   Name:_____

   Title:_____ Phone:_____
   (Area Code)

   Address:_____
   (Zip Code)

Person 2:

Name:_____

Title:_____ Phone:_____
(Area Code)

Address:_____
(Zip Code)

C. Staff aides on key state legislative committess most knowledgable about public transportation financing issues:

Person 1:

Name:_____

Title:_____ Phone:_____
(Area Code)

Address:_____
(Zip Code)

Person 2:

Name:_____

Title:_____ Phone:_____
(Area Code)

Address:_____
(Zip Code)

Person 3:

Name:_____

Title:_____ Phone:_____
(Area Code)

Address:_____
(Zip Code)

D. Person(s) in the state Department of Transportation most knowledgable about public transportation financing issues:

Person 1:

Name:_____

Title:_____ Phone:_____
(Area Code)

Address:_____
(Zip Code)

Person 2:

Name:_____

Title:_____ Phone:_____
(Area Code)

Address:_____
(Zip Code)

3. Person(s) most knowledgable about public transportation financing matters at the regional level:

Person 1:

Name: _____

Title: _____ Phone: _____
(Area Code)

Address: _____
(Zip Code)

Person 2:

Name: _____

Title: _____ Phone: _____
(Area Code)

Address: _____
(Zip Code)

Person 3:

Name: _____

Title: _____ Phone: _____
(Area Code)

Address: _____
(Zip Code)

Please indicate, to the best of your knowledge, at which level of government the following activities occur: (If more than one level is involved, please check all that apply):

	Transit system Management	City or County	Regional	State
Forecasting of Public Transit Revenues (all sources):	_____	_____	_____	_____
Forecasting of Public Transit Operating Expenses:	_____	_____	_____	_____
Forecasting of Public Transit Operating Deficits:	_____	_____	_____	_____
Forecasting of Public Transit Capital Expenses:	_____	_____	_____	_____

At what level(s) of government are the sources of funds and allocation of funds decisions made concerning the following expenditure classifications: (Check all that apply)

	Transit system Management	City or County	Regional	State
Sources of state or local matching shares for federal capital grants:	_____	_____	_____	_____
Sources of local matching funds for state capital grants, if any:	_____	_____	_____	_____
Sources of state or local matching funds for federal operating grants:	_____	_____	_____	_____
Sources of local matching funds for state operating grants, if any:	_____	_____	_____	_____
Allocation of state or local funds for capital expenditures:	_____	_____	_____	_____
Allocation of state or local funds for operating expenditures:	_____	_____	_____	_____

Thank you for completing this questionnaire. For recordkeeping purposes, we would appreciate the following information, naturally this information will be held in strict confidence. Thank you again for your cooperation.

Name of Respondent: _____

Title: _____ Phone: _____
(Area Code)

Address: _____
(Zip Code)

Please return to: The Transportation Institute
Room 301-Merrick Hall
N.C. A&T State University
Greensboro, North Carolina 27411
Attn: E. Walther

APPENDIX C

STATE AND LOCAL TRANSIT FINANCING METHODS:

Public Transit Financing Methods
Financing Alternatives
Cost Control Incentives
User Share of System Expenses
Performance Measures
Obtaining and Allocating Funds

STATE AND LOCAL TRANSIT FINANCING METHODS

Please provide information on various aspects of financing public transit. Feel free to attach additional sheets. Also copies of explanatory, descriptive or supportive documents would be greatly appreciated. Thank you for your cooperation and assistance.

Public Transit Financing Methods

1) Please describe the methods used to finance public transit in your state. Distinguish between financing of operationing costs and of capital expenditures.

2) What are the state and local shares of public transit support? (Please note any variations by type of system or source of funds).

a) For operating expenses: _____% State support

_____% Local support

b) For capital expenditures: _____% State support

_____% Local support

3) What legislation defines the state's role in public transit financing and the relationship with local or regional levels of government? (Please attach copies if possible).

4) What are the sources of funds available for public transit financing?

	Is this a dedicated source?	
a) At the State level:		
i)_____	Yes	No
ii)_____	Yes	No
iii)_____	Yes	No
b) At the Local level:		
i)_____	Yes	No
ii)_____	Yes	No
iii)_____	Yes	No

5) In the past five years, has your department/office performed any analysis of alternative methods for financing public transit? If so, what methods were used? How might the study obtain copies of any reports, working papers, etc. which resulted from the analysis?

6) What techniques does your department/office utilize for the following activities: (If your department/office does not perform a particular analysis, please note which government agency or private organization does perform the analysis, if it is performed at all).

a) Forecasting revenues from public transit operations:

Technique(s) used:_____

_____

_____

_____

Period covered by forecast: _____one year; _____five years;

other time period: (specify)_____

Performed by other agency/organization:_____

_____

Not performed by any transit organization/agency/operation:_____

b) Forecasting costs of operations:

Technique(s) used:_____

_____

_____

_____

Period covered by forecast: _____one year; _____five years:

Other time period: (Specify)_____

Performed by other agency/organization:_____

_____

Not performed by any transit organization/agency/operation:_____

c) Forecasting costs of capital acquistitions:

Technique(s) used:_____

_____

_____

_____

Period covered by forecast: _____one year; _____five years;

other time period: (specify)_____

Performed by other agency/organization:_____

_____

Not performed by any transit organization/agency/operation:_____

d) Forecasting the level of local (non-state, non-federal) support for public transit: (If appropriate, please distinquish between support for operations and support for capital projects).

Technique(s) used:_____

_____

_____

_____

_____

Period covered by forecast: _____one year; _____five years;

other time period: (specify)_____

Performed by other agency/organization:_____

_____

_____

Not performed by any transit organization/agency/operation:_____

e) Forecasting deficits, both operations only and total, for public transit systems:

Technique(s) used:_____

_____

_____

_____

Period covered by forecast: _____one year; _____five years;

other time period:(specify)_____

Performed by other agency/organization:_____

_____

_____

Not performed by any transit organization/agency/operation:_____

f) Projections of the level of state operating and/or capital assistance for public transit:

Technique(s) used:_____

_____

_____

_____

Period covered by forecast: _____one year; _____five years;

other time period: (specify)_____

Performed by other agency/organization:_____

_____

_____

Not performed by any transit organization/agency/operation:_____

g) How accurate have the forecasts proven to be, and has anything been learned to improve the accuracy of the forecasts?

Very accurate_____; Somewhat accurate_____; Not very accurate_____

No forecasts made_____

Forecasting techniques improved by:

Financing Alternatives

7) Have alternative revenue sources for public transit support been explored and, if so, what alternative sources were considered?

No alternatives explored_____

Alternatives:	Explored	Adopted	Already used
Dedicated sales tax	_____	_____	_____
Dedicated gasoline tax	_____	_____	_____
Dedicated payroll tax	_____	_____	_____
Dedicated excise tax	_____	_____	_____
Dedicated auto tag tax	_____	_____	_____
Value capture tax	_____	_____	_____
Leasing air rights	_____	_____	_____
Advertising: in-side vehicle	_____	_____	_____
outside bus	_____	_____	_____
in-side station	_____	_____	_____
in-side shelter	_____	_____	_____
School bus operations	_____	_____	_____
Charter	_____	_____	_____

Other (specify):_____

_____

_____

Tax increase with revenues NOT dedicated to transit _____

Taxes considered:_____

8) Where did you obtain information on the advantages and disadvantages of alternative financing sources?

In-house study: _____

Survey of other transit properties and/or DOT's: _____

Survey of the literature: _____

Informal contacts with other DOT's or transit properties: _____

Studies from the US Department of Transportation: _____

Other sources: (specify)_____

_____

_____

No information sought: _____

Alternatives not explored/does not apply:_____

9) If estimates were made of potential revenue yields from alternative sources, what forecasting techniques were used?

Alternatives not explored/does not apply:_____

Forecasts made:

Technique(s) used: 1._____

_____

2._____

_____

3._____

_____

10) What "do's" and "don'ts" were learned while exploring alternative sources which would be helpful to others in the field?

Cost Control Incentives

11) What implicit or explicit incentives for transit system cost control are incorporated into state level transit financial assistance programs? Into local level transit financial assistance programs?

No state level incentives:_____ No local level incentives:_____

12) If other incentive systems were considered, what were they?

Not applicable:_____

13) How would you evaluate the effectiviness of cost control incentives?

Does not apply:_____

State level: Very effective_____; Somewhat effective_____; Not effective_____

Local level: Very effective_____; Somewhat effective_____; Not effective_____

Any additional comments on cost controls and/or their effectiviness in your particular situation:

User Share of System Expenses

14) What policies or guidelines exist with respect to the "appropriate" share of transit operating expenses which should be recovered from users?

No policy or guideline:_____

Fare box recovery should be _____% of operating expenses. Please elaborate if appropriate:

Performance Measures

15) What performance measures do you use to assess public transportation and are these measures in any way linked to financing arrangements? Do different levels of government utilize differing performance measures and, if so, how do they differ?

Obtaining and Allocating Funds

16) Through what offices and legislative bodies must proposals for state level financing of public transportation pass before they become law? Is this arrangement optimal? How would you change it?

17) How are state funds in support of public transit allocated among local areas of government and/or various transit operators? What differences, if any, exist in the allocation method by type of transit program?

18) How stable and predictable have the arrangements described above proven to be?

Very stable:_____ Somewhat stable:_____ Not stable:_____

Cannot rate:_____

19) Have there been any cash-flow problems in providing transit assistance?

a) From the federal level: None:___ Sometimes:_____ Always:_____

b) From the state level: None:____ Sometimes:_____ Always:_____

c) From the local or regional level: None:____ Sometimes:_____ Always:_____

Any additional comments on timing of assistance funds flows:

20) Have the lags between allocation of transit funds and the actual dispersment of these funds presented any financial or political concerns and, if so, how were these concerns resolved?

No difficulties/concerns presented:_____

Yes, some concerns have arisen:_____; please explain the nature of the concerns and how they were handled:

21) Have you experienced any problems with the alignment of federal, state and local financing timetables each year? How were any such problems resolved?

No difficulties have arisen:_____

Yes, some difficulties have arisen:_____; please explain the nature of the difficulty and how it was resolved:

22) Are there any difficulties in financing transit because of: property tax freezes, constitutional debt ceilings, state employee job freezes, or other legal restrictions? If you have experienced these difficulties, how were they resolved and do you have any advice for others trying to cope with similar problems?

No such difficulties:_____

If you have had such difficulties, please indicate their nature and the steps taken to resolve them:

23) Do public subsidies (or dedicated tax sources) for public transportation rise along with inflation? Do they keep up with inflation? Are there any techniques you have discovered to cope with inflation problems?

Subsidies/dedicated tax sources: do_____/do not_____ rise with inflation.

Subsidies/dedicated tax sources: do_____/do not_____ keep up with inflation.

Subsidies/dedicated tax sources: are_____/are not_____ sensitive to business cycle fluctuations

Please elaborate on the above responses:

24) Do the transit systems in your state make use of part-time operators or drivers? If not, would such an arrangement be beneficial?

Yes, part-time operators/drivers are used:_____

No, part-time operators/drivers are not used:_____

Please elaborate:

25) If you have any comments on other aspects of transit financing which you would like to note, please use this space and/or attach additional sheets or materials.

Thank you for completing this questionnaire. In case we need clarifying information or other follow-up as well as for record keeping purposes, we would appreciate the following information. Naturally, this information will be held in strict confidence. Thank you again for your cooperation.

Name of respondent:_____

Title:_____

Address:_____

_____ Phone: _____

(Zip Code) (Area Code)

Please return to:

The Transportation Institute
301 Merrick Hall
North Carolina A & T State University
Greensboro, North Carolina 27411
Attn: E. Walther

APPENDIX D

STATE AND LOCAL GOVERNMENT FINANCING OF PUBLIC TRANSIT SYSTEMS:

Guidelines for Case Study Interviews

STATE AND LOCAL GOVERNMENT FINANCING OF PUBLIC TRANSIT SYSTEMS

Guidelines for Case Study Interviews

1. What methods are used to finance public transportation?

2. What are the state and local government shares of such support?

3. What is the legislation which defines the state's role?

4. Has your department performed any analysis fo financing alternatives to provide state assistance to public transportation?

5. What techniques does your agency use to perform any of the following:

   a. forecasting revenues from public transportation operations
   b. forecasting costs of operations
   c. forecasting costs of capital acquisitions
   d. forecasting the degree of local (non-state, non-federal) assistance for public transportation
   e. forecasting deficits of public transportaiton agencies in the state
   f. projecting the level of state operating and capital assistance which would be needed to support public transportation
   g. how accurate have the forecasts proved to be, and has anything been learned to improve the accuracy of the forecasts?

6. What techniques are used to compare various alternative revenue sources in support of public transportation?

   a. what alternatives were explored?
   b. where did you get information on the advantages and disadvantages of various funding arrangements?
   c. what techniques were used to estimate revenue yields from alternative proposals?
   d. what "do's and don'ts" were learned in this process?

7. What incentives for cost-control on the part of transit agencies are implicit or explicit in the state and/or local financing arrangements both current and proposed or examined.

8. What elements in the state or local financing arrangements provide incentive for pricing policies which establish a role of the user in paying costs?

   a. Is there any policy to have users pay a predetermined proportion of the operating costs of public transportation?
   b. Have there been notable fare increases for public transportation in your state? What has been the effect on ridership?
   c. What impact does public policy regarding transit subsidy have on local fare policy?

d. Are there incentives for firms to increase operating revenues from non-fare sources (such as charters, school bus operations, etc.)?

e. Do such pricing policies play a role in improving the efficiency of operation of the transit agencies?

9. What arrangements or legal requirements are there for multijurisdictional or regional public transit financing?

10. What performance measures do you use to assess public transportation, and are these measures in any way linked to financing arrangements?

11. What studies have been done, if any, on how to reduce service levels, in the event of insufficiency of public transportation financing?

12. Through what offices and legislative bodies must proposals for state level financing of public transportation pass before they become law? How would you evaluate this system?

13. How are state funds in support of public transportation allocated among the local areas of the state?

14. How stable and predictable have these arrangements been?

15. Have you experienced any cash flow problems in providing assistance to public transportation?

a. Form the federal level?
b. From the state level?
c. From the local level?
d. What techniques have been used most effectively to prevent or ease such problems?
e. Is there any problem with the alignment of federal, state and local financing timeables each year?

16. Have you experienced any difficulties in financing transit because of: property tax freezes, constitutional debt ceilings, state employee job freezes, or other legal restrictions?

17. How could paperwork with respect to public transportation financing be simplified?

18. Do public subsidies for public transportation rise along with inflation? Do they keep up with inflation? Are there any techniques you have discovered to cope with this problem?

19. Are there any innovation financing techniques being used to support public transit in your state (for example joint development financing, value capture, leasing of air rights, special assessments to developers for transit improvements, use of highway funds for public transportation, etc?) What have you learned from your experience with any of these methods? How important a revenue source are these methods.?

20. Who audits your expenditure of public subsidies for public transportation?