Special Report 208

Proceedings of the Conference on Evaluating Alternative Local Transportation Financing Techniques

Denver, Colorado
November 28-30, 1984

Transportation Research Board
National Research Council

1985 TRANSPORTATION RESEARCH BOARD EXECUTIVE COMMITTEE

OFFICERS

Chairman: *John A. Clements,* President, Highway Users Federation for Safety and Mobility, Washington, D.C.

Vice Chairman: *Lester A. Hoel,* Hamilton Professor and Chairman, Department of Civil Engineering, University of Virginia, Charlottesville

Executive Director: *Thomas B. Deen,* Transportation Research Board

MEMBERS

Ray A. Barnhart, Administrator, Federal Highway Administration, U.S. Department of Transportation (ex officio)

Joseph M. Clapp, Vice Chairman-Corporate Services, Roadway Services, Inc., Akron, Ohio (ex officio, Past Chairman, 1984)

Lawrence D. Dahms, Executive Director, Metropolitan Transportation Commission, Oakland, California (ex officio, Past Chairman, 1983)

Donald D. Engen, Vice Admiral, U.S. Navy (retired), Administrator, Federal Aviation Administration, U.S. Department of Transportation (ex officio)

Francis B. Francois, Executive Director, American Association of State Highway and Transportation Officials, Washington, D.C. (ex officio)

William J. Harris, Jr., Vice President, Research and Test Department, Association of American Railroads, Washington, D.C. (ex officio)

Ralph Stanley, Administrator, Urban Mass Transportation Administration, U.S. Department of Transportation (ex officio)

Diane Steed, Administrator, National Highway Traffic Safety Administration, U.S.Department of Transportation (ex officio)

Alan A. Altshuler, Dean, Graduate School of Public Administration, New York University, New York

Duane Berentson, Secretary, Washington State Department of Transportation, Olympia

John R. Borchert, Regents Professor, Department of Geography, University of Minnesota, Minneapolis

Robert D. Bugher, Executive Director, American Public Works Association, Chicago, Illinois

Ernest E. Dean, Executive Director, Dallas-Fort Worth Airport, Texas

Mortimer L. Downey, Deputy Executive Director for Capital Programs, Metropolitan Transportation Authority, New York

Jack R. Gilstrap, Executive Vice President, American Public Transit Association, Washington, D.C.

Mark G. Goode, Engineer-Director, Texas State Department of Highways and Public Transportation, Austin

William K. Hellmann, Secretary, Maryland Department of Transportation, Baltimore

Lowell B. Jackson, Secretary, Wisconsin Department of Transportation, Madison

John B. Kemp, Secretary, Kansas Department of Transportation, Topeka

Alan F. Kiepper, General Manager, Metropolitan Transit Authority, Houston, Texas

Harold C. King, Commissioner, Virginia Department of Highways and Transportation, Richmond

Darrell V Manning, Adjutant General of the Idaho National Guard, Boise

James E. Martin, President and Chief Operating Officer, Illinois Central Gulf Railroad, Chicago

Fujio Matsuda, Executive Director, Research Corporation of the University of Hawaii, Honolulu

James K. Mitchell, Professor, Department of Civil Engineering, University of California, Berkeley

H. Carl Munson, Jr., Vice President for Strategic Planning, The Boeing Commercial Airplane Company, Seattle, Washington

Milton Pikarsky, Distinguished Professor of Civil Engineering, City College of New York, New York

Walter W. Simpson, Vice President-Engineering, Norfolk Southern Corporation, Norfolk, Virginia

Leo J. Trombatore, Director, California Department of Transportation, Sacramento

The **Transportation Research Board** is a unit of the National Research Council, which serves the National Academy of Sciences and the National Academy of Engineering. The Board's purpose is to stimulate research concerning the nature and performance of transportation systems, to disseminate the information produced by the research, and to encourage the application of appropriate research findings. The Board's program is carried out by more than 270 committees, task forces, and panels composed of more than 3,300 administrators, engineers, social scientists, attorneys, educators, and others concerned with transportation; they serve without compensation. The program is supported by state transportation and highway departments, the modal administrations of the U.S. Department of Transportation, the Association of American Railroads, the National Highway Traffic Safety Administration, and other organizations and individuals interested in the development of transportation.

The National Research Council was established by the National Academy of Sciences in 1916 to associate the broad community of science and technology with the Academy's purposes of furthering knowledge and of advising the federal government. The Council operates in accordance with general policies determined by the Academy under the authority of its Congressional charter, which establishes the Academy as a private, nonprofit, self-governing membership corporation. The Council is the principal operating agency of both the National Academy of Sciences and the National Academy of Engineering in the conduct of their services to the government, the public, and the scientific and engineering communities. It is administered jointly by both Academies and the Institute of Medicine.

The National Academy of Sciences was established in 1863 by Act of Congress as a private, nonprofit, self-governing membership corporation for the furtherance of science and technology, required to advise the federal government upon request within its fields of competence. Under its corporate charter, the Academy established the National Research Council in 1916, the National Academy of Engineering in 1964, and the Institute of Medicine in 1970.

Special Report 208

Proceedings of the Conference on Evaluating Alternative Local Transportation Financing Techniques

conducted by the
Transportation Research Board

sponsored by the
Federal Highway Administration
Urban Mass Transportation Administration

Denver, Colorado
November 28-30, 1984

Transportation Research Board
National Research Council
Washington, D.C. 1985

Transportation Research Board Special Report 208
Price $10.80

modes
1 highway transportation
2 public transit

subject areas
11 administration
14 finance

Transportation Research Board publications are available by ordering directly from TRB. They may also be obtained on a regular basis through organizational or individual affiliation with TRB; affiliates or library subscribers are eligible for substantial discounts. For further information, write to the Transportation Research Board, National Research Council, 2101 Constitution Avenue, N.W., Washington, D.C. 20418.

Printed in the United States of America

Library of Congress Cataloging in Publication Data
National Research Council. Transportation Research Board.
Conference on Evaluating Alternative Local Transportation Financing Techniques (1984: Denver, Colo.)
Proceedings of the Conference on Evaluating Alternative Local Transportation Financing Techniques, Denver, Colorado, November 28-30, 1984.

(Special report/Transportation Research Board; 208)
1. Local transit–United States–Finance–Congresses. I. National Research Council (U.S.). Transportation Research Board. II. United States. Federal Highway Administration. III. United States. Urban Mass Transportation Administration. IV. Title. V. Series: Special report (National Research Council (U.S.). Transportation Research Board); 208.
HE 4456.C65 1984 388.4'042 85-15271
ISBN 0-309-03819-7 ISSN 0360-859X

Sponsorship of Transportation Research Board Special Report 208

GROUP 1–TRANSPORTATION SYSTEMS PLANNING AND ADMINISTRATION
Kenneth W. Heathington, University of Tennessee, chairman

Steering Committee to Develop the Conference on Evaluating Alternative Local Transportation Financing Techniques
Alice E. Kidder, Babson College, chairman
Lee H. Bowser, Gary Brosch, Lawrence D. Dahms, Warren H. Frank, Jacqueline Hart, William I. Herman, Janet L. Jones, Carol A. Keck, Bruce D. McDowell, John Douglas Miller, Samuel R. Mitchell, Wayne B. Placide, Marshall F. Reed, Jr., George J. Scheuernstuhl, Leonard S. Simon, George M. Smerk, Robert G. Stanley, Erskine S. Walther

Liaison Representatives: Arturo Politano and Edward Thomas

Kenneth E. Cook, Transportation Research Board staff
Conference Consultant, Marcom Associates, Inc.

The organizational units, officers, and members are as of December 31, 1983.

Preface

Many urban areas are concerned about the disparities between the cost of providing tranportation services and the revenues available to cover those costs. Local governments are being encouraged to become more self-sufficient in financing public transportation and highway programs. They are looking for ways to overcome revenue shortfalls and to find new sources of transit and highway revenues.

To respond to this need, the Urban Mass Transportation Administration and the Federal Highway Administration requested that the Transportation Research Board of the National Research Council conduct a National Conference on Evaluating Alternative Local Transportation Financing Techniques. The purpose of the conference was to disseminate the results of current research on local transportation financing to a wide audience of local officials, planners, transportation managers, and financing specialists and to consider the various issues associated with evaluating alternative financing techniques for local transportation capital and operating programs.

A Committee to Develop a Conference on Evaluating Alternative Local Transportation Financing Techniques was established by the National Research Council. The Committee reflected a diversity of interests and included local government and transportation administrators, financing experts, private-sector associations concerned with transportation issues, planners, investment bankers, and academicians (see Steering Committee Biographical Information). The Committee developed the conference program and supervised the preparation of this report.

The major topics addressed at the conference were

- Financial planning and its relationship to the urban transportation planning process
- Revenue sources for financing local transportation
- Financial planning techniques
- Packaging and implementing the financial plan

The conference concentrated on small workshop groups. To help focus the discussions, resource papers and case studies were presented to the conferees before each workshop session. These papers will be found in Part 2 of this report. The Steering Committee also prepared a list of questions for use by the workshops to help stimulate the discussions. These may be found in Appendix A. A Checklist of Revenue Sources for Financing Local Transportation (Appendix B) was also made available for use in the workshops. A recorder kept notes for each workshop session, and a summary of the discussion was presented by four rapporteurs (Part 4). Urban Mass Transportation Administration and Federal Highway Administration speakers set forth the Administrations' positions, research activities, and concerns relating to local transportation finance. At the end of the conference, they attempted to identify gaps in knowledge that needed research.

One of the workshops decided to develop a hypothetical case study as a way to address the local finance issues. The hypothetical conditions and the resulting financial plan are presented in Part 3 of the report.

Since a primary purpose of the conference was to provide an opportunity to exchange information rather than to arrive at a specific solution to the questions that were posed, the proceedings attempt to present a sample of the breadth of the discussions and do not purport to recommend a consensus position or a model solution to the local transportation financing problem.

A brief summary is provided in Part 1 to give the reader an overview of the conference.

The report represents the efforts of the steering committee, the consultant to the project, the speakers, the workshop chairmen, the rapporteurs, the staff of both the sponsoring agencies, and most of all the conference participants. Special appreciation goes to Angela Mulloy of Marcom Associates for developing the resource material and preparing the report. Arturo Politano and Edward Thomas, the sponsor's program managers, provided staff assistance to the project. The project was performed under the supervision of K. B. Johns, Assistant Director, and Kenneth E. Cook, Transportation Economist, of the Technical Activities Division of TRB.

Contents

Part 4: Workshop Summaries

Part 1

Overview

Overview

In recent years, agencies responsible for constructing, operating, and maintaining highways and transit systems have found it increasingly difficult to finance these facilities. Increasing demands for local transportation coupled with decreasing revenue sources have financially constrained local transportation agencies.

The causes of the crisis in local transportation financing are complex—the result of the interplay of several events that began in the late 1970s:

- The energy shortage and the subsequent rise in gasoline prices, coupled with federal requirements for more fuel-efficient automobiles, resulted in a decline in fuel consumption and thus in motor fuel tax revenues.
- In the late 1970s and early 1980s, there were unforeseen drastic increases in construction, maintenance, and operating costs of transit and highways.
- The "property tax revolt" in several states reduced local revenue sources for all purposes.
- There has been an increased need for maintenance funding resulting from deferred maintenance practices for both highways and transit.
- Matching requirements for federally funded programs have required substantial local financial contributions.
- Direct operating subsidies for transit have been curtailed by the federal government.
- Escalating interest rates have caused a decline in the ability of state and local governments to enter the bond market.

As a result, local agencies are caught in the middle of a financial squeeze, with traditional revenue sources decreasing and local demands for transportation increasing. Although financial needs for streets and highways differ from those for transit, there are many common elements that can be shared.

The federal government has sponsored substantial research on transportation finance. A large body of literature has evolved, but many issues remain unresolved. Some of these areas are

- How can financial planning practices be improved?
- Who is responsible for the program, the financial plan, and the budget?
- Can forecasting techniques be made more accurate?
- How can a financial plan be developed to cover capital and operating programs?
- How can the financial plan be marketed successfully to the political decision makers and the necessary constituencies?

This is a summary of the conference proceedings and resource papers relating to financial planning, forecasting costs and revenues, funding options, and packaging and marketing the plan.

THE FINANCIAL PLANNING PROCESS AND TECHNIQUES

A successful process is one that combines transportation planning and budgeting to match needs and resources and develops a set of integrated plans, programs, and budgets. Frequently, however, the process follows two separate paths: one that considers financial resources and another that considers transportation needs. Financial planning is usually the responsibility of the finance office, and the transportation planning office often plays only a minor role in budget development. This results in a fragmented planning process in which the projects that are identified are not financially achievable.

Integrating the financial planning and transportation planning processes into a single, interactive, more iterative process may be one way to alleviate this problem. Vital elements of such a process include identifying common goals, analyzing the environment, identifying future options and their consequences, evaluating current problems and resources, and improving communication among all the participants in the decision-making process. The final product is an identification of strategies for developing and maintaining the transportation system.

It is important for the process to begin at the local level and reflect local goals and requirements. Local governments may be reticent to participate in a process that is imposed by a higher level of government. While implementation agencies may take the lead in estimating needs and costs, a careful evaluation of their input is necessary to be sure that short-range objectives and operating interest do not carry too much weight compared to the longer-range comprehensive plan.

Public acceptance and approval of the plan are primary considerations. It is therefore wise to involve all affected groups early in the process. Their input can provide a better focus for needs identification and resource allocation. Private businesses may even provide a catalyst since they usually have a vested interest in assuring that transportation development brings economic vitality to the community. Public workshops and open discussions can be effective ways to encourage participation. A coordinator can be useful for focusing the discussions and assisting citizens in sharing their ideas and concerns. Temporary task forces and professional mediators may provide a neutral environment in which to negotiate major issues. Since some forms of public participation can be costly, each locale will need to assess the form of public involvement that would be most appropriate.

Financial planning is not only a technical process. It also includes an iterative political process that seeks to balance service needs and financial constraints. The major concern in developing a financial plan is to consider all of the effects of a plan, as well as the future impact of such things as inflation, demand, and costs.

Effective financial planning includes both strategic planning and budgeting. Although it may be difficult to forecast long-term demand for services or costs, transit experience on high capital systems has generally shown that costs are substantially underestimated and usage overestimated. Likewise, highways may become congested soon after they are completed even though excess capacity was designed into the system.

Developing a strategic plan is the first step in financial planning. A strategic plan attempts to identify the future changes over a period of time and to identify different scenarios necessary to achieve the desired transportation program. Strategic planning integrates long- and short-term investment decisions with operational and human resource decisions. From the private sector viewpoint, it is a marketing concept that starts with identification of needs for a product or service, identifies product characteristics, and then targets specific groups and products to meet those needs.

Developing a strategic plan includes the following activities:

- Analyze the Environment —both the threats and opportunities that may lie partially hidden in the near and distant future.
- Consider Basic Assumptions—continuation of certain levels of fiscal support, growth patterns, geographic expansion, and development or contraction of service.
- Assess Current and Future Posture—current and future material and human resource needs such as public image, employee requirements and turnover, training, and availability of information.
- Analyze Market Potential—future travel demand, community development and redevelopment efforts, and other community needs that may affect transportation
- Develop Goals and Objectives—priorities that will evolve into workable, practical objectives and a realistic time frame for accomplishing these objectives.
- Develop a Marketing Plan—segments of the market to be pursued, the types of service to be offered, and the funding schemes and promotional plans to be used.
- Identify Resources—facilities, equipment, and organizational and political requirements necessary to achieve the objectives and serve the target markets.

Financial planning reflects strategic decisions and outlines options to obtain the revenue to implement those decisions. The financial plan may identify the service needs in a particular community and reflect the political consensus for raising revenues. While it could meet current needs, a good financial plan may be molded by long-range plans for the community.

In developing the financial plan, focus needs to be on the financial impact of the programs to be undertaken, the requirements for additional resources, and the need for legislation or additional planning. Financial plan development includes the following tasks:

- Review current operations and the cost of those operations projected as closely as possible for the next 1- and 5-year periods.
- Develop goals, priorities, and objectives based on near-term priorities and adequacy of the funding level. Coordinate ongoing and new programs and identify their costs and budgets.
- Prepare estimates of labor costs, maintenance costs, energy costs, capital costs, travel demand, funding, and subsidies.
- Prepare different scenarios of key factors such as demand, federal support, new taxes, labor costs, inflation rates, and so forth.

Budgets allocate specific resources to facilities or programs and provide a yearly financial plan by which to control actual expenditures. They also provide data to evaluate service. Typically, the steps in preparing a budget are

- Develop a tentative program of services to meet the needs and desires of the community within established public policy guidelines.
- Project annual dollar costs for all expenditures to achieve the desired programs.
- Project revenues, and develop a financial plan to meet the budget requirements.
- Compare expenditure and revenue projections and determine strategies for meeting shortfalls.

A major problem in most current budgeting processes is the separation between the financial plan for the period and the policy and program implications of a budget. Budgeting is more than a continuation of the current programs; it is a policy decision-making process.

REVENUE FORECASTING

Revenues are derived from a number of sources that range from government taxes and subsidies to direct user charges and private sector contributions. These revenue sources are subject to the vagaries of inflation, shifts in government policy, adjustments in supply and cost, and uncertainties in demand—all of which make long-term revenue forecasting difficult.

The state or local agency responsible for collecting taxes usually forecasts tax revenues. The procedure involves predicting such factors as population, employment, retail sales, motor vehicle sales, fuel consumption, and interest rates.

Financial forecasting techniques vary in sophistication. A number of agencies employ sophisticated modeling techniques, while others extrapolate past trends. The Urban Transportation Planning System (UTPS) is a battery of econometric models used to forecast travel demand. One transit model forecasts route-level data on ridership by fare type; another method simply assumes an average number of riders per hour, multiplied by an assumed average fare. Trend predictions range from straight-line techniques to regression analysis of historic data. In some procedures, results are tested by examining demand elasticities, particularly when increases in user charges are being considered.

FORECASTING COSTS

A capital improvement budget typically includes the cost of the materials, labor, and financing necessary to build a facility. Some agencies use a project priority ranking and programming scheme to develop their capital budgets. Factors such as physical condition of the facility, congestion, and safety are used in order to establish criteria for project selection. In recent years, because of escalating costs of materials and labor, many localities have adopted the policy of deferring maintenance. Consequently, although a capital budget does not usually include the full life-cycle cost of operating and maintaining a facility, some local agencies are beginning to include these estimates in their budgets so that officials can better understand the financial impact of an improvement and the cost of inadequate maintenance of existing facilities.

Forecasting techniques for operating and maintenance costs are generally not as well defined as those for capital budgeting. Techniques range from simple trend projections to computer modeling. The technique used depends in part on the accounting system and related information systems available to supply the data. Some current cost-reporting systems may be adapted to capture data from payroll and operating statistics, which can be used for budget forecasting, while others cannot produce useful data without considerable restructuring.

Some form of trend analysis is the most commonly used technique for predicting costs. In the simplest form, predictions are made by unit cost models based on a fixed schedule. More sophisticated analyses use costs from current and previous years, factored for current age and condition, and predictions of economic trends. Inflation adjustments are also estimated for external factors. Many agencies rely on manual data capture for input data to develop forecasts.

FUNDING SOURCES

The traditional sources of transportation funding include motor fuel taxes, vehicle taxes, tolls, government subsidies, and developer financing. Most new sources are really extensions of traditional sources rather than truly innovative solutions. For example, dedicated taxes for local transportation have been growing in popularity, several states have implemented local option motor fuel taxes, and there has been renewed interest in toll roads and developer financing. Joint development, benefit assessment districts, and tax increment districts offer potential revenue sources in special site-specific situations.

There is no fail-safe funding source. What may work well in one community may not work at all in another. Regional differences, political structures, prevailing ideologies, spatial factors, and economic bases all limit the types of mechanisms that can be used in a particular area. In addition, federal and state laws may preempt or impede the implementation of new revenue sources at the local government level.

Different members of the community have different motivations for supporting a new transportation funding source. Businesses may be supportive to gain greater accessibility to customers. Environmentalists, social groups, and groups favoring reduced traffic congestion may also be supportive.

In considering a new revenue source, local governments need to quantify the benefits to be provided as well as the probability of success and the impediments to implementing a new financing plan. In addition to such intangibles as political and public attitudes, an assessment of the following will be necessary:

- Is the economy generally healthy and growing, or is it stagnant or declining?
- Is the industry mix cyclical or relatively stable?
- Are trips generally short or of the long-haul variety?
- Will municipalities cooperate in implementing a financing approach?
- How strong is support for transportation expenditures?
- Does enabling legislation exist at the state level?

Other important questions include:

- Is the source equitable? Fuel taxes may favor heavy vehicles at the expense of lighter ones. Sales taxes are regressive; income taxes are progressive.
- How stable is the revenue? Revenues from a sales or income tax may fluctuate more severely than those from a property tax.
- What administrative costs are involved? Some options require more administration than others. Toll roads, for instance, typically have higher collection costs than motor fuel taxes.
- What are the potential side effects? Certain taxes lead to boundary problems and retaliatory taxes. Tax rates are crucial to a region's competitive economic position, especially where the central city is competing with other regional centers. Economic development could be adversely affected by excessively high beneficiary-based taxes.

A real and immediate need for action can be an important element in gaining public support. Long-range plans that anticipate need may not be viewed favorably, and those that show too much of a need could even indicate that continuing with the project would be unwise. However, long-range financial planning can be useful in assuring a full and open public consideration of the necessary funding for desirable activities and in preventing some projects from being undertaken when their future financial needs cannot be met.

Plans requiring expanded financing may be viewed by the public with some skepticism. An open discussion of revenue sources and clear communication of the need for the project and proposed revenues can play an important role in convincing constituents that the benefits will be worth the cost.

Timing and local community attitudes are important elements in gaining support for a funding source. A conducive environment has two key facets: a clear appreciation of the need for action on the local level and interaction with both the public and the political decision makers.

REVENUE OPTIONS

Many states, cities, and transporation agencies have recently been developing alternative ways to finance transportation projects. Those that have been implemented successfully include sales taxes, private financing, new debt instruments, donations, lotteries, and benefit-assessment districts. A summary of some of the traditional and alternative sources that are becoming popular follows:

User Fees

Vehicle Fees	A variety of fees and taxes imposed by most states on vehicle owners as part of the vehicle registration process. Can include a graduated tax on vehicle weight or miles traveled. Usually considered a charge for access to system and not based on use of system. Provides stable source of revenue.
Fuel Taxes	Levied by all states on fuel sales. Some local governments are authorized to impose motor fuel taxes and share in state fuel tax revenues. Are easily administered and produce substantial revenues.
Parking Taxes	Imposed by local governments on vehicle drivers or facility operators. Can yield significant revenue in large urban areas but may have adverse impact on local businesses.
Tolls	Fees charged to users of a facility. Generally based on size, weight, number of axles, and distance traveled. Can produce high amounts of revenue and are particularly useful where revenue lags behind increased traffic demand.
Transit Fares	Involve patronage fares, passes, and surcharges for peak-hour use. A combination of several alternatives may be necessary to maximize return.
Utility Fees	Transportation tax added to water and sewer fees based on consumption. Could include street utility fees.

Nonuser Fees

Property Taxes	Levied on both real and personal property. May be imposed by states, local govern-

	ments, or transportation authorities, although some states have rate limitations. Revenues may be inflation sensitive.
Income Taxes	Include employer payroll taxes and employee income taxes. Can produce substantial revenue due to large base; however, few local governments are authorized to use income taxes for transportation.
Sales Taxes	Imposed on general merchandise, specific services, and luxury items by most states and many local governments. Some portions may be diverted or dedicated to transportation. Easily administered and responsive to inflation.
Severance Taxes	Levied on removal of minerals and natural products from land or water. Can be imposed on resource-extracting industries.
Special Benefit Fees	
Tax Increment Financing	Earmarked revenues from taxes on personal and real property based on increases above a fixed base attributable to transportation improvement. Must be authorized by the state and can be used only by jurisdictions with ad valorem taxing authority. Can be used to secure bonds.
Special Assessments	Charges to the owner of a property that benefits from an improved transportation facility. Can be based on frontage, area, value, or a combination of factors. Can be used to support bond issues, although special legislation is usually required.
Impact Fees	Imposed on private developers to mitigate impacts of the development on local service. Can be in the form of tax on square footage, sponsorship of a transportation program, or improvements to adjoining facilities. Can be used as a condition for obtaining site plan approval or building permit.
Service Charges	Charge on properties for direct access to a transportation facility. May be assessed as a lump sum contribution to a capital item or an annual fee to cover operating costs.
Private Financing	
Developer Financing	Payment of capital transportation improvement costs by private developers in return for dedicated land, construction of specific facilities, traffic control measures, or subsidized facilities. May be voluntary or required by law. May result in reduction of public expenditures but can be inequitable to developers.
Negotiated Investments	Contributions by private developers to the cost of public transportation improvements in return for changes in existing zoning and building regulations. Revenue potential opportunities may be limited by growth, construction rate, mobility requirements, and location desirability.
Private Ownership	Includes sharing ownership cost between transportation agencies and private entrepreneurs, employer subsidies for transportation, or development of a private consortium with authority to finance, construct, and charge fees to provide transportation. Eligible for specific depreciation and investment tax credits.
Private Donations	Land or capital contributions by businesses and private citizens for improvements that have strong private interest. Donors benefit from tax deductions and access.
Debt Financing	
Bonds	Appropriate for high front-end capital expense where a tax or fee can be pledged for debt service. Good source for obtaining large amounts of revenue quickly, although local government's authority is usually regulated by the state.
Participation Trust Certificates	Used to provide evidence of ownership to an investor who leases property back to the agency. Secured by asset and cash reserve fund. Interest to investor is tax-exempt and there is low risk.
Grant Anticipation Notes	Can be issued upon contract execution to provide working capital before receipt of government subsidies, grants, or reimbursements. Interest is tax-exempt, and payment is guaranteed by municipal revenues.
Zero Coupon Bonds	Issued by public agencies at price below face value and at a deferred unspecified interest rate. Discounting maturity value provides competitive, tax-exempt yield.
Interest Arbitrage	Investment of borrowed funds at a higher interest rate than is being paid. Can generate significant amounts of revenue, although public agencies face severe penalties for use other than to reinvest debt service reserve funds or to temporarily reinvest unspent bond proceeds.
Vendor Financing	Loan provided by manufacturer for value of equipment. Often used to gain competitive bidding advantage. Does not generally require specific revenue pledge, although local agencies need authority to issue.
Private Leasing	Ownership of equipment or building by a private firm that then secures a bond and leases equipment or building to agency. Lease agreement is structured so that bond proceeds pay for most of the purchase price. Private firm benefits from accelerated depreciation allowances.
Private Property Utilization	
Leasing or Selling Rights	Involves the sale or lease of undeveloped land, subsurface rights, or air rights surrounding a public facility. Can generate site-specific revenue and can provide a steady, long-term cash flow.

Leasing/Selling Existing Facilities	Can be a potential revenue source, although it may require capital outlays and sophisticated real estate and development skills. Amount of revenue is affected by availability and condition of facilities, characteristics of local real estate market. May require approval if facilities are funded by federal or state sources.
Land Banking	Involves the process of purchasing land and holding in anticipation of future use. Substantial cost savings possible, although large capital outlays are required and some states may prohibit use.

Special Revenues

Advertising Fees	Includes charging fees or taxes on billboard advertising and renting space on public facilities such as parking meters, bus shelters, vehicles, and terminals. Local government may require authority to monitor advertisements.
Lottery	Allowed by several states, although very few allocate revenue to transportation. Can result in substantial revenue, although state legislation is required and operation involves close control and management.

Enhancing Revenue Picture

Contracting Services	Involves contracting out work to reduce costs or meet peak requirements on profitable activities. Allows greater flexibility in adjusting program size.
Budget Indexing	Automatic adjustment and guarantee of transportation revenues to meet rising costs. Permits better long-range planning and programming and results in part of the budget being immune to inflation.
Terminating Exemptions	Phasing out exemptions to special user groups and on alternative fuels. Has potential of recapturing signficiant amounts of revenues.
Cash Flow Management	Shifting from an accrual to a cash-based financial management system. Can result in one-time source of additional revenue and generate significant interest on cash balances.

PACKAGING THE FINANCIAL PLAN

A successful financial plan is credible and has been integrated with other needs and demands for transportation services. Each financing need requires a unique approach, and the climate for the process varies with each local government. This stems from different attitudes toward goals and policies, political constraints, legislative limits or requirements, and bureaucratic tradition. Packaging the financial plan therefore involves working with other levels of government, other affiliated departments within the local jurisdiction, and the private sector to maximize eligibility for grants, loans, and other forms of financial assistance. This is a complex process that frequently involves interdepartmental decisions and adjustment of priorities.

Dependable funding can be instrumental in conducting a well-planned and orderly program. Therefore, it is helpful if revenues can be dedicated for local transportation and if additional funds can be authorized when delay, inflation, and higher standards result in increased costs.

Timing can be a significant factor in large-scale projects for which land acquisition and construction costs are heavily concentrated in the early years. Debt financing programs can sometimes be applicable, especially when cash flow from other financing sources may not be adequate. Generally, large districts with a well-developed tax base tend to be preferable for financing in the early years where large amounts of capital are needed. Local tax districts can be used to fund later capital outlays or operating subsidy needs where interests and support are more localized.

The following factors are important when evaluating alternative finance sources:

- Public acceptance
- Administrative costs and efficiency
- Institutional feasibility
- Revenue potential
- Revenue source preemption by other governments
- Efficiency
- Equity of distribution of costs and benefits
- Resistance by affected groups

Existing tax sources seem to be preferable because of existing administrative structure, less need for new legislative action, and established public acceptance. More innovative techniques have uncertain results, require more analysis, and may require a stronger marketing approach.

However well-planned a financial plan may be, there are likely to be budget and schedule changes. Labor practices, affirmative action, environmental factors, and competition among bidders will affect the total costs of a program. The challenge of the program manager is to deliver the product as close to budget and schedule as possible and at the same time respond to changing community concerns and fluctuations in the economy.

SELLING THE PLAN

In general, selling the financial plan involves keeping decision makers, legislators, and constituents informed about program developments, available resources, and the consequences of program decisions.

It is important to develop a marketing strategy early in the project. This strategy can be used to encourage widespread participation in the planning process and to inform the public and local officials about the proposed projects, the budget level, and the techniques proposed to meet revenue shortfalls. It can also identify benchmarks in the process that will require coordination and outside review. It may be helpful to give one staff member overall responsibility for liaison on the plan.

An effective marketing strategy requires a cooperative attitude and close liaison with the state government, especially if state enabling legislation, a bond referendum, or a diversion of tax funds will be required. State officials will be concerned with equity in the apportionment of projects and in the financial burden. They will want assurance that long-term commitments will be met. Cooperation with federal agencies will also be needed to prepare applications for grants and loans and to obtain federal-aid funding.

An important step in developing a marketing strategy is to identify those people with a vested interest in the project. Their support will be essential to the success of the program. Stressing the benefits of the program is more likely to gain their support than trying to sell the program. However, they need to be assured that their objections, interests, and problems will be addressed by this program.

Participation is necessary from all interested sectors—social, economic, political, business—as well as the news media and related special interest groups. These citizens can help in generating public support if they feel the funding requirements are valid. Needs, funding proposals, and any changes need to be carefully explained so that constituents are confident of exactly what is to be funded, how it benefits their part of the community, whether they can

trust the government to deliver the program on budget, and what voice they may have as decisions are being made. The information will be important input in allowing them to compare the project with other proposals and to weigh both its benefits and disadvantages easily.

It is wise to work with the media to avoid misinterpretation of plans before they are ready for presentation. Keeping good press relations and at the same time keeping the planning process open and responsive require great care and attention. Media involvement minimizes the chances of the press incorrectly reporting information and can act as a positive force in forging consensus for a financing plan.

Financial planning needs to concentrate on the long iterative process that involves a broad range of constituencies. The process itself appears to be more important in determining the ultimate success of the program than does the technical financial plan. While a good plan is founded on a sound technical base, the responsiveness to the public's perceived needs for services and the involvement and commitment of the entire community to the transportation plan were identified as the key elements for success in achieving the transportation program. As one of the workshops pointed out: "Maybe the process [planning] is more important than the product [the plan]."

Part 2

Presentations

Case Study on Local Financing Techniques: Atlanta, Georgia

Erskine S. Walther
Transportation Institute, North Carolina A&T State University
Greensboro, North Carolina

INTRODUCTION

The primary subject of this discussion is a review of financial and service planning processes in the Atlanta, Georgia, metropolitan region as they apply to transportation, both transit and roadways. The objective is to discover how a financing and service planning package is developed and marketed.

This effort involves two primary tasks—review of the region's planning process and discussion of any packages that may have been developed by the process. While this discussion is concerned with the planning process task, a greater degree of attention and detail is devoted to discussion of financing packages.

The transportation planning process in the Atlanta region has some structural and procedural differences from many similarly positioned communities around the nation, but the core elements of the process are not particularly different, and a detailed treatment is unnecessary. The only true package to be developed in the region is that supporting the 1971 Metropolitan Atlanta Rapid Transit Authority (MARTA) referendum, and, therefore, it will receive the most attention—not because it produced a stunning victory, which it did not. However, it provided the margin of victory and has had long-term benefits not originally anticipated.

THE ATLANTA METROPOLITAN AREA

In a legal sense, the Atlanta metropolitan district is composed of the seven counties (Clayton, Cobb, DeKalb, Douglas, Fulton, Gwinnett, and Rockdale) forming the Atlanta Regional Commission (ARC), the region's Metropolitan Planning Organization (MPO). In an economic development sense, the metropolitan district comprises nine counties and is beginning to embrace parts of additional counties as well. Indeed, the growth of urbanization beyond the boundaries of ARC is one of the emerging problems in transportation planning in the region.

Transportation planning in metropolitan Atlanta does not speak with one voice, at least not in the short run. The central pillars of transportation planning are ARC's long-term plan and the MARTA rail system.

THE ATLANTA REGIONAL COMMISSION

ARC was formed in 1972 by state law, to undertake planning functions within the seven-county Atlanta metropolitan region. This required written agreements with the seven county governments, the city of Atlanta, and 53 municipal governments within the region.

A key agreement is the Triparty Agreement among ARC, MARTA, and the Georgia Department of Transportation (GADOT). This cooperative agreement is of particular importance in that it brings three of the most powerful organizations in the region into regular and structured contact, and led to the development of mutual goodwill and respect. This cooperative spirit also affects the other governments comprising the planning region, and ARC is, on occasion, the only organization on speaking terms with all other organizations in the region.

In terms of transportation planning, there exists a pre-ARC regional plan developed in the 1960s that envisioned a sizable network of new freeways. In the post-MARTA referendum era, virtually all of the new freeways have been deleted from the long-term plan in favor of upgrading the existing freeway system and expanding the MARTA rail system.

Several references have been made to the referendum MARTA rail system and even to a post-MARTA referendum era. These references acknowledge what is probably the single most important event in Atlanta's transportation past, present, and future: the 1971 passage of an addition to the sales tax to fund the construction of a 53-mile rapid rail system. While the details of this event will be reviewed later, what is important for present purposes is an understanding that the referendum system is viewed as an inviolate commitment. The referendum system was an existing commitment when ARC was formed. All long-range transportation planning starts from the referendum rail system and the upgraded freeway system.

The abandonment of most of the new freeways contained in the long-range plan developed before the existence of MARTA and ARC is evidence of the impact of the rail system on long-range planning. While it is true that other factors such as highway construction costs and neighborhood opposition to particular freeway projects have played a role in the abandonment decisions, the existence of the referendum MARTA rail system provided an alternative to freeway construction that made abandonment more reasonable and more palatable.

The long-range Transportation Improvements Plan (TIP) was developed in 1977. This plan endorses the referendum rail system and addresses alternatives for the postreferendum system period. The plan calls for a 101-mile rail system serving five counties and substantial bus service in seven counties. The rail and bus systems presently serve two counties.

The long-range plan also includes various highway projects. Some corridors will experience substantial transit and highway improvements if the long-range plan is realized.

The plan was developed by constructing a series of global scenarios, ranging from all highways with no new transit to all transit with no unprogrammed highways. Highways and transit have been integrated in the planning process and treated as complementary mobility techniques.

The ARC has been unsuccessful in encouraging the non-MARTA service counties to explore transit alternatives to their growing congestion problem. This encouragement has taken the form of funding for transit feasibility studies as well as the reserving of a share of the region's UMTA

Section 5 monies for each of these counties. The same concept is being used with the region's Section 9 funds, but these funds can be reserved for only 1 year before reallocation to MARTA.

The ARC planning process establishes a framework within which the local planning for roadways occurs. Regional roadway plans are contained in the 8-year regional TIP. When a project is placed in TIP, its costs must be consistent with the available projected funding. With regular cost projection updates, this policy has been able to keep project costs to within approximately 10 percent of the available funds. Local governments find this structured program, balancing projects with funds, to be beneficial. It is a policy adopted by the ARC Board, and the Board is composed of the member governments. A recent update of the TIP revealed potential difficulties in this policy.

Local activities revolve around this rather standard TIP process. Local governments set priorities for projects, with rankings based on local policy and politics. These project listings by priority are used locally or sent to other appropriate organizations, such as ARC or GADOT. Improvements involving federal-aid highway funding are sent to GADOT for a final decision.

Most local street and road projects do not require regional or GADOT attention. However, ARC does have a special review process for major projects considered to have regional impacts. For such a project, governmental units comprising ARC must review and approve the project. Any extensions to the MARTA rail system or major freeway initiatives would fall within this review process. Otherwise, local governments have the usual freedom to plan and execute local projects with local impacts funded from local resources.

One local initiative in this respect is the recently developed Fulton County cost-sharing program with private developers for off-highway improvements. Under this program, developers are required to contribute to an escrow account a pro rata share of the costs of specific off-highway improvements, based on estimated traffic generation, and the improvements are paid for with funds from this account.

ARC has a Board-adopted policy of maintaining a balance between projects in the TIP and the availability of funds. Regular updates for the 2-year annual element of the regional TIP have served to maintain this balance on an ongoing basis. These updates are now indicating that funding will not be sufficient to support all the roadway projects contained in the current plan. Therefore, ARC is recommending that proposed projects be trimmed back and new funding sources developed. ARC will attempt to develop the revisions in the projects and the new funding sources. This situation bears watching, as it may produce the first packaging of roadway projects with a particular funding mechanism in metropolitan Atlanta. The 1971 MARTA referendum package has been the only project so presented to date.

A joining of roadway improvements with a financing mechanism would constitute a major and important change for metropolitan Atlanta. There is no unified financial plan for roadway improvements beyond the projections for individual projects contained in the TIP. Financial planning occurs at each level of funding at the present time. This is a factor in the realization of projects involving multiple organizations, even when there is coordination at the planning stage. A few examples of such difficulties will be noted during the discussion of MARTA activities.

THE MARTA PACKAGE

The 1971 MARTA referendum is an excellent example of packaging and marketing a financial and service plan as a joint proposal. Even though the referendum passed by a narrow margin, the system enjoys broad-based, strong community support. In the main, this support rests upon two factors:

- Packaging of the original proposal
- Effective delivery of items in the package

The MARTA system was originally placed before the voters in 1968 and suffered a major defeat. Subsequent investigation and analysis indicated several reasons for that defeat, including

- The use of the property tax as the funding mechanism
- Poor or no communications with major segments of the community; the Black community in particular
- A proposal that focused on long-term benefits but paid little attention to immediate transportation needs
- The absence of firm federal funding commitment
- The perception that the proposal was being rammed down the public's throat

In short, MARTA supporters moved too quickly and without proper attention to developing a consensus of support among the various communities of interest in the Atlanta region.

The period between 1968 and 1971 was spent addressing these errors. The funding source was a major concern, as it was a primary factor in the defeat of the 1968 referendum.

Several alternative sources of funding were examined during the inter-referenda period. The primary sources considered were

- The property tax
- A gasoline tax
- A cigarette tax
- Benefit assessment districts surrounding stations and rail lines
- An income tax
- A commuter income tax
- A sales tax
- Combinations of those listed

Even though the income tax option received considerable attention, serious consideration narrowed to the property and sales taxes. The other options were eliminated from consideration because they either did not generate sufficient revenues or did not have political support.

In the choice between the property and sales taxes, the dividing lines of support emerged with the city of Atlanta favoring the property tax and the counties favoring the sales tax. MARTA had no preference.

The debate over the funding mechanism continued until the mayor of Atlanta agreed to support the sales tax, if the other parties would agree to free transportation. This statement led to the political consensus to support a sales tax, coupled with a low fare structure, the exact nature of which was to be developed later.

The fare structure that emerged was a 10-year policy with a 7-year commitment to a 15-cent fare with free transfers (the existing fare was 40 cents with 5-cent transfers).

The MARTA supporters went to the state legislature and community meetings with a combination package of a sales tax of 1/2 percent and a 7-year 15-cent fare. While legislative hearings were being held, the sales-tax rate and the role of the state government underwent major changes. During the community meeting process, MARTA policy became better defined and was committed to paper, with respect to a number of issues of importance to various communities of interest.

The original sales-tax rate considered was 1/2 percent, but during the legislative hearings, the rate was moved to 3/4 percent as cost numbers and fare-subsidy numbers became more detailed.

The state of Georgia continued to be the funding source for the proposed MARTA system over and above the sales-tax revenues. Governor Jimmy Carter was advised that the

collection of a 3/4 percent sales tax would present the state with major administrative difficulties, and Governor Carter proposed that the rate be moved to a full 1 percent, and the state would no longer contribute to the costs of MARTA. MARTA supporters were willing to accept this suggestion.

To secure the support of the fiscal conservatives in the state legislature, a number of compromises were made. A major concern of these legislators was the level of the fare subsidy. An agreement was reached that the sales-tax rate would drop to 1/2 percent at the end of 10 years, and the system would then be required to recover 50 percent of its operating expenses from the farebox. The 10-year time frame was selected because the construction plan called for completion of the heavy construction phase within 10 years. The 10-year fare policy reflects this provision of the legislation. Since the passage of the referendum, MARTA legislation has been amended to extend the full 1 percent rate until June 30, 2012, and to impose the existing low farebox recovery requirement of 35 percent of the previous year's operating cost.

The core part of MARTA's package was formulated through a process of political consensus that was being built by local governments and political entities through compromise in the state legislature. When this legislation was passed by the Georgia State Legislature in 1971, the process of community building began in earnest.

A major component of the MARTA package was a series of formal policy statements adopted by the MARTA Board of Directors. A key policy statement was the 10-year fare policy that committed MARTA to 7 years of 15-cent fares followed by 3 years of annual 5-cent fare increases. After 10 years, the fare would be set at the level necessary to meet the farebox recovery requirement contained in the enabling legislation.

The financial package contained a 1 percent sales tax for 10 years, declining to 1/2 percent thereafter, and a 10-year low-fare policy. The service component of the package began with a 53-mile rapid rail system and certain specified improvements to the bus system.

Several aspects of the service component grew out of numerous community meetings and were incorporated in formal commitments by the MARTA Board. Such items as bus shelters, air-conditioned buses, and service levels were prominent aspects of bus system improvements contained in the service component package.

Another important aspect might be termed the community responsibility component. The Black community came to MARTA with a set of concerns that, if satisfied, would ensure their support. MARTA responded with a series of Board-adopted formal policy statements. This approach to learning community concerns and developing formal policy commitments that could be addressed within the abilities of the system was followed in a wide range of community matters. Prominent among these policy statements are those that address

- Fair treatment for persons displaced by MARTA rail construction
- Equal employment practices
- Minority business enterprise procurement policies
- Equal service levels to all segments of the community

The package that went before the voters included a clearly stated financing mechanism, a written commitment to low fares, a service package statement for bus and rail services, and a series of positive policy commitments on matters of particular interest to various communities in the Atlanta region. Together these items presented a rather strong package, but the vote was close. The result should not, however, detract from the long-term value of this well-developed package.

The MARTA system presently enjoys extensive popular support. This situation rests, in large measure, on two primary factors.

First, the referendum package contained some benefit for most segments of the community and, second, MARTA has delivered what it promised. As one observer stated: "They had a public trust placed in them and they delivered on that trust." As another commented: "There are very few people who cannot see some direct benefit from the MARTA system." It seems apparent that a well-designed package of financing and service has benefits far beyond its initial usage.

For the purposes at issue here, MARTA is a clear success story, built by hard work, imaginative thinking, and extensive interaction with the communities of interest to be affected, and rested on a solid package that addressed multiple issues of concern and interest. No matter how commendable these pillars of success may be, the most critical element in the long-term success of the referendum package has been delivery on the public trust.

TRANSIT-HIGHWAY COORDINATION

Transit planning and its coordination with highway planning occurs primarily within the framework of ARC, and especially under the Triparty Agreement among ARC-MARTA-GADOT. The basic responsibility and most of the activity for transit planning rests with MARTA. The ARC long-range plan coordinates transit with MARTA, highways with GADOT, streets and roads with local governments, and each with the others. ARC also participates in various short-range planning and coordination activities with MARTA rail and local governments, as well as with the GADOT. Results of these effort have been mixed.

To illustrate two aspects of the planning process involving the transit-roadway interface, two examples are worth consideration. Both are either failures or successes, depending on which part of the process, from planning to implementing, is being considered.

During the preliminary engineering of the MARTA rail system, a series of studies called Transit Station Development Studies (TSDS) was undertaken. These studies contained highly detailed land use and traffic pattern analyses and addressed such questions as what a local government wants from the station and what MARTA can do to satisfy their aspirations. One of the benefits of these studies is that the MARTA rail system is planned rather than engineered.

Out of these studies came the decision to merge two North Line stations into a single station and make major improvements to the intersection involved. The intersection improvements made the station merger desirable. All concerned parties agreed, and the agreement became part of MARTA's rail system design and the region's TIP. The station is 98 percent complete and no construction has begun on the intersection improvements because of difficulties in obtaining rights-of-way. As one planner put it: "Is that coordination or isn't it?" He had no ready answer. The plans were coordinated, but the result is not yet coordinated.

Another illustration that is a result of these studies is the decision to construct a ramp from an existing MARTA rail station parking lot directly to the adjacent Interstate highway. All parties have agreed, and the ramp is in the regional TIP. However, no one thinks they should have to pay for it. The planning was coordinated, but no ramp exists yet.

These two examples point out a problem in the regional planning structure for metropolitan Atlanta. There is a central planning agency, ARC, and a structured planning process for the region. Plans tend to be constructed with a regional perspective, and transportation alternatives tend to be coordinated.

This planning agency is not a meaningful dispenser of funds, and there is no coordinated financial planning for the region's transportation system. The planning process has no direct and meaningful structural linkages to the funding process. While the planning may be regional in scope, the

funding is predominantly local in scope. Further complicating the transit-highway coordination process is the total lack of interaction between transit and highways on funding matters, with the occasional exception of a particular project.

This structural separation of transportation planning and financing renders any effective packaging of service and financing for multimodal transportation projects virtually impossible.

CONCLUSION

There are positive and negative lessons to be learned from the Atlanta experiences, as this review of transportation planning, financing, and coordination in the Atlanta metropolitan region indicates. The regional planning process placed special emphasis on the 1971 MARTA referendum package, which was approved, and points out that the formulation of a coherent package of financing and service has short-term benefits when selling the transportation service, but, more important, can build a community support base that may produce significant positive long-term effects. Certainly, this was the case for the MARTA package.

In addition, the review has shown that coordinated multimodal transportation service planning has definite long-term benefits, in that each mode may draw upon the strengths of the other and growth may be more structured and orderly. When service planning is structurally divorced from financing authority, the positive impacts of joint-service planning are lessened and, in some cases, negated. One approach to this particular problem is a regional planning entity with financial authority of some type, but this may not be politically acceptable in all situations. In that case, goodwill and jointly developed service goals must be relied on to provide incentives to follow the service planning with a timely flow of financial resources.

Financial Elements of Urban Transportation Planning: Puzzling Over the Metropolitan Transportation Puzzle

Bruce D. McDowell, Senior Analyst
Advisory Commission on Intergovernmental Relations
Washington, D.C.

INTRODUCTION

The fiscal stress being faced by the transportation community across the nation and the traditional straight-line financial planning process commonly used for metropolitan transportation do not work well together. It can be argued that this mismatch will be overcome by a redefinition of the financial planning process to make it more iterative, politically conscious and sensitive, open, and mature.

This argument assumes there will be little or no change in the fragmented patterns of governmental and intergovernmental organizations and responsibilities in most of the nation's metropolitan regions in the foreseeable future. Usually, the opposite assumption is made, followed by a prescription for reducing governmental fragmentation. However, such prescription frequently falls on deaf ears. It would be refreshing to look at opportunities for improving financial plans by working with the organizations and programs already in place.

Moving financial planning toward greater effectiveness within its present environment requires different skills than the readily available technical ones of forecasting, costing, and budgeting. This approach focuses directly on the scarcer skills and resources needed for managing interpersonal and intergovernmental dynamics.

The tasks undertaken here are to

- Refine the concept of financial planning to meet today's circumstances
- Examine alternative approaches to financial planning that might yield better results
- Identify those organizations and individuals who hold financial power
- Appraise alternative methods of linking separate revenue and expenditure streams to commonly held regional goals and strategies
- Evaluate the roles of metropolitan planning organizations in the linking process
- Characterize the types of skills needed to successfully plan metropolitan transportation finances

THE FINANCIAL PLANNING TASK

Financial planning involves the process of matching resources to needs. In the standard concept of this process (Figure 1), planners are expected to set forth a plan for transportation facilities and services that will be financed and implemented by others—each step following the other in a straight-line progression. In times of plentiful funding, this concept works well, and financial planning is a rather straightforward matter of segmenting the plan into discrete projects, developing cost estimates for each project, aggregating costs, comparing the total to revenue forecasts, and adjusting project priorities to balance costs with revenues.

With cutbacks in some traditional revenue sources, fluctuating pressures of inflation, shifting responsibilities among the levels of government, and multiplying proposals for improving productivity, this straightforward process is too rigid. The separation of planning, financing, and implementing no longer produces satisfactory results.

For at least a decade, what has been developing instead is a more complex planning process (Figure 2), in which the cost implications of building, maintaining, and operating transportation systems have become embedded in all parts of the planning process. This became very explicit with the advent of the federal requirement for Transportation System Management (TSM) analyses in the mid-1970s, and is being reemphasized now with requirements for stable financial commitments and maximum local shares in new federal regulations for major capital projects. The substantive transportation plan has become at least as important to financial success as revenue forecasts and revenue enhancements. As finances tighten, productivity improvement and proposals for shedding public responsibilities to the private sector may receive even more attention in some places than proposals for increasing revenues. When cost and revenue estimates do not match, the nature and extent of transportation services are as likely to be reevaluated as are the yields of present and proposed revenue sources.

At this point such concepts as alternative types of services, alternative service providers, revised standards of service, contracting out, and negotiating private sector partnerships come into play. In other words, financial pressures may lead us to plan a different transportation system than was originally contemplated, and to pay for it with a more complex financing package than the one first proposed. Instead of a simple financial plan consisting of an operating capital budget, the result may very well involve a series of

- Investment strategies
- Spending plans
- Revenue plans
- Debt management plans
- Marketing plans
- Service shedding plans

There may be many plans in each category, and each plan may be the responsibility of a different agency and dependent on a separate—and possibly unpredictable—source of funds restricted to specified uses. In addition many plans may contain elements of strategy, rather than firm dollar commitments. For example, a revenue plan may

- Count on grants not yet awarded
- Contain tax increases the state legislature would have to enact or a local referendum that would have to be passed
- Propose private land donations, leases, value captures, or transit subsidies that must be negotiated

Coordinating and relying on this broad array of financial plans often proves to be a challenging task.

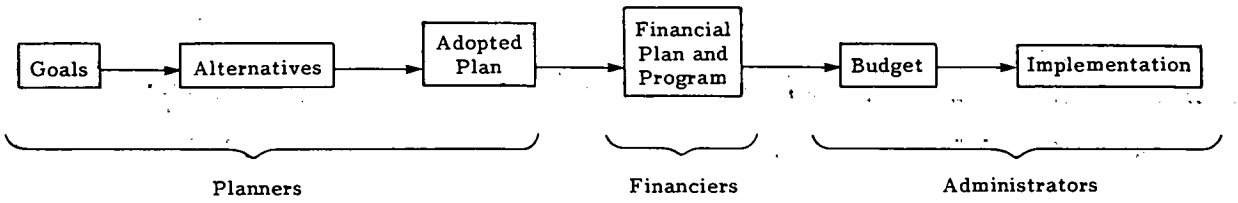

FIGURE 1 Traditional transportation planning (for good times).

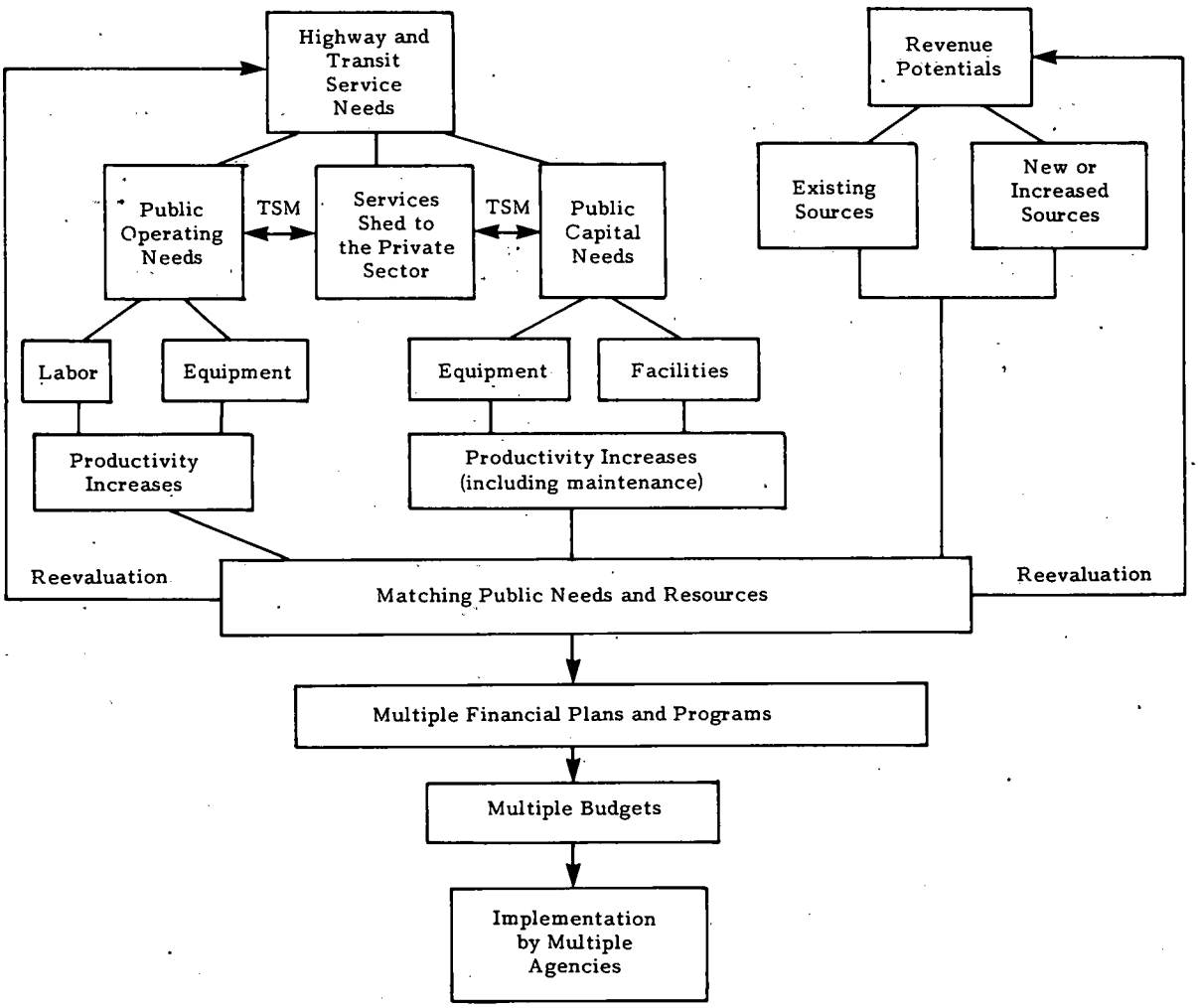

FIGURE 2 Redefined transportation planning (for cutback times).

ALTERNATIVE APPROACHES TO FINANCIAL PLANNING

The basic tension in financial planning comes in deciding whether transportation needs should generate the transportation budget or whether budget policy should generate the transportation program. Together with the age-old dilemma of whether to pursue strategic or project planning, this tension sets the stage for many controversies. Some combination of these approaches generally emerges. In times of cutbacks, the budgeteers have more going for them than the planners, unless the planners can demonstrate the cost-effectiveness of each proposal.

The effect of tight-money times and cost-conscious planning is to blur the traditional stages of the planning process that step down from broad system plans to corridor plans, to moderately precise multiyear programs, to specific projects. When costs were not critical, it was possible to plan metropolitan area-wide transportation systems, using very rough financial estimates, and let precise cost estimates wait until the project design stage, when implementing agencies became involved. Likewise, when metropolitan plans needed to consider only physical transportation routes and facilities, operating cost estimates were left to the operating agencies. These cost details now are moving into the metropolitan planning arena because of both their immediate and long-term effects over the life of the planned facilities and equipment. Who should prepare such cost estimates: metropolitan planners, implementing agencies, or some combination of the two? Tight-money times tend to blur agency responsibilities. It is no longer clear which comes first—the strategy or the project.

Another factor in blurring responsibilities is the pressure over the last decade to move planning closer to implementing. This can be done by giving planning agencies a degree of control over operating agencies or, conversely, by placing more of the planning function in the implementing agencies. The federally required Transportation Improvement Program (TIP) was an attempt to bridge the gap between planning and action without making fundamental changes in responsibilities, but it has not been entirely successful. As a result, making planning more realistic and effective has led to continued controversy, and planning funds have started shifting to the implementing agencies.

The danger in this shift is that long-range visions and objective analyses, unencumbered by vested operational interests, will be sacrificed for short-term administrative effectiveness. Some elected officials feel that the implementing agencies are substantially more staff-dominated and less-hospitable places in which to debate basic policies than the metropolitan planning agencies. In the Advisory Commission on Intergovernmental Relations (ACIR) 1983 survey of city, county, metropolitan planning, transit agency, and transit union officials in 56 metropolitan areas, 52 percent of the respondents corroborated these misgivings by favoring the concept of separating transit policy making from operations (1, p.96).

One partial antidote to blurring everything in the metropolitan transportation planning process is to sift out the purely local projects having no interjurisdictional impact and cut them loose from the regional program. Some projects are outside the scope of regional planning, and relaxed federal regulations for urban transportation planning and programming allow reduced detail for others. There is room for further movement in this direction. The results could help streamline the metropolitan planning process, while removing an irritant to local governments and releasing local energies for initiating needed innovations.

FRAGMENTED FINANCIAL POWERS

Financial powers are real; planning powers are not, even when embodied in officially adopted plans. The inherent weakness of metropolitan plans was recognized in the federal comprehensive, continuing, and cooperative (3C) requirement for transportation planning, which makes any project not included in officially adopted TIP plans ineligible for federal funding. This requirement was an attempt to unify financial powers fragmented by separate federal highway and transit grant programs. Many state highway agencies opposed this requirement and found ways around it. Directly funded transit agencies tend to parry planning policies with which they disagree, leaving financial power in the transportation field—real power—highly fragmented.

There are four federal transportation planning grant programs and seven principal highway and transit implementation programs. Table 1 depicts this fragmentation of power. Local governments and metropolitan planning organizations (MPOs) each receive funds directly from only two of the eleven programs, while states and transit operators each are funded directly by five programs. Although MPOs play a role in approving the use of funds in ten of these eleven federal-aid programs, others play equally strong or stronger roles. In no case does the MPO receive implementation funds itself that it could pass on to implementors willing to follow the MPO plan. Instead, the implementors already own the funds and usually initiate the projects they want to pursue.

Transportation funds from state and local taxes, transit fares, and other sources go directly to the implementing agencies in most cases and are budgeted independently. Operating primarily under federal rules and regulations, MPOs have little leverage over these non-federal funds.

The financial plans for transportation in most metropolitan areas are the separate budgets of the multiple transit providers, the multiple local governments, and the state transportation departments.

LINKING SEPARATE REVENUE AND EXPENDITURE STREAMS

The main task of a metropolitan financing plan for transportation is to link these separate revenue and expenditure streams to a common set of goals and strategies, insofar as they are of regional significance. There are many different methods for attempting this task. Some are centralizing, others are decentralizing, and still others are mixed.

Centralizing Methods

The most straightforward way to link the multiple transportation revenue and expenditure streams in metropolitan districts is to channel them through a single point. For example, if the federal grant funds to be spent for highways and transit in a given metropolitan area were allocated directly to the MPO for sub-allocation in accordance with the MPO's own planning, substantial coordination would be expected. Many diverse and strong political pressures would focus on the MPO in the process, but the mere fact that a single organization would be responsible for all final decisions could be expected to elicit at least a modicum of internal consistency among projects. The Metropolitan Transportation Commission in San Francisco, California, probably comes closest to this model.

Another option is to reduce the number of grant recipients, even though it might not be possible to have only one. An example is the transit funding agency illustrated by the Chicago Regional Transportation Authority (RTA). RTA is not the region's MPO and has nothing to do with highways, but, for transit, it comes close to holding all the cards.

Still another centralizing option is for the MPO to assume a strong mediation role. For this to work, a significant number of the organizations holding transportation finance power in the region would have to agree to negotiate their differences for the sake of realizing mutual benefits. In such a situation, the MPO could offer a forum for the negotiations, perhaps with the help of a professional mediator. This technique—referred to as negotiated investment strategies (NIS)—has been tried in St. Paul, Minnesota; Gary, Indiana; and Columbus, Ohio.

A fourth centralizing option is for the MPO to promote cooperation and coordination by informal means (2). This

TABLE 1 Principal Federal Aid Programs Supporting Metropolitan Transportation

Programs	Principal Recipient				Principal Project Approval Agencies					
	State	Local Government	Transit Operator	MPO	FHWA	UMTA	State	Local Government	Transit Operator	MPO
Planning										
Section 8 Transit Technical Studies				X	X	X				X
Section 9 Transit Block Grant			X						X	X
PL Grants				X	X	X				X
HPR Grants	X						X			
Implementation										
Section 3 Discretionary Transit Capital Grants			X			X			X	X
Section 9 Transit Block Grants			X						X	X
Urban System Highway and Transit Capital Grants		X	X					X		X
Interstate Substitution Highway and Transit Capital Grants	X	X	X		X	X	X	X	X	X
Interstate Highway Grants	X				X		X			X
Primary Highway Grants	X				X		X			X
Secondary Highway Grants	X				X		X			X
Totals	5	2	5	2	6	4	5	2	4	10

Source: ACIR staff compilations, 1984.

approach could include such techniques as (a) voluntary committees and task forces, established for specific purposes and on a temporary basis; (b) regular meetings of the responsible general managers of transit agencies and other key transportation officials; and (c) designated liaison staffs within the major transportation agencies who are specifically charged with developing stronger communication channels among cooperating agencies. The idea is to develop close personal relationships and professional ties among transportation officials as an important means of creating a healthy and productive "web of trust," that can lead to staff sharing and staff collaboration among agencies, smoothing their coordination activities. Some such activities are found frequently, but they are more highly developed and more fully used in certain places in California, such as San Diego and San Francisco.

Decentralizing Methods

Delegation of responsibilities is the key concept in techniques that decentralize financial planning. One means of delegating is to establish a regional planning framework to guide specific planning by local governments and other transportation agencies. The separate plans can be reviewed by the MPO for consistency with regional guidelines and sent back for further work, if found deficient. This process is used in Minneapolis and St. Paul, Minnesota, as well as in Oregon and Florida.

A variation of this delegation theme is to subregionalize the planning and negotiating process. Under this agreement, only unreconciled differences surface at the regional level. State or county lines that divide the region often give rise to this approach, which is often reinforced by suballocating transportation funds to the subregions, either by formula or by some process of negotiation.

The most separatist approach is to encourage competition among transportation agencies, on the assumption that the most cost-effective and successful ones will be rewarded and create the biggest benefits. This is a marketplace-type of rationale that applies more to transit than to highways.

Mixed Methods

These centralizing and decentralizing methods need not be applied to the entire metropolitan transportation planning and financing task. The different transportation modes and subregions can be treated differently within the same metropolitan area.

THE MPO ROLE

The obvious question that arises about ways to link the separate revenue and expenditure flows is, "What about the MPOs—weren't they designed to provide these linkages?" This is a good question and needs to be answered.

Present MPO Roles

A recent ACIR study of metropolitan transit evaluated the MPO situation (1). The basic finding was that MPOs are doing a creditable and needed technical job of compiling transportation projects proposed by operating agencies, molding these projects into the TIPs required to administer federal grants, and constraining TIPs to a fiscal level reasonably commensurate with expected federal funding. MPOs routinely juggle priorities and resolve minor issues. Yet, major new initiatives and efforts to resolve big controversies that may have been discovered by the MPO usually were found to occur outside MPOs in the regular political channels occupied by mayors, governors, and legislators. In other words, the MPOs' technical processes and the regions' political processes do not seem to mesh well. Real decision makers do not use MPOs. Nevertheless, once the big decisions have been made, MPOs reflect these decisions in their revised TIPs.

TIP revisions are frequent. As reported in a recent Transportation Research Board (TRB) report, the portions of a TIP annual element not funded, plus the portions amended during the year, may be large enough to create significant potential for changing the intent of the original program (3, p.48).

Obviously, the average MPO is neither the policy innovator nor the financial planning wizard one might suppose it to be after reading what is expected of it.

The Future of MPOs

ACIR's 1983 survey of a broad range of officials in 56 metropolitan areas (1, pp.90-102) revealed, in part, that

- Most respondents saw the MPOs in their districts as needing to (a) expand their scope of planning to meet a broader range of financial, regulatory, and public and private partnership issues, (b) place greater emphasis on strategic reevaluations of the nature of future transit services, and (c) simultaneously meet short-range transit service and productivity improvement needs
- Substantial minorities saw a need for greater coordination of transit plans with land use policies, parking programs, and automobile tolls
- A majority of the respondents felt that the MPOs should make greater use of informal coordination techniques, but there was lukewarm support for expanding representation on the MPO governing boards to include labor and business, and opposition greeted the proposal for giving MPOs greater authority

The conclusions emerging from these findings, as far as MPOs are concerned, are that their current usefulness could be enhanced, but their powers should remain limited. These conclusions are in line with two other recent studies prepared for the U.S. Department of Transportation (DOT) concerning better ways to coordinate urban transportation (2). These studies found that fragmentation of responsibilities was the general case, and fragmentation was likely to persist in the foreseeable future. They laid primary stress on improving coordination through

- Financial and other incentives encouraging public agencies and individuals to embrace cost-effective transportation improvements
- A closely knit web of relationships and trust among key individuals in the transportation community
- Specific techniques—both formal and informal—of strengthening relationships among individuals and agencies
- Greater involvement of interest groups and the public as transportation projects are developed, thereby strengthening nongovernmental support

The reports stressed the potential effectiveness of these techniques, regardless of how fragmented the formal organizational structure may be in a metropolitan region, so long as a talented individual coordinator committed to, and skilled in, operating in a public policy environment is assigned the task and is supported by trusting leaders within the community.

In light of the federal government's withdrawal from most programs for metropolitan planning other than those in the field of transportation—including particularly the withdrawal from metropolitan land use planning—state legislation would appear to provide the only other option for strengthening metropolitan transportation coordination. Where strong state action has occurred, as in Minneapolis and St. Paul, Minnesota; Atlanta, Georgia; and San Francisco, California, MPOs do have some worthwhile advantages. Where legislative potential exists in the states for forging stronger links among the multiple transportation financial flows, they should be pursued. However, there is probably more promise in most places in taking the informal coordination route.

SUMMARY

As important as it is for metropolitan transportation financing to have good cost estimates, reliable forecasts, responsive cost accounting, timely facility condition inventories, accurate service performance reports, creative productivity improvement proposals, and correct budget documents, it is equally important to establish cooperative networks for interagency coordination. This may require professional skills in listening, communicating, marketing, mediating, organizing the community, lobbying, and running successful meetings. It is a mistake to think these skills are just common sense that can be applied by any manager. These skills are needed by MPOs and other participants in the metropolitan transportation process. They must be pursued diligently and patiently to achieve success.

MPOs are structured to bring everyone together so they can get to know each other, build mutual understanding and trust, share information, and learn to work together constructively toward common goals. The organizational structure cannot do the job alone. If the participants and facilitators are inept, these contacts can generate discord rather than trust and cooperation, and no matter how good the financial data and proposals are, they are not likely to be coordinated or implemented.

An extra effort to perfect these skills is essential. When it is time to budget for the financial planning staff, some of these non-financial skills should be funded. Substantial dividends in the form of better linked transportation revenue and expenditure streams will be realized.

REFERENCES

1. Metropolitan Transit in the 1980s: An Intergovernmental Challenge. Draft. Advisory Commission on Intergovernmental Relations. Washington, D.C., June 1984.
2. Petersilia and Reno. Operating Multi-Model Urban Transportation Systems. U.S. Department of Transportation, Dec. 1977; Burkhardt et al. Current Institutional Arrangements for Urban Transportation Decisions—and Potential Changes. National Technical Information Service, Springfield, Va., Oct. 1981.
3. E. A. Harper. Transportation Improvement Program for Northeastern Illinois. In Transportation Research Board Record 955, TRB, National Research Council, Washington, D.C., 1984, pp. 41-49.

Case Study on Local Financing Techniques: Denver, Colorado

George J. Scheuernstuhl, Director, Transportation Services
Denver Regional Council of Governments
Denver, Colorado

INTRODUCTION

The Denver region has relied heavily on traditional federal and state funding sources to fund transportation improvements. To respond more rapidly to growing transportation needs in the last 10 years, other revenue sources and mechanisms have been put in place to supplement the traditional sources, and a Regional Transportation District (RTD) was created with specific authority to levy taxes and collect funds in the district. Recently special districts have been authorized and implemented by Colorado statute that allows the collection of taxes for unique capital infrastructure purposes, including transportation, within the geographic bounds of the district. Although these districts are public entities, they generally are operated by developer interests and provide a unique vehicle for the private sector to supplement traditional transportation funding sources.

Despite the traditional funding sources and supplemental sources, funds for needed transportation improvements are not adequate to meet current and future demand for transportation facilities. In recognition of this problem, the Denver Regional Council of Governments (DRCOG) has been involved in identifying and seeking acceptance of additional local and state funding sources for transportation improvements. This paper summarizes that process.

TRADITIONAL FUNDING SOURCES

The principal sources for funding highway improvements in the Denver region and the state of Colorado are the traditional federal funding sources, including Interstate transfer, Interstate 4R, and primary, secondary, and urban system funds. In fiscal year 1985, these sources provide about $233 million. The State Highway User's Tax Fund (HUTF) is derived primarily from the collection of 12 cents per gallon on motor fuel, supplemented by vehicle registration fees and driver's license fees, and is the principal source of state funds for highway transportation needs. In fiscal year 1985, the Highway User's Tax Fund will produce about $320 million. The funds are used for varying transportation-related activities as follows:

Administration, state patrol	17 percent
Maintenance and operation	34 percent
Passthrough to cities and counties	32 percent
Capital projects	17 percent

The funds allotted for capital improvements, currently $54 million, go entirely for matching traditional federal funding sources. It should be noted that substantial funds, under the term "Administration," are used for other than direct highway activities. For example, operation of the State Highway Patrol is funded from the Highway User's Trust Funds, as is trucking regulation and operation of weigh stations.

In an attempt to replace certain funds taken from the Highway User's Trust Fund for other activities, the legislature authorized transfer of sales-tax revenues from transportation-related items from the general fund to the Highway User's Trust Fund. This 1979 authorization is known as the Noble Bill and is due to expire on July 1, 1986.

Of the $290 million available annually for transportation capital projects from federal and state sources, it is estimated that the Denver region receives approximately 40 percent, and collects approximately 55 percent of the motor fuel taxes. With the completion of the Interstate system in the Denver region, it is anticipated that funds made available from state and federal sources may drop to as low as 35 percent by 1990.

In municipalities the sales tax is the principal source of revenue for a wide variety of needs, including transportation. The property tax is the principal general funding source in counties.

DISTRICT FUNDING SOURCES

Regional Transportation District

In 1969 the Colorado General Assembly created the Regional Transportation District and activities were initiated in 1974. This District was created as a political subdivision of the state, with the duties, privileges, immunities, rights, liabilities, and disabilities of a public body politic incorporated to develop, maintain, and operate a mass transportation system for the benefit of the inhabitants of the District. RTD has continued in existence since that time.

Legislation establishing RTD provided a strong, but not entirely adequate, funding base for the District. Currently, RTD has access to five different sources of revenue that include the sales tax, federal grants, operating revenues, interest income, and property taxes. RTD levies a sales tax of 0.6 percent on all commodities, with the exception of food, utilities, and motor fuel. The sales tax is used to provide revenue to finance the operations of the District, defray the cost of construction of capital improvements and acquisition of capital equipment, and pay the interest and principal on the District's securities. The sales-tax revenues yield approximately $70 million annually. In addition to the 0.6 percent sales tax, the legislature has also granted RTD the power to levy an additional sales tax. If the District's electorate should give their approval, RTD could levy an additional districtwide sales tax not to exceed 1 percent. Of this amount, 13 percent could be used for any purposes of the original sales tax, while 87 percent would be used for implementation of a fixed-guideway mass transit system. In the enabling legislation of 1969, RTD received power to levy a property tax. This authority is limited to a maximum of $500,000 and can be levied for no purpose other than for the payment of any annual deficit in the operation and maintenance expenses of the District. The property tax has not been used yet. Annual federal grants of approximately $13 million, annual operating revenues of $18 million, and yearly interest income of $6 million are also funds available to RTD.

In 1972 RTD was also given power by the voters to issue up to $425 million in revenue bonds, backed by sales-tax receipts, to finance the development of a multimodel transportation system. Approximately $45 million of bonds have been issued at this time.

Metropolitan Districts

In 1981 the Colorado Special District Act was enacted, authorizing the creation of metropolitan districts that provide two or more of the following services: fire protection, mosquito control, parks and recreation, safety protection, sanitation, street improvement, television relay and translation, transportation, and water. Formation of a metropolitan district is conditioned on the submittal of a service plan to the Board of County Commissioners. The service plan includes

- A financial survey
- An engineering survey showing how the services will be provided and financed
- A map of the proposed district boundaries
- Estimates of the population and assessed valuation
- A description of the facilities to be constructed
- A cost estimate

The Board of County Commissioners may approve, with conditions, or disapprove the service plan and its compatibility with other services and plans. When the service plan is approved, a petition signed by 100 persons, or 10 percent of the qualified voters, is filed in District Court. A public hearing is held by the court on the formation of the District, and an election is held to approve the formation and elect five directors for the Special District.

The Special Districts have many of the same powers as municipalities. Among these are powers to enter into contracts and agreements to issue bonds, including revenue bonds; charge and set fees, rates, tolls, and so forth that can constitute a lien on property served; employ staff or consultants; acquire property; and furnish services and facilities outside its boundaries. In addition a metropolitan district may provide traffic control devices; enter into agreements with counties, the Colorado Department of Highways (CDH), or railroads; provide street or transportation improvements; use the power of eminent domain; or provide public transportation services. The Special Districts have power to levy and collect ad valorem taxes on all taxable property in the District, create reserve funds, issue negotiable coupon bonds, issue tax-exempt revenue bonds, and deposit money. Local streets and roads have been particular focal points of metropolitan improvement districts, and these have been financed by extensive bonding, paid for by their own property tax revenues.

There is wide variation among localities in relying on developers in improvement districts for financing subregional road improvements. The impact of metropolitan improvement districts in Colorado has been most apparent in the development of fast-growing unincorporated areas, particularly in the southeast portion of the Denver region. It is important to note that while Special Districts are considered public or quasi-public entities in Colorado, many districts consist almost entirely of commercial development and are governed and staffed by developers and major corporations. Therefore, although metropolitan district funds used for street improvements technically are considered tax revenues, these are taxes levied by the private sector on the private sector. In a sense, therefore, Special Districts are a mechanism whereby transportation improvements are financed by the private sector.

In the Denver region, metropolitan improvement districts are rapidly becoming the principal means of providing for local roadway improvements in unincorporated areas. Their use in some of the region's municipalities is also increasing.

Of particular significance in the Denver region is the cooperative action taken by a number of metropolitan districts in funding major arterial and freeway improvements. The Joint Southeast Public Improvement Association (JSPIA) was founded in April 1982 as a cooperative association among Special Districts. By the end of 1985, this association expects to have completed $20 million worth of roadway improvements south of Denver in the I-25 corridor.

In addition to these projects, JSPIA's individual member districts have their own slates of smaller-scale projects, the cost of which is not shared by the association in accordance with their ordinary responsibilities as metropolitan districts. A unique facet of JSPIA is that its members help to fund off-site improvements, that is, projects not necessarily located in each particular member's district but believed to have indirect benefits to all.

In addition to the Special District funding, municipalities and counties use a wide variety of mechanisms, including dedications and tax-increment financing, to fund certain public improvements in their jurisdictions.

PROCESS UNDER WAY TO DEVELOP ADDITIONAL FUNDING SOURCES FOR TRANSPORTATION CAPITAL NEEDS

Despite traditional sources, the funds made available to RTDs for transit, and contributions of the private sector through Special Districts to provide for transportation improvements, an approximate $3.6-billion gap in the funding of needed transportation improvements through the year 2000 has been estimated. This funding shortage has led DRCOG to initiate a process to identify additional funding sources and secure their use.

The Regional Transportation Plan (RTP), adopted in January 1983, identified a substantial deficit in available resources, compared with the costs of projects needed to provide for minimal improvements in mobility. While serving as the stimulus for the process to secure additional funding, this admonition was not new. It has been found in all previous plans prepared for the Denver region. Supporting this statement was the realization among representatives of local governments involved in the allocation of Federal Aid Urban System funds that the amount of federal funding available clearly would not do the job. Concern over initial proposals by the federal government to dispense with urban system funding supported the need for local governments to investigate additional sources of needed transportation improvement funds.

In 1983 DRCOG initiated a study to better define the transportation funding gap, examine revenue sources and funding mechanisms, and develop initial recommendations regarding additional funding sources and mechanisms. The study report, "Financing Transportation Capital Projects in the Denver Region," prepared by Cambridge Systematics, Inc., was completed in January 1984. After reviewing a substantial list of possible funding and financing options, the report made a number of specific recommendations. More important than the specific recommendations were the fundamental concepts embodied in these recommendations. They can be summarized as follows:

1. Traditional financing sources must be relied on if the level of funding necessary is to be achieved. While the study recognized the wide variety of more exotic taxing and financing schemes, such as developer taxes, value capture, parking taxes, hotel occupancy taxes, and so forth, that could be implemented, it emphasized that traditional funding sources, such as motor fuel taxes, sales taxes, and vehicle registration, were the only tax vehicles that could provide the magnitude of funding necessary.
2. There is an urgent need to develop an additional funding source for regional roads, for example, those local jurisdiction roadways that carry the bulk of traffic between and through major communities within the region. The greatest gap between revenues and expenses was projected for these

roadways. This gap reflects the need, inadequacy, and precariousness of authorization of Federal Urban System Funds, the only federal source funds for such roadways.

3. A joint transit and highway transportation funding effort is preferable to individual modal actions. The study recognized the mutually supportive aspects of these two modes of transportation, and strengthened the notion that if transit service was not appropriately provided, far more in the way of highway funding would be necessary to satisfy the travel demands in the region.
4. Jurisdictions should not be legislatively inhibited from pursuing policies to make more efficient use of available public and private financial sources. The study highlighted specific needs for changes in legislation to allow urbanizing counties to levy increased sales tax and to levy taxes only for the unincorporated portions of the county. Other secondary action recommendations included the imposition of consistent developer fees across the region, the leasing of air and ground rights-of-way, an intergovernmental strategy for advance right-of-way reservation and acquisition, a regional road fund pool, a state loan bank, and joint development along rapid transit corridors.

This capital financing study, prepared with the assistance of a broad-based group of private and public sector individuals, provided the foundation for the work under way in the Denver region by the DRCOG Transportation Finance Task Force to establish specific financing recommendations and develop a base of political support for these recommendations. The task force, comprised of local and state elected officials and private sector representatives, has been meeting regularly since early October and is expected to produce recommendations in December.

The next steps in the process include securing the approval of the recommendations by the state legislature and getting the public to accept them.

ISSUES IN THE DEVELOPMENT OF FUNDING AND FINANCING RECOMMENDATIONS

The selection of funding sources and financing mechanisms involves the consideration of a number of factors that may be considered individually, but in the end must be considered collectively in developing acceptable recommendations. The needs to be addressed are benefits, funding base source funds, administration of fund collection and distribution, legality of the funding source, equity, political acceptability, basis of support for the recommendations, benefits resulting from the recommendations, and the financing mechanism. In developing recommendations for the Denver region, the consideration of each of these factors produced issues that needed to be resolved.

Needs To Be Addressed

Most transportation engineers believe the need for additional funding is obvious; however, this is not always the case with decision makers and the public. The magnitude is not always apparent. To provide a firm base for the development of the funding recommendations, the magnitude of needed transportation expenditures was established. While this may appear to be a relatively simple process, certain issues arose in the development of need.

At issue initially was the extent of needs to be addressed. Consistent with the overall goal of implementing RTP, need was focused on RTP projects. To ensure that local needs were also considered, an attempt was made to estimate the relative value of needs on collector and local service roadways. While the determination of RTP needs was relatively straightforward, needs at the local level were more difficult to ascertain, so their level of needs was estimated by projecting sample situations.

Another issue was whether needs should include both capital and maintenance. Inasmuch as maintenance needs were extremely difficult to identify at local and state levels, the decision was made initially to limit needs to capital projects. During the task force deliberations, the question of funding maintenance needs was raised again. CDH, with the help of DRCOG, provided an estimate of the level of maintenance funding required annually through the year 2000. The issue of including maintenance in the funding proposal has not been fully resolved. It is anticipated that only a capital funding proposal will evolve from the task force with maintenance left to be addressed by CDH and the state legislature. This position reflects the priorities of local government relative to raising additional funds and suggests that maintenance should continue to be funded in the traditional manner.

Similarly, funding of highway and transit needs was an issue in the task force. Disagreement among the RTD Board of Directors, DRCOG, and CDH over the extent of the future-year transit system and the appropriate technology has somewhat clouded the prospects of the financing proposal to be a combined transportation proposal. The RTD Board has viewed the Transportation Finance Task Force activities as a mechanism for eliciting a premature response as to the nature of the transit system from the RTD Board, and has been reluctant to identify any specific projects to be funded or sanction a combined transportation proposal. It is anticipated that the RTD Board will make a decision in sufficient time to allow greater specificity in improvements to be made public and agree on a combined transportation highway and transit proposal. Tied to this issue is the potential for upward revision of highway needs if the level of transit service anticipated in the regional plan is not implemented by RTD. This level of need was not initially identified in the study, since the objective of the study was to implement the regional plan. Later in the process, this level of funding was estimated.

Associated with justifying the need for additional transportation revenues was the recognition that transportation needs were in competition with other infrastructure, social, and educational funding needs. No attempt was made to consider these demands directly relative to transportation needs, leaving this for either legislative debate or voter decision.

Benefits of Additional Funding

At the beginning of the task force process, it was decided that if political and public support was to be gained, the public must know what they would be getting with the additional funds. A listing was prepared of specific projects to be constructed if the additional funding was provided. These projects were developed on the basis of technical criteria that included severity of current problems, use in the year 2000, route continuity, and cost-effectiveness. The improvement list was reviewed with CDH to ensure its acceptability. Because the RTD Board is in the process of reviewing the previous Board's decision relative to a fixed-guideway transit system, no specific transit projects have been identified at this time. It is anticipated that these projects will be better defined by January 1985, in time for possible presentation to the legislature by spring of 1985.

Establishment of Funding Base

Of key concern in developing the funding level needed to fund projects in the Denver region was the establishment of expected resources from federal and state sources to be used in the Denver region, and, based on past experience, this level was assumed constant in the future. While the task force has implicitly accepted this position, the State Highway Commission has not adopted such a policy. If this funding base is eroded, even if the recommendations should be implemented, the funds available will not be adequate to meet the region's needs.

Funding Sources

While a number of potential funding sources were identified, few of these sources, with the exception of what might be termed traditional sources, can provide the level of funding needed. The funding recommendations were focused primarily on traditional sources of funds, such as motor fuel tax, sales tax, vehicle registration, and income tax.

Unfortunately, the sales tax that was recommended as the principal source for regional road needs in the capital finance report is coveted by local governments for a variety of local needs, as well as by the state for the possible funding of educational and other statewide needs. The Transportation Finance Task Force clearly identified this conflict and appears to favor only a sales tax on motor fuel as a possible sales tax source.

The geographical unit on which these taxes were to be levied was to be addressed also. It was the initial recommendation of the CSI capital finance report that funding sources be identified for three specific funding tiers. These included the state highway system in the Denver region, regional traffic-serving roadways under the jurisdiction of counties and municipalities, and subregional local traffic-carrying roadways under the jurisdiction of counties and municipalities. With respect to the state highway system, it was recommended in the capital finance study that taxes levied for support of improvements to these facilities be levied only in the Denver region, and funds levied in the region be returned 100 percent to the region without distribution to other parts of the state. This recommendation attempted to focus the incidence and benefits of the tax primarily on the area of need and on the principal users of the facilities. While this approach has appeal, it appears to be viewed negatively by members of the State Highway Commission, who reason that it could preclude the possible levying of additional funds on a statewide basis. It appears that the funding proposal for state highways will include the entire state.

Administration, Equity, and Legality

The manner in which funds are to be collected and distributed was also an issue. The ability to use mechanisms already in place that could collect the additional funds and distribute them, as opposed to creating an additional administrative mechanism to accomplish this purpose, is a key consideration. Tied to this is the question of legality of tax administration. Also of concern was the equity in the distribution of the funds collected. Existing state sources of collection and distribution appear to be preferred. A committee to establish project priorities and funding approval similar to the DRCOG urban system allocation process seems to have some support.

Acceptability

The manner in which the additional funding would be viewed and accepted by taxpayers was also considered. Implicit in the task force deliberations was the desire to include projects in the improvement package to ensure that all areas of the community would receive benefits from the proposal. The inclusion of a transit system, for example, would provide additional mobility in an area where roadway improvements were expected to be minimal.

In addition, the perceived impact on taxpayers was considered in the identification of potential revenue sources. Proposed funding rates were kept within a perceived level of acceptability. A sales tax on gasoline—removing exemption of motor fuel—was suggested to be limited to 3 percent, which is consistent with sales tax on other commodities. The motor fuel tax per gallon was limited relative to what was perceived to be an acceptable upper limit.

The manner in which the funding proposal would be viewed in the state legislature is also of consideration—regional versus statewide taxation. The statewide approach for state highways and a regional approach for regional roadway needs appear to be the more politically acceptable.

Financing Mechanism

While state statutes allow the highway department to issue highway anticipation warrants, the low interest rates authorized effectively negate any possibility for a bonding-type approach for highway improvements. The possibility of bonding was considered by the task force. The Colorado State Legislature's substantial resistance to a bonding mechanism was stated as the principal reason for not pursuing this approach for highway projects. The proposals developed for funding highway projects will apparently be on a pay-as-you-go basis. It should be noted that RTD has the authority to issue bonds.

FUNDING RECOMMENDATIONS

Tables 1-3 identify the preliminary recommendations suggested by DRCOG staff and its consultant, Browne, Bortz, and Coddington, based on the task force's advice. The task force is expected to have reviewed and taken action on these recommendations before the November 1984 TRB conference on local transportation financing techniques. At the state level, an additional 5.4 cent motor fuel tax per gallon is recommended. The recommendation builds on a traditional source with a strong direct relationship to benefits. Particularly there are the additional recommendations that call for the continuance of historical allocations to the region, as well as for the continuation of the passthrough of funds to cities and counties. In providing additional funding for purely local needs, it is hoped support will be generated at the local level. The recommendation that resources provided by the Noble Bill should be maintained is important, and a major assumption of the recommendations. Consistent policy relative to developer contributions is included also. The ability to acquire needed rights-of-way in anticipation of future construction is highly recommended. Though not discussed with any degree of detail, the recommendation that the ton-mile tax be investigated as a possible revenue source to help cover road maintenance and reconstruction costs is significant. The ton-mile tax could face substantial opposition from trucking interests, and it has not been considered as a primary recommendation.

At the regional level, a special tax on motor fuel, additional vehicle registration fees, or a combination of the two is recommended as the principal fund-raising source. Motor fuel is now exempt from the sales tax, and the bulk of the return would be provided by lifting the exemption. The additional recommendations are also important. An allocation mechanism is called for similar to the current DRCOG Federal Aid to Urban Systems project selection process. The mechanism would ensure that the funds would be used by the RTP.

Recommendations for transit are principally the sales tax increase as well as an employee head tax.

The intent of the effort is to combine the transit and highway funding strategies into a total transportation financing package.

CONCLUSION

The task force will make its final recommendations. These will be reviewed by DRCOG's Transportation Committee and forwarded to the DRCOG Board for approval. The next step will be packaging the recommendations for presentation to appropriate legislative committees. Assuming legislative approval, the final step is an appeal to the public, perhaps culminating in requesting voter approval.

TABLE 1 Suggested State Financing Strategies

	Total Current Rate	Additional Rate Required	Comments
Recommended Source			
Motor-fuel tax (per gallon)	12 cents state 9 cents federal	5.4 cents	Traditional mechanism used for state funding. Strong direct relationship with benefits. Would need to be indexed to reflect inflation.
Alternative Sources			
Special sales tax on motor fuel	No current	5.3 percent	Better revenue generator than per gallon tax but would require new legislation. Direct relationship with benefits.
Registration fee	$54	$29	Traditional mechanism used for state and local funding. Direct relationship with benefits. Fee would need to be indexed to inflation. Major increase in existing rate.
Income tax	2.6 percent	0.3 percent	Good state revenue source, but not earmarked for special purposes. Little relationship with benefits.
Additional Recommendations			
Regional HUTF share	It is recommended that a statewide tax or fee be assessed, with historical allocations maintained for both the regional project share and also city and county passthroughs for the Denver Metropolitan Area (DMA). With these historic allocation percentages, the rates indicated would generate adequate funding for DMA state project shortfalls and an annual passthrough of $11 million for DMA cities and counties, approximately 1/3 of the total nonregional shortfall.		
Noble Bill funds	It is recommended that the resources now provided by the transfer of sales-tax revenue to the HUTF be maintained after fiscal year 1986, either through continuation of the transfer authorization or its replacement by alternative revenue sources.		
Anticipation notes	It is recommended that the state legislature enable CDH to take advantage of debt financing, as appropriate, through federal reimbursement anticipation notes. These debt instruments can be backed by expected flows of federal funds already committed for Interstate, primary and secondary roads.		
Developer contributions	It is recommended that the Colorado Highway Commission and CDH extend the current policy directive on private funding for state highway projects. Specifically, consistent guidelines for determining the appropriate level of developer contributions should be developed and publicized to more equitably assist the funding of those state highway projects where there are identifiable land development benefits.		
Joint development	It is recommended that CDH vigorously pursue opportunities for the leasing of air rights or ground rights for land over, adjacent to, or under state highways. This could occur through a review process to assess opportunities associated with planned, but not yet built, major projects.		
Right-of-way acquisition	It is recommended that a process be set up so that CDH, cooperatively with counties and municipalities, can develop a long-range strategy for advance rights-of-way acquisition and reservation in corridors in which future major regional highway facilities are to be located. After this process is set up, private developer contribution of this right-of-way may be required, depending on guidelines that should be established by CDH. The actual advance acquisition or reservation should be done at the local level, utilizing local land use and zoning powers.		
Ton-mile tax	It is recommended that the ton-mile tax be investigated as a means to help cover road maintenance and reconstruction costs. Fair-share contributions from truck and railroad assessments might be appropriate for ongoing maintenance expenses and grade separation projects.		

TABLE 2 Suggested Regional Financing Strategies

	Total Current Rate	Additional Rate Required	Comments
Recommended Source			
Special sales tax on motor fuel	No current	3.0 percent	Good revenue source that keeps pace with inflation. Strong direct relationship with benefits. Would require special legislation. More easily administered on regional basis than per gallon tax.
Vehicle registration	$54	$7 annually	Good revenue source. Value-based tax would keep pace with inflation and be more progressive. Direct relationship with benefits. Common local source collected by counties, but regional tax would require special legislation.
Alternative Sources			
General sales tax	6.6 percent	0.3 percent	Good revenue source, but increasingly competitive use by other governmental agencies. Yield rises with inflation. Indirect relationship with benefits. Would require special legislation.
Motor fuel tax (per gallon)	12 cents state 9 cents federal	4.4 cents	Traditional source for state highway funding. Administration difficulties because current tax collected from distributors. Would require special legislation. Would need to be indexed to reflect inflation.
Income tax	2.6 percent	0.2 percent	Traditional revenue source for state general fund. Major constitutional and legal barriers for local use. Yield rises with inflation, but little relationship with benefits.
Additonal Recommendations			
Allocation mechanism	It is recommended that revenue from the regional tax for roads be distributed for funding designated projects on the Regional Transportation Plan according to a committee process modeled after the current regional Federal Aid Urban Systems funding committee, with representation from each local government jurisdiction in the region.		
Regional fund pool	It is recommended that the possible formation of a regional transportation infrastructure pool be explored. Tax revenue for regional roads could be initially channeled through such a pool to facilitate allocation decisions. A revenue pool might also help reduce debt costs for some city and county governments. In any case, it could provide a central mechanism for distributing the recommended regional tax revenues for financing regional road projects.		

TABLE 3 Suggested Transit Financing Strategies

	Total Current Rate	Additional Rate Required	Comments
Recommended Source			
General sales tax	6.6 percent	0.5 percent	Combined sales and employee head tax would spread burden among residents and businesses benefiting from transit development. Combination could also lessen cumulative impact of individual tax increases and strengthen political support.
Employee head tax (per month)	$4 (Denver)	$3	
Alternative Sources			
General sales tax	6.6 percent	0.8 percent	Good revenue potential. Expansion of current tax. Few legal or administrative barriers, but increasingly competitive. Required rate from single source could be high.
Employee tax	$4 (Denver)	$8	Administrative difficulties and limited revenue potential if not indexed to inflation. Required rate would triple existing tax. Related to benefits for commuters.
Income tax	2.6 percent	0.5 percent	Common state source that rises with inflation. Major legal and political difficulties exist for regional applications.
Additional Recommendations			
Federal funding	It is recommended that the transit financing plan reflect the assumption that no federal funding will be available for construction of a transit system. While federal support should continue to be sought, current federal policy and likely future funding positions of UMTA make the possibility of federal grants remote.		
Value capture	It is recommended that value capture funding mechanisms be used to recognize the benefits attributable to transit system development that will accrue to property owners in the vicinity of the corridors. Legislation should be enacted to enable RTD to engage in establishing special assessment or tax increment financing districts at proposed station locations, engage in air- and ground-rights leasing along rights-of-way, and engage in land banking for joint property development adjacent to stations.		

Sources of Revenue for Local Transportation: What Are the Potentials and the Impediments?

Gary L. Brosch
Rice Center
Houston, Texas

INTRODUCTION

State and local governments spent more than $45 billion to improve the nation's transportation system last year. The federal government alone spent $25.1 billion in 1984. Even with this tremendous scale of expenditures, most people involved in planning and implementing transportation—whether highway or transit, provider or planner, administrator or technician—are faced with budget constraints that limit their ability to meet transportation needs. The task is not to decry the lack of resources or revenue, but to participate in a process of examination, thought, and creativity for effective use of current sources and creative application of new sources. Many of the old formulas do not apply today.

For the last 20 years, transportation has relied on several main revenue sources. These typically varied by the type of transportation facility or service. They include

- Highway financing
  - Federal (with small local match)
  - State motor fuel and vehicle taxes
  - Tolls
- Transit financing
  - Federal (capital and operating grants)
  - Fares
  - Local government general revenues

Many states, cities, and transit systems developed alternative revenue sources, and these have become familiar to those interested in transportation—sales tax, private participation in financing, new debt instruments, contracting arrangements, donations, lotteries, and benefit assessment districts.

Examples of these new revenue sources are many and are found in almost every region of the country. In highway financing, many states have created legislation allowing cities and counties to pass local-option motor fuel taxes. The states include New York, Alabama, South Dakota, and Oregon. In fiscal year 1982-1983, Dade County, Florida, collected $28 million from this source. The use of tolls to finance improvements is an old revenue source with new applications. The Dallas North Tollway was completed in 1968 and will be extended in 1986. In Tampa, Florida, an additional 12.3 miles has been added to the initial 5.2-mile South Crosstown Expressway. Private development-related measures vary widely, but typically use funds or land from private developers for financing part of the facility improvement. In Newport Beach, California, four developers funded 14 intersections for $1.7 million. In Palm Beach County, Florida, developers paid $1.6 million to widen a major east-west arterial.

Transit has experienced similar applications of new revenue sources. Private-sector involvement has included benefit assessment districts, various lease and sale agreements, donations, private service providers, merchant subsidies, and others.

In Madison, Wisconsin; Denver, Colorado; Los Angeles, California; Seattle, Washington; and other cities, transit improvements are being financed by property tax assessments on properties that benefit from the improvements. Tax-increment finance involves a similar principle by allowing cities to issue bonds against future increases in property values due to transit or other transportation improvements. Many of these revenue sources have been available for years, but were dismissed as politically unpalatable or because of a lack of staff capacity to implement the approach.

Dedicated taxes for transportation are gaining in popularity. Since 1981, 30 local governments have implemented a dedicated revenue source for transit from sales taxes, property taxes, and the now famous beer tax in Birmingham, Alabama. These are but a few examples of so-called new revenue sources for transportation planning. Which of these potential sources seem to enjoy the greatest popularity?

CURRENT TRENDS: WHO IS DOING WHAT?

The most significant sources of additional local revenues for transportation, both in dollar amounts and in the number of local entities considering the source, are the following:

- Tolls (highways)
- Motor fuel taxes (highways and transit)
- Sales tax (primarily transit)
- Beneficiary-based revenues (highway and transit)

Tolls

Toll financing has been used primarily for highway financing. It is a user fee imposed on those who use a transportation facility—road, bridge, tunnel, or highway. As the Interstate highway system is completed and major highway financing is turning its attention to maintenance and expansion, toll financing for new facilities may present additional opportunities for financing new facilities. Toll-road applications are of importance to the following types of facilities:

- High-speed, limited-access facilities
- Service in high-demand corridors, such as suburban to downtown
- Convenient bypass facilities to avoid major congested areas
- Immediate mobility improvements, when adequate state or local funding is not available within a reasonable period of time

There was extensive use of toll roads and facilities in the United States from 1940 to 1960. There are almost 5,000 miles of toll facilities in operation, with half these miles on the Interstate highway system. The 88 toll roads range from 1/10 of a mile to more than 50 miles. Bridges, ferries, and tunnels are also financed with tolls. Renewed interest in this source of revenue is primarily for use on commuter highways in urban areas.

Toll roads have some inherent advantages that have caused renewed interest in their use:

- Produce sufficient revenues
- Administrative capacity exists in other toll facilities or can be created through an administrative unit
- High efficiency as a revenue source, since the users receive the service directly
- Public acceptance is good where previous experience is evident
- Equitable to users of the facility

Toll roads also have several disadvantages that need to be considered:

- Toll-fee adjustments are difficult to adjust for inflation, due to administrative and political problems
- Public acceptance is critical for approval and operation
- Service must be noticeably better than nontoll facilities
- Operation and management must be efficient
- The potential for economic and demographic changes creates conditions of uncertainty about revenue and costs
- Opportunities for application are relatively few
- Federal funds are severely restricted in toll projects
- Authorization from state legislature is needed

Facilities built within the last 10 years include

- Dallas North Tollway
- Richmond, Virginia, expressway system
- South Crosstown Expressway, Tampa
- Dulles Toll Road; Fairfax County, Virginia

Motor Fuel Taxes

Motor fuel taxes are being used as a revenue source for transit and highway financing. These taxes are those taxes assessed locally that are in addition to traditional federal and state taxes. Local motor fuel taxes are used in 63 counties and 274 cities, and rates vary from 1 cent to 4 cents. As an alternative method, Indiana converted from a cents-per-gallon formula to a percentage formula, and New Mexico has indexed the tax to the average wholesale price of fuel.

The attraction of using motor fuel taxes to finance street and highway improvements is twofold: it already exists and is understood, and those who pay the tax are typically the ones who use the improvements. The fuel tax is similar to a sales tax and relates directly to the public good being financed.

The advantages of this source of revenue include

- It provides a reliable stream of revenue.
- It has good revenue potential.
- It is a mechanism for collecting tax.
- It has high efficiency in collection.
- It is equitable for users of the system.

There are several disadvantages to this revenue source that may account for its lack of use:

- State legislatures are reluctant to share tax.
- There may be poor acceptance if the need is not clearly evident.
- The tax does not adjust with inflation if not indexed.
- It may produce border problems among local governments.

Sales Tax

A dedicated sales tax has been considered and debated by more local entities than any other local tax source, and is used primarily for transit financing. Since this tax is approved at the local level, the approval requires active participation of local residents and community leaders. It is seen as a benefit to the transit rider and automobile user, the latter through a perceived potential for traffic reduction.

The advantages of using a sales tax for transportation financing include

- Produces large amounts of revenue
- Responds quickly to income changes and inflation
- More politically acceptable than other levies
- Administration not usually a problem, unless there are a large number of exemptions
- Administration, enforcement, and redistribution accomplished at the state level

There are several disadvantages to the use of sales tax:

- Revenues decline when consumer buying declines
- Strong competition from other public services to use this revenue source
- May encourage consumers to make purchases outside the taxing jurisdiction
- Tax is less related to transportation usage

Beneficiary-Based Revenues

Although tolls and other user-fee revenues are benefit based, they are tied to direct users of transportation. There are other beneficiaries of transportation improvements—property owners, developers, and investors. Beneficiary-based revenues refer to several value-capture techniques that seem to be gaining in popularity. These include

- Joint development
- Benefit-assessment districts
- Tax-increment districts

Joint Development

Joint development has been used as a financing and development tool in both transit and highway development. Opportunities for direct private investment in public projects offer additional revenue potential. The number of ways in which this has occurred makes it difficult to categorize or analyze advantages or disadvantages. As in any business venture, the specifics of the project, the timing, location, individual participants, and other unique factors come into play.

In Miami, Florida, air rights were sold to developers, providing regular income based on gross income of the project. In Seattle, Washington, local businesses caused a local improvement district to be created to help finance $1.1 million of a streetcar line. In San Diego, California, two developers are paying $3.5 million for realignment and construction of a new bridge. Many cities have used privately provided funds for downtown transportation improvements in the recent surge of central business district revitalization.

An array of negotiated agreements exists for this revenue arena—donated resources, shared costs, leasing, and lease-purchase.

There are ample examples of approaches involving sector revenue:

- Washington, D.C., Metro Transit Authority's joint-development approach to transit station development
- Merchant subsidy of transit services in Cedar Rapids, Iowa, and Champaign, Illinois
- Private donations in San Francisco, California, for overhauling the cable car system
- Privately funded marketing efforts by civic organizations for special shuttle service using rubber-tired cable cars in Fort Worth, Texas

- Private provider of park-and-ride lot in Arlington, Texas

The advantages of joint development in transportation projects include

- More rapid initiation and development of projects
- Controllable decision environment
- Flexibility in conceptualization of project
- Equity for participants in process
- Good and sufficient revenue potential

The advantages and disadvantages depend on the specific project. Possible disadvantages are

- Lack of skill levels needed for real estate and development considerations
- Uncertainty associated with some development projects
- Legal requirements requiring local or state legislation
- Potential for inefficient acquisition of resources—long negotiating period, potential for failure
- Unwarranted public participation in the development process

Benefit-Assessment Districts

These can be used to finance both transit and highway facilities. Road utility districts are authorized in Texas for property owners to build and finance roads with tax-exempt bonds. Special or benefit assessments are a way of recouping the benefit experienced by property owners, businesses, or others who receive some measurable financial benefit from development of a transportation facility. The implication is that increased access results in increased property value, increased sales, and other types of benefits. For the most part, benefit assessments are used for transit or roadway projects, involving revenue-producing properties, including commercial, industrial, and rental.

Benefit assessment occurs as a result of an opportunity for which these revenue sources are applicable and the process in which interested parties reach agreement. There must be a good opportunity and willing parties, and the persons or businesses most affected in an area must agree to the assessment process.

Traffic-impact fees charged to developers in Palm Beach County, Florida, and San Diego and Newport Beach, California, usually are based on projected effects of the proposed improvements by the developer. Benefit-assessment districts impose some form of tax on the businesses or property owners in the district. Assessment paving has been used for many years to provide residential street improvements, and application of this approach is possible in other situations.

Transit facilities in Denver, Colorado; New York, New York; Los Angeles, California; Madison, Wisconsin; Miami, Florida; and Seattle, Washington, have used benefit-assessment revenue as a means of financing transit improvements. The revenue is being used in various ways—capital improvements, operating funds, and maintenance. The impetus for this revenue source at times originates and is encouraged by private-sector beneficiaries, and an important feature is the intentional and necessary involvement of the private sector in the process. It is almost impossible to approve an assessment district without this effort.

Many other forms of beneficiary revenue exist and can be applied where the opportunity exists. This includes transit, street, or highway improvements. Donations of rights-of-way or property are typical examples. The state of Texas has made this important when setting priorities for highway construction. In Newport Beach, Califonia, a developer donated land for a transit center and funds for operating a shuttle service.

The advantages of benefit assessment include

- Equitable for property owners who benefit from facility or improvements
- Limited number of participants who need to favor the approach
- Good potential revenue source; can be designed to match need
- Flexibility in application through adjustment of assessment formulas
- Can be used to leverage expenditure of other funds
- Provides stable income source
- Can be used for a variety of expenditures—capital, operation, and maintenance

Special assessment districts apply to particular projects and have various disadvantages:

- Typically, assessments do not adjust with inflation
- Administration for a single project may be complex
- Requires state legislation
- Depends heavily on agreement of property owners and others who will pay the assessment
- Relies on specific opportunities, matched with specific transit or transportation improvements

Benefit assessment offers a useful implementation tool for producing needed revenues.

Tax-Increment Districts

Tax-increment districts are beneficiary-based forms of financing that rely on the impact of public improvements to increase property values sufficiently to retire bonds issued by a local authority. They have not been used extensively with transit or transportation improvements, however. Beaverton, Oregon, is an example of a successfully completed project involving transit, street, and other improvements to a blighted area of downtown. Embarcadero Station in San Francisco, California, is another good example.

TRADITIONAL REVENUE SOURCES

These suggestions are not intended to sidetrack consideration from traditional funding sources, but to supplement them and expand the view. The traditional sources will continue to be essential. Some questions arise, however. What form will these sources take? How will the federal role change? Will there be a shift in the way transportation funds are distributed, and what impact would this have?

CONCLUSION

National trends are not as important as determining what will work in a particular community, and each of the various revenue sources should be examined in light of local circumstances. Some questions for which answers may be found are as follows:

- What are the potential and possible problems with each of the revenue sources?
- What are the potential yields of using the various sources of revenues, and what are the costs of collection and enforcement?
- What are the legal, political, and institutional impediments to using these revenue sources?
- What are the economic and social impacts of using these sources of revenues, what are the equity considerations of who pays versus who benefits, and how are the potential losers compensated?
- How do institutional structures, for instance, special districts, affect the selection of revenue sources?
- Does the purpose for which the additional revenues will be used—capital versus maintenance and operations—make a difference in the revenue source?

Case Study on Local Financing Techniques: Portland, Oregon

Jack Mason
Tri-County Metropolitan Transportation
Portland, Oregon

INTRODUCTION

The level of transit service should, perhaps, dictate the level of financing, but it may be a circular situation in which resources available actually dictate the level of services that can be offered. This is the case with Portland.

SERVICE PLANNING

A major decision was made in 1976 to build the light-rail system from downtown Portland to surburban Gresham. At the time that decision was made, Oregon's political climate was controlled by strong leaders in influential positions and supportive of mass transit—the mayor, the governor, and the chairman of the state's transportation commission. Those individuals dictated a series of events that led to the abandonment of a proposed freeway and a transfer of funds to a transit corridor project in which an existing freeway would be widened and a light-rail system built in the same corridor. This decision marked a strong shift from highways to transit as a transportation solution.

This commitment to mass transit has been continued by the metropolitan planning agency in Portland, the Metropolitan Services District (MSD). MSD is responsible for development of the 20-year regional transportation plan. With its emphasis on mass transit, this plan is monitored by a committee of elected representatives of the political subdivisions in Tri-Met's service district. One significant characteristic of the Portland region is the remarkable consensus that exists among subdivisions. This has been particularly effective in achieving support from Oregon's congressional delegation.

The regional transportation plan (RTP), adopted by MSD in June 1977, reflected the decision that mass transit would be emphasized as an essential element of any solution to the transportation problem. The RTP, written by MSD, is the basis for Tri-Met's 5-year plan, the Transit Development Program (TDP). The program was adopted in February 1980, and has an extensive and detailed service plan but includes no financial plan.

This lack of financial plan has had a significant impact on implementation of the program. The first step in implementing the 5-year plan was taken in September 1982, after three postponements totaling almost a year and severe reductions of the original plans. Only 20 percent of the total increase in service hours planned for the first increment was put on the street. That first step on Labor Day 1982 included the introduction of the self-service fare system, a grid system, and fare adjustment. The fare adjustment is not a euphemistic styling for a fare increase. The base fare was increased, but offered offsetting discounts for purchasing prepaid bus tickets and introduced a lower fare, allowing a trip within one zone for 50 cents compared with the base fare of 75 cents.

The amount of service implemented in the first step was significantly less than originally planned and led to a fairly intense reaction from the press and transit groups in the region. This was the first of a series of clashes between regional transportation planning and the reality of Tri-Met's fiscal survival.

The amount of service Tri-Met had on the street grew steadily from 1970 through September 1982, when the reduced first step of the 5-year plan was implemented in the form of a grid system, increasing weekday service by nearly 10 percent. Based on the proposition that customer acceptance of service overall can be measured by originating rides per service-hour, in 1983 this figure dropped to its second lowest level in Tri-Met's history. Pressure was building to cut service, revenues were falling off, customer acceptance of the service had deteriorated to its second lowest point in agency history, and Tri-Met was entering a period of severe financial constraints. In June 1983, a service reduction of 2 percent was implemented by improving efficiencies of certain runs with little public reaction, but in January 1984, a 6 percent reduction was effected that generated intense public feeling. Even more emotional reaction greeted the announced plan to cut another 6 percent in June 1984. By this time the agency was the most notorious act in town. The consensus of regional subdivisions that had adopted mass transit as its favorite solution to transportation problems was nowhere to be found.

FINANCIAL PLANNING

A significant step in financial planning was taken in June 1977, when financial projections were made to accompany an aggressive service policy adopted by the board for agency direction. These projections were not far off the mark with one glaring exception—the cost of providing the service planned. Little financial planning occurred until the fall of 1981, when a financial forecasting model was put together. Delays in implementing the ambitious TDP were experienced, and a second study regarding Tri-Met's finances was conducted by the Portland City Club, a fairly influential group of civic-minded citizens throughout the area served by Tri-Met. This second study concluded that additional financing would be required to provide the level of service the region demanded. The position of Tri-Met's Board, based on political assessments, was that Tri-Met must live within its existing resources, offer service on a revenue-driven basis, and not seek additional revenue until the light-rail system was operating successfully.

REVENUE SOURCES

Under company policy, revenue sources dictate the level of service. Tri-Met has two major sources of revenue—farebox receipts and an employer-payroll tax.

Employer-Payroll Tax

When Tri-Met was created in 1969, the presiding politicians decided an employer-payroll tax was the path of least

resistance for continuing operations funds for the agency. The state of Oregon has no sales tax, but does have a relatively high income tax. Any attempt to increase property taxes would have been defeated at the polls. The employer-payroll tax was established with a 6/10 of 1 percent cap and originally levied at 2/3 of that cap. In January 1978, the rate was increased to its legal limit. The annual increases in revenues from the employer-payroll tax have varied from almost 39 percent to -4 percent. The problem lies in employment in the region, which peaked in 1980 and declined sharply from that time until August 1983. In fiscal 1980, the employer-payroll tax increased 21 percent over the previous year. In fiscal 1981 the increase was only 6 percent, less than 1/3 of the previous year.

Farebox Receipts

Farebox receipts climbed steadily from the agency's inception until 1981, when there was a leveling off and slight decline. In September 1982, the first quarter of Tri-Met's fiscal 1983, self-service fare was introduced. This was an experiment evaluating a fare-collection system reputed to be common in Europe and essential to the economic operation of light-rail systems that do not have barrier control. This fare-collection system was supposed to generate significant savings through faster loading, shorter dwell times, and improved headways. Tri-Met used that system from September 1982 until it was sharply modified and de-fanged in April 1982, an approximate 18-month period during which the agency endured costs that ran far over budget, equipment failures beyond control, and no noticeable operational savings. Fare evasion was a conservative 15 percent at its peak, and a confrontational environment developed between fare inspectors and riders. The experiment as originally implemented has been abandoned because the agency can no longer bear the financial drain represented by costs, such as fare inspectors and fare evasion, that were not being offset by operating savings.

PASSENGER REVENUES

Passenger-revenue forecasting has been a greater problem than the employer-payroll tax. The inputs to the financial forecasting model are some 200 variables. The outputs are projections split into fairly accurate 6-year projections and a longer range, more clouded 8-year extension. The model, developed in 1981, has been fine tuned and is now a useful tool for the 5-year plan.

Planning Results

What are the results of the service and financial planning Tri-Met has practiced in recent years? Operating losses—increasing losses—have been suffered for the last 3 fiscal years. Working capital has dropped from a 1981 high of $15.6 million to $8.6 million at the end of the last fiscal year, and payrolls alone require $5 million cash each month.

Criticism was directed at the agency's incompetent financial planning. When it entered this period of declining revenues, the agency had over $15 million in working capital; in effect, banking the public's money. It was a defendable decision to carry out the 5-year plan to the maximum extent possible. What was not appreciated by Tri-Met, and the population of the region and country, was the depth and length of the recession. The failure to recognize this situation and the unforeseen burden of self-service fare were too much to avoid any impact on the level of service. The public that reacted bitterly to service cuts did not seem to need the level of service remaining.

FINANCING TECHNIQUES

The situation has led to implementing additional financial techniques to avoid further service cuts and to ensure adequate cash to meet payrolls. These techniques are

- Stripping assets through the use of an early-out program, funded by the pension plan, that permitted the maintenance of the full-time and part-time mix that would most efficiently run service after the June cut, and the transfer of excess pension funding from the pension trust to working capital
- Submitting to the legislature a proposed package for restructuring debt, currently $30 million in outstanding bonds
- Identifying specific priorities for the upcoming negotiation of the union contract
- A closer link between accrual and cash budgets

Major efforts have been devoted to refining the financial forecast model and linking it more closely with actual results. In longer-range financial planning, the board has embarked upon a review of those ambitious goals adopted in June 1977. The board has appointed a Blue Ribbon Committee to review three alternative levels of service over the next 20 years, considering the environment for taxpayer acceptance of mass transit and taxpayer willingness to pay for whatever level is perceived to be best for the region. Contrary to the political environment existing at the time the decision was made in the 1970s to build a light-rail system, there are no strong mass transit supporters who are political leaders now. Another question to be studied by the Blue Ribbon Committee, as well as another committee of heavy hitters in one of the counties served, is the connection between economic development, transportation, and mass transit. These two committees will try to devise a system responsive to the transportation and mass transit problems of the region.

Tri-Met's 5-year plan and its budget development must go on. This is being done through the use of scenarios characterized by alternative hypotheses aimed mainly at the level of bus feeder service demanded by the light-rail trunk, and the level of success in upcoming contract negotiations.

Goals in financial planning are

- A clear, quantified linkage, leading from the strategic plan adopted by the board to each year's budget.
- The attainment of regional realism regarding transit funding. The employer-payroll tax, at its current rate, is inadequate to provide the level of service thought to be needed for economic development. Various spokesmen for the business community have convinced the board that the rate of the employer-payroll tax cannot be increased under any conditions, and the board is not inclined to attempt an increase. There is some feeling that the burden must be shifted from the employer to a broader base, probably through such a vehicle as a sales tax. This feeling tends to ignore the fact that the employer-payroll tax, because it is a deduction against both the Oregon income tax and national income tax, is a means for spreading the burden widely. The issue is being brought to a head in the current discussion of whether to extend the light-rail system westward from the city for a distance equal to its current eastern leg.
- A better, faster, more efficient connection between service levels and budgets must be developed. There should be some means of accurately quantifying alternative networks without having to go to actual runcuts to determine the financial impact of differing service levels.

Financial Planning Techniques: What Elements Are Included in a Good Financial Plan?

George M. Smerk
Indiana University
Bloomington, Indiana

Special thanks are due to Dr. Brendon Hemily for his comments, suggestions, and overall help in preparing this paper.

INTRODUCTION

Financial planning for transit has always been important. From the earliest private-enterprise days of the industry to the present day of public ownership, there has been a need to gauge the resources needed for maintaining operations, making necessary capital investments, and replenishing the transit property.

Financial planning is more important in times when money is scarce. Management effort is always directed toward the scarce resource—when labor is short, management of personnel functions becomes an important factor. With mounting concern over financial problems in transit, management's attention should be increasingly directed toward financial planning. What should be, and what is, are often two different things. Financial planning that prudence and good management demand is often missing in transit and replaced by endless anxiety, fiddling with budgets, and cost-cutting programs.

Financial planning is more difficult and necessary at present because of financial uncertainties facing transit. While uncertainty is no stranger to the transit industry, it has taken on a new dimension. From a financial viewpoint, the federal-aid program begun in 1961 has continually expanded the number of programs and federal funds available, and for many years this trend was steadily upward. Since 1981 the level of federal support has actually diminished, and there is a continuing threat from the Reagan administration to discontinue the operating-aid and capital portions of the program. Federal transit money appears to have stabilized for the moment, but the threat continues to be real because of the massive federal deficit.

Local and state transit support is another uncertainty. In recent decades, there have been substantial increases in state and local support for transit operations, capital, planning, and other programs—usually matching a federal grant—but this support tends to fluctuate with the condition of the economy. In times of depressed economics, when transit ridership and fare receipts usually fall, it is difficult for state and local governments to provide additional funds for transit. With local political conflicts between city and suburb, rising costs of labor and supplies, and a dash of citizen tax revolt, the financial situation in transit is often a trying one. This makes financial planning more important than ever.

BEGINNING OF THE FINANCIAL PLANNING PROCESS

Financial planning identifies needs, develops managerial strategies, helps make the best use of limited resources, may reduce uncertainty, and helps educate the public and public officials. A good financial plan must meet the needs of the present; however, it should be prepared with an eye to the future and molded by the long-run plans for the transit property. With long- and short-run considerations in mind, the strategic plan is the ideal starting point for development of the financial process.

Most transit properties have no strategic planning process; they are typically innocent of a solid financial planning process. There are ideal situations and normal situations for which transit properties should aim. What follows may appear too neat and precise, but it is not intelligent to dismiss a concept or an idea that may be helpful, merely because it is uncommon in a given industry.

The long-range planning process for a transit property is carried out most effectively through the development of a strategic plan. Strategic plans normally arise from the desires of a transit policy board to look beyond the immediate future. The need for long-range capital investment is often the spur to such planning. Equipment and machinery wear out, and there is a need to maintain buildings and other fixed facilities. Experienced policy makers begin to raise questions about heavy maintenance, capital replenishment needs, or new capital purchases for the next 2 to 5 years, or sometimes longer. But a strategic plan is much more than a capital investment plan; it integrates long- and short-run investment decisions with operational and human resource decisions. A strategic plan may be animated initially by capital investment considerations, but it goes beyond planning.

The strategic planning committtee established by the policy-making board should work closely with the budget committee of the board and the management team of the transit property. The budget committee should strive continuously to update the budget to reality, and the strategic planning committee should regularly survey the strategic plan and update it as needed to conform with better information and more knowledge of world conditions. Strategic planning committees are rare in the transit industry. Lack of strategic planning, that vital eye to the future, is often an unconscious decision to lock a transit property into the present, perhaps crisis-ridden management pattern. On the contrary, a strategic plan attempts to lay out the future over a period of between 1 and 10 years and move the property forward to what it should be doing in the future, based on the best available information and a vision of how transit may best serve the community. Figure 1 is a diagram of the strategic planning process.

The strategic planning process begins with an analysis of the environment in which the transit property exists. This should include an assessment of the threats and opportunities that may lie partially hidden in the near and distant future. For instance, the aim of the Reagan administration to reduce expenditures for transit programs is a threat. There would be a threat in any effort on the part of a state or local government to diminish its support for transit. On the other hand, a strong local commitment to downtown redevelopment may be a good long-run opportunity for

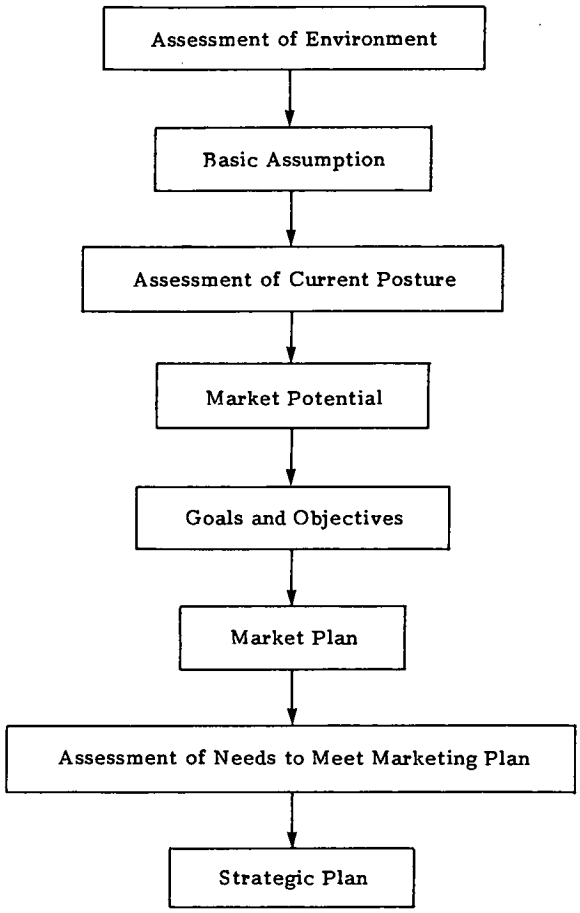

FIGURE 1 The strategic planning process.

transit. Renewal is the sort of venture with which transit can be closely identified and play an important role.

Another major factor in the strategic plan is consideration of basic assumptions regarding the property. This would include such assumptions as the continuation of certain levels of fiscal support, growth patterns in the city as they will affect transit operations, geographic expansions, a move toward a rail system, development of reserved freeway lanes for buses, or a contraction of service because of an expected sharp decline in population.

An assessment of the current posture of the property should be made. This is a measure of the material and human resources available to carry out whatever tasks are seen to be needed. The assessment should include current and future needs and directions. While anything beyond 1 or 2 years is difficult to assess, some things are rather clear. The need to replace buses or other rolling stock on a regular pattern is something relatively easy to determine, based on the economic life of the equipment. Other aspects of a property that can be examined with profit at this stage are employee turnover rates; retirement policy; the number of administrative, managerial, and staff employees; the age and training of employees; the availability of information from the management information system in place; and the image of the property as reflected by local media.

Another step to be taken is an analysis of the market potential for the transit property. This includes an estimate of future travel demand and other community needs that may affect transit. These should be projected as solidly as possible and as far as possible into the future. In this category such considerations as community development and redevelopment efforts in which transit may or must play a role should be analyzed. This step is essential in calculating revenues.

From the foregoing efforts comes the development of goals and objectives, a process that should take into account all groups and jurisdictions that will be affected. The goals of the transit agency should not be hammered out in a vacuum. In formulating goals and properties, input is necessary from the community and community leaders, as well as from transit management. The goals will be affected by the values of the community and the priority of various activities important in the community in which transit may play a role. Within the transit organization, all levels of employees should have some input in the process, particularly in the establishment of objectives. Broad participation is essential to design workable, practical objectives for a transit organization and realistic timetables for the accomplishment of those objectives.

Policy makers should use the long-range nature of the stategic plan to establish long-range goals and action priorities. The short-range needs assessments that are part of any long-range strategic plan are used to develop the short-range goals and priorities. The goals of a transit property establish ideal conditions and long-run aims. No goal in transit can be achieved quickly or by the accomplishment of any one of the objectives that flow from the goal, objective, action process. Objectives are more specific and short-run in nature and flow from the goals. The sequence of effort to achieve various objectives is the strategy; it is obviously related to priorities established by the policy makers in conjunction with outside information sources and upper levels of transit management.

A market plan must be developed. This will include thoughts about the segments of the market to be pursued. A key decision has to be made about whether the transit property will seek to serve only captive riders or will seek to serve a more general public. The types of service, the structure of the system, and the kinds of management activities will vary according to these different goals. The type of transit product should be considered here, along with the pricing schemes and promotional plans that will be used to market different types of transit service to various segments of the urban travel market that will be pursued.

Facilities, equipment, organizational resources, and political and legislative requirements needed to achieve the objectives and serve the target markets must be determined. The selection of what is to be done and the sequence of the actions are the strategic plan.

TURNING STRATEGY INTO A FINANCIAL PLAN

A strategy must be developed into a financial plan (see Figure 2). Many questions will have to be raised, such as what the long-range financial implications of the plan are; what is to be done to implement the plan that may require additional resources; and determination of whether there is need for legislation, referendums, or additional planning. In moving from the strategy to the financial plan, the planners need to focus on the financial impact of programs that will be undertaken. An obvious step here is a review of the ongoing programs, including the present operations, with the cost of those operations projected into the future as accurately as possible for the next year or two. Routine capital replacement costs are also part of the financial planning process. The horizon timespan is no set term of years; it is as far into the future as one may expect a transit property or the community it serves to stay generally the same, with no transit capital undertakings of large magnitude or cataclysmic changes in the urban place itself.

Considering new programs in keeping with the overall strategy, financial planners assess what needs to be done. The new programs would be based on the near-term goals and priorities for the next few fiscal years of the property

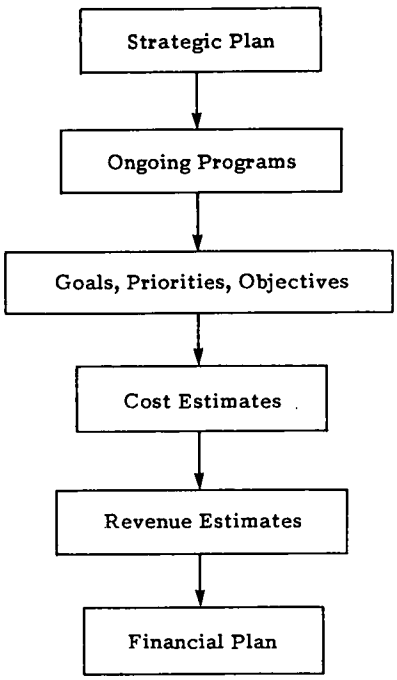

FIGURE 2 Financial planning.

and should be based closely on the objectives established for these new undertakings. In moving from the strategic to the financial plan, financial planners must determine whether funding levels are realistic, based on the best estimate of what may be available. The ongoing and new program elements of the financial plan should be coordinated by means of a formal programming system on which the various tasks to be achieved, and their costs and budgets, are itemized with a timetable for the expenditures.

Cost estimates are the next step. Estimating costs is never easy—for example, financial planners have to forecast labor costs. This is usually done by using trends, including agreements in the labor contract that must be honored throughout the life of the contract. Certain assumptions regarding productivity have to be made at this point. In making this judgment, financial planners need to know the status of pay and work conditions in the transit industry, as well as the impact that industry conditions elsewhere may have on local rates of pay and conditions of future contracts. Often there are bellwether cities, the labor agreements of which are raised by union bargainers in other cities. Careful attention should be paid to these cities.

The organization of the transit property and its personnel should be considered along with plans for any necessary changes in the number or type of personnel and the way the property is organized. If the strategic plan foresees the construction of several additional storage and maintenance facilities to service difficult divisions of an expanding transit service, personnel costs will change because planners and construction engineers will be needed. With divisionalization of a transit property, the need to modify the organizational structure arises that may have other cost ramifications.

Forecasting maintenance costs is usually accomplished by trend analysis. Some transit properties have done an excellent job of costing out maintenance; others have very limited information available. Consideration should be given to new maintenance procedures, new equipment, or new facilities coming on-line that may increase productivity in maintenance, or decrease it in the case of new, more complicated equipment. If good information is available, it may be possible to make certain assumptions about productivity in the maintenance realm. Improved maintenance management practices may lead to an increase in productivity. Standard costs are useful for certain kinds of routine maintenance jobs, such as changing bus brake linings.

Energy costs now are a major element in the cost of transit operations, whether electricity or petroleum-based fuels are used for power. Diesel fuel cost estimates are usually based on past trends and the state of the world economy as it affects crude oil prices. Because oil prices are related to the world political and economic situation, world affairs need to be monitored. The possible trend of rates with the local power company and the potential impact careful negotiation might have on rate trends need to be assessed by management of electrically powered systems.

Estimating capital costs reflects two elements. The first is the need to modernize and sustain existing plant and equipment, based on a routine capital replacement plan, that should be relatively straightforward. The need to improve and expand the level of service, however, involves a decision that has to be based on the timing and extent of investments. Input needed here is the projected demand for transit over the period of the strategic plan and the capacity of the existing system to meet that demand. From this information, the strategic plan should lay out certain activities and efforts of a capital nature, and the financial planners need to know and understand the impact on capital expenditures and the timing of expenditures.

In estimating revenues, there is need to forecast the number of passengers. The average fare paid is also a necessary part of the information. With the cooperation of the service planning department, an estimate of the number of passengers in the current year and years in the future must be made. Adjustments have to be made also for the patterns of demand related to changes and fares. Perhaps more difficult is forecasting the subsidies flowing to transit over a protracted period of time. The federal subsidies are based on appropriations, as well as authorization for the different programs. The program to be supported and the funds allocated have a known life; the subsequent authorizations and budget appropriations are a matter of conjecture.

Nonfederal government subsidies generally are based on extrapolation of past trends. When there is a question about dedicated tax receipts supporting a bond issue, most transit properties hire consultants to forecast tax receipts because this type of forecasting calls for a specific expertise. The forecast of the yield from a new or proposed dedicated tax is required also. The quality of the forecasting depends on the management information system developed by the transit property. The difficult but essential decision relative to a management information system is to consider what and how much information to collect.

The financial planning process requires some formal iterative procedure for regularly matching revenues and costs. This is a speculative undertaking, especially when projecting far into the future. The best suggestion is the use of scenario planning, with each scenario based on different assumptions about such key factors as ridership, federal support, new taxes, fare changes, labor costs, inflation rates, and so on. A convenient way to handle this is with a spreadsheet on a microcomputer so that various combinations of factors can be tried and examples carried out more quickly than if performed manually. Such planning is vital in that it provides a variety of options for the policy board to consider, and the impact of a variety of factors over the next 5 to 10 years (or whatever the strategic planning and strategic financial planning time horizon may be) can be compared and assessed. The various scenarios should be reasonable; windfalls, total disasters, or any extreme speculations should be avoided. The board must choose the scenario it believes is most likely or the one it prefers; from this choice there is a resulting set of financial assumptions, implications, and decisions to be made.

BUDGETING

The budget process turns the ideas and desires concerning a financial plan into a concrete, annual plan. Budgeting for a transit property—or any enterprise—is the annual, detailed planning and implementation of key decisions laid out in the financial plan. The purpose of the budget is clear-cut. It is an aid in making and coordinating short-range plans, a succinct device for communicating plans to the managers of specific activity centers, and acts as a potent, quantitative means of motivating managers to achieve established budget targets. A budget is also a benchmark for controlling ongoing activities and the basis for monitoring centers of financial responsibility and their managers for performance and achievement of objectives, and serves as a means of educating managers to the process of managing because it helps weave together the fiscal aspects of a property's activities.

There are several budget components. The operating budget reveals the planned operations for the coming year and includes the expected revenues and expenses. One way of doing this chore is through the use of a program budget that shows the estimated revenues and costs of the major programs of the transit property, arranged by department or service with the revenues and costs of each spelled out.

Another means of preparing an operating budget is by use of responsibility-center budgets, setting forth plans in terms of responsibility centers. Responsibility-center budgets are most often used in construction and are usually broken down into cost elements such as labor, materials, fuel, and so on.

In preparing the operating budget, a budget committee is useful. This committee, separated from the policy board budget committee, is usually guided by a budget director and is a top management group that recommends the budget guidelines the organization is to follow for the budget period. The budget committee coordinates the separate budgets prepared by the various organizational units, helps to resolve any differences that may exist among the units, tidies up the product, and submits the final budget to top management for approval.

The budget staff may do a large share of the budget work in any organization. Nevertheless, the most crucial budgeting is really done by the line organization; they play a key role in helping establish objectives for the transit property and deciding what financial resources will be needed to achieve the objectives. "Bottom-up budgeting" is the term often used to describe this procedure, and the process lets those closest to the action set their budgets. This procedure is useful in setting the total amount of the budget and the pace of expenditure.

There are many questions concerning the relationship and interaction between the budget committee, the finance director, the general manager, the finance committee of the board of directors, and the board as a whole. Whatever differences and problems there are should be solved as quickly as possible, so the budgeting, financial planning, and strategic planning processes can move along smoothly.

The budget is usually developed on an annual basis. In some cases, monthly information is provided—the annual budget is broken down into monthly periods to provide benchmarks. Another common practice is to prepare quarterly budgets for a year and make regular updates. This procedure is particularly appropriate where the situation is volatile or where close control is desired.

Regular budgeting within the fiscal year framework is a good idea, to take account of any unexpected changes that may occur. This process is becoming easier because the use of electronic data processing has made information available on a more timely basis than was possible in the past. In the best situation, adherence to the overall budget should be monitored on a monthly basis, as well as on a departmental or other organizational unit level.

A revenue or sales budget may be prepared in addition to an operating budget. A revenue budget is a statistical forecast based in a mathematical analysis of general conditions in the economy; local market conditions; tax drawdowns for the transit property; and receipts of grants from federal, state, and local governments. It is also a concoction that includes judgmental estimates as a cure for the problem of uncertainty and reflects negotiation between top management and underlying management on just what revenues will be.

Another type of budget is the cash budget that shows revenues and expenses, cash inflows, and outflows. The inflow and outflow of cash is the main concern in timing of certain expenditures. The cash budget begins as a budget balance sheet and income statement, adjusted to reflect the planned sources and uses of cash over a relevant time period. This is important to use in analyzing plans having cash flow implications to estimate each of the sources and uses of cash. No transit property or other enterprise wants to be embarrassed, or cast into serious fiscal difficulties, by not having sufficient cash on hand when it is needed. Grant reimbursement procedures from government often lead to cash flow problems for a property.

The capital expenditures budget lists the expenditures for capital to be made in a given time period and is usually prepared separately from the operating budget. The wisest course is to separate capital replenishment projects or replacements of equipment, such as new buses for old, from the budgets for completely new capital investments.

PROBLEMS AND PITFALLS

There are a number of problems and pitfalls having to do with the financial world of transit that should be considered when involved in financial planning, including

- Expansion of service area
- Inflation-sensitive financing
- Predicting fares
- Elasticity of demand
- Ability to control costs

Many transit properties have been involved in expanding the tax base by expanding the service area; that is, transit properties have moved from serving principally a major city jurisdiction to providing service on a countywide or multiple-county basis; the allure is not only the sense of serving the whole of a metropolitan region, but a larger tax base. Such territorial expansions have been popular notions for years and are especially tempting when federal aid is uncertain. The problem is that service may have to be so greatly expanded to touch the whole of the jurisdiction of the subventions that the increased tax and farebox revenues from the expansion of service will be far outrun by the expanded costs. In such circumstances, expanding the service and tax base becomes self-defeating from a financial viewpoint. Experience shows that transit properties should be wary about substantial increases in the service and tax areas. Little good is achieved if a larger number of dollars are being spread more thinly than before.

With the need to depend on state and local fiscal sources on an increasing basis, there is a natural desire to find some source of financing that keeps up with inflation. Looking at the spectrum of choices possible, a property tax is sluggish and unpopular and has some real problems. It requires reassessment of values on a frequent basis to stay up with changing property values, and reassessment is not done with sufficient frequency in most places.

A sales tax is more reflective of the state of the economy and inflation and is attractive, because as prices go up the sales-tax revenues go up. However, it is usually considered to be highly regressive toward low-income persons. Even so, a sales tax may be justified depending on the degree of relative benefit received by various groups. If the poor benefit more from transit, there may be nothing wrong with their paying a larger proportion of their income for transit support. To reduce conflict over the regressive

nature of sales taxes, such basic items as food and medicine may be exempt from the sales tax; or a piggyback on a local sales tax for transit—an extra half cent—may be required, and not be levied on items such as food and medicine.

The income tax is attractive because it reflects the ability of persons to pay, but this raises other questions. Should all residents or all workers in the transit authority area pay the income tax? Those who pay the most income tax may use transit the least and, with some justice, may question the equity. Income tax is linked closely to the general condition of the economy and level of unemployment. The consensus is that income tax is not a good source of tax revenue for downside situations.

No tax is safe and sure and free from ups and downs. A spectrum of local tax sources probably is best. With a variety of taxes, the likelihood of instability of financial resources may be diminished. It should be noted that any effort requiring a referendum to be passed imposes yet another level of difficulty on management. It forces management into the political arena—there is no way to avoid politics when trying to develop a positive referendum situation.

Another problem arises with predicting fare receipts. Many transit properties have poor information available, and, whether good or not, detailed passenger data available is doubtful. Does transit management know who rides, who pays, and what they pay? How many classes of fare are there to dilute the base fare, and exactly what is the average fare? The average fare calculation should be made on a regular basis because it is important in predicting the yield from various changes in passenger demand. Sampling should be carried out regularly to determine as accurately as possible what is the average fare being paid.

One of the more difficult items to estimate is the elasticity of demand in regard to fare changes. In some cases a rise in fares has clearly cut patronage; in others it has had no observable impact. Probably the worst situation is to raise fares and cut service at the same time, which puts a double hit on the passenger and is sure to alienate present and potential riders. Another question to answer is whether there are riders who will pay a high fare because the service is good, such as for express service. These are passengers to covet because of their potential contribution to revenues. Sufficient promotional effort should be aimed at this group to encourage their participation in the transit system. Promotional efforts must be used to boost patronage and information on the impact of the promotional effort gathered. The transit agency must be capable of contracting out or providing special services to boost its revenues. All of these factors make predicting fare receipts very difficult, especially over an extended time period.

There are serious questions about the transit property being able to control its costs successfully, either because of uncertain cost estimates or lack of cost information. Do the costs control the property? Is the concern about costs the major driving force of the system? Are there broader, more cogent concerns? While control of costs is important, it is not the sole reason transit service exists or the singular justification for the presence of a management team. The amount and degree of detail in cost information is important in any effort to manage transit property. The costs should be broken down sufficiently so that management can take intelligent action. For example, in labor costs, pull-out, pull-in, overtime, relief time, and report time should be calculated separately and not lumped together as labor costs. Cost calculations should be made on per route basis so the costs to operate a given route or a given trip can be determined. If only average costs are available, management is in trouble, because it is difficult to manage on the basis of average costs. In many cases a dangerous situation exists where costs are merely projected up and down without adjustments being made for inflation or ability to control certain cost elements.

In the maintenance field, costs are often not estimated carefully or accurately, and detailed information is not kept. Vehicle histories with detailed costs should be available so the maintenance manager can understand the strengths of given types of equipment or parts and knows what needs to be ordered to complete a job in the future; also information about whether there are standard costs per job. Many transit properties have no idea what a job should cost and have no guideline for the effort. Automatic escalating costs are important, such as cost-of-living allowances and health insurance premiums. These are major cost elements in transit in recent years and therefore strict attention must be directed to them.

CONCLUSION

An orderly financial planning process such as that discussed here is rarely used in the transit industry. Most transit properties have no strategic plan, goals, or objectives, and have no idea what it is they are trying to achieve except in the short term. Lack of interest on the part of the policy-making board is one reason that little may be done in either strategic or financial planning. This may be due to amateurism on the part of the board or the short-run thinking that permeates the political atmosphere. Transit, as a public enterprise, is inescapably a part of the political arena. Management may lack the professionalism to give thought to the processes of strategic or financial planning. Moreover, the transit industry has no tradition of the kind of long-run thinking needed for the efforts required. Even where policy makers and management want to do long-range strategic and financial planning, a lack of staff and shortage of good information may doom the effort from the start.

Whatever the reasons, most transit properties have reduced financial planning to nothing more than annual budget preparation, and for most transit agencies poor information has resulted in the need for supplemental budgets each year. Transit properties without any kind of strategic planning or financial planning have foregone the opportunity to take advantage of the process of giving careful thought to helping to shape the future.

The financial plan is derived from the strategic plan and the strategic plan is long-run in nature. Therefore, financial planning is not just for the immediate future but for the long run. From the strategic plan, goals, priorities, and objectives are derived and agreed upon by the policy-making board and top levels of management. The financial plan is based on established goals, objectives, and priorities.

From the financial plan the budget is prepared, and the budget is a detailed, annual financial plan. The goals, priorities, objectives, strategic plan, financial plan, and budget should be reviewed regularly.

Case Study on Local Financing Techniques: Buffalo, New York

Edward H. Small
Niagara Frontier Transportation Committee
Buffalo, New York

Buffalo, the major city in the two-county area of Erie and Niagara, is facing significant changes in its economy. Major manufacturing industries are phasing down or out. Nonetheless, the area is committed to its continued existence.

Constituent members of the metropolitan planning organization (MPO) include the transit operator for the urban district, the Niagara Frontier Transportation Authority (NFTA), the State Department of Transportation, the two cities of Niagara Falls and Buffalo, and Erie and Niagara counties—one of which is heavily urban and the other distinctly rural. The seventh member is the planning board for the region, the comprehensive planning body that is responsible for housing, water, sewer planning, and other similar activities. Because the MPO has seven constituent members with voting privileges, decision making takes a bit longer than in other structures.

The downtown section has a transit mall and a light-rail project that bisect the district and form a major focus for urban redevelopment. The light-rail system began operating in the fare-free zone this past October; the first revenue service portion will begin operations in April 1985, and the complete 6-mile system will be in operation by April 1986.

ESTABLISHING PRIORITIES

One of the issues involves developing the downtown, and transit is a major aspect. Questions include whether to redevelop a major parking area and the impact of this parking area on transit. Another aspect is the equity of transit versus highway priorities. When highway construction on a beltway was begun, Buffalo was a region that was forecasted to have a population of 2 million. Best estimates today are slightly over 1 million, even in the year 2000. Pieces and elements of the expressway system have never been finished, and those in the more rural areas are more interested in highways than in transit. This cannot be ignored if a transit financial plan taps the public as a whole.

In 1976 the Niagara Frontier Transportation Committee (NFTC) voted to advance the light-rail project and Niagara County voted not to advance the project. The committee had always operated on a consensus basis, which meant there had to be unanimous decisions on all issues. Differences of opinion had to be resolved before they came to the policy board. There was one issue that was not resolved in this manner. Niagara County's constituency felt they were going to have to pay for major shares of a project—in terms of both capital cost and operating cost—but have no benefit of the system. The chairman of the policy committee at that time assured the county it would not pay capital costs; that capital costs for transit were historically paid by federal funds and state matching shares, not local funds. A transit financial study was then made to protect Niagara County's concerns and also to reflect Erie County's fair share once this project was in place and operating. The resulting 5-year transit operating assistance plan was geared to about 1986, the point at which the light-rail system would be open and operating. Its major issues were

- Shall transit be expanded?
- Should there be more service, or the same service with lower fares or equal fares?
- If there is a shortfall of aid from federal and state sources, what level of local government should be anticipated to support the transit system?
- What funding source should be considered for that type of financial need?

The study was projected toward a heavy public input process.

FINANCING ISSUES

There had been only one fare increase in Buffalo in about 7 years, during a time of inflation in the late 1970s. It was obvious that revenue was not keeping up with continuing costs. Since the transportation authority took over the private system in 1974, local aid was at the lowest level of revenue. It came from the two counties and was a mandated contribution through the state. The state takes an active role in transit operating assistance in New York State. It must take into consideration the large metropolis of New York City and at the same time be realistic enough to secure legislative votes for a statewide package that shows consideration for the upstate regions. The state transportation law, enacted in 1974, requires the state to provide operating assistance to the urban districts in an amount proportional to their service characteristics; counties in that service district are to provide matching amounts. The county amount remained fixed through the years, and the state kept increasing its share over and beyond the original intent of the matching program.

In 1982, without the light rail on line, the system cost $32 million to operate. Operating aid was $17 million—$8.9 million in federal funds, $6.2 million in state funds, and $1.8 million from the two counties. The latest figures for 1983 showed that the cost of the system was slightly up at $33 million; ridership was down slightly due to economic conditions in the region, and the operating aid was $18 million. Federal aid was down slightly, and the state share—made up of direct state funding and a gross receipts tax on oil—was up quite a bit.

During the course of the study, the Reagan administration began to suggest the drastic reduction of federal aid for operating purposes. A worst-case scenario of no federal aid, escalating costs, and the impact of inflation was presented to the public, who was then asked: What do you really want to buy in terms of transit, and how is it to be financed?

URBAN SYSTEM VERSUS RURAL SYSTEM

Niagara County and Erie County are quite different. Niagara County is rural and has a bare-bone system—the line is either operating or it is not. They had three choices for 1986: more service, the same service, or reduced service with various fare options.

The policy committee endorsed a series of actions. The key action was the acceptance of the equity issue by the urban and the rural counties. It was proposed and accepted that the revenues would be credited to the boarding passengers in each county for the particular mode that was operating in that county, and that the cost would be attributable to the vehicle miles of service of that particular mode in that particular county. If Niagara County had no rail mode, they would not be liable for any of the expenses associated with it. Erie County and Niagara County accepted the provision that if additional aid did come to the region at some future point, either from federal or state sources, it would not be allocated to Niagara County.

CONCLUSION

An innovative approach in this study was the use of a professional consultant to conduct attitude surveys of the public in the two counties in order to identify feelings toward transit and the most logical solutions. It was determined that transit ranked 7 out of 9 in public services the public at large felt should be supported by public funds. It was a consensus that fare increases were not deemed unreasonable and the public did not expect fares to be held down over several years. However, there was great reluctance to use any portion of a sales tax as a source for financial aid. Their priorities were fare increases, service cutbacks, and federal and state aid. Local aid was not one of the options.

Packaging and Implementing a Financial Plan: Achieving Support, Consensus, and Consent

Lawrence D. Dahms
Metropolitan Transportation Commission
San Francisco, California

INTRODUCTION

When the metropolitan planning commission (MTC) was created by the California Legislature in 1970, there were substantial state and federal highway taxes available to build urban roadways, but transit funding was limited. MTC's first responsibility was to prepare a regional transportation plan (RTP). The legislature recognized that the San Francisco Bay Area would expect to include transit as well as urban highways in its plan, and MTC was encouraged to recommend a financial plan that would depend on new legislative authorization of transit funding. From the very beginning MTC had to understand the role and importance of a financial plan in delivering transportation improvements.

ESSENTIAL ELEMENTS OF A FINANCIAL PLAN

Some successful financial plans have been sketched on the back of envelopes, and others have been shelved despite what seemed to be perfect formulation. The necessary ingredients of a successful financial package vary, depending on many factors.

If consideration is limited to that of funding urban transportation projects and services as provided by public agencies, it is possible to identify factors that may deserve being called essential elements of a financial plan. These elements are

- Program, project, or service to be funded must be clearly defined
- Source of funds must be adequate and should be dedicated
- A credible sponsor must be committed to delivering the program
- There must be a broad base of community support
- The sponsoring agency must be capable of responding to community concerns and economic variations as they arise without losing control of the budget and schedule, and have sufficient authority to carry out its mandate

A CLEARLY DEFINED PROGRAM

One example of a successful transportation funding plan on the national level was that authorized by Congress to build the Interstate highway program. For the most part its rural and urban segments have been constructed despite delays and a changing economy. It has not been a lack of funding that has caused a few segments to become controversial and difficult to complete.

The program was defined in broad terms and was to include approximately 41,000 miles, linking certain designated cities according to standards promulgated by the federal government. It was well defined and extensive, and merited the continuing financial commitment of Congress for almost three decades. The key to success has been the assurance that once designated as part of the system every Interstate segment would be funded eventually.

If the federal Interstate program is an example of financial planning at its best, some local transit plans have been prime examples of planning at its worst. Transit plans have faltered when they have been specific but not extensive enough to serve all parts of a community. On the other hand, plans have faltered when they were made extensive enough to serve most of the community but were unable to raise sufficient funds to cope with changing economic conditions and the cost of responding to other community concerns. To counter these difficulties, transit plan sponsors sometimes avoid being specific in describing programs to be funded. In Santa Clara County this general strategy has been employed successfully. While it is desirable to be as specific as possible regarding what is to be funded, this fundamental objective must be considered in the context of how well the rest of the financial plan can be defined and controlled.

ADEQUATE AND DEDICATED FUNDS

The Interstate program is a model of success. Congress dedicated gasoline taxes and other fees to finance the construction, and the continuous flow of funding made for a well-planned, orderly construction program. When delay, inflation, and higher standards drove the cost of constructing roadways up, Congress extended the program and authorized additional funds. There was rarely any notice of the extent of cost overruns on the system, and engineers were not fired or reprimanded because of inadequate attention to budget and scheduling control.

Other parts of the highway system have not been so generously funded. Nonetheless, because of the broad base and continuous nature of most federal, state, local, and highway programs, there has been little criticism for project cost overruns.

By comparison, transit is the neglected stepchild. The nation's network of transit systems has not benefited from steady, reliable funding. Major new systems have been fixed in scope and budget, and there is no built-in mechanism to fund the higher costs associated with inflation, delay, and response to community concerns. There is a federal discretionary program, Section 3, that has provided some relief, but it suffers because transit is important to a limited number of states. This means there is a limited base of support for the program in Congress and the executive branch. Even Section 3 funding is becoming less helpful as the federal government seeks to limit its commitments through spending ceilings in full-funding contracts and other devices.

Dedicated and adequate funding remains an illusive objective. The expectation when funding transit is that operators will have to compete for a limited supply of discretionary funds on a year-to-year basis. This tendency at the federal level puts even more pressure on the objec-

tive of securing more dependable funding at the state and local levels of government.

A CREDIBLE SPONSOR COMMITTED TO DELIVERING THE PROGRAM

The Interstate highway system was built by 50 state highway departments, in partnership with the Federal Highway Administration (FHWA). Federal and state agencies have, with limited exception, been accepted as credible Interstate highway program sponsors. They have been completely committed to the program. Their credibility has not been marred by attention given to cost overruns because of the way the financial plan masks the effects of the overruns.

It has not been easy for the Interstate program, however. In some cities, the details of design standards have been imposed without giving proper consideration to other community values. The most obvious result has been the inability to complete some Interstate segments and some loss of financial support for the program as a whole.

Transit sponsors frequently have not been perceived as credible for many reasons. Controversy over system coverage versus the construction budget, operating subsidies, local funding, cost overruns, and other factors often cast doubt in the minds of the public and local officials regarding the competency of transit sponsors. While transit sponsors may be committed to their programs, they seldom have partners to reinforce that commitment to the extent that FHWA, Congress, and state legislatures reinforce the highway program commitment.

COMMUNITY SUPPORT FOR THE PROGRAM

When someone else is paying the bill, most of the community is either neutral or supportive of a program. The Interstate system benefits from such favorable circumstances.

When a community is asked to vote local taxes to provide new or expanded services it is a different matter, and community support must be cultivated. All the elements of a good financial plan become crucial in building that support. If voters are asked to authorize an additional tax, they want to know exactly what is to be funded, how it benefits their community, whether they can trust the government to be responsible and deliver the program on budget, and what voice they may have when decisions are being made. Good communication and an active public participation program are crucial to building support.

ABILITY TO ADMINISTER THE PROGRAM

Events will dictate budget and schedule changes even for the most well-planned and organized transportation project. The challenge of the program manager is to deliver as close to budget and schedule as possible, while responding to concerns of the community and fluctuations in the economy.

The most significant community concerns are likely to focus on such areas as labor practices, affirmative action, environmental factors, and competitive bidding. Those concerns are usually addressed by local, state, and federal regulations and, in broad terms, the impact of these considerations can be anticipated. It takes a very sophisticated management team with clout and autonomy to assimilate successfully the detailed facets of these complex regulations into a lean budget and tight schedule.

Results are convincing; theories are not. To illustrate the relevance of the financial plan elements, consider how they relate to three examples.

The first was a plan to complete the capital funding of BART, consummated in 1969. The second was a plan to provide BART, AC Transit, and San Francisco Muni operating funds that had been authorized in 1977 and amended in 1979. The third is a plan to finance a 16-year, $2.8-billion rail extension program for the San Francisco Bay Area, now being formulated.

BART CAPITAL FUNDING (1966-1969)

Project Definition

In the original measure passed by voters in 1962, BART was defined as a 71-mile rail system with 33 stations serving 14 cities. The original financial plan covered the construction of a new Muni-Metro light-rail system with four new outer Market Street stations and occupancy of the middle level of four BART stations along inner Market Street. The measure also set a budget for the project.

By 1966 scope changes, delay, and inflation combined to drive costs over the original $1 billion revenue authorized. As a result the BART Board decided to seek legislative relief.

At this point the project definition changed in three aspects from the original plan:

- Parts of the system were cut back to save costs. This included replacing the central Oakland four-track section with a three-track section, deferral of power supply equipment, and elimination of reserve rail tracks and turnback.
- Features were added, particularly within the stations and in the vicinity of station parking lots to improve traffic and pedestrian circulation and the system's appearance. These changes were made at the urging of the cities affected and to secure necessary city street closure agreements. A 34th station, serving BART and Muni-Metro, and substitution of subway aerial sections in Berkeley were changes made later as a result of separate financial plans.
- Elevators and related features were added to make BART accessible to the wheelchair-dependent as part of the eventual legislative agreement to fund the project.

The plan rejected the idea of curtailing the length of the system as an alternative to securing additional funds.

Fund Sources

The legislature debated almost 3 years before enacting legislation required to ensure completion. In the beginning the debate focused on the amount needed to complete the system. The original $50 million shortfall was soon determined to be $150 million, and debate raged over the source. Governor Reagan sought a temporary ½-cent sales-tax solution, and legislative leaders preferred a bridge-toll increase. The ½-cent sales tax was enacted. Revenue bonds were authorized so the $150 million needed would be available as soon as possible to prevent further delay of the project. There was no provision for additional funding that might be needed if further unanticipated problems arose.

Credible and Committed Sponsor

While the BART Board of Directors was committed to completing the full 71-mile system plus the Muni-Metro Program, it did not meet fully the test of credibility and commitment. It was held responsible for the deficit and lost credibility on that account. The ultimate decision by the legislature to complete the system was due more to the extent of investment already involved than from their confidence in the BART board. In an effort to reduce the capital deficit, the board trimmed back certain critical project elements. This exposed a lack of commitment to the integrity of the BART system, and the decision came back to haunt BART in the form of operating problems.

Community Support

When the need for fiscal relief had become apparent, several factors had combined to erode much of the

organized community support for BART—7 years' disruption of street traffic; emergence of a budget deficit; and arguments over design, jobs, and contracts. The public attitude mirrored that of the legislature, and the public continued to support completion of the system despite misgivings regarding BART as a government institution.

Ability to Administer the Program

In retrospect, the delay in building BART was inevitable. The project opened with a 6-month-long taxpayers' suit and was plagued by inflation that exceeded anyone's expectations. This example illustrates vividly the challenge of a project sponsor to deliver a fixed program within a fixed budget and schedule.

BART, AC TRANSIT, MUNI OPERATING PLAN—1977 AND 1979

Project Definition

BART became fully operational and a new financial challenge arose— providing for the system's day-to-day operating expenses. BART was not alone in this dilemma. The other two transit operators providing service in the San Francisco-Oakland area, Muni and AC Transit, were also facing mounting deficits. In response the state legislature directed MTC to work with the three overlapping transit districts to develop a long-term financial plan for transit operations. The level of service to be funded was defined as the existing levels of service, plus introduction of certain committed services by BART and Muni. The plan was implemented in 1977 and modified in 1979.

Fund Sources

A wide range of potential sources was estimated—extension of the temporary 1/2-cent sales tax was the most obvious candidate. A complementary bridge-toll increase to provide capital matching funds was also a likely prospect given recent legislative action granting MTC authority to raise tolls for that purpose. These were the sources chosen.

Credible and Committed Sponsors

Credibility was earned for the financial plan in a number of ways. The local commitment to do all that could be done before turning to the legislature for assistance became a feature of the financial plan. MTC joined with the three affected operators in setting forth 20 principles regarding program administration, cost savings, labor rates, fare setting, and service coordination that had been agreed to as the foundation for the program. This formed the basis for administration of the program and has worked essentially as intended since enactment of the financial plan in 1977.

The one major change came about in response to Proposition 13. This measure denied AC Transit over half its local tax support, and, to some degree, reduced BART and Muni support. Under the 1977 legislation three-fourths of the 1/2-cent sales tax was earmarked for BART operating and capital expenses, and the remaining 1/4 cent was to be allocated by MTC to any of the three operators for service improvements. A plan revision was approved by the legislature in 1979 that made 1/4 cent of the sales tax revenues allocated by MTC available to sustain existing service, rather than being limited to improved services as originally contemplated.

Community Support

Polls taken by the Bay Area Council and MTC indicated substantial support for additional transit funding and for the sales tax as a likely source. Informed interest groups, such as the Bay Area Council and the League of Women Voters, followed the plan's development. A 19-member citizens advisory committee was involved also. The result was support for the program by the most interested representatives of the community and there was no organized opposition.

Ability to Administer the Program

The principles adopted as the basis of the plan became the guidelines for its administration. MTC commissioners from the three counties involved and representatives from each of the three transit operators have served as a committee to guide administration of the program since its enactment in 1977. Thanks to its considerable authority, MTC has been able to administer the plan successfully for 7 years, despite the loss of revenues from two major sources.

Under MTC's guidance, the three operators' labor contract settlements during the interim have been more conservative than before, and they raised fares approximately in unison in 1979 and 1981. Service and transfer coordination was improved, and, while there are still significant improvements to be made, the MTC-operator partnership provides the basis for the expectation of continued improvement.

The 1977 and 1979 plans were intended to provide sufficient funds to constitute a permanent base of operating support for the three transit agencies. The Proposition 13 tax loss and declining federal operating support are having an adverse impact on one operator, AC Transit, causing it to cut services. AC Transit's weakened financial position will be addressed by a Bay Areawide Transit Operating Plan being developed as a part of a regional rail-extension finance plan.

THE $2.8 BILLION RAIL EXTENSION PROGRAM

Project Definition

The original BART master plan in the mid-1950s envisioned a 6-county system encircling the lower San Francisco Bay. The existing 71-mile system was seen as a first increment. In 1962 when the vote was taken, brochures showed dotted lines to suggest extensions in Alameda, Contra Costa, and San Francisco counties. Since the successful 1962 vote several project plans devoted to these extensions have been prepared, but there has not been any real effort to secure funding needed for construction.

In the meantime, the state, through Caltrans, has contracted to contin commuter-rail service (now called Caltrain) operated by Southern Pacific along 44 miles of double track, linking San Francisco and San Jose. Caltrans seeks an extension of both terminals to sites closer to the central business districts. Santa Clara County Transit has secured funding for its Guadalupe light-rail line that will run for 22 miles on a north-south axis through downtown San Jose, connecting with the Caltrain service, and extensions are being planned. The Muni-Metro service has been operating since 1976 and San Francisco has proposed extensions.

When the President signed the penny-for-transit federal gas tax into law in 1983, it marked a reaffirmation of some federal involvement in rail construction. This prompted MTC to sponsor an effort to develop a Bay Area rail extension program. The commission decided it was time to focus serious consideration on where and how to build the next round of rapid transit lines for the Bay Area.

To gather input from the public and transit operators, MTC held eight public hearings, beginning in July 1983 and ending in February 1984. On February 22, 1984 the commission adopted a 16-year, $2.8-billion plan to build 86 miles of rail extensions. The plan was predicated on the assumption that 50 percent of the funding would come from federal sources and 50 percent from state and local sources. MTC's task now is to formulate a financial plan capable of funding the extensions.

Fund Sources

Key to the financial plan will be the $920-million-per-year UMTA Section 3 program proposed by the President in the 1984-1985 budget. Assuming a 10 percent Bay Area share, which is optimistic, it would produce $92 million per year for the region, or roughly 50 percent of the cost of the rail plan.

Federal funds depend on regular renewal of federal program authorization and successful advocacy by the region. It is impossible to anticipate with any certainty how much federal support will be forthcoming. It is clear, however, that a community helps its case most by showing a substantial state and local financial base as a demonstration of local commitment to the project. So the focus of the MTC financial plan at this stage will be to build the strongest base of state and local support possible. At this early stage of plan development MTC can predict with some confidence only those funds presently dedicated to capital funding, including fares, bridge tolls, state gas taxes, state general funds, and local sales taxes. More of these same fees and taxes as well as development fees, special assessment taxes, motor-vehicle license fees, and any other device capable of making substantial contribution must be considered.

The use of bridge tolls for transit has become a special case. The legislature authorized MTC to increase tolls on the Bay's bridges to provide capital funds for transit in 1975. MTC proposed to use its granted authority and increase the tolls from 50 cents to $1 in 1977. After protests, the legislative leadership advised MTC that it would be easier to secure the companion 1/2-cent sales-tax measure if tolls were increased to 75 cents and that suggestion was implemented. The increase now produces approximately $10 million per year for transit projects that, when matched with federal funds, supports a capital program of almost $50 million each year.

In 1981 MTC's authority to increase tolls was restricted. In 1984 the state legislature attempted to lift the restriction only to be thwarted by a veto from the governor. Had the measure survived, MTC would have been able to raise tolls to $1 in 1985, producing $12 million a year for transit.

The bridge-toll example illustrates the volatility of transit funding. It demonstrates that firm resolve and considerable patience are needed to secure funding and find substitutes if a plan goes awry. It also demonstrates that state policies do not always mirror state sentiments—a generic problem for urban transit financial planning.

Credible and Committed Sponsors

MTC is sponsor of this plan. The ten transit operators associated with MTC in the Transit Operators' Coordinating Council are partners. The transit operators become the sponsors of individual projects when funds begin to flow for construction. The extent of commitment of the partners must be developed as the plan is developed. It is too soon to tell if there will be sufficient commitment on the part of everyone needed to make the plan successful.

Community Support

To win the support of the transit community MTC has invited representatives of the major transit operators to sit on MTC's Executive Committee, which is overseeing the financial planning work for all of the rail program. In addition, a transit finance advisory committee has been formed, composed of representatives of business, labor, environmental organizations, and other community groups. Local media, particularly community newspaper publishers, showed intense interest in the development of the rail plan. News coverage was considerable, and editorials, positive and negative, appeared regularly. MTC has invited publishers and top broadcast executives to serve on the finance panel and several have accepted. It is through the work of this committee and MTC's continuing work with Bay Area interest groups that support for the program may be developed, just as was done with the 1/2-cent sales-tax program in 1977.

Ability to Administer the Program

Just as the financial plan must be expanded from the conceptual to a refined definition, so must the projects be better defined. This is being done in several corridor-planning projects sponsored by MTC, BART, and Santa Clara County. In recognition of the 16-year duration of the program, some projects may not reach the final design stage for several years. Even the institutional sponsorship of some projects is subject to further investigation. At this stage a detailed budget and schedule have yet to be redefined. It follows that the mechanism for assuming adherence to budget and schedule also will require additional work and agreement.

CONCLUSION

The elements of a good financial plan have been defined and used to evaluate two financial plans successfully implemented and one being formulated.

A plan must be flexible and embody an administrative mechanism able to adjust to change. The experience of producing successful plans in some past context does not assure success in some different context.

The financial plan must be tailored to the unique circumstances of the program and community in question. The trick is to have the right plan at the right time, and the insight to recognize that specialized fit.

UMTA's Perspective

Ralph L. Stanley, Administrator
Urban Mass Transportation Administration
Washington, D.C.

INTRODUCTION

A topic that has gained increased prominence in the scheme of transportation planning recently is the need for responsible, effective transportation financing at the local level. With the economy in a period of marked prosperity, the mobility requirement of our fast-growing metropolitan regions is an ever-expanding need. Hand-in-hand with this has come a national concern for federal spending.

The deficit is a problem that Americans must face together. The Reagan administration has made a commitment to maintain realistic restraints on government spending so that today's needs will not impoverish the nation tomorrow. Judging from their resounding support in the recent election, it is clear that the American public has faith that President Reagan will attain this goal swiftly and competently.

The challenge of reducing spending growth brings with it a burden of securing alternative support for the many programs that are fed by the federal hand. In this respect, transportation is no exception.

With the continuing expansion of major urban centers nationwide to include extensive miles of suburbs, the need for reliable, flexible mass transit is evident. The traditional public transportation services that have come into their own since federal assistance to mass transit was instituted 20 years ago are no longer adequate to meet the needs of this mushrooming suburban population. With $4 billion per annum required merely to update standard traditional public transit systems in the United States, a way must be found to augment federal transit assistance or the services required by sprawling metropolitan regions cannot be maintained.

A four-point plan covering problems needing attention in the realm of local financing has been developed. Touching briefly on each of these phases demonstrates UMTA's perspective in each category.

TRANSPORTATION FORECASTING

It is essential to effective public transit that financial planning be developed in conjunction with transportation forecasting activities. Good transit planning is founded on the basic premise that a transportation system is created on the basis of need. The basic mobility requirements of a community must be considered first—the need for people to find cost-effective commuter travel to work, school, and the marketplace.

The particulars vary within each community. Once the transit need has been established, an efficent project that meets those specific regional demands should be developed, with a fiscal plan that speaks responsively to the monetary requirements of the project. A system should not be devised merely to enhance the general prestige of a community. Projects created solely for the sake of their existence are doomed from their inception, and it is important for local political leaders to realize this. The congressional representative who votes for a mass transit system his district cannot afford to operate when the construction is completed is not doing his constituency a favor.

ALTERNATIVE SOURCES OF REVENUE

Alternative sources of revenue used to fund a system must reflect the particular characteristics of the region. Funding measures should be based on the relative needs and assets of a community. There is a myriad of options available to serve this task, including various forms of taxation or lottery systems. The means selected will depend on the locality. For example, in a district experiencing an elevated unemployment rate, a payroll tax would be unsuitable. In contrast, a community that is undergoing a period of population growth and economic prosperity, such as Houston, Texas, and various regions throughout California, would be wise to implement such a system or, alternatively, a sales-tax method of procurement.

There is an overwhelming advantage to involving the private sector in the development of alternative funding sources. Private-sector participation in local transportation planning results in the creation of stronger, more efficient transit systems dealing directly with community needs.

The private sector can provide input to gear transportation to specific local needs and enhance the financial base available for transportation support. An example of a funding source that can be generated by this type of involvement is issuance of bonds by various segments of the private sector.

Private-sector involvement in early planning stages promotes community interest in a transit system that may lead to enhanced ridership. The overall result of private-sector participation is a positive sharing of costs and benefits that provides transit support and enhances local economies.

In making the determination of what constitutes cost-effective transportation planning, the real concern is one of mobility—the best, most efficient way to get people from one point to another. This is not a transit versus highway debate. Responsible, thoughtful transportation planning on the local level must be created to foster effective transit systems throughout the country, while at the same time alleviating some of the federal burden through the instigation of local funding sources.

FINANCIAL PLANNING TECHNIQUES

Another issue that must be addressed is the absolute necessity of devising sound, legitimate financial planning techniques to produce the best available systems for funding. These techniques should be state-of-the-art, reflecting the best professional planning options.

The need to have these reliable planning mechanisms in place cannot be overemphasized. There are all too many

illustrations of problems that arise in financing and implementing a system when the projections at the planning stage are conducted haphazardly.

The downtown People Mover in Detroit is a poignant example of what can go wrong when the groundwork is not properly laid for development of a cost-effective mass transit project. In addition to serious quality-control problems plaguing this system, the cost overruns for the People Mover are now estimated at between 35 and 50 percent of the original figures.

What was once expected to cost in the neighborhood of $135 million is now a project of more than $180 million, and anticipated expenses will soon drive the price tag for this project over the $200 million mark. What is disheartening is the knowledge that the People Mover will cost Detroit commuters and taxpayers unpredictable sums of money for years to come.

Other regions have experienced similar disappointments as a result of insufficient planning. At a cost of $1.7 billion, the Bay Area Rapid Transit (BART) was completed $1 billion over budget. With a projected first-year usage of 258,500 commuters each day compared to actual ridership of less than half that figure, and an operating deficit for the last fiscal year of $87 million, this system is also a victim of inadequate fiscal planning.

Washington, D.C., is not exempt from the pitfalls of transportation forecasting. The Washington Metropolitan Area Transit Authority (WMATA), once billed as the prototypical metro success story, has grossly exceeded its original cost estimates as well. From a starting figure of $793 million, the project has engulfed to date nearly $6 billion in construction funds, and more than $13 billion will likely be needed to complete the system. All these examples drive home a single, inescapable truth in transit planning—a system can be cost-effective only if it is conceived with meticulous precision.

It is essential that data input be consistent with available empirical evidence to ensure that the results obtained from this process are an accurate calculation of the needs and expectations of the public. These statistics must be realistic, based on reasonable assumptions; it is wrong to assume that people will pay any price to get the transit system they think they want. Unless a proper balance is struck at this stage, a community may run through all the preliminary planning steps only to find itself on the verge of constructing a system that will be rejected by the public.

PACKAGING

An extension of this need to develop rational planning techniques should be addressed. Once those measures have been established in a reasonable fashion, the next step is the implementation of a package logically employing the specifics determined in the planning stage. A rational prospectus is useless if the output does not follow the same sensible guidelines.

For a plan to be applied effectively, several factors must be present. It is important to have a good working relationship among all parties concerned. Input from private citizens must be obtained early so that, when the plan is ready for implementation, the private sector has a clear understanding of what it can expect from the project.

Everyone involved must be aware of their respective roles and responsibilities. This requires detailed accounts of contractual obligations, the anticipated schedule for the flow of capital to the project, and the accompanying legal ramifications for each stage of development. These preventive measures will be helpful in reducing conflicts between the political and private sectors and will serve to ensure that the project, once built, will receive continued support from the public.

CONCLUSION

As the need for local transportation funding continues to grow, the responsibilities of the private and public sectors for developing new resources will expand. Local leaders must be assisted by the federal level in developing accurate forecasting techniques and reliable funding sources. The ultimate responsibility for efficient local transit, however, will rest with the community itself. If the leadership in the various regions throughout the nation will keep the need for public mobility as their primary objective in transit planning and development, the ride will be smoother for all concerned.

With continued efforts, transit funding on the local level will emerge as another illustration of new local independence fostered by the Reagan administration, helping to keep the federal government out of the public's pocket and back in the role of adviser where it rightfully belongs.

Evaluating Alternative Local Transportation Financing Techniques

Dennis C. Judycki, Division Chief
Federal Highway Administration
Washington, D.C.

First of all, I want to thank the Transportation Research Board (TRB) for inviting Federal Highway Administrator R.A. Barnhart to this conference. The Federal Highway Administration (FHWA) has had a long and fruitful relationship with TRB. Conferences such as this are often the cutting edge of progress as new ideas are developed and information exchanged. Unfortunately, Mr. Barnhart cannot be here today because he was scheduled to attend a TRB steering committee meeting on the Strategic Highway Research Program, a program of research covering infrastructure needs.

Both FHWA and UMTA regard local transportation planning and financing as important interrelated issues. Credibility is an important resource, and we cannot afford not to do a good job of financial planning.

FHWA believes that financial planning, when done as part of traditional transportation planning, can make the difference between a practical transportation plan and an impractical one. Financial planning is not simple because financial conditions vary from state to state and from urban region to urban region. Also, state and local jurisdictions are the first to feel the impact of inadequate financial planning. For this reason it is critical that state and local agencies assume primary responsibility for planning and financing local transportation systems.

At the federal level priority is being placed on:

- Continuing FHWA involvement in programs of the highest federal interest, such as completion of the Interstate system, preservation of the Interstate and primary systems, and replacement and rehabilitation of bridges on major systems. Highway user fees have been significantly increased; the shortfall for federal-aid highways alone is $5 billion a year.
- Priority will continue to be placed on sharing information among states and local governments on a variety of subjects, including evaluating and using available financial resources. It is important to share the experiences of forerunners and trendsetters as new techniques are tried.

FHWA and UMTA recognize our important responsibility to share with state, local governments, and the private sector specific knowledge on how to cope with ever-increasing financing needs. UMTA and FHWA are supporting the Joint Center for Urban Mobility. As the name implies, the joint center represents a cooperative effort by federal, state, local governments, and the private sector. The joint center is part of Rice Center, affiliated with Rice University in Houston, Texas.

The joint center disseminates technical information to state and local governments and provides assistance on new approaches to urban transportation system development and financing. Mr. Gary Brosch is the Director of the Joint Center for Urban Mobility.

The joint center has conducted, and is conducting, a number of studies that will advance the field of financial planning for urban transportation. The studies include a case analysis on financing mechanisms, an evaluation of innovative highway financing mechanisms, an examination of ways to improve public/private partnership in transportation planning, and an analysis of revenue forecasting approaches. Results of these and other studies are disseminated through reports and the joint center's newsletter, the Exchange. The center is available for technical assistance in these fields.

FHWA is participating with TRB in two important studies—a study to synthesize current knowledge on toll financing and a study to examine state and local ordinances that encourage private financing of public highway improvements.

In addition, in 1983 FHWA completed a contract study through Kimley Horn to examine the use of private funds for highway improvements. These case studies focused on the participation by developers in funding improvements on facilities affected by their developments.

FHWA maintains a solid technical assistance capability on related topics. This assistance has been manifested in several ways. For example, we have provided workshops on the use of quick response procedures for evaluating traffic impacts of developments and have sponsored the development of a microcomputer software package for applying these techniques. More recently FHWA, with help from the joint center and UMTA, developed a workshop to synthesize and disseminate findings from a number of financing studies. Called "Financing Urban Transportation Improvements," this workshop draws on these studies and presents the material in understandable and practical formats. This new workshop will be available on a pilot basis in January. The primary audience for all workshops has been state, local planning, and engineering staffs.

Beyond the federal role in financing programs of the highest federal interest and sharing information with state and local governments, the role of monitoring financing trends is becoming more important. With the passage of the Public Works Improvement Act of 1984, federal agencies will be asked to analyze and report on methods used to finance public works improvements, trends in financing methods, and other infrastructure-related data.

More than ever, state and local governments must use existing revenues effectively and identify alternative sources of revenue. Urban project financing is undergoing rather fundamental changes at the state and local levels. Motor fuel taxation at the state level, which was once the overwhelming principal highway revenue source, has slipped from two-thirds to slightly more than one-half of all user revenues. Since the late 1970s 22 states have changed their motor-fuel taxes by indexing them to automatically compensate for inflation and to offset declining fuel consumption. Unfortunately this tax delegates control over revenues to an administrative procedure that makes reliable forecasts

of revenue difficult. Perhaps this is why most states still choose to adjust rates legislatively rather than administratively. In 1983 27 states adjusted motor fuel tax rates. Two-thirds of these states levied a tax increase of 3 or more cents.

As nontraditional revenues become more common practice, states are looking toward state sales taxes on motor fuel and vehicles. Over one-half of the states now use one of these methods. Some states recognized a need for generting more funds at the local level and implemented local-option motor fuel taxes. Most recently the states of Florida and California have passed legislation to allow their respective counties to levy between 1 and 4 cents per gallon fuel tax for local transportation projects, if county voters approve. Some states and local governments have used toll financing, such as Virginia for the Dulles Toll Road and Harris County, Texas, for the Hardy Toll Road in northwest Houston. Bonding has also received a renewed interest and makes good economic sense in many cases. The American Public Works Association publication on 17 strategies has a good summary of this and other financing techniques.

The private sector has an increasingly significant role to play in planning and implementing transportation improvements. The private sector has already played a major role in planning transportation facilities. In Houston, Texas, the Chamber of Commerce was instrumental in developing a 13-year, $17.4-billion plan for multimodal improvements. In Cleveland, Ohio, the Greater Cleveland Growth Association is tackling the difficult task of addressing the problem of severely deteriorating community infrastructure. Private-sector participants, consisting of members from business, banking, law, and industry, are working with the public sector to accomplish common goals. Private developers have financed intersection improvements, street widenings, overpasses, and interchange construction in exchange for obtaining zoning flexibility to build office, commercial, or residential developments. In some cases improvements totaled large amounts ($18 million in the case of the Joint Southeast Public Improvement Association in the Denver region). Developing public and private coalitions is critical to successful financial programming.

MPOs stand in a unique position as partners with the private and public sectors. MPOs have traditionally addressed the longer-range regional impacts of urban developments, with an emphasis on improvements that increase capacity. MPOs are in a unique position to evaluate quickly the impacts of development strategies in suburban locations, where transportation needs are mushrooming as a result of demographic shifts and accompanying private investments. In this case MPOs have the complete picture of the region and its goals. Consequently it has an important role to play in ensuring the development of a coordinated program of transportation improvements consistent with transportation needs and financial resources. In some districts MPO's role in nontraditional project development, such as pavement management programs and assessing impacts of major new suburban developments, is yet to be defined but will certainly depend on the service a metropolitan agency can provide its local constituents. In other areas, just as the MPO's role has evolved in coordinating project development, there are opportunities for the evolution of a role to coordinate and perhaps even facilitate project financing. Packaging financial plans for policy makers should receive a great deal of attention. The Denver Regional Council of Governments' initiative in this direction is an example of taking financial planning a step beyond the traditional for MPOs. MPOs can ensure that transportation programs subsequently developed would be more practical.

FHWA recommends increased activity in financial planning and suggests that it become an integral part of the analyses of transportation strategies. Just as there are trade-offs in transportation alternatives, there are trade-offs between financing alternatives and financing strategies.

Research Needs Statement

Edward L. Thomas
Urban Mass Transportation Administration
Washington, D.C.

ONGOING RESEARCH IN TRANSIT FINANCE

Rather than discuss future research needs, I thought I would take this opportunity to discuss research and technical assistance activities being offered, developed, or planned by UMTA. Future research needs will undoubtedly be brought out in the conference proceedings and summarized by Arturo Politano.

This conference is among numerous efforts UMTA is using to provide technical assistance in the area of transit finance. Other activities include (a) case studies of successfully implemented local transit financial plans, (b) a guide for forecasting nonfare revenue, (c) major investment project planning guidance, (d) a handbook on financial management for transit, (e) a guide for forecasting cost and fare revenue, and (f) various courses. We believe the other activities being pursued are complementary with this conference, since they touch on the themes of the four conference workshops. The following is a brief description of each activity, and are the primary activities being pursued by the UMTA Office of Technical Assistance.

Case Studies in Nonfederal Funding for Transit

In this project, UMTA commissioned an analysis of six cases where primarily nonfederal funding was used for capital projects and operating programs. The cases considered are Houston park-and-ride lots; Montgomery County, Maryland, Ride on System; San Francisco BART Embarcadero Station; Los Angeles County Long Beach LRT, Washington, D.C., Metrorail Joint Development; and Denver Mall.

The case studies document the content of the financial packages put together; the rationale for deciding on the content; and the various technical, political, and institutional issues encountered during the implementation process. A draft report has been prepared and the final report is expected soon.

Forecasting Nonuser Charge Revenue

The primary aim of this research is development of a technical assistance guide on financial forecasting. It will present an improved methodology for forecasting revenues and describe how to integrate this methodology into established analytic techniques for urban transportation planning. This forecasting guide will cover the full range of revenue sources including broad-base taxes (sales, income, and property taxes), user charges (tolls, gas, and parking taxes), benefit and cost sharing strategies (special assessment districts, connector fees, and joint development projects), and borrowing strategies (conventional bonds, equipment trust certificates, industrial bonds, and revenue anticipation notes). Other products of this research are materials to support ongoing courses being offered by UMTA and the Federal Highway Administration (FHWA), and recommendations on enhancements to existing microcomputer software for financial forecasting and also on new software that might be needed. This guide is scheduled for completion in September 1985.

Project Planning Guidance

UMTA is sponsoring the development of a series of guides to assist agencies undertaking project development activities in accordance with UMTA's major capital investment policy. The finance-related guides include ones on estimating capital and operating and maintenance (O&M) costs and financial planning for major capital investments. The cost estimation guides will explore the various techniques of cost estimation, recommend best professional practice, and provide data on recent experiences. The financial planning guide will provide a systematic methodology for developing the financial information necessary during systems planning, alternatives analysis, preliminary engineering, and final design. Emphasis will be placed on the analysis of alternative sources of financing, the development of annual cash flow statements, reasonability checks on service plans, construction schedules, cost estimates, patronage forecasts and revenue projections, and also on guidelines for implementing financial programs. A survey of transit bond financing experiences will be a key effort in developing the financial planning manual. The development of the financial planning manual is just getting under way and a final report is not expected before May 1986.

Financial Management Handbook for Transit Operators

The UMTA University Research Program is sponsoring the development of a financial management handbook for transit operators. This handbook is being prepared by the Indiana University Institute for Urban Transportation. The handbook is an outcome of the Institute's course on financial management for transit. It will cover the fundamentals of financial management including accounting principles, data requirements, budget development, cash management, risk management, pension management, and inventory and cash control. For further information on this manual or the course, contact George Smerk at Indiana University (telephone: 812-335-8143).

Forecasting Transit System Operating Costs and Revenues

UMTA is offering a course on forecasting costs and revenues for transit operators. The course is organized around five methods of estimating driver costs, maintenance costs, general and administration costs, fare revenue, and nonfare revenue. The course critiques the forecasting procedures for each method, discusses problems in data manipulation, and identifies the influence of policy initiatives like alternative fares, changes in work rules, and the amount of service provided. The course also contains application problems for the participants and a demonstration of one of

the methods using a desk top microcomputer. Each method will be documented in a technical report. The report on driver cost estimation is the nearest to completion. Further information on the course can be obtained from the UMTA Office of Methods and Support (telephone: 202-426-9271). Because of the technical orientation of this course, it is recommended for technical staff and program managers.

Seminar on the Role of Mayors in Transit Finance

These seminars, to be developed by the U.S. Conference of Mayors, will inform mayors and their staffs of the causes behind the financial problems facing transit systems, the various solutions to these problems, and the contributions they can make in evaluating and implementing transit financial programs. The seminars will be offered through the Conference of Mayors' Research and Education Foundation. Plans are to offer the seminars at the Conference of Mayors' Annual Meeting, Regional Meetings, and Mayors' Leadership Institute Training Sessions.

UMTA OFFICE OF GRANTS MANAGEMENT

The UMTA Office of Grants Management is also supporting research in areas related to transit finance. Examples of the projects include:

- Market, feasibility, and pro forma study for development at Elizabeth, New Jersey, commuter rail station
- Planning for innovative financing through the use of MPOs and workshops
- State options for transit financing
- Options for financing the east urban line trolley (San Diego, California)
- Statewide program for maximizing income from transit land assets through joint development (Connecticut)
- Interactive graphics computer system for land management
- Case study of air rights development integrated with an intermodal terminal
- Case study of Turnkey Park-and-Ride lots (Houston, Texas)
- Financing transit infrastructure in a time of fiscal constraints
- Complementary private transit services through transportation management associations
- National Cooperative Transit Research Program—Benefit-Cost Sharing Project
- University Research Program

Research Needs Statement

Arturo Politano
Federal Highway Administration
Washington, D.C.

FUTURE RESEARCH PRESENTATION

In order to develop a statement of research needs, I attended at least one workshop with each group. On the basis of what I heard, I jotted down my impressions of research topics suggested by participants and came up with about eight topics. The first five are topics of future research:

- Identifying tax capacity limits of jurisdictions (local)
- Transferability and marketability of financing mechanisms
- Prerequisites of funding mechanisms for ensuring viability
- Private-sector participation and its influence on a region's priority program of projects
- Equity of financing mechanisms—who gains, who loses, opportunities for balance

The last three topics for which we hope to find some answers in one or two years are:

- Incentives for using MPOs as a vehicle for coordinating financial plans
- Private-sector involvement—how much and how beneficial
- Examples of successes and failures of MPO planning

These topics may, in part, be touched on by an FHWA/UMTA study done by the joint center. The objective of the study is to explore the involvement of the private sector in planning and implementation of transportation improvements through case study approaches.

In undertaking this research, we are fulfilling a mission of sharing information. We can also share our efforts. If your financial plans are completed, send them to me. They may provide information for our studies. If your financial plans are being developed, let us know. We'll be glad to provide the benefit of our knowledge as a sounding board.

Part 3

Hypothetical Case Study

Hypothetical Case Study

One of the workshops decided to use a case study approach to consider the issues rather than respond directly to the suggested workshop questions. The workshop co-chairmen prepared a hypothetical case and presented it to their workshop. The members of the workshop were then divided into six groups to represent different segments of the community (state and local government, a transportation authority, the business community, transit-dependent and disadvantaged groups, and the general public). After developing their strategies for action, each group participated in a mock public hearing where all the other groups could challenge claims and assertions. Points were allotted to the challengers and to the defenders by the workshop co-chairmen who acted as the judges for the game. After the conference was over the workshop members summarized their deliberations and proposed the following financial plan for the case study.

GENERAL SITUATION

- Deteriorating public transit system
- Freeway system over capacity and getting more congested
- Rapid economic growth overburdening all local infrastructure
- Growth threatening to stall because of general overburdening of transportation infrastructure, but especially because of increasing mobility and access problems in the central business district and other key activity centers
- Generally perceived need for drastic upgrading of transportation infrastructure—highways and transit
- No general agreement on the specific upgrading that should occur
- No general agreement on who should pay and how payments should be made (that is, revenue sources) to support needed improvements

PROPOSED SERVICE PACKAGE

- 25 percent capacity increase for existing major freeways
- 20 miles of new freeways
- 60-mile rapid rail system—new system, no rapid rail currently exists
- Minor arterial improvements to support freeway improvements and new freeway construction
- Minor improvements to existing bus transit system—most intended to feed rapid rail system when opened

PROPOSED FINANCIAL PACKAGE

- Dedicated sales tax of 2 percent—current rate 5 percent
- Dedicated gallonage tax on motor fuels of 1 cent per gallon—current rate 8 cents
- Bus fare increase of 30 cents (present 50 cents) with long-term bus and rail base fare to be $1.00
- Transfers to increase from 5 cents to 15 cents
- Projected annual yield of sales tax $95 million
- Projected annual yield of gallonage tax $50 million
- Projected share of operating costs for bus and future rail to be recovered from fare box—50 percent $ 3 million
- Projected total costs for freeway construction $10 billion
- Projected total costs for rapid rail construction $ 6 billion
- Projected total costs for bus system improvements $ 3 million
- Projected total costs for arterial improvements $ 4 million
- Responsibility would rest with regional transportation authority

Transportation authority presently has authority over transit fares

Note: New taxes require enabling legislation from state legislature and a popular referendum.

The concerns of each group were outlined as follows:

LOCAL GOVERNMENT

- Encourage growth
- Control growth so it is not self-terminating
- Control growth to maintain quality-of-life
- Keep transit-dependent, minorities, the elderly, and the handicapped communities happy
- Keep business community and developers happy
- Improve the quality-of-life so that more industry and jobs can be attracted

STATE GOVERNMENT

- Not to get caught in a local situation that is becoming explosive
- Not to put any new state monies into transportation in region
- Subcurrents:
  - Rural area resentment of urban areas in general
  - Other urban districts' resentment of major urban district in the state

Note: Legislature must pass enabling legislation to permit local popular referendum on the taxing package, and may include requirements as to reporting, expenditure limits, fare-box recovery rates, and so forth as it sees fit.

TRANSPORTATION AUTHORITY

- Get program of projects funded and under way
- Defuse potentially explosive congestion problems
- If growth becomes self-terminating because of congestion, avoid the blame
- Keep everybody happy, if possible
- Run a respectable and adequate system of roadways and transit

BUSINESS COMMUNITY

- Keep growth on track
- Acknowledge that congestion threatens growth
- Concern regarding access to their establishments by both customers and employees
- Concern regarding impact of new taxes on the business climate
- Cool to special-benefit tax districts

TRANSIT-DEPENDENT, MINORITIES, ELDERLY, AND HANDICAPPED

- Secure reliable mobility, especially transit and paratransit
- More security on transit buses, concern over security on proposed rapid rail system
- Improved transit facilities—bus shelters, air-conditioning on buses, lift-equipped vehicles (bus or paratransit vehicles), and so forth
- Low fares
- Low taxes on members of these groups
- Increased mobility
- Fair share of construction expenditures for minority businesses
- Fair share of improved transit services, including access to rail
- Subagenda:
  - Exercise political influence
  - Develop a new political group to advance a broad range of socioeconomic issues in the future

GENERAL PUBLIC

- Reduce travel time and hassle
- Enjoy the benefits of growth
- Only a limited willingness to pay increased taxes; concern over what will actually get for new tax dollars
- Neighborhood opposition to new freeway construction
- Neighborhood concern over rapid rail construction; not as opposed to rapid rail as to freeways because rail would take less land and be underground in most neighborhoods

RECOMMENDATIONS

The Workshop Committee prepared the following report of their recommendations.

The financing plan is a multielement financing concept and at the local level represents an equitable sharing among general revenues, users' fees, developer contributions, and benefit assessments (Table 1). The recommended financing plan is flexible and can accommodate changing circumstances and needs as implementation proceeds.

It is generally recognized that many elements of the financing concept require voter or legislative approval, are uncertain, or could be adversely affected by unanticipated events. The multielement financing concept must be dynamic and should be reviewed annually by the Metro Council to ensure that expected financial revenues are sufficient to meet the financial requirements as construction proceeds.

Need

We have assessed carefully the need for the proposed infrastructure investments and have analyzed the demographic, economic, and transportation assumptions that lead to the proposed investment program. There is regional consensus that the proposed investments are necessary to upgrade existing highway and transit investments and add capacity to accommodate future growth. There is legitimate concern, however, over how soon the projected future will be realized.

The proposed program provides a reasonable strategic investment framework for the region.

Staging

The continuing uncertainty of federal partnership in infrastructure investments, especially for transit, makes long-term planning difficult. The UMTA alternatives analysis for the Phase I transit program has been completed. UMTA approval to proceed to preliminary engineering awaits the adoption of a financing plan. Recommendations have been made to UMTA officials, and this financial plan is considered to represent the public and private partnership anticipated by UMTA regulations. The cost-effectiveness ranking of this project will be among the highest in the nation.

Subsequent federal transit investments in Phases II and III are problematical. The Phase II transit program includes major investments in busways to complement the Phase I light-rail line. Also included is the difficult and costly investment in the downtown subway that must be completed before the Phase III light-rail line serving the western suburbs can be built.

It is not likely that UMTA will authorize an alternatives analysis for the downtown subway before the Phase I light rail is operational. This would delay rapid transit implementation for Phases II and III. The Phase II busway improvements to the north are independent of the light-rail program and may be able to proceed independently.

On the highway side there are similar uncertainties regarding implementing this ambitious program. In constant dollars the maximum annual expenditure of $1.5 billion is 50 percent greater than that accomplished in any previous year. Prudent management suggests that implementation proceed only as it is clear that management controls, staffing, and training are complete and ready to supervise a program of this magnitude.

It is recommended that the investment program be implemented in phases. The Metro Council, as part of the TIP process, should review annually the prospects of federal financial assistance, the expected and realized demographic and economic projections, and project implementation. The priorities, phasing schedule, and financing plan should be updated annually.

Financing Plan

Revenue potential, equity, political acceptability, and the administrative difficulty of each—potential elements of a financing plan for capital and operating requirements of the highway and transit infrastructure investments—have been evaluated. Of major local funding sources that could form the necessary base for the financing plan, an additional sales tax stands out as the logical choice.

There are political, economic, and practical advantages to a multielement financing plan. Such a plan has the advantage of relying on a diversity of revenue sources that can be tailored to provide equitable sharing of costs and benefits and appeal more broadly to the electorate.

An additional 1 percent sales tax must be the primary element of any financing concept for highway and transit infrastructure investments. It is also necessary and practical to rely on additional revenue sources.

TABLE 1 Metro Council Transportation Investment Program Blue Ribbon Committee Financing Plan ($ millions)

	1	2	3	4	5	6	7	8	9	10	Total
Project Capital Expenditures											
Transit											
Bus	60	60	60	60	60	60	60	60	60	60	600
Rapid transit											
Phase I	25	75	150	200	200	0	0	0	0	0	650
Phase II	0	0	0	50	125	300	300	200	50	0	1025
Phase III	0	0	0	0	0	0	75	150	300	200	725
Total	85	135	210	310	385	360	435	410	410	260	3000
Joint Development Revenues	0	5	10	15	20	20	25	25	25	25	170
Net Project Expenditures	85	130	200	295	365	340	410	385	385	235	2830
Highways											
Existing system	100	100	100	100	100	100	100	100	100	100	1000
Expansion											
Phase I	150	500	600	700	600	100	0	0	0	0	2650
Phase II	0	0	0	0	200	600	800	800	700	500	3600
Phase III	0	0	0	0	0	0	300	600	600	250	1750
Total	250	600	700	800	900	800	1200	1500	1400	850	9000
Interchange Policy Funds	15	30	35	40	45	45	60	75	70	50	465
Net Project Expenditures	235	570	665	760	855	755	1140	1425	1330	800	8535
Total Capital Expenditures	320	700	865	1055	1220	1095	1550	1810	1715	1035	11365
Sources of Funds	0	67	6	9	8	10	14	12	13	8	
Carryover											
General Taxes											
Sales	126	141	158	177	198	222	249	279	312	349	2211
User Fees											
Motor fuels tax	60	61	61	62	62	63	64	64	65	66	628
Bridge tolls	0	0	0	0	40	42	44	46	49	51	272
Transit revenues	15	20	21	26	36	44	46	48	54	63	372
Benefit Assessments											
Value capture	0	0	3	4	6	9	11	10	12	12	66
Corridor assessment district	15	16	17	17	18	19	20	21	22	23	189
Federal											
UMTA											
Capital	51	81	126	186	231	216	261	246	246	156	1800
Operating	20	26	28	34	48	59	61	64	72	84	496
FHWA											
Capital	150	360	420	480	540	480	720	900	840	510	5400
Operating	0	0	0	0	0	20	30	40	44	48	182
Bond Account	0	0	150	180	240	190	440	495	525	230	2450
Bond Interest	0	0	0	18	7	17	5	33	3	14	98
Total Sources of Funds	437	771	989	1193	1435	1390	1966	2259	2257	1614	14164
Uses of Funds											
Operating & Maintenance											
Transit											
Bus	50	65	70	75	95	120	126	132	139	146	1018
Rapid transit	0	0	0	10	25	26	28	29	40	65	223
Highways	0	0	0	0	0	50	75	100	110	120	455
Total Operating & Maintenance Costs	50	65	70	85	120	196	229	261	289	331	1696
Capital											
Transit											
Bus	60	60	60	60	60	60	60	60	60	60	600
Rapid transit	25	70	140	235	305	280	350	325	325	175	2230
Highways	235	570	665	760	855	755	1140	1425	1330	800	8535
Total Capital Costs	320	700	865	1055	1220	1095	1550	1810	1715	1035	11365
Bond P&I											
Sales Tax Revenue Bonds	0	0	45	45	45	45	135	135	205	205	860
Toll Revenue Bonds	0	0	0	0	40	40	40	40	40	40	240
Total Uses of Funds	370	765	980	1185	1425	1376	1954	2246	2249	1611	14161
Carryover	67	6	9	8	10	14	12	13	8	3	

Sales Tax

It is essential that 1 percent additional sales tax should be provided for financing the highway and transit capital needs. These revenues can and should be used to provide the backing for revenue bonds. Revenue bonds should be issued to ensure the cost-effective and timely implementation of the capital program. One estimation is that an ambitious implementation program would require the issuance of $2.05 billion in sales-tax revenue bonds, and this level of bonding is fiscally prudent.

A 1 percent sales tax provides 51 percent of the local financing required over the 10-year period.

Federal Participation

The federal government has an important role in transportation infrastructure investments that avoid the problems plaguing older urban areas. The Metro Council has, and should continue to pursue, federal participation in highway and transit capital investments. The goal of 60 percent capital and 40 percent operating partnership with the federal government is an ambitious but reasonable goal. The implementation program should be adjusted if federal funds are not forthcoming.

User Fees

Users are direct beneficiaries of the investment program. The comprehensive program of highway and transit user fees provides approximately 29 percent of the required local revenues.

- Motor-Fuel Taxes — An additional 2 cent per gallon motor fuel tax is recommended. This provides 14 percent of the local financing requirements.
- Bridge Tolls — The local $400 million capital requirement for the McManus Memorial Bridge should be financed in total by revenue bonds backed by bridge tolls. Over the next 10 years, this provides 6 percent of local financing requirements.
- Transit Revenues — The Metro Council should adopt a policy that transit revenues will be established to recover 30 percent of the operating costs from the farebox. Either fares or service levels should be adjusted biannually to achieve this goal. At this level transit revenues generate 9 percent of local financing requirements.

Developer Contributions

Local developers at transit stations and highway interchanges benefit from these public investments. The public capital cost of these facilities should be funded in part by land or other contributions, and joint-development projects in partnership with developers.

Metro Council should adopt a goal of 6 percent of the total capital cost of transit and highway programs to be funded by a voluntary partnership with developers at transit stations and interchanges. The level of private-sector participation should be a major factor in establishing implementation priorities. This program generates approximately 15 percent of required local revenues.

Benefit Assessment

There are other direct beneficiaries of this investment program, including businesses in the transit and highway corridors. This investment program will alleviate existing and expected peak-hour congestion that is a result of work trips. It is recommended that the Metro Council establish corridor assessment districts to levy an employee head tax on all employees within a mile of the freeway and transit corridors.

Plans for value capture at transit stations should be aggressively pursued from the outset. Value capture can provide a continuing source of revenue for transit. Benefit-assessment districts to capture these revenues can provide a continuing source of revenue for transit. Such districts, creatively applied, also offer important opportunities to local communities to enhance a fixed-guideway investment.

Together these benefit-assessment concepts provide approximately 6 percent of required local revenues.

Part 4

Workshop Summaries

The fifth plenary session of the conference was a summary of the conference workshops. The following reports were presented during that session by the workshop chairpersons.

Financial Planning: Needs, Roles, and Relationships

Carol Keck
New York State Department of Transportation
Albany, New York

The goals of the first set of workshops were to identify how transportation planning, financial planning, and strategic planning fit together; determine what role the MPO structure or process can or does play in integrating the three types of planning; and identify the current relationships of financial planning, transportation planning, and strategic planning and the role of the decision-making process in implementing these plans. One problem was that the subject centered around plans rather than planning.

One workshop used a gaming simulation and role-playing technique with limited discussion of the issues. Their efforts, however, identified two categories of concerns in this planning process—those of "management" or decision makers, and those of the "technicians." On the management side, the major problem is how to be "fair and equitable." Managers have the difficult—if not impossible—task of assuring that allocations are equitable within constraints imposed by the states, the federal government, or other programs and regulations. Technicians, on the other hand, most often suffer from a credibility problem—the reports and plans they produce are often put on a shelf and never used.

The second workshop focused on four issues:

- Who is responsible for various types of planning efforts?
- What incentives are there for those groups to undertake those efforts?
- How can planners' credibility be improved?
- How can a financial planning or strategic planning process be initiated?

They concluded that more communication and interaction among the actors in all the processes were needed and that, in most cases, financial planning and strategic planning do not actually happen. Unless there is a real need to get somebody to take a different look at what is currently being done, the existing process is going to continue to shape the plans. In many instances, the private sector should take steps to get the process started. When employees cannot get to work, when shoppers cannot get to the stores, when development plans need transportation facilities and services, the private sector has a vested interest in ensuring that adequate planning takes place and in initiating that process.

The third workshop group concentrated on assuring that meaningful interpersonal relationships were developed among planning participants. The success of those relationships is often gauged by the credibility of the products of the planning process and by the environment and atmosphere in which decisions are reached. The group felt that important ways to unlock creativity include assisting elected officials and citizens to participate fully and developing sharply honed listening skills within public agencies. Without active sharing of ideas and concerns, the transportation planning process often becomes routine and supportive of doing things the way they have always been done. To initiate and continue an integrated financial, transportation, and strategic planning process, the "what if?" questions should be asked and answers should be honestly sought. In this same vein, it is often difficult to find neutral turf on which to negotiate major issues once they have been identified. Even MPOs are not always viewed as neutral. The group identified temporary task forces and negotiations conducted by professional mediators as possible alternatives to the MPO or other usual forum.

Finally, the fourth workshop tried to answer the eight questions that had been posed at the beginning of the session. Participants discussed the planning process itself and reached the following conclusions:

- The planning process should be from the bottom up. It cannot be imposed from above or the desire and willingness of the actors to participate in it will be lost. It needs local problems and issues to solve; it needs concerns to which participants can relate directly.
- Common goals among all participants and governments are necessary to integrate the financial, strategic, and transportation processes. The benefits to all actors must be clear.
- The financial planning process should be used to place realistic limitations on the transportation planning process because of the limited availability of financial resources. Although this is what the group apparently concluded in this first workshop, subsequent discussions have pointed out the need for interaction between financial and transportation planning—it is not a one-way street. Transportation and strategic planning can be effective mechanisms in allocating those scarce resources.

In conclusion, there did not appear to be a single set of conclusions or recommendations common to all groups, but maybe some general conceptions were beginning to be formed:

- Transportation, financial, and strategic planning should not be done in isolation; they should be part of a larger, integrated, interactive decision-making process.
- The process and structure provide a forum where various issues can be formulated, discussed, and developed; it may not be the best forum in all regions in all circumstances, however, and efforts to force the process to operate within the organization may meet with failure. The role of the private sector may be to provide the focus, expertise, or neutral ground necessary to effectively initiate a new process.
- Interpersonal relationships can be critical in any planning efforts, and situational and environmental conditions can affect the outcome of even the best-made plans and process. A single individual can mean the difference between success and failure of the process.

Maybe the process (planning) is more important than the product (the plan).

Revenue Sources

David J. Forkenbrock
University of Iowa
Iowa City, Iowa

The problem of obtaining necessary revenue with which to operate and maintain local transportation services and facilities can be almost overwhelming. Throughout the conference, two somewhat counterposing outlooks were expressed. One was a sense of caution: Don't present an option or technique as a panacea. Just because it worked in city A, it may not work all that well in city B. Regional differences in economic strength delimit financing approaches. Political structures, prevailing ideologies, the historic role of transit and automobiles, spatial factors, and the nature of the economic base also restrict the types of mechanisms that realistically can be used to finance transportation services.

A second outlook is that we must dare to be entrepreneurs. Negativism will not produce the solutions we need. For each financing option, one could come up with a circumstance in which that mechanism would fail to produce much revenue or produce adverse impacts. We must be ready to try new ideas, using the best information available, and to analyze how an idea would work in a particular city, region, or state.

Most of the workshops avoided examining all conceivable options, one by one; rather, most contemplated the local conditions that are likely to affect the types of approaches that could be suitable. For instance:

- Is the local economy growing and generally healthy, or is it stagnant or even declining?
- Is the local industry mix cyclical or relatively stable?
- What is the prevailing trip geography in the city?
- How strong is the regional government?
- How great is support for transit or highway expenditures locally?
- Does the necessary enabling legislation exist at the state level; if not, what are the chances of its passage?

Other local conditions need to be considered as well, such as the political orientation of local decision makers.

Timing is critical for the successful implementation of new revenue sources. A conducive local environment has two key facets:

- A clear appreciation of the need for action at the local level. Transportation development plans that are predicated on greatly expanded financing may be viewed with some skepticism. Such plans could backfire if too much additional revenue is required to achieve the planned services. The need for the project and the sensibility of the proposed revenue source must be established before proceeding.
- Continued interaction with the public, not just the decision makers. A public referendum could be used as a means of gauging public support. If the public supports the financing approach, decision makers also are more likely to support it.

Research has been done on factors influencing the public's willingness to pay taxes for transit. Two articles in Transportation Research Records 761 and 936 examine local support for transit financing. In these articles data from two cities show that a wide variety of personal motivations exist for supporting a local property tax. Business persons often are willing to pay the tax to gain accessibility to customers. Environmentalists, promoters of social equity, and those who hope to experience less congestion in the streets and less competition for parking also are willing to pay local taxes. There is a potential constituency out there, but planners and managers have to demonstrate to local taxpayers that the benefits will be worth the cost. One workshop observed that this need is somewhat more serious with transit than is the case with highways. Indirect benefits are a much greater consideration with transit.

Other considerations of importance include

- Equity — The growing body of literature on highway cost allocation indicates that motor fuel taxes favor heavy vehicles at the expense of lighter ones. This problem may not be as serious within cities as it is between them, due to the vehicle mixes, although trucks operating on city streets with low weight-bearing capacities impose rather high costs.
- Revenue Stability — This ties in with local conditions. If you have a roller-coaster, durable-goods-producing local economy, revenues from sales and income taxes will fluctuate more seriously than will a property tax. It should be remembered that sales taxes tend to be regressive; income taxes can be quite progressive.
- Administrative Costs — Toll roads would involve enormous administrative costs, particularly where there are now numerous access points to the road that is going to be tolled. On the other hand, the Portland Tri-Met payroll tax that is collected through the state revenue department really has minimized administrative costs.
- Side Effects — Certain local taxes can lead to boundary problems that, in turn, contribute to the flight of taxpayers. Similarly, excessively high beneficiary-based taxes could adversely affect economic development. Tax rates are crucial to the economic viability of most areas, especially those where the central city is competing with regional centers.

To summarize, the need for additional revenue to provide vital transportation and services is great. There is no safe, sure-fire mechanism. A number of options have been used with varying success, but what is golden in one community may be deadly in another. There are, however, some useful principles uncovered in the workshops that can help guide us as we contemplate possible revenue sources.

Financial Planning Techniques

John Miller
James A. Lowery Company
Chicago, Illinois

The workshops on financial planning techniques seemed to dwell very little on financial planning techniques. Rather, they discussed an entire series of things related to the process of financial planning—the need for and the alleged benefits of financial planning, the end result, and the interrelationships between financial planning and strategic planning.

With respect to the process, it became clear that financial planning is not itself a plan. It is a long, iterative process involving many constituencies, and it seeks to balance service needs and financial constraints. It is not strictly a technical process. It is a political process of resource allocation that searches for workable solutions. Financial planning in the real sense is the weighing of alternatives and the selection of options.

The workshops talked about the need for and some of the benefits of financial planning. There was some question of its underlying utility—whether it is really useful, whether accurate forecasts can be made over a long range of time, whether the power and control of money overshadows the rational, analytical decision-making process, and whether there is any commonly accepted standard for doing financial planning. There seemed to be a strong conclusion from all these workshops that financial planning is necessary and possible, but that the plan must reflect the felt needs for services within a given community. The plan should include a description of the product, the actual services to be provided, and the revenues being generated. It should, further, reflect the political consensus that has grown for developing the service plan and raising revenues. It should be a workable implementation strategy for actually laying out concrete steps for doing this.

There seemed to be a common agreement that strategic planning should be the basis for financial planning. However, this process is difficult to implement because

- There is often no ability to effect wholesale change
- Existing funding patterns seem to be locked in
- There is no ability to accurately reflect long-term demand for services
- There is often no staff-level incentive for strategic planning

From a private-sector point of view, strategic planning is really a marketing concept that is used for product development and market segmentation. It starts with the identification of felt needs for a product or service and moves into identifying product characteristics and targeting specific groups and products to meet those needs. In a real sense, the operating plan is a strategic plan. The strategic plan is the expenditure side of the budget and projects or determines needs in a more accurate fashion. Strategic planning is not magic, it is not something hard, and it is not something that is not already done.

Financial planning reflects the strategic decisions you make on how to raise the funds, and the financing plan relates these service elements to the financial constraints in which you must work. It can be as simple as an annual budget or as complex as a plan for a new heavy rail transit system. In any event, the financial and strategic components recycle back and forth and are highly integrated.

Packaging and Implementing a Financial Plan

Samuel R. Mitchell
Chicago Association of Commerce and Industry
Chicago, Illinois

What came out of these workshops is salesmanship. When marketing a product, the product basically has to be credible. Constituencies and interested sectors must be educated. Not just the general assembly, state legislature, or city council, but all groups—social, economic, political, business, and so forth. The media must also be involved; there must also be an attempt to control the informed, unreliable source that feeds the media. Government officials and their staffs must be kept informed. Good, strong, hard controls must be kept on what is being said about projects. People who run briefing sessions and those who have contact with the public should be identified.

There are two schools of thought regarding revenue sources. One is that politicians have their own ideas of what is usable and serviceable, what can pass and what cannot, and what they can trade in the future. This says there is a better chance if the person in charge does the front-end thinking and gives them something they can look at and compare with other proposals. Members of general assemblies and city councils are overworked, so it is necessary to get to know these people on the state, city, and county levels; to help them go through the process; and to make it easier and more understandable for them to see why they should vote the way you think they should. By giving them ideas on specifics, they can be convinced why the project or the process you want is important and good. Give them something to take back to the district; identify the people who have a vested interest in the issue and get to them early and often. Don't just try to sell them. Find out what they want, and build the reasons and rationale on how you can get around their objections or convert them to your ideas.

There was discussion about establishing a funding level. One way, which is a little risky, is to pad the proposal and then horse trade. This has been done before, but a certain credibility problem develops when a project is always 30 to 40 percent less than the proposal. A sensitivity develops in the state house, the general assembly, the city council, and among the voters and taxpayers. A real, tight, livable, honest, and defendable budget has a better chance.

The private sector has to be able to identify the cost and benefit relationship if it is to be enticed into supporting the project. They will not support you if they don't feel the project will have a positive impact on their bottom line, increase their profits, or enhance the business environment.

When creating a policy, be prepared to live with it for a long time. More important, be prepared to live with the free enterprise system. A lot of competitors are competing for that same business joint venture. Be sensitive to what is going on with the voter, and be prepared to deliver.

The four workshops reflect what is perceived as a revolution. During the depression, the nation became disillusioned with the private enterprise system, and we developed two sectors—the public and private sectors. We are now merging the two. The public sector has operated independently and has not had to respond to the marketplace. The private sector must now become socially conscious while the public sector must become responsive to the profit motive and think more the way the private sector does.

Appendix A Workshop Topics

WORKSHOP A:
FINANCIAL PLANNING AND ITS RELATIONSHIP TO THE TRANSPORTATION PLANNING PROCESS

1. What level of financial planning is appropriate at the different stages of the transportation planning, programming, and project development process—from systems and corridor planning to preliminary engineering and final design?

2. Who is responsible for financial planning at the different stages of planning, programming, and project development, and what are the appropriate roles of regional and metropolitan planning organizations, transit authorities, highway agencies, and local governments?

3. What is the relationship between the local (MPO) financial planning process and the state financial process, and how may it be improved? Can the TIP be a vehicle for real joint agency financial planning and programming?

4. What is the relationship between the planning process and the political decision-making process? Who implements the plan?

5. How are needs established? How are trade-offs made among the multiplicity of objectives of the participants in the financial planning process? How are standards of services established?

6. How do you integrate multiple levels of governments' financial involvement and the private sector participation into a financial plan?

7. How should the financial planning and the transportation planning process be interrelated? Are both processes done jointly or separately?

8. How do you assess the consequence of not having adequate financing?

9. What role should financial planning play in the strategic planning process?

WORKSHOP B:
REVENUE SOURCES FOR FINANCING LOCAL TRANSPORTATION

1. What are the revenue potentials and possible problems in using the following revenue sources to finance highways and transit?

   a. User fees (for access to system and proportional to usage)
   b. Ancillary user services
   c. Broad-based taxes (real and personal property)
   d. Debt financing and toll mechanisms
   e. Special-benefits taxes (including special taxing districts)
   f. Joint ventures and private sector contributions
   g. Excise and taxes not related to the use of transportation
   h. General fund appropriations
   i. Intergovernmental grants, apportionments, and revenue sharing

2. What are the potential yields of using the various sources of revenues and what are the costs of collection and enforcement?

3. What are the legal, political, and institutional impediments to using these revenue sources?

4. What are the economic and social impacts of using these sources of revenues? What are the equity considerations of who pays versus who benefits? How are potential losers compensated?

5. How do institutional structures (for example, special districts) affect the selection of revenue sources?

6. Does the purpose for which the additional revenues will be used (that is, capital versus maintenance and operations) make a difference in the revenue source?

WORKSHOP C:
FINANCIAL PLANNING TECHNIQUES

1. What elements are included in a financial plan? What are the data requirements? How do you forecast cost and revenues? What are the strengths and weaknesses of available tools for forecasting revenues?

2. What is the relationship of financial planning to the capital and operating budget process?

3. How are criteria developed for allocating resources among competing transportation programs and activities that are below the political decision-making level?

4. How is a financial plan with variable federal and state grants-in-aid programs managed? How are matching fund requirements handled?

5. How does the financing structure affect the performance of the program?

6. What administrative arrangements are needed to develop a financial plan, and what are the cash-flow management and accounting needs for the plan?

7. How is the legal relationship defined between the parties to a program agreement?
8. How do you evaluate the distribution of costs and benefits on user groups and on the community? How do you define equity in the distribution of costs and benefits?
9. What criteria should be used to allocate resources among competing modes—transit and highways—and what legislative changes might be necessary?

WORKSHOP D:
PACKAGING AND IMPLEMENTING THE FINANCIAL PLAN

1. How do you establish credibility with the political decision makers, with the public, and with special interest groups? How can one avoid a pork barrel approach?
2. How do you determine what revenue sources and what financial package will be most effective, most equitable, and face least resistance?
3. How do you gain the support of the public and the many political districts and agencies involved? How do you overcome resistance to the financial plan?
4. How do you develop a joint venture agreement with the private sector?
5. How are sponsors prevented from opting out of projects or systems or reducing their funding participation?
6. How do you ensure that the transportation agency can deliver on its promises?
7. To what degree do the voters and political decision makers rely on the financial plan in approving or disapproving a tax proposal?
8. What techniques have been successful in getting tax referendums passed?
9. What are the differences between financing a new capital project and financing operations, maintenance, and rehabilitation of the existing system?

Appendix B Checklist of Revenue Sources for Financing Local Transportation

Resource Material for the Conference
Prepared by Angela Mulloy, Marcom Associates

USER-RELATED FEES

Motor Vehicle Fees

Motor vehicle fees encompass vehicle registration and titling fees, licensing fees, use taxes, personal property taxes, inspection fees, and sales taxes on motor vehicles. These taxes can be levied by local governments or imposed by states and allocated locally. Their revenue potential is high, and they provide a stable source of income. Motor vehicle fees must be designed to discourage vehicle owners from purchasing items in areas with lower tax rates.

Most states have some form of vehicle registration process. Because this process is also used to collect the appropriate taxes, the actual added administrative costs are minimal. In addition, increasing such taxes does not necessarily generate additional costs. Some states impose a graduated tax on vehicle weight or miles traveled, which is geared toward more equitably distributing the cost of wear and tear on highway facilities. Graduated weight taxes are complicated by interstate travel, but many states have reciprocal agreements with other states and tax only those vehicles registered and based in their state. Graduated mileage taxes (ton/mile and weight/distance taxes) are used in relatively few states. They may become more prevalent in the future as governments realize their equity and efficiency.

Motor Fuel Taxes

Motor fuel taxes are levied by all state governments. Several states have also authorized local governments to impose their own motor fuel taxes. Others reallocate a portion of the state fuel tax revenues to the areas in which they were collected or divide motor fuel taxes among the state, counties, and cities by formula. Motor fuel taxes are easily administered and can produce substantial revenues. Many states treat motor fuel taxes as a selective sales tax and exempt gasoline from general retail sales taxes. The increased use of diesel fuel and more fuel-efficient vehicles is changing the equity of fuel consumption taxes. Diesel engines are significantly more fuel efficient than gasoline-driven vehicles, and states have imposed diesel tax differentials to combat this inequity and also to reflect the increased damage done to pavements by heavy vehicles.

Motor fuel taxes have traditionally been collected on a fixed cents-per-gallon basis. However, this type of tax does not respond to inflation, and, in many cases, voter approval is required to increase tax rates. Therefore, some states have begun to collect fuel taxes on a percentage basis, which is more inflation-responsive. While increases in fuel prices and fuel consumption will raise additional revenues, sharp decreases in consumption can lessen revenues severely.

Parking Taxes

Parking taxes on the use of private or public parking facilities may be imposed on either the vehicle driver or the operator of the facility. In large urban areas, parking taxes can yield significant revenue.

While increased parking taxes may encourage the use of transit, they may also reduce parking demand. In addition, there is often opposition to taxes intended to reduce traffic. Such fees tend to discourage use of downtown areas, which may inhibit downtown revitalization. Parking fees may therefore be most effective when imposed solely on captive long-term downtown parkers.

Tolls

Tolls are widely used to finance construction and repair of tunnels, roads, and bridges. Tolls can produce high amounts of revenue. They are particularly useful in areas where revenue sources have not kept up with increased traffic demand. Although reduced rates may be offered to encourage use of high-occupancy vehicles, tolls are not generally designed to encourage efficient travel patterns or transit use. To avoid opposition by the public, toll facilities must meet an existing need for improved services.

Tolls affect only the actual users of the facility. Tolls are generally based on the size, weight, or number of axles of vehicles. However, the use of tolls does generate costs of collection and may also present legal difficulties. In addition, rapid rate increases may cause decreased use of the facilities. The general use of tolls in addition to motor fuel taxation and other user charges raises questions of double taxation of toll facility users.

Transit Fares

Transit fare pricing involves several aspects: the system fare rate structure, promotional fares, marketing, and fare collection techniques. A number of pricing policy alternatives may be employed by a single property in order to maximize the return or to meet other political and revenue goals. One type of pricing involves a surcharge placed on commuters who travel during peak hours. The surcharge may increase farebox revenues from those commuters who must travel during peak hours but may also result in a decline in ridership. Other pricing policies include zone fares (distance-based fares), passes, flat fares, and self-service fare collection policies.

Utility Fees

Water and sewer fees are generally levied based on consumption. Levies for transit are sometimes attached to electric and gas utility bills. Street utility fees could be imposed in a similar fashion.

Large businesses would likely oppose utility fees because of their potentially high proportionate cost.

NON-USER-RELATED FEES

Property Taxes

Property taxes may be levied on both real and personal property. At the local level, they serve as a major source of revenue for local transportation systems. This revenue may be allocated directly to transportation through earmarked funds or it may be appropriated through general funds. Earmarked taxes are often viewed more favorably than yearly appropriations from local governments. Property taxes are imposed by local governments or public transportation authorities, but some states have set limits on tax rates that can be applied.

Property tax revenues can increase with inflation, if reassessment procedures are conducted efficiently and frequently. However, property taxes are often unpopular with the public, and increases often meet with strong opposition. Inaccurate and inequitable assessments are a major complaint. To reduce local property tax burdens, several state governments have assumed partial responsibility for funding urban transportation facilities.

There has been public resistance to increasing property taxes in recent years in a number of states where voters have put limits on the rates or amount of tax that is generated.

Income Taxes

Employer payroll taxes and employee income taxes can produce substantial revenue because of their potentially large base. They are usually in the form of a flat-rate tax on earned income and respond immediately to inflation. However, relatively few states have authorized the use of income taxes at the local level. In addition, use of these taxes for transportation purposes has been limited.

Employee income taxes may face some opposition at the local level because employees are already subject to federal and state income taxes. Employer payroll taxes may be opposed by many businesses, which must already pay several employee-related taxes. Value-added taxes are sometimes advocated as more equitable and have substantial potential for revenues. They are in general use in European countries.

Sales and Excise Taxes

Sales and excise taxes produce significant local revenue, second only to property taxes. Most states levy sales taxes, and many give local governments the authority to impose additional sales taxes. Some areas dedicate a portion of sales taxes specifically to transportation financing. Others divert general sales taxes to transportation uses, especially to transit subsidies. However, in regions with several jurisdictions, the commercial base is not always evenly distributed and revenues may not be allocated in proportion to the benefits to be received.

Sales taxes are easily administered and respond quickly to inflation; likewise, sales tax revenues may fall when consumption decreases. Sales taxes are regressive, placing the heaviest burden on low-income groups. However, exemptions on necessities such as food and drugs can be used to offset this factor. Selective sales and consumption taxes may be applied to specific commodities or services, such as alcoholic beverages, amusements, gambling, tobacco products, and luxury items. While selective sales taxes impose substantial excess burdens, they allow consumers to avoid the tax by not buying the commodity.

Severance Taxes

Severance taxes are levied on the removal of minerals and natural products from land or water. Such products include oil, gas, coal, other minerals, timber, and fish. Similar taxes are also imposed on some industries to balance costs of providing them with specific government facilities, such as forest roads.

SPECIAL BENEFIT FEES

Tax Increment Financing

Tax increment financing is used to finance public improvements with earmarked property tax revenues. In some states, the tax is applied to personal as well as real property. Tax increment financing districts are established in the area being improved, and a base-year property value is assessed. Property tax revenues from any increases in property value above the base year are used to fund transportation improvements in the district. Anticipated tax revenues can be used to back general obligation bonds and tax allocation bonds, but the improvement must be financed through the local general revenue fund if the increases do not occur.

State governments must authorize the use of tax increment districts, and transportation agencies are usually excluded from direct earmarking of funds because tax increment financing can only be used by jurisdictions with ad valorem taxing authority. However, tax increment revenues are usually dedicated to urban redevelopment, and transit-related improvements are often included in such projects. Through tax increment financing, conventional limitations on borrowing may be bypassed by redevelopment agencies. Because the improvements financed by tax increment financing attract additional private investment in the district, the property tax base is eventually increased. However, the establishment of tax increment districts may be opposed by other districts, such as hospital districts, that depend on property tax revenues. While tax increment financing is designed to provide funds for public improvements without special taxes on property in the area, use of such tax forms may decrease municipal property taxes or other taxes. The entire community then contributes to the revenues used only for the benefit of property owners in the improved area.

Special Assessments

Special assessments are one-time or recurring charges placed on property that benefits from an improved facility. They are issued by the local government according to a formula based on front footage, lot area, appraisal value, or a combination of factors. The fees pay for all or a part of the costs of the improvements and are used to secure and retire the bonds financing the improvements. Special assessments are commonly used to finance sewers, streets, curbing, and sidewalks. Special assessments to property owners near a transit station or mall provide an opportunity to finance transit-related improvements.

Special assessments may be applied to residential, commercial, industrial, or mixed-use developments and may cross municipal or other political boundaries. Revenue potential depends on the cost of the improvements, the benefit to the properties, the size of the district, the intensity of economic activity in the district, and the impact of the assessment on the property owner. Special legislation is usually required before a local agency can make special assessments, property owners usually must agree to the assessment, and funds must be used for improvements directly related to the assessed property. The difference between special benefits to a property owner and benefits to the community at large should be recognized and evaluated before an assessment is recommended.

Impact Fees

Impact fees and mandated development of transportation facilities are imposed on private developers to mitigate the impacts of the development on local services. They are

justified by the concept that since the new development will exacerbate transportation problens, the developer should pay for the solutions. The fees are often used as a condition for obtaining site plan approval or building permits and may be imposed in the form of a tax based on square footage or sponsorship of a ridesharing or private transportation program. They also may be in the form of improvements to streets or transit that are affected by the development. Improvements must meet specified standards and are subsequently incorporated into the local street or transit system.

Impact fees can yield substantial revenue and have resulted in support of significant ridesharing activities; however, utilization is usually limited to growth areas where the cost of the fee will not drive developers to other locations. Local ordinances are usually necessary before impact fees can be imposed.

Service Charges

Under this technique, properties adjacent to transportation facilities pay a charge for direct access to the facility. The charge may be a lump sum contribution to a capital item or an annual contribution to operating costs. Developers have traditionally resisted such charges, but attitudes are changing as the value of transit is reassessed.

PRIVATE FINANCING

Developer Financing

Many local agencies are drawing on the resources of private developers for capital transportation improvements in order to avoid the expenditures associated with providing transportation facilities to support new projects. In some areas, a specific developer contribution is required by law if the development creates a certain threshold of traffic, while in others a developer may make voluntary improvements to the development to increase its potential and value. In most cases, private developers negotiate with local governing authorities for dedication of land, road construction or improvement, traffic control measures, or subsidized transportation facilities.

Private developer financing is most successful in areas that are experiencing growth and have a strong real estate market. The public benefits from this technique because large public expenditures on transportation improvements are reduced. The approach can be inequitable if developers are required to pay more than their fair share of costs for improvements to mitigate the impact of their projects.

Negotiated Investments

Developers are negotiating changes in existing zoning and building regulations in exchange for a commitment to contribute to the cost of public improvements to support the new development. While revenue potential is significant, negotiated investments vary in amount and form, depending on the size of the project and the demand for the public services it generates.

Opportunities to negotiate investments with developers are limited by the area's growth, rate of construction, mobility requirements, and location desirability. The concept raises questions about the extent to which conditions may be attached to zoning approvals and may infer special treatment on owners of the rezoned land.

Private Ownership and Subsidies

Private ownership of transit property is again being considered in some cities. The most sophisticated concept involves a private consortium that is given the authority to finance, construct, and charge user fees to provide the public transportation system. Some transportation agencies are sharing capital and service costs with private entrepreneurs. One venture resulted in funds to support projects related to a new downtown transit loop and another shared the expenses of new bus service in an outlying community. Many large employers are subsidizing transportation fares for their employees and sponsoring incentives such as early-dining discounts at local restaurants in return for use of the transit system.

In addition to the benefit of reducing costs, there are specific depreciation and investment tax credits that can help make this an attractive alternative.

Private Donations

Some local governments have successfully solicited private donations for capital improvements that have strong public interest. While donors benefit from tax deductions and public relations, few projects generate sufficient public interest.

A well-organized and highly visible fund-raising campaign is necessary in order to assure donors that their contributions will be publicly recognized.

DEBT FINANCING

Bonds

Bonds are a good source for obtaining large amounts of revenue relatively quickly. Bonds are usually appropriated for a one-time capital expense where a tax or fee can be pledged for debt service. Several mechanisms can be used to secure bonds: guaranteeing principal and interest payments from the full faith and credit of the local government's general fund revenues; issuing state-supported bonds on behalf of local communities; earmarking a portion of revenues from property and sales or user taxes; and pledging surplus revenues from other public enterprises.

A local government's authority to borrow for capital needs is usually regulated by the state, and both interest rates and financial backing affect a local government's ability to use bond financing and the interest rates attached to the bonds. Some states limit general bonds to a percentage of assessed taxable property and others require approval of bond issues by referendum. Since bonds must be repaid, a revenue source for repayment must be identified. A major problem is getting public support for a tax source that will provide sufficient funds to repay principal and interest on the bonds.

Participation Trust Certificates

Participation trust certificates can be used to finance capital expenditures, but they cannot be used to finance operating budgets. Certificates are issued as evidence that an investor owns a percentage interest in the equipment or property. The equipment or property is then leased back to the transit agency. The agency gains immediate use of the asset and agrees to make payments of the purchase price plus interest. Participation trust certificates are secured by a combination of the value of the asset and a cash reserve fund. The total amount of the cash reserve must always equal a specific percentage of the principal amount of the certificate. The public agency gains title to the asset once the note is paid in full.

Interest received from certificates issued by a public agency is tax-exempt. Public acceptance of certificates is generally high because they provide a relatively low-risk investment and can be sold at lower interest rates than more conventional securities.

Grant Anticipation Notes

Grant anticipation notes may be used to provide working capital prior to receipt of government subsidies, grants, or reimbursements. Funds may be borrowed once subsidy contracts are executed. Payment is guaranteed by other municipal revenues.

Since interest from grant anticipation notes is tax-exempt, the notes can be sold at lower interest rates.

Zero Coupon Bonds

Zero coupon bonds are sold at prices below face value and at a deferred unspecified interest rate. The face value of the note plus interest are paid in one payment upon maturity of the note. The discounted price of the note is set so that the difference between the bond's purchase price and its value at maturity will provide a yield competitive with the marketplace. The yield on bonds issued by public agencies is tax-exempt.

The unspecified interest rate helps public agencies offer competitive interest rates; however, the face value of the note is often much larger than the value of the proceeds.

Interest Arbitrage

Interest arbitrage is the process of borrowing funds at a low interest rate and investing the borrowed funds at a higher interest rate. Public agencies are permitted to use arbitrage only to reinvest debt service reserve funds for the duration of the bonds or to reinvest temporarily unspent bond proceeds for a short period on the proceeds that are to be used for capital projects. Any other use of arbitrage by a public agency is prohibited, and penalties are severe. Interest gained on illegal use of arbitrage is taxable.

The differential between the lending rate and the market rate is usually about 3 to 4 percent, which can generate significant amounts of revenue.

Vendor Financing

Financing by manufacturers is a common method of financing transit equipment. The loan, which is secured by the equipment and repaid with tax or operating revenues, can usually be arranged for any amount up to the value of the equipment. Vendors often use loan terms, loan guarantees, and other credit devices to increase their chances of success in a competitive bid. Since vendors are anxious to demonstrate their equipment, they often offer financing at lower rates. However, vendor financing may be a substitute for a lower purchase price. Foreign vendors sometimes have won competitive bids by obtaining low interest loans from export-import banks, and transit authorities have been criticized for accepting subsidized loans from foreign vendors.

Vendor financing that is backed by the purchased equipment does not generally require a specific revenue pledge; however, transportation agencies need authority to issue such long-term debt.

Private Leasing

Lease-purchase agreements have long been used for financing public office buildings, revenue-producing facilities, and equipment. Under this arrangement, tax-exempt revenue bonds are secured by a private firm that retains ownership of the equipment or building. A lease agreement is structured so that bond proceeds pay for most of the purchase price. The private firm supplements public bond proceeds with a capital contribution and claims accelerated depreciation allowances for tax purposes. Such things as bridge rehabilitation or the purchase of transit vehicles can be financed in this manner.

PRIVATE TRANSPORTATION PROPERTY UTILIZATION

Leasing or Selling Development Rights

Public agencies sometimes may be permitted to purchase more land than necessary when implementing transportation improvements. This undeveloped land is often sold or leased to private developers. In addition, subsurface or air rights around the facilities can be sold or leased. This technique can generate substantial revenue, which can be used for other capital outlays or to offset operating costs. Leasing is often the preferred method because it provides steady, long-term cash flow and can be structured to respond to inflation.

Enabling legislation is required in most states to authorize air rights leases or to permit excess taking of land. In addition, public opposition may result if the agreement significantly benefits the developer more than the public sector.

Leasing or Selling Existing Facilities

Selling or long-term leasing of existing facilities can be a potential revenue source. A number of factors affect the amount of funds that can be generated by this process, including the availability and condition of such facilities, the characteristics of the local real estate market, and the portion of the facilities actually owned by the public agency. Agencies may also develop excess land, either through their own resources or by a joint venture arrangement with a private developer. However, this process requires large capital outlays and sophisticated real estate and development skills.

While plans to sell or lease existing facilities may not be publicly opposed, approval may be necessary if the facilities were funded by UMTA, FHWA, or state sources.

Land Banking

Land banking is the process of purchasing and holding land in anticipation of planned future use. By purchasing in advance, before inflation and speculation escalate prices, public agencies can acquire land in desirable locations at reasonable costs.

While large capital outlays are required initially, substantial cost savings are possible, depending on the amount of land banked and the increase in prices. If the land later becomes unnecessary, it may be sold. Regulations in some states prohibit land banking, and local officials may place more priority on short-term projects.

SPECIAL REVENUES

Advertising Fees

Many transit properties already receive revenue from advertisements placed inside or outside of vehicles and facilities. Advertising space could also be rented on other public facilities. Several cities are renting space on their parking meters or transit waiting areas such as bus shelters and subway stations. A flat fee is paid by a broker who then sells the space. The city has the right to monitor the suitability of the advertisement. Fees or taxes could also be placed on billboard advertising, based on the size of the advertisement and the daily traffic count of the adjoining road.

Lottery

Lotteries are a popular way to raise revenue without levying additional taxes. One fourth of the states in the United States currently have lotteries. Although the revenues generated will vary by number and types of games, a lottery has the potential of raising substantial money for public agencies. Some of these revenues could be dedicated to transportation. Only two states allocate a portion of lottery receipts to transit, and only one allows the receipts to be used for any type of transportation project.

State legislation is required before a lottery can be established. Operation involves developing rules and regulations, implementing a marketing program, and monitoring extensive security procedures.

ENHANCING REVENUE PICTURE

Contracting Services

Many local governments are beginning to examine the possibilities of contracting out work as a way to reduce costs or meeting peak service requirements. Items that have been successfully contracted include line-haul, express, regular route, or specialized transit services that can be provided by private carriers at a lower rate and without the cost of purchasing additional equipment. Highway and transit maintenance work that requires expensive tools and special facilities; engineering and inspection of capital improvement projects; and management of transportation projects and transit systems by professional administrators are also being contracted out by local governments.

Contracting permits greater flexibility in adjusting program size. However, union-management agreements may restrict the use of contracting out of services. Other problems in contracting, such as enforcing public policy and guaranteeing adequate service, may also arise.

Budget Indexing

Budget indexing is a means of automatically adjusting a transportation agency's revenues to meet rapidly rising costs. The state legislature guarantees that specific needs will be funded over a defined period of time, which permits better long-range planning and programming and results in at least part of the budget being inflation-proofed.

Terminating Exemptions

Tax exemptions on alternative fuels such as gasohol have resulted in a substantial loss of revenue for many states. Several of them are phasing out the exemption and reclaiming this revenue.

Many types of individuals and groups are also exempted from paying user fees such as motor fuel taxes. Significant amounts of revenues could be recaptured by removing tax exemptions.

Cash-Flow Management

Shifting to a cash-based financial management system from an accrual system can result in a one-time source of additional revenue. Also, forecasting of disbursements and short-term investments of cash receipts may generate significant interest on idle funds.

Freeing User Fee Revenues

It is not unusual for vehicle excise tax revenues to be devoted almost entirely to nontransportation uses at the local level. Many indirect transportation services such as police may be supported by motor fuel funds. Transportation funds can be gained by shifting support for activities not related to the transportation system's physical condition to the general fund.

Selected Bibliography

Advisory Commission on Intergovernmental Relations. "Metropolitan Transit in the 1980's: An Intergovernmental Challenge." Background chapters. Washington, D.C., May 1984.

American Public Works Association, Institute for Transportation. Paying for Transportation at the Local Level: 17 Strategies.

Anagnostopoulos, G.; Damm, D.; Dooley, T.; Maling, W.; and Ward, D. Financial Forecasting Techniques in the Transit Industry: A Summary of Current Practice. Prepared by U.S. Department of Transportation, Transportation Systems Center. Washington, D.C.: U.S. Department of Transportation, Urban Mass Transportation Administration, March 1982. Contract No. PPA-UM-217.

ATE Management and Service Company, Inc. Transitions. Cincinnati, Ohio, Summer 1982.

Billingsley, Randall; Guseman, Patricia; and McFarland, William. Fare Box and Public Revenue: How to Finance Public Transportation. Prepared by Texas A&M University, Texas Transportation Institute. Austin, Texas: State Department of Highways and Public Transportation, February 1980. Study No. 2-10-78-1057.

Brown County Planning Commission. Financial Planning for the Green Bay Transit System. Washington, D.C.: U.S. Department of Transportation, Urban Mass Transportation Administration, January 1983. Contract No. DOT-I-83-15.

Cervero, Robert. Intergovernmental Responsibilities for Financing Public Transit Services. Prepared by University of California, Berkeley, Institute of Urban and Regional Development. Washington, D.C.: U.S. Department of Transportation, Urban Mass Transportation Administration, August 1983. Contract No. DOT-CA-11-0023. PB83147520.

Cervero, Robert; Wachs, Martin; Berlin, Renee; and Gephart, Rex. Efficiency and Equity Implications of Alternative Transit Fare Policies. Prepared by University of California, Los Angeles, School of Architecture and Urban Planning. Washington, D.C.: U.S. Department of Transportation, Urban Mass Transportation Administration, September 1980. Contract No. DOT-CA-11-0019. PB80224710.

Dooley, Thomas, and Spiller, David. Financial Planning in Transit: Use of Commercially Available Microcomputer Software. Prepared by U.S. Department of Transportation, Transportation Systems Center. Washington, D.C.: U.S. Department of Transportation, Urban Mass Transportation Administration, November 1983. Report No. UMTA-MA-06-0039-83-1.

Dygert, Paul; Holec, James; and Hill, Donald. Study of Public Transportation Fare Policy. Prepared by Peat, Marwick, Mitchell & Co. Washington, D.C.: U.S. Department of Transportation, Office of the Secretary, December 1976. Contract No. DOT-OS-50134.

Forkenbrock, David. Methods for Improving Highway Financing in Iowa. Iowa City, Iowa: University of Iowa, Institute of Urban and Regional Research, February 1983.

Holec, James, Jr. Transit Capital Planning in the San Francisco Bay Area. Washington, D.C.: U.S. Department of Transportation, Urban Mass Transportation Administration, January 1983.

Institute of Public Administration. Financing Transit: Alternatives for Local Government. Washington, D.C.: U.S. Department of Transportation, Urban Mass Transportation Administration and Office of the Secretary, July 1979.

James J. Lowery & Co. Financial Rating of Proposed New Start Fixed Guideway Projects. Prepared for the U.S. Department of Transportation, Urban Mass Transportation Administration, January 1985. Contract No. NY-06-0120.

Meisner, Laurence. Financing Urban Transportation Improvements. Report 2: Use of Private Funds for Highway Improvements. Prepared by Kimley-Horn and Associates, Inc. Washington, D.C.: U.S. Department of Transportation, Federal Highway Administration, January 1984. Contract No. DTFH61-82-C-00033.

North Carolina A&T State University, Transportation Institute. State and Local Financing of Public Transit Systems. Washington, D.C.: U.S. Department of Transportation, Urban Mass Transportation Administration, June 1983. Contract No. DOT-1-84-31.

North Carolina A&T State University, Transportation Institute. State and Local Governmental Responses to Increased Financial Responsibility for Public Transit Systems. Washington, D.C.: U.S. Department of Transportation, Urban Mass Transportation Administration, November 1983. Contract No. DOT-1-85-05.

Politano, Arturo. Financing Urban Transportation Improvements. Report 1: Cost-Effectiveness Considerations in Corridor Planning and Project Programming. Washington, D.C.: U.S. Department of Transportation, Federal

Highway Administration, April 1983. Report No. FHWA-PL-83-001.

Public Technology, Inc. Inflation-Responsive Transit Financing: An Urban Consortium Information Bulletin. Washington, D.C.: U.S. Department of Transportation, Secretariat to the Urban Consortium for Technology Initiatives, June 1982. Contract No. DOT-I-82-27.

Rice Center. A Guide to Innovative Financing Mechanisms for Mass Transportation. Washington, D.C.: U.S. Department of Transportation, Urban Mass Transportation Administration, December 1982. Contract No. DOT-I-82-53.

Rice Center. Alternative Financing for Urban Transportation: State-of-the-Art Case Analyses. Washington, D.C.: U.S. Department of Transportation, Federal Highway Administration and Urban Mass Transportation Administration, October 1983. Contract No. DOT-I-83-54.

Rice Center, Joint Center for Urban Mobility Research. Financing Urban Transportation Improvements. Report 3: A Guide to Alternative Financing Mechanisms for Urban Highways. Washington, D.C.: U.S. Department of Transportation, Federal Highway Administration and Urban Mass Transportation Administration, June 1984. Contract No. DTFH61-82-Y-30042.

Rice Center, Joint Center for Urban Mobility Research. Revenue Forecasts for Innovative Light Rail Financing Options. Washington, D.C.: U.S. Department of Transportation, Urban Mass Transportation Administration, September 1983. Contract No. DOT-I-83-36.

Rice Center. Non-Federal Funding for Transit Systems: State of the Art Case Analysis. Washington, D.C.: U.S. Department of Transportation, Urban Mass Transportation Administration, March 1985. Contract No. TX-06-045.

Transportation Research Board. State Resources for Financing Transportation Programs. National Cooperative Highway Research Program, Synthesis of Highway Practice No. 62, Washington, D.C., August 1979.

Transportation Research Board. Urban Transportation Economics: Proceedings of Five Workshops on Pricing Alternatives, Economic Regulation, Labor Issues, Marketing, and Government Financing Responsibilities. Washington, D.C.: U.S. Department of Transportation, Office of the Secretary, March 1978. Contract No. DOT-OS-60060.

University of Iowa, Institute of Urban and Regional Research. National Transportation Policy Study Commission. Working Paper No. 8: Toll Financing. Washington, D.C.: National Transportation Policy Study Commission, November 1978.

U.S. Department of Transportation. A Study of Urban Mass Transportation Needs and Financing. Report of the Secretary of Transportation to the U.S. Congress pursuant to Section 138(a), Public Law 93-87. Washington, D.C., July 1974.

U.S. Department of Transportation. Innovative Transit Financing. Washington, D.C.: Urban Mass Transportation Administration, February 1979.

U.S. Department of Transportation. Transit Marketing Management Handbook: Pricing. Washington, D.C.: Urban Mass Transportation Administration, April 1976.

U.S. Department of Transportation. Sources of Information on Urban Transportation Planning Methods. Washington, D.C.: Urban Mass Transportation Administration and Federal Highway Administration, March 1983. Report No. URT-41-83-3.

U.S. Department of Transportation, Urban Mass Transportation Administration. "Urban Mass Transportation Major Capital Investment Policy; Notice," Federal Register, Part VI, Vol. 49, No. 98, May 18, 1984.

Windsor, Duane. Administrative Impacts of Private Financing Techniques for Urban Transportation. Prepared by Rice University, Jesse H. Jones Graduate School of Administration. Washington, D.C.: U.S. Department of Transportation, Office of University Research, January 1984. Contract No. DTRS5682-C-00024.

Participants

November 28-30, 1984
Denver, Colorado

AHRENDSEN, Mark D., City of Wilmington, N.C.
ANDERSON, Philip C., Colorado Highway Department

BARKLEY, Greer, Southeastern Arizona Governments Organization (SEAGO)
BARNES-LEE, Caluha L., Urban Mass Transportation Administration
BLOOM, Jon A., Minnesota Department of Transportation
BOCKENKAMP, Ann, Adams County, Colorado
BOSLEY, Garland G., Arkansas State Highway and Transportation Department
BRADSHAW, Thomas W., Jr., The First Boston Corporation
BRAME, Dan, City of Orlando, Florida
BRAND, Daniel, Charles River Associates
BROSCH, Gary L., Rice Center, Joint Center for Urban Mobility Research
BROWNING, Bob, Regional Transportation District, Denver, Colorado
BURNS, Deborah R., Federal Highway Administration
BYRNE, Grace E., Puget Sound Council of Governments

CIPRIANI, Ralph, Cheyenne-Laramie County Regional Planning Office

DAHMS, Lawrence D., Metropolitan Transportation Commission, San Francisco, California
DEUTSCH, Susan, Paine-Webber
DEVILLE, William J., Regional Transit Authority, New Orleans, Louisiana
DOEBNER, Thomas H., Texas State Department of Highways and Public Transportation

FLIEGER, Gary G., Regional Transportation District, Denver, Colorado
FORKENBROCK, David J., University of Iowa

GAUDETTE, John, Transit Consulting Group
GERARD, David, Evansville Urban Transportation Study
GOTTS, Terry L., Michigan Department of Transportation

HART, Jacqueline, University of the District of Columbia
HEDEMANN, Janice, Mid-American Regional Council
HERMAN, William I., Washington Metropolitan Area Transit Authority
HOFFART, Larry, California Department of Transportation
HUME, Randall, Regional Transit Authority, New Orleans, Louisiana
HUNKING, Loila, City of Sioux Falls, South Dakota

IRVING, Donald J., Tri-County Regional Planning Commission, East Peoria, Illinois

JAEGER, Leora G., City of Albuquerque, New Mexico
JANETT, Sally A., Larimer-Weld Council of Governments
JONES, Janet L., Tri-Met, Portland, Oregon
JUDYCKI, Dennis C., Federal Highway Administration

KECK, Carol A., New York State Department of Transportation
KEMP, Michael, Charles River Associates
KIDDER, Alice E., Babson College
KONIECZKA, Paul, Nashau Regional Planning Commission
KURTZ, Kenneth B., Port Authority of New York and New Jersey

LEGGETT, Eddie D., North Carolina Department of Transportation
LUETH, Bob, Golden Empire Transit District, Bakersfield, California

MARTIN, Robert, Urban Mass Transportation Administration
MASON, P.J. (Jack), Tri-Met, Portland, Oregon
MCCROSKEY, Jack, Regional Transportation District, Denver, Colorado
MCDOWELL, Bruce D., Advisory Commission on Intergovernmental Relations
MERGNER, Arthur W., ATE Management & Service Company
MILLER, John, James J. Lowrey Company
MITCHELL, Samuel R., Chicago Association of Commerce and Industry
MONTAGUE, Ken D., Utah Transit Authority
MULLEN, Paul F., Metropolitan Area Planning Agency

NEHR, Aloysius, Central Ohio Transit Authority
NEISWENDER, Roger, Governor's Committee on Greater Orlando Transportation Study Committee
NILEMO, Bruce S., Colorado Department of Highways

OAKLEY, Janet P., Federal Highway Administration
OROPEZA, Mario, Dallas Area Rapid Transit

PAIGE, John H., Northeastern Illinois Planning Commission
PLACIDE, Wayne B., Houston Metropolitan Transit Authority
PLUNK, Robert, Illinois Department of Transportation
POLITANO, Arturo, Federal Highway Administration

REISH, Robert D., URS Company
ROANE, Debra, Urban Mass Transportation Administration
ROSE, Velma A., Regional Transportation District, Denver, Colorado
ROSS, David E., City of Lakewood, Colorado
ROURKE, Bill, Regional Transportation District, Denver, Colorado
RUDY, Steven D., Denver Regional Council of Governments

SCHAEVITZ, Robert C., Parsons Brinckerhoff
SCHEIBER, Walter A., Metropolitan Washington Council of Governments
SCHUTT, Debbie, County of Oakland, California

SCHEUERNSTUHL, George J., Denver Regional Council of Governments
SEVIER, Anita M., Urban Mass Transportation Administration
SEVIT, Brenda, Lakewood, Colorado
SEXTON, Ramon P., City of Steamboat Springs, Colorado
SHINN, Mike R., Tennessee Department of Transportation
SKLUTE, Steve, Florida Department of Transportation
SKOLNICK, Marilyn, League of Women Voters of Pennsylvania
SMALL, Edward H., Niagara Frontier Transportation Committee
SMERK, George M., Indiana University Institute for Urban Transportation
SMITH, Frank J., State Department of Highways and Public Transportation
SMITH, Joshua H., Municipality of Metropolitan Seattle
SMITH, Maude W., Shearson-Lehman/American Express
SMITH, Terry M., City of Eugene, Oregon
SPENCE, Theodore A., Oregon Department of Transportation
STANLEY, Ralph, Urban Mass Transportation Administration
STANLEY, Robert, American Public Transit Association
STEINMAN, Cristina, National Association of Regional Councils

TELLER, Michael F., Maryland Department of Transportation
THOMAS, Edward, Urban Mass Transportation Administration

VERCHINSKI, Paul, Urban Mass Transportation Administration

WALKER, E.L., Jr., Wilbur Smith and Associates
WALTHER, Erskine S., North Carolina A&T State University
WARD, Donald G., Iowa Department of Transportation
WEIDMAN, Joseph S., Northern Arizona Council of Governments
WEISS, Barbara, Government Finance Officers Association
WICKER, Arcelia, City of Wilmington, North Carolina
WIEDEFELD, Paul S., Regional Planning Council, Baltimore, Maryland

YOUNG, Jack R., Metropolitan Atlanta Rapid Transit Authority

ZEBAUERS, Validis, Jefferson County Department of Highways and Transportation, Colorado

Steering Committee Biographical Information

The following are members of the Steering Committee to Develop a Workshop on Evaluating Alternative Local Transportation Financing Techniques.

ALICE KIDDER, Chairman, serves as Director of Sponsored Research and Associate Professor of Management at Babson College. Dr. Kidder received a BA from Swarthmore College and a PhD from the Massachusetts Institute of Technology. Her previous positions include Associate Professor of Economics, Spelman College, 1967-1968; Associate Professor of Management, Atlanta University, 1968-1969; Professor of Economics, North Carolina Agriculture and Technological State University, 1969-1980; and Associate Professor of Management, Syracuse University, 1980-1983.

LEE H. BOWSER is Director of Strategic Planning at the Pennsylvania Department of Transportation. He received a BA from Indiana University of Pennsylvania and an MA in Regional Planning from Pennsylvania State University. Prior to 1973, he served as Associate Planner at Garrett, Fleming, Corddry and Carpenter, Inc. Between 1973 and 1981, he was Deputy Secretary for Planning and Director of Program Development and Management at the Pennsylvania Department of Transportation.

GARY BROSCH is Director of the Joint Center for Urban Mobility Research at Rice Center. His primary transportation interests are planning and finance. Mr. Brosch received his BS and MS degrees in Economics from the University of South Florida. He has held the positions of Senior Research Economist with the Office of the Governor for the State of Florida, 1978-1979; Staff Director, Economic Development Committee, Florida House of Representatives, 1978-1981; and Special Economic Advisor for Urban Mass Transportation Administration, 1981-1983.

LAWRENCE D. DAHMS serves as Executive Director of the Metropolitan Transportation Commission. He is a member of the TRB Committees on Policy Development Process and Taxation, Finance, and Pricing; past member of the Bay Conservation & Development Commission; the Metropolitan Transportation Commission; the APTA National Transportation Policy Committee, APTA Board of Directors; and the 1974 National Transportation Study Review Team; past chairman of the TRB Executive Committee, 1983; and past chairman of the MTC Technical Advisory Committee. He received a BSCE from San Diego State University and an MBA from Sacramento State University. Mr. Dahms has served in the following positions: Construction Management Engineer, U.S. Army Corps of Engineers, 1958-1961; Principal Administrative Analyst, California Legislative Analyst, teacher of Economics, Sacramento State College, 1961-1969; Director of Planning & Research, Assistant General Manager, Planning and Marketing, Assistant General Manager, Operations, Acting General Manager, San Francisco BART, 1969-1975; consultant, Arthur D. Little, Inc., 1975-1976; consultant, Metropolitan Transportation Commission, 1976-1977; and Deputy Director, California Department of Transportation, 1977. He is the author of various published papers, including "Transportation Planning and Finance, the State Role," printed in the January 1969 California Digest and the 2nd quarter 1969 Tax Digest, and he assisted in writing an MTC authorizing act.

WARREN H. FRANK is Executive Director of the Central New York Regional Transportation Authority. He has a BA degree, and his specialties include transit finance, marketing, management, and labor relations. Mr. Frank has served as Vice President of Marketing and member of the board of directors, American Public Transit Association; owner-manager, bulk petroleum transport business; and President, CNY Centro, Inc., Center of Oswego, Inc., Centro of Cayuga, Inc., and Centro Parking, Inc. He was a recipient of Syracuse University's School of Business Administration Frank Award for Outstanding Transit Leadership, Northeastern University's Outstanding Transit Manager Faculty Award, and APTA's Jesse L. Hugh Award as "the transit leader who has done the most to advance the urban transit industry in the United States and Canada."

JACQUELINE HART is Associate Professor, Department of Urban and Regional Planning, at the University of DC. She received a BS in Mathematics from the University of Pennsylvania and an MCP (City Planning) from Howard University. She has 15 years experience as a practitioner in city planning at various city universities: WTT, Federal City College, and UDC. Her experience in transportation includes 5½ years working for the U.S. Congress House District Committee with oversight responsibilities of WMATA. She has worked on consultant projects in transportation in Washington. She participated in an UMTA summer faculty workshop for faculty members of historically black colleges and universities. She also has experience in the data analysis field.

WILLIAM I. HERMAN serves as Planning Director of the Capital Transportation Agency and Planning Director of WMATA. He received a BA from Union College, Schenectady, New York, and an MA from Maxwell School, Syracuse University. His previous positions include Economist, New York State Department of Taxation and Finance Research Analyst Tax Institute; and Program Analyst, Housing and Home Finance Agency.

JANET L. JONES is Manager, Transit Forecasting, at the Tri-County Metropolitan Transportation District of Oregon (Tri-Met, Portland, Oregon). She received a BA in Economics from Lewis & Clark College, and her areas of expertise include cost and revenue analysis, financing forecasting, and modeling. She served as an Economic Analyst at Tri-Met from 1979-1983.

CAROL A. KECK is a Program Research Specialist IV for the New York State Department of Transportation's Planning Division. She is a member of TRB committees on Public Transportation Planning and Development, and Statewide Multimodal Transportation Planning; and past member of a TRB Committee on Bus Transit Systems and several NCHRP panels. She served as department representative at numerous conferences on transit financing and planning, and to the Buffalo and Elmira areas on transportation planning matters. She is currently developing a statewide master plan for transportation. Ms. Keck received a BA from Harpur College and an MA from the State University of New York at Albany. She worked for the New York State Department of Audit and Control from 1967 to 1970, and in the following positions for the New York State Department of Transportation: Research Analyst, Development Division, 1970-1973; and Senior Research Analyst, Planning Division, 1973-1979.

BRUCE D. MCDOWELL is a Senior Analyst for the Advisory Commission on Intergovernmental Relations. He is a member of the American Institute of Certified Planners. He received a BA in Sociology from American University, an MCP in City Planning from the Georgia Institute of Technology, and a PhD in Public Administration from American University. He has held the following positions: Planner and Senior Planner, Maryland National Capital Park and Planning Commission, 1959-1963; Analyst, Advisory Commission on Intergovernmental Relations, 1963-1964; and Director, Regional Management Information Service, Assistant Director of Regional Planning, Director of Program Coordination, Metropolitan Washington Council of Governments. He is the author of many reports and published articles, a contributor to several books, and has lectured at several colleges and universities.

JOHN DOUGLAS MILLER is a Financial Adviser at James J. Lowrey & Co. He received a BS from the Lila Ascheson Wallace School of Community Service and Public Affairs, University of Oregon, and an MPPM from the Yale School of Organization and Management. His areas of specialization include public finance, short-term financing instruments, and transportation capital planning. His previous positions include Oregon Executive Assistant to Chief Administrative Officer, Multnomah County, 1975-1978; Legislative Analyst, U.S. Office of Management and Budget, 1979; and Second Vice President, Chase Manhattan Capital Markets Corporation, 1980-1983.

SAMUEL R. MITCHELL is President of the Chicago Association of Commerce and Industry. He serves on the Chicago Crime Commission, the Japan-American Society of Chicago, the Illinois Council of Economic Education, the Chicago Convention and Tourism Bureau, the Citizenship Council of Chicago, and the U.S. Chamber of Commerce. Mr. Mitchell received a BS from Southern Illinois University. He previously worked as Executive Director, American Hardware Manufacturers Association; Director of Advertising, Skill Corporation; Advertising Manager, FMC Corporation's Outdoor Power Equipment Division; Advertising Supervisor, Allis-Chalmers Manufacturing Co.; and Director of Midwest Chapter, French-American Chamber of Commerce.

WAYNE B. PLACIDE is Director of Treasury Services for the Houston Metropolitan Transit Authority. He is a member of the American Finance Association, the Municipal Finance Officers Association, and the Southwest Pension Conference. He received a BSEE from Prairie View A&M College and an MBA from Atlanta University. His previous positions include Cash Management Officer, First City National Bank of Houston; Cash Management and Loan Officer, Mellon Bank, Pittsburgh; and Associate Design Engineer, Ling-Tempo-Vought, Inc.

MARSHALL F. REED is a Transportation Engineer for the Highway Users Federation (previously the Automotive Safety Foundation). He received a BS in Civil Engineering from Duke University, and his primary interests include transportation finance, planning, and management. He is a member of TRB committees on Planning, Programming, and Evaluation; Local Transportation Finance; and Transportation Professional Needs. He is also a member of ASCE and served as Chairman of the ASCE Urban Planning and Development Committee in 1977.

GEORGE J. SCHEUERNSTUHL is Director of Transportation Services for the Denver Regional Council of Governments. His areas of expertise are regional, county, and municipal highway and transit systems policy planning; traffic engineering; transportation system management; transit studies (responsible for development of regional study to address local transportation funding and financing issues); and intergovernmental relations. He received a BSCE, MSCE, and MCP (Community Planning) from the University of Cincinnati. He is registered as a Professional Engineer in Ohio and Colorado. He serves as Chairman, TRB Committee on Transportation System Management, and Vice-Chairman, American Planning Association Transportation Division.

LEONARD S. SIMON is Assistant Executive Director of the U.S. Conference of Mayors and President of the Consumer Council of American Research Foundation. He received a BA and MA from George Washington University. He served as a member of the congressional staff from 1970 to 1972 and as a Staff Analyst for Richard J. Barber Associates from 1973 to 1977.

GEORGE M. SMERK is Professor of Transportation, School of Business, and Director, Institute of Urban Transportation, for the Center for Transit Research and Management Development, Indiana University. His specialty is urban transportation policy. He received a BS and an MBA from Bradley University and a DBA from Indiana University.

ROBERT G. STANLEY is Director, Planning and Policy Analysis, at the American Public Transit Association. He received a BA from Colgate University, and an MA in Regional Planning from the University of North Carolina. His previous positions include Senior Associate, Barton-Aschman Associates, 1972-1978; Planner/Policy Analyst, Urban Mass Transportation Administration, U.S. DOT, 1978-1981; and APSA Congressional Fellowship, 1981-1982.

ERSKINE S. WALTHER is a Research Associate, Transportation Institute, North Carolina A&T State University. He received a BS in Economics and Business Administration, an MA in Economics, and an MBA in Insurance and Finance from the University of North Carolina at Greensboro. From 1978 to 1980, he worked for North Carolina A&T State University as Assistant Project Director, Transportation Research, Department of Agricultural Economics.