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Evaluation of Innovative Financing Techniques

Knoxville, Tennessee's Experience

June 1984

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EXECUTIVE SUMMARY

The 1980's continue to be a period of turmoil for public transportation as transit systems around the country attempt to cope with shrinking federal subsidies, escalating costs, and continued demands for service. Municipalities nationwide are investigating alternative funding strategies in an attempt to replace federal dollars, and the City of Knoxville is no exception. In this report, a joint effort of the Knoxville-Knox County Metropolitan Planning Commission and K-TRANS, funding enhancement options are examined for applicability to the Knoxville public transportation situation.

The report begins with an analysis of the Surface Transportation Assistance Act of 1982 and the Act's impact on local transit funding. Chapter Three presents an overview of funding strategies used by transit systems in cities around the United States, and the following chapter narrows the focus to identifiable options appropriate for use in the Knoxville environment. A set of criteria has been developed that includes legal feasibility, political feasibility, social equity, and revenue generation. Each funding alternative has been evaluated using this set of criteria, and a determination was made concerning the most appropriate revenue enhancement strategy for K-TRANS at this time. While mechanisms for funding capital projects are included, the emphasis of this report is on operating funding since this is the area of greatest concern in Knoxville.

The results of survey research conducted to ascertain public willingness to be taxed to support local transit are evaluated in Chapter Five.

A complete bibliography, along with the abstracts of relevant literature, is included in the Appendix.

Introduction

Since 1876, the City of Knoxville has had a public transportation system. The early years saw the development of numerous horse-drawn and, later, electric streetcar lines in the city. Ridership on these lines was very high, and as a result, very profitable for each company. Public transportation continued to dominate the transportation scene until the 1920's when the automobile began to grow in popularity. Ridership on the city's system of electric streetcars and new motorized buses remained high until after World War II when Knoxvillians increasingly used automobiles for transportation.

In 1947, the era of the electric streetcar had ended when the private operator, Knoxville Transit Lines decided to switch to an all-bus transit system. Despite several major attempts at modernizing the fleet of buses, patronage declined. It became apparent that fares alone would no longer cover the basic costs of providing transit services. K-TRANS' last profitable year of operation was in 1970. Subsidies from the Federal government, the State of Tennessee, and the City of Knoxville became necessary to cover the increasing deficits. In recent years, this assistance has fallen short due to the sharp increases in the costs of labor and fuel. New sources of funding are needed to maintain basic levels of transit service in Knoxville.

K-TRANS and the Knoxville-Knox County Metropolitan Planning Commission (MPC) have been examining Knoxville's total public transit funding situation. This analysis has included an examination of Knoxville's current public transit funding situation along with the exploration of potential new funding opportunities. This study, originally developed as a series of technical memorandums on Knoxville's public transit funding situation includes five separate analysis chapters. These chapters include: 1) a review of the Surface Transportation Assistance Act of 1982, 2) an examination of current Federal, State and local transit funding sources for Knoxville, 3) a literature search and review of new and innovative sources of transit funding being developed around the country, 4) an analysis of those new and innovative funding enhancement techniques which could be developed in Knoxville, 5) a comprehensive public survey determining the attitudes of Knoxvillians toward K-TRANS and their funding situation. In the aggregate, these chapters provide a significant amount of base information which can be used by Knoxville's City Council, the Knoxville Transportation Authority (KTA) and other public and private agencies in setting transit funding policy in the Knoxville community.

Since K-TRANS and the KTA receive a significant portion of their current operating and capital funding from the Urban Mass Transportation Administration (UMTA), it is appropriate to begin this study with a detailed analysis and overview of the Federal funding programs under the Surface Transportation Assistance Act of 1982. The Surface Transportation Assistance Act of 1982 is a combination of older public transit funding legislation and new legislation designed to enhance previous Federal transit funding programs. Correct interpretation of the many unusual provisions within this legislation is critical to the overall planning of Knoxville's transit funding enhancement efforts.

CHAPTER 1

SURFACE TRANSPORTATION ASSISTANCE ACT OF 1982

A. ABSTRACT

Section Three

Funding has been provided through Section Three of the Urban Mass Transportation Act for the purpose of making capital improvements for transit systems. Grants awarded by UMTA have been used customarily for major projects such as acquisition of new transit vehicles and for construction of new facilities. It should be noted that UMTA has made grants for these purposes as a matter of policy and practice although this is not expressed in the Act. Capital items of lesser value have customarily been purchased with funding under Section Five.

The Surface Transportation Assistance Act authorizes continuation of the Section 3 program through Fiscal Year 1986. However, there are several significant changes from the past including:

-First, funding levels will be reduced by 31.5% between FY 1983 and FY 1985.[1]

-Second, the federal contribution of total project cost will be reduced from 80% to 75%.[2]

-Third, preference will be given to applications for projects which are labor intensive beginning FY 84.[3]

-Fourth, there will be technical changes in the grant process whereby UMTA will be able to approve projects and authorize initiation of the projects before the time that funding has actually been provided by Congress. A grant recipient will therefore be able to prepare for the project (such as solicit bids, sign contracts with successful bidders) before Federal funds are available and actually begin work with the assurance that Federal reimbursement would occur when funds are appropriated.[4]

Section Four(i)

Section 4(i) includes innovative applications of new technology and/or management procedures to transit problems. Funding will be continued through FY 86, but will be included in appropriations for Section 3.[5] No specific level of funding was set by the Act. Awards will be determined by the Urban Mass Transportation Administration.

Section Five

Section 5 has provided all transit operating assistance and much of the capital improvements funding up to the present. Grant awards have been made from allocations constructed on the basis of population and population density. The program was continued through Fiscal Year 1983 but was terminated entirely when funding expired at the end of FY 83. Unobligated funds will remain available to the cities to which they were allocated until spent or until FY 86, whichever comes first.

Section Six

Service and methods demonstrations are funded through the Section 6 program. Whereas Section 4(i) projects include innovative applications of existing management techniques, the purpose of Section 6 is to test entirely new and previously untried concepts. A modest increase in funding will be provided annually through Fiscal Year 1986.[6]

Section Eight

In recent years planning functions have been funded through Section 8. The program will be continued through Fiscal Year 1986 but funding will be included with Section 3 appropriations.[7] As funding was reduced for Section 3 activities, Section 8 monies will also be reduced.

Section Nine

A new funding source for transit operations and for transit capital improvements was created through the Surface Transportation Assistance Act of 1982. This new section will itself be funded through proceeds of the new motor vehicle fuel tax which went into effect on April 1 of 1983. Major features of the Section 9 program include both operating assistance and capital funding. It also permits funding to be used for planning purposes.

A review of the features of operating assistance funding is as follows:

- Utilizes a formula allocation basis for both operating and capital assistance as did Section 5 but will utilize 1980 census figures rather than a combination of 1970 and 1980 data as was used previously.[8]

- Offers operating assistance funding which began at the beginning of FY 1984. Capital improvement dollars will be available beginning in FY 1983 although a limited number of dollars will be available in FY 1983 because tax receipts cover only a portion of the year.[9]

-Funding to Knoxville will be restricted to 90% of the FY 1982 Section 5 allocation.[10] In 1984 only, Knoxville will be able to trade capital dollars for operating assistance on the basis of transferring three capital dollars for every two operating dollars. The trade will be limited to the difference between 90% of Knoxville's FY 1982 allocation and Knoxville's full FY 1982 allocation (roughly $125,000 difference). After FY 1984, allocations will be limited to 90% of what was received by its Section 5 operating assistance allocation in FY 1982.[11] There are, however, legislative proposals pending which could extend the "trade".

For capital purposes, allocations to Knoxville will be made on the basis of population, population density, and upon transit vehicle revenue miles.[12] Major features of this element are:

-Introduces bus revenue vehicle miles as an element for determining allocations.[13]

-Introduces a concept of a "program of projects" for transit systems in determining eligible programs.[14]

-Re-defines "capital" item in determining eligibility to 1% of the replacement value of a vehicle for the purpose of purchasing parts.[15]

-Establishes an incentive tier for cost per passenger mile.[16]

Other Features

Sections 16(b) and Section 18 will continue to be funded although these sections do not directly affect applications submitted by the City of Knoxville and K-TRANS. Procedures for agencies seeking funding through 16(b)(2) will continue at the present with the qualifications that funding will be included in apportionments for Section 3 which is being reduced.[17]

Reallocations of Section 9 allocations can be made between cities within any state under certain conditions. There is a possibility that a small number of dollars could come to Knoxville although this is not likely.[18]

Regulations relating to service to elderly and handicapped passengers will be revised. The U.S.D.O.T. was instructed to revise certain regulations or at least submit proposals by about October 1, 1983.[19] Final regulations have not been developed. Elderly passengers will be entitled to travel on city buses which are supported in part by federal funding merely by presenting a Medicare Card.[20] Local procedures which are in conflict with this requirement had to change by October 1, 1983. K-TRANS utilizes procedures which meet or exceed all requirements contained in Section 5(m) of the Urban Mass Transportation Act so changes did not occur in Knoxville as was necessary in other cities.

Certain other certifications presently required will remain in effect with the exception that some certifications for compliance with federal laws or regulations may be made by grant recipients themselves rather than by UMTA. Other requirements such as Civil Rights protection and the performance of an annual independent financial audit will remain as they have been in the past.[21]

B. SECTION-BY-SECTION REVIEW OF THE SURFACE TRANSPORTATION ASSISTANCE ACT OF 1982

Section 107: Interstate Transfers

Certain appropriations made to the Highway Trust Fund may be transferred to substitute transit projects where there is significant need for such a transfer to take place. The total dollar amount which can be transferred nationally is as follows:

Fiscal Year 1983: $257,000,000

Fiscal Year 1984: $700,000,000

Fiscal Year 1985: $700,000,000

Fiscal Year 1986: $725,000,000[22]

One quarter of the total dollar amount to be transferred will be determined by the Secretary of Transportation. Three quarters of the total transfers will be determined by Congress.

Projects initiated prior to passage of the 1982 Act were guaranteed funding. Allocations were authorized to carry forward one year if not obligated in the fiscal year for which they were authorized.[23]

Section 165: "Buy America"

Under most circumstances, new construction projects and new transit vehicles (including communications equipment) must be of U.S. manufacture.[24] The only exceptions are in circumstances where the Secretary of Transportation determines that:

- "Buy America" provisions are inconsistent with the public interest,
- that materials and products are not produced in the U.S. in adequate quantities or of a satisfactory quality,
- in the case of vehicles, at least 50% of total cost represents components made in the U.S. and that final assembly occurred in this country. The cost of labor for final assembly cannot be used in calculating the 50% domestic value requirement, and

-domestic manufacture would increase total costs by at least 10% for rolling stock or 25% for all other projects.[25]

Section 301: Short Title

Sections exclusively relating to urban mass transit service are combined into a single unit known as the "Federal Public Transportation Act of 1982".

Section 302: Authorization of Appropriations

Authorized funding for Sections 9A and 18 is $779,000,000 for Fiscal Year 1983. Authorized funding for Sections 9 and 18 is as follows after Fiscal Year 1983:

-Fiscal Year 1984: $2,750,000,000

-Fiscal Year 1985: $2,950,000,000

-Fiscal Year 1986: $3,050,000,000[26]

Funding for Sections 3, 4(i), 8 and 16(b) consists of:

-Fiscal Year 1984: $1,250,000,000

-Fiscal Year 1985: $1,100,000,000

-Fiscal Year 1986: $1,100,000,000[27]

Funding for planning activities as a part of Section 8 is included in the above authorization but specifically limited to $50 million. However, spending for planning purposes, normally funded through Section 8, is also eligible as an expense from Section 9.[28]

Funding for Sections 6, 10, 11(a), 12(a), and 20 is as follows:

-Fiscal Year 1983: $86,250,000

-Fiscal Year 1984: $86,000,000

-Fiscal Year 1985: $90,000,000

-Fiscal Year 1986: $90,000,000[29]

The local contribution required for federal funding under Section 3 for capital improvements purposes is increased from 20% to 25% and the federal share is reduced from 80% to 75%.[30] The Act also provides that 2.93% of authorizations for capital purposes under Section 3 be committed to Section 18.[31]

Section 303: Block Grants (Creation of Section 9)

Allocations will be made on the following basis:

-8.64% for cities under 200,000 population,

-88.43% for cities of over 200,000 population, and

-2.93% for nonurbanized areas (provided for in Section 302).[32]

Allocations to cities of over 200,000 (including Knoxville) are made on the basis of:

-Revenue vehicle miles,

-revenue route miles,

-population, and

-population density.[33]

Conditions for receiving grants remain unchanged from previous grant programs with the exception that a grant recipient must:

-Develop a program of projects,[34]

-extend half fare privileges to elderly and handicapped passengers presenting a Medicare card in accordance with rules presently in effect,[35] and

-provide the public, including interested private operators, an opportunity to comment upon the program of projects.[36]

Existing regulations which remain in effect include certification that the grant recipient:

-Has the legal, financial, and technical ability to carry out the program of projects,

-has satisfactory control over facilities to be acquired or operated using funds provided through federal assistance,

-will hold a public hearing on project applications.

Other existing regulations which remain effective are:

-Private enterprise protection,

-charter bus regulations,

-restrictions on school bus operations,

-local funding and progress report requirements,

-planning requirements,

-labor protection, and

-civil rights requirements.[37]

Two audit and review requirements are also contained within the Section 9 grant program:

-A complete independent financial audit of all expenditures must be conducted no less than once a year, and

-no less than once every three years, a full review and performance evaluation of each grant recipient's activities must be conducted "with specific reference to compliance with statutory and administrative requirements, and consistency of actual program activities with the proposed program of projects..."[38]

Additionally, there are certain other new requirements relating to certification of purchasing procedures, "Buy America" provisions, and assurances that a grant recipient is carrying out its program of projects.[39]

There are two facets of the Act which relate to grants for capital improvements. First, "capital" has been re-defined for the purposes of grants funded through Section 9 to include "associated capital maintenance item". This is defined as a replacement part for rolling stock which "costs no less than 1 per centum of the current fair market value of rolling stock".[40] The federal funding level for capital grants to be paid through Section 9 is 80% of the net project cost.[41]

Operating assistance grants will also be funded through Section 9 beginning in Fiscal Year 1984. The maximum level of funding available through the Section 9 program for operating assistance is 90% of the allocation in the federal Fiscal Year 1982 for cities of 200,000 to one million population (including Knoxville).[42] However, in Fiscal Years 1983 and 1984, a portion of allocations given for capital improvements may be re-allocated for operating purposes. In Fiscal Year 1983, and FY 1984 Knoxville traded three allocated capital dollars for two operating dollars

up to its limit of the Fiscal Year 1982 allocation. Fiscal Year 1983 dollars came from Section 5 allocations. The same trade occurred in Fiscal Year 1984, however the transfer came from Section 9 capital allocations and was applied toward Section 9 operating assistance. A transfer from capital allocations to operating assistance cannot occur after Fiscal Year 1984, based upon the Act as it is presently written.[43] Legislative proposals are pending which would extend this option, however.

Requirements to make a transfer from capital allocations to operating assistance in Fiscal Year 1984 include the following:

-Inclusion in the Section 9 program of projects, and

-development of a three year plan for financing continuation of service without use of a transfer.[44]

The remaining one dollar which remains as a result of each three-to-two transfer will be made available to the Secretary of Transportation for the purpose of making discretionary capital grants.[45]

Eligible grant recipients include all agencies which were designated recipients previously. The Act also spells out procedures to be used for agencies which were not previously designated recipients but could become so in the future.[46]

The Governor of each state may re-allocate funds at his discretion to that state's cities which have less than 200,000 population. Additionally, funds may be used to supplement allocations to cities of 200,000 to 300,000 population if the urbanized area which was originally to have received the money concurs with the reallocation.[47]

Allocations will be made to urbanized areas from Section 9A in Fiscal Year 1983 exclusively for capital or planning purposes. Allocations to cities of 200,000 to one million population are made on the basis of population, population density, and bus revenue miles operated.[48]

Sums apportioned under this section will be available to the urbanized area to which it was allocated for a period of three years following the fiscal year when it was originally apportioned, or until the money is spent. Unspent funds will be added to the succeeding year's allocation, at least until such funds expire.[49]

Section 304: Existing Capital Grant Program

Congress directed the Secretary of Transportation to "emphasize projects that are labor intensive and that can begin construction or manufacturing within the shortest possible time".[50]

Section 305

UMTA is now authorized to award grants on contract authority rather than appropriations authority. Contract authority allows an award of grants prior to the time that money is actually appropriated by Congress. This is possible through a "letter of intent". The Act authorized funding for letters of intent which had been issued prior to the time of the Act's passage. It also formalized procedures for future letters of intent. Funding for contracts covered by letters of intent are to first be provided through a recipient's Section 9 formula allocation wherever possible.[51]

Section 306: Research & Training Grants

Continued funding will be provided for the purpose of awarding research and training grants. Five million dollars will be provided in Fiscal Year 1984 and $10 million will be provided in Fiscal Years 1985 and 1986.

Section 307: Availability of Funds -- Section Five

Allocations to cities for funding under Section 5 of the Urban Mass Transportation Act (both for capital and operating purposes) will remain available to the area to which allocations were made through Fiscal Year 1985. Unobligated funds will be made available as an addition to appropriations through Section 9 through Fiscal Year 1986.

Section 308: Competitive Procurement

Acquisition of rolling stock should be made on the basis of competitive procurement. Consideration will be given to performance of vehicles, standardization, life cycle costs, and lowest initial capital costs.

Section 309: Bus Rehabilitation & Right-of-Way Definitions

Bus rehabilitation is recognized as an eligible expense for the purpose of federal funding for capital improvements when rehabilitation or rebuilding would extend the useful service life of a bus by at least five years. Vehicles which use an overhead catenary for receiving electric power are also eligible for capital improvements funding.

Section 310: Performance Reports

Congress has instructed the Secretary of Transportation to report the performance and conditions of mass transit facilities receiving federal support at least once every two years beginning January, 1984. The report should also estimate future capital improvements needs of transit systems for periods of one, five, and ten years.

Section 311: MARTA

Funding is assured for continuation of construction work on the MARTA rail system in Atlanta.

Section 312: MBTA

Congress has cancelled 80% of the principle and interest on a loan made to the Massachusetts Bay Transportation Authority (MBTA) in 1973.

Section 313: Advance on Acquisition of Right-of-Way

Certain restrictions were eliminated relating to acquisition of rights of way for new separated-grade transit systems (such as new rail projects).

Section 314: MBTA Technology Study

Congress authorized $500,000 for a feasibility study on certain Massachusetts Bay Transportation Authority (MBTA) trolley bus lines for conversion to more efficient technologies.

Section 315: Long Term Leverage Financing

A study of joint private/public financing programs for the purpose of supporting ongoing capital improvements programs for transit systems was ordered by Congress.

Section 316: Formula Grants for Nonurbanized Areas

Certain technical revisions were made in the Section 18 program for providing transit assistance to nonurbanized areas.

Section 317: Special Needs of Elderly & Handicapped Persons

A study of the special needs of elderly and handicapped persons was called for by Congress for the purpose of determining the best way of carrying out requirements contained in Section 504 of the Rehabilitation Act of 1973. The study is intended to develop information needed to promulgate regulations for implementing that Act. The study will seek to determine:

- Minimum criteria for providing transportation services to elderly and handicapped persons, and

- procedures to monitor grant recipient's compliance.

Section 318: Safety Authority

Previous laws and procedures were repealed in favor of a new section which requires the Secretary of Transportation to investigate conditions in facilities or equipment which is financed with federal funding when a serious hazard of death or injury could occur. Should the Department of Transportation determine that serious hazards exist, the grant recipient must submit a plan for correcting or eliminating such a condition. The Secretary of Transportation may withhold financial assistance until a satisfactory plan is developed.

C. ANALYSIS OF THE SURFACE TRANSPORTATION ASSISTANCE ACT OF 1982

Congress passed the Surface Transportation Assistance Act of 1982 as the last item on the agenda of the 1982 "lame duck" session. It was a compromise response to a variety of transportation issues. One of those issues addressed by the Act was that of federal financial assistance for transit systems around America. Budget reductions previously recommended by the Reagan Administration would have completely eliminated operating assistance funding from the Federal government for transit systems as well as significantly reducing funding for capital improvements. Passage of the Surface Transportation Assistance Act of 1982 will therefore accomplish two things for urban transit services:

- Provide a new source of funding for mass transportation in the form of capital improvements and operating assistance authorizations, and

- created an additional fuel tax to defray the cost of the expenditures which were being authorized by the Act[52] (transit is to receive 1¢ of a 5¢ per gallon highway fuel tax).

For mass transit, the impact is twofold:

- It significantly reduced the amount of federal support coming from the general fund and instead created a tax base to pay the costs of providing support for transit,[53] and

- continued to provide federal assistance for transit operations, although at a lesser level than in the past. Capital assistance funding availability will gradually increase, although actual appropriations are determined on a year-by-year basis.

Emphasis of this Act was given to labor intensive projects such as new maintenance facility construction and new rolling stock, both buses and rail cars.[54]

This analysis will review the various elements of the Surface Transportation Assistance Act of 1982 specifically as they affect Knoxville and the K-TRANS system. This analysis will address these points from a functional perspective such as capital improvements or operating assistance. This review will also include a brief overview of several of the sections which have lesser impact on Knoxville such as the Interstate Transfer program and the system of allocations for very large or very small cities. These points will be identified with regard to their role in overall transit funding and to provide perspective for points which are more directly related to the needs of Knoxville and its citizens.

Capital Improvements Programs - Background

Federal funding for transit capital improvements can be awarded from any of several sources through the Urban Mass Transportation Administration. Some of these sources are discretionary and others are based on formula allocations. Until passage of the Surface Transportation Assistance Act, primary sources of funding were Sections 3 and 5 of the Urban Mass Transportation Act of 1964. Most grants through Section 3 provide funding for major capital improvements projects such as large purchases of vehicles or construction projects. They are discretionary in nature. Two examples of Section 3 projects in Knoxville are the acquisition of a former Knoxville Utilities Board building for use as a K-TRANS office and maintenance facility (opened 1975) and purchase of new Grumman Flxible buses to replace older K-TRANS vehicles (began service in 1982).

Grants through Section 5 are customarily used for routine capital improvements programs which are a part of an ongoing repair or replacement program. Two examples of Section 5 grants in Knoxville are roof reconstruction at the K-TRANS maintenance facility (completed in 1979), and purchase of special vehicles for serving handicapped passengers on the K-TRANS LIFT (began service in 1981). Section 5 grants are based on formula allocations.

A discretionary funding source has also been available for massive construction projects such as new rail system construction. This is known as the Interstate Transfer program which was initiated in 1978 and allows the funding of certain transit projects as an alternative to major highway construction.[55] To date, funding for substitute transit projects has been provided only to large cities for projects such as Atlanta's MARTA Rail System. It is consequently unlikely that provisions of the Interstate Transfer program would be used in Knoxville. However, future policy changes or changing needs in Knoxville could make this option attractive in the future.

Capital Improvements Programs - Funding

Funding for the various capital improvements programs has traditionally been provided by Congressional appropriations from general revenues. For the first time, funding was provided from a new source beginning in Fiscal Year 1983. Funding for many transit capital improvements projects will be awarded utilizing the receipts of a highway users fuel tax which was created by the Act.[56] In FY 84, funding from general revenues will be significantly reduced; supplanted by revenues derived from the tax.

Funding for Section 5, which has been provided from general revenues, will be eliminated entirely at the end of FY 83.[57] Interstate Transfer funding, which will be provided through the fuel tax, will be increased significantly beginning in FY 84.[58] A new program known as Section 9 will also be funded through fuel tax receipts beginning in FY 83 and continuing at least through FY 86.[59]

Section Three

The Act maintains funding for the Section 3 program through Fiscal Year 1986. There are two significant changes from past policies, however:

- Funding will be reduced by 22.6% to $1.25 billion in FY 84 from $1.606 billion in FY 83. Funding will be further reduced by $150 million to $1.1 billion in FY 85 and FY 86. This represents a total reduction of 31.5% between FY 83 and FY 85.[60]

- Federal contributions toward net project costs will be reduced from 80% to 75% with the non-federal (local and state share, generally) increasing from 20% to 25%.[61]

The Section 3 capital improvements program will emphasize projects which are labor intensive and can be initiated quickly.[62]

Section Five

Funding for the Section 5 program will be eliminated after Fiscal Year 1983. Previous allocations have been made to urbanized areas on the basis of population and population density. The purpose and many of the procedures utilized in distributing Section 5 capital funds will be assumed through the new Section 9 and 9A program which is being initiated in FY 83.

Two points were addressed in the Act as they relate to the Section 5 program:

-Capital funds apportioned to urbanized areas but not yet spent will continue to be available to the area to which allocated through the end of Fiscal Year 1985 or until obligated, and

-unobligated capital funds in the Section 5 program after FY 85 will be returned to the Department of Transportation and become available as discretionary grant funds through FY 86.[63]

Section Nine

A new funding source for both capital improvements and operating assistance was created by the Act. Known as Section 9 and Section 9A, the program provides assistance to urbanized areas based upon a complex formula. Like the Section 5 capital and operating allocations, population and population density are major factors in the allocation formula but for the first time, operating factors such as revenue vehicle miles are introduced in determining the allocations.

Section 9 is different from the Section 5 program which it replaces in that its orientation is more toward capital improvements than for operating assistance. Section 9A is a one-year program created for FY 83, and provides assistance exclusively for capital improvements. Funding for both capital improvements and operating assistance will be initiated when Section 5 funding expires in FY 84.

Knoxville's allocations for the FY 83 Section 9A funds are based upon a formula applicable to cities with an urbanized area population of 200,000 to one million. Cities for over one million population or under 200,000 utilize different formulas. The formula applicable to Knoxville is based upon:

-Population (25% of allocation) (1980 Census),

-Population density (25% of allocation), and

-Bus revenue vehicle miles as a ratio of total bus revenue miles of other cities in the same population range (50% of allocation).[64]

The same basic allocation formula will be used beginning FY 84 when operating assistance allocations will be introduced with the exception that the calculation for bus vehicle revenue miles will also include a modest factor for cost of operation per passenger mile.[65]

Special Features of Section Nine

There are three major features of the Section 9 program which were introduced by the Act:

- -The concept of a "program of projects",
- -redefinition of "capital" for eligibility of funding, and
- -introduction of the transit planning function as an eligible expense.

Additionally, it will be possible to transfer a portion of capital allocations toward operating assistance in FY 84 only. There is a revision of regulations relating to accommodating elderly passengers on transit buses at a reduced fare beginning in FY 84.

The concept of a "program of projects" is one of the most significant aspects of the Act in that it extends previous planning and programming procedures for acquisition of capital items well beyond what was previously required. A program of projects is simply a comprehensive listing of all materials, services, and activities to be funded through the Section 9 program (or Section 9A) to be funded in a particular year.[66] This will include:

- -Capital purchases,
- -"associated capital maintenance items",
- -operating assistance,
- -transfer of capital allocations for operating assistance (FY 84 only), and
- -transit planning activities (other than existing Section 8 activities),

Development of a program of projects will consolidate certain planning functions and traditional grant administration functions into a single process. The process requires that a designated recipient certify that it:

- -Has the legal, financial, and technical capacity to carry out the proposed program of projects,
- -will have satisfactory control over project facilities to assure that they are operated in a manner consistent with the objectives stated in the program of projects,

-will comply with regulations relating to half fare provisions for handicapped and elderly passengers,

-will fulfill various other regulations which have previously been in effect, and

-will provide appropriate public notice and solicit necessary public comment through public hearings.[67]

Eligible expenses for the program of projects will include all operating assistance, routine capital items, and some transit planning functions beginning in FY 84. In FY 83 only, operating assistance projects will be funded through Section 5.

Two changes have been made in eligibility for the funding of certain items. The first change is that transit planning activities are eligible as an expense within the Section 9 capital program.[68] All transit planning activities must be identified within the program of projects and are subject to audit and review procedures which are consistent with those applicable to other activities funded under Section 9.[69] The second change is that capital purchases are now defined so as to include "associated capital maintenance items". An "associated capital maintenance item" is defined as "equipment and materials each of which costs no less than 1 per centum of the current fair market value of rolling stock comparable to the rolling stock for which the equipment and materials are to be used".[70] Purchases of replacement parts and components for buses are therefore now eligible as a capital purchase. Many of these parts have not previously been eligible for purchase under either the Section 3 or Section 5 Capital program.

This is significant for two reasons:

-It will enable transit systems to purchase many parts and components as a capital expense rather than as an operating expense. Federal subsidies are 50% for operating expenses but 80% for capital expenses.

-It will make it possible for transit systems such as K-TRANS to purchase certain costly parts such as transmissions and engines as capital items, thereby lessening the burden on the maintenance operating budget.

Complete rehabilitation of buses is defined as an eligible expense for Section 9 funding in circumstances where rebuilding would extend the useful life of a vehicle.[71] UMTA previously funded bus rebuilding as a matter of practice, however the Act formalized the procedures.

Section Nine - Application Requirements

In order to develop a program of projects, an applicant must fulfill certain obligations:

-Make information available to the public with regard to the amount of money available and the recommended projects developed by the applicant,

-develop the program of projects in consultation with other interested parties including private operators,

-publish a notice of the program of projects,

-hold a public hearing on the program of projects, and

-consider comments by the public prior to submitting the final program of projects.[72]

Section Nine - Reporting Requirements

Appropriate reporting on the program of projects must take place while the program is in progress and at its conclusion. Two specific reporting requirements must be undertaken:

1. An independent audit to be conducted annually to ascertain,

   -whether activities have been carried out in a timely and effective manner, and

   -whether the recipient has carried out activities consistent with appropriate laws and regulations.[73]

2. At least once every three years, a performance evaluation is to be conducted by the Urban Mass Transportation Administration to determine whether grant funds are being spent in accordance with federal regulations and that program activities are consistent with the program of projects as submitted. In the event that UMTA finds discrepancies with either of the above, funds may be reduced or withdrawn.[74]

Capital Improvements Program - Procedures Applicable to All Sections

There are several requirements common to all capital improvements programs. "Buy America" provisions require grant recipients to purchase "steel, cement, and manufactured products which are produced in the United States". There are certain exceptions to the "Buy America" provisions.

- -Where their application would be inconsistent with the public interest,
- -materials and products are not produced in the United States in sufficient quantities or of satisfactory quality,
- -in the case of rolling stock, the cost of components which are produced in the United States represent at least half of the total cost and where final assembly is in the United States. Costs of final assembly are not eligible in figuring the 50% of component cost but is in addition to component costs, and
- -where "Buy America" requirements would raise the cost of the finished product excessively (an increase of at least 10% for rolling stock and 25% for construction projects).[75]

Another change is that of the creation of contract authority in awarding grants through a system of "letters of intent". Letters of intent have been used by the Urban Mass Transportation Administration for several years as a way of permitting grant recipients to initiate certain portions of their capital projects with the assurance that a formal grant contract is forthcoming. Contract authority contained in the Act will enable UMTA to formally award grants for transit capital improvements projects in advance of the time that monies are actually appropriated.[76] In this way, a grant recipient can not only handle routine administrative functions such as to request bids or enter into negotiations with suppliers, but actually award bids and begin work. Reimbursements are guaranteed when the grantee receives a letter of intent. Actual payment would not occur until Congress appropriates funding, however.

Letters of intent which had been issued by UMTA prior to passage of the Act were assured funding with the qualification that UMTA was directed to utilize the grantee's Section 9A allocations wherever possible.[77]

Other technical requirements common to all capital improvements projects include the filing of certifications or assurances relating to:

- -private enterprise provisions,
- -charter bus operations,
- -school bus operations,

-local contribution and progress payments,

-planning requirements,

-labor protection,

-Civil Rights assurances, and

-Section 15 data reporting requirements.[78]

-independent audit obligations.[79]

Also specified in the Act are new or revised procedures relating to audit requirements.[80] "Buy America" provisions are also applicable to all capital improvements projects.[81]

Operating Assistance

Transit operating assistance has been provided through the Urban Mass Transportation Act of 1964 since funding was first provided in 1974. Federal financial assistance has been provided through Section 5 but will be terminated after Fiscal Year 1983. Funding will be initiated through Section 9 formula allocations beginning in FY 84.

There are three significant differences between the Section 5 program and the Section 9 program:

-Section 5 grants were funded through general revenues, whereas, the Section 9 grants will be funded through dedicated receipts from the highway users fuel tax,

-The allocation formula for Section 5 was based exclusively upon population factors whereas operating factors are part of the composition of the Section 9 formula, and

-Applications for Section 5 operating assistance were processed separately from applications for capital projects, whereas, Section 9 applications will be processed in a combined "program of projects" including capital improvements and certain planning activities.

Formula Allocations - Fiscal Year 1983

Funding levels and the formula for allocating operating assistance to urbanized areas will change during the life of the Act. The allocation formula applicable to Section 5 operating assistance will be used in FY 83 only, then will change when funding is initiated from the Section 9 program in FY 84. The procedures applicable to FY 83 are as follows:

-Allocations are based upon the population and population density in each urbanized area using census data from 1970 and 1980. These census based allocations are derived from and combined of 1970 Census data (25%) and 1980 Census data (75%), and

-urbanized areas with a population between 200,000 and one million (including Knoxville) will be limited to 90% of the allocation given in FY 82. Allocations to cities of under 200,000 population or which operate rail transit service are calculated differently.[82]

-Cities may "transfer" allocations for capital improvements in FY 84 to operating assistance within certain limits:

  -trade three dollars in capital allocations for two dollars of operating assistance, and

  -the total cannot exceed the full FY 82 allocation.[83]

-Unspent funds remaining after FY 83 remain available to the urbanized area to which they were allocated through FY 85 at which time they will be returned to UMTA if not obligated for use by the city to which allocated.[84]

-unobligated funds after FY 85 plus any dollars traded to UMTA from capital allocations for operating assistance (the remaining dollar from the two for three trade) will be available to UMTA for awarding discretionary capital grants in FY 86.[85]

Formula Allocations - Fiscal Year 84-86

Beginning in FY 84, operating assistance funding for transit systems will be provided through Section 9 formula allocation grants. There are four different methods of calculating allocations:

-For urbanized areas with a population of one million or more,

-for urbanized areas with a population of 200,000 to one million (including Knoxville),

-for urbanized areas with a population of under 200,000, and

-for smaller, non-urbanized areas (generally under 50,000 population which are provided assistance through Section 18).

Knoxville is an urbanized area in the category of a population size of 200,000 to one million. Criteria for cities in this category are as follows:

- -25% based upon population as determined in the 1980 Census,
- -25% based upon population density as determined in the 1980 Census,
- -50% based upon bus vehicle revenue miles as a ratio of total bus revenue vehicle miles of other cities in the same category,[86] and
- -a factor will be considered in the vehicle revenue mile calculation for cost of operation per passenger mile.[87]

The same formula will be utilized for both operating assistance and for capital improvements allocations. Technical requirements for receiving and administering a capital grant will also apply to operating assistance projects as well, with two exceptions:

- -The Act specifically requires acceptance of a Medicare card as identification for passengers travelling on the previously mandated elderly passenger reduced fare,[88] and
- -in FY 1984 only, it permits a transfer of capital allocations to operating purposes up to the full level of allocations in FY 82 (in cases where FY 84 allocations are less than FY 82 allocations).[89]

There are two requirements for making a trade of capital allocations for operating purposes:

- -That three capital dollars be traded for each two operating dollars, and
- -that an applicant which wishes to trade capital allocations for operating assistance develop a three year plan for funding that capital funds will not be necessary to support the transit system after FY 84.[90]

Operating assistance projects will be considered part of the "program of projects" beginning in FY 84 which includes capital improvements and planning activities not included in Section 8 funding. Application requirements, regulations, and certifications applicable to Section 9 capital projects are applicable to Section 9 operating assistance

projects as well. Audit and financial reporting requirements are somewhat more strict than in the past. In addition to an annual independent audit of expenses, UMTA is required to conduct a performance evaluation on each grantee at least once every three years. The purpose of the performance evaluation is to ensure that grant recipients are "carrying out the recipient's program, with specific reference to compliance with statutory and administrative requirements, and consistency of actual program activities with the...program of projects".[91]

Research, Training, and Demonstration Projects

Funding for projects involving innovative applications of management techniques was provided by the Act, although funding is limited. Funding is to be continued through FY 86.

Research and training in urban transportation will also be continued through FY 86.[92]

Special Research

The Act mandated that three research projects be undertaken by the Department of Transportation. The first is an assessment of future capital requirements of transit systems as well as operational and maintenance needs for one, five, and ten year periods. The Secretary of Transportation will report findings to Congress on January 1, 1984, and at least once every two years thereafter.[93]

The second research project is a study of long-term leverage financing as a means of securing private participation with public transit agencies in assuring continued capital improvements at transit facilities. Completion of the study is required by mid-1983.[94]

A third study obligates the Department of Transportation to determine the special transportation needs of elderly and handicapped persons so as to promulgate effective but practical regulations necessary to carry out Section 504 of the Rehabilitation Act of 1973.[95]

FOOTNOTES

[1]U.S. Congress, House, Surface Transportation Assistance Act of 1982 (Washington, D.C.: 97th Congress, 19 December 1982), Section 302(a): Section 21(4)(2)(B).

[2]Ibid., Section 302: Section 21(a)(2)(C)(5b).

[3]Ibid., Section 304(a)(b).

[4]Ibid., Section 305.

[5]Ibid., Section 302: Section 21(a)(2)(B).

[6]Ibid., Section 302: Section 21(b).

[7]Ibid., Section 302: Section 21(a)(2)(5c).

[8]Ibid., Section 303(a),(b), (c), (d).

[9]Ibid., Section 303: Section 9A.

[10]Ibid., Section 303(k)(2).

[11]Ibid., Section 303(1)(1)(A).

[12]Ibid., Section 303: Section 9(c)(2)(A).

[13]Ibid., Section 303: Section 9(c)(2)(A)(i).

[14]Ibid., Section 303: Section 9(e)(2).

[15]Ibid., Section 303: Section 9(j).

[16]Ibid., Section 303: Section 9(a)(3).

[17]Ibid., Section 302: Section 21(a)(2)(b).

[18]Ibid., Section 303: Section 9(n)(1).

[19]Ibid., Section 317.

[20]Ibid., Section 303: Section 9(e)(3)(C & D).

[21]Ibid., Section 303: Section 9(3)(1).

[22]Ibid., Section 107(a)(1), Amending Section 103 of Title 23 of the United States Code.

[23]Ibid., Section 107(a)(2).

[24]Ibid., Section 165(a)

[25]Ibid., Section 165(b & c).

[26]Ibid., Section 302, Amending the Urban Mass Transportation Act of 1964, Section 21(a)(1); Section 21(a)(2)(A).

[27]Ibid., Section 302: Section 21(a)(2)(b).

[28]Ibid., Section 302: Section 21(a)(2)(c)(5).

[29]Ibid., Section 302: Section 21(a)(2)(c)(5)(a).

[30]Ibid., Section 302: Section 21(a)(2)(c)(5)(b).

[31]Ibid., Section 302: Section 21(a)(2)(c)(3).

[32]Ibid., Section 303, Amending the Urban Mass Transportation Act of 1964, Section 9(a)(1 & 2); Section 302: Section 21(a)(2)(c)(3).

[33]Ibid., Section 303: Section 9(c)(2).

[34]Ibid., Section 303: Section 9(f)(3).

[35]Ibid., Section 303: Section 9(e)(3)(c & d).

[36]Ibid., Section 303: Section 9(f).

[37]Ibid., Section 303: Section 9(e)(1); 9(e)(3)(A-D)

[38]Ibid., Section 303: Section 9(g)(1-4).

[39]Ibid., Section 303: Section 9(e)(3)(E-H).

[40]Ibid., Section 303: Section 9(j).

[41]Ibid., Section 303: Section 9(k)(1 & 2).

[42]Ibid., Section 303: Section 9(k)(2).

[43]Ibid., Section 303: Section 9(l)(1)(A & B).

[44]Ibid., Section 303: Section 9(l)(2)(A & B).

[45]Ibid., Section 303: Section 9(l)(3).

[46]Ibid., Section 303: Section 9(M).

[47]Ibid., Section 303: Section 9(N)(1 & 2).

[48]Ibid., Section 303: Section 9A.

[49]Ibid., Section 303: Section 9(O).

[50]Ibid., Section 304, Amending the Urban Mass Transportation Act of 1964, Section 3(a).

[51]Ibid., Section 305, Amending the Urban Mass Transportation Act of 1964, Section 3(a)(4).

[52]Ibid., Section 511(a)(1).

[53]Ibid., Section 531(e)(1).

[54]Ibid., Section 304(b)(6).

[55]Ibid., Section 107(a)(1).

[56]Ibid., Section 511(a)(1).

[57]Ibid., Section 302: Section 21(a)(2)(b); Section 21(a)(5)(b).

[58]Ibid., Section 107(a)(1).

[59]Ibid., Section 302: Section 21(a)(2)(B).

[60]Ibid., Section 302: Section 21(a)(5)(b).

[61]Ibid., Section 304 (b)(6).

[62]Ibid.

[63]Ibid., Section 307: Section 5(o).

[64]Ibid., Section 303: Section 9(c)(2)(B).

[65]Ibid., Section 303: Section 9(b)(3).

[66]Ibid., Section 303: Section 9(e)(2).

[67]Ibid., Section 303: Section 9(e).

[68]Ibid., Section 302: Section 21(a)(2)(C)(5).

[69]Ibid., Section 303: Section 9(g).

[70]Ibid., Section 303: Section 9(j).

[71]Ibid., Section 309: Section 12(c)(1).

[72]Ibid., Section 303: Section 9(f).

[73]Ibid., Section 303: Section 9(g)(1).

[74]Ibid., Section 303: Section 9(g)(2).

[75]Ibid.

[76]Ibid., Section 165.

[77]Ibid., Section 302: Section 21(a)(2)(c), Section 305: Section 3(a)(4).

[78]Ibid., Section 305: Section 3(a)(4)(3).

[79]Ibid., Section 9(e)(1).

[80]Ibid.

[81]Ibid.

[82]Ibid., Section 303: Section 9(c)(2).

[83]Ibid., Section 303: Section 9(K & L).

[84]Ibid., Section 303: Section 9A(a)(3).

[85]Ibid., Section 303: Section 9(1)(3).

[86]Ibid., Section 303: Section 9(c).

[87]Ibid., Section 303: Section 9(c)(3).

[88]Ibid., Section 303: Section 9(e)(3)(D).

[89]Ibid., Section 308: Section 9(1)(2)(B).

[90]Ibid.

[91]Ibid., Section 303: Section 9(g)(2).

[92]Ibid., Section 306.

[93]Ibid., Section 310.

[94]Ibid., Section 315.

[95]Ibid., Section 317(c).

CHAPTER 2

TRADITIONAL FUNDING SOURCES

Chapter 1 of this report provided a detailed analysis and review of the legislation of the Surface Transportation Assistance Act of 1982. The language of the Act applies to all transit systems around the country. This chapter takes this analysis one step further in that it analyzes the specific effects of the Act on the K-TRANS budget for FY 82, FY 83, and FY 84. Through this budget analysis, it may be possible to identify areas of vulnerability in the local public transit budget outlook. The objectives of this analysis are:

- To trace federal and state funding which has been available to the City of Knoxville for operation of K-TRANS services,

- to trace federal and state funding which has been available to the City of Knoxville for capital improvements for K-TRANS services, and

- to evaluate funding as may be available to the City of Knoxville for future operating assistance and capital improvements.

Several calculations enter into this process. First is the Section 5 formula allocation process and where allocations were made for both operating and capital purposes. The calculations also trace where capital allocations are "traded" for operating allocations and under what terms. This has been the primary funding source for K-TRANS operating assistance from the federal government through FY 83 and a major source of assistance for capital improvements. Calculations are also shown for Section 9 operating assistance and capital improvements projected for 1983 and 1984. Section 9 essentially replaces Section 5 funding in FY 84.

The calculations in this chapter include:

- Section 5 operating assistance allocations for FY 82 and 83,

- Section 5 capital improvements allocations for FY 82 and 83,

- Additional Section 5 operating assistance available to Knoxville from the FY 83 capital allocation which can be "traded",

- Limits on capital to operating "trades",

- Actual drawdowns on Section 5 operating assistance allocations,

- Unobligated Section 5 operating assistance allocations available in FY 84,

- Capital improvements drawdowns from Section 5 allocations,

- Section 9 operating assistance and capital improvements allocations projected for FY 84, and

- Consolidated Section 5 and Section 9 capital availability summary projected for FY 84.

Finally, this section contains three simple forms for projecting availability of federal funding through FY 86, the time period when the Surface Transportation Act of 1982 expires. The first form is a simple, "checkbook" format for computing the availability of operating assistance. To use this form, simply "credit" allocations in the same way as entering a deposit into a personal checkbook. "Debits" or "withdrawals" can be made when figuring a budget. There is a column for budgeted needs of operating assistance dollars and another column for actual use once the year is closed and an audit is complete. In this way, it is possible to adjust projected use of operating assistance allocations against actual use of operating assistance allocations against actual use of operating assistance allocations. The "balance" is the amount of money which is available in the next fiscal year.

The second form performs the same calculations for capital allocations expenditures. Allocations are entered as a "credit" and expenses (or "obligated" levels of funding) are shown as a "debit" or "budgeted drawdown." Again, actual levels of funding are shown in a separate column enabling adjustments to be made at the conclusion of the project.

A third form permits estimations of the need for federal capital improvements allocations. Calculations based upon the Transportation Improvements Program or staff estimations being conducted to update the TIP can be figured to ascertain the availability of funding for TIP proposed improvements. The Urban Mass Transportation Administration generally requires available but unobligated allocations to be used prior to applying for discretionary Section 3 funds so the third form can be used to ascertain the level of funding available to support particular proposed projects.

Utilizing the personal checkbook format also permits transfer of information from one form to another such as occurs with a capital/operating "trade" of FY 83 Section Five or FY 84 Section 9 funds.

One additional factor affected Section Five allocations. In May, 1984, the Tennessee Department of Transportation arranged a complicated "re-allocation" of capital and operating funds among several cities in Tennessee, including Knoxville.

This reduced certain capital allocations and increased certain operating allocations. Knoxville agreed to transfer to other cities a total of $357,934 in capital improvements dollars. TDOT then transferred $1,560,000 into the Knoxville account. This included approximately a quarter of a million dollars which Knoxville had previously bedgeted for but became a part of the overall funding "pot".

This resulted in a reduction in the availability of capital funds for Knoxville but a significant increase in the availability of operating funds. Three factors are significant:

- First, that a modest level of funding had been anticipated for K-TRANS as carry-forward funds from previous years. This was, in essence, wiped out in that these carry-forward funds were included in the re-allocation.

- Second, that the impact of a deobligation of funds from TN05-4039 were not included in the re-allocation. Consequently, the additional monies as will become available from the close-out and deobligation of TN-05-4039 will also be available to K-TRANS for future grants.

- Third, that proceeds from the re-allocation are intended to support K-TRANS in both FY 85 and FY 86. Although the proceeds from the reallocation must be used quickly as they are subject to expiration, the intent is to "roll-over" new Section Nine allocated funds for FY 85 into FY 86. The re-allocation will therefore support K-TRANS for two budget years.

OPERATING ASSISTANCE ALLOCATIONS - FY 82 AND 83

Total Allocations

FY 82 Knoxville Allocations

Tier I Knoxville UZA Allocation[1]	$ 577,182
Tier I Tennessee Governor's Allocation[2]	$ 480,605
Tier II Knoxville UZA Allocation[3]	$ 53,575
Tier II Tennessee Governor's Allocation[4]	$ 46,531
Total FY 82 Tier I and Tier II	$1,157,893

FY 83 Knoxville Allocations

Tier I Knoxville UZA Allocation	$ 774,181
Tier I Tennessee Governor's Allocation	$ 206,553
Tier II Knoxville UZA Allocation	$ 63,489
Tier II Tennessee Governor's Allocation	$ 18,380
Total FY 83 Tier I & Tier II	$1,032,603

Total FY 82 & FY 83 Allocations (Exclusive of trades for capital $)	$2,190,496

NOTES:

[1]Based upon 1980 Census data - operating purposes only

[2]Based upon 1970 Census data - operating purposes only

[3]Based upon 1980 Census data - grantee's choice of operating or capital

[4]Based upon 1970 Census data - grantee's choice of operating or capital

SECTION FIVE CAPITAL ALLOCATIONS - FY 82 AND 83

FY 82 Knoxville Allocations

Tier III Knoxville UZA & Tennessee[5]	$ -0-
Tier IV Knoxville UZA Allocation[6]	$240,487
Tier IV Tennessee Governor's Allocation[7]	$200,248

FY 83 Knoxville Allocations

Tier III Knoxville UZA & Tennessee[8]	$ -0-
Tier IV Knoxville UZA Allocation[9]	$355,675
Tier IV Tennessee Governor's Allocation[10]	$ 98,720
Total FY 82 & FY 83 Allocations	$895,130
FY 83 1:1 Capital for operating trade	$ 9,501
FY 83 3:2 Capital for operating trade[11]	$173,683
Total reduction in FY 83 allocation	$183,184
FY 82 Capital allocation	$440,735
Remaining FY 83 Capital allocation	$271,211
Balance FY 82 & FY 83 Capital allocations	$711,946

NOTES:

[5]Allocation for fixed rail system - FY 82

[6]Allocation based upon 1980 Census - FY 82

[7]Allocation based upon 1970 Census - FY 82 - Later transferred to TDOT

[8]Allocation for fixed rail system - FY 83

[9]Allocation based upon 1980 Census - FY 83 - Later transferred to TDOT

[10]Allocation based upon 1970 Census - FY 83

[11]Received for operating assistance: $115,789 - Trade
$173,683 in capital allocations

IMPACT OF REALLOCATION

1982 Tier IV Knoxville - UZA Direct	$240,487
1982 Tier IV Governor's	200,248
1982 Total	$440,735
1983 Tier IV Knoxville Direct	$355,675
1983 Tier IV Governor's	98,720
1983 Total	$454,395
Total 1982 & 1983	$895,130
Carry-Forward from FY 81	58,966
Transfer to TDOT	$357,934
Balance Available to K-TRANS (prior to obligation & trades)	$596,162*

*Equals direct allocation

Obligations - Section Five Capital	
TN 05-0011	$ 35,000
FY 83 1:1 Trade: Operating	9,501
FY 83 3:2 Trade: Capital/Operating	173,683
Total	$218,184
Balance	$377,978

1983 Section 9A		$ 864,000
1984 Section 9		
Block Total	$2,506,804	
Operating	-1,052,104	
3:2 Trade	- 73,683	
Capital Available		$1,241,017
Section 5 Capital		$ 377,978
Total		$2,532,995
Section 9A TN 90-0011		$ 864,000
Balance 5/18/84		$1,668,995

EXPIRATIONS

Expiring 9/30/84

1981 Capital	$58,966	
Re-Allocated to TDOT	-58,966	
Balance to Expire 9/30/84		$ -0-

Expiring 9/30/85

1982 Knoxville UZA Direct	$240,487	
1982 Knoxville Governor's	$200,248	
Re-Allocated to TDOT	-200,248	
Obligated TN 05-0011	35,000	
Balance to Expire 9/30/84		
FY 82 Account	$205,487	$ 205,487
1983 Knoxville UZA Direct	$355,675	
1983 Knoxville Governor's	98,720	
Re-Allocated to TDOT	- 98,720	
FY 83 1:1 Trade - Operating	- 9,501	
FY 83 3:2 Trade - Operating	173,603	
Balance to Expire 9/30/85		
FY 83 Account	$172,491	$ 377,978

NOTE: All Section 5 Expires 9/30/85 regardless of year allocated.

FY 83 CAPITAL/OPERATING TRADE

Total Operating Assistance Allocation

Tiers I & II FY 82	$1,157,893
Tiers I & II FY 83	$1,032,603
FY 83 1:1 Trade	$ 9,501
FY 83 3:2 Trade	$ 115,789
Total Section Five Allocations	$2,315,786
Re-allocation (Governor's one time)[12]	$1,500,000
Total	$3,815,786

Capital/Operating trades - FY 83 Limits
1982 "Cap" Limit (90% of FY 82 Allocation)

1982 Total: Tier I & II	$1,157,893
90% of Total FY 82 Allocation	$1,042,104

It is possible to trade one FY 83 capital improvements dollar for each FY 83 operating assistance dollar up to the FY 82 "cap". It is then possible to trade three FY 83 capital improvements dollars for two FY 83 operating assistance dollars up to the actual FY 82 allocation.

Actual FY 83 allocation	$1,032,603
Trade capital dollars (1:1 trade)	$ 9,501
FY 82 "cap" (90% of allocation)	$1,042,104
Trade capital dollars (3:2 trade)	$ 115,789
FY 82 allocation	$1,157,893

NOTES:

[12]A one time re-allocation was made by the Governor of Tennessee using funds allocated to two Tennessee cities which do not have transit systems. The $1.5 million was therefore assigned to Knoxville's "account" in the same way that a conventional allocation would be made.

OPERATING ASSISTANCE DRAWDOWNS - ACTUAL

TN-05-4027-1[13]	$ 109,969
TN-05-4031[14]	$1,256,590
TN-05-4031-1[15]	$ 105,723
TN-05-4039[16] (Projected)	$1,731,015
TN-05-4039[17] (Actual)	$1,638,943
Total	$3,111,225

NOTES:

[13]Project TN-05-4027-1 amended the original grant for K-TRANS operating assistance in FY 81. Receipts from project TN-05-4027-1 were assigned to the K-TRANS operating budget for FY 1983.

[14]Project TN-05-4031 is the original grant for K-TRANS operating assistance in FY 82.

[15]Project TN-05-4031-1 is the amended grant project for K-TRANS operating assistance in FY 82. Receipts from project TN-05-4031-1 were assigned to the K-TRANS operating budget for FY 83.

[16]Project TN-05-4034 is the original grant for K-TRANS operating assistance in FY 83.

[17]Actual results of Project TN 05-4039 based upon audited results.

OPERATING ASSISTANCE CARRY-FORWARD FOR FY 84

Total Allocations

FY 82	$1,157,893
FY 83	$1,032,603
Trade	$ 125,290
Re-Allocation	$1,500,000
Total	$3,815,786

Total Drawdown (Actual)

TN-05-4027-1	$ 109,969
TN-05-4031	$1,256,590
TN-05-4031-1	$ 105,723
TN-05-4039	$1,638,943
Total	$3,111,225

Carry Forward & Available to K-TRANS in FY 84[18]	$ 704,561

Notes:

[18] Available to K-TRANS through FY 86 or until obligated.

CAPITAL IMPROVEMENTS DRAWDOWNS

Capital/Operating Trade 1:1	$ 9,501
Capital/Operating Trade 3:2	$173,683
Project TN-05-0011[19]	$ 35,000
Total	$218,184
Total Available Capital Improvements Allocations	$895,130
Balance After Operating Trade & Capital Drawdown	$676,946

Notes:

[19]Capital improvements project filed to provide the Knoxville/Knox County Community Action Committee with new and rebuilt vans for the purpose of accommodating handicapped passengers outside of Knoxville but within Knox County.

OPERATING ASSISTANCE CALCULATION - SECTION 9 FY 84

Allocations for FY 84

Operating Assistance

Basic Allocation (projection)	$1,042,104
Capital/Operating Trade 3:2	$ 115,789
Total FY 84 Allocation (projection)	$1,157,893

Impact on Capital Allocation

Total Section Nine Allocation (projection)	$2,506,804
Operating Assistance	$1,042,104
Capital/Operating Trade[20]	$ 173,683
Estimated Balance: Section Nine Capital Improvements Allocation	$1,291,017

Notes:

[20]In a three for two trade of capital allocations for operating assistance, $173,683 in capital dollars would yield $115,789 in operating assistance.

Evaluation of Capital Improvements Funding Sources

Section 3 capital improvements grant programs are subject to two changes: First, the federal contribution has been reduced from 80% of net project cost to 75% of net project cost. The non-federal contribution must therefore be increased. Second, total funding available for capital improvements funding is being reduced by over 30% between FY 83 and FY 85. Section 3 discretionary capital improvements grants will therefore be much more difficult to secure. Inflationary pressures will increase project costs at the same time that federal dollars available are being reduced.

Section 9 formula allocations for capital purposes are being significantly increased over Section 5 formula capital allocations. Knoxville will find it increasingly necessary to utilize its formula allocations rather than to use discretionary funds. Past practices by UMTA have favored use of formula allocation grants over discretionary grants. With the cuts in discretionary grant funds, it is likely that this policy will become increasingly important.

Precise determination of formula allocations for Knoxville are not made until Congress actually appropriates funds. For program planning purposes, it is reasonable to use FY 84 estimated figures although this amount may prove to be slightly high in the event that fuel consumption and the consequent tax revenues fall.

Evaluation of State Operating and Capital Assistance

Additional funding from the Tennessee Department of Transportation has been available through the Office of Public Transportation for both operating assistance and capital improvements projects. Operating assistance funding has traditionally been modest, representing only about 1½% of the K-TRANS operating budget. Appropriations are made annually by the state legislature. For budgeting purposes, a figure of about $75,000 annually is recommended although the actual figure may be slightly higher.

Participation in capital improvements projects has been an area where the Office of Public Transportation has traditionally been prominent. The Tennessee DOT has generally paid half of the non-federal share of capital improvements projects for each of Tennessee's transit systems or 10% of net project costs based upon 80% federal participation. Major support for transit capital improvements can be expected to continue although the extent of funding may be limited somewhat in the future depending upon appropriations by the state legislature. Past practices by UMTA have required use of all formula allocations before discretionary grants were awarded. With the cuts in discretionary grant funds, it is likely that this policy will become increasingly important.

Precise determination of formula allocations for Knoxville will not be made until Congress actually appropriates funds. For financial planning purposes, it is reasonable to use FY 84 estimated figures although this amount may prove to be slightly high in the event that fuel consumption and the consequent tax revenues fall.

Allocations to Knoxville for use by K-TRANS have been made through a complex formula in the Section 5 program and will be made through a formula for Section 9, as well. Section 9 formula allocations will be made exclusively for assigned operating amounts and assigned capital and planning amounts. The alternative "second tier" with a recipient's choice of use has been eliminated. However, there is an optional capital/operating "trade" which serves much of the purpose of "Tier II" allocations. This option is available only in FY 84 although there is a lobbying effort underway by many transit systems for Congress to extend this option.

Eligibility of purchases for a "capital" purpose has also been broadened so that purchases of replacement parts for buses may, in certain circumstances, be eliminated as an operating expense and made a capital cost instead.

The fourth tier is to be used exclusively for capital improvements for bus transit systems. Funding may be used for any capital purpose and not merely for new buses.

All Section 5 formula allocations will continue to be available to the city to which apportioned through fiscal year 1985 or until obligated and used, whichever comes first. Allocations not obligated by the end of FY 85 will be returned to the Department of Transportation for reassignment to any other transit system during FY 86.

TABLE 1

SUMMARY OF CAPITAL IMPROVEMENTS ALLOCATIONS
FOR K-TRANS

CAPITAL IMPROVEMENTS - FORMULA ALLOCATIONS

PROJECT YEAR & DESCRIPTION	PROJECT NUMBER	CREDITS	BUDGET DRAWDOWN	ACTUAL DRAWDOWN	BALANCE
Balance Beginning FY 82	-	$ 58,966	-	-	$ 58,966
FY 82 Section Five	-	$ 440,735	-	-	$ 499,701
FY 83 Section Five	-	$ 454,395	-	-	$ 954,096
Re-Allocation to TDOT	-	-	-	$ 357,934	$ 596,162
CAC Vans	TN05-0011	-	$ 35,000	-	$ 561,162
1:1 Cap/Op Trade FY 83	TN05-4039	-	-	$ 9,501	$ 551,661
3:2 Cap/Op Trade FY 83	TN05-4039	-	-	$ 173,683	$ 377,978
Capital Improvements Formula Allocations - Section Nine					
Balance Beginning FY 83	-	-	-	-	-0-
FY 83 Section Nine	-	$ 864,000	-	-	$ 864,000
Capital Project	TN90-0011	-	$ 864,000	-	-0-
FY 84 Section Nine	-	$1,464,700	-	-	$1,464,700
3:2 Cap/Op Trade	TN90-X010	-	$ 173,683	-	$1,291,017
FY 85 Section Nine (Est)	-	$1,760,000	-	-	$3,051,017
FY 86 Section Nine (Est)	-	$1,760,000	-	-	$4,811,017

TABLE 2

SUMMARY OF OPERATING ASSISTANCE ALLOCATIONS
FOR K-TRANS

OPERATING ASSISTANCE - FORMULA ALLOCATIONS

PROJECT YEAR & DESCRIPTION	PROJECT NUMBER	CREDITS	BUDGET DRAWDOWN	ACTUAL DRAWDOWN	BALANCE
Balance Forward Beginning FY 82	-	-	-	-	0
FY 82 Allocation	-	$1,157,893	-	-	$1,157,893
Governor's Reallocation	-	$1,500,000	-	-	$2,657,893
Amendment - FY 81	TN-05-4027-1	-	-	$ 109,969	$2,547,924
FY 82 Basic Grant	TN-05-4031	-	$1,256,590	$1,256,590	$1,291,334
Amendment FY 82	TN-05-4031-1	-	-	$ 105,723	$1,185,611
FY 83 Allocation	-	$1,032,603	-	-	$2,218,214
Capital/Operating Trade 1:1	-	$ 9,501	-	-	$2,227,715
Capital/Operating Trade 3:2	-	$ 115,789	-	-	$2,343,504
FY 83 Basic Grant	TN-05-4039	-	$1,731,015	$1,638,943	$ 704,561
FY 84 Allocation (Estimated)	-	$1,042,104	-	-	$1,746,665
Capital/Operating Trade 3:2 (Estimated)	-	$ 115,789	-	-	$1,868,454
FY 84 Basic Grant (Estimated) Sec. 9	TN-90-0010	-	$1,163,506	-	$ 618,948
FY 84 Basic Grant Sec. 5	TN-05-4045	-	$ 612,489	-	$ 86,459
					-0-*
1984 Re-Allocation		$1,560,000			$1,560,000
FY 85 Allocation (Estimated)		$1,042,104			$2,602,104
TN 05-4039 Deobligation		$ 92,072			$2,694,176
FY 85 Basic Grant (Estimated) Sec. 5			$1,500,000		$1,194,126
FY 85 Basic Grant (Estimated) Sec. 9			$ 419,362		$ 774,814

NOTES:

*Due to the re-allocation, all carry-forwards were "zero-ed" for FY 84 although some funds remained in the operating account, the impact of the re-allocation was to consolidate available funds into a single source. The total re-allocation was for $1.56 million. There is an additional $92,072 which will become available as a result of the close-out of the FY 83 project known as TN 05-4039.

TABLE 3

STATEMENTS OF REVENUES AND EXPENSES
FOR K-TRANS

YEARS ENDED JUNE 30, 1983 AND 1982

	1983	1982
Operating Revenues:		
Passenger fares for transit service	$ 1,909,174	$ 1,998,717
Special transit fares	325,134	290,373
Charter service	68,528	90,002
Demand service - LIFT	22,822	15,978
Advertising	46,254	23,795
Total Operating Revenues	$ 2,371,912	$ 2,418,865
Operating Expenses:		
Maintenance	772,916	756,577
Transportation	3,221,535	2,930,348
Marketing and promotion	183,474	126,023
Insurance and safety	538,069	402,319
General and administrative	304,346	272,052
Service fees (note 2)	52,000	55,514
Taxes and licenses	232,774	210,405
Operating rents	63,647	46,535
Pension (note 3)	67,310	52,157
Depreciation and amortization	1,910	1,284
Total Operating Expenses	$ 5,437,981	$ 4,853,214
Operating Loss	3,066,069	2,434,349
Federal Grants - Restricted	136,642	-
Nonoperating Revenue	28,685	24,314
Loss Before Contributions for Operating Purposes	2,908,408	2,410,035
Contributions for Operating Purposes (note 4):		
City of Knoxville	1,130,801	967,455
State of Tennessee Department of Transportation	74,295	70,265
U.S. Department of Transportation:		
Budget Request	1,731,015	1,256,590
Additional receivable (payable) based on actual results	92,072	105,724
Total contributions for operating purposes	2,853,614	2,400,034
Excess of expenses over revenues (note 5)	$ (54,794)	(10,001)

See accompanying notes to statements of revenues and expenses.

NOTES TO STATEMENTS OF REVENUES AND EXPENSES
FOR K-TRANS

YEARS ENDED JUNE 30, 1983 AND 1982

(1) Summary of Significant Accounting Policies

(a) Basis of Presentation and Affiliation

K-TRANS is the operating company under the jurisdiction of the Knoxville Transportation Authority which operates and maintains motor buses to serve as the public transit system of the City of Knoxville. The City has contracted with Knoxville Transit (an unincorporated division of American Transit Corporation) whereby Knoxville Transit operates and manages K-TRANS.

(b) Inventories

Inventories of repair parts are valued at the lower of average cost or market.

(c) Depreciation

Depreciation is computed using the straight-line method over estimated service lives.

(d) Revenue Recognition

Revenues from passenger fares, special contract fares, and charter service are recognized as earned at the time transportation is provided.

(e) Income Taxes

As a result of its affiliation described above, K-TRANS is exempt from Federal and state income taxes.

(2) Operating Agreement with Knoxville Transit

Under an agreement for the period July 1, 1982, through June 30, 1985, Knoxville Transit operates and manages K-TRANS for an annual management fee of $52,000, paid to American Transit Corporation. Either party has the right to terminate the agreement upon giving 90 days notice if the other party fails to cure a default of the agreement within 30 days of receipt of written notice of default.

A provision of the aforementioned agreement requires the City to provide all facilities and inventory; therefore, the City of Knoxville owns the transportation equipment, garage facilities and inventory of bus parts and supplies used by K-TRANS for the operation of the transit system. Had the aforementioned assets been owned by K-TRANS, estimated depreciation expense amounting to approximately $655,000 and $300,000 for the years ended June 30, 1983 and 1982, respectively, would have been reflected in the accompanying statements of revenues and expenses.

(3) Pension Plan

K-TRANS has a contributory pension plan in effect for the benefit of substantially all employees. The total pension expense includes normal cost and amortization of unfunded prior service cost over thirty years. The acturial present values of the plan's accumulated benefits are calculated using the aggregate level cost method with supplemental liability.

A comparison of accumulated plan benefits and plan net assets for K-TRANS' defined benefit plan, based on an acturial report dated February 1, 1983, is presented below:

Actuarial present value of accumulated plan benefits	1983	1982
Vested	$852,996	$802,601
Nonvested	18,049	17,899
	$871,045	$820,500
Net assets available for benefits	$651,567	562,862

The assumed rate of return used in determining the actuarial present value of accumulated plan benefits was 7%.

(4) Contributions for Operating Purposes

The contributions for operating purposes consist of the contribution made by the City of Knoxville, actual receipts from the U.S. Department of Transportation based upon prior submitted budgets or reapplications; receivables due from or owed to the U.S. Department of Transportation for the difference between prior submitted budgets and actual audited results; amounts due from the U.S. Department of Transportation for prior submitted budgets where receipts have not been collected; and, commitments from the State of Tennessee Department of Transportation for funds to aid in the operations loss based on required maintenance of effort.

(5) Excess of Expenses Over Revenues

The excess of expenses over revenues is reimbursed to K-TRANS by the City of Knoxville generally in the month following the end of the fiscal year.

CHAPTER 3

LITERATURE SEARCH AND REVIEW

Recent policy shifts in the Federal government are gradually transferring the burden for financing transit operations to the local level. George M. Smerk, Professor of Transportation at Indiana University says, "despite the transit legislation in the Surface Transportation Assistance Act of 1982 that was more favorable than many observers expected, transit in the United States will probably depend more heavily in the future on local funding."[1] As a result, public transit agencies across the country have begun to explore and develop new and innovative local funding sources for public transportation.

Rice Center, in their timely study, "A Guide to Innovative Financing Mechanisms for Mass Transportation," summarizes the opportunities local public transportation agencies have in developing new sources of funds:

> The framework for innovation already exists. The Urban Mass Transportation Act provides several legislative incentives for local transit properties to ensure the maximum involvement of the private sector in supporting public transit activity and correspondingly, to reduce the financial burden on the taxpayer. Many state laws are being changed to accomplish the same purpose, and local transit authorities are applying innovative solutions to transit needs.[2]

The purpose of this chapter is to examine a wide range of funding alternatives which are currently in use across the nation that may be used in Knoxville to support public transportation. Through a search and review of pertinent literature and information on funding enhancement techniques, several innovative funding strategies were identified as having potential application in Knoxville. Each of these funding enhancement techniques will be described and discussed after a brief overview of the issues and problems which affect the funding situation for the City of Knoxville and K-TRANS.

Issues and Problems

Critical to an analysis of potential funding enhancement mechanisms for public transit is an examination of information on the basic issues and problems which affect the funding situation for the City of Knoxville and K-TRANS. Many of these issues and problems affect not only the

local public transit environment but also the entire transit industry. Understanding the depth and character of these funding problems will assist in the proper determination of the best methods to provide additional sources of funding for the City of Knoxville and K-TRANS.

During the last three decades, the decentralization of residential and industrial activities, combined with increased automobile ownership and significant governmental subsidies to auto travel (e.g., road and highway construction and improvements) have de-emphasized the use of public transportation. Under these circumstances, not even the most well-managed public transit system could expect to break even. Fueled by inflation, public transportation costs have increased faster than both revenue from the farebox and public subsidies.

As a result, deficits are increasing. The causes underlying these growing deficits include:

1) Transit costs have risen faster than the national rate of inflation and will probably continue to do so. Cost increases have been led by fuel and for parts and equipment used in the maintenance of vehicles.[3]

2) Because total transit operating costs have been considerably higher than revenues, higher operating costs will increase the gap between expenses and revenues, even if both expenses and revenues increase at the same percentage rate.

3) The public continues to demand improved service or at least the same level of transit service even if some of the service is not particularly well patronized and represents a larger proportion of the overall operating deficit.[4]

4) The demand for transit service is at least somewhat sensitive to changes in fares. Increased fares, particularly significant increases in fares, may decrease ridership to the extent that total revenue increases may be less than needed.[5]

5) Support from local government for the purpose of providing transit operating assistance has not increased at the same rate as inflation.[6] In Knoxville, there have been no increases in local operating assistance for five years, despite inflationary pressures.

6) Rising costs of other public services, such as schools, health care, police protection, and roads have increased the competition for local and state tax dollars,[7] and

7) Federal support did not increase funds available to subsidize operating costs of transit at the same rate as that of inflation between 1977 and 1982; and federal funds for transit operating assistance have been cut since 1982.[8]

According to the literature, these problems will be the most important for the City of Knoxville and K-TRANS to solve in the years ahead. K-TRANS has attempted to address these various issues and problems through many adjustments in the levels of service, fare schedules, and sources of funding. Although local officials cannot control many of the causes of K-TRANS' rising deficits, new sources of funding can be developed and used to mitigate these problems. Below is a description of the many innovative funding techniques which have proven effective across the country in enhancing local funding for public transit.

Innovative Funding Enhancement Techniques

A wide variety of innovative funding enhancement techniques for public transportation exists in the United States. Below is a listing and description of those techniques and mechanisms which have been used by one or more transit properties as a response to tight budgets and decreased federal subsidies.

A. Broad-Based Taxes and Revenue Sources

1. Retail Sales Tax
2. Property Tax
3. Payroll Tax
4. Income Tax
5. Lottery or Gambling Tax

B. Charges on Motor Vehicle Users

1. Motor Fuels Tax
2. Vehicle Tax
3. Bridge and Tunnel Tolls
4. Commercial Parking Taxes

C. Charges on Property Benefitting from Transit

1. Service Charges
2. Special Benefit Assessment
3. Tax Increment Financing
4. Transit Impact Requirements
5. Negotiated Investments

D. Borrowing Strategies

1. General Obligation Bonds
2. Certificates of Participation or Equipment Trust Bonds
3. Tax-Exempt Industrial Revenue Bonds
4. "Safe Harbor" Leasing
5. Interest Arbitrage
6. Grant Anticipation Notes
7. Lease-Purchase Agreements
8. Vendor Financing
9. Zero Coupon Bonds

E. Joint Ventures with the Private Sector

1. Leasing/Selling Development Rights
2. Leasing/Selling Existing Facilities and Equipment
3. Donations for Capital Improvements and Operating Expenses
4. Cost-Sharing
5. Land Banking

Transit Operations

1. Fare Increase
2. Peak-Hour Surcharge
3. Distance-Based Fares
4. Reduced Levels of Service
5. Reduced Costs
6. Improved Efficiency
7. Contracted Taxi Service
8. Contracted Transit Service/Maintenance/Management
9. Contracted Vanpooling
10. Increased State Transit Assistance
11. Greater Marketing Efforts

A. BROAD-BASED TAXES AND REVENUE SOURCES

Several general taxing mechanisms are commonly used by states, municipalities and transit authorities to support transit development and operations. Currently, local funds for public transit subsidy most commonly come from retail sales and property taxes. These two broad-based taxes, in essence, charge the entire community for the benefits of transit. In Knoxville, this is the case with property and sales taxes supporting general revenues from which K-TRANS appropriations are derived. Although less widely used, payroll and income taxes as well as lotteries, also tap community-wide funding resources.

1. Retail Sales Tax: Most states rely on a retail sales tax for a large proportion of their revenue, and/or allow local jurisdictions to levy such a tax for their own purposes. The possibility exists for a portion of the local sales tax, or the state sales tax, to be dedicated to transit. This tax is more politically acceptable than many other taxes, but revenue shortfalls can occur as the sales tax revenue falls if consumer buying declines.

   The best example of retail sales tax being dedicated to public transit occurs in Atlanta, Georgia, where a 1% tax levied in Fulton and Dekalb Counties is used to support the MARTA system.[9]

2. Property Tax: A dedicated property tax can provide a stable source of funding for transit properties, and the property tax has been "one of the most frequently dedicated for transit purposes."[10] Property taxes can be levied for general public purposes, thereby mitigating the requirement made of special benefit districts that the taxed property receive services in proportion to the tax levy. Within the last ten years, local application of the property tax for transit purposes has been promising.[11]

3. Payroll Tax: A payroll tax is a percentage on gross payrolls which is paid by employees within a defined geographical area. These tax payments, considered to be business expenses, are deductible from corporate income subject to federal, state, and local taxes. The tax may be applied to all employers within the defined area, or it may exempt non-profit organizations such as private charitable or educational institutions. Portland, Oregon's Tri-County Metropolitan Transportation District was given power to levy up to a 0.6% employer-paid payroll tax on businesses operating within the district. In 1981, the payroll tax generated $37 million in revenues, representing 55% of the district's operating budget.[12]

4. Income Tax: The employee income tax is a flat-rate percentage tax deducted from the employee's wages or paycheck. This type of tax is imposed upon all employees who work within a specifically designated area, regardless of place of residence. Traditionally, this tax has been used to raise general revenues. However, in the cases of Ohio and Kentucky, revenues from employee income taxes have been dedicated to support public transportation. In 1981, Cincinnati, Ohio generated $12 million, representing 30% of its transit operating budget.[13]

5. Lottery or Gambling Tax: Several states operate lotteries or tax parimutuel betting. While most of these revenues are assigned to general revenue funds and allocated among state departments, some states dedicate part of the receipts from taxes on gambling and lotteries to transit. In 1981, the Arizona legislature established the Local Transportation Assistance Fund, which is financed by a share of the state lottery proceeds.[14]

Retail sales and property taxes generally provide most of the revenue for local public transit subsidization. Virtually every major city in the country uses these taxes to support public transit. In 1980, a survey of the United States Conference of Mayors (USCM) revealed a wide variety of tax rates being used to fund public transportation. Table 4 shows the results of that survey.

TABLE 4

1980 DEDICATED TRANSIT TAXES IN JURISDICTIONS
SURVEYED BY USCM

JURISDICTION	TYPE OF TAX	RATE	TAXING AUTHORITY
California			
Fresno	Sales Tax	1/4¢	State
Long Beach	Sales Tax	1/4¢	State
Los Angeles	Sales Tax	1/4¢	State
	Sales Tax	1/2¢	RTD Service Area
Oakland	Sales Tax	1/4¢	State
Riverside	Sales Tax	1/4¢	State
Sacramento	Sales Tax	1/4¢	State
San Diego	Sales Tax	1/4¢	State
San Francisco	Sales Tax	1/4¢	State
	Sales Tax	1/2¢	BART Counties
San Jose	Sales Tax	1/4¢	State
Santa Barbara	Sales Tax	1/4¢	State
Stockton	Sales Tax	1/4¢	State
Florida			
Tampa	Property Tax	1/2 mill*	County
Georgia			
Atlanta	Sales Tax	1¢	2 Counties
Illinois			
Chicago	Sales Tax	1¢	Cook County 1/4¢ in collar counties
Decatur	Sales Tax	1/32 of 1¢	State
Peoria	Sales Tax	1/32 of 1¢	State
Rockford	Sales Tax	1/32 of 1¢	State
Indiana			
Fort Wayne	Property Tax	97 mills	City
Gary	Gas Tax	1%	State
Iowa			
Cedar Rapids	Property Tax	38 mills	City
Dubuque	Property Tax	2 mills	City
Kentucky			
Louisville	Earnings Tax	0.2%	County

JURISDICTION	TYPE OF TAX	RATE	TAXING AUTHORITY
Massachusetts			
Boston	Gas Tax	1.5% of wholesale price	City
Michigan			
Detroit	Gas Tax	1.1¢/gallon	State
Flint	Gas Tax	1.1¢/gallon	State
Grand Rapids	Gas Tax	1.1¢/gallon	State
Lansing	Gas Tax	1.1¢/gallon	State
Minnesota			
Minneapolis	Property Tax	1.7 mills	Region
St. Paul	Property Tax	1.7 mills	Region
Missouri			
St. Louis	Sales Tax	1.2¢	City-County
Montana			
Billings	Property Tax	10 mills	City
Nebraska			
Lincoln	Gas Tax	1.2¢/gallon	State
New York			
New York City		2% oil company profits	State
North Carolina			
High Point	Property Tax	25 mills	City
Ohio			
Canton	Property Tax	1.5 mills	City
Cincinnati	Property Tax	0.3%	City
Cleveland	Sales Tax	1/2¢	City
Dayton	Sales Tax	1/2¢	City
Oregon			
Portland	Payroll Tax	0.6%	City
Salem	Property Tax	1.0 mills	City

JURISDICTION	TYPE OF TAX	RATE	TAXING AUTHORITY
Texas			
Houston	Sales Tax	1¢	County
San Antonio	Sales Tax	1/2¢	City-County
Washington			
Seattle	Sales Tax	3/10¢	County
	Motor Vehicle Tax	1% value	State
Spokane	Motor Vehicle Tax	1% value	State
	Household Tax	$1 month/ household	City

*mill = 1¢ per $1000 assessed valuation.

Source: Public Technology, Inc., Inflation - Responsive Transit Financing (Washington, D.C.: U.S. Government Printing Office, June 1982), pp. 6-7.

B. CHARGES ON MOTOR VEHICLE USERS

Public transportation in the United States has witnessed a tremendous decrease in ridership since World War II. Most of this decline has been caused by the increased dependence on automobiles. Public transit operators across the country believe motor vehicle users benefit from the presence of public transit and, therefore, should be taxed to support the service. Four different taxing mechanisms were identified that can provide additional revenue for public transportation.

1. Motor Fuels Tax: This is the option chosen by many transit authorities, local or state governments that dedicate a revenue source to transit. The major problem with this option at this time is April 1, 1983 passage of a federal fuel tax increase, with a portion dedicated to transit. Politically, Congressional action will likely make a local referendum harder to pass at this time.

2. Vehicle Tax (Registration, Personal Property, Etc.): This tax has the capability of generating significant revenue if dedicated to transit (or shared by transit), but is unpopular for several reasons. Car owners object to subsidizing transit directly through ownership of vehicles. Also, the tax is one that is rather easy to avoid because of the difficulty of enforcement. Because it is levied only in a localized area, anyone claiming to reside outside of the area is exempt, making avoidance of the tax a simple task. In addition, penalties for non-payment cannot be too strong.[15]

3. Bridge and Tunnel Tolls: New York, Philadelphia, and San Francisco are currently using bridge and tunnel tolls to help finance local public transit. These tolls are easy to collect in these areas since most facilities have collection stations in place. In terms of equity, tolls are considered a legitimate charge to motorists entering congested areas that would be more crowded if transit were not available.

4. Commercial Parking Taxes: Parking price strategies have the potential for significantly altering travel behavior in favor of high-occupancy vehicles.[16] The parking tax, for example, was estimated as capable of increasing home-to-work transit trips by 23%. A surcharge levied by local government and dedicated to transit has the potential of generating both a permanent local funding source as well as greater farebox revenues.

C. CHARGES ON PROPERTY BENEFITTING FROM TRANSIT

There is a growing interest among public officials in strategies that allow transit systems to share with the private owners the increases in land values that result from public transit improvements. To tap this source of revenue, a jurisdiction may levy a service charge or special assessment on the property or dedicate the additional tax revenue resulting from the property's increased value to transit.[17] Please note that these revenues are primarily realized in connection with major capital projects.

1. Service Charge: Under this technique, properties adjacent to transit stations are charged a fee for direct access to the facility. The fee may be paid annually or in a lump sum by the developer. These charges are comparable to payments made when an individual property is connected to a water or sewer system. The charges may be in the form of a capital item, such as a pedestrian walkway, or an annual contribution to operating costs, such as station maintenance.[18]

   Toronto requires connecting property owners to pay all capital costs of extending pedestrian ways to transit stations. In the United States, there are a few examples of public-private cost-sharing provided for in access agreements, such as in New York's Rockefeller Center and Citicorp Center. Although developers in the United States traditionally have resisted paying for transit access or sharing the cost of station construction or maintenance, this attitude may be changing as developers reassess the value of transit access. For example, several banks in Toledo, Ohio, are paying the maintenance costs of new downtown bus shelters, in which they are installing automatic teller machines. The Mobile Lane Development Corporation is paying Arlington County, Virginia, a portion of the cost of a pedestrian tunnel connecting an office-residential complex with a subway station.[19]

2. Special Benefit Assessment: When transit development can be shown to benefit certain sites and property values, a special benefit assessment may be an attractive method of financing that development. An assessment may be either one-time or recurring, and is levied by city council or a special district authority on those properties that benefit from transit development and at the rate proportional to benefits received. A major problem with the assessment is the lack of consistent methodology for determining benefits received. A special benefit assessment was successfully developed in connection with the construction of a transit mall in Denver, Colorado.[20]

3. Tax Increment Financing: Tax Increment Financing (TIF) is a method of financing public improvements with dedicated property tax revenues. A Tax Increment Finance District is established in the area most directly benefitting from the improvements, and a "base-year" assessed property value is determined. Property taxes collected on the base year value within the district are distributed to pre-existing taxing jurisdictions as usual; however, taxes collected on any increases in property values above the base year value are dedicated to financing the public improvements within the district. Tax Increment Financing currently is allowed in 37 states. Beaverton, Oregon established a tax increment zone in the downtown area in 1972, and it has been used to support public transit.[21]

4. Transit Impact Requirements: Transit impact requirements are fees and requirements imposed on developers to mitigate the impact of their new projects on transit service. The requirements are established by local ordinance as a condition for obtaining building permits. These requirements have been justified on grounds that new development will exacerbate peak-hour traffic or transit problems and, thus, should pay for solutions to mitigate the potential congestion. In San Francisco, the County Board of Supervisors enacted in 1981 the Transit Development Fee Ordinance which authorizes the city to collect a one-time fee of $5 per square foot from owners or developers of new downtown office space. The proceeds from this fee will be used to pay for the capital and operating costs of additional peak-period public transit services.[22]

5. Negotiated Investments: A negotiated investment is a commitment by a developer to contribute to the cost of public improvements necessary to support his new development. The developer's commitment usually is offered in exchange for changes to existing land use regulations that are needed to execute his project. Local governments often can utilize their zoning or building permit authorities to bargain with developers to pay for transit-related improvements required to provide access to the new development area. The revenue potential for negotiated investments is significant. In selected cases, agreements between public entities and developers have ranged from $18 million to $100 million.[23]

D. BORROWING STRATEGIES FOR CAPITAL PURPOSES

When transit was in private hands, capital expenditures were financed by floating bonds and selling stock. As deficits began to mount and transit systems were taken over by public agencies, these conventional sources of capital funds were closed off. The Federal government and some State governments then stepped in and began to finance transit's capital needs with grants. Since the mid-1970's these grants have financed most of transit's capital outlays.[24]

Because capital costs are far outpacing Federal and State appropriations, local governments are likely to have to provide an increasing share of capital funds. To meet these needs, some localities are taking a new look at conventional as well as innovative types of bonds. Bonds will probably not be an appropriate finance tool for small transit authorities, but for those systems with large-scale capital needs, bonds may serve a useful purpose.[25]

1. General Obligation Bonds: Public transit authorities may receive a large portion of their local operating funding through the issuance of general obligation bonds. Although most governmental units can borrow for capital needs, the process is often complicated by state regulations. Some states limit general obligation bonds to a percentage of assessed taxable property. Others require bond issues to be approved in referendum. Sometimes limitations have been avoided by channeling bond sales through agencies free of debt restrictions. For example, the Embarcadero Station in San Francisco was financed by bonds sold by the San Francisco Redevelopment Authority.[26]

2. Certificates of Participation or Equipment Trust Bonds: These certificates allow the cost of equipment or property to be spread among many investors. Each investor owns a share of the title to the property and leases his share back to the city or agency. These certificates constitute a short-term debt instrument, with an average life of 10 to 12 years. At maturity, the sum of the monthly lease payments equals the investors' principal plus interest. Investors are attracted to certificates by their tax-exempt interest and monthly payments on short term maturities. The Southern California Rapid Transportation District is the first transit agency to use this technique to raise local matching share funds for the purchase of new buses.[27]

3. Tax-Exempt Industrial Revenue Bonds: Under the new Section 103 (b)(4)(I) of the Internal Revenue Code, tax-exempt entities such as transit authorities and municipalities may issue industrial revenue bonds to raise money to pay lease payments on transit vehicles. These vehicles must be owned by a tax-paying entity or individual and leased to a governmental unit. The interest on the bonds is tax-exempt. New York City's Metropolitan Transportation Authority is the nation's first transit system to take advantage of the provision of the Economic Recovery Act of 1981 that allows the sale of tax-exempt industrial revenue bonds to finance the purchase of mass transit equipment.[28]

4. "Safe Harbor" Leasing: This concept essentially allows transit agencies to sell the accelerated depreciation deductions on transit vehicles to private corporations or entities seeking shelter for their taxable income. This concept, permitted under the Economic Recovery Tax Act of 1981 and the 1982 Tax Act, is currently available on the purchase of vehicles under contract by March 31, 1983, and placed in service by December 31, 1987. The tax-exempt obligations to support the use of "safe harbor" leasing must be issued by December 31, 1984.[29] Under the "safe harbor" leasing option, the transit authority issues tax-exempt obligations and lends the proceeds to a tax-paying entity that will acquire and then lease the transit vehicles back to the agency. The Metropolitan Transportation Authority in New York City is taking advantage of these new tax law provisions and saving millions on the purchase of subway cars and buses by selling the depreciation tax-breaks to a private company.[30]

   It should be noted that these "lease-back" arrangements cost the federal government significant tax revenues, and are therefore highly controversial. The 1981 Economic Recovery Tax Act is likely to be revised by Congress to limit the ability of transit authorities to take advantage of this option. However, there is also a divergent move in Congress to allow public transit to continue using "lease-back" techniques. The future of this financing option is unclear at this time.

5. Interest Arbitrage: This technique allows transit agencies to borrow money for the purchase of transit vehicles at a tax-exempt rate, enter into a lease-purchase agreement with private investors who actually make the purchase of the vehicles, and lease them to the transit agency. The agency makes lease payments out of the borrowed funds, and invests the remaining proceeds in financial instruments returning a high rate of interest. The transit vehicles may be purchased by the agency at the end of the lease period for a nominal sum ($1 per vehicle).[31]

In using interest arbitrage to invest public funds at private higher rates, the agency must be extremely careful regarding Internal Revenue Service regulations to avoid severe penalties. "Under existing IRS regulations:

- public entities are permitted to reinvest bond proceeds for a period of up to three years on that portion of the proceeds that is to be used for capital projects; and

- public entities are permitted to reinvest debt service reserve funds for the duration of the bonds."[32]

In 1979, the Houston Metropolitan Transit Authority experienced a net gain of $435,500.00 on the purchase of 53 city buses by using interest arbitrage.[33]

For transit agencies whose enabling legislation does not allow such flexibility, it may be possible to use private intermediaries to reinvest bond proceeds or other borrowed money.[34]

6. Grant Anticipation Notes: Grant application notes may be used by a transit system to provide working capital prior to the receipt of its Federal or State operating subsidies, thus avoiding mid-year cash deficit crises experienced by some agencies. The Southeastern Pennsylvania Transportation Authority recently authorized the sale of $30 million in one-year, tax-exempt notes.[35]

7. Lease-Purchase Agreement: A lease-purchase agreement permits a public entity to purchase equipment or property on an installment basis. Financing for lease-purchase agreements often is arranged for public entities by financial institutions. The financial institution finds one or more investors to purchase all or a portion of the equipment or property and then to lease their shares back to the transit agency. Under the agreement, the public entity agrees to make payments of the purchase price plus interest over a period of years in exchange for the right to use the asset immediately and the right to purchase the asset for a nominal fee at the end of the contract. In 1981, the Metropolitan Transit Authority (MTA) in Houston, Texas, entered into a lease-purchase agreement as part of a larger financing package to purchase eight new city buses and to rehabilitate 84 existing buses.[36]

8. Vendor Financing: This technique is the most common form of debt used to finance the local share of UMTA-funded transit buses. Under this arrangement, the manufacturer of the vehicles arranges financing, with the debt being secured by the vehicles purchased. The debt is retired by the transit agency with tax or operating revenues. The transit agency may request that the vendors supply financing proposals as part of the competitive bidding process. This technique has been used successfully by the MTA in New York City to purchase subway cars.[37]

9. Zero Coupon Bonds: Zero coupon bonds are bonds sold at prices substantially below their face value and at a zero coupon rate. Upon maturity, the issuer pays the face value of the bond in one lump sum to the investor; no interest payments are made during the life of the bond. The discounted price is set so that difference between the bond's purchase price and value at maturity will provide a yield that is competitive with other investments in the marketplace. In 1982, the Massachusetts Bay Transportation Authority in Boston saved an estimated $6 million on the total cost of borrowing $8.2 million worth of conventional bonds.[38]

E. JOINT VENTURES WITH THE PRIVATE SECTOR

A public transit agency undertaking capital projects (maintenance facilities, park-and-ride lots, guideways, and stations/terminals) leases or purchases real property, either on fee simple or in partial interest. Agencies can acquire property by direct purchase or by condemnation--the latter requiring more stringent proof of public purpose. Once an agency has full or partial interest in a property it can--subject to legal restrictions--dispose of any portions which are not needed for the transit purpose. Such property which is available for disposition constitutes a transit agency's real estate portfolio.[39] Land banking, leasing or selling developmental rights and existing facilities, cost-sharing, and the solicitation of donations from private business or industry for capital improvements and operating expenses represent a diverse cross-section of mechanisms for funding public transit. These mechanisms are intended to generate cash sums, either in lump sums or income streams over a number of years.

1. Leasing/Selling Development Rights: The sale or lease of air-rights over a station or other transit facilities is the least complicated type of income-producing development. It does not require significant capital outlays or land acquisition. The developer constructs and manages the building and pays the agency an annual rent, plus, in some cases, a percentage of the retail sales. Leasing is generally preferred over selling, because the agency retains control over the property and can enjoy its long term appreciation. Denver Regional Transportation District has recently leased the air-rights above a downtown transit center to a private developer for a high rise office building.[40]

2. Leasing/Selling Existing Facilities: Local governments and transit agencies in need of additional funds may be overlooking vacant or underutilized properties as a source of revenue. Transit terminals, park-and-ride lots, and maintenance facilities may be free for other uses because of shifts in demographics, changes in anticipated real estate development, construction of new facilities, or creation of new authorities. In these instances, transit agencies have the opportunity to generate additional revenue through the sale or lease of existing facilities. Fargo, North Dakota is in the process of building a city bus terminal, half of which will be leased to the Greyhound Bus Company. The city is receiving $30,000 a year in lease revenues from Greyhound to support local public transit.[41]

3. Donations for Capital Improvements and Operating Expenses: Local governments and public transit agencies have successfully solicited donations from the private sector for transit related improvements and operating expenses. Such capital improvements are usually related to projects with strong public interest or support. Donors usually benefit from tax deductions for their contributions and good public relations. A well organized and highly visible fund-raising campaign may be necessary to generate large amounts of money. The campaign will give private companies confidence that their contributions will be publicly recognized and, thus, will enhance their image in the community. This funding enhancement technique has been used in a number of communities across the country to support public transit. The most interesting case is in San Francisco where private donations were used to overhaul the famous cable car system.[42]

4. Cost-Sharing: There are some public transit agencies in the United States which are sharing capital and service costs with private entrepreneurs. In many cases, developers of large residential and industrial parks are teaming up with local transit agencies in order to share the burden and costs of operating transit. In Des Moines, Iowa, a private real estate firm and the transit system have shared the expenses of starting bus service to an outlying community.[43]

5. Land Banking: Land banking is the advance acquisition and holding of land for planned future uses. Land banking permits transit agencies to purchase the most desirable sites at affordable prices--before inflation and speculation drive up the land values and force transit agencies to locate facilities in less suitable areas or to pay exorbitant prices.

The Urban Mass Transportation Administration has provided funding for land banking through its advanced Land Acquisition Loan Program which loans 100% of land costs at attractive interest rates for properties to be used for transit purposes within a 10 year period. Purchase can take place before plans for future facilities are finalized. In Boston and Philadelphia, the public transit authorities used land banking to purchase land in anticipation that future facility expansion would be needed.[44]

F. TRANSIT OPERATIONS

Local transportation authorities and public transit operators have the opportunity to address the problems of increasing deficits and revenue shortfalls by making improvements and/or adjustments in the operation of their system(s). A variety of techniques have been developed and refined to mitigate these revenue problems. These techniques range from standard fare increases and increased operating efficiency to contracted transit services and increased marketing efforts.

1. Fare Increase: Increasing transit fares is usually the first consideration of local transportation authorities and public transit operators to increase total revenue intake. Fares represent the principal source of revenue for transit agencies. Fare increases, if too large in too short a time, may result in ridership loss, which can reduce overall revenues expected from the fare increase. All transit agencies attempt to keep fare increases to a minimum.[45]

2. Peak-Hour Surcharge: A peak-hour surcharge is a charge placed on commuters who travel during peak hours, usually 6:00 A.M. to 9:00 A.M., and 3:00 P.M. to 6:00 P.M. Depending on the magnitude of the price increase and the riders' sensitivity to fare charges, the surcharge may generate an increase in farebox revenues. The revenue increase will come from those commuters who do not object to higher fares, or who lack the ability to shift their travel times to off-peak hours or to use other means of transportation. In 1982, the Kansas City Area Transportation Authority instituted a peak-hour surcharge to commuters and this has significantly aided public transportation in the Kansas City area.[46]

3. Distance-Based Fares: Popular forms of distance-based fares include stage fares (where prices increase with irregular distance steps), zonal fares (where prices change every time a fairly arbitrary demarcated geographic zone is traversed), and graduated fares (where prices are exacted as a pure function of distance, as in a per-mile basis). The major

opposition to a distance-based fare structure is that of difficulty of collection. However, these fares are seen as more equitable than flat fares which penalize the short-distance rider to subsidize long rides.[47]

4. Reduced Levels of Service: Although most transit operators feel that cutting service is more harmful than increasing fares, this option is used in times of financial pressure because it can be implemented quickly. Money can usually be saved by eliminating or reducing the levels of service during hours of less patronage.[48]

5. Reduced Costs: A third option often pursued as a response to financial pressures is direct attempts by transit companies to reduce their operating costs. These actions, however, usually require a longer time to implement and are of two types: a) cost reductions through labor negotiations and b) reductions in staff.[49]

6. Improved Efficiency: Much recent discussion in the transit field has focused on trying to improve the efficiency of service provision in order to reduce operating costs. There are four levels at which actions might be taken to improve efficiency:

   a) organizational efficiency: the process of improving the efficiency of the overall organization by clarifying responsibilities, improving formation, and strengthening control.

   b) network efficiency: the process of improving the performance of the route structures and network in order to reduce system costs.

   c) operational efficiency: the process of improving operational performance, and ensuring a more efficient use of the various resources (labor, capital, information) needed to provide service.

   d) individual efficiency: the process of inciting better individual performance from each employee.[50]

7. Contracted Taxi Service: Contracting for taxi service is a cost effective way to provide public transit service to areas with (or during times of) low demand, where fixed-route scheduled bus service is economically inefficient. Often referred to as demand-responsive or dial-a-ride service, taxi services typically offer shared ride transportation between any two points within the service area. Taxicab companies are reimbursed for their services with provider-side subsidies or user-side subsidies. Santa Fe, New Mexico relies solely on three private taxi operators to provide public transit service

anywhere within the city limits. Anticipating an increase in population and related needs for transit, the city decided to contract for taxi service as a cost effective alternative to setting up a publicly owned and operated bus system.[51]

8. Contacted Transit Service/Maintenance/Management: Public transit agencies across the country have been saving money by contracting with private carriers and companies to provide transit services, the necessary maintenance, and management to operate a successful system. This is usually done when the transit agency does not have the capability to provide needed services. Houston's MTA currently contracts with four private carriers to provide service on 13 of MTA's 17 park-and-ride lots. MTA also contracts for maintenance of 18 vehicles, such as body work, interior refurbising, air conditioning retrofit and transmission or engine rebuilding.[52]

9. Contracted Vanpooling: Vanpooling is a form of ridesharing in which a group of 8 to 15 people who live close to each other ride together in a passenger van to a common work locale. Transit agencies may promote vanpooling by providing vans to interested groups as a means of improving mobility during rush hours. The agency may acquire the vans by leasing them from a third party or by actually purchasing the vans. The leasing company usually provides the vans and insurance and arranges for local maintenance of the vans at a nearby facility. Several public transit agencies around the country provide this type of service. San Francisco, Houston and Norfolk, Virginia have very successful systems, primarily because revenues are covering operating expenses.[53]

10. Increased State Transit Assistance: State governments, like their local and federal counterparts, must assume a larger share of the fiscal burden that public transit operators currently face. Traditionally, many states have funded both operating and capital costs of public transit systems throughout the country, but their contributions have been consistently below those of federal and local governments. Public transit operators have the opportunity to work with state transportation officials to secure additional funds for capital and operating assistance through increased gasoline taxes, bond issues, and other innovative funding techniques. However, most states are also experiencing revenue shortfalls and will be unable to significantly alter their spending programs in the future.[54]

11. Greater Marketing Efforts: Public transit agencies can increase ridership, and revenues, through an aggressive marketing campaign. Marketing includes several functions. It involves the obvious program of advertising, public relations, and efforts to keep the public interested and informed about public transit services. Marketing also includes telephone information, publication of bus schedules, bus stop signing, etc. Public transit operators have

traditionally sold advertising space on the interior and exterior of their vehicles, however, additional advertising space can be sold through the erection of billboards at maintenance facilities, the inclusion of sponsors names on bus stop signs and schedules, and many other techniques.

Trends and Future Directions

Clearly, transit agencies are pursuing a variety of strategies to increase their income from non-farebox sources. Although each local situation is different, some industry trends are apparent. The primary financial goal of most systems is an assured source of revenue that is responsive to inflation and provides the agency with some degree of financial independence. As a result, most agencies prefer a dedicated tax to an annual general fund appropriation that varies from year to year and often comes with strings attached. On the Other hand, the earmarked tax that generates inadequate revenue is seen as a disadvantage, because it may inhibit the State or local government from making other funds available. Localities with dedicated property taxes often find this a problem.[55]

Some agencies are moving to switch, if they can, from traditional, flat rate, gas and property taxes to dedicated taxes based on retail sales or income, because these levies meet with less public resistance and are more sensitive to economic changes. The dedicated regional sales tax appears to be the tax of choice for many agencies because it has the potential to generate income adequate to support operations and to guarantee revenue bonds for capital improvements.[56]

Agencies without an adequate single tax source often find it necessary or politically expedient to build a broad-based support package that draws revenue from several unrelated sources. Large cities, like New York and Chicago follow this strategy.[57]

Finally, it is apparent that agencies are increasingly experimenting with complex borrowing and income producing techniques. A few systems are using new borrowing mechanisms, such as equipment trust certificates and industrial development bonds, that are more attractive to the private sector than conventional bonds. Others are adopting tax strategies that tap the increased property values generated by the availability of transit service facilities. Also, agencies are looking at the revenue potential of leasing air-rights or excess property to private developers. Those agencies successfully taking these non-traditional approaches have had to develop expertise in a variety of financing techniques and the workings of the real estate market.[58]

FOOTNOTES

[1]George M. Smerk, "Passing That Referendum," Bus Ride, May 1983, p. 74.

[2]Rice Center, Joint Center for Urban Mobility Research, A Guide to Innovative Financing Mechanisms for Mass Transportation (Washington, D.C.: U.S. Government Printing Office, December 1982), preface.

[3]Public Technology, Inc., Inflation-Responsive Transit Financing (Washington, D.C.: U.S. Government Printing Office, June 1982), p. 1.

[4]Ibid.

[5]Ibid.

[6]Ibid.

[7]Ibid.

[8]Ibid.

[9]Ibid., p. 10.

[10]Gladstone Associates, Innovative Financing Techniques: A Catalog and Annotated Bibliography (Washington, D.C.: U.S. Government Printing Office January, 1978), p. 2-16.

[11]Ibid., p. 2-17.

[12]Rice Center, op. cit., p. 13.

[13]Ibid., p. 15.

[14]Public Technology, Inc., op. cit., p. 12.

[15]Ibid., p. 13.

[16]Gerald K. Miller and Carol T. Everett, "Raising Commuter Parking Prices - An Empirical Study," Transportation, Vol. 11, 1982, pp. 105-106.

[17]Public Technology, Inc., op. cit., p. 14.

[18]Ibid.

[19]Ibid.

[20]Rice Center, op. cit., p. 3.

[21]Ibid., p. 7.

[22]Ibid., p. 9.

[23]Ibid., p. 5.

[24]Public Technology, Inc., op. cit., p. 16.

[25]Ibid.

[26]Ibid., p. 17.

[27]Rice Center, op. cit., p. 29.

[28]Public Technology, Inc., op. cit., p. 18.

[29]Rice Center, op. cit., p. 31.

[30]Public Technology, Inc., loc. cit.

[31]Rice Center, op. cit., p. 31.

[32]Ibid.

[33]Ibid., p. L-1.

[34]Ibid., p. 32.

[35]Public Technology, Inc., op. cit., p. 19.

[36]Rice Center, op. cit., p. 33.

[37]Ibid., p. 37.

[38]Ibid., p. 39.

[39]Ibid., p. 19.

[40]Public Technology, Inc., op. cit., p. 20.

[41]Rice Center, op. cit., p. 25.

[42]Ibid., p. 51.

[43]Public Technology, Inc., op. cit., p. 20.

[44]Rice Center, op. cit., p. 21.

[45]Michael D. Meyer and P. Brendon Hemily, Public Transportation in the 1980's: Responding to Pressures of Fiscal Austerity (Washington, D.C.: U.S. Government Printing Office, February 1982), p. 12.

[46]Rice Center, op. cit., p. 17.

[47]U.S. Department of Transportation, Intergovernmental Responsibilities for Financing Public Transit Services (Washington, D.C.: Urban Mass Transportation Administration, August 1983), p. 29.

[48]Michael D. Meyer and P. Brendon Hemily, loc. cit.

[49]Ibid., p. 17.

[50]Ibid., p. 19.

[51]Rice Center, op. cit., p. 43.

[52]Ibid., p. 45.

[53]Ibid., p. 47.

[54]American Public Transit Association, An Overview of State Transit Funding (Washington, D.C.: American Public Transit Association, October 1982), p. 2.

[55]Public Technology, Inc., loc. cit.

[56]Ibid.

[57]Ibid.

[58]Ibid., pp. 20-21.

CHAPTER 4

ANALYSIS OF IDENTIFIED OPTIONS

A. SELECTION CRITERIA

A set of criteria was developed to evaluate the potential application of each of the innovative funding mechanisms identified in Chapter 3 to the Knoxville situation. The criteria used to measure applicability to Knoxville include: (1) Legal Feasibility, (2) Political Feasibility, (3) Social Equity, and (4) Revenue Generation. Each of the criteria is described below, as used by the project committee.

1. Legal Feasibility: Each strategy must be assessed according to its legal application in the Knoxville community under present legislation. The legal authority to implement any given strategy by means of enabling legislation is a major consideration in selecting any funding mechanism. The Federal government also has a hand in determining, through Internal Revenue Service laws and regulations, the use of some strategies. For example, there is currently a movement in Congress to close the tax loophole that allows "safe-harbor" leasing. However, most of the strategies discussed in Chapter 3 are presently allowed under Federal law.

   The City of Knoxville is a creation of the State of Tennessee, and as such, can use only those funding options specifically granted by the state. The State of Tennessee has traditionally given municipalities wide discretion in the use of property taxes, but limits the use of other forms of taxation rather severely. However, in 1982, the state legislature authorized a 1¢-per-gallon local option gasoline tax to be levied and dedicated to local public transportation. While the state has authorized the use of this tax, the requirement for passage of a local referendum has yet to be fulfilled by any Tennessee city.

The ordinance governing public transportation in the City of Knoxville also limits many of the activities in which the Knoxville Transportation Authority (KTA) may engage to generate revenue for the transit system. The Knoxville City Code (Section 30A-47) restricts the KTA from using borrowing techniques for funding capital expenditures. According to the ordinance:

> "The KTA shall not have the power to:
>
> (1) Incur indebtedness;
>
> (2) Issue any notes or other obligations constituting a lien upon properties, real or personal, used in the system for the purpose of transporting passengers;

(3) Sell, purchase, or lease real estate; or

(4) Enter into any service and operation agreement with any other governmental jurisdiction for transportation services, except with the prior approval of the Mayor and the Council of the City of Knoxville." (Ordinance Number O-166-78,§13, 10-3-78)

Of course, if the state allows a municipality to levy a tax or to engage in other revenue-generating techniques, then the KTA may recommend to the Mayor and City Council that they do so. The City Council and the Mayor may enter into agreements or levy a tax, as long as state and/or voter-approval requirements are satisfied.

Any strategy developed for revenue enhancement for the transit system must meet any and all Federal, state and local legal requirements.

2. Political Feasibility: Acceptance of taxation or other revenue-generating options by the citizens of Knoxville is a major element in the implementation of revenue enhancement plans. For example, the citizens of Knoxville must approve a referendum on the gasoline tax, demonstrating their willingness to be taxed to support the local transit system. Any further enabling legislation that is required to implement an option will need the political support of local leaders and their constituents, and also, a majority in the state legislature. For this reason, any revenue enhancement alternative that is considered will be weighed according to present law, and the likelihood of public approval.

3. Social Equity: As a public service, transit in Knoxville is committed to serving all segments of the community to the best of its ability. Traditionally, it has been held that levels of service and the burden of payment for service should be distributed equitably throughout the community. The ability-to-pay criterion has also been a part of the K-TRANS fare system as is illustrated by the differential in regular adult fares and those charged to the elderly and handicapped. Any taxation plan will be assessed as to incidence (who pays) and equity of application in the community.

4. Revenue Generation: Presently, K-TRANS competes with other public services for a share of local tax dollars, whereby the annual total that the system will receive is speculative. A dedicated funding source is vital to the system's ability to plan for the future, and to utilize present funding for maximum benefit. At present, K-TRANS is most concerned about budgeting for operating expenses, and therefore, any source of revenue will be analyzed with operating funding foremost in mind. Each funding option will be assessed according to estimated ability to generate substantial revenue for K-TRANS.

Table 5 illustrates the capacity of each identified strategy for fulfilling each criterion. (See Appendix A for scaling technique).

Conclusions

In analyzing each of the funding mechanisms with respect to the criteria selected, the planning staffs of K-TRANS and MPC identified the options most suitable to Knoxville. These decisions were based on the knowledge gained from a literature search and review, and an understanding of the local transit operating environment. Of all the strategies considered, four were identified as having potential for significant revenue generation for Knoxville in defraying transit operating expenses during a five-ten year time frame. These four are: motor fuels tax, commercial parking tax, some form of gambling tax, and tax increment financing. These options will receive additional study. It was not deemed necessary to continue evaluation of techniques that would not produce significant revenue for transit operating expenses.

It should be noted that each of the strategies selected is intended to increase revenue used to cover operating expenses. While capital needs are important, funding to meet operating expenses is most critical to K-TRANS at this time and will continue to be so until a permanent funding source is created. Capital improvement options are listed in Table 5, and could be used in the future to provide local match dollars for a capital project. However, they are not dealt with specifically at this time.

As can be seen from Table 5, many of the strategies studied would not be suitable for the Knoxville situation. For example, the State of Tennessee levies a sales tax from which it derives most of its revenue. The state allows the City of Knoxville to levy only a small percentage of this tax for local purposes, and there is little probability that a portion of this local revenue would be dedicated to transit. The City of Knoxville makes extensive use of the property tax, the revenue from which becomes part of the general fund for all municipal purposes. The likelihood of a property tax dedication to transit is remote, as this is already the heaviest tax paid locally, and it is paid in conspicuous amounts. In 1977, a property tax dedication to transit was proposed in City Council, but the measure died for lack of a second to the motion. Voter reaction to an increase in property taxes for transit purposes would probably be hostile. Payroll taxes and income taxes receive negative reaction in this area, and surcharges have been proven unsuccessful in supporting transit in other cities. Therefore, the four options identified above were chosen for further analysis.

The following section presents each option with respect to its legal feasibility, political feasibility, social equity, and revenue generation capabilities.

TABLE 5

LOCAL TRANSIT FUNDING ENHANCEMENT STRATEGIES

CRITERIA ANALYSIS

STRATEGY NAME	LEGAL FEASIBILITY	POLITICAL FEASIBILITY	SOCIAL EQUITY	REVENUE GENERATION
Retail Sales Tax	City levies small percentage	Poor; state gets majority of revenue from this tax	Regressive; especially on food & medicine	Good for state; poor for local transit
Property Tax	City can levy	Poor; heaviest tax paid in localities; paid in conspicuous amounts	Progressive, if used with exemptions for low-income households	Good for city; poor for local transit
Payroll Tax	No state enabling legislation	Poor; no state or local support for this type of tax: over-used	Fair; Falls on employers, but is levied at a flat rate	Poor; rates must be set very low
Income Tax	No state enabling legislation	Poor; little state or local support for this type of tax	Progressive if used with low-income exemptions and a progressive rate structure	Large potential base; poor outlook for transit
Lottery or Gambling Tax	No state enabling legislation	Moderate; does not raise taxes	Not applicable; only paid if payee makes the choice to participate	Significant for levying body; transit could lobby for a portion of receipts
Motor Fuels Tax	State enabling legislation in place; need local referendum	Moderate: small tax which is logically related to transportation, but already levied at state & federal level	Fair; Increases cost of driving car/decreases cost of transit trip	Significant for transit; a dedicated tax
Vehicle Tax	City can levy	Moderate; small tax but hard to enforce because of difficulty in determining residency	Fair; flat rate on all owners, but fulfills a benefit from - transit principle	Poor; rates must be low
Bridge and Tunnel Tolls	Not Applicable in Knoxville	Not Applicable	Not Applicable	Not Applicable

TABLE 5 (CONT.)

STRATEGY NAME	LEGAL FEASIBILITY	POLITICAL FEASIBILITY	SOCIAL EQUITY	REVENUE GENERATION
Commercial Parking Taxes	Need state enabling legislation	Moderate; retail and other businesses will resist	Dependent on incidence of tax	Good in CBD Knoxville
Peak-Hour Surcharge	Requires KTA approval	Very poor; attempts by bus services have been very unsuccessful	Dependent on cost of riders' alternative means of transportation & flexibility of ridership	Poor; may decrease overall ridership
Tax Increment Financing	Need state enabling legislation	Fair; would not require voter approval, and would not raise tax rate	Dependent upon incidence; Good, if only levied in CBD where transit is most vital	Dependent upon tax percentage dedicated to transit; potential for significant revenue generation
Fare Increase Reduced Levels of Service Reduced Costs Improved Efficiency	These strategies are not considered innovative, as they are practiced as part of the management of the K-TRANS system. Increased fares and reduced service have been necessities at times, whereas reducing costs and improving efficiency are daily management concerns. Certain of these options may be difficult or impossible to implement from a political perspective even if economically appropriate.			
Contracted Taxi Service	Legal	Moderate; probable public acceptance, but little or no labor acceptance	Very good as an alternative to fixed-route service	Very poor; seen as cost-effective option but generates no revenue
Contracted Transit Service/ Maintenance/ Management	Legal	Popular; cost-effective for city	Not applicable	Very poor; generates no new revenue
Contracted Vanpooling	Legal	Not for K-TRANS system; would compete with existing vanpool services	Not applicable	Not applicable
Increased State Transit Assistance	Legal	Because of state revenue problems, increases to transit are unlikely at this time	Good	Depends on amount allocated to transit by state
Greater Marketing Efforts	Requires KTA approval	Popular; cost-effective for city	Not applicable	Moderate; potential for attracting new revenue

TABLE 5 (CONT.)

Service Charges	
Special Benefit Assessment	
Transit Impact Requirements	These strategies are of great interest to transit operations with major capital needs and facilities. The K-TRANS system is now primarily concerned with revenue-enhancement for operating purposes, and therefore, these options will not be of great interest to the K-TRANS system at this time. However, they should be considered as alternatives at such future time that the K-TRANS system is in need of a local match for a federal grant for capital purposes.
Negotiated Investments	
General Obligation Bonds	
Certificates of Participation or Equipment Trust Bonds	
Tax-Exempt Industrial Revenue Bonds	
"Safe-Harbor" Leasing	
Interest Arbitrage	
Grant Anticipation Notes	
Lease-Purchase Agreements	
Vendor Financing	
Zero Coupon Bonds	
Leasing/Selling Development Rights	
Leasing/Selling Existing Facilities and Equipment	
Donations for Capital Improvements and Operating Expenses	
Cost-Sharing	
Land Banking	

B. OPTIONS APPLICABLE TO KNOXVILLE

The four funding strategies considered for further analysis include:

- Motor Fuels Tax,
- Commercial Parking Tax,
- Gambling Tax, and
- Tax Increment Financing.

This section will detail these options in relation to the four criteria as well as discuss implementation procedures.

Motor Fuels Tax:

Legal Feasibility: On May 1, 1982, a local option gasoline tax law became effective in Tennessee. This law allows a local jurisdiction operating a transit system to hold a referendum for the purpose of levying a 1¢-per-gallon gasoline tax within that jurisdiction, and for that tax revenue to be dedicated to transit. To date, Metro Nashville and Hamilton County (Chattanooga) have held referenda, but the tax is not operative anywhere in the state.

Political Feasibility: On April 1, 1983, the federal government instituted a 5¢-per-gallon gasoline tax increase, with 1¢ of this revenue apportioned to transit jurisdictions by formula. This revenue is intended by the Reagan Administration to replace former tax revenues supporting transit operations. The fact that this tax has been so recently established will toughen resistance to passage of a local option tax. The gasoline tax legislation allows a county to levy the tax, but it is unlikely that Knox County voters would favor a tax supporting a transit system which does not serve them. Therefore, the referendum question will probably be resolved by city voters.

Social Equity: This tax meets a benefit criterion (relating charges to benefits deriving from transit), in that automobile drivers pay for and benefit from the lesser amounts of traffic congestion and parking problems brought about by transit use. It also meets a pricing principle by increasing the cost of driving an individual car while decreasing the cost of the transit trip. However, the motor fuels tax is regressive in that the low-income household will pay a proportionally larger segment of its income in tax than will the higher-income household. But it has two advantages: "... (a) it varies with the amount of auto use, and (b) it is collected in small amounts rather than relatively large sums".[1]

Revenue Generation: The Finance Division of the Tennessee Department of Transportation estimated that tax revenue accruing to K-TRANS from the local option gas tax would have been $1.459 million in 1981-82. This is the approximate amount of revenue which could be expected to accrue from gasoline sales within the City of Knoxville in the near future.

Implementation: In order for the city to levy the gasoline tax, the Knoxville City Council would be required to adopt a resolution. It would have to be approved or disapproved by voters at the next regularly scheduled election within the city occurring at least sixty (60) days after the county election commission receives a certified copy of the resolution. The election commission, if a majority of voters vote "FOR" the resolution, would certify it to be operative. However, no tax could be collected until the first day of a month that occurs at least thirty days after the operative date.[2]

The tax would be collected by the State Department of Revenue. Knoxville would receive an amount equal to the proceeds of the tax within the City of Knoxville. The department may keep an amount up to 2% of the taxes collected to cover the expenses of administration and collection.[3]

The proceeds of this tax can only be used to maintain present levels of service or to extend service. It cannot be used to increase present levels of compensation of personnel.[4]

Parimutuel Betting or Other Form of Gambling Tax

Legal Feasibility: Presently all forms of gambling (except certain types of bingo games) are illegal in Tennessee. However, the state legislature has had bills introduced during the last two sessions which, if passed, would allow referenda in major Tennessee cities or counties to determine the legality of parimutuel betting on horse/dog racing. If such a bill became law, and referendum approval was obtained in Knox County, it is suggested that K-TRANS lobby for a share of the tax revenue.

Political Feasibility: There seems to be a good deal of support for gambling tax revenue in Tennessee, but there is also organized opposition. It is probable that this tax will become a reality in the future, and transit should be prepared at that time to push for a share of the revenue.

Social Equity: A productive tax on gambling would undoubtedly fall heavier on the low-income user, but the tax can be avoided by simply not utilizing the product. This feature makes the tax acceptable to some who prefer not to tax necessities. However, this is a value judgement, and there are arguments on both sides about the equity of a "sin tax".

Revenue Generation: It is estimated that this tax would be highly productive, as it has been for other jurisdictions, but it is not possible to estimate an amount of revenue that would accrue to the Knoxville transit system. Such amount would depend on the language of the legislation and the dedication of an amount to K-TRANS. However, Pennsylvania and Arizona have statewide lotteries with a portion of the proceeds dedicated to local transportation assistance. In 1980-81, lottery sales in Pennsylvania were $427 million, of which $169 million were net proceeds. Transit programs for senior citizens received $21.48 million of these funds. In FY 1981-82, a total of $115 million was generated by lottery sales in Arizona, with a net revenue of $44 million. The City of Phoenix received $7.8 million and the City of Tucson received $3.4 million for their local mass transportation systems. These funds may be used for either capital or operating expenses.[5]

Implementation: Since all forms of gambling are illegal in Tennessee, there are no guidelines for implementation of this tax in this state. However, the law passed by the state legislature of Pennsylvania created a Division of the State Lottery within the Department of Revenue. In Arizona, the lottery funds are allocated to the state-administered Local Transportation Assistance Fund, which then apportions the proceeds to transit systems based on the population of the operating city or town.[6]

Commercial Parking Taxes

Legal Feasibility: Section 7-36-103 of the Tennessee Code Annotated states that with regard to municipalities, "The power to fix, levy and collect such fees, rents, tolls, or other charges shall include the power to impose charges to the privilege of parking motor vehicles in or upon any on-street or off-street parking facilities, and the power to facilitate the collection of such parking fees or other charges by the use of parking meters". This section illustrates the state's willingness to allow municipalities to obtain revenue from parking facilities within their jurisdictions. As such, it would appear that legislation allowing for commercial parking taxes in Knoxville would not have great difficulty in the state legislature. However, it would be the responsibility of City Council to levy the tax, and to specify that revenues would accrue to the transit system.

Political Feasibility: This tax would be firmly opposed by merchants, businesses, and parking lot owners, especially in the downtown area. Unless the tax is applied throughout the community (a highly unlikely occurrence), the long-term probability is that merchants and businesses would relocate in areas where they could offer cheaper (or free) parking. Such a move would be detrimental to the CBD and K-TRANS by removing the market for transit which currently exists in downtown Knoxville.[7]

Social Equity: Parking charges meet a benefit criterion by charging for the use of scarce space, and a pricing principle by increasing the cost of traveling by car, and thus encouraging the use of transit and pooling. The tax is considered regressive to the extent that revenues raised are not spent on projects that benefit the poor. An UMTA publication states:

> A main weakness of taxes on commercial parking is the fact that many parking spaces are provided free of charge to employees by employers and to customers by downtown merchants. A recent review cites data to the effect that about 85% of all employees in urban areas in the U.S. receive parking subsidies. [8]

This statement highlights the probability that merchants will absorb the tax for customers and employees traveling by car, and pass the tax along in the form of increased prices and charges to all customers, including transit riders. However, the argument surfaces here that transit riders should absorb a greater portion of the cost of providing service. Therefore, the social equity question does not have a clear-cut answer in the matter of commercial parking taxes.

Revenue Generation: Revenue projections would depend on the area in which the tax was imposed and the rate of the tax. Yields from large urban cities include: New York City (6% tax rate) = $12 million annually; Bay Area Rapid Transit (10¢ per hour surcharge) = $38 million annually.[9] Congestion and lack of space has not become so acute in smaller cities as to encourage them to overcome the inevitable political opposition to this tax. However, it is possible to make theoretical projections regarding revenue generation from a commercial parking tax in Knoxville's central business district.

In Knoxville, there are approximately 11,740 parking spaces in the downtown area.[10] A 1981 study of parking in the downtown area concluded that the average duration of stay per car in commercial parking lots was 2.1 hours, and the average accumulation in commercial parking lots was was 75%.[11] Another study concluded that the average fee charged per car was $1.30.[12] Thus, approximately 4 cars use a space in a typical eight-hour day, five working days per week. Computed on the average fee charged, duration of stay, and accumulation, commercial parking in downtown Knoxville generates approximately $11,904,360.00 per year. If a 6% tax rate were imposed, and dedicated to transit, K-TRANS would realize approximately $714,261.60 annually from a commercial parking tax.

Implementation: The commercial parking tax would require state enabling legislation, and an ordinance by City Council. The method of collection and administrative structure would be determined in the ordinance and approved by City Council.

Tax Increment Financing:

Tax increment financing (TIF) involves freezing, according to a base date, the real estate tax base in a benefit area. Taxes on all increments to values accruing after the base date are reserved for redevelopment.[13] For example, the City of Beaverton, Oregon, established the downtown business area as a benefit zone, and uses the increment revenue over the base to finance redevelopment, including transit service.[14] This funding mechanism has been used thus far to fund capital projects that are expected to enhance property values in the benefit district. It is conceivable that this option could be modified to provide operating funds for local transit. If it is assumed that transit operations are vitally important to downtown business, then it is reasonable to include downtown business property in a strategy to defray operating deficits.

Legal Feasibility: The State of Tennessee makes no provision for this technique, and state authorization is necessary for use of this strategy. However, voter approval is not needed because the tax rate itself does not change.

Political Feasibility: This concept is relatively easy to implement, because voter approval is not necessary. However, the approval of state and municipal legislators might be difficult to obtain if constituent opposition was strong. Opposition would possibly come from those objecting to the use of this revenue for transit, as opposed to other municipal functions. The taxpayers themselves would be burdened with only the routine increases following reassessment.

Social Equity: Because the tax would fall primarily on businesses in the downtown area that benefit the most from transit, low-income households would not be adversely affected by this tax. The businesses themselves would continue to pay property taxes at the same rate.

Revenue Generation: The total amount of revenue generated by the tax would depend upon the percentage of total incremental tax revenues dedicated to transit. It would fulfill a benefit criterion to levy the tax only in the Knoxville Central Business District. The property tax revenue from this area in 1981 totaled $4,149,338.00.[15] Assume that the reassessment raised property values by 2% overall, or an increase of $82,986.76 in tax revenues if the tax rate remained the same. This entire increment could be dedicated to transit, or any percentage thereof.

Implementation: TIF would require state enabling legislation, and an ordinance by City Council. The base rate, the tax rate, and the increment dedicated to transit would be specified in the ordinance, as well as collection procedures and administrative structure.

TABLE 6

SUMMARY OF SELECTED MECHANISMS

STRATEGY NAME	LEGAL FEASIBILITY	POLITICAL FEASIBILITY	SOCIAL EQUITY	REVENUE GENERATION
Commercial Parking Taxes	Need state enabling legislation	Moderate; retail and businesses will resist	Dependent on incidence of tax	Good in CBD Knoxville
Lottery or Gambling Tax	No state enabling legislation	Moderate; does not raise current taxes	Not applicable; only paid if payee elects to participate	Significant for levying body; Transit could lobby for a portion of receipts
Motor Fuels Tax	State enabling legislation in place; need local referendum	Moderate; small tax which is logically related to transportation, but already levied at state & federal levels	Fair: increases cost of driving car/decreases cost of transit trip	Significant for transit; a dedicated tax
Tax Increment Financing	Need state enabling legislation	Fair; would not require voter approval & would not raise tax rate	Dependent upon incidence; Good if only levied in CBD where transit is most vital to businesses	Dependent upon tax percentage dedicated to transit; potential for significant revenue generation

C. CONCLUSIONS

Legal Feasibility

The most acceptable option, as far as current law is concerned, is the motor fuels tax. State enabling legislation is in place, and the mechanism is available to allow a public referendum. While the state might have no objection to tax increment financing or commercial parking taxes, the city officials who would levy the tax would probably be more resistant. There is almost certainly strong resistance to gambling, thereby to the revenue from a gambling tax.

Political Feasibility

The willingness of citizens to allow themselves to be taxed to support local transportation is a key ingredient in determining the success of any option. As far as strong public resistance is concerned, the gambling tax would most likely be the hardest to obtain and dedicate to transit. Commercial parking taxes and tax increment financing would probably be most strongly opposed by downtown businesses, who would carry the heaviest burden of these taxes. The motor fuels tax would be paid in small amounts, but the existence of a recent federal gasoline tax increase makes the resistance to this type of local tax uncertain. The results of a survey to determine the attitude of the citizens of Knoxville toward taxing to support K-TRANS will be analyzed in the following section.

Social Equity

The social equity of all options could be debated, but conclusions of a general nature may be drawn. Tax increment financing appears to be the most socially equitable option, at least to the extent that the tax is not passed on to customers or patrons in the form of increased prices. If it is assumed that gambling is an optional luxury, as opposed to a necessity, then the social equity of this tax lies in the fact that the patron chooses to pay it voluntarily by participating in gambling activities. While both commercial parking taxes and motor fuels taxes are more closely related to transit, they are generally recognized as regressive taxes, in that they fall more heavily on the poor household than on the wealthy. However, to the extent that lower-income households drive automobiles less than higher-income households, and to the extent that taxes on that driving are used to benefit lower-cost public transportation, these taxes may be more progressive.

Revenue Generation

While it is not possible to obtain precise figures on revenue for any of these options, estimates have been made for all options but the gambling tax. There is no real basis on which to estimate the revenue which might accrue to the city and to transit from this tax, except to compare other states which collect significant revenues from this tax. From estimates, the motor fuels tax would generate the greatest amount of revenue for transit; approximately $1.459 million annually. If a commercial parking tax was levied only in downtown Knoxville, and was levied at a rate of 6%, it is estimated that approximately $714,261.60 would be generated annually. If 1981 property taxes were designated as base rate, and the increase in property values was 2%, Tax Increment Financing would produce approximately $82,986.76 for K-TRANS, if only downtown property was taxed. Obviously, the greatest revenue-generator would be the motor fuels tax.

Best Option

The motor fuels tax appears to be the most feasible funding strategy for the K-TRANS system. State enabling legislation is in place and, most importantly, it would generate substantial revenue for K-TRANS. The local referendum requirement is an obstacle that could be overcome with intensive campaigning and public information dissemination. A survey of Knoxville citizens has been completed to determine willingness to support a tax to fund transit in Knoxville, and the results and analysis of that survey will appear in the following chapter.

FOOTNOTES

[1]Institute of Public Administration, Financing Transit: Alternatives for Local Government, (Washington, D.C.: U.S. Government Printing Office, 1980), p. 28.

[2]Local Transportation Funding Act of 1982, Tennessee Code Annotated, Sec. 107.

[3]Ibid., Sec. 104.

[4]Ibid., Section 105, 109.

[5]Rice Center, Joint Center for Urban Mobility Research, A Guide to Innovative Financing Mechanisms for Mass Transportation, (Washington, D.C.: U.S. Government Printing Office, December 1982), pp. V-1 through V-3.

[6]Ibid.

[7]Institute of Public Administration, Financing Transit, p. 29.

[8]Ibid., p. 30.

[9]Ibid., pp. 29-30.

[10]Knoxville-Knox County Metropolitan Planning Commission, A Closer Look: The 1982 World's Fair Transportation System, Phase II Report, (Knoxville, Tennessee: Knoxville-Knox County Metropolitan Planning Commission, July 1983) p. 115.

[11]Knoxville Parking Authority, 1981 Update of Parking Needs: Knoxville Central Business District, (Kimley-Horn and Associates, Inc., January 1982), Knoxville, Tennessee, pp. 12, 15.

[12]Knoxville-Knox County Metropolitan Planning Commission, World's Fair Phase II, p. 113.

[13]Rice Center, Innovative Financing Mechanisms, pp. 6-11.

[14]Ibid., p. C-1.

[15]Knoxville-Knox County Metropolitan Planning Commission, Center City-Data and Technical Information Report, (Knoxville, Tennessee: Knoxville-Knox County Metropolitan Planning Commission, August 1981), p. 27.

CHAPTER 5

PUBLIC OPINION SURVEYS

Chapters Three and Four of this report examined selected funding strategies which have potential for development and implementation in Knoxville to support K-TRANS operations. From that analysis, it was determined that the motor fuels tax is the most feasible strategy for innovative funding of the transit system. In order to gauge the amount of local support for a tax for transit in Knoxville, questions designed to reveal support or opposition to a tax were incorporated into two different public opinion surveys on K-TRANS and its service. Below is an overview of the methodology used in preparing and conducting the surveys as well as a review of the results of those questions pertaining to transit funding in Knoxville.

Background

In 1975, the Transportation Center at the University of Tennessee completed a public opinion survey of K-TRANS and its service. The Center's on-board survey of 4270 passengers over a three-day period provided information for K-TRANS staff and elected and appointed officials for policy-making purposes. But as time went on, the data became unreliable and outdated. A new comprehensive public opinion survey was needed.

K-TRANS and the Knoxville-Knox County Metropolitan Planning Commission agreed to develop a comprehensive public opinion survey of K-TRANS and its service. A project management committee was organized to develop the comprehensive survey, to actually conduct the survey, and to compile and analyze the results.

Methodology

The comprehensive survey was conducted in two phases: first, a telephone survey of the general population of Knoxville and Knox County, and second, a survey of passengers on-board K-TRANS buses (see Figures 1 and 2). The surveys were prepared concurrently so that results would be comparable. Additionally, the implementation schedule for both surveys overlapped so that all data was collected within approximately the same time frame. The telephone survey was taken in mid and late September, 1983, while the on-board survey was taken in late September and early October.

MPC staff members conducted the telephone survey. K-TRANS administered the on-board survey. Both surveys underwent testing where a small quantity of the surveys were administered to ascertain whether the questions were easy to understand and could be answered quickly. The tests proved to be valuable as both surveys needed minor revisions based upon experiences gained during testing.

FIGURE 1

TELEPHONE SURVEY

Hello. My name is_____. I am with the Knoxville-Knox County Metropolitan Planning Commission. We are conducting a brief survey to inquire about people's travel habits in the Knoxville area. Would you answer a few questions? (Note to caller: Talk to adults only; if none are home, hang up and call another number).

Address (from phone book)_____ Phone Number_____ Codes

1. Do you live within Knoxville's City Limits? ( ) Yes ( ) No ( ) Don't Know 1._____

2. What is the name of your neighborhood/community?_____ 2._____

3. Are you a registered voter? ( ) Yes ( ) No ( ) No Comment 3._____

4. Do either you or your family own a car? ( ) Yes ( ) No 4._____

   If Yes, how many cars do you or your family own and operate?
   ( ) 1 ( ) 2 ( ) 3 ( ) 4 or more ( ) Don't Know

5. How many people are in your household? ( ) 1 ( ) 2 ( ) 3-4 ( ) 5-6 ( ) 7+ 5._____

6. How often do you shop in downtown Knoxville? ( ) Daily ( ) Weekly 6._____
   ( ) Monthly ( ) Seldom, if ever

7. Is anyone in your family employed in downtown Knoxville? ( ) Yes ( ) No 7a._____ b._____
   Who?_____

8. What part of town do you usually travel to buy? (Note to caller: Ask for location and not store) 8a._____ e._____
   b._____ f._____
   c._____ g._____
   d._____

   Groceries_____ Furniture_____
   Medicine/Drugs_____ Appliances_____
   Hardware_____
   Clothing_____

9. Do you or your family ride with K-TRANS? ( ) Yes ( ) No 9a._____ e._____
   b._____ f._____
   If Yes, when you ride with K-TRANS where do you go? c._____ g._____
   d._____ h._____

   ( ) Work ( ) Medical ( ) Personal Business ( ) Recreation/Social
   ( ) Shopping ( ) City Schools ( ) Downtown ( ) UT Football Games
   ( ) College/University/Trade School ( ) Other_____

   (Note to caller: Explain to the interviewee that he/she may answer any of the following questions whether or not that person uses K-TRANS services or not).

10. How do you rate K-TRANS service? ( ) Very Good ( ) Good ( ) Unsatisfactory 10a._____
    ( ) Adequate but needs improvement ( ) Uncertain b._____
    Comments_____

11. Could you name something good about K-TRANS, its buses, or its service? 11._____

    Comments_____

12. Do you have any suggestions for improvements to K-TRANS transit service? 12._____

    _____

13. Do you consider K-TRANS as being an essential public service for Knoxville? 13a._____

    ( ) Yes ( ) No Comments_____ b._____

14. Who do you think rides K-TRANS the most? 14a._____ d._____
    b._____ e._____
    ( ) All people ( ) People going to work/school ( ) Older/Handicapped c._____
    ( ) Lower Income People ( ) People without cars ( ) Other_____

15. If K-TRANS experienced financial problems would you ( ) raise fares 15._____
    to maintain existing transit services or ( ) cut back services to keep
    fares from being raised? ( ) Other_____

16. Would you favor a special tax to pay for maintaining and improving K-TRANS 16a._____
    services? ( ) Yes ( ) No ( ) Maybe ( ) No Comment b._____

    If no, how should K-TRANS be funded?_____

FIGURE 2

ON-BOARD SURVEY

K-TRANS is interested in what you think of our service and the ways our service is used. We would appreciate if if you were to answer the questions on this survey form. IF YOU HAVE FILLED OUT THIS SURVEY BEFORE, YOU DO NOT NEED TO FILL IT OUT AGAIN.

1) When you ride with K-TRANS, where do you usually go?

Work	____	Library	____	Look for Employment	____
School	____	Shopping	____	Social Service Agency	____
Church	____	Lunch	____	Recreation of some kind	____
Bank	____	Post Office	____		

2) Why are you riding with K-TRANS today? (Please state the one or two most important reasons).

Saves money	____	Avoids parking problems	____
Don't drive	____	Avoids traffic congestion	____
Car not available when I needed to make this trip			____

3) Do you ever go shopping after you have already taken K-TRANS to go somewhere else? (Such as ride K-TRANS to work and go shopping on your lunch break.)

Yes ____ No ____

4) If you use K-TRANS to go shopping or go shopping after you have taken K-TRANS to go to work or school, what do you usually buy?

Groceries	____	Clothing	____	Medicine	____
Appliances	____	Hardware	____	Furniture	____

Other (type of purchase)_____

5) Have you ever used the K-TRANS "Shop & Ride" service? Yes____ No____

6) If you ride with K-TRANS to work or to school, where do you go?

Downtown	____	West Town Mall Area	____
High School	____	Any of Knoxville's Hospitals	____
UT & Ft. Sanders	____	Business or Technical School	____
Knoxville College	____	Other (please state)	____

7) Overall, how do you rate K-TRANS service?

Very good ____ Good ____ Adequate ____ Poor ____

8) Can you name something you like about K-TRANS? _____

_____

9) Do you have any suggestions for improvements which K-TRANS should make?

_____

10) Do you think K-TRANS is an essential public service which should be provided by the city government for the people of Knoxville? Yes ____ No ____

11) If K-TRANS experienced financial problems, which would you rather see done?

_____Raise fares and maintain the level of service, or
_____Have fares remain the same and cut service.

12) Would you favor a special tax to pay for maintaining and improving K-TRANS?
Yes ____ No ____

13) If you answered "Yes" to question 12, which improvement would you make? (Please show only the one or two most important changes).

____ Have the buses run into more parts of Knoxville.
____ Run the buses more often in the morning and afternoon rush hours.
____ Run the buses more often in the mid-days.
____ Buy more new buses.
____ Buy more of the new passenger shelters.
____ Lower the fares.
____ Run more buses on Saturdays.
____ Run more buses on Sundays.
____ Run the buses later on weekday evenings.
____ Other (State suggestion)_____

14) Are you a registered voter? Yes ____ No ____

K-TRANS appreciates your interest in our service and your willingness to help us by answering questions on our survey. Thank you for your help.

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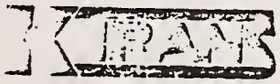

The telephone survey consisted of two elements: 1) a collection of attitudinal data concerning K-TRANS, and, 2) a study of retail shopping patterns. Originally, it was determined that a sample of one thousand residents would be sufficient to achieve a statistically significant sample. This was later increased in order to assure the project management committee that the results were an accurate reflection of public attitudes. A total of 1,278 telephone surveys were ultimately taken. The survey was focused on residents of the city since most K-TRANS service is provided within the City. However, a sizable sample of responses was also taken in Knox County. The final ratio was approximately 2/3 - 1/3 of city to county residents. The actual split between city and county residents was approximately 55% to 45%.

The survey was carried out using a random selection technique from telephone numbers in the phone book. Each of three survey technicians was assigned to approximately one-third of the phone book. Within each third, they selected the number at the top of each column. If there was no answer, the number was identified to be called back at a later time. If there was no answer a second time, the number was dropped from consideration. If a technician exhausted the numbers at the top of each column, he/she was instructed to return to the first column of their section and use the same selection process with the tenth number in each column. Surveys were taken both during the day and in the evening. This ensured that working household members would be surveyed.

On-board survey techniques were taken over a three-week period with partial coverage of the system on each day. Technicians assigned to collect data covered different routes at different times. Each route was covered several times over the three week period and each bus "trip" was surveyed at least once. Most routes were surveyed more than once and heavily travelled routes were surveyed up to four times.

The survey form stated that it was not necessary for a passenger to fill out a form more than once. Additionally, technicians asked passengers if they had been offered a survey previously. It is therefore unlikely that more than a small number of passengers filled out more than one survey form. Among the relatively few passengers who responded more than once, the total number of duplicated surveys is believed to be negligible in relation to the total survey effort.

The result of this approach is that every regular rider (one who ordinarily rides at least five days a week) should have had at least one opportunity to respond to the survey. Frequent and even occasional riders also should have had some likelihood of an opportunity to respond.

From the perspective of survey research, the sample taken far exceeded any requirements for statistical significance. In fact, fewer surveys could have been taken and the results would likely have been unchanged. However, a policy decision was made by K-TRANS that as many passengers as possible should be given the opportunity to participate in the survey process. Consequently, nearly four thousand surveys were taken.

Survey Questions

Several questions which the project management committee developed on taxation and other related topics appeared on both the telephone survey and the on-board survey. The objective was to make the results comparable between responses from the general population and responses of K-TRANS passengers. Below is a listing of the questions asked on taxation and other related topics.

		Telephone	On-Board
1.	Are you a registered voter?	Yes	Yes
2.	Do you consider K-TRANS as being an essential public service for Knoxville?	Yes	Yes
3.	Would you support a tax to pay for maintaining and improving K-TRANS services?	Yes	Yes
4.	What suggestions would you make to pay the cost of supporting the K-TRANS system?	Yes	No
5.	If K-TRANS experienced financial problems, which would you rather see done: raise fares and maintain existing transit services or cut back services to keep fares from being raised?	Yes	Yes

Results

An important variable in establishing a motor fuels tax in Knoxville is a supportive voter base for a local referendum. Both surveys asked if the respondent was a "Registered Voter" in Knox County. Most of the respondents to the telephone and on-board public opinion surveys indicated that they were registered voters. This information was needed in order to gauge the potential for establishing a gasoline tax to support K-TRANS in Knoxville. The results for both surveys were:

	Telephone	On-Board
Registered Voters	74.1%	69.9%
Non-Registered Voters	24.9%	24.0%
Uncertain	1.0%	6.1%

On-board survey respondents were not asked to furnish an address in order to keep the surveys anonymous. It was assumed that virtually all of the on-board survey respondents lived in the City of Knoxville (excluding express-bus passengers) because most of the bus routes are confined to the city limits of Knoxville. Telephone survey respondents were asked if they lived in the City of Knoxville or Knox County. The results of the telephone survey was:

	City	%	County	%
Registered Voters	646	50.5%	302	23.6%
Non-Registered Voters	227	17.8%	91	7.1%
Total	873	68.3%	393	30.7%

The voter registration reveals that approximately 70% of all survey respondents were legally registered to vote locally. This breakdown is important when comparing with the rest of the results presented in this chapter.

Telephone and on-board survey respondents were also asked "Do you consider K-TRANS as being an essential public service for Knoxville?" Both passengers on the K-TRANS system and the public as a whole said that K-TRANS is an essential public service. The results for both surveys were:

	Telephone		On-Board
Response	Non-riders	Riders	
Yes	93.4%	97.2%	85.3%
No	1.8%	1.2%	4.4%
No Response	4.7%	1.6%	10.3%
Total Respondents	929	322	3966

In breaking down the results of the question on determining if K-TRANS is an essential public service for Knoxville, the telephone survey respondents provided the following information.

	Yes	No	Don't Know
Total Registered Voters (City and County)	97.62%	1.84%	0.54%
Total Non-Registered Voters (City and County)	96.35%	1.00%	2.66%
Knoxville Registered Voters	97.93%	1.91%	0.16%
Knoxville Non-Registered Voters	97.22%	0.46%	2.31%
Knox County Registered Voters	96.93%	1.71%	1.37%
Knox County Non-Registered Voters	94.05%	2.38%	3.57%

Again, K-TRANS is seen as an essential public service by an almost unanimous group of citizens. There are only slight differences in the extent of a favorable response between residents of the city, residents of Knox County and people who are and are not registered to vote. The largest degree of favorable responses came from registered voters in the City of Knoxville at nearly 98%. The smallest level of support came from people who are not registered to vote in Knox County with 94%. In aggregate, registered voters responded more favorably than people who are not registered to vote.

Survey respondents riding with K-TRANS also gave a favorable indication that K-TRANS is seen as an essential public service for Knoxville. The results of that survey are as follows:

	Yes	No	No Response
Peak-Hour Passengers	85.5%	4.4%	10.1%
Off-Peak Passengers	84.9%	4.5%	10.6%
Total Survey	85.3%	4.4%	10.3%

One explanatory note should be made with regard to the apparently high level of "No Reponse" to this survey question in the on-board survey. The question appeared toward the bottom of the form. Consequently, there were several of the forms which were not entirely completed by passengers whose destination was reached prior to their responding to every question. For purposes of the survey analysis, a survey was considered acceptable for tabulation if most questions were addressed. However, this resulted in an apparently high level of "No Response" answers on several of the questions.

So far, the results of the telephone and on-board public opinion surveys have shown that most respondents in Knoxville and Knox County are registered voters and that they feel K-TRANS is an essential public service for Knoxville. Telephone and on-board survey respondents were also asked to share their ideas on whether they would "Support a special tax to pay for maintaining and improving K-TRANS services?" The results for both surveys were:

	Telephone			On Board
Response	Non-Riders	Riders	Total	
Yes	40.7%	46.9%	42.0%	54.2%
No	34.0%	27.0%	32.2%	34.0%
Maybe	14.7%	17.7%	15.7%	---
No Response	10.5%	8.4%	10.1%	11.7%
Total Respondents	929	322	1278	3966

The information suggests that there is generally a willingness to support a special tax which is dedicated to supporting K-TRANS service. However, the large proportion in the "Maybe" and No Response" categories indicated that the respondents are sensitive to the nature of any special tax.

In breaking down the results of this question from the on-board survey, the passengers for both the peak-hour and off-peak-hour gave remarkably similar results. Both groups indicated a greater willingness to support K-TRANS through a special tax than those from the telephone survey. The breakdown for the on-board survey is as follows:

	Yes	No	No Response
Peak-Hour Passengers	55.3%	33.6%	11.0%
Off-Peak Passengers	52.3%	34.7%	13.1%
Total Survey	54.2%	34.0%	11.7%

Individuals asked over the telephone to share their views on supporting a special tax to pay for maintaining and improving K-TRANS services generally responded favorably, although not as high as the on-board survey. Below is a breakdown of the results of this question:

	City Resident Voters			County Resident Voters		
	Registered	Non-Registered	Total	Registered	Non-Registered	Total
Yes	44.0%	46.7%	44.7%	34.4%	42.3%	35.9%
No	31.6%	25.6%	30.1%	37.4%	35.2%	36.9%
Maybe	15.6%	16.7%	15.9%	17.2%	9.9%	15.3%
No Response	8.8%	11.0%	9.4%	10.9%	12.1%	11.8%

City Sectors*:	Central	West	Northwest	North	East	South
Yes	56.0%	40.7%	40.2%	35.3%	49.0%	45.6%
No	23.6%	33.0%	36.8%	38.6%	29.7%	25.6%
Maybe	14.2%	16.1%	18.7%	18.4%	12.9%	16.0%
No Response	6.2%	10.2%	4.3%	7.7%	8.4%	12.8%

County Sectors*:	North	Northeast	East	South	Southwest	Northwest
Yes	28.6%	38.8%	38.6%	39.1%	40.0%	29.6%
No	47.6%	45.0%	33.3%	33.7%	35.0%	35.2%
Maybe	14.3%	6.3%	22.8%	15.2%	13.3%	23.9%
No Response	9.5%	10.0%	5.3%	12.0%	11.7%	11.4%

*Note: Care must be exercised in the interpretation of the sector breakdown of responses due to low number of observations in each sector. However, the general patter of willingness to support a tax in those areas served by transit can still be seen.

As previously noted, the results of the question reveal a large block of "Maybe" and "No Response" answers. Over a quarter of all the responses (25.7%) indicated "Maybe" or gave no response. This voting bloc will make the difference in either passing or failing a referendum supporting a special tax to pay for maintaining and improving K-TRANS services since the basic results (Yes or No) are matched closely.

In breaking down the results of this question by voter registration and by geographic sectors, some interesting trends have developed. Support for a special tax was greatest in the areas of Knoxville and Knox County which presently receive the most service from K-TRANS. Parts of the City of Knoxville which have good levels of service were most willing to support a special tax. The highest city sector was the Central Sector with 56% indicating yes. Parts of Knox County which receive little or no service were the least willing to support additional taxation.

Securing support for additional taxation from people who presently have no opinion or reside in a part of Knoxville which receives little service may be possible. K-TRANS could offer new or revised services which might appeal to individuals who presently cannot be served by K-TRANS. Or, K-TRANS could address some perceived need which citizens believe are presently unmet or insufficiently met. In this respect, K-TRANS has the potential of acting as a unique agency within the public sector: To develop a program of services based upon analysis of the transportation needs then offer it directly to voters. If the voters like the program, they may choose to vote for it and pay the cost. If it is not satisfactory, they may choose to vote against it.

Individuals who indicated on the telephone survey that they would not support any additional taxation to support the K-TRANS system were given the opportunity to make suggestions on what method they would use to pay the cost of supporting the K-TRANS system. Overwhelmingly, the survey respondents favored the users paying more for K-TRANS' services. Below is a breakdown of the results of that subquestion:

Have users pay more	48.0%
Maintain the status quo	4.1%
Eliminate non-essential services	3.7%
Replace K-TRANS management	2.9%
Support with existing taxes	2.0%
Be more efficient	0.3%
Other suggestions (less than 0.5%)	33.4%
No opinion	5.1%

Telephone and on-board survey respondents were asked one final question on public transit financing, "In the event K-TRANS experienced financial problems, would you prefer to see fares increased and services maintained or fares remain the same and service cut?" Below are the results to the question:

	Telephone		On-Board
Response	Non-Riders	Riders	
Raise Fares	53.7%	58.4%	69.6%
Cut Service	15.1%	14.6%	19.6%
Other	15.4%	16.8%	---
No Response	15.8%	10.2%	10.8%
Total Respondents	929	322	3966

The majority of responses here favored raising fares and maintaining service rather than holding fares at their present level and cutting service. Both riders and non-riders believe that maintaining service levels is essential. Telephone survey respondents indicated that they would overwhelmingly support raising fares and maintaining services as opposed to maintaining fares and cutting services. Below are the results of the telephone survey respondents:

Raise Fares	54.5%
Cut Service	14.5%
Do Neither	0.5%
No Opinion	15.5%
Other suggestions	15.0%

On-board survey responses indicate an even greater willingness to support the choice of raising fares and maintaining service over maintaining fares and cutting service. Below are the results of on-board survey respondents:

	Peak-Hour	Off-Peak	Total Survey
Raise Fares	69.7%	69.4%	69.6%
Cut Service	19.0%	20.4%	19.6%
No Response	11.3%	10.2%	10.8%

Conclusion

The results of the telephone survey and the on-board survey, conducted on over-lapping time schedules, indicate a strong belief on the part of Knoxville citizens that transit is an essential public service that the City should provide. Most respondents favor raising transit fares, rather than cutting service, as a response to financial difficulties. A larger percentage of City residents indicated support for a tax for transit than indicated opposition, but there is a substantial number of "maybe" and "no response" answers to this question. This finding suggests that these respondents might be presuaded to support a tax by public information and an effective referendum campaign.

REFERENCES

REFERENCES

American Public Transit Association. An Overview of State Transit Funding. Washington, D.C.: American Public Transit Association, October 1982.

American Public Transit Association. A Survey of Local Mechanisms for Financing Operating Costs. Washington, D.C.: American Public Transit Association, June 1982.

American Public Transit Association. Employment Impacts of Transit Capital Investment and Operating Expenditures. Washington, D.C.: American Public Transit Association, April 1983.

Bennett, John. "Federal Waste on Grants for Buses in Southeast Bared." Knoxville News-Sentinel, January 22, 1983, p. B-1.

Charles River Associated Incorporated. CRA Research Review, January 1983.

Chattanooga Area Regional Transportation Authority. Gas Tax Referendum: Review, Analysis and Documentation. Chattanooga, Tennessee: CARTA, November 1982.

Damm, D.; Dooley, T.; Maling, W.; Ward, D; and, Anagnostopoulos, G. Financial Forecasting Techniques in the Transit Industry: A Summary of Current Practice. Springfield, Virginia: National Technical Information Service, March 1982.

DeBeer, Ann Maurer. Financing Operating Subsidies for Urban Mass Transit Systems: An Analysis of State and Local Tax Options. Springfield, Virginia: National Technical Information Service, June 1974.

Downtown Research and Development Center. Downtown Idea Exchange, March 1, 1983, Volume 30., No. 5., p. 1.

Gladstone Associates. Innovative Financing Techniques: A Catalog and Annotated Bibliography. Washington, D.C.: U.S. Government Printing Office, January 1978.

Harris, Roger. "K-TRANS Hopes for Share of Gas Levy." Knoxville News-Sentinel, December 12, 1982, p. A-13.

Harsha, Barbara. "Transit Policy Shift Clouds Funding for Cities." Nation's Cities Weekly, April 25, 1983, pp. 1-2.

Institute of Public Administration. Financing Transit: Alternatives for Local Government. Washington, D.C.: U.S. Government Printing Office, 1980.

Kimley-Horn and Associates, Inc. K-TRANS Service Plan, 1983-1988. Raleigh, North Carolina: Kimley-Horn and Associates, Inc., 1983.

Kirby, Ronald F. and Ernst, Ulrich F. W. Involving Private Providers in Public Transportation Programs: Administrative Options. Washington, D.C.: U.S. Government Printing Office, April 1981.

Knoxville City Council. Knoxville City Code: Public Transportation. Knoxville, Tennessee: Knoxville City Council, Chapter 30A, Amended and Adopted 1980.

Knoxville-Knox County Metropolitan Planning Commission. A Closer Look: The 1982 World's Fair Transportation System, Phase II Report. Knoxville, Tennessee: Knoxville-Knox County Metropolitan Planning Commission, July 1983.

Knoxville-Knox County Metropolitan Planning Commission. Center City-Data and Technical Information Report. Knoxville, Tennessee: Knoxville-Knox County Metropolitan Planning Commission, August 1981.

Knoxville Parking Authority. 1981 Update of Parking Needs: Knoxville Central Business District. Knoxville, Tennessee: Kimley-Horn Associates, January 1982.

K-TRANS (Knoxville Transit Division, American Transit Corporation) and Amalgamated Transit Union Local #1164. Memorandum of Agreement. Knoxville, Tennessee: K-TRANS, January 1982.

Lago, Armando M. and Mayworm, Patrick D. "Transit Means Business: A Corporate Planning Approach to Transit Fare and Service Planning." Transportation Quarterly, Vol. 36, No. 3, July 1982, pp. 335-349.

McHugh, Richard and Puryear, David L. Regional Financing Alternatives for Mass Transit, Volume I: Summary. Springfield, Virginia: National Technical Information Service, October 1979.

Meyer, Michael D. and Hemily, P. Brendon. Public Transportation in the 1980's: Responding to Pressures of Fiscal Austerity. Washington, D.C.: U.S. Government Printing Office, February 1982.

Miller, Gerald K. and Everett, Carol T. "Raising Commuter Parking Prices - An Empirical Study." Transportation, Vol. II, 1982, pp. 105-126.

Morin, Stephen J. National Urban Mass Transportation Statistics, Second Annual Report, Section 15 Reporting System. Washington, D.C.: U.S. Government Printing Office, July 1982.

Morlok, Edward K. and Witon, Philip A. Self-Sustaining Public Transportation Services, Volume 1, Guidelines for implementation. Springfield, Virginia: National Technical Information Service, November 1979.

Norman, Mark R. "1982 Surface Transportation Assistance Act - A Summary." ITE Journal, March 1983, pp. 14-15.

Norman, Mark R. "The Surface Transportation Assistance Act of 1982." ITE Journal, April 1983, pp. 12-15.

Oram, Richard L. "Making Transit Passes Viable." Transportation Quarterly, Vol. 37, No. 2, April 1983, pp. 289-295.

Orski, C. Kenneth. "Private Enterprise and Public Transportation." Vital Speeches of the Day, Vol. 49, No. 1, October 1982, pp. 18-22.

Page, Clint. "New DOT Discrimination Policy". Nation's Cities Weekly, April 25, 1983, p. 1.

Petersilia, Michael and Reno, Arlee. Operating Multi-Modal Urban Transportation Systems. Springfield, Virginia: National Technical Information Service, December 1977.

Pierce, Neal R. "Lack of Federal Funds-Transit's Silver Lining?" Memphis Commercial-Appeal, March 16, 1983, p. 12.

Powelson, Richard. "1-Cent Gas Tax Hike May Be K-TRANS' Only Relief." Knoxville News-Sentinel, November 1982, p. B-1.

Public Technology, Inc. Inflation - Responsive Transit Financing. Washington, D.C.: U.S. Government Printing Office, June 1982.

Pucher, John and Hirschman, Ira. "Distribution of the Transit Tax Burden in Five U.S. Metropolitan Areas." Transportation, Vol. 11, 1982, pp. 3-28.

Pucher, John. "Who Benefits from Transit Subsidies? Recent Evidence from Six Metropolitan Areas." Transportation Research, Vol. 17A, No. 1, 1983, pp. 39-50.

Rice Center, Joint Center for Urban Mobility Research. A Guide to Innovative Financing Mechanisms for Mass Transportation. Washington, D.C.: U.S. Government Printing Office, December 1982.

Rock, Steven M. "New Funding Sources for Transit: Who Pays?" Chicago, Illinois: Illinois Institute of Technology.

Roth, G. and Wynne, G. G. Free Enterprise Urban Transport. Springfield, Virginia: National Technical Information Service, January 1982.

Shinn, Robert and Conn, W. David. Evaluating Revenue Sources for Public Transit: A New Frontier for Environmental Planners. Springfield, Virginia: National Technical Information Service, October 1975.

Smerk, George M. "Passing That Referendum." Bus Ride, May 1983, pp. 74, 76.

Tennessee General Assembly. "Local Transportation Funding Act of 1982." Tennessee Code Annotated, Section 67-63-101.

Transportation Research Board. Finance Issues: County Highways and Public Transit. Washington, D.C.: National Academy of Sciences, 1981.

Transportation Research Board. Transportation Finance, Equity, and Cost Allocation. Washington, D.C.: U.S. Government Printing Office, 1981.

Transportation Research Board. Urban Transportation Economics. Washington, D.C.: National Academy of Sciences, 1978.

Tucker, Thomas, Jr., et al. A Study of Alternative Means of Financing Future Transport Needs of the Milwaukee Urban Area. Springfield, Virginia: National Technical Information Service, November 1973.

U.S. Congress. House. Surface Transportation Assistance Act of 1982. 97th Congress, 2nd Session, Report No. 97-987, 19 December 1982.

U.S. Department of Transportation. A Study of Revenue Mechanisms for Financing Urban Mass Transportation. Springfield, Virginia: National Technical Information Service, February 1974.

U.S. Department of Transportation. Intergovernmental Responsibilities For Financing Public Transit Services. Washington, D.C.: Urban Mass Transportation Administration, August 1983.

U.S. Department of Transportation. Patronage Impacts of Changes in Transit Fares and Services. Washington, D.C.: Urban Mass Transportation Administration, September 1980, pp. 17-55.

U.S. Department of Transportation, Urban Mass Transportation Administration. Transit Financing Fact Sheet, 3 Volumes, July 1982.

Williams, Fred L. States in Public Transportation: An Analysis Based on Nine Case Studies. Washington, D.C.: U.S. Government Printing Office, 1981.

Wisconsin Department of Transportation, Division of Planning and Budget. Local Funding Options for Wisconsin Urban Transit Systems. Washington, D.C.: U.S. Government Printing Office, July 1982.

Wolman, Harold and Reigeluth, George. Financing Urban Public Transportation: A Comparison of U.S. and Foreign Cities. Springfield, Virginia: National Technical Information Service, April 1980.

APPENDIX A

THURSTONE SCALING EVALUATION TABLE

NOTE:

The original evaluation of the funding enhancement strategies was conducted using the Thurstone scaling evaluation technique. This involved applying a scale of one to five (one being the worst and five being the best) to each of the four criteria for every innovative funding strategy. All funding techniques scoring a total of 13 or more points were considered for further analysis.

The resulting table was considered inadequate for two reasons. The numbers in the table showed what score a funding strategy received, but not information on why it was rated low or high. Also, it was believed the numbers could be misleading. They were intended to represent only a general consensus and not a scientific evaluation.

In spite of these issues, the project staff felt the table had value to other communities. Since many other transit systems are also experiencing financial difficulties, the systematic ranking procedure for strategy evaluation contained in the table can be applied elsewhere in the same manner used for K-TRANS in Knoxville.

LOCAL TRANSIT PROJECT FUNDING ENHANCEMENT STRATEGIES

CRITERIA ANALYSIS

STRATEGY NUMBER*	CRITERIA: LEGAL FEASIBILITY	POLITICAL FEASIBILITY	SOCIAL EQUITY	REVENUE GENERATION	TOTAL	REMARKS
A.1	3	2	2	4	11	Fail
A.2	4	3	3	4	14	Pass
A.3	1	1	3	3	8	Fail
A.4	1	1	3	3	8	Fail
A.5	2	3	4	4	13	Pass
B.1	5	3	3	4	15	Pass
B.2	4	3	2	2	11	Fail
B.3	1	1	1	1	4	Fail
B.4	3	2	3	3	11	Fail
B.5	5	3	2	2	12	Fail
C.1	2	2	3	2	9	Fail
C.2	2	1	3	2	8	Fail
C.3	2	3	3	3	11	Fail
C.4	2	1	3	1	7	Fail
C.5	3	2	3	2	10	Fail
D.1	3	2	3	4	12	Fail
D.2	3	3	3	3	12	Fail
D.3	3	2	3	3	11	Fail
D.4	3	2	3	3	11	Fail
D.5	2	2	2	2	8	Fail
D.6	4	2	3	3	12	Fail
D.7	4	3	3	3	12	Fail
D.8	4	4	4	3	15	Pass
D.9	4	4	4	3	15	Pass
E.1	1	1	1	1	4	Fail
E.2	1	1	1	1	4	Fail
E.3	4	4	4	2	14	Pass
E.4	3	4	4	2	13	Pass
E.5	4	2	3	3	12	Fail
F.1	5	4	3	2	14	Pass
F.2	5	3	3	1	12	Fail
F.3	5	5	5	2	17	Pass
F.4	5	5	5	2	17	Pass
F.5	2	3	3	2	10	Fail
F.6	5	4	4	2	15	Pass
F.7	2	3	3	2	10	Fail
F.8	5	4	4	3	16	Pass
F.9	5	4	4	2	15	Pass

*See next page for strategy descriptions.

STRATEGY DESCRIPTIONS

A. Broad-Based Taxes and Revenue Sources

1. Retail Sales Tax
2. Property Tax
3. Payroll Tax
4. Income Tax
5. Lottery or Gambling Tax

B. Charges on Motor Vehicle Users

1. Motor Fuels Tax
2. Vehicle Tax
3. Bridge and Tunnel Tolls
4. Commercial Parking Taxes
5. Peak-Hour Surcharge

C. Charges on Property Benefitting from Transit

1. Services Charges
2. Special Benefit Assessment
3. Tax Increment Financing
4. Transit Impact Requirements
5. Negotiated Investments

D. Borrowing Strategies

1. General Obligation Bonds
2. Certificates of Participation or Equipment Trust Bonds
3. Tax-Exempt Industrial Revenue Bonds
4. "Safe Harbor" Leasing
5. Interest Arbitrage
6. Grant Anticipation Notes
7. Lease-Purchase Agreements
8. Vendor Financing
9. Zero Bond Coupons

E. Joint Ventures with the Private Sector

1. Leasing/Selling Development Rights
2. Leasing/Selling Existing Facilities and Equipment
3. Donations for Capital Improvements and Operating Expenses
4. Cost-Sharing
5. Land Banking

F. Transit Operations

1. Fare Increase
2. Reduced Levels of Service
3. Reduced Costs
4. Improved Efficiency
5. Contracted Taxi Service
6. Contracted Transit Service/Maintenance/Management
7. Contracted Vanpooling
8. Increased State Transit Assistance
9. Greater Marketing Efforts

APPENDIX B

ANNOTATED BIBLIOGRAPHY

American Public Transit Association. A Survey of Local Mechanisms For Financing Operating Costs. Washington, D. C.: American Public Transit Association, June 1982.

This report is based on a survey that was designed to identify, in general terms, the types of local financing mechanisms now being used to support transit operations across the country. Types of financing discussed include sales taxes, property taxes, lottery proceeds, general funds, gas taxes, motor vehicle taxes, occupational taxes, ad valorum taxes, and tolls. The survey results also showed differences in financing mechanisms used by area size and region, dedication of taxes, taxing authority, and special provisions.

American Public Transit Association. An Overview of State Transit Funding. Washington, D.C.: American Public Transit Association, October 1982.

This APTA survey is intended to provide information to transit systems and state lawmakers to highlight the need for increased support for public transportation. Each state's total transit demand, service levels, operating costs, and the state government's present overall financial commitment to transit are documented. States are represented individually and in relationship to one another in terms of how their transit demand (indicated by urbanized population), service (indicated by total revenue vehicle miles) and transit budgets correlate. Each state's spending for transit is also displayed as a percentage of its overall transportation spending and total state revenues.

American Public Transit Association. Employment Impacts of Transit Capital Investment and Operating Expenditures. Washington, D.C.: American Public Transit Association, April 1983.

This APTA study was conducted to provide detailed information on the employment impacts of various public transit investments at the national level and to provide guidelines on how similar analyses can be carried out at the local or regional level. The study estimates the number of full-time equivalent jobs created for each $100 million of expenditures in various types of transit projects and programs. This information, coupled with similar analyses done by local transit managers and planners, will play a major role in reaffirming the importance of a strong transit program at the national, state, and local level. Compared to the capital projects, transit operating expenditures create substantially more jobs in the national economy.

Historically, the UMTA capital programs have supported a mix of projects, including 20 percent new rail starts, 40 percent rail modernization and 40 percent bus related. If this pattern continues, the $1.1 billion new transit revenues provided by the Surface Transportation Assistance Act of 1982 would generate some 84,000 full-time equivalent jobs in the nation's economy.

Bennett, John. "Federal Waste on Grants for Buses in Southeast Bared." Knoxville News-Sentinel, January 22, 1983, p. B-1.

This article discusses how a free flow of taxpayer funds allowed transit authorities in eight Southeastern States to buy several hundred more buses than they needed.

Charles River Associated Incorporated. CRA Research Review, January 1983.

This article highlights how CRA assisted New York's Metropolitan Transportation Authority in obtaining an investment-grade rating on its revenue bonds. By demonstrating enough financial capability to issue revenue bonds, MTA could turn to private-sector financing for transit improvements.

Chattanooga Area Regional Transportation Authority. Gas Tax Referendum: Review, Analysis and Documentation. Chattanooga, Tennessee: CARTA, November 1982.

This report reviews the materials, strategy, and month-by-month activities of the organization promoting the gas tax campaign. It includes advice on "do's" and don't"'s for transit systems pursuing the gas tax referendum in the future, copies of the promotional materials used, and the print attention given to CARTA's campaign.

Damm, D.; Dooley, T.; Maling, W.; Ward, D; and, Anagnostopoulos, G. Financial Forecasting Techniques in the Transit Industry: A Summary of Current Practice. Springfield, Virginia: National Technical Information Service, March 1982.

This report describes the results of discussions with approximately two dozen transit operators concerning the use of financial forecasting techniques for planning and budgeting. Four major budget categories were examined: fare revenues, labor costs, maintenance costs, and subsidies. Although several properties are developing improved and innovative forecasting procedures, in general there is great potential for increasing the efficiency and effectiveness of financial forecasting in the transit industry. A major issue is the improvement of coordination and cooperation among the departments of a property in the generation and use of data for forecasting purposes.

DeBeer, Ann Maurer. Financing Operating Subsidies for Urban Mass Transit Systems: An Analysis of State and Local Tax Options. Springfield, Virginia: National Technical Information Service, June 1974.

The purpose of this report is to analyze the various taxing alternatives open to state and local governments when faced with the problem of covering deficits of their urban mass transit systems. The format of the study is to: (1) outline the financial condition of the urban mass transit industry; (2) present the issue of operating subsidies; (3) present data on the state and local government response (4) analyze state and local taxes used and not used for financing subsidies; and (5) provide a brief outline of the Federal role in the issue. According to the author, the financial condition of the urban transit industry guarantees that operating deficits will continue and increase at progressive rates. The author finds that state governments rely mainly on retail sales taxes and specific excise taxes to meet operating deficits of the transit industry, while local governments rely mainly on property taxes. By definition these taxes tend to fall primarily upon a class of persons that are supposed to benefit from an urban transit subsidy program. Alternatives to the present taxing mechanisms are presented. Conclusions and recommendations are furnished. A bibliography is included.

Downtown Research and Development Center. Downtown Idea Exchange, March 1, 1983, Volume 30., No. 5., p. 1.

This article outlines methods of financing transit capital and operating costs, including motor vehicle user charges and broad-based taxes. It also discusses joint public/private initiatives, including benefit sharing charges and value capture, and joint development.

Gladstone Associates. Innovative Financing Techniques: A Catalog and Annotated Bibliography. Washington, D.C.: U.S. Government Printing Office, January 1978.

This report is designed primarily to assist local decision-makers in identifying the full range of transit financing techniques, more systematically assessing the pros and cons for each local case, and choosing among the alternative courses of action. Although to date the innovative techniques covered here have been infrequently used to pay for transit in this country, they have been widely applied to finance other capital improvements. Calculations illustrate analytical procedures to identify opportunities and constraints and payoffs for the public sector from applying techniques in specific situations. These techniques of market research and feasibility evaluation are used every day to guide private investment decisions and can similarly serve the government sector. "Financing Technique" refers to all means of paying the capital or operating costs of mass transit.

Harris, Roger. "K-TRANS Hopes for Share of Gas Levy." Knoxville News-Sentinel, December 12, 1982, p. A-13.

This article discusses the proposed 5-cent gasoline tax and how K-TRANS hopes to get one-cent of that tax. Other funding sources have been utilized by other cities for transit systems including a public-transit levy assessed on mortgages in Syracuse, N.Y. and portion of the sales tax going to transit systems in Houston and Atlanta.

Harsha, Barbara. "Transit Policy Shift Clouds Funding for Cities." Nation's Cities Weekly, April 25, 1983, pp. 1-2.

This article discussed how Section 3 discretionary funds for FY 84 will be used to fund extraordinary capital assistance needs.

Institute of Public Administration. Financing Transit: Alternatives for Local Government. Washington, D.C.: U.S. Government Printing Office, 1980.

The handbook is divided into six sections, each concerned with a major topic. Section I reviews the background of contemporary U.S. problems in financing transit, analyzes the economics of fares and subsidies, and discusses the possible justifications for subsidies. Section II summarizes the present subsidy programs of the Federal government and those state governments which have undertaken to assist urban transit, and the subsidy programs of the 25 largest cities, which account for more than 90% of transit service.

Section III analyzes levies related to special benefits to persons and property which stem from the maintenance or improvement of transit service. Section IV analyzes more general local revenue sources, including the three major broad-based taxes (property, income, and sales) and the principal other taxes and charges which may be used at the local level. Each major tax is evaluated by several criteria-productivity and yield potential, probable effects on economice development, administrative feasbility and special administrative problems, equity and political acceptability. The section also includes a chapter on the special problems of borrowing for public transit improvements.

Section V evaluates each potential tax revenue source for transit support in terms of various advantages and disadvantages. A quantitative rating is applied to the six evaluation criteria mentioned above.

Section VI discusses the special problems of serving the transportation deprived-people who require special treatment because of poverty, age, or physical handicaps.

Section VII concludes the handbook with chapters on the relation of organization to transit financing and administration in the context of metropolitan governmental structures; and the special problems of preparing transit budgets and packaging various transit financial sources to make up the best possible service programs.

Kirby, Ronald F. and Ernst, Ulrich F. W. Involving Private Providers in Public Transportation Programs: Administrative Options. Washington, D.C.: U.S. Government Printing Office, April 1981.

Various approaches to involve private providers in public transportation programs were discussed in this report under two general categories: provider-side subsidies and user-side subsidies. Provider-side subsidies for transportation services are paid directly to the transportation provider for offering specified services and fare levels. User-side subsidies are a less conventional approach in which special user groups purchase transportation "vouchers" at discounted prices. The user then has the freedom to exchange the vouchers for transportation services of his choice with participating carriers/providers.

The authors concluded that the potential does exist for expanding private provider involvement to more conventional transit services for the general public. Demonstration projects have been developed by UMTA to test provider-and user-side subsidy programs, yet empirical results are still unavailable. Experience to date suggests that benefits received by elibible users and the cost impacts of the two approaches are not significantly different. Further testing and monitoring of provider- and user-side subsidy programs are needed for more conclusive and empirical results.

Knoxville City Council. Knoxville City Code: Public Transportation. Knoxville, Tennessee: Knoxville City Council, Chapter 30A, Amended and Adopted 1980.

This chapter creates the Bureau of Public Transportation Services, the Knoxville Transportation Authority, and allows for an optional citizens advisory committee. The duties, responsibilities and procedures for operating public transportation in Knoxville are set forth here.

K-TRANS (Knoxville Transit Division, American Transit Corporation) and Amalgamated Transit Union Local #1164. Memorandum of Agreement. Knoxville, Tennessee: K-TRANS, January 1982.

This agreement sets forth the provisions agreed to by the Company and the Union for the period of time specified.

Lago, Armando M. and Mayworm, Patrick D. "Transit Means Business: A Corporate Planning Approach to Transit Fare and Service Planning." Transportation Quarterly, Vol. 36, No. 3, July 1982, pp. 335-349.

This article deals with what the authors see as the principle problem of transit planning today: that fare and service level decisions are hardly ever jointly planned and considered, despite the fact that fares and service levels are intrinsically related. The corporate planning approach is outlined to maintain a balance between revenue and cost. Comparisons are made with examples given to illustrate the planning approach in a private corporation setting and in a transit company setting. A model is developed for deriving and implementing fare and service policies in order to maximize the goals of the individual transit company.

McHugh, Richard and Puryear, David L. Regional Financing Alternatives for Mass Transit, Volume I: Summary. Springfield, Virginia: National Technical Information Service, October 1979.

Increasing mass transit deficits and declining central city fiscal strength generated strong interest in regional taxation for transit. This report, volume 1 of 5 volumes, summarizes the other four volumes of the study and presents the results of two case studies regarding the distribution of tax burdens under alternative central city and regional financing systems. The main focus of the study is on regional or metropolitan--wide taxation to subsidize mass transit. The study examines an earnings tax, a sales tax, a property tax, and a surcharge to state income taxes, each levied on a central city and a regional basis in two case study areas--Atlanta and New York City.

Some of the results of this study effort are as follows: (1) regional financing for mass transit spreads the tax burden more evenly and reduces fiscal pressure on central cities; (2) the relatively high level of regional taxes per transit rider suggests that the primary justification for regional transit taxation is to share the financing burden according to ability to pay; (3) the specific tax base chosen makes a significant difference in the distribution of the burden; and (4) transit fares appear to be much more regressive than other alternatives considered. The authors state that despite some flaws, regional taxation can spread tax burdens more evenly among jurisdictions and more equitably among households. Other volumes of this study are: Volume II: Atlanta Case Study; Volumes III: New York City Case Study; Volume IV: Tax Burden Estimating Procedures; and Volume V: Construction of Metropolitan Income Distribution for Atlanta and New York City.

Meyer, Michael D. and Henily, P. Brendon. Public Transportation in the 1980's: Responding to Pressures of Fiscal Austerity. Washington, D.C.: U.S. Government Printing Office, February 1982.

This report outlines the results of a survey of 30 transit operations and a detailed study of the Greater Bridgeport Transit District. Optional responses to financial problems are offered and analyzed. Organizational, political, and economic impacts of alternative responses to financial pressures are assessed and the results of the transit operation survey are interpreted. Alternatives include: increased fares, reduced levels of service, reduced costs, increased public funding, and improved efficiency in providing service. There is a section on understanding organizational change, promoting desirable change, and approaches to choosing a course of action.

Miller, Gerald K. and Everett, Carol T. "Raising Commuter Parking Prices - An Empirical Study." Transportation, Vol. II, 1982. pp. 105-126.

This is a study of the effect of parking prices on commuter behavior. Results from previous studies are cited: parking price strategies have the potential for significantly altering travel behavior in favor of high occupancy vehicles; a $2 parking surcharge was estimated as capable of increasing home-to-work transit trips by 23%; approximately 20% of those employees now driving alone and receiving free parking would switch to carpooling or transit if forced to pay commercial rates to park.

This paper documents observed impacts at a sample of worksites in the Washington, D.C. area of OMB's elimination of parking subsidies for some federal employees in 1979. Although, OMB's actions were reversed in court and the reinstated, the parking subsidies were eliminated for a short time only. This paper surveys the results of a study of parking and travel behavior of federal commuters in that time. The results showed that raised parking rates influenced some significant shifts to higher-occupancy vehicles.

Morin, Stephen J. National Urban Mass Transportation Statistics, Second Annual Report, Section 15 Reporting System. Washington, D.C.: U.S. Government Printing Office, July 1982.

This report summarizes the financial and operating data submitted annually to the Urban Mass Transportation Administration (UMTA) by the nation's public transit operators, pursuant to Section 15 of the UMT Act of 1964, as amended. The report consists of two sections: Section 1 contains industry aggregate statistics only, while Section 2 contains detailed financial and operating data on individual transit agencies. The current edition contains transit industry statistics compiled from the Section 15 data submitted by the transit agenices for fiscal years ending between July 1, 1979 and June 30, 1980, the second year of operation of the Section 15 reporting system.

Morlok, Edward K. and Witon, Philip A. Self-Sustaining Public Transportation Services, Volume 1, Guidelines for Implementation. Springfield, Virginia: National Technical Information Service, November 1979.

This research study consists of two separate volumes. The study examines three systems of urban transportation services which are self-sustaining (cover at least operating costs from the farebox). The three systems selected for the study are: (1) the Philadelphia-Lindenwold Hi-Speed Line, a rail rapid transit line operated by the Port Authority Transit Corporation (PATCO); (2) the express bus services in the City of New York, with routes operated by both the Metropolitan Transit Authority as well as private bus companies; and (3) the suburban railroad service in the Chicago metropolitan area of the Chicago and Northwestern Transportation Company (formerly C&NW Railway). These services are characterized by high fares; high service quality including a high probability of obtaining a seat on alternative modes, including the prive car; service between residential areas and CBDs; market areas composed primarily of middle-to upper-income inhabitants; and costs not necessarily lower than comparable service by other operators. All three, until recently, have covered at least operating costs from the farebox. That two of them no longer do so is attributable to explicit policy decisions, and not to a failure in the viability of the service (See Chapter 2, Volume II). This research concludes that although self-sustaining services are clearly appropraite only for certain markets, within those markets they have potential as a means of relieving the increasing scale of transit deficits.

Norman, Mark R. "1982 Surface Transportation Assistance Act - A Summary." ITE Journal, March 1983, pp. 14-15.

This article discusses the ITE input in the Surface Transportation Assistance Act of 1982. The ITE provided information and assistance to the Congress and the Administration in the development of the new legislation.

Norman, Mark R. "The Surface Transportation Assistance Act of 1982." ITE Journal, April 1983, pp. 12-15.

This article discusses highway program authorizations, highway safety authorizations, and mass transit authorizations in the Surface Transportation Assistance Act of 1982.

Oram, Richard L. "Making Transit Passes Viable." Transportation Quarterly, Vol. 37, No. 2, April 1983, pp. 289-295.

This article discusses five areas of importance in making transit passes viable. Restricted use of passes through peak-only passes, reduced fare permits, directionally limited passes, and point-to-point passes is recommended. Market segmentation is also important such as commuter passes for peak-only user, reduced fare permit valid at all times for the more intensive rider, and tokens for the less then regular rider. Employer invovlement in sales and subsidies of passes as well as merchant involvement through discounts is encouraged. Promotion is also important in terms of short-term sales or coupon discounts. The article also describes the Fare Cutter Card program in Bridgeport.

Orski, C. Kenneth. "Private Enterprise and Public Transportation." Vital Speeches of the Day, Vol. 49, No. 1, October 1982. pp. 18-22.

This is a reproduction of a speech given by Mr. Orski, who is President of the Corporation for Urban Mobility, before the Annual Washington State Transportation Conference in Bellingham, Washington, September 16, 1982. Mr. Orski cites the need for public/private cooperation in public transportation services and illustrates how such cooperation is currently working in various cities around the country. The topics covered in the speech include: private sector involvement in transit station improvement; the private sector as a service provider; new forms of private sector involvement; and Transportation Management Associations.

Page, Clint. "New DOT Discrimination Policy". Nation's Cities Weekly, April 25, 1983, p. 1.

This article discusses how states which do not spend 10% of highway and mass transit aid with minority owned firms may end up with no aid at all.

Petersilia, Michael and Reno, Arlee. Operating Mulit-Modal Urban Transportation Systems. Springfield, Virginia: National Technical Information Service, December 1977.

This project examines the state-of-the-art in multi-modal urban transportation system operations, proposes and assesses eight model institutional arrangements for more efficient and effective urban transportation operations, assess the influence of Federal policies in this area, and proposes possible changes to enhance coordination of urban transportation services.

The report concludes that some of the more important elements in determining the success of efforts to coordinate urban transportation operations include are institutional structure, responsibility for coordination, incentives operating on each agency and individual, patterns of personal relationships, and specific mechanisms for coordination. Potential Federal actions and incentives for promoting coordinated urban transportation operations are proposed.

Pierce, Neal R. "Lack of Federal Funds-Transit's Sliver Lining?" Memphis Commerical-Appeal, March 16, 1983, p. 12.

This article catalogues the impact that less federal aid for capital projects will have on transit infrastructures around the nation (specifically, Houston, Los Angeles, Philadelphia, Baltimore, Miami, Cleveland, Denver, etc.) and advances the theory that this may be a blessing in disguise. Pierce quotes Kenneth Orski, president of the Corporation for Urban Mobility and former federal Urban Mass Transportation Administration official, that less federal aid "obliges local areas to be more self-reliant and more creative in the use of local resources". Incremental development, "value recapture" and joint public/private financing are advanced as "overdue local innovation to turn transit from drains on public treasuries into profitable, city-building enterprises."

Powelson, Richard. "1-Cent Gas Tax Hike May Be K-TRANS' Only Relief." Knoxville News-Sentinel, November 1982, p. B-1.

This article discusses how federal funding for transit service will be reduced and how K-TRANS will depend on the one-cent per gallon tax on gasoline. It also relates the experience in Birmingham, Alabama where the transit system had to close down due to lack of funds. When the system reopened, ridership was low due to lack of confidence in the system.

Public Technology, Inc. Inflation - Responsive Transit Financing. Washington, D.C.: U.S. Government Printing Office, June 1982.

This report list a variety of techniques used by jurisdictions around the country to pay for transit capital and operating costs. They include broad-based taxes and revenue sources, charges on motor vehicle users, charges on property benefitting from transit, borrowing strategies, and joint ventures with the private sector. The report also describes current programs utilizing these innovative techniques and contacts in each area.

Pucher, John and Hirschman, Ira. "Distribution of the Transit Tax Burden in Five U.S. Metropolitan Areas." Transportation, Vol. 11, 1982, pp. 3-28.

This study analyzes transit financing in five U.S. metropolitan areas that use a wide range of financing techniques and mixes in order to estimate the degree of variation in the regressivity of state and local transit taxation. These areas are: northern New Jersey; Portland, Oregon; San Antonio, Texas; Chicago, Illinois; and Phoenix, Arizona. The authors conclude that financing transit costs through general fare increases is far more regressive than financing through state and local subsidies. The only exception to this generalization would be a fare increase accompanied by a complete revision in fare structures, including discount passes for low-income riders, distance-based fares, peak/off-peak pricing, and an increase in commuter rail and rapid transit fares relative to bus fares. The authors strongly recommend zonal surcharges with lower base fares, stating that low-income riders make considerably shorter trips on the average, than do affluent riders.

Pucher, John. "Who Benefits from Transit Subsidies? Recent Evidence from Six Metropolitan Areas." Transportation Research, Vol. 17A, No. 1, 1983, pp. 39-50.

The author states that transit managers have been charged with the almost impossible task of achieving a wide range of social, environmental, and economic objectives, and demonstrates that, in the area of social objectives, transit subsidy programs are progressive. The poor are significant beneficiaries of subsidies both at the national aggregate level and in each of the six metropolitan areas examined in this study. Transit subsidies are progressive in three ways: the transit subsidies accruing to the poor are much larger than the tax payments they make to finance subsidies; affluent households pay substantially more in transit taxes than they receive in subsidies; and low-income households reap many times more subsidized transit trips per dollar of their tax payments than do high-income households. Financing transit costs through tax-supported subsidies is far more progressive than the most likely alternative, which would be to raise fares and thereby force riders to bear a larger percentage of the tax burden. Again, the exception would be to restructure fares on a distance basis.

Rice Center, Joint Center for Urban Mobility Research. A Guide to Innovative Financing Mechanisms for Mass Transportation. Washington, D.C.: U.S. Government Printing Office, December 1982.

This report serves as a guide for local transit leaders and planners who are interested in learning about innovative financing mechanisms. Each of twenty-three financial mechanisms is summarized and defined, before describing its financial impact and the major issues affecting its applicability. Local applications of each are then documented. In addition, recent initiatives and new ideas for financing mass transit are addressed.

The twenty-three financial mechanisms are grouped into six major categories: (1) Assessments (e.g. Tax Increment Financing, Special Benefits Assessments); (2) Taxes and User Charges (Corporate Payroll Tax, Employee Income Tax); (3) Use of Property and Property Rights (e.g. Land Banking, Leasing/Selling Existing Facilities); (4) Issuance of Debt (e.g. Certificates of Participation, Lease Purchase Agreements); (5) Contracted Services (e.g. Taxis, Transit Service Maintenance/Management); and (6) Voluntary Participation Programs (e.g. Donations for Capital, Employer Sponsored Pass Program). A summary table (pp. vii-viii) identifies which funding mechanisms are best suited to achieve specific transit agency objectives.

Rock, Steven M. "New Funding Sources for Transit: Who Pays?" Chicago, Illinois: Illinois Institute of Technology.

Funding alternatives for public transit were explored in this article, with the emphasis on "who pays" for each alternative. How would different income groups be affected by different funding sources? "Differential tax incidence of one source was compared with that of another source" (p. 2), which is essentially an examination of the distribution of burdens. Most funding alternatives examined were those levied on households.

The Consumer Expenditure Survey (CES) of the Bureau of Labor Statistics provided data about spending patterns of families in different income brackets. Among the funding alternatives compared were: sales tax motor fuels tax cigarette tax, alcohol tax, tolls, income tax, and parking and touring tax. Funding sources were analyzed and then categorized as progressive (taking an increasing percentage of income as income rises), regressive (taking an decreasing percentage of income as income rises), or proportional (p. 5). Although fairness would dictate that those with greater ability should bear a larger share of financial burden, regressive taxes are a bigger burden to lower-income families, because the taxes are a higher proportion of total family income. Examples of regressive taxes are transportation fares, utility tax, and gas tax. Taxing in direct proportion to benefits received was suggested as a fair alternative.

In conclusion, increasing transit fares was considered one of the most regressive of the funding alternatives examined. User charges in fares and services are extremely regressive.

Roth, G. and Wynne, G.G. Free Enterprise Urban Transport. Springfield, Virginia: National Technical Information Service, January 1982.

The conventional wisdom that public transport in cities cannot be provided at a profit, that it has to be supplied by publicly-owned or franchised monopolies is examined in the report. Ths report draws on the experience of developing countries in the operation of non-subsidized, privately-run and profitable urban transport systems to make the point that these systems, generally characterized by small vehicles, deserve closer examination in this country. The authors state that the jitneys, collective taxis, and minibuses discussed in this report can provide local transportation options for large segments of the population, assist in relieving the pressure on the major franchised public transport systems, and generate employment.

This report provides an overview that describes a number of public transport systems abroad (largely in developing countries) that operate at a profit, and indicates action that may enable the United States to develop network of fast, reliable urban public transport services responsive to users' needs, at prices that most can afford. Chapter 2 of this report provides examples of different types of urban public transport that run at a profit while providing good service. Chapter 3 describes the characteristics of successful urban public transport systems. Chapter 4 reviews the private provision of public transport in U.S. cities and considers the possibilities of its expansion. Chapter 5 outlines how lessons from abroad can be applied to U.S. transportation systems.

Shinn, Robert and Conn, W. David, Evaluating Revenue Sources for Public Transit: A New Frontier for Environmental Planners. Sprinfield, Virginia: National Technical Information Service, October 1975.

This report identified alternative sources of revenue for the support of public transportation and suggests a comprehensive framework within which these alternative revenue sources may be evaluated. Particular attention is devoted to those sources of revenue (gasoline taxes, parking surcharges, congestion tolls, etc.) which positively impact on regional environmental and transportation planning objectives at the same time that they provide new revenue for transit support.

The report draws on a limited number of existing studies to identify (1) the potential range of future revenue deficits facing U.S. transit operations; (2) the sources, amounts, and distribution of existing revenues going to support transit in the largest U.S. metropolitan areas; (3) alternative financing mechanisms available; (4) evaluation criteria which have previously been employed to select revenue sources for transit support; and (5) new criteria which could be employed to provide a more complete evaluation.

Smerk, George M. "Passing That Referendum." Bus Ride, May 1983, pp. 74, 76.

Smerk, a professor of transportation at Indiana University, outlines major issues of concern to transit properties interested in passing a referendum dealing with the financing of transit in a local area. Smerk addresses such issues as public information, formation of public committees, getting the vote out, money for the campaign, media cultivation, and other activities associated with the successful campaign to pass a transit tax referendum.

Tennessee General Assembly, "Local Transportation Funding Act of 1982." Tennessee Code Annotated, Section 67-63-101.

This is the gasoline tax bill which became law, effective May 1, 1982. The bill allows counties and/or municipalities to tax gasoline sold within their jurisdictions up to 1¢ per gallon, following the passage of a resolution by voters in the area to be taxed. This 1¢ per gallon is earmarked for transit facilities and operations and, therefore, the tax is only applicable in those jurisdictions operating a mass transportation system or beginning to operate such a system.

As of June, 1983, no city or county had passed such a referendum. Nashville-Davidson County MTA and Chattanooga-Hamilton County CARTA were defeated in their attempts to pass a referendum to allow gasoline to be taxed to support transit.

Transportation Research Board. Finance Issues: County Highways and Public Transit. Washington, D.C.: National Academy of Sciences, 1981.

Mass transit is successfully funded at the local level in metropolitan Seattle. A partnership that includes the transit rider, service-area resident, and the state are the critical features of Seattle Metro's financial structure.

One of the main sources of revenue is from the farebox. The author believes that fares will continue to be central to transit funding in the future, but understands the reluctance of local officials to raise fares: the burden of higher fares often falls hardest on the lower-income riders, representing a high proportion of their total incomes. The question of equity is always disucssed when transit fare increases are considered. As fares continue to rise in the '80's, the transit system will continue to rely on its riders for one-third of its total revenue.

A second source of support is from local service-area residents, another major partner in Seattle Metro's financial structure. The retail sales tax of three-tenths of one percent on all transactions, except food and drugs, provides the revenue to support mass transit. All service-area residents benefit from the availability of the transit system and from the reduction in traffic congestion.

The third partner in transit funding, the state, has contributed the revenues from the motor vehicle excise tax to the transit system. The state contribution is unique because, although state revenues are being used, no approporiation process is involved. In the future, it is anticipated that revenues will continue to grow at about the level of general inflation.

In conclusion, the combination of funding sources is considered a successful partnership and a means to provide a transit system which meets Seattle's present and future demands.

Transportation Research Board. Transportation Finance, Equity, and Cost Allocation. Washington, D.C.: U.S. Government Printing Office, 1981.

As the costs for public transportation services increase, requiring the consumer to pay a higher proportion of total costs, it is important that equitable fare policies be used. The existing fare policy in Barnstable, Massachusetts requires users to pay a flat fee in exchange for an unlimited number of trips during a three-month period. This paper examines a proposal that the Cape Cod Regional Transit Authority (CCRTA) adopt a fare policy based on the number and length of user trips. "Travel distance would be estimated by using a zone-to-zone distance matrix", and then a computer would generate invoices to be mailed to riders. (p. 7)

CCRTA is considering alternative fare policies to replace its current one: (1) free-fare policy was not financially possible; (2) fare-box collection required extra personnel and security; (3) mail-in collection, with the rider fee paid in advance; and (4) mail-in collection, with payment after use, determined by the number and length of trips. Alternative 4 was considered the most equitable solution.

In conclusion, the desirable fare policy would take into account the number and length of trips taken and the group's ability to pay and their physical condition (e.g. elderly, handicapped service).

Transportation Research Board. Urban Transportation Economics. Washington, D.C.: National Academy of Sciences, 1978.

This report contains the proceedings of five workshops on pricing alternatives, economic regulations, labor issues, marketing, and government financing responsiblities. Brief summaries of the five workshops follow:

1. The workshop on urban transportation pricing alternatives considered such topics as obejectives of pricing policies, spatial and temporal aspects, effects on revenue and patronage, public attitudes, and barriers to implementing pricing innovations.

2. The workshop on economic regulation of urban public transportation addressed problems of urban public transportation to determine how current regulations might be amended to facilitate more efficient workable public transportation. In addition to a review of current federal, state, and local practices and problems and the theory of regulations, the workshop considered the impacts of removing or curtailing economic regulation of public transportation on demand; revenues, services, and the interrelationships between deregulation and other public policies; and paratransit.

3. The workshop on issues of labor relations in urban public transportation was designed to identify problems in and alternatives to current labor involvement in efforts in improve productivity and introduce technological innovation, examine trends in bargaining and contract arbitration, and evaluate the impacts of subsidies and the transition to public ownership and operation of transit facilities.

4. The workshop on measuring the effectiveness of transit marketing considered how public transportation can be planned, managed, and operated to provide the desired services while remaining financially healthy. It included considerations about current and potential markets, tailoring services to meet demand, facilitating the delivery of information to users, improving services, setting fare policies, providing transportation for the disadvantaged, and integrating public transportation management.

5. The workshop on government responsiblities for financing efficient urban transportation examined the means available to local government to bring about the changes recommended in the earlier workshops and cited specific examples. A conceptual framework was suggested for identifying all the expenditures made on transportation facilities and related services by federal, state, and local governments as well as public authorities and private organizations, on the one hand, and 11 the revenue from the transportation system, including user charges, transportation-related taxes, and nontransportation contributions, on the other hand. The pattern of deficits in different types of services (e.g., bus versus rail, peak versus off-peak travel) and expenditures (capital versus operating) was examined, and the strengths and weaknesses of the local, state, and federal governments were assessed. Local, state, and federal sources of revenue for funding deficits were evaluated with respect to the size of fiscal resources and administrative and political consideration (e.g., flexibility, degree of government interference and control, and local autonomy).

Tucker, Thomas Jr., et al. A Study of Alternatives Means of Financing Future Transport Needs of the Milwaukee Urban Area. Springfield, Virginia: National Technical Information Service, November 1973.

An examination is made of sources of revenue for financing future transportation needs with an emphasis on the needs of the Milwaukee area. Revenue sources are evaluated on the basis of four criteria: how much revenue is provided by the source; how well the source encourages people to conserve transportation resources; how equitably the sources allocate burdens; and the extent to which the source provides demand signals for the adjustment of the scale of the transport system.

The study concludes that: (1) at the federal level the most effective source of revenue is the funding provision of the Urban Mass Transit Act, (2) at the state level the two most effective revenue sources are increases in the excise tax on gasoline, increases in vehicle registration fees, and (3) at the local level the two most effective sources of revenue are a surcharge on all-day parking and an ad valorem tax on automobiles registered in the Milwaukee Urban area.

U.S. Department of Transportation. A Study of Revenue Mechanisms for Financing Urban Mass Transportation. Springfield, Virginia: National Technical Information Service, February 1974.

This report covers the analysis of two revenue mechanisms for financing urban mass transportation, a transit fuel tax and an additional gasoline tax imposed in urban areas. The report includes analysis of the magnitued of revenues that could be raised, tax rates required to raise these revenues, tax incidence, potential impact on transit usage, and mechanisms for tax collection.

U.S. Department of Transportation: Patronage Impacts of Changes in Transit Fares and Services. Washington, D.C.: Urban Mass Transportation Administration, September 1980, pp. 17-55.

An UMTA study which reports the following findings:

-Transit demand is inelastic to fare changes.
-Elasticities for fare increases do not differ from those for fare decreases.
-Fare-free elasticities are slightly smaller than comparable reduced-fare elasticities.
-Small cities have larger fare elasticities than large cities.
-Bus travel is more elastic than commuter-and rapid-rail travel.
-Off-peak fare elasticities are double the size of peak-fare elasticities.
-Short-distance trips are more elastic than long-distance trips.
-Intrasuburban trips are four times more elastic than radial trips on arterials.
-Fare elasticities rise with income and fall with age.
-Of all trip purposes, the work trip is the most inelastic.
-Travel by the elderly is slightly more elastic than average.
-Promotional fare elasticities are slightly larger than short-term fare elasticities following permanent fare revisions.

U.S. Department of Transportation, Urban Mass Transportation Administration. Transit Financing Fact Sheet, 3 Volumes, July 1982.

These fact sheets discuss several transit financing schemes. One fact sheet relates several types of motor vehicle user charges in the form of taxes on motor fuels or the value of motor vehicles, bridge and tunnel tolls, and commercial parking taxes. Another fact sheet discusses the two computer programs, UFARE and RIDE, for systemwide fare analysis. This fact sheet also list other UTPS sources of fare analysis techniques. The other two fact sheets discuss joint public/private initiatives, including benefit sharing charges and joint development, and broad-based taxes, including retail sales tax, property tax, payroll tax, and other innovative schemes such as income tax and taxes on utilities, bank assets, mortgages, lotteries, and professional services.

Williams, Fred L. States in Public Transportation: An Analysis Based on Nine Case Studies. Washington, D.C.: U.S. Government Printing Office, 1981.

The anlysis of case studies in this report led to conclusions in the following areas:

Administrative Forms

The evidence suggest a strong preference for a mixed (modal-functional) form in State public transportation administration. "Modal Administration" refers to the practice of establishing separate sub-divisions for each form of transportation, such as highways, airports, and public transportation "Functional Administration" refers to the practice of coordinating different "modes" under such standard functions as finance, planning, and policy. The mixture balances (1) effective interface with grant recipients and federal programs (i.e., U.S. DOT), (2) advocacy of public transportation goals, and (3) multimodal and comprehensive viewpoint regarding public transportation's role.

Capital Programs

Direct State participation and oversight of capital projects and programming appears to be on the increase as the competition among grantees for State funds increases; i.e., project prioritization is becoming increasingly necessary for State allocation decision-making. This is the outcome of a fifteen-year process of gradually increasing State financial commitment to public transportation capital projects. The high (80%) federal match has been a critical factor in stimulating this process. Evidence is adduced to support this causal inference. Increased State "participation" entails:

a. Development of State-level programs of plans and of capital projects;

b. Active and direct State assistance in the preparation of regional Transportation Improvement Programs (TIP);

c. State involvement throughout the federal grant application process; and

d. State evaluation of projects on their comparative merits within the State.

State Operating Assistance

State programs reflect both the desire to provide operating assistance and the fear of runaway deficits. General revenues have been the most common funding sources, although there is considerable pressure (from the transit industry) in favor of dedicated taxes. States tend to use

flow of State funds for the purpose of regulation (e.g., cost control) regardless of the funding device. States appear to be evolving in the direction of formula allocation of operating assistance. This is often called "performance based" but it is usually based on sheer "need" (e.g., previous year costs plus an inflation factor). Cost control is a growing concern of States which are providing operating assistance. The approaches to cost control are highly State-specific and little is known about the effectiveness of the programs in controlling costs.

State Operations

In Maryland, the only State transit system operator included in this study, State ownership and operation seems to maximize State leverage over costs whil also maximizing State liability for costs. There is no evidence in our work that State operation in Baltimore has had any effect on labor costs or labor productivity. In Massachusetts, State responsibility appears to be tantamount to ownership. The controversies in Boston reveal political and structural problems that are probably widespread though not as visible in other large cities. The state serves as an arena for the resolution of intense conflicts among jurisdictions (79) served by the Massachusetts Bay Transit Authority, an arena that might be compromised if the State owned the system directly.

Planning and Programming

The metropolitan planning process is a process in which States may exercise influence and otherwise participate in local public transportation development. Some States are well on their way to developing statewide capital plans which could eventually bring about the statewide coordination of metropolitan plans. Statewide transit programming, which seems likely to increase in the near future would be an interesting new development. Metropolitan Planning Organizations frequently provide a forum for State-local and inter-local issues resolution.

State Intervention

States appear to be well suited to centralize many of the resources and skills needed but otherwise not available to small transit operations. Many State public transportation activities take the form of technical assistance. At least two States, New York and Pennsylvania, have undertaken management and policy studies of very large multijurisdictional transit systems.

Wisconsin Department of Transportation, Division of Planning and Budget. Local Funding Options for Wisconsin Urban Transit Systems. Washington, D.C.: U.S. Government Printing Office, July 1982.

This report examines the state of Wisconsin's funding options at the local level to increase operating revenues for the transit system. Three categories of transit system funding options are examined: transit fare policy options, local transit finance options, and less traditional funding options.

The first major category of fare policies includes: (1) flat fare policies; (2) distance-graduated fare policies; (3) time-graduated fare policies; and (4) fare prepayment and discount policies. The authors conclude that flat fare increases which retain existing fare structures are probably the most acceptable method of increase to all concerned or affected by the transit system.

Local transit subsidy options, the second major category of local funding, includes three options: (1) local property tax assessments; (2) local sales tax; and (3) motor vehicle registration fee. Currently, property tax revenues provide most subsidies to local transit systems in Wisconsin communities. Local sales tax and motor vehicle registration are potentially good sources of revenue, but all local transit finance options involve trade-offs.

Less traditional transit funding options are examined last: (1) borrowing mechanisms; (2) benefit charges; and (3) service contracts or agreements. There less traditional applications should be carefully examined by any community considering them to determine their applicability to the community's needs.

In conclusion, local transit funding should include several policy options in combination in order to develop a package of funding options that will work well with that community's characteristics and needs.

Wolman, Harold and Reigeluth, George. Financing Urban Public Transportation: A Comparison of U.S. and Foreign Cities. Springfield, Virginia: National Technical Information Service, April 1980.

This report examines how cities in other Western nations attempt to solve many of the same financing problems facing American urban public transportation systems. The study includes both a survey of the financing characteristics of 23 cities in other nations and intensive case studies of innovative financing mechanisms in 6 cities: London, Paris, Munich, Hamburg, Vienna, and Stockholm.

The authors conclude that transit systems everywhere face similar problems: increasing automobile ownership, combined with suburbanization, leading to decreased transit ridership; rapidly rising operating costs, particularly labor; public opposition to fare increases; and resulting large and increasing operating deficits.

However, the study also found that the response to problems differed significantly from city to city. In particular transit systems in the U.S. are relying increasingly on subsidies from the Federal government, while many foreign systems rely more on fare increases and/or local government subsidies, many of which are derived from financing mechanisms which would be innovative within the U.S. context. The authors discuss these innovative techniques and speculate upon their possible adaptability to U.S. cities and their transit systems.

NOTICE

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TECHNOLOGY SHARING

SPECIAL STUDIES IN TRANSPORTATION PLANNING (SSTP)

PROGRAMS OF THE U.S. DEPARTMENT OF TRANSPORTATION