

NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM
SYNTHESIS OF HIGHWAY PRACTICE

97

**TRANSIT OWNERSHIP/OPERATION
OPTIONS FOR SMALL URBAN AND
RURAL AREAS**

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NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM
SYNTHESIS OF HIGHWAY PRACTICE

97

TRANSIT OWNERSHIP/OPERATION OPTIONS FOR SMALL URBAN AND RURAL AREAS

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NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM

Systematic, well-designed research provides the most effective approach to the solution of many problems facing highway administrators and engineers. Often, highway problems are of local interest and can best be studied by highway departments individually or in cooperation with their state universities and others. However, the accelerating growth of highway transportation develops increasingly complex problems of wide interest to highway authorities. These problems are best studied through a coordinated program of cooperative research.

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PREFACE

A vast storehouse of information exists on nearly every subject of concern to highway administrators and engineers. Much of this information has resulted from both research and the successful application of solutions to the problems faced by practitioners in their daily work. Because previously there has been no systematic means for compiling such useful information and making it available to the entire highway community, the American Association of State Highway and Transportation Officials has, through the mechanism of the National Cooperative Highway Research Program, authorized the Transportation Research Board to undertake a continuing project to search out and synthesize useful knowledge from all available sources and to prepare documented reports on current practices in the subject areas of concern.

This synthesis series reports on various practices, making specific recommendations where appropriate but without the detailed directions usually found in handbooks or design manuals. Nonetheless, these documents can serve similar purposes, for each is a compendium of the best knowledge available on those measures found to be the most successful in resolving specific problems. The extent to which these reports are useful will be tempered by the user's knowledge and experience in the particular problem area.

FOREWORD

*By Staff
Transportation
Research Board*

This synthesis will be of special interest to decision makers and others seeking information on alternative systems for operating smaller transit programs. Information is presented on various systems and an evaluation framework is presented.

Administrators, engineers, and researchers are continually faced with highway problems on which much information exists, either in the form of reports or in terms of undocumented experience and practice. Unfortunately, this information often is scattered and unevaluated, and, as a consequence, in seeking solutions, full information on what has been learned about a problem frequently is not assembled. Costly research findings may go unused, valuable experience may be overlooked, and full consideration may not be given to available practices for solving or alleviating the problem. In an effort to correct this situation, a continuing NCHRP project, carried out by the Transportation Research Board as the research agency, has the objective of reporting on common highway problems and synthesizing available information. The synthesis reports from this endeavor constitute an NCHRP publication series in which various forms of relevant information are assembled into single concise documents pertaining to specific highway problems or sets of closely related problems.

An important choice facing transit decision makers in small urban and rural areas is the type of arrangement to be used for ownership and operation of the system. This report of the Transportation Research Board reviews the choices generally available and evaluates the advantages and disadvantages of each. A framework for the selection of the options is also presented, and the need for more information on the effectiveness of various ownership/operation options is identified.

To develop this synthesis in a comprehensive manner and to ensure inclusion of significant knowledge, the Board analyzed available information assembled from numerous sources, including a large number of state highway and transportation departments. A topic panel of experts in the subject area was established to guide the researcher in organizing and evaluating the collected data, and to review the final synthesis report.

This synthesis is an immediately useful document that records practices that were acceptable within the limitations of the knowledge available at the time of its preparation. As the processes of advancement continue, new knowledge can be expected to be added to that now at hand.

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TRANSIT OWNERSHIP / OPERATION OPTIONS FOR SMALL URBAN AND RURAL AREAS

SUMMARY

Public transportation services in rural and small urban areas have several common characteristics. These services are important to a broad spectrum of public agencies, are usually multijurisdictional, are established to meet a variety of special transportation needs, and are extremely dependent on financial support from sources other than fares.

Ownership means holding titles to vehicles and related equipment and facilities. Operations are the day-to-day activities such as scheduling drivers, dispatching services, and maintaining vehicles. The most common ownership and operations options are (a) publicly owned and operated, (b) publicly owned and privately operated, and (c) privately owned and operated. In some cases a publicly owned and operated system may also use a private company to manage day-to-day operations. Also, many privately owned and operated systems are publicly subsidized.

Public ownership options allow greater orientation toward service to the entire public and offer a better position for short- and long-term planning, which may lead to greater coordination and consolidation of transportation services. Public ownership can take advantage of tax exemptions and may eliminate state public utility commission involvement in setting routes and fares. On the other hand, public ownership may entail political interference that affects management and operations, especially where the service is publicly operated, and financing may be difficult during times of fiscal austerity. Public ownership may not be suitable in some areas because it requires a public entity to be involved in a function with which it has little experience. The degree to which the various advantages and disadvantages of public ownership occur is affected by the type of public ownership (city, county, or authority).

Private ownership permits easier implementation of new service. Because public employees are not involved, there is less potential for political interference. Where service is publicly subsidized, a public official is needed to administer the contract and monitor the service. However, private ownership may not be able to take full advantage of local, state, and federal tax exemptions.

Before evaluating the various ownership and operation options, three questions should be answered: (a) What are the public transportation needs? (b) Should public funds be used to meet those needs and if so, what funds are available? (c) Do current laws permit creation of special organizations, such as authorities?

The evaluation of options should include a detailed study of costs, especially those related to personnel, and the noncost factors, such as coordination of

services, potential for political interference, time to implement the option, and problems of adding employees to a public payroll. A framework, which includes a flow chart and two matrices, is suggested for formulating and evaluating the options. The flow chart is a logical, systematic method of answering questions regarding needs and availability of funds, owners, and operators. Use of the flow chart should result in identification of several potential ownership/operation options. The matrices are then useful in evaluating the cost and noncost factors for each option.

A recommendation of this synthesis is that a systematic study be conducted to examine the relationship of the ownership/operation option to overall system efficiency and effectiveness in small urban and rural areas.

INTRODUCTION

BACKGROUND

The general problems, issues, and concerns regarding the provision of public transportation services in rural and small urban areas are well documented (1-4). A review of this literature indicates that there are four major characteristics of these services, which need to be clearly understood in order to ensure that proper planning and implementation are carried out and, specifically, that appropriate ownership and operation options are considered.

One characteristic is that public transportation services are of extreme importance to a broad spectrum of public agencies from all levels of government, many of which are concerned primarily with basic human needs. Consequently, a number of efforts have been initiated to coordinate the work of these agencies, based on the assumption that these efforts would prove to be fruitful and productive, leading to the provision of more effective and efficient transportation services (5-8). Although experience has shown this to be true in a number of instances, there are certain barriers that have to be overcome to make coordinated efforts successful (9). Ownership and operation options, if feasible, provide the necessary authority and flexibility required to deal with these barriers, thus making the time and money committed to the effort worthwhile.

The second characteristic is that services like those in major metropolitan areas are usually multijurisdictional; that is, they are often provided to more than one city, town, and county. This has led to the creation of organizations, such as regional transit authorities that represent all jurisdictions and often own and sometimes operate the services. These entities also facilitate the allocation of various costs to each jurisdiction to ensure that the different jurisdictions are paying their "fair share." This allocation of costs requires that reliable data be tabulated and maintained on expenses, and, in some cases, on ridership (the data gathering would be most likely a responsibility of the owner and/or the operator).

A third characteristic is that these services are established to meet a variety of special transportation needs, particularly those of individuals without access to an automobile, such as elderly, low-income, and handicapped persons. Moreover, it is apparent that no one type of public transportation will meet all needs and that some combination is essential. Types of public transportation include local bus (10, 11), intercity bus (12-14), taxi (15-18), chaircar (19), and human service agency services (20). Recently, other types have been investigated, including the integration of the postal bus (21) and

the school bus (22, 23) with regular public transportation, employer/employee based vanpools (24), and mobility clubs (25). Some of these services are owned and/or operated by private, for-profit and nonprofit entities, whereas others may be offered by public agencies.

Finally, the fourth characteristic of these services is that they are extremely dependent on financial support from sources other than fares paid by users (26). Therefore, a concerted effort must be made to determine what funding sources are available. Because some sources require that funds be used only to support certain expenses incurred by specific types of owners and operators, it is essential that all funding requirements be identified and that ownership/operation options be considered accordingly.

PURPOSE OF SYNTHESIS

The overall goal of this synthesis is to provide guidance to transportation decision makers, administrators, and analysts in rural and small urban areas in the selection of public transportation ownership and operation options. As suggested above, this selection will be related to the types of public agencies involved, the number of local political jurisdictions served, the funding sources utilized, the needs met, the types of services provided, and the availability of operators.

The synthesis goal can be translated into three objectives:

1. Identify the major ownership and operation options for rural and small urban areas;
2. Review the major advantages and disadvantages of each option; and
3. Develop a framework to assist in the decision on the type of ownership and operation for a rural or small urban area.

In Chapter 2, the major responsibilities in the provision of transit services, including ownership and operation, are briefly discussed, the entities (both public and private) often involved in various ownership and operation options are described, the organizational aspects of different options are identified and compared, and finally, the advantages and disadvantages associated with various options are discussed. A framework to guide officials in rural and small urban areas in the selection of appropriate ownership and operation options is offered in Chapter 3. The final chapter presents conclusions and recommendations for further research.

OWNERSHIP AND OPERATION OPTIONS

Two major responsibilities in the provision of public transportation services are ownership and operation. Ownership relates to the responsibility of holding titles and other legal documents to vehicles and related equipment and facilities. Operational responsibilities are day-to-day activities such as scheduling drivers, maintaining vehicles, and dispatching vehicles. Other important responsibilities include policy-making (e.g., setting fares, routes, and schedules), administration (e.g., monitoring and evaluating service), and overall management (e.g., supervising the day-to-day activities). Detailed discussions on these responsibilities and various ownership and operation options have been previously published (27-29).

ALTERNATIVE OPTIONS FOR SMALL URBAN AND RURAL AREAS

A variety of organizational options have been utilized in the provision of public transportation services in small urban and rural areas. Whereas some options include a single entity, others combine two or more entities that in some way share the major responsibilities of providing the service. These entities have generally included the following:

- City or town,
- County,
- Local transit authority or district,
- Regional transit authority or district,
- Regional planning agency,
- State agency,
- Cooperative or consortium,
- Public utility company,
- Human service agency,
- Private, nonprofit operator,
- Private, for-profit operator, and
- Private transit management company

As can be observed, some of these entities fall into the public sector, and other entities are members of the private sector. (See Appendix A for a list of contacts for entities involved in selected geographical areas cited in this synthesis report.)

The most common ownership and operation options that have been used in small urban and rural areas are described and compared below. Each option is identified in terms of the entity or entities involved as well as the entity's general role and responsibilities in ownership and operations and the related areas of policy making, administration, and management. Whenever possible, examples of small urban and rural areas that have utilized such options are cited.

The options are summarized and divided into three groups in Table 1. In a recent survey conducted by the International

City Management Association (ICMA),¹ 808 of 1,050 of the local bus services (or 77.0%) were publicly owned and operated. Of the remaining, 80 (or 7.6%) reported that services were publicly owned and privately operated, and 162 (or 15.4%) stated that privately owned and operated services were currently provided. The services were offered in a city or town with a population less than 50,000 or a county with a population less than 250,000.

TABLE 1
OWNERSHIP AND OPERATION OPTIONS^a

Option 1: Publicly Owned and Operated ^b
1A Local Government Owned and Operated
1B Transit Authority Owned and Operated
Option 2: Publicly Owned and Privately Operated ^b
2A Local Government Owned and Privately Operated
2B Transit Authority Owned and Privately Operated
Option 3: Privately Owned and Operated ^c

^aThe use of volunteer or in-kind personnel (e.g., drivers, escorts) might exist in any system, but would more likely occur in Options 2 and 3 in which private, nonprofit organizations, such as community/human service agencies, are involved.

^bA private transit-management company is sometimes used in publicly owned services. The management company's responsibility is to manage the day-to-day operations. Under such an option, the operational staff (including drivers and mechanics) would be employed by the public agency in Option 1 or the management company in Option 2.

^cPrivate owners and/or operators may include for-profit bus, taxi, and school bus operators; nonprofit community action/human service agencies; public utility companies; and transit-management companies. If the private owner/operator is publicly subsidized, a purchase-of-service contract is negotiated with a public or private nonprofit entity (e.g., regional planning agency or community/human service agency), which plays an administrative/monitoring role.

¹The ICMA data cited in this synthesis are based on the survey "A Profile of Public Transit in Small Cities and Rural Communities—1981 (TRAN81)" conducted by the International City Management Association, Washington, D.C., 1980.

Option 1A: Local Government Owned and Operated

Cities, towns, and counties have played an increasing role in public transportation, particularly since the early 1970s. Of the 808 publicly owned and operated services reported in the ICMA survey, 152 (18.8%) were city or town owned and operated (including Chapel Hill, North Carolina; New Castle, Pennsylvania; Sheboygan, Wisconsin; and Arcata, California) and 110 (13.7%) were county owned and operated (including Nevada County, California; Collier County, Florida; Linn County, Iowa; and Washington County, Maryland).

Typically, the local policy board, such as a city council, board of selectmen, or county commission, assumes the entire responsibility of ensuring that adequate public transportation services are offered. In this option the local policy board has the policy-making and ownership roles and usually delegates the administrative, management, and operational roles to a local transit (or transportation) administrator. The administrator oversees the operations staff (e.g., operations supervisor, drivers, dispatchers), who are directly responsible for carrying out the day-to-day operating activities. The administrator and support personnel and all operational staff are local public employees.

A variation to this option is the use of a private transit management company who has the responsibility of managing the day-to-day operations. This company is hired on a contractual basis for one or more years. Consideration is often given to negotiating such a contract with provisions that give the company an incentive to function in an effective and efficient manner. The operational staff are local public employees. The management company works directly with the local transit administrator or the city, town, or county manager or mayor.

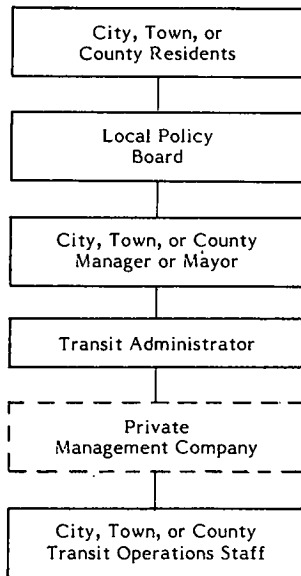


FIGURE 1 Option 1A: Local government owned and operated.

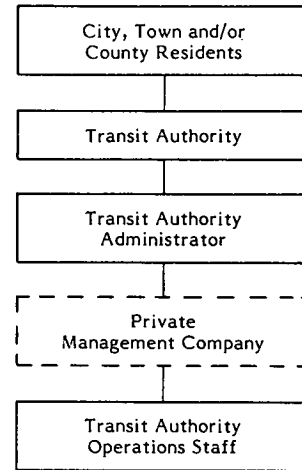


FIGURE 2 Option 1B: Transit authority owned and operated.

The organizational arrangement of this option, including the variation involving the use of a private management company, is shown in Figure 1.

Option 1B: Transit Authority Owned and Operated

A local transit authority (LTA) or a regional transit authority (RTA) is a public entity created specifically for the purpose of ensuring that adequate public transportation is provided to a city, town, or county, or group of cities, towns, and/or counties. The transit authority usually has the policy-making and ownership responsibilities and is made up of persons who are either locally elected officials or designated appointees of such officials (30). The transit authority, depending on state law and local ordinances, may have taxing, bonding, and other forms of authority.

A transit authority administrator is responsible for administrative, management, and operational matters. All administrative and operational personnel are public employees of the transit authority. A private management company could be hired to perform the overall management, as depicted in Figure 2.

Of the 808 publicly owned and operated systems reported in the ICMA survey, 483 (59.8%) were owned and operated by transit authorities (common in California, Connecticut, Massachusetts, and Pennsylvania).

Option 2A: Local Government Owned and Privately Operated

This option is the same as Option 1A, except that the local government does not operate the service. Instead of employing its own operational personnel, the city or county contracts with either a local private operator or a private management company. Of the 80 publicly owned and privately operated systems reported in the ICMA survey, 50 (63%) are owned by a local government and privately operated. Examples include the counties of Stanislaus, California; Escambia,

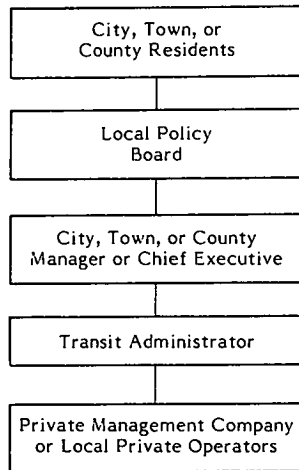


FIGURE 3 Option 2A:
Local government owned
and privately operated.

Florida; and Lenawee, Michigan; and the cities of Marshalltown, Iowa; Hot Springs, Arkansas; Biddeford, Maine; Jamestown, New York; Monroe, Michigan; and Missoula, Montana. The last three are operated by private management companies.

In this option the only public employees involved in transit are the local administrative staff. The local policy board is still the transit policy-making unit and would own vehicles, facilities, and related equipment, which would be leased in the contract to the private operators. These operators could be private, for-profit operators (such as a local fixed-route, fixed-schedule bus company, a private management company, or a taxi company) or a private, nonprofit operator associated with a local human service agency. It should be noted that such operators might own vehicles and other equipment. If such equipment is used in services under contract with the city, town, or county, the manner in which service is offered is under the control of the local government. It should also be noted that vehicles owned by the operators could very possibly be used for services that are not supplied under contract with the city, town, or county. Examples of such services would be exclusive-ride taxi service offered by the taxi company, charter and school bus services operated by the bus company, and human service agency services provided by private, nonprofit operators. Figure 3 shows the organization of this option.

Option 2B: Transit Authority Owned and Privately Operated

As in Option 1B, the transit authority would have the policy-making and ownership responsibilities in this option. However, as in Option 2A, the services would be operated by private operators under contract to handle the management and day-to-day operating activities (Fig. 4). Only administrative personnel are usually employed directly by the transit authority. This option is used in some states, such as Massachusetts, because the transit authority is prohibited by law

to operate service (31). About one-third of the 80 publicly owned and privately operated services in the ICMA survey were owned by transit authorities. Examples include the Pioneer Valley Regional Transit Authority, Massachusetts; the Area Transportation Authority of North Central Pennsylvania; and Raleigh, Winston-Salem, and Asheville, North Carolina.

A regional transit authority also attempts to coordinate region-wide services for both the general public and for special population groups, such as the elderly or handicapped. These coordinated services can take a variety of forms. For example, an RTA might purchase five 10-passenger vans and lease them to a private, nonprofit operator who would offer service under contract with the RTA to Town Councils on Aging in six different towns on designated days and during specified times for a particular trip purpose (e.g., medical trips, nutrition trips). The manner of payment for such services is often negotiated between the RTA and the Councils before the service is actually delivered (32, 33). The Councils might pay on the basis of some established rate per unit of service (i.e., per passenger trip), with the rider possibly paying a portion of the cost "out of pocket." This coordinated service could also be operated by a private, for-profit taxi company or group of companies with the use of tickets or some type of voucher.

Option 3: Privately Owned and Operated

Although the trend in many small urban and rural areas has been toward public ownership, privately owned and operated services still exist. Some of these services receive no direct public financial assistance, whereas other privately owned and operated services do obtain some form of direct public subsidy through a purchase-of-service contract. Those services not typically subsidized directly include, for example, an employer-sponsored vanpool service or an intercity bus company providing service within a rural region (possibly to and from an urbanized area). Another, less common example is that of a public utility company operating a local bus service. Such services are in existence in the cities of Durham and Greensboro, North Carolina; and Anderson

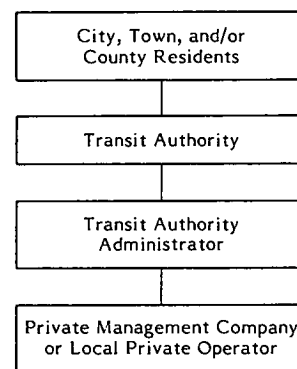


FIGURE 4 Option 2B:
Transit authority owned
and privately operated.

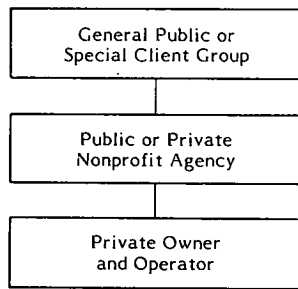


FIGURE 5 Option 3: Privately owned and operated (publicly subsidized).

and Spartanburg, South Carolina. These systems are owned and operated by Duke Power Company. Another example is an exclusive-ride taxi service, which is offered in many small urban areas. The only public involvement in the above services is the regulatory control of a state public utilities commission in the case of the intercity and local bus services, and the local policy board in the provision of taxi service.

Services that are directly subsidized are of two general types: (a) private, *for-profit*, and (b) private, *nonprofit*. Private, *for-profit* operators might receive either capital or operating subsidies, or both. These subsidies are negotiated through contractual purchase-of-service agreements between the operator and some type of public or private entity that primarily plays an administrative role. Administrative entities on the public side often include local governments, such as cities, towns, and counties, and, sometimes, regional planning agencies (RPAs) and state agencies. RPAs are used in several rural regions of Iowa. In Texas the State Transportation Commission administers such contracts with, in some cases, the assistance of RPAs.

On the private side, this administrative role could be assumed by a nonprofit human service agency (HSA), or even a cooperative or consortium. These private, nonprofit groups were considered in a regional area of Western Massachusetts (19). A human service agency (HSA) is an organization that assists various segments of the population in meeting basic human needs; e.g. a local Council on Aging. A cooperative is a legal entity that often sells shares to members who determine the way service is to be provided. Cooperatives were commonly used during the Office of Economic Opportunity (OEO) program in the late 1960s. A consortium is not necessarily a legal entity, but is typically created through an inter-agency agreement. The agreement defines roles, responsibilities, and objectives of the consortium.

The primary responsibility of the administrative unit, public or private, is to monitor the contract with the private operator or operators. Some of these contracts may be simple, such as that between a city and a local bus company. Typically, such a contract would either guarantee a fixed operating ratio of gross expense to gross revenue, a certain percentage profit based on gross revenue, or a fixed fee. A more complicated contract might be negotiated between an HSA and a private operator such as a taxi company. The HSA might sell to its clients, at a minimal price, tickets (or coupons) that can be used to ride the taxi at a reduced rate.

The difference in the price the client pays and the normal rate would be funded by the HSA in the manner specified in the agreement. It should be noted that this service could be delivered by a private, nonprofit operator instead of a taxi operator that operates for a profit. This option is depicted in Figure 5, assuming that a public subsidy is provided.

ADVANTAGES AND DISADVANTAGES OF VARIOUS OPTIONS

Inherent in each of the options presented are certain advantages and disadvantages that must be weighed when options are being considered for implementation.

Public Ownership (Options 1 and 2)

A major factor in the selection of an appropriate or desirable option is whether the ownership responsibilities are those of a public entity or private entity. Options 1 and 2 both involve a public entity with the ownership responsibilities as well as policy-making duties, and thus are options more oriented toward service to the "entire public." In addition, these publicly owned options often offer a sounder base for performing short- and long-range planning and, consequently, may lead to a greater opportunity for consolidation and coordination of transportation services, both transit and nontransit (e.g., human services), which may be of primary interest to the policy-making body. Some forms of public ownership also usually take full advantage of local, state, and federal tax exemptions and make some federal and state funds directly available for supporting capital and operating costs.

Finally, public ownership may eliminate the need for the State Public Utilities Commission (PUC) to be involved in the economic regulation of routes and rates, and thus service changes and experimental improvements can be implemented in less time and local and/or regional transit objectives can be accomplished more easily. It should be noted that although public ownership may transfer economic regulation to a local agency, an independent state PUC in some states (such as North Carolina and Massachusetts) will (and perhaps should) still regulate safety aspects, such as vehicle braking systems and driver eligibility requirements.

Obviously, public ownership may have various disadvantages. Potential political interference may adversely affect the management and operations of service, particularly in Option 1, where all responsibilities of providing transit service fall into the public domain. This disadvantage may be mitigated by the hiring of a private management company, or by implementing Option 2, where the management and operation of service are delegated to private entities. Public ownership, especially if it is coupled with public operation, may require considerable capital outlay to purchase equipment and other facilities, which could lead to bond issuance. During an era of fiscal austerity at all levels of government, the support for such capital outlays, and public ownership in general, may be extremely difficult to obtain. Moreover, once the necessary broad-based support is generated, this in turn may lead to potential system inefficiencies due to politically motivated pressures for unwarranted services. Finally,

public ownership in some small urban and rural areas may not be considered suitable because it requires a public entity to become directly involved in a function with which it has had little experience. This disadvantage could also be diminished if a private management company is hired, or if private operators are utilized, as described in Options 2A and 2B.

The advantages and disadvantages of public ownership as employed in Options 1 and 2 are summarized in Table 2.

Local Government Owned (Options 1A and 2A)

In addition to the advantages and disadvantages discussed above, the specific public entity owning the service may also have a bearing on the desirability of an option. In Options 1A and 2A, where the city or county assumes ownership, it may be easier to unify various transit activities with similar on-going governmental activities. For example, the maintenance

of buses or vans could be carried out in local or county garages or shops by local or county personnel.

In terms of financing, a city, town, or county may be in a better position to secure funds from a local lending institution instead of through bond purchase by outsiders, as might be the case with a transit authority. It may also be advantageous for the city, town, or county to have ownership rights, as each jurisdiction likely has a well-defined constituency, compared to a transit district that may include only part of a city, town, or county. Because of a local consensus that there is no need to create another governmental policy board, which could contribute to fragmentation and undesirable decentralization of local and county decision making, the city, town, or county may be perceived as being more appropriate than a transit authority.

It may also be agreed on by local and/or county elected officials that it is more desirable (over the short term) to own the services initially, and to determine at some later date

TABLE 2

ADVANTAGES AND DISADVANTAGES OF PUBLICLY OWNED SERVICES
(OPTIONS 1 AND 2)

Advantages	Disadvantages
<ul style="list-style-type: none"> ● Orientation would be more oriented toward service to the entire public. ● A more sound position to perform short-range and long-range planning would be provided. ● Maximum advantage may be taken of local, State and Federal tax exemptions. ● Some Federal and State grants could be used directly. ● Greater opportunity to consolidate and coordinate transportation and non-transportation services (both public and private) would be offered. ● Usually no regulation by State Public Utilities Commission exists; therefore service changes and experimental improvements would be easier to implement. ● The allocation of costs to those receiving service such as human service agencies, and in the case of county- or region-wide service, different political jurisdictions, would be facilitated. 	<ul style="list-style-type: none"> ● Potential for political interference in day-to-day transit operations, particularly if the service is publicly managed and/or operated. ● Considerable capital outlay may be needed (especially if publicly operated) to purchase equipment and other facilities, which could lead to bond issuance. ● Potential inefficiencies may result in operation due to political pressures for unwarranted services. ● Potential difficulty in obtaining large amount of citizen support may exist, especially during the present era of fiscal austerity. ● Public entity must become directly involved in a function with which it has had little experience; can be lessened some if services are managed by experienced private firm. ● Public entities may have to become involved with labor groups; this involvement can be minimized if management and operations are responsibilities of private entities.

TABLE 3
ADVANTAGES AND DISADVANTAGES OF LOCAL GOVERNMENT OWNED
SERVICES (OPTIONS 1A AND 2A)

Advantages	Disadvantages
<ul style="list-style-type: none"> ● Various transit activities (e.g., fleet maintenance) can be unified possibly more easily in City or County maintenance garages and shops. ● Local lending institutions may be more likely to offer loans to City, Town, or County. ● No new public entities have to be created. 	<ul style="list-style-type: none"> ● Inclusion of transit employees under civil service may be required; therefore, salaries and benefits equal to those paid to city and county employees would likely be necessary. ● In the case of county-owned service, service or tax zones may have to be devised to equate levels of service and/or usage to financial commitment. ● In the case of city-owned service, other surrounding cities and towns would have little voice in the provision of service. ● Political interference.

whether there is a need to form another public entity such as a local or regional transit authority. This approach was taken in the late 1970s in Franklin and Berkshire Counties in Massachusetts. Both county commissions decided to assume the responsibility of providing transit services under the Section 147 Program, and subsequently initiated the development of RTAs to take responsibility for regional transit service.

A disadvantage of city, town, or county ownership is that transit employees may have to be included under civil service, and therefore salaries and benefits equal to those paid to city and county employees may be necessary. This disadvantage is more serious in Option 1A, in which all administrative and operations personnel are city, town, or county employees. In addition, with county-owned services the development of service or tax zones may be required to associate equitably levels of service or use with financial commitment. If the creation of such zones is considered too complicated, and as a result the city or town assumes ownership responsibilities, surrounding cities and towns and outlying areas in the county would likely have little input in the provision of service.

The advantages and disadvantages for the city, town, or county owned services in Options 1A and 2A are summarized in Table 3.

Transit Authority Owned (Options 1B and 2B)

Associated with transit authority owned services are additional advantages and disadvantages due largely to the organizational and legal characteristics of an authority or district. One advantage of an LTA or RTA can be the elimination of the need for the city, town, and/or county policy

boards to assume transit policy-making and ownership responsibilities. Where enabling legislation exists, transit authorities are fairly simple to create; several states have enacted enabling legislation to create transit authorities and districts (30). Transit authorities are often granted powers such as taxing and borrowing. Regional transit authorities offer an organizational entity that facilitates the coordinated efforts of groups of cities, towns, and counties in attempting to meet their transit needs cooperatively.

Being involved in creating any new public agency, such as a transit authority, in the 1980's will not be an easy chore. An aggressive public information program may be essential. In order to obtain proper representation on an authority, particularly an RTA, a large policy board may be necessary; and in the case of an LTA, jurisdictions surrounding the local area may not be given adequate opportunity to express their attitudes and desires regarding the provision of service. It may be considered more reasonable to create an LTA at the outset, and at a later time, explore the need for and merits and shortcomings of a multijurisdictional entity, such as an RTA.

The advantages and disadvantages of transit authority owned services are summarized in Table 4.

Privately Owned and Operated (Publicly Subsidized) (Option 3)

One advantage of this option, compared to an option involving public ownership, is the ease with which service can be implemented. For example, usually in this option there will be no need to order and purchase new vehicles with

TABLE 4
ADVANTAGES AND DISADVANTAGES OF TRANSIT AUTHORITY OWNED
SERVICES (OPTIONS 1B AND 2B)

Advantages	Disadvantages
<ul style="list-style-type: none"> • The need for the City or County policy boards to assume the lead policy-making role in the provision of transit service would be eliminated. • Usually fairly simple to create an LTA or RTA provided that enabling legislation exists to allow cities and towns to form such authorities. • An RTA provides a mechanism for cities, towns and counties to coordinate their needs, and for new jurisdictions to join as growth occurs. 	<ul style="list-style-type: none"> • In the case of an LTA, cities and towns surrounding the local area being served would have little voice in the provision of service. • Convincing the public that a new public entity is required may be difficult. • In the case of an RTA, a large policy board may be needed. • Political interference.

TABLE 5
ADVANTAGES AND DISADVANTAGES OF PRIVATELY OWNED AND
OPERATED (PUBLICLY SUBSIDIZED) SERVICES (OPTION 3)

Advantages	Disadvantages
<ul style="list-style-type: none"> • Subsidy or purchase of service can be implemented relatively quickly and in a generally uncomplicated manner. • Less potential for political interference in day-to-day transit operations. • No need for transit employees to become public employees. • Private operator can deal directly with organized labor groups and minimize need for public agencies to do so. • System performance of an intercity bus company carrying primarily packages can be increased. 	<ul style="list-style-type: none"> • Normal advantages of private ownership are lessened when operating deficits are effectively guaranteed in a contract. • The availability of service is subject to periodic renegotiation, therefore making continuous service questionable. • A public entity would still be necessary for monitoring service agreements, acting as a "funnel" for certain public financial assistance. • Associated with this mechanism will be direct public administrative costs. • Implementation of service changes and adjustments may be relatively difficult to carry out. • May not be able to take full advantage of local, State and Federal tax exemptions. • May be difficult to explain to public that a private operator needs continued public assistance.

public funds, because private owners and operators have the necessary vehicles and are in fact providing services along a major corridor primarily for charter or package delivery purposes. (This option was utilized by the public transit agency in Harlingen, Texas, and Valley Transit Co., Inc.) The subsidy for passenger service would be provided through a contract as discussed earlier in the review of Option 3.

Another advantage inherent in this option is that there are fewer, if any, public employees who are involved full time. Furthermore, there is little or no involvement on a regular basis of a public agency, and, consequently, there is less potential for political interference. Also, as in the case of publicly owned and privately operated services, this option minimizes the need for a public entity to deal directly with organized labor groups.

The significance of these advantages depends in part on the provisions in the contract. For example, if a fixed-route, fixed-schedule bus operator is paid a flat fee regardless of the number of persons carried, then there really is limited incen-

tive (except for the concern for a contract renewal) for the operator to perform effectively or efficiently. In addition, it may be extremely difficult for service changes to be made, unless such provision is included in the contract to allow for these changes in a simple and expeditious manner.

Disadvantages include the need for a public official to spend time administering the contract and monitoring and evaluating services. This amount of time, however, will be significantly less than in Options 1 and 2. In addition, private owners and operators may not be in a position to take full advantage of various tax exemptions. Finally, as in the case of publicly owned and privately operated services, contracts have to be negotiated regularly, and, consequently, service could be discontinued either permanently or temporarily at the end of each contract period. This is significant in rural and small urban areas, particularly in those areas where only one such operator exists.

Table 5 lists the advantages and disadvantages of privately owned and operated (publicly subsidized) services.

CHAPTER THREE

A FRAMEWORK TO ASSIST IN THE FORMULATION AND EVALUATION OF OWNERSHIP/OPERATION OPTIONS

Before a framework to assist in the formulation and evaluation of ownership and operation options for a particular small urban or rural area is presented, pertinent questions regarding the formulation of possible options are discussed below along with the cost and noncost factors of importance in the evaluation of these options.

FORMULATION OF OPTIONS

The formulation of alternative ownership and operation options will undoubtedly be an integral part of the overall planning effort carried out to develop a public transportation plan for a rural or small urban area. Whether the plan includes a small-scale, fixed-route, fixed-schedule bus service available to the general public or a region-wide, advance-reservation, demand-responsive service for certain population segments (e.g., the elderly) and groups (e.g., human service agencies), more than one ownership and operation option should be formulated and considered. These options could total four or more, with the exact number and entities being related to the following broad questions:

- What are the public transportation needs in the area, and are existing owners and operators willing and able to meet those needs?
- Should public funds be used to meet those needs, and, if so, what public funds are available, and what restrictions (if any) are placed on these funds?

- Do current state laws permit cities, towns, and counties to create special organizations such as transit authorities and districts?

The relevance and significance of these questions regarding the formulation of alternative ownership and operation options are discussed below.

Public Transportation Needs

One of the initial tasks carried out in a transit planning study is the identification of needs. In such studies it is often useful to define needs by population segments and various trip purposes. For example, there may be a need to transport gainfully employed persons to work each day. Another need, which is quite different, may be to carry elderly individuals to a nutrition site at lunch time on selected days of the week. A third need may be to transport handicapped persons in wheelchairs to work or to a health center.

The specific needs relate to the ownership and operation option in several respects. First, whether the riders are ambulatory, partially ambulatory, or nonambulatory will determine in part what type of operators might be considered. In the case of the persons in wheelchairs, some specially equipped vehicle with possibly a hydraulic lift and tie-downs will be necessary. Often a private, for-profit operator, such as a taxi company, would not be prepared to provide this service, and, in some cases, would be unwilling to do so.

Therefore, a private, nonprofit operator, or perhaps a private, for-profit chaircar or ambulance company, will have to be utilized. In the case of the gainfully employed workers, a private, for-profit bus company could be hired on a contract by a public entity to operate during the peak periods in the mornings and afternoons, or perhaps an employer/employee-based vanpool service could be offered without significant involvement of a public entity. Finally, to transport the elderly persons, a private, nonprofit operator with drivers trained in cardiopulmonary resuscitation (CPR) might be used, or a user-side subsidy arrangement could be developed with the local private, for-profit taxi company.

Needs will also have some bearing on the form of ownership. For example, in order to satisfy the special needs of the elderly or handicapped, perhaps these individuals should be served by a private, nonprofit operator who not only employs specially equipped vehicles and trained drivers, but who is also under the control of a human service agency in the area. The vehicles could be owned by either an agency or by the operator.

Use and Availability of Public Funds

It is a foregone conclusion in most small urban and rural areas that public transportation services require some form of public funding. These funds come from a variety of sources at all levels of government. Some federal sources may require that the funds be given to a local public agency, for example, to purchase vehicles. This agency may operate the service or may contract with a private operator who, in turn, will operate the vehicles and provide a service to the general public. The vehicles also may be leased to a private operator who will provide service; however, if the public agency retains ownership, this will facilitate future transfer of vehicles to another operator, should this be desired.

Similar capital funds offered by some state DOTs (such as in Massachusetts) require that the recipient be a regional transit authority and that the authority contract with a private operator.

Other federal and state funding sources are used to reimburse operators for providing specialized services to a particular individual or group of individuals who are affiliated with a human service agency, such as the elderly person traveling to a nutrition site. The use of such human service agency funds may not require a public entity to be involved; consequently, public ownership may not be considered necessary or advantageous. In addition, it should be noted that some human service agency funding sources have data reporting and auditing requirements that should be considered when formulating ownership and operation options.

Creation of Special Bodies

As discussed in Chapter 2, regional and local transit authorities or districts have been created in rural and small urban areas to provide public transportation services. In some cases, these authorities have eliminated the need for local and county policy boards to assume this responsibility, and, in other cases, have facilitated coordination among groups of cities, towns, and counties.

In states in which no such enabling authority exists, it may be necessary to enact appropriate legislation, which may be time-consuming and ultimately create delays in the implementation of service. If such enabling authority is deemed necessary and desirable, legislation can be drafted and proposed. A useful action to take in the interim might be the designation of a city, town, or county agency as the lead public entity, with many of the powers of a transit authority.

EVALUATION OF OPTIONS

After the formulation of possible options, an effort should be made to evaluate these options to select the most appropriate option or options. In this evaluation a number of factors should be considered, including cost and other noncost, important factors.

Cost-Related Factors

A critical concern in any transit-related decision, such as the selection of an ownership and operation option, is cost. The types and significance of various costs incurred in the provision of transit service are well documented (34). Some types of costs will be common to all options, and other costs will apply only to specific options. Costs involved in all options include supervisory, driver, mechanic, dispatcher, and other worker wages. If a service is provided by a city or county, which acts as the owner and operator, then the employees may have to be included within the civil service structure and paid the same hourly wages and benefits earned by other city or county employees with comparable qualifications and responsibilities. If the services are privately operated, the operator may be required to pay local union wages, and in cases where no union exists, the private operator might follow company personnel policies and pay scales or scales of the local labor market. Another common cost is fuel expenses. The magnitude of this cost will vary from option to option, due in part to federal, state and local tax exemptions.

Costs that are usually associated with specific options include capital expenses for vehicles and other facilities, depreciation, profit, and management fees. For example, if one of the alternatives utilizes a private, nonprofit owner and/or operator, there will be no "profit expense" as there would be if a for-profit operator were involved. Therefore, in a particular situation the nonprofit operator may be preferred.

This was the case with the Pioneer Valley Transit Authority (PVTA) in western Massachusetts; consequently the PVTA terminated its on-going contract with a private, for-profit operator and created a private, nonprofit entity to operate service. In the process the PVTA also acquired the for-profit operator's maintenance garage and thus reduced the monthly operating costs, which had previously included depreciation expenses on the garage facility for the for-profit operator. Because the acquisition of the garage was a capital cost, the local governments funded only 10 percent of the costs and the federal and state governments paid the other 90 percent. Also this local capital cost was a one-time expense, instead of the previous recurring monthly operating cost,

where the local share would be approximately 50 percent and the federal and state share would be about 50 percent.

It should be noted that in this particular situation lower total monthly operating costs resulted without any institutional or political problems. This was due largely to the fact that the nonprofit operator hired all of the for-profit operator's employees; thus no existing employees were adversely affected in the termination of the for-profit operator's contract. If the existing employees had not been hired by the nonprofit operator and had become unemployed, displacement allowances might have been necessary as required in the UMT Act Section 13(c) labor provisions. As is apparent from this case, the selection of an ownership and operation option may be a more complex task when an existing service is in place and consideration is being given to changing from one option to another.

Noncost Related Factors

It is clear that the various ownership/operation options have strengths and weaknesses that, unlike the cost factors discussed above, cannot be quantified easily in dollar terms. These strengths and weaknesses are often a reflection of public officials' philosophies, perceptions and attitudes toward the community's public policy goals, objectives, and, specifically, the role and importance of public transit in the towns and surrounding areas.

For example, the preference of public officials for an RTA-owned service over a city- or LTA-owned service will be related to the local concern for coordinating services among various communities. The extent to which public officials support public ownership and/or operation will be associated with their level of interest regarding local public control in overall service delivery as well as monitoring, evaluation, advertising, promotion, and their general attitude toward public intervention.

Other noncost factors often considered by public officials in assessing the overall strengths and weaknesses of the various ownership and operation options include:

- The possibility that agencies will encounter significant political interference in overall management and day-to-day operations;
- The stability of the agencies (i.e., the likelihood that the agencies involved in ownership and operations will continue their roles as owners and operators and will not encounter problems that might lead to sudden termination of service);
- The need for training employees (e.g., supervisors, drivers, mechanics, dispatchers);
- The amount of time required to implement the options (e.g., do vehicles have to be ordered and purchased, do new entities have to be created, and if so, does proper enabling legislation exist to establish these entities);
- The extent to which unwarranted services will be provided due to local public pressures;
- The need to add employees to current public payrolls (if so, how many and for what purposes);
- The need to include such public employees within the local civil service system;
- The possibility of combining various transit functions with ongoing public functions (e.g., transit maintenance with other city maintenance activities);

- The importance and ability of various entities to borrow and tax;
- The ease with which common carrier passenger service can be combined with other existing transit services (e.g., package delivery); and
- The probability that a public entity will have to deal directly with organized labor.

THE FRAMEWORK

The framework recommended to formulate and evaluate a set of ownership and operation options consists of two major components: (a) a flow chart to aid in the formulation of options that are reasonable (or at least not inappropriate) for consideration; and (b) two matrices to assist in the evaluation of cost and noncost factors for these options. A hypothetical case study to demonstrate the use of the framework is presented in Appendix B.

Flow Chart

In order to use the flow chart, a reasonable amount of information must be available regarding the public transportation needs of the geographical area under consideration, the types of services required to meet these needs, the willingness and ability of existing owners and/or operators to provide the services, the availability of public funds to support these services and the regulations concerning such funds, and the extent to which state and local laws permit governmental units to own and operate transit services. As evident from the discussion on the formulation of options, this information is directly and indirectly associated with the appropriateness of various agencies in the ownership and operation of transit services.

In order to obtain this information properly, a public transit planning study may be necessary (if it has not already been undertaken). In the early 1970s these efforts were called "tech (technical) studies," and later referred to as "TDPs" (transit development plans). A TDP was primarily short term (1 to 5 years) in most small urban and rural areas, and, at a minimum, consisted of an analysis of local transit needs, an inventory of existing services and funding sources, and an assessment of alternative levels and types of transit service. In some instances (10, 11), a general qualitative comparison was conducted to review ownership and operation options.

The flow chart is shown in Figure 6. Questions regarding the needs and availability of public funds, owners, and operators are listed in a logical, systematic manner. To formulate a set of options for a given area, the user begins by answering the questions at the top of the flow chart and, depending on the answers, follows the appropriate arrows. For example, if the answer to the first question (What are the needs and what type of service will best meet these needs?) is that the primary need is to transport nonambulatory persons who do not have access to a car, the next step is to determine if public funds are available to meet such a need. What is implied here is that the availability of federal, state, and local funds will have a direct influence on whether local officials are interested in providing service, whatever the need may be.

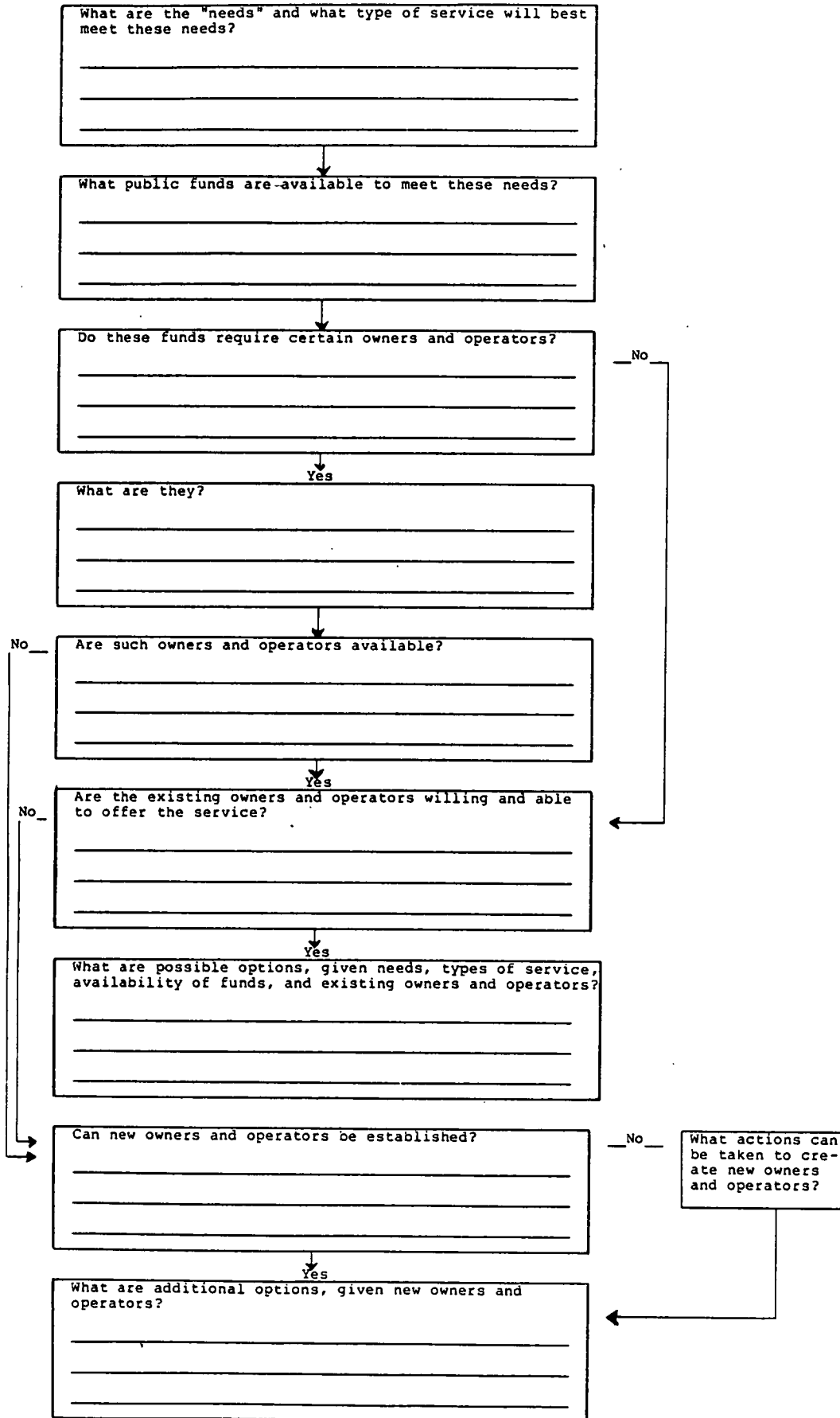


FIGURE 6 Flow chart to assist in the formulation of ownership/operation options.

Option	Annual Operating Costs						Approx. fuel price incl. tax (\$/gal)	Maint. and repair costs	Purchase-of-service contract (subsidy)
	Annual Salaries and Wages					Benefits (% of wages)			
	System mgmt.	Drivers	Mechanics	Dispatchers	Others				

Option	Annual Operating Costs					Annualized Start-up Costs				Total Annual Costs
	Vehicle license, insurance, etc.	Profit	Mgmt. fee	Taxes ^a	Total Annual Operating Costs	Public capital outlay required ^b		Training	Displacement allowance	
						Local	Total			

^aIncludes taxes on parts, tires, real and personal property, new equipment, etc.
^bThere may be additional capital costs beyond start-up period.
^cRelevant only where existing services are in place and where existing employees may be affected.

FIGURE 7 Matrix of cost factors.

If adequate public funds are available, then the next question is: Are existing owners and operators required to receive such funds, and do these funds have to be used for certain expenses, such as capital investment only? For example, eligible recipients of UMT Act 16(b)2 funds are private non-profit groups and eligible expenses include only the purchase of vehicles and other equipment. In Massachusetts (Chapter 161(B)) state transit funds can only be received by transit authorities who are not legally allowed to operate the service and must contract with private operators. In Pennsylvania state legislation was recently enacted to finance the implementation of paratransit services offered by private, nonpro-

fit agencies. It can be observed that some funding sources are somewhat restrictive with respect to the type of service to be supported, the type of organization permitted to be the recipient, and the responsibility the recipient has in the delivery of transit service. After determining funding requirements, the next questions to address are: (a) Are the needed owners and operators available in the area? (b) If so, are they willing and able to offer service? It should be understood that a prospective operator such as a bus company might be available locally, but is not able to offer the desired service because buses are not available and/or may not be willing to operate the service

	(1) Potential for Coordination	(2) Degree of Public Control	(3) Ease of Making Service Changes	(4) Ability to Tax	(5) Ability to Borrow	(6) Potential for Combining with Other Govern- mental Functions	(7) Ease of Combining with Existing Package Delivery
Importance							
Option							

	(8) Potential for Political Interference	(9) Training Needs	(10) Need to Hire Employees	(11) Need for Civil Service Employees	(12) Need to Deal with Labor Unions	(13) Need to Create New Entities	(14) Delays in Implementation
Importance							
Option							

FIGURE 8 Matrix of noncost factors.

because, for example, the proposed service is door-to-door transportation for individuals confined to wheelchairs, a type of service the company may not be experienced or interested in providing.

If the needed owners and operators are not available or if available owners and operators are not willing or able to offer the service required to meet local needs, then new ownership and operation entities will have to be created. These entities might include private, nonprofit operators or a local or regional transit authority to be the recipient of available funds and to contract with an existing bus company. Initially it might be wise to consider implementation of service with existing organizations to avoid delays in implementation while new organizations are being established. Depending on the level of interest in the community regarding the need for services, it may also be decided that no resources be com-

mitted to creating new organizations because existing organizations may be adequate, and, should they prove to be inadequate or ineffective, new organizations can be considered at a later time. This approach should not be construed as being inappropriate, but as a strategic, short-term, and perhaps a politically expeditious decision to facilitate implementation of a vital service. After determining the need to create new owners and operators and identifying existing owners and operators who are willing and able to offer service, a set of ownership and operation options can be formulated and subsequently assessed by means of the evaluation matrices.

Evaluation Matrices

The primary purpose of the matrices is to evaluate the options identified by means of the flow chart. This evaluation

will present a clearer picture of the cost and noncost considerations of each option, and thus allow for the selection of the best option or options in an objective and systematic manner.

The two evaluation matrices are shown in Figures 7 and 8. In each matrix, the options formulated with the use of the flow chart are listed on the left side; the column heads refer to the factors to be considered in assessing these options. (These factors may be changed to suit the needs of a particular locality; i.e., columns may be added to or deleted from the matrices.) The matrix in Figure 7 contains cost-related factors, whereas the matrix in Figure 8 contains noncost factors. These factors were derived from the material presented in the section in this chapter on the evaluation of options and in Chapter 2, particularly the review of the general advantages and disadvantages of various options.

Major cost-related factors in Figure 7 include the annual wages for major employees in each option and the approximate fuel price, including taxes. Such information provides an indication of the relative differences in wages and fuel costs among the options. Other factors to be considered in examining the relative differences in the costs of each option are the existence of subsidy, profit, taxes, management fees,

maintenance, and capital costs. If transit services exist and ownership and operation options are being considered to replace an existing option, there may be a need, as discussed previously, to pay displacement allowances. The least expensive option may be ultimately determined only after competitive bids are submitted by prospective private operators (assuming that there are such operators in the options under consideration). By using cost information from Figure 7, cost estimates for publicly owned and/or operated options can be estimated by a local public official, perhaps with the assistance of a consultant or private management company. These costs can then be compared to those options that employ private operators.

Figure 8 offers an organized way in which to review the noncost factors or strengths and weaknesses of the possible options. As suggested earlier, the relative importance of these factors is associated with the perceptions and attitudes of local public officials toward the role, importance, and need for transit in their own towns and the surrounding areas. Qualitative scales or ordinal measures could be used to take into account both the relative importance and magnitude of each noncost factor.

CHAPTER FOUR

CONCLUSIONS AND RECOMMENDATIONS

This report has presented a review of the most common ownership and operation options that have been used to provide public transportation services in rural and small urban areas. Twelve organizational entities are identified as being involved in the provision of transit service, either alone or cooperatively with another entity. Some of these entities are public agencies and others are private organizations. Whether one entity assumes the total responsibility of offering service or it is a collaborative effort between the public and private sectors and among multiple jurisdictions depends largely on the needs of the area, the commitment and legal authority of the jurisdictions involved, the availability of public funds, and the willingness and capability of existing owners and operators to supply the necessary services.

A framework (including a flow chart and evaluation matrices) to assist in the formulation and assessment of possible ownership and operation options has been described. The flow chart, in a stepwise fashion, aids in the identification of a set of reasonable ownership and operation options, given transit needs and the availability of funds, owners, and

operators. The matrices aid in the evaluation of the various cost and noncost factors of the options under consideration.

It should be emphasized that many of the on-going publicly financed transit services in small urban and rural areas have not been in operation as long as their counterparts in major metropolitan areas. Because some of these rural transit services (particularly many of those funded through Section 18 of the UMT Act) have only been in existence for 2 years or so and because no comprehensive uniform data base has been readily available, no effort has been made to determine the effect an ownership and operation option has on costs and other aspects of system performance.

Consequently, it is recommended that a systematic study be conducted to examine the relationship of the implemented ownership and operation option to overall system efficiency and effectiveness in small urban and rural areas. Such research should take full advantage of the work carried out by the University of California Institute of Transportation studies on the organization, structure, and performance of transit agencies (35), and the UMT Act Section 15 data base.

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APPENDIX A

TRANSIT SYSTEM CONTACTS

A list of persons employed with the local transit systems cited in this synthesis report is presented below. These persons can be contacted if more information pertaining to the selection or experience of an ownership/operator option is desired.

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APPENDIX B

HYPOTHETICAL CASE STUDY TO DEMONSTRATE FRAMEWORK

A hypothetical case study is presented below to demonstrate the use of the framework recommended to formulate and evaluate ownership and operation options. In this example, information is provided regarding the needs, the funding sources available, the existing owners and operators, state enabling legislation, and the cost and noncost factors. This information is used to show how a set of possible options can be formulated with the assistance of the flow chart. The matrices are used to compare and contrast these options with respect to cost and noncost factors and to identify the best option or options, which then would be subjected to more detailed analysis.

BACKGROUND

The town of Hatchville (population: 19,000) is located in rural Elsworth County. Hatchville serves as the county seat and is one of nine small urban areas in the county.

Based on the results of a preliminary transit study, the local elected officials in Hatchville have decided that available federal, state and local monies should be secured to meet the public transit needs of the town. These needs include providing mobility to those town residents who do not own a car or have a driver's license, or who for some other reason have only limited access to private transportation for work and/or nonwork trips within Hatchville.

From the study it was determined that the most effective and efficient way to meet these needs would be with conven-

tional fixed-route, fixed-schedule bus service, given the town's highway network configuration, the location of non-residential trip generators, residential densities, the spatial and temporal characteristics of current travel patterns within the town, and other factors. It was decided that both peak and off-peak service would be offered along two or perhaps three routes, requiring three to six medium to large diesel vehicles (including spares), depending on the headways, schedules, route length, etc. No such service is presently in operation. The public monies to be used to defray capital, administrative and operating costs of the proposed service would be: (a) Section 18 funds; (b) state funds; and (c) local funds. (Eligible recipients of state funds must be public organizations/agencies, which may contract with private organizations to own and/or operate service.)

The inventory of existing owners and operators reveals that a private bus operator, Company A, is based in the community, and currently operates school bus and charter services. In the past, Company A also provided fixed-route, fixed-schedule service within the town. In addition, a private taxi company operates several taxicabs on an exclusive ride basis, and a local Council on Aging operates two vans to transport elderly residents to nutrition sites during the mid-day. Company A is willing to assume ownership and operation responsibilities and offer the service under a public contract with its own drivers, vehicles, and maintenance facilities, but is also willing to operate the service with its own drivers and publicly owned vehicles and other equipment. Neither the taxi company nor the Council on Aging is

interested in providing service. Finally, it should be noted that private management companies are also available to manage and/or operate service under a contractual agreement.

Currently, the city is opposed to assuming ownership and/or operation of such a service unless the cost of this option is significantly lower than other options and would like to implement service as soon as possible.

Finally, state enabling legislation allows the cities and towns in the state to create local and regional transit authorities. At this time, however, no other town is interested in supporting such a service within its jurisdiction or between its jurisdiction and Hatchville, and the county is strongly opposed to subsidizing such a service with county funds.

DETERMINING POSSIBLE OPTIONS

Given the views of public officials in the towns and the county as well as information on local transit needs, and available owners, operators, funds, and state legislation, the flow chart can be completed as shown in Figure B-1. As emphasized in the report, this flow chart aids local officials in the identification of possible options in a stepwise and structured manner. Those local officials who are experienced and knowledgeable in transit planning and development may not find it necessary to follow such a flow chart; however, local personnel who have little or no experience in the transit area should find it useful. By using the flow chart as shown in Figure B-1, eight possible options can be identified:

- a. Town owned and operated,
- b. Town owned and Company A operated,
- c. Town owned and private management company operated,
- d. Company A owned and operated under contract with town,
- e. LTA owned and operated,
- f. LTA owned and Company A operated,
- g. LTA owned and private management company operated, and
- h. Company A owned and operated under contract with LTA.

COST FACTORS

The next step is to obtain information regarding the cost and noncost factors related to the various options. This information is summarized as follows:

1. If the service is owned and operated by the town (option a), all personnel (including supervisors, drivers, mechanics, and dispatchers) will be civil service employees and will earn the following wages: system management—\$9 per hour (\$18,720/year); drivers, mechanics, dispatchers—\$6 per hour (\$12,480/year). Also it is required that civil service employees receive benefits totaling 26 percent of wages.
2. If the service is LTA owned and operated or operated by Company A, or operated by a private management company (options b–h), the wages will be as follows: system management—\$9 per hour (\$18,720/year); drivers, mechanics, dispatchers—\$5 per hour (\$10,400/year). These

employees will receive benefits totaling 16 percent of all wages.

3. Under private ownership (options d and h), fuel would be purchased at approximately \$1.30 per gallon, whereas under town or LTA ownership (options a–c, e–g), fuel would cost \$1.18 per gal, because public ownership entities are exempt from state sales taxes. Taxes on tires and parts will also be paid by private owners in options d and h.

4. Each of the six options that involve town or LTA ownership (a–c, e–g) requires a local public capital outlay, which would be 10 percent of the total capital costs; Section 18 and state funds support the other 90 percent.

5. The town and LTA owned and operated options (a and e) do not include a profit or management fee.

6. All options involving Company A (b, d, f, h) would include a profit, but no management fee.

7. The options involving a private management company (c and g) would not include a profit but would include a management fee.

8. Because the desired service currently does not exist, no personnel currently employed will likely be adversely affected. Consequently, there will be no displacement allowances involved in any option.

Some of this information is used to complete the cost matrix as shown in Figure B-2. If the dollar costs for capital outlay, profit, management fee, and taxes, etc., and the vehicle hours and vehicle miles are known, the relative differences in start-up costs and annual operating costs among the various options can be calculated. The necessary cost-related information for options b–d, f–h could be obtained through the solicitation of competitive bids.

NONCOST FACTORS

The noncost factors can be evaluated with the aid of the work sheets presented in Figures B-3–B-5. These work sheets were prepared for use by local officials.

The work sheet shown in Figure B-3 presents a method by which local officials can identify the relative importance of the various noncost factors. The work sheets shown in Figures B-4 and B-5 can be used by local officials in determining relative differences in noncost factors among the various options. The results from these work sheets can be transferred to the noncost matrix as shown in Figure B-6. In the upper half of each cell in the matrix is a number representing the score from work sheets Nos. 2 and 3. This score is multiplied by the corresponding level of "importance" from worksheet No. 1, which has been entered on the first line of the matrix, and the product is entered in the lower half of the cell. The products are summed for each option to give a "total" on the far right side of the matrix.

It should be emphasized that the use of these work sheets and the noncost matrix requires that the user (i.e., the local official) be familiar with the characteristics, advantages, and disadvantages associated with the various options as discussed in the body of this synthesis report. In addition, it should be recognized that the results shown on the noncost matrix represent, in part, the philosophies, perspectives, and biases of the local official toward the role of local governments in the provision of public transit.

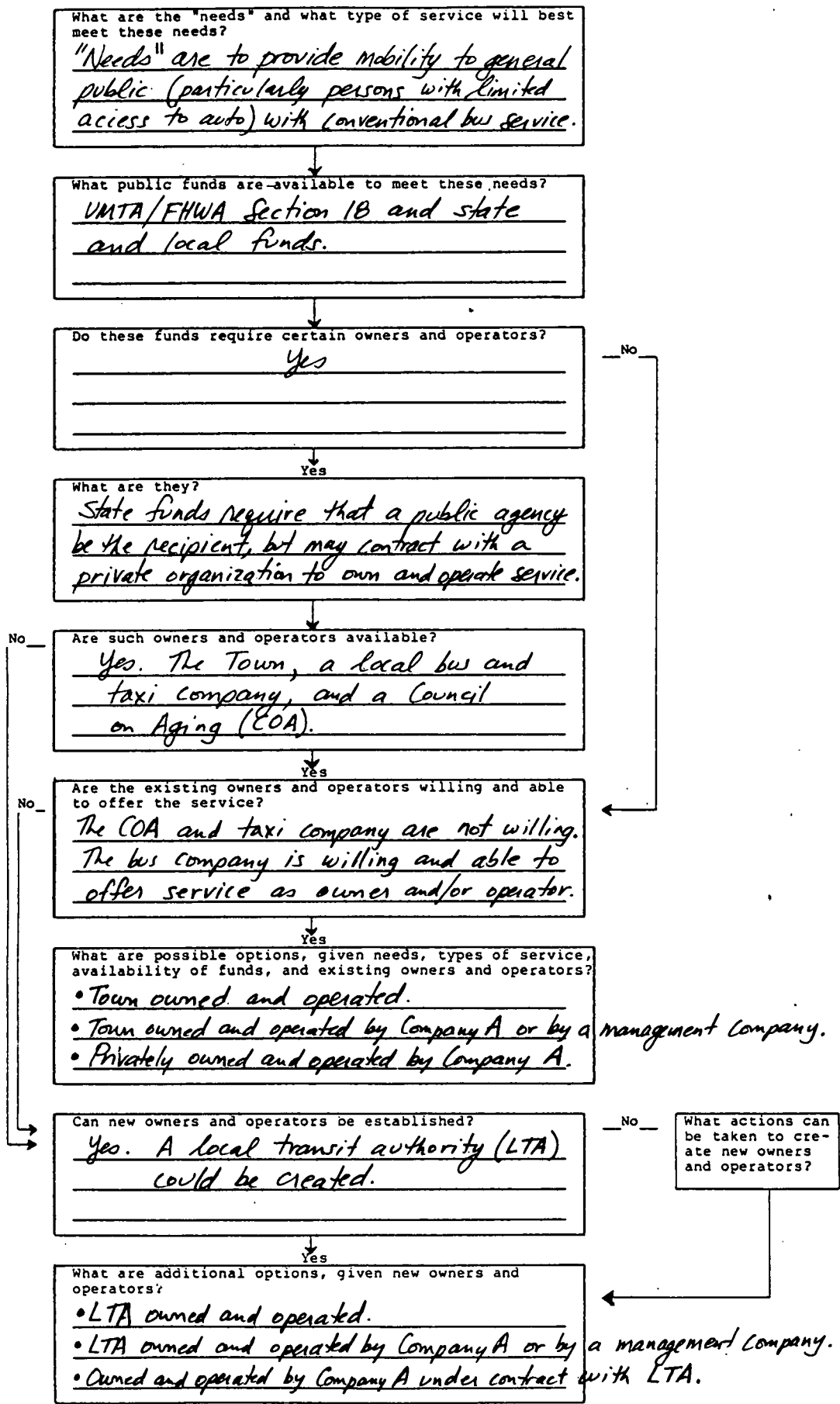


FIGURE B-1 Completed flow chart to assist in the formulation of ownership and operation options.

Option	Annual Operating Costs								
	Annual Salaries and Wages						Approx. fuel price incl. tax (\$/gal)	Maint. and repair costs	Purchase-of-service contract (subsidy)
	System mgmt.	Drivers	Mechanics	Dispatchers	Others	Benefits (% of wages)			
a) Town own & op.	\$18,700	\$12,500	\$12,500	\$12,500	-	26	1.18	No	
b) Town own Co. A op.	"	10,400	10,400	10,400	-	16	1.18	No	
c) Town own PMC op.	"	"	"	"	-	16	1.18	No	
d) A own & op. Contract w/Town	"	"	"	"	-	16	1.30	Yes	
e) LTA own & op.	"	"	"	"	-	16	1.18	No	
f) LTA own Co. A op.	"	"	"	"	-	16	1.18	No	
g) LTA own PMC op.	"	"	"	"	-	16	1.18	No	
h) A own & op. Contract w/LTA	"	"	"	"	-	16	1.30	Yes	

Option	Annual Operating Costs					Annualized Start-up Costs				Total Annual Costs
	Vehicle license, insurance, etc.	Profit	Mgmt. fee	Taxes ^a	Total Annual Operating Costs	Public capital outlay required ^b		Training	Displacement allowance ^c	
						Local	Total			
a		No	No	No		Yes		Yes	No	
b		Yes	No	No		Yes		No	No	
c		No	Yes	No		Yes		Yes	No	
d		Yes	No	Yes		No		No	No	
e		No	No	No		Yes		Yes	No	
f		Yes	No	No		Yes		No	No	
g		No	Yes	No		Yes		Yes	No	
h		Yes	No	Yes		No		No	No	

^aIncludes taxes on parts, tires, real and personal property, new equipment, etc.

^bThere may be additional capital costs beyond start-up period.

^cRelevant only where existing services are in place and where existing employees may be affected.

FIGURE B-2 Completed matrix of cost factors.

How important is it to:

not slightly moderately extremely
important important important important

	0	1	2	3
1. Facilitate coordination among towns?		X		
2. Provide local governments with control of routes, rates, schedules, and other transit policy matters?			X	
3. Permit local governments to make service changes quickly?			X	
4. Provide an entity with the ability to tax for transit purposes . . .				X
5. . . . and to borrow at low interest rates?				X
6. Combine transit functions with other on-going governmental functions?		X		
7. Combine passenger transit with package delivery?		X		
8. Separate day to day operations from local political interference?				X
9. Eliminate the need for local governments to train drivers and other personnel?				X
10. Eliminate the need to hire drivers and other personnel?				X
11. Eliminate the need to include transit employees in local civil service system?				X
12. Eliminate the need to deal directly with transit labor unions?				X
13. Eliminate the need to create new entities?				X
14. Implement service as soon as possible?				X

FIGURE B-3 Work sheet No. 1.

To what extent does each option:

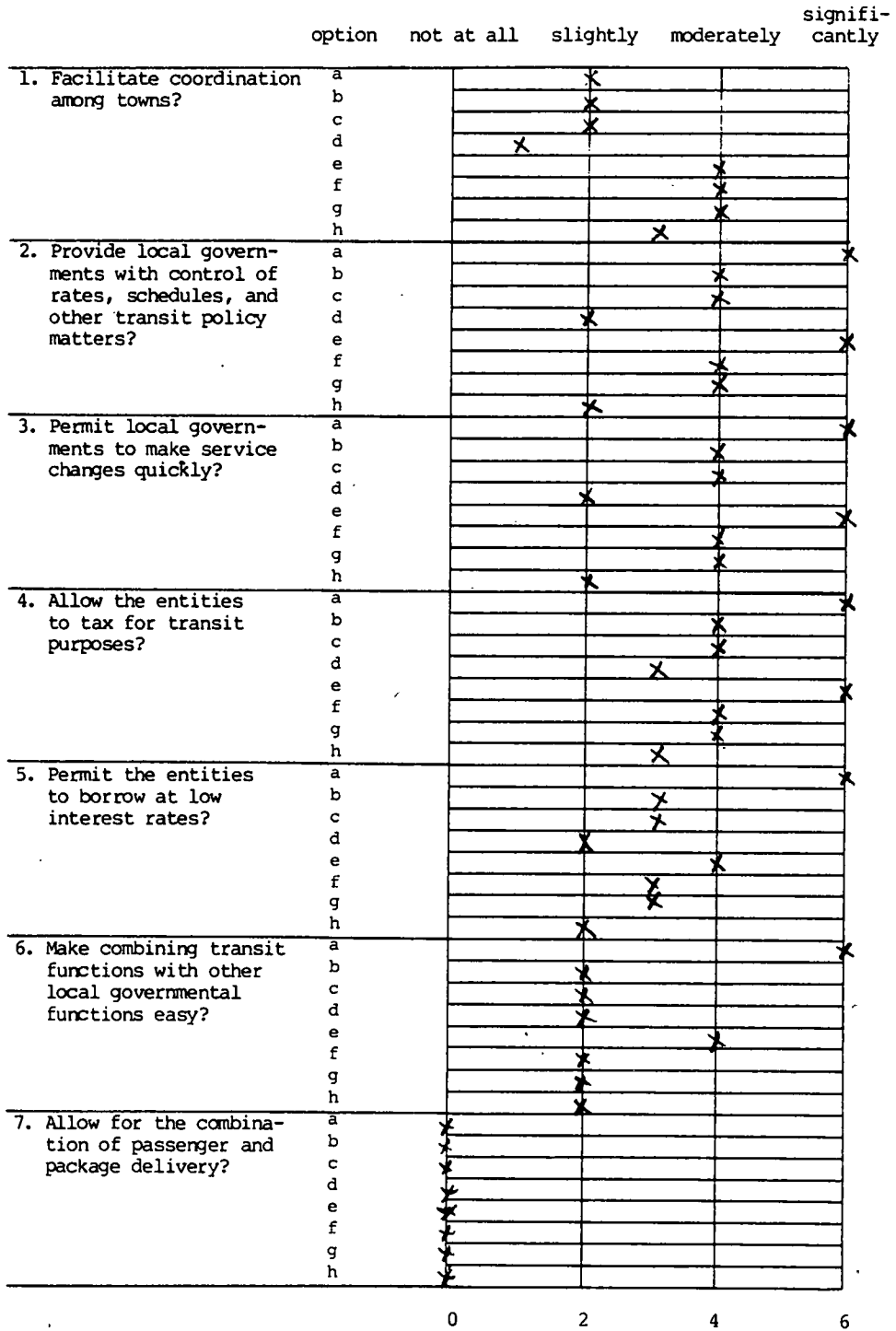


FIGURE B-4 Work sheet No. 2.

To what extent in each option will:

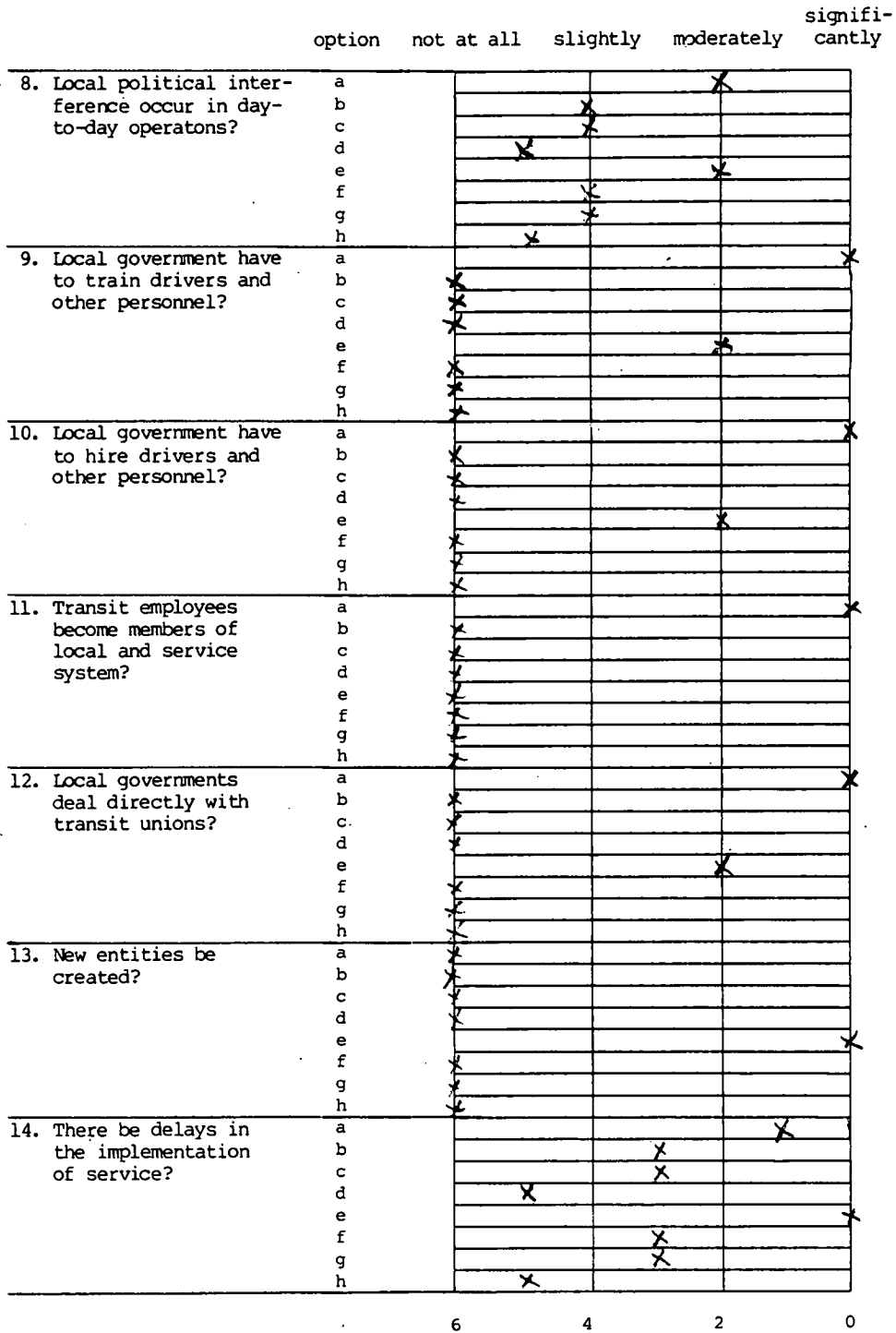


FIGURE B-5 Work sheet No. 3.

	(1) Potential for Coordination	(2) Degree of Public Control	(3) Ease of Making Service Changes	(4) Ability to Tax	(5) Ability to Borrow	(6) Potential for Combining with Other Govern- mental Functions	(7) Ease of Combining with Existing Package Delivery
Importance	1	2	2	3	3	1	1
Option a	2 2	6 12	6 12	6 18	6 18	6 6	0 0
b	2 2	4 8	4 8	4 12	3 9	2 2	0 0
c	2 2	4 8	4 8	4 12	3 9	2 2	0 0
d	1 1	2 4	2 4	3 9	2 6	2 2	0 0
e	4 4	6 12	6 12	6 18	4 12	4 4	0 0
f	4 4	4 8	4 8	4 12	3 9	2 2	0 0
g	4 4	4 8	4 8	4 12	3 9	2 2	0 0
h	3 3	2 4	2 4	3 9	2 6	2 2	0 0

	(8) Potential for Political Interference	(9) Training Needs	(10) Need to Hire Employees	(11) Need for Civil Service Employees	(12) Need to Deal with Labor Unions	(13) Need to Create New Entities	(14) Delays in Implementation
Importance	3	3	3	3	3	3	3
Option a	2 6	0 0	0 0	0 0	0 0	6 18	1 3 95
b	4 12	6 18	6 18	6 18	6 18	6 18	3 9 152
c	4 12	6 18	6 18	6 18	6 18	6 18	3 9 152
d	5 15	6 18	6 18	6 18	6 18	6 18	5 15 146
e	2 6	2 6	2 6	6 18	2 6	0 0	1 3 107
f	4 12	6 18	6 18	6 18	6 18	6 18	3 9 154
g	4 12	6 18	6 18	6 18	6 18	6 18	3 9 154
h	5 15	6 18	6 18	6 18	6 18	6 18	5 15 148

FIGURE B-6 Completed matrix of noncost factors.

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

TRANSPORTATION RESEARCH BOARD

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