

1. Report No. TX-94/1974-1	2. Government Accession No.	3. Recipient's Catalog No.	
4. Title and Subtitle IMPROVING TRANSIT COORDINATION IN TEXAS		5. Report Date November 1994 Revised: March 1995	
7. Author(s) Patricia A. Turner and Katherine F. Turnbull		6. Performing Organization Code	
9. Performing Organization Name and Address Texas Transportation Institute The Texas A&M University System College Station, Texas 77843-3135		8. Performing Organization Report No. Research Report 1974-1	
12. Sponsoring Agency Name and Address Texas Department of Transportation Research and Technology Transfer Office P. O. Box 5080 Austin, Texas 78763-5080		10. Work Unit No. (TRAIS)	
15. Supplementary Notes Research performed in cooperation with the Texas Department of Transportation and the Federal Transit Administration. Research Study Title: Improving Transit Coordination and Communication in Texas		11. Contract or Grant No. Study No. 7-1974	
16. Abstract <p>This study was undertaken to examine strategies that have been used or considered to improve coordination between transit providers on a national basis and identify possible strategies that may be implemented by transit providers in Texas. This report reviews federal initiatives supporting transit coordination and provides national examples of state and local coordination efforts. Issues that may limit or restrict coordination are also included along with suggestions to address these concerns. Several potential coordination strategies and implementation approaches are identified from the literature review. Finally, the report contains guidelines for analyzing various coordination strategies and implementation approaches and establishing a performance monitoring program to evaluate implemented strategies.</p>		13. Type of Report and Period Covered Interim September 1992 - August 1994	
17. Key Words Transit Coordination, Human Services Transportation Coordination, Public Transportation Coordination, Specialized Transportation Coordination, Integrated Transit,		14. Sponsoring Agency Code	
19. Security Classif.(of this report) Unclassified		18. Distribution Statement No restrictions. This document is available to the public through NTIS: National Technical Information Service 5285 Port Royal Road Springfield, Virginia 22161	
19. Security Classif.(of this report) Unclassified	20. Security Classif.(of this page) Unclassified	21. No. of Pages 224	22. Price



Improving Transit Coordination in Texas

Patricia A. Turner
Assistant Research Scientist
Texas Transportation Institute

Katherine F. Turnbull
Research Scientist
Texas Transportation Institute

Research Report 1974 - 1
Research Study No. 7-1974
Research Study Title: *Improving Transit Coordination and
Communication in Texas*

Sponsored By



Texas Department of Transportation

In Cooperation With
Federal Transit Administration,
United States Department of Transportation

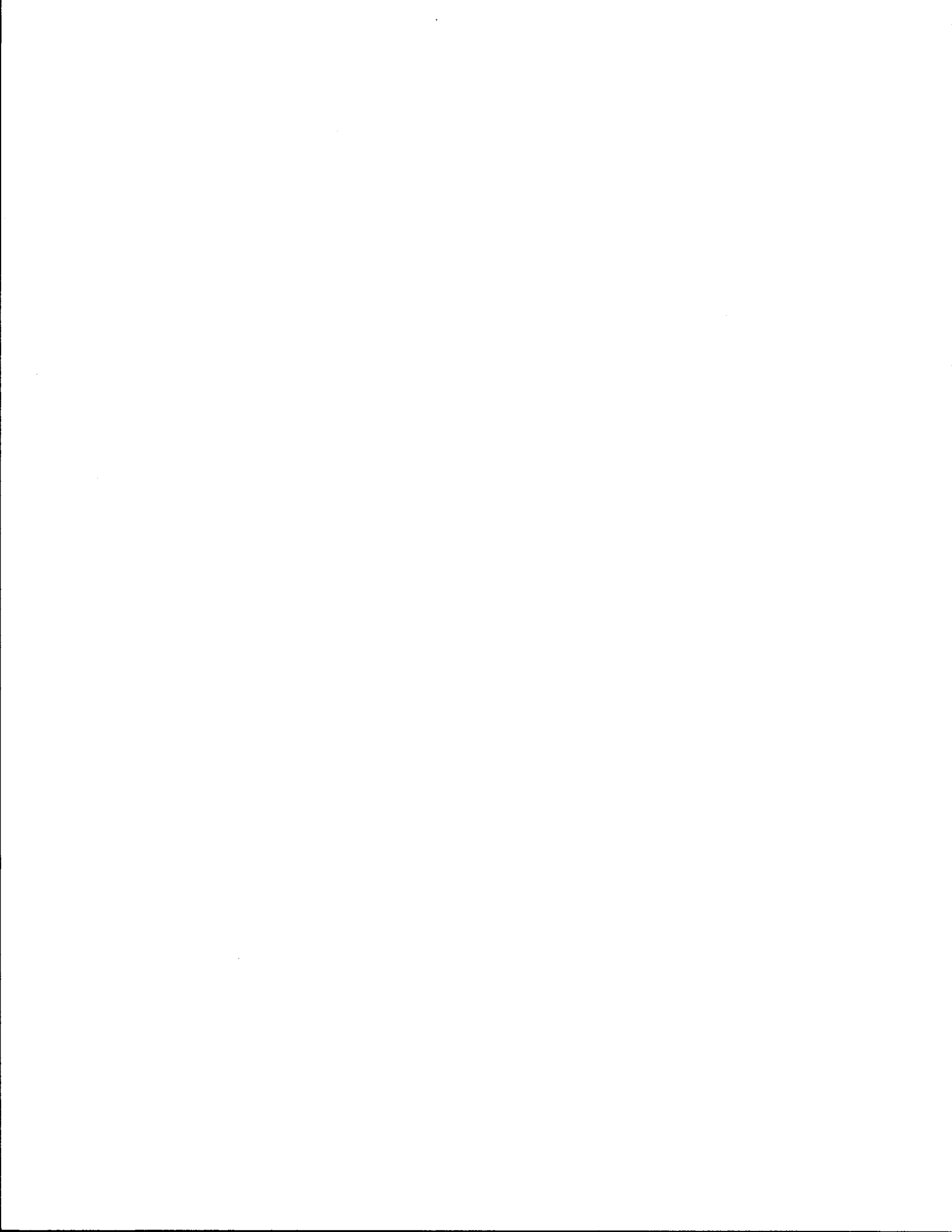


TEXAS TRANSPORTATION INSTITUTE

**The Texas A&M University System
College Station, Texas 77843-3135**

November 1994

Revised: March 1995



IMPLEMENTATION STATEMENT

Transit systems in Texas and throughout the country are continuing to explore approaches to improve the efficiency and effectiveness of their services. Concerns over funding availability have made these efforts even more important in recent years. Coordination among different service providers is one approach that can be used to enhance service efficiency and effectiveness and to enhance service availability to different ridership groups. This study examines strategies that have been used or considered to improve coordination between rural and urban transit providers on a national basis and identifies possible coordination strategies that may be implemented by transit providers in Texas. Further, it provides guidelines for groups interested in exploring different coordination techniques in more detail.

The results of this research project should be of benefit to TxDOT, transit systems, service providers, human services agencies, local governments, communities, and users of public transit. Moreover, rural and human services transit providers should find this report particularly valuable since revised application procedures for the Section 16 grant program now place greater emphasis on coordination as a condition of grant funding.



DISCLAIMER

The contents of this report reflect the views of the authors who are responsible for the opinions, findings, and conclusions presented herein. The contents do not necessarily reflect the official views or policies of the Federal Transit Administration or the Texas Department of Transportation. This report does not constitute a standard, specification, or regulation, and is not intended for construction, bidding, or permit purposes.

ACKNOWLEDGMENT

The authors would like to recognize the following individuals for assistance during the preparation of this report. They provided information essential for the completion of this report;

Andy Anderson, *West Texas Opportunities, Inc.*, Odessa
Ann Bacon, *Goodwill Industries, Inc.*, Lubbock
Sarah Chamberland, *Texas Department of Transportation*, Bryan District
Richard Christie, *Texas Department of Transportation*, Public Transportation Division
Karen Dunlap, *Texas Department of Transportation*, Public Transportation Division
Ven Hammonds, *Texoma Area Paratransit System, Inc.*, Sherman
Tina Janek, *Office of Client Transportation Services*, Office of the Governor
Joseph Jones, *Collin County Area Rural Transportation*, McKinney
Martha Mayes, *Greater Houston Area Chapter, American Red Cross*, Houston
Jeff Pulvis, *Tarrant County Chapter, American Red Cross*, Ft. Worth
Norma Sessom, *Collin County Area Rural Transportation*, McKinney
Elaine Shellenberger, *Nutrition & Services For Seniors*, Beaumont
Bill Strawn, *Texas Department of Transportation*, Public Transportation Division
Gayle Todd, *Brazos Systems*, Bryan
Carole Warlick, *Hill County Transit*, San Saba
Arlene Youngblood, *Texas Department of Transportation*, Public Transportation Division
TxDOT District Public Transportation Coordinators

The following Texas Transportation Institute staff assisted in compiling and preparing this report;

Xavier Cervantes, *Graduate Research Assistant*
Nell Lindquist, *Assistant Research Scientist*
Pat Beck, *Assistant Research Specialist*

The assistance of these individuals is both acknowledged and appreciated.

TABLE OF CONTENTS

List of Figures	XI
List of Tables	XIII
List of Case Studies	XIV
Summary.....	XV
I. Introduction	1
Study Objectives.....	1
Research Approach.....	2
Background.....	2
Report Organization	4
II. Federal Coordination Initiatives.....	5
Growth in Public Transportation Needs.....	6
Federal Response to Specialized Transportation Needs	7
Growing Concerns About Coordination	9
Federal Response to Coordination Concerns	10
Summary.....	15
III. State Level Coordination Programs	17
Components of State Coordination Programs	17
Examples of State and Local Coordination.....	21
Innovative Strategies to Promote Coordination	27
State Coordination Resources and Activities	29
State Level Coordination in Texas.....	31
Summary.....	41

TABLE OF CONTENTS (CON'T)

IV. Coordination: Goals, Benefits, and Barriers.....	43
Coordination: What Is It?	43
Levels of Coordination	44
Coordination Goals	49
Benefits of Coordination.....	49
Barriers to Coordination.....	54
Texas Coordination Issues	62
Summary	64
V. Transit Coordination Strategies and Implementation Approaches	65
Service Delivery Coordination Approaches	65
Selected Coordination Implementation Approaches	82
Summary	98
VI. Planning, Selecting, and Evaluating Coordination Strategies and Implementation Approaches	99
Coordination Planning Process.....	99
Evaluation of Coordination Strategies	112
Selecting Coordination Implementation Approaches	126
Establishing An Ongoing Monitoring and Evaluation Program	130
Summary	137
VII. Conclusions	139
References	147
Literature Reviewed	151
Appendix A Federal Funding Resources	159
Appendix B State Coordination Contracts and Coordination Activities.....	171
Appendix C Transportation Surveys	179
Appendix D Inventories and Expenses	195

LIST OF FIGURES

Figure 1	Florida's Coordinated Transportation Disadvantaged System.....	27
Figure 2	Coordination Partners Identified By Section 16 Applicants - Texas.....	36
Figure 3	Three Levels of Coordination.....	45
Figure 4	Service Expansion Through Coordination.....	52
Figure 5	Relationship of Coordination Approaches to Transit Functions.....	67
Figure 6	Degree to Which Timesharing/Ridesharing Accomplishes Coordination Goals.....	71
Figure 7	Degree to Which Information and Referral Accomplishes Coordination Goals.....	75
Figure 8	Degree to Which User-Side Subsidy Accomplishes Coordination Goals.....	80
Figure 9	Degree to Which Lead Agency Accomplishes Coordination Goals.....	84
Figure 10	Degree to Which Pure Brokerage Accomplishes Coordination Goals.....	91
Figure 11	Degree to Which Partial Brokerage Accomplishes Coordination Goals.....	93
Figure 12	Coordination Planning Process.....	100
Figure 13	Checklist for Determining Interest and Feasibility of Coordination.....	101
Figure 14	Potential Participants in Coordination Activities.....	103
Figure 15	Sample Letter to Solicit Coordination Interest and Participation.....	104
Figure 16	Service Comparison of Transportation Resources and Needs.....	113
Figure 17	Vehicle Routes Before and After Ridesharing.....	119
Figure 18	Checklist for Choosing Between Lead Agency Options.....	127
Figure 19	Checklist for Choosing Between Brokerage Options.....	129
Figure 20	Checklist to Choose Among Administrative Agency Options.....	130

LIST OF FIGURES (CON'T)

Figure 21	Monitoring and Evaluation Program.....	133
Figure D-1	Inventory of Vehicles and Passengers' Location.....	197
Figure D-2	Vehicle Inventory Form	198
Figure D-3	Chart of Accounts: Transportation Expenses.....	199

LIST OF TABLES

Table 1	Early Federal Transportation Related Acts	6
Table 2	State Legislation Relating to Coordination of Transportation Resources	19
Table 3	Coordination Efforts Among Section 18 Providers - Texas	37
Table 4	Potential Benefits of Coordinated Transit Systems	51
Table 5	Comparison of Cost and Efficiency of Sample Transportation Services: Before and After Coordination	53
Table 6	Barriers to Coordination and Ways to Overcome Them.....	56
Table 7	Selected Coordination Strategies and Implementation Techniques.....	66
Table 8	Listing of Common Operating Parameters.....	111
Table 9	Data Requirements for Evaluating Coordination Strategies	114
Table 10	Common Transit Performance Indicators	135
Table 11	Suggestions To Improve Transit Coordination in Texas.....	140
Table A-1	Federal Transit Administration Programs.....	163
Table A-2	Department of Health and Human Services Programs.....	164
Table A-3	Other Agencies' Programs	167
Table B-1	State Coordination Contacts and Current Coordination Activities	173

LIST OF CASE STUDIES

Case Study 1	Houston, Texas	39
Case Study 2	Ft. Worth, Texas.....	40
Case Study 3	McKinney, Texas	47
Case Study 4	Sherman, Texas	48
Case Study 5	Dial-A-Bat Paratransit Service.....	59
Case Study 6	Operations Clearinghouse.....	69
Case Study 7	Centralized Dispatch Service	70
Case Study 8	Timesharing.....	72
Case Study 9	Coordinated Maintenance Programs.....	74
Case Study 10	Information and Referral Program	76
Case Study 11	Pooling Insurance Premiums.....	77
Case Study 12	Purchase of Service Contracts	81
Case Study 13	Contract Services	82
Case Study 14	Existing Lead Agency	85
Case Study 15	Pure Transportation Lead Agency.....	87
Case Study 16	Pure Brokerage	89
Case Study 17	Partial Brokerage.....	92
Case Study 18	Administrative Agency With Lead Agency.....	95
Case Study 19	Administrative Agency With Broker	97

SUMMARY

The objectives of this project were to examine coordination strategies utilized by transit providers across the nation and in Texas, to identify which strategies may be appropriate for TxDOT and transit providers in Texas to pursue, to identify issues and barriers commonly associated with implementing these strategies, and to examine methods to overcome these barriers. Another objective was to identify various approaches available to implement selected coordination strategies. The study also includes guidelines that can assist transit providers with selecting, evaluating, implementing, and monitoring various coordination strategies.

Transportation providers in Texas and throughout the country continue to explore opportunities to improve the efficiency and effectiveness of their services. Coordination is one approach that can help achieve this goal and may even result in increased cost effectiveness, expanded services, higher ridership levels, and improved program efficiency. A number of coordination strategies may be appropriate for further consideration in Texas. These include approaches designed to coordinate vehicle operations, maintenance, and administrative functions. Implementation approaches illustrate how various strategies may be incorporated into a coordination program. Those highlighted in this report include lead agency, brokerage, and administrative agency.

The four-step coordination planning process outlined in this report should help interested groups evaluate and select potential strategies to coordinate vehicle operations, maintenance, and administrative functions. The process involves determining the feasibility of a coordination effort, assessing the level of local interest, identifying service deficiencies and needs, and analyzing the potential for coordination. Strategies might include establishing ridesharing and timesharing arrangements, coordinating purchasing, combining training programs, and setting up an information and referral system.

Several checklists are provided to assist interested groups in making key decisions when selecting various implementation approaches. These checklists help decisionmakers choose between a pure transportation lead agency or an existing human services lead agency, a pure or partial brokerage, and an administrative agency model with a lead agency or with a brokerage.

This report also includes guidelines for developing an ongoing monitoring and evaluation program which should be useful to transit providers and other groups. A monitoring and evaluation program helps to ensure that anticipated benefits of coordination are actually realized and is essential to the success of the coordination effort. Also, this type of program allows the coordinated system's performance to be continuously monitored and evaluated so that necessary adjustments are made as needed.

Finally, the study identifies several activities that TxDOT, other state agencies, transit providers, and communities could undertake to help promote and foster coordination efforts. Activities that TxDOT and other state agencies could pursue include providing start-up funding for coordination, sponsoring demonstration projects, enhancing policy guidelines, promoting standardization, supporting education and training programs, enhancing communication, and supporting shared use of facilities. Transit providers and local communities could actively coordinate maintenance and training programs, establish information and referral programs, and support coordination efforts between different transit systems and industry sectors.

I. INTRODUCTION

Transit agencies and operators throughout the country, including those in Texas, continue to examine ways to improve the efficiency and effectiveness of all types of transit services. Enhancing coordination between rural, urban, and intercity transit operators is one method actively being pursued in many areas. Utilizing the coordinated resources of different transit providers may result in a more responsive and reliable transportation system. Further, those who participate in coordinated systems may realize benefits related to increased cost effectiveness, expanded services, higher ridership levels, and improved program efficiency.

STUDY OBJECTIVES

The need to examine the opportunities for and the issues associated with enhanced coordination among different transit providers in Texas was identified in the *Texas Transit Research Agenda*. Although transit coordination has been discussed on a national level for many years, less focus has been placed on examining possible applications within the state. This study was conducted to provide a better understanding of the various coordination strategies and implementation approaches that may be appropriate for TxDOT, transit agencies, service providers, human services agency providers, local governments, and other groups in Texas to pursue. Specifically, the study identifies issues commonly associated with various coordination strategies and examines methods to overcome those concerns. Further, the study presents several coordination strategies that transit providers in Texas may utilize and discusses various techniques to implement selected coordination strategies. The study also outlines the coordination planning process and describes how to evaluate potential coordination strategies. Finally, the study includes a set of guidelines for analyzing various coordination strategies and implementation approaches and establishing an ongoing monitoring program to evaluate selected coordination strategies.

RESEARCH APPROACH

In order to accomplish the objectives of the study, a number of activities were conducted. First, a state-of-the-art literature review was completed to identify strategies and techniques that have been used or considered to improve coordination between rural and urban transit services on a national basis and within the state. Potential coordination strategies most appropriate for use in Texas were examined in greater detail to determine their benefits and their applicability for use. Real and perceived political, institutional, legal, and economic issues that may limit or restrict the use of coordination techniques were also reviewed along with strategies to address these concerns. Techniques most suitable for enhancing coordination between transit service operators in Texas were then identified. Finally, guidelines for evaluating potential coordination strategies, selecting potential coordination implementation approaches, and monitoring the results of coordination activities were developed to provide practical guidance for TxDOT, transit providers, human services agencies, local governments, and other groups interested in coordination.

The results of this research project should be of benefit to TxDOT, transit agencies, service providers, communities, and users of public transit. Further, rural and human services transportation providers should find this report particularly valuable. Revised application procedures for the Section 16 grant program now place greater emphasis on coordination as a condition of grant funding. Beginning in 1995, all Section 16 grant recipients in Texas must demonstrate coordination efforts.

BACKGROUND

Coordination among conventional transit services has long been a concern in the United States. For example, competition existed among many of the early street railway systems. Overlapping services existed in some areas until municipalities started to regulate operators through exclusive franchise agreements. This did not eliminate the need for coordination, however. Urban areas often contained multiple franchises, with each having the right to serve a certain area or a specific route (1).

Coordination has also been a concern for human services agencies. Historically, transportation operations for human services agencies developed

outside of the conventional transit industry and were often not considered in local and regional transportation plans. Thus, coordination of the services provided by different agencies, as well as with local transit systems, has been an issue in many areas.

Since the early 1960s, many communities across the nation have had, in effect, two distinct and separate transit systems: public transit and human services agency transportation. Both systems are publicly supported and both have similar objectives – to provide for the efficient movement of people. In some cases, the systems operated with little coordination, increasing the potential for service gaps and overlaps, fragmentation, wasted resources, inefficient operations, and duplication of administrative costs (2,3). Public concern over these issues prompted federal, state, and local governments, as well as transit systems and human services agencies, to examine ways to improve the efficiency and effectiveness of existing transportation services. In addition, the increase in rural transit services and the decline in intercity services in many areas compounded the need to examine techniques to improve coordination between urban, rural, and intercity services.

The concept of using coordination as a means to improve efficiency and to expand community transportation services gained wide support in the early 1970s and was heavily promoted by federal and state funding agencies, transportation planners, and academics. Studies at that time indicated that inefficiencies existed with the system and that all groups could benefit from enhanced coordination. Generally, the major reasons identified for coordinating transportation services were to eliminate overlap and duplication of service, fill gaps in service, save resources through greater economies of scale, and improve and expand services (4).

Support for intergovernmental coordination and cooperation continues to be prevalent in the 1990s. Federal government management reform efforts have brought about a renewed interest in improving governmental efficiency and effectiveness. States and localities are examining ways to provide improved services without increasing funding levels. Competition for scarce resources has become tougher. Many funding agencies require that recipients provide productivity measures, performance results, and documented evidence of cooperation and coordination. For some government entities, sharing the costs of equipment, services, and programs is more than a matter of friendly cooperation – it is a means of survival.

Recent transportation legislation illustrates the commitment by the Federal government to enhance interagency coordination and cooperation. The passage of the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 re-emphasized the importance of coordination among all agencies and groups involved in the transportation planning process. For example, metropolitan planning organizations (MPOs), state departments of transportation (DOTs), and local transit operators must explore the collaborative development of multimodal transportation planning strategies and the coordinated programming of transit and highway projects to take full advantage of federal and existing financial resources (5).

REPORT ORGANIZATION

This report contains seven chapters. Following the introduction, Chapter II presents a brief overview of federal coordination initiatives. Chapter III provides a synopsis of state programs to improve transit coordination and includes examples of state coordination models. Coordination goals and the potential benefits of coordinated transit systems are discussed in Chapter IV. A summary of both real and perceived issues which may limit or restrict the use of coordination techniques is also presented in this chapter. Chapter V discusses selected coordination strategies that have been used to improve transit service delivery between different types of transit operators and service providers. Some of these strategies may be appropriate for further consideration and use in Texas. This chapter also includes selected implementation approaches. Chapter VI outlines the coordination planning process and describes how to evaluate potential coordination strategies. The chapter also includes a set of guidelines for analyzing various coordination strategies and implementation approaches and establishing an ongoing monitoring and evaluation program for selected coordination strategies. Chapter VII contains a summary of the major topics covered in this study.

2. FEDERAL COORDINATION INITIATIVES

In recent years, the Nation's transportation providers have faced increased operating expenses during a time when available funds have been limited. Although funding currently appears to be relatively stable, the demands being placed on transit operators continue to increase. The requirements of the Americans with Disabilities Act (ADA) of 1990, the aging of the population, the increasing suburbanization of housing and jobs, and other factors all place additional demands on transit and human services agencies. Transportation providers are faced not only with maintaining existing services but also with initiating new and expanded services. Consequently, state and local governments have actively sought a variety of innovative, non-traditional methods to expand services, improve operating efficiencies, and address unmet service demands.

Coordination of resources is one method that has gained recognition and support in the transit industry as a means to improve the efficiency and effectiveness of service delivery. This support has resulted in the passage of federal and state legislation encouraging cooperation and coordination among transit providers.

Coordination efforts at the federal level have been well documented. The federal government sponsored several transit coordination demonstration programs in the late 1970s and early 1980s. Some examples include the Urban Mass Transportation Administration (UMTA – now the Federal Transit Administration) Service and Methods Demonstration Projects, the Office of Human Development Services Transportation Initiative, and the Federal Highway Administration Rural Highway Public Transportation Program (6). Several case studies, as well as workshops and conferences have also been funded by the federal government during this time period.

In addition, early federal legislation addressing the provision of rural and specialized transit services also contained language encouraging the coordination of these services. Specific examples include Section 147 of the Federal Highway Act and Sections 18 and 16 of the Federal Transit Act of 1964.

Table 1 summarizes the early federal statutes and regulations governing federal programs that provide transportation.

TABLE 1. EARLY FEDERAL TRANSPORTATION RELATED ACTS

Legislation	Section	Purpose
Federal Aid Highway Act of 1973, as amended	147 165(b)	Rural Highway Public Transportation Demonstration Program Bus and Other Project Standards
Federal Transportation Act of 1964, as amended	3 16 16(b)2 18	Discretionary Grant or Loan Program Capital Grant Program Planning and Design of Mass Transportation Facilities to Meet Special Needs of the Elderly & Persons with Disabilities Capital Grant Program Formula Grant Program for Areas Other Than Urbanized Areas
Older Americans Act of 1965, as amended	Title III	State and Community Programs on Aging & Nutrition Sites for the Elderly
Rehabilitation Act of 1973, as amended	Title I	Vocational Rehabilitation
Developmental Disabilities Services & Facilities Construction Act of 1970, as amended		Formula Grant Program
Social Security Act	Title XIX Title XX	Medicaid Social Services For Individuals
Community Services Act of 1974, as amended	Title II Title V	Community Action Program Head Start

Note: For a detailed description of federal statutes and regulations governing federal programs that include transportation as a service, please refer to Appendix D, Cutler, D.A., and Sue Knapp, "Coordinating Transportation Services for the Elderly and Handicapped."

Source: Dooley, Francis. *Public Transportation For Rural and Small Urban Areas: A Report on Coordination in 12 Selected Section 18 Projects*. Washington, D.C.: Federal Highway Administration, 1982, p. 137.

Today, federal legislation encourages or requires coordination among transit systems through regulations, demonstration grants, and preferential funding of coordinated systems. Federal funding sources have become the backbone of most community transportation programs. (See Appendix A for a list of federal funding resources for transportation.) However, this was not always the case. This chapter provides an historical overview of how federal support for rural and public transportation and coordination has evolved over the past two decades.

GROWTH IN PUBLIC TRANSPORTATION NEEDS

The growing use of the automobile, coupled with financial constraints in many of America's rural and small cities during the 1960s and early 1970s, led to a decline in transit revenues and public transportation services. At the same

time, the greatest expansion of government-sponsored social service programs gave rise to a large new urban population, eligible for services, but with no means to get to them. As a result, more of America's poor, elderly, and disabled citizens became increasingly isolated and immobile (Z).

Many of the new social service programs required some form of specialized transportation service. Often, recipients of these services needed demand responsive rather than the traditional fixed-route transportation service. Thus, rural and specialized public transportation became the sole means to access health and human services for many. Transportation to agency services was often haphazard, however. For instance, some individuals could be transported to, but not picked up from appointments. Others were not served at all.

The realization of the need for low-cost public transportation in rural areas led to the enactment of Section 147 of the 1973 Federal-Aid Highway Act. This Act included a three year demonstration program that provided the first federal funds for rural public transportation. Early support for coordination of specialized transportation was reflected in one of the goals of the Act which was to enhance coordination by increasing productivity, reducing duplication of services, and improving economies of scale among agency transportation providers (Z).

FEDERAL RESPONSE TO SPECIALIZED TRANSPORTATION NEEDS

Early legislation specifically addressed the transportation needs and rights of elderly citizens and persons with disabilities. Section 165(b) of the Federal Aid Highway Act of 1973 required that funded projects be planned, designed, constructed, and operated to allow effective utilization by the elderly and disabled persons. Section 504 of the Rehabilitation Act of 1973 prohibited discrimination and secured the rights of these citizens to participate and benefit from federally funded programs.

In 1975, Section 16 of the Federal Transit Act of 1964 established a national policy that the elderly and persons with disabilities have the same rights as other individuals to utilize public transportation facilities and services. The Act mandated that all publicly supported transit systems be accessible to this group of citizens. Congress established the Section 16(b)(2) Capital Assistance Program in response to the special transportation needs of the elderly and persons with disabilities. Section 16 provided grant funds to private nonprofit

organizations to assist with the provision of transportation services for elderly and disabled persons where existing transportation was unavailable, insufficient, or inappropriate. Program funds could be used to purchase vehicles, wheelchair lifts, and related support equipment.

Critics voiced concerns that the Section 16 program failed to encourage grant recipients to coordinate. Guidelines lacked measures to prevent fragmentation and service overlap (1). In addition, regulations restricted vehicle usage to programs for the elderly and persons with disabilities. In response, new guidelines, established a year later, allowed program vehicles to be used by other human services agencies or the general public providing that transportation for the elderly and persons with disabilities was the first priority.

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) included a number of significant changes to the Section 16 program allowing states and local providers greater flexibility in deciding how best to serve the transportation needs of the elderly and persons with disabilities. For instance, public bodies certifying that no nonprofit agencies are available in an area to provide the service can apply for Section 16 funds. States can also designate certain public agencies such as a county agency on aging or a public transit provider to coordinate human service activities in a particular area. These public agencies may also apply for Section 16 funds.

Eligible capital expenses were also expanded under ISTEA. Funds may be used for the acquisition of transportation services under contract, lease, or other arrangement. Both capital and operating costs associated with contracted service are eligible expenses. Additionally, vehicles purchased with Section 16 funds may be leased to public bodies. Another change allows Section 16 funds to be transferred to Sections 9 or 18 during the last 90 days of their availability to the state.

By providing more options for serving the needs of the elderly and persons with disabilities, the Section 16 program seeks to foster enhanced coordination and cooperation at the state and local levels. Grant recipients are strongly encouraged to coordinate Section 16 projects with other transit services. In some states, recipients are required to coordinate. Within urbanized areas, states must include Section 16 projects in the State Transportation Improvement Program (STIP). In non-urbanized areas, states are encouraged to coordinate these transit services (8). Finally, another provision intended to encourage

coordination allows states to consolidate Sections 16, 18, and 9 funding requests.

GROWING CONCERNS ABOUT COORDINATION

Concern over the lack of coordination of transportation services in rural areas was first voiced to the Senate Committee on Public Works in 1975. Witnesses pointed to several federal laws and regulations that inhibited transportation coordination at the local level. In response, the Committee directed the U.S. General Accounting Office (GAO) to identify all federal programs oriented toward the transportation of people to determine if any federal restrictions existed, and to recommend ways to eliminate restrictions that hinder coordination of transportation programs (9).

The results of this study, which were documented in a 1977 GAO report, outlined several impediments faced by participants in federal programs as they attempted to coordinate transportation services. Although the study did not find any express statutory or regulatory provisions specifically prohibiting the coordination of transportation services among federal programs, it did find that conflicting program regulations inhibited coordination. In addition, the study identified 114 separate government programs that provided transportation services as a support component (9).

Also in 1977, the Office of Human Development Services (OHDS) funded a two year transportation demonstration program to determine the feasibility of coordinating or consolidating existing transit services at the local level (10). At the time, coordination was being looked at as the major way to eliminate duplication and provide high quality services. Thus, the program's goal was to show that coordination enhanced both the quality and quantity of human services transportation.

The results of the demonstration program were mixed, however. The program experiences indicated that coordination did not necessarily lead to more efficient or effective transportation operations. Participants found that coordination required more time and effort than had been initially imagined. Further, the program showed that participants confronted more problems than anticipated, took longer to resolve them, and achieved less than expected (10). In spite of these results, coordination continued to be considered a viable means to improve the efficiency and effectiveness of transportation service delivery.

FEDERAL RESPONSE TO COORDINATION CONCERNS

To address conflicting program regulations identified by the GAO report, Congress passed Section 313 of the Surface Transportation Assistance Act of 1978 which added Section 18 to the Federal Transit Act of 1964. Section 18 marked the coming of age for rural public transportation. For the first time, capital and operating assistance was available to transportation providers in non-urbanized areas. Through the Section 18 matching grant program, the federal government provides 80 percent of the capital cost of purchasing transportation equipment, 80 percent of the administrative and overhead costs, and 50 percent of the net operating cost.

The legislative history of Section 18 contains a clear mandate for coordination. Program guidelines require that Section 18 applicants include a description of efforts made to coordinate with public and private transportation providers, with particular emphasis on human services agencies. The goals of the Section 18 program are to:

- enhance access of people in non-urbanized areas to health care, shopping, education, employment, public services, and recreation;
- assist in the maintenance, development, improvement, and use of public transportation systems in rural and small urban areas;
- facilitate the coordination of programs and services funded by other federal programs; and
- provide for the participation of private transportation providers (11).

Section 18 represented the first indication that the U.S. Department of Transportation (DOT) considered state governments responsible for addressing human services clients in its service delivery (12). States were encouraged to devise and implement administrative controls to “insure maximum feasible” coordination among local transportation providers. The legislation significantly impacted the role of state government in transportation coordination for two reasons:

- it placed the public transit recipient in the lead role with specific responsibilities for coordination implementation at the local service provision level; and

- it made coordination of existing resources a prerequisite for the receipt of additional transportation resources (12).

Creating or amending transportation-related legislation is one method the federal government used to address coordination among the various federal transit programs. The 1980s brought additional attempts to coordinate human services transportation systems with other rural and urban transportation providers. Different federal departments established joint councils, formed working agreements, held conferences, and adopted policies encouraging better coordination on transportation issues. In addition, demonstration grants were made available to evaluate whether coordination efforts required by federal legislation were being met. Improving the efficiency and effectiveness of transportation services for elderly persons and persons with disabilities remained a major focus throughout the 1980s.

In June 1983, the Administration on Aging (AoA) and UMTA agreed to work together to provide a structure and process to address issues concerning transportation for the elderly and persons with disabilities. The following year, the first AoA and UMTA *National Conference on Transportation for the Elderly and Handicapped* was held to identify and resolve key issues regarding transportation problems for these groups. One key issue identified was the need for greater coordination of funding sources at the state and local levels. Conferees suggested a Congressional mandate to coordinate all federal transportation funds. Employing the concept of "public transportation delivery networks" was also viewed as a means to coordinate and manage diverse opportunities at the local level. By treating transit as a generic service, it was thought that more coordination could be achieved among the public, semi-public, and private transportation providers (13).

In 1985, agency heads, state officials, and transit operators requested that Congress intervene to address concerns related to fragmentation, duplication, and waste caused by uncoordinated transit systems. Multiple social service programs, diverse client populations, different administrative practices, and the involvement of numerous federal, state, and local agencies all hindered coordination efforts. Throughout the hearings, witnesses cited instances where coordination had improved the cost effectiveness of human services transportation and called for the federal government to facilitate coordination among transportation service providers (14).

The hearings resulted in the commitment of two agencies, the Department of Health and Human Services (DHHS) and the Department of Transportation (DOT), to seek better federal coordination on transportation issues. In October 1986, the departments signed an *Interagency Agreement for the Coordination of Transportation Services* that acknowledged the need for a "systematic and coordinated effort to insure that federal requirements and policies promoted the most cost efficient and effective use of federal funds" (15).

The focus of the agreement was clear and to the point:

It is the policy of the Department of Health and Human Services and the Department of Transportation to coordinate related programs at the federal level wherever possible, and to promote maximum feasible coordination at the state and local levels (14).

Both departments pledged to work together to encourage state and local governments to participate in the management of program coordination; adopt administrative practices encouraging coordination; share technical resources and information with transportation providers; encourage efficiency in service delivery; and use federal, state, and local resources more cost-effectively (15).

Coordination among federal government agencies continued throughout the 1980s. In early 1990, the AoA and the FTA renewed efforts to improve coordination of transportation services for the elderly. The departments agreed to work together to improve access to nutrition, health care, and support services for older citizens. AoA and FTA also pledged to engage in collaborative activities to improve coordination of specialized human services transportation programs by linking with other organizations that administer programs affecting transportation for the elderly (16).

Recent changes in the federal legislative environment present significant challenges and opportunities to the transportation community. For instance, the 1990 Americans with Disabilities Act (ADA) mandates new requirements regarding service to the disabled community. The 1990 Clean Air Act Amendments requires the transportation community to address air quality needs and to meet established goals. The Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 places new emphasis on transit and provides new funding opportunities.

1990 American With Disabilities Act (ADA)

The ADA legislation was enacted to address discrimination against individuals with disabilities in such critical areas as employment, housing, transportation, and access to public services. Full implementation of the legislative requirements will have a substantial fiscal impact upon the transit industry. For example, the ADA requires that all local public fixed-route services have wheelchair lifts installed on newly purchased and rehabilitated vehicles. In addition, public entities providing fixed-route service must also offer comparable paratransit services to disabled persons who can not use the fixed-route service. Further, the construction of new facilities or the alteration of existing facilities must be accessible and usable by disabled persons, including those who use wheelchairs.

The regulations pertaining to paratransit services will have major implications for transit systems in Texas. Systems must conform to the new requirements relating to service areas, hours and days of operation, and eligibility requirements (17). The financial burden placed upon transit systems by these requirements may make mutually beneficial coordinated public and human services transportation programs more attractive.

1990 Clean Air Act Amendments

The 1990 Clean Air Act Amendments are the most recent update of the 1970 Clean Air Act that established a national air pollution control program. The 1990 Amendments require that states and local transportation systems meet the Environmental Protection Agency's (EPA) National Ambient Air Quality Standards (NAAQS). These standards set maximum levels for the concentration of certain toxic gases and particles in the air.

The 1990 Amendments affect states, metropolitan areas, and transit systems in several ways. For example, all metropolitan areas and states must update their transportation improvement plans (TIPs) and state implementation plans (SIPs) to identify how they intend to meet the requirements. Programs that increase the use of public transit, bicycles, rail, and travel demand management techniques, as well as improve vehicle inspection and maintenance, must be developed. For metropolitan areas violating EPA ozone and carbon monoxide standards, transportation policies must be realigned to discourage unnecessary automobile use and to encourage the use of high-occupancy vehicles. These non-attainment areas must also develop and implement programs to address air

quality problems and reduce emissions levels to specific requirements of the different non-attainment classifications. For transit systems in urban areas, all new vehicles must meet stringent clean air requirements and existing buses must adhere to EPA developed bus emission standards.

Coordination and cooperation among state and local government agencies, transit systems, private industry, and the public is essential in order to accomplish the objectives of the 1990 Clean Air Act Amendments. States must involve the public, through hearings and opportunities to comment, in the development of the SIP. Transit systems must work with MPOs and other state and local agencies in developing local plans and the SIP. Within non-attainment areas, transit systems can play an integral role in planning and implementing new programs and services to help others meet the requirements of the Act. For example, private employers located in non-attainment areas with more than 100 employees must increase average vehicle occupancy by 25 percent or risk fines. To help employers implement mandatory trip reduction plans, transit systems can add or expand fixed-route services, help establish vanpools, provide ridematching services, assist with guaranteed ride home programs, and provide other services and programs. These requirements affect a number of metropolitan areas in Texas. Houston is in the severe non-attainment category for ozone, while Beaumont and El Paso are in the serious category. Dallas is classified as a moderate non-attainment area. El Paso is the only city in the state not meeting the carbon monoxide standards. It is classified as a moderate non-attainment area for carbon monoxide.

1991 Intermodal Surface Transportation Efficiency Act (ISTEA)

In December 1991, President Bush signed the Intermodal Surface Transportation Efficiency Act (ISTEA) providing authorizations for highways, highway safety, and mass transportation for the next six years. An important objective of the ISTEA was to give state and local governments more flexibility in selecting the most appropriate projects to address identified needs. The Act also established new planning criteria and funding categories for state and local transportation systems.

The ISTEA contains a clear mandate for coordination and cooperation among state and local government agencies involved in the transportation planning process. The metropolitan planning provisions of the Act feature enhanced roles for local governments, MPOs, transit agencies, and states. The

Act provides greater responsibilities for MPOs and states but also provides greater flexibility in the use of program funds.

In addition to the planning process, the project selection process also requires extensive coordination and cooperation among state and local officials. For certain projects, selection is made by the MPO in consultation with the state. For other projects, selection is by the state in cooperation with the MPO. The ISTEA also contains a series of 15 factors that must be considered in the MPO planning process and 20 factors which must be included in the state planning process. Coordination is among these factors.

The increased funding flexibility provided by the ISTEA offers MPOs, state DOTs, and local transit operators more opportunities to implement selected projects and programs. However, the coordinated development of a multimodal transportation planning process will be needed to take full advantage of federal and existing financial resources.

SUMMARY

In conclusion, federal efforts to encourage coordination among transit providers have been well documented over the past two decades. The realization of the need for rural and specialized transportation led to the passage of several acts in the 1970s that provided the first funds for this type of transportation.

Concern over the lack of coordination of transportation services in rural areas was first voiced in the mid 1970s. Congress responded by directing a study to identify and eliminate potential federal restrictions that could hinder the coordination of transportation programs. Other federal agencies sponsored demonstration programs to assess the feasibility of coordinating transit services at the local level. Although the demonstration programs produced mixed results, federal support for coordination continued.

The federal government also addressed coordination issues by creating or amending transportation-related legislation and by enhancing interagency cooperation. Section 18 contained a clear mandate for coordination and encouraged states to adopt programs to promote coordination among local transportation providers. Federal departments created joint councils, formed

working agreements, held conferences, and adopted policies to encourage better coordination on transportation issues.

Recent changes in the federal legislative environment present significant opportunities for state and local coordination. For example, coordination and cooperation among state and local government agencies, transit systems, private industry, and the public is essential in order to accomplish the objectives of the 1990 Clean Air Act Amendments. Financial burdens caused by compliance with the ADA may make mutually beneficial coordinated transit programs more attractive. Finally, the 1991 ISTEA requires that state and local government planning agencies coordinate and cooperate in order to take full advantage of federal and existing financial resources.

3. STATE LEVEL COORDINATION PROGRAMS

State interest in coordinating transit services has steadily increased since the advent of federal funding for urban, rural, and specialized public transportation. As noted previously, federal program guidelines encourage states to actively pursue methods to coordinate transit services at the state, regional, and local levels. The Section 16 program strongly encourages grant recipients to coordinate projects with other transit services and requires states to establish project selection criteria. As a result, many states include cooperative planning and coordination as evaluation criteria in the selection process for Section 16 projects. Further, the Section 18 program requires that states ensure the administrative processes governing federal funds positively address the coordination of transportation resources. Consequently, grant applicants must include descriptive efforts to coordinate with other transportation providers. Finally, provisions of the ISTEA also encourage greater coordination among all levels and types of providers.

Federal mandates have encouraged the development of state coordination programs that differ vastly in their approach, requirements, and degree of complexity. This chapter examines the structure of state coordination programs and includes examples of different approaches. State strategies to encourage and promote greater coordination among Sections 18 and 16 grant recipients are also summarized. The chapter concludes with a discussion of current state coordination activities on a national and a statewide basis.

COMPONENTS OF STATE COORDINATION PROGRAMS

Because most Section 18 and 16 transit patrons use public transportation to receive services provided by other government programs, states have attempted to integrate these services by coordinating state DOT funding policies with state human services agencies. A 1981 survey of state coordination activities found that over half of the states had made "considerable progress" in implementing policies and programs to improve coordination among agencies providing transportation services (18).

The states used a number of different approaches. Eleven states had created interagency coordinating committees through executive order or legislation. Nine others had implemented funding methods to encourage coordinated transit delivery. A 1986 study revealed that the number of states with coordination activities mandated by executive order or legislation had increased to twenty-three (11). At that time, 41 states had some type of coordination mechanism in place to improve the level and availability of transportation services in rural areas, compared to 35 in 1981.

Information concerning state coordination legislation, interagency committees and task forces, state and local level interagency agreements, and state-to-local level technical assistance programs has been compiled and updated many times over the years. Currently, 29 states have some type of legislation or executive order in place encouraging coordination. Table 2 contains a summary of the legislation and executive orders adopted in all 50 states. Some of these approaches may be useful in the development of a statewide coordination plan for Texas.

Most state coordination programs share a similar objective of reducing or eliminating duplicative services. However, the structure of these programs vary considerably in scope and complexity. Generally, a combination of administrative methods as well as organizational strategies, planning activities, funding mechanisms, training and technical assistance, and special programs and projects are used when developing state, regional, and local coordination programs.

State-level coordination programs typically fall into one of three administrative categories: interagency task forces; interagency committees; and mandatory coordination programs (11). Each of these categories is briefly described next, along with examples from different states.

- **Interagency task forces** are informal committees that share information and help to coordinate activities of different groups. Interagency task forces are usually comprised of representatives from the state department of transportation, various human services agencies, transit agencies, MPOs, and local governments. Task forces meet to discuss mutual

TABLE 2. STATE LEGISLATION RELATING TO COORDINATION OF TRANSPORTATION RESOURCES

State	Legislation or Executive Order Relating to Coordination
Alabama	1989 EO 29 established Alabama Interagency Transportation Review Committee.
Alaska	none
Arizona	1980 Arizona Older Americans Act required coordination of services.
Arkansas	1977 Act 192 expanded the role of Arkansas' DOT to include administration of federal DOT programs and mandate coordination among state agencies providing transportation.
California	1979 AB 120 The Social Services Transportation Improvement Act required coordination of all social services transportation and established a task force to monitor its implementation.
Colorado	1983 legislation authorized the Dept. of Highways to conduct transit planning in areas under 200,000 population.
Connecticut	1987-88 Appropriation of \$8 million to develop elderly and persons with disabilities coordination plans.
Delaware	1979 Delaware Transportation Authority Act created Delaware Transit Authority with power to create statewide specialized transit administration under its control.
Florida	1979 Florida Statute Chapter 427 established Coordinating Council for the Transportation Disadvantaged.
Georgia	1981 Senate Bill 457 required coordination of transit services.
Hawaii	none
Idaho	none
Illinois	1984 Resolution 1299 established the Illinois Task Force on Coordination of Public Transportation Service to develop a plan for coordination of transportation service for disabled persons.
Indiana	none
Iowa	Code 1A Chapter 601J gave IDOT power to distribute state transit assistance and federal funding to a single agency in each of 16 sub-state regions and prohibits use of other state, federal, or local funds for any transportation service not coordinated with the regional transit agencies.
Kansas	1994 bill mandates that all Sections 16 and 18 transportation providers belong to coordinated transit district in order to be eligible for federal and state funding.
Kentucky	none
Louisiana	1992 EO created the Interagency Transportation Coordination Committee to make recommendations to maximize the utilization of transportation resources and increase cost efficiency of providing services.
Maine	1979 LD 1556 established administrative framework for coordination allocation of state and federal funds.
Maryland	1986 Transportation Article Section 2 authorized funding for all counties for general purpose transportation for the elderly and persons with disabilities. 1975 Article 77 permits use of school buses to transport elderly.
Massachusetts	none
Michigan	none
Minnesota	1983 Minnesota Human Rights Law amended to include public transportation service criteria for people with disabilities. 1979 Senate Bill 405 established a state policy on coordinating public and private transportation.
Mississippi	none
Missouri	1986 Senate Bill 676 provides for planning and coordination efforts. 1985 Senate Bill 53 created Coordinating Council on Special Transportation.
Montana	1983 Senate Bill 21 established authority for local government to levy up to one mill of property tax to provide transportation for the elderly and persons with disabilities.
Nebraska	LR 136 established the Public Transportation Advisory Committee which advises the Dept. of Roads on legislative matters affecting human services coordination.

TABLE 2. STATE LEGISLATION RELATING TO COORDINATION OF TRANSPORTATION RESOURCES (CON'T)

State	Legislation or Executive Order Relating to Coordination
Nevada	none
New Hampshire	none
New Jersey	1983 Senior Citizens and Disabled Resident Act dedicates 7.5% of Casino Tax revenues for senior and disabled transportation. 75 percent of funds are earmarked for coordinated county systems. 1979 EO No. 70 established a task force to address coordination.
New Mexico	none
New York	1990 Chapter 61 requires NY City to provide coordinated, accessible transportation disadvantaged (TD) service by requiring additional urban areas to do the same. 1986 SB8959 provided rural public transportation coordination assistance program within the NY DOT. 1978 EO No. 75 established an interagency task force.
North Carolina	1988 established elderly and disabled transportation assistance program. 1985 EO No. 9 established the NC Public Transportation Advisory Council and the NC Interagency Transportation Review Committee.
North Dakota	none
Ohio	none
Oklahoma	none
Oregon	none
Pennsylvania	1976 Rural and Intercity Common Carrier Act funds public transportation in rural areas and requires coordination among existing carriers.
Rhode Island	1989 legislation approved funding for a test Paratransit Brokerage System.
South Carolina	1981 Amendment to Interagency Council legislation of 1977 added members to the Council including the Dept. of Mental Retardation, the chairman of the Senate Transportation committee, and the Chairman of the House Education and Public Works Committee. 1977 State law established the SC Interagency Council on Public Transportation to give advice and make recommendations to the SC Dept. of Highways & Public Transportation. 1973 State law authorizing Regional Transportation Authorities based on specified criteria including coordination.
South Dakota	none
Tennessee	none
Texas	1991 House Bill 7 created the Office of Client Transportation Services in the Office of the Governor to develop a statewide coordination plan for human services client transportation providers.
Utah	none
Vermont	1987-88 General Appropriations mandated state coordination study.
Virginia	1986 Senate Bill 29 mandated the development of a plan to provide coordinated transportation services to the disabled.
Washington	none
West Virginia	none
Wisconsin	1981 State law authorized DOT to fund public transportation projects in non-urbanized areas under the FTA section 18 program. 1977 State law authorized DOT to make state capital grants for specialized transit to supplement Section 16 and to provide capital and operating assistance to counties to provide specialized transportation services.
Wyoming	none

Sources: "CTR Resource Guide." *Community Transportation Reporter*, Vol. 12, No. 1, January 1994, pp. 80-82; "CTR Resource Guide." *Community Transportation Reporter*, Vol. 11, No. 1, January 1993, pp. 70-75; and M.J. Greene, *Coordinating Rural Transit: Stretching State Resources For Better Service*. Lexington, KY: Council of State Governments, State Government Research Institute, 1987, pp. 21-31.

transportation concerns relating to service delivery, administration, and funding. For example, in South Dakota, the *Transportation Planning and Coordinating Task Force* identifies problems and solutions to coordinating transportation, recommends policy changes to improve transportation planning, funding, and delivery, and reviews Sections 18 and 16 applications. In Idaho, a task force was used to explore opportunities for coordination by identifying expenditures for transportation outside the state DOT.

- **Interagency committees** are formal groups usually created by state legislation, executive order, or interagency agreements. These committees meet regularly and may have specific responsibilities related to funding programs or special studies. In Colorado, the *Interagency Advisory Committee (IAC)* uses a competitive process to evaluate all Sections 16 and 18 applications. The committee uses various criteria, one of which relates to the "extent of coordination." Other criteria relate to local support, operational efficiency, and need for services which are all closely linked to and largely dependent upon coordination. In Maryland, the *Interagency Committee on Specialized Transportation* is responsible for developing an overall plan for management, administration, and utilization of Section 16 funds and coordinates the activities of state agencies involved in the provision of transit service.
- **Mandatory coordination programs** may be created by state legislation or other policy directives. These programs are usually administered by state departments of transportation and typically involve all state and local agencies providing transit services. Mandatory coordination programs may include authority delegated by the state legislature for the termination of state funding for human services and transportation agencies that do not comply with coordination program guidelines.

EXAMPLES OF STATE AND LOCAL COORDINATION

Several states have taken the lead in adopting legislation to coordinate statewide transit services. For example, Iowa enacted legislation in 1976 establishing 16 regional transit systems as the sole recipients of federal, state, and local transit funds, and restricted expenditures of these funds to transportation services coordinated with the regional systems. In 1979,

California enacted the Social Services Transportation Improvement Act that required the coordination of all social services transportation and created a task force to monitor the Act's implementation. Also in 1979, Florida passed a law mandating coordination among all state and federally funded programs providing or purchasing transit services for the transportation disadvantaged.

States have also focused coordination efforts at the regional and local levels. By 1986, 18 states operated coordination programs at the regional level while five states concentrated efforts at the local level (11). Regional-level coordinating committees may be comprised of delegates from regional transportation agencies and may also include representatives from the state departments of transportation and health and human services. Regional committees operate similar to state-level coordination committees; however, they tend to focus on regional needs.

States that concentrate efforts at the local level generally designate a sole provider or a single agency as responsible for public transportation services in the local area. The sole provider may be empowered by state legislation to require coordination among the local transportation providers in the region.

The literature review revealed that there are many examples of state, regional, and local coordination programs. Some approaches used in other states are reviewed next and may be appropriate for further consideration in Texas. The examples were selected because they illustrate how cooperative relationships among state, regional, and local governments can lead to successful state coordination programs.

State and Local Policy Coordination – North Carolina (19)

North Carolina's program was designed to encourage local coordination. The program consists of a state oversight group which is responsible for reviewing local coordination plans. State and federal grant funds are used to reward local entities that conform to the state plan.

The Governor of North Carolina established a panel consisting of taxicab and intercity bus operators, human services agency directors, public transportation providers, and state and local officials to examine existing transportation policies, programs, and legislation and determine how these helped contribute to meeting the transportation needs in rural areas. The panel recommended the establishment of an integrated state and local approach to

coordination. The policy-based coordination program began in 1978 after an Executive Order was issued calling for the coordination of all state-administered transportation programs.

State level coordination is accomplished through the Interagency Transportation Review Committee (ITRC), a state oversight body. ITRC was created by Executive Order Number 29 in 1978 which was renewed on a regular basis. The Executive Order expired in 1990, however, and was superseded in August 1991 by Executive Order Number 150 which established the North Carolina Human Service Transportation Council.

The basis for the state's coordination program is an on-going local planning process designed to determine the level of coordination most appropriate for local service needs. Under the process, each county is required to have a formally adopted Transportation Development Plan (TDP) which requires some level of local transit coordination. County-level TDP steering committees determine local coordination strategies with the assistance of state-appointed technical representatives who serve on the committees.

While the state does not dictate which coordination strategies should be implemented, it does take a strong advocacy approach in promoting the consolidation of services under the auspices of a single provider. Even in localities that adopt a plan calling for multiple providers, the state expects those localities to establish a process to ensure that duplication of service does not occur. Moreover, the state only recognizes one grant recipient per county for discretionary funding.

Human services agencies are expected to participate in the locally adopted plans. The ITRC ensures compliance by reviewing all requests from local agencies for state or federal funds administered by the state. The committee has the authority to withhold funding from agencies that are not in compliance with local plans.

The state department of transportation uses discretionary funds, primarily Section 16 funds, as incentives for local coordination. Localities that do not adopt a plan are not eligible for Section 16 funds or funding from the state's elderly and disabled transportation program. This incentive, along with the state's strong technical assistance role, has been instrumental in the successful adoption of TDPs across the state. In 1978, only 13 counties had developed plans. Today, all 100 counties in the state have completed transportation plans.

Single Regional Transportation Provider – Iowa (11, 19)

In Iowa, the responsibility for administering federal and state funding for rural transportation is vested with the Iowa Department of Transportation (IDOT). Legislation enacted in 1976 empowered IDOT to distribute state transit assistance and federal funding to a single agency in each of 16 sub-state regions. It further prohibits the use of other federal, state, or local funds for any transportation service not coordinated with the regional transit systems.

Iowa's coordination policy mandates that transit activities receiving state or federal transit funding must be conducted in accordance with locally-adopted transit development plans. This policy is supported by a program of Section 18 funded planning activities which produce annual regional transit development plans for each of the 16 transit regions in the state and the eight small urban areas.

Local officials within each urban area or transportation region must designate a single agency which is responsible for the administration and provision of transit services. Regional systems are also encouraged to combine transit resources to provide a comprehensive passenger transportation program. The program's goal is to increase travel opportunities for both social service clientele and the general public. Although service may be designed around specific client transportation needs, services must be open to all client groups and to the general public at all times.

Transit funding within each region must be consistent with the locally adopted transit development plan. Agencies not designated as the regional transit provider can receive federal and state funding through an agreement with the designated agency. Agreements must provide for the coordination of every agency's transit services with those provided directly by or under other sub-contracts of the transit administrative agency. This policy is supported by state legislation enacted in 1985 which mandates that agencies other than the designated regional transit provider must either operate under contract with the designated provider or prove that their operation is more efficient in order to receive funding for transit services. These agencies must also obtain certification of coordination from IDOT.

The legislation further requires that the state withhold funding from providers not coordinated with the local urban or regional transit provider. The State's Public Transit Division, with input from a State Advisory Committee, is

responsible for determining which agencies are in compliance with the coordination requirements and which should be subject to funding sanctions. The process for determining agency compliance is currently under revision. The creation of an ongoing interagency council to advise IDOT on the compliance determinations for local agencies is being considered. Further, formalizing the sharing of responsibility for coordination decisions by involving all the state agencies that contribute transportation funds, private sector funding sources, and local city and county governments is also being examined.

Iowa's commitment to the regional transit concept has required state and regional personnel to have technical knowledge of transit operations, organization development, and community organization. It has taken time to develop this expertise. In addition, skills for gaining political support for coordination through the commitment of fiscal resources, and intergovernmental cooperation are also needed.

Coordinated Statewide Specialized Transportation System – Florida (11,19,20)

No formal guidance system regarding the development and operation of transportation services for elderly, disabled, and/or rural residents existed until Florida enacted legislation in 1979 mandating the coordination of all state- and federally-funded programs serving the transportation disadvantaged. (TD) Transportation services for the disadvantaged were primarily provided by private, non-profit organizations that had expanded services with available federal, state, and local funding. The Legislature's action to mandate statewide coordination arose from the realization that professional human services providers were not necessarily professional transit providers. Although some providers had grown from small fleets into rural public transit systems, most operated only a few vehicles on a daily basis for a limited number of users.

Chapter 427 of the Florida Statutes created the Coordinating Council for the Transportation Disadvantaged, a state-level policy-setting board responsible for coordinating transportation services for the disabled throughout the state, within the Florida Department of Transportation (FDOT). Membership consists of representatives from various state agencies and consumer groups representing the interests of elderly, disabled, and low income persons. In 1989, the Coordinating Council was elevated to an independent commission, reporting directly to the Governor and the legislature. It was also renamed the

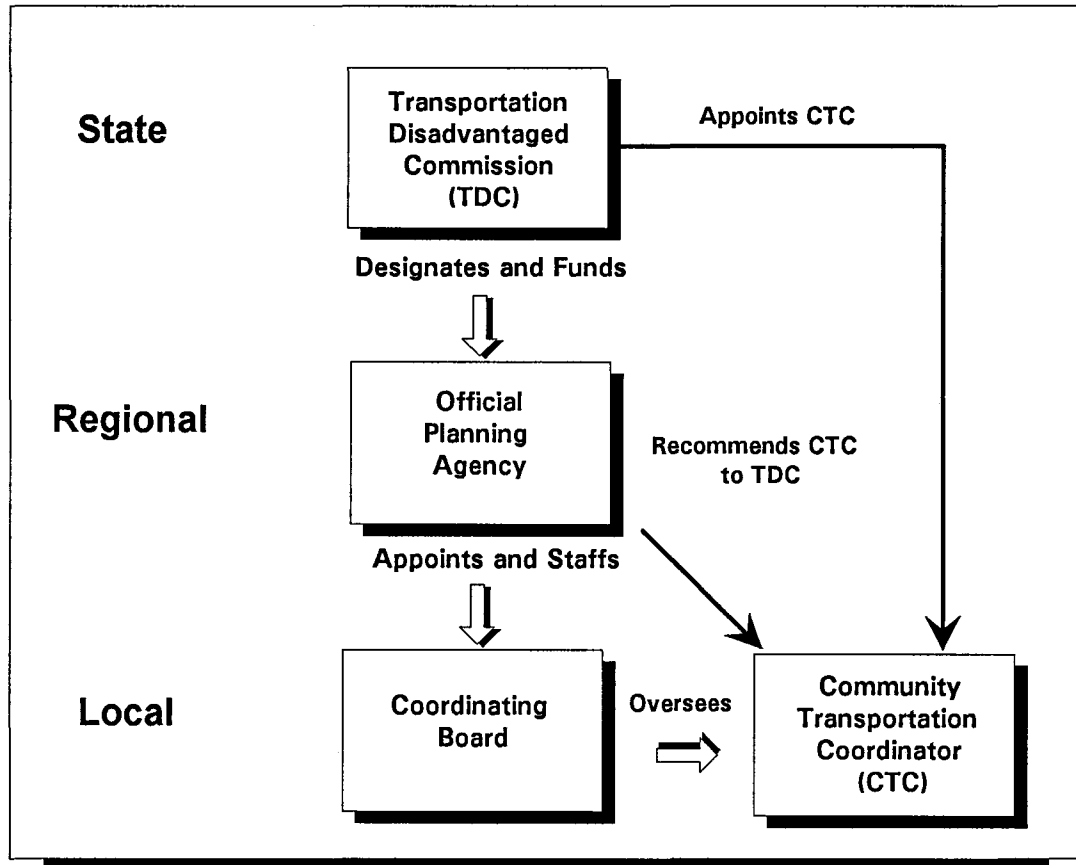
Transportation Disadvantaged Commission (TDC) at this time. In addition, the legislation provided a dedicated source of funding and included mandates that increased the role and responsibilities of the Commission.

An important responsibility of the Commission is to prepare a statewide five-year plan addressing the transportation problems and needs of the transportation disadvantaged. The plan must be fully coordinated with local transit plans. Moreover, the Commission must coordinate all transportation disadvantaged programs with appropriate federal, state, and local agencies, and public transit agencies to ensure compatibility with existing transportation systems.

Coordinating transportation services for the disadvantaged requires extensive interaction among the Commission, government agencies, planning organizations, local coordinators, transit operators, and purchasers of service. Figure 1 highlights the approach utilized by the TDC. The Commission designates and funds an official planning agency in each county that reports annually to the Commission on the sources and amounts of federal, state, and local funds used to provide transportation services within their planning areas. In urban areas, the official planning agency is the metropolitan planning organization (MPO). The planning agency, in turn, appoints and staffs a local coordinating board representing community, human services agency, and public transit interests to oversee the provision of TD transportation services within the county. Planning agencies develop a coordinated transportation improvement program and service plan with the assistance of the local board and select a local community transportation coordinator (CTC) for recommendation to the commission.

The Commission appoints a CTC for each county to be responsible for ensuring that transportation services for the disadvantaged are delivered. By law, community transportation coordinators must coordinate all transportation disadvantaged services. The local coordinator may be an existing transportation operator or an agency that contracts out some or all of the service to other operators. In either case, all agencies and operators receiving public funds for transportation services must contract with the local coordinator for these services. In 1990, there were 48 local coordinators in the state, representing 63 of the state's 67 counties. Of those, 27 provided all of the transportation service

FIGURE 1. FLORIDA'S COORDINATED TRANSPORTATION DISADVANTAGED SYSTEM



in their county, 14 provided some service and contracted with other operators to provide additional service, and seven contracted out all of the service provided in their county.

INNOVATIVE STRATEGIES TO PROMOTE COORDINATION

State coordination efforts often exceed the minimal federal coordination requirements. A review of the various strategies used to encourage and promote coordination through Section 18 and 16 policies and procedures is especially beneficial. A 1988 study concluded that most states include coordination as an evaluation criteria for project selection (8). However, the weighting factor of this criterion in the overall evaluation process, the degree of coordination required, and the ways in which applicants are required to document coordination efforts vary from state to state. Some states place only minor emphasis on coordination, while others require a high level of coordination with specific documentation. In some states, Section 16 policy guidelines permit

only one applicant or recipient per county or jurisdiction. This section discusses the various policies and procedures that states use to require and evaluate coordination as part of the Section 16 grant application process (8).

The degree of coordination required varies among different states. In Virginia, a Section 16 applicant is evaluated by the state according to the level of coordination proposed. For example, an agency that proposes to consolidate transportation services completely with one or more agencies is given 60 points for its coordination efforts. Fewer points are given for lesser levels of coordination: 40 points for a joint purchase of service agreement, 30 points for timesharing, 20 points for joint purchasing of supplies and equipment, joint maintenance of vehicles, or active coordination with an MPO, and 10 points for limited cooperative planning. The lack of any attempt at cooperative planning or other approaches results in no points being awarded.

In Massachusetts, applications are returned if strict guidelines that require coordination are not followed. Applicants in urban areas must apply for funds through the regional transit authority. If an agency with Section 16 vehicles already operates in an area, proposals for new or expanded service in the same area must be pursued through the agency already providing service. Projects that provide regional service are given priority, and there is a general multi-client service requirement. Programs may be client specific during certain periods of the day, but open dial-a-ride services are encouraged during off-hours of the day. Further, vehicles should be made available to other agencies during off-hours.

In Georgia, each county can designate only one nonprofit organization as its transportation provider. Counties are required to develop an integrated transportation system and to submit a "Single Integrated Operating Plan" to the state. In Alabama, local governments establish evaluation criteria and select only one applicant per year for Section 16 funding. Applicants must show documentation of a coordinated plan that addresses all transportation needs of a jurisdiction's elderly and disabled population. In Kentucky, only one agency per area is funded and designated the Section 16 recipient for that location. The designated recipient assumes the responsibility for coordinating any future requests for service in its area.

Arizona gives priority consideration to coordinated applications of two or more agencies, with one agency acting as the lead agency and principal

applicant. In Tennessee, projects that offer transportation to all elderly and persons with disabilities are rated higher than projects that offer services only to agency clients for specific programs. Wisconsin applicants must secure contracts with other agencies and identify hours and days when vehicles will be shared, charges for vehicles, and operating rules in order to receive priority consideration. South Dakota requires written agreements with other agencies and promotes private, nonprofit organizations to contract with a private, for-profit operator for services such as maintenance, repair, garage facilities, and assistance in routing and scheduling.

Some states strongly encourage or require that Section 16 and Section 18 applicants coordinate. States with large rural populations such as Montana, Alabama, and North Dakota have been active in this coordination effort. In Alabama, Section 16 providers must coordinate with Section 18 providers. Further, the state strongly recommends that the same agency handle both programs in each jurisdiction.

STATE COORDINATION RESOURCES AND ACTIVITIES

As noted previously, states currently engage in varying degrees of coordinating activities. Some, such as Florida, have comprehensive coordination laws and well-developed coordination programs. Others are just initiating coordination efforts. Whatever the current status of the coordination program, lessons from both successful and unsuccessful coordination attempts can be valuable resources. For states in the initial stages of establishing a coordination program, a 1989 report provides several elements that should be considered when coordinating public transportation resources. Elements to be included are:

- passage of state laws for the coordination of public transportation;
- identification and evaluation of efficiency enhancing activities;
- identification and evaluation of activities that impact the effectiveness of public transportation;
- identification and assessment of the ability of transportation decision makers to impact transportation coordinating activities;
- identification and assessment of state Health and Human Services (HHS) decision makers' ability to impact transportation coordinating activities;

- collection of laws and executive orders that have resulted in the formation of efficient and effective public transportation systems; and
- application of the above items in the formation of a coordinated system in a previously non-coordinated system (6).

Additional suggestions to improve the success of state coordination programs include:

- involvement of minimal numbers of policymaking bodies in coordination and clear identification of key decision makers;
- make provisions for capital acquisitions and start-up funds readily available for providers that experience cash-flow problems;
- establish a minimum level or standard of training and competencies for drivers;
- ensure availability of affordable insurance (may require direct subsidies for the expressed purpose of purchasing insurance);
- clarify roles and authority of advisory boards and councils or committees;
- require maintenance of performance data to evaluate efficiency and effectiveness of programs;
- mandate annual reports with standardized data requirements; and
- provide more technical assistance in the interpretation of regulations, application process, management training, passenger assistance training, and other training.

One of the most valuable resources for both initial and ongoing coordination programs appears to be access to current information on coordination activities. Further, networking with transportation professionals that oversee state coordination activities can provide additional insight to successful coordination projects. Appendix B contains a list of state coordination contacts along with the state office or department that is responsible for coordination activities. These contacts provide an easy reference for individuals and groups involved in the coordination effort who might be considering a specific coordination activity.

Appendix B also contains Information on the types of coordination activities and projects currently underway in the various states. For example, some states sponsor demonstration projects to evaluate brokerage concepts and other

service coordination options. Other states provide start-up grants for coordinated systems from funding provided by a state income tax check-off, while others use state lottery funds for public and paratransit transportation systems with area service coordinators. Still others provide special tax revenue options for coordinated systems.

STATE LEVEL COORDINATION IN TEXAS

A 1986 survey of state coordination programs found that the major limitation to implementing coordination activities in Texas appeared to be restrictive federal program guidelines (11). However, many of the perceived barriers to coordination were actually created at the state and local levels. The report suggested that legislation mandating such efforts and providing clearer authority for state agencies responsible for coordination activities could enhance state-level coordination.

Although the statewide coordination effort is relatively young in Texas, there are a number of good examples of coordination activities at the local program level. The issues associated with coordination are being addressed at the highest levels of state government. To improve coordination among human services agency transportation providers, the Texas Legislature created the Governor's Office of Client Transportation Services (OCTS) in 1991. The OCTS is responsible for collecting data on health and human services client transportation needs, services, and expenditures, and for developing a statewide coordination plan. Some of the office's goals include (21):

- developing a statewide client transportation network to involve clients, providers, and agencies in developing coordination plans;
- fostering agency collaboration by coordinating planning and contracting for services; developing standardized reporting requirements; and supporting resource sharing and joint problem solving; and
- completing a statewide assessment of transportation needs and creating an information clearinghouse.

Specifically, legislation charges OCTS with collecting information about client transportation needs, services, and expenditures and developing a statewide plan for transportation coordination. OCTS must report findings and recommendations from these efforts to the Health and Human Services (HSSC)

Commission on September 1st of even numbered years. In January 1994, the OCTS was instrumental in the formation of the Agency Transportation Coordination Council (ATCC). The ATCC is comprised of transportation experts from ten state agencies, including TxDOT. The goal of the ATCC is to identify and address state and federal barriers to coordination and to develop proposals to coordinate agency transportation services, programs, and resources (21).

In September 1994, OCTS submitted a report to the HHSC (21). The report describes the current status of client transportation in Texas, outlines the desired condition of client transportation and alternatives to achieving these goals, compares recent initiatives in Texas to nationally accepted standards, and provides specific recommendations for future activities. The report also contains nine recommendations from the ATCC. These recommendations, which are noted below, were reviewed by each state department and more detailed action plans to address them were developed (21):

- Use the OCTS as the statewide clearinghouse for information on transportation conferences and training events.
- Evaluate current transportation monitoring requirements in order to develop simple, uniform monitoring instruments that would meet the needs of all agencies which require monitoring of purchased transportation.
- Investigate and remove the barriers to development of a common agency operational report for programs which purchase transportation services.
- Simplify existing agency transportation rules by using references to the most fundamental and widely applicable rules published.
- Negotiate for waivers or exceptions to federal transportation rules if necessary to improve transportation coordination.
- Develop a forum for a voluntary interagency preliminary review of proposed transportation related rules.
- Identify the components of contracted transportation rates and investigate the possibility of adoption of uniform rate components (not uniform rates) by agencies which contract transportation.
- Monitor and evaluate the TxDOT regionalization of the Section 16 grant program for capital expenditures for elderly and disabled transportation.

- Convene at least four meetings of local transportation stakeholders to share, evaluate, and develop models of regional transportation coordination.

The final section of the report included a Proposed Statewide Action Plan. This plan is intended to provide a flexible map for future progress toward the goal of improved transportation service delivery (21). Public input on the plan will be sought in late 1994 and early 1995. It is anticipated that the plan will be finalized in early 1995. The plan is comprised of the goal to improve the delivery of client transportation services in Texas, five recommended strategies to achieve this goal, and suggested annual actions. The five recommended strategies focus on the following elements (21):

- Develop an efficient transportation service delivery infrastructure which will be responsive to client needs.
- Continue to build on the public transportation system and to develop public-private partnerships to meet all client needs.
- Evaluate strategies for allocation of state-administered client transportation funds to optimize available funding and maximize service delivery.
- Ensure continuous improvement of state planning and management, including vigorous stakeholder participation.
- Ensure local control and flexibility, especially for regional variations.

The OCTS will continue to work with the ATCC, TxDOT, other state agencies, and other groups to implement the Statewide Action Plan and to conduct other activities. These efforts will help foster coordination efforts within the state and will assist with the ongoing sharing of information among the various groups involved with client transportation services.

TxDOT has sponsored and participated in several activities to address transit coordination in Texas. In 1993, TxDOT published the *Texas Rural Public Transportation System Peer-to-Peer Resource Manual* (33). This manual was developed through the coordinated efforts of TxDOT's Division of Public Transportation, the Transit-Operators Advisory Committee, and the Rural Transportation Assistance Program (RTAP) Peer-to-Peer Network Committee. The manual includes general information about each of the Section 18 operators in the state and the areas of expertise of the staff at each system. Specific skills

included in the listing are marketing, public relations, local coordination planning, automation and computerization, maintenance, training, and other areas of expertise.

The manual was developed to provide operators with a resource to obtain help with specific problems. Contacts can be made with others who have encountered and overcome similar issues. Communication may be through telephone conversations, the exchange of written material, or on-site visits and meetings. This manual provides a valuable and useful resource for Section 18 and other operators in the state.

TxDOT also sponsors other activities that enhance ongoing coordination efforts. For example, the Public Transportation Division has sponsored different training sessions for operators over the years. The financial management seminars funded through RTAP provide a recent example of the training efforts offered or coordinated by TxDOT. In addition, annual transit conferences have been held for over 20 years. These have been sponsored and coordinated by TxDOT in conjunction with the Texas Transit Association, operators, and other groups. The conferences, which are held in different communities throughout the state, provide the opportunity for all groups involved with public transit activities in the state to share ideas and exchange information. Special training sessions are often included in the conferences, and coordination activities have been highlighted in many sessions.

TxDOT promotes coordinated planning, funding, and service delivery among Section 16 and Section 18 grant recipients. These transit providers receive federal and state funding through TxDOT. This support has ranged from sponsoring workshops to adopting policies and regulations that encourage or require coordination among transit providers. A 1991 workshop sponsored by TxDOT resulted in the identification of several common coordination issues and concerns among rural public transit providers. Among these concerns were accountability issues, lack of standardization between various state agencies, and lack of communication. The next chapter discusses these issues more extensively. Further, workshop participants suggested that the state create a task force to address these concerns.

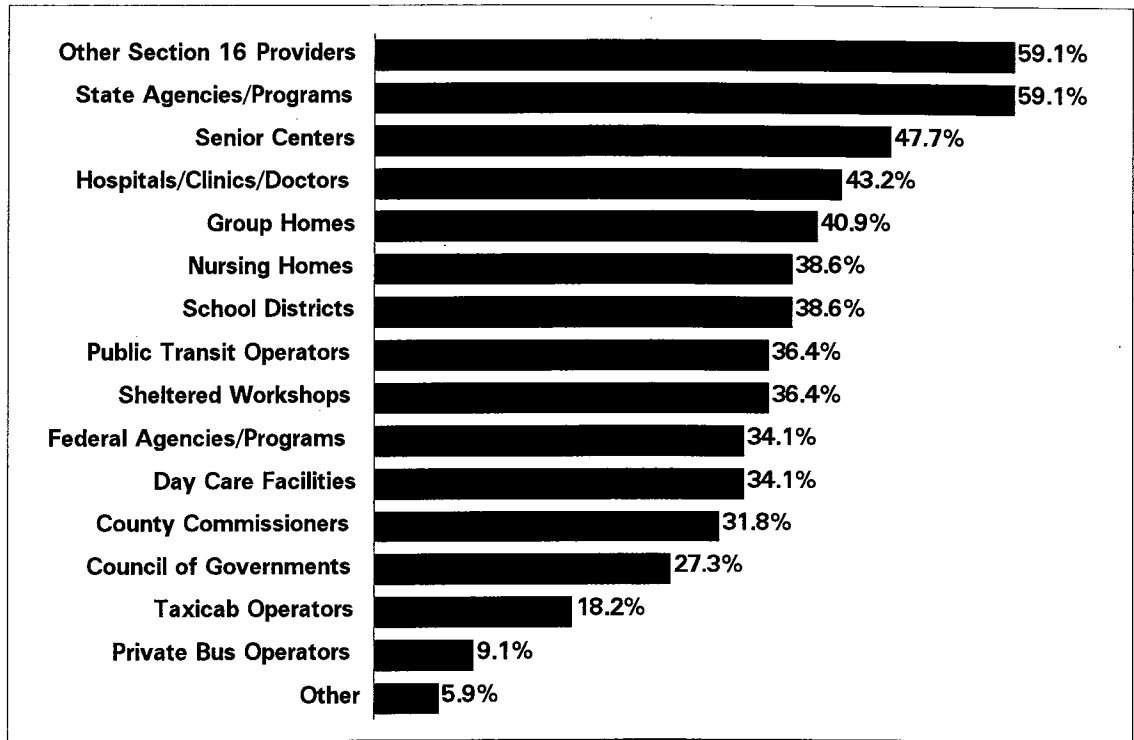
TxDOT also encourages recipients of Section 16 and Section 18 funds to participate in coordinated systems at the local level. Program guidelines require that existing or proposed public transit systems applying for Section 18 funds

demonstrate that acceptable efforts have been made to coordinate with other transit providers and users in a given service area. This includes coordinating with social service agencies that may be able to purchase client transportation service from the Section 18 provider. Table 3 provides examples of local coordination efforts among transit operators in Texas. The information indicates the diversity of coordination efforts among Section 18 operators in the state. Case Studies 1 and 2, at the end of this section, further illustrate the extent of coordination being undertaken by some transportation providers in Texas.

The revised TxDOT application guidelines for the Section 16 program places greater emphasis on coordination as a condition of grant funding. Public and private transit systems applying for Section 16 funds must indicate which entities they intend to coordinate transportation services with and describe the degree of coordination that will occur with each entity. Figure 2 indicates that more than half (59.1 percent) intend to coordinate with other Section 16 providers, as well as state agencies and programs that provide client transportation services. Many providers also intend to focus coordination efforts on senior centers, medical facilities, and group homes. In the future, Section 16 grant recipients must demonstrate coordination efforts in more detail.

Some local governments are employing innovative techniques to coordinate with public and private transit operators. As part of a recent study on the intercity bus industry in Texas (22), TTI researchers surveyed bus company representatives regarding ways in which the State could assist and improve the intercity bus industry. The most frequently cited answer was the development of government-owned multimodal transportation facilities. These facilities would serve two purposes: first, they would streamline the transfer from one mode of transportation to another, and second, they would eliminate the reliance that smaller bus companies have on terminal facilities owned or operated by larger companies.

FIGURE 2. COORDINATION PARTNERS IDENTIFIED BY SECTION 16 APPLICANTS - TEXAS



Notes: Grant applicants were asked to: "Check which of the following entities your agency will coordinate transportation services with in the upcoming year." Percentages reported are based on responses from those applicants selected for 1994 funding. (Totals do not add to 100 percent due to the multiple response nature of the question.) "Other" includes churches, city officials, counties, and other TxDOT districts.

Source: Section 16 Grant Program Application, Texas Department of Transportation, Public Transportation Division, 1994.

One example of a planned government-owned multimodal transportation facility is in Laredo. The City is constructing a \$12 million Intermodal Transit Center, located in the city's central business district. The facility will provide a transfer point for the 18 bus routes operated by El Metro, the municipal transit system. In addition, private intercity bus companies will be allotted an area to handle up to six buses at a time. Thus, travelers arriving in Laredo by an intercity carrier will have easy access to the local transit system. Further, facilities will be provided at the center for the county's rural transportation system, El Aguila. The transit center will also provide a park-and-ride facility for up to 500 vehicles which enables El Metro to implement a reverse commute program to Laredo's rapidly growing city limits and into western Mexico.

TABLE 3. COORDINATION EFFORTS AMONG SECTION 18 PROVIDERS - TEXAS

SECTION 18 OPERATOR	Sponsoring Agency	LOCAL COORDINATION EFFORTS
Alamo Coordinated Transit (ACT) San Antonio	Council of Government	<ul style="list-style-type: none"> • coordinates with county and city government, Transportation committee, and various social, civic, and state agencies.
Bee Community Action Agency Rural Public Transportation System (RPT) Beeville	Public/non-profit community action	<ul style="list-style-type: none"> • coordinates with transportation services through San Patricio Community Action Agency, Rural Economic Assistance League, Inc., and Senior Community Services in Live Oak County.
Brazos Transit System (BTS) Bryan	Public/non-profit community action	<ul style="list-style-type: none"> • works with local organizations to incorporate transit shuttle services for community events.
Capital Area Rural Transportation System (CARTS) Austin	public/brokerage	<ul style="list-style-type: none"> • brokerage system coordinates resources and services of seven different agencies into the CARTS system . Coordinates service with Capital Metro.
Cletran Transportation System Cleburne	municipality	<ul style="list-style-type: none"> • Johnson County Committee on Aging coordinate referrals.
Colorado Valley Transit Columbus	public/non-profit	<ul style="list-style-type: none"> • works with social service agencies, commissioners, advisory councils, and local officials
Community Transit Service Corsicana	public/non-profit community action	<ul style="list-style-type: none"> • works with local governments in areas such as disaster planning, traffic patterns, and community needs.
Connect...Transportation Galveston	public non-profit community mental health agency	<ul style="list-style-type: none"> • assisted with the development of a county-wide transportation improvement program which is coordinated through local MPO.
Double Mountain Coach Aspermont	community action	<ul style="list-style-type: none"> • efforts are made to link with major intercity providers (i.e., Greyhound, Texas, New Mexico & Oklahoma Coaches, Inc. (T.N.M.&O) and with senior citizen's centers.
East Texas Council of Governments Kilgore	Council of Government	<ul style="list-style-type: none"> • coordinates with county officials, City of Tyler Transit, and City of Longview.
Hill County Transit San Saba	private/non-profit community action	<ul style="list-style-type: none"> • coordinates with other public and private transportation providers; participates on local advisory committees; and has good working relationship with social service agencies in service area.
Palo Pinto County Transportation Council (PPCTC) Mineral Wells	non-profit transportation agency	<ul style="list-style-type: none"> • coordinates and contracts with local agencies for education and medical services transportation.
Panhandle Transit Amarillo	private/non-profit community action	<ul style="list-style-type: none"> • occasionally provides transportation for senior citizens groups when additional vehicle seating capacity is needed.
Parker County Transportation Service Weatherford	non-profit transportation agency	<ul style="list-style-type: none"> • attempts to coordinate with senior citizens transportation; works closely with Palo Pinto and Somerville Section 18 provider.

TABLE 3. COORDINATION EFFORTS AMONG SECTION 18 PROVIDERS - TEXAS (CON'T)

SECTION 18 OPERATOR	Sponsoring Agency	LOCAL COORDINATION EFFORTS
San Patricio Arkansas Transit System (S.P.A.R.T.S) Sinton	community action	<ul style="list-style-type: none"> • coordinates with senior citizen groups, neighboring section 18 provider, Valley Transit, and Regional Transportation Authority.
SharpLines Rural Public Transportation Crowell	community action	<ul style="list-style-type: none"> • connects with all major bus lines and city cab companies; works closely with city and county officials; and coordinates disaster preparedness with school and fire department.
SPAN Denton	nonprofit community action	<ul style="list-style-type: none"> • subcontracts with local taxi company.
SPARTAN Levelland	nonprofit community action	<ul style="list-style-type: none"> • coordinates with all senior citizen groups within the eight county area and subcontracts with three; provides shuttle runs for special events.
Stage Transit Sweetwater	community action	<ul style="list-style-type: none"> • coordinates with Texas State Technical College.
Texoma Area Paratransit System (TAPS) Sherman	private/nonprofit	<ul style="list-style-type: none"> • marketing and public relations efforts with other agencies has resulted in formal and informal contracts for client transportation services; coordinates transportation resources through networking with other community agencies.
The Connection Greenville	private/nonprofit committee on aging	<ul style="list-style-type: none"> • coordinates transportation services with public service agencies.
The Transit System Glen Rose	nonprofit transportation agency	<ul style="list-style-type: none"> • contracts to provide service to Committee on Aging, Texas Rehabilitation Commission & Department of Human Services; occasionally provides service to Mental Health & Mental Retardation.
Thunderbird RPT San Angelo	Council of Government	<ul style="list-style-type: none"> • coordinates services for Area Agency on Agency programs, joint marketing efforts; transportation center/senior and community center publishes information on transit alternatives to communities; transportation director and Area Agency on Aging coordinate and conduct joint visits with local officials to promote linkage between programs; annual contract renewal negotiations with 10 counties and 3 cities allows participation in both formal and informal coordination meetings with city officials, also attracts outside interest from other parties such as Texas Commission for the Blind (San Angelo Chapter), Lions International (Sonora), and community advocacy groups for seniors (Mertzson and Paint Rock).

Source: Table compiled from self-reported information contained in "Texas Rural Public Transportation System Peer -To-Peer Resource Manual," Austin, TX: Texas Department of Transportation, Division of Public Transportation, 1993.

CASE STUDY 1. HOUSTON, TEXAS

AMERICAN RED CROSS - GREATER HOUSTON AREA CHAPTER

The Greater Houston Area Chapter of the American Red Cross has provided transportation services in the Houston area for the past thirty years and is actively involved in expanding the level of client transportation services through coordination. The Chapter has both verbal and written cooperative agreements to provide transportation services for numerous health and human services organizations, including a fee-for-service contract agreement with the Houston Council on Alcoholism & Drug Abuse (HCADA). Prior to the contract, clients were transported on a case-by-case basis via taxi cabs. In addition to reducing the number of passenger trips, the arrangement resulted in a 50 percent reduction in HCADA's client transportation expenses while enabling clients to network with each other. The Houston Area Chapter also coordinates with other Section 16 programs. Negotiations under way with one provider, the Mental Health Mental Retardation Authority of Harris County (MHMRA), may result in the consolidation of the two transportation programs.

By volunteering to act as the lead agency in the coordination effort, the American Red Cross continues to make significant strides toward the establishment of a community-wide coordinated transit network. Representatives of local health and human service agencies agree that a coordinated system will produce many benefits to participating organizations and agency clients. As the lead agency, the American Red Cross assumes responsibility for dispatching, scheduling, and driver training for all participating human service organizations. Participants transfer existing transportation resources, such as agency vehicles, paid and volunteer drivers, and funding, to the American Red Cross to manage the coordinated system.

To improve the chances for success of the coordination effort, the American Red Cross developed a coordination implementation plan. The four-phase plan proposes a systematic expansion of the specialized coordinated transit network, with each phase building incrementally upon the previous phase as experience, need, and funding allows. Thus, the Houston coordination effort is evolving and ongoing since the plan is still being implemented.

Participants feel that a coordinated system relying on the collaborative efforts of the community and agency transportation providers offers several benefits. First, consolidating the transportation management functions of several agencies allows more staff time to be devoted to the primary functions of the organization. Second, the centralized dispatching system provides more flexibility for clients as well as expanding available services. Third, pooling agency transportation funds expands the purchasing power for vehicles and maintenance and may lead to cost savings through joint purchases. Finally, the pool of potential volunteer drivers is greatly expanded as agencies work together to recruit drivers.

For more information, contact Martha Mayes, Greater Houston Area Chapter, American Red Cross, at (713) 526-8300.

CASE STUDY 2. FORT WORTH, TEXAS

AMERICAN RED CROSS - TARRANT COUNTY CHAPTER

The Tarrant County Chapter of the American Red Cross has been actively involved with coordination since 1983 after a transportation needs study recommended that the agency act as the lead agency to coordinate several small scale transportation programs. As the only transportation provider in Tarrant County operating without jurisdictional boundaries, the American Red Cross seemed the logical choice for the lead agency. In 1984, the WHEELS Program emerged as an expanded, coordinated service to provide medical and social service transportation to clientele from many different agencies.

The WHEELS program offers two types of services: a Medical Transportation Service and a Vocational Transportation Service. The former provides door-to-door, demand response transportation for senior citizens and physically challenged persons. The latter provides service to clients who need transportation to vocational rehabilitation training, for job search activities, or to gain access to ongoing employment.

WHEELS has several informal cooperative agreements with area transportation providers to share program information and refer clientele. In addition, WHEELS works closely with numerous medical facilities to ensure that service duplication is avoided and that patients have transportation. WHEELS has several purchase-of-service contracts with several human services organizations. These contracts require agencies to certify client eligibility and to provide case management services; WHEELS provides vocational and medical transportation to agency clientele.

WHEELS participates in several joint-use arrangements. The Program's diversified training staff teaches other agency drivers in exchange for a reasonable fee. Another joint-use arrangement with a Section 16 provider allows WHEELS to use the agency's vehicles in order to provide expanded transportation services when needed.

The WHEELS Special Transportation Program has brokerage contracts with four human services organizations. Most contracts require WHEELS to supply vehicles and drivers for a certain number of hours per week. WHEELS acts as a single provider for another agency, assuming responsibility for all aspects of transportation administration, maintenance, and operations.

WHEELS' management is actively involved in the transportation network as members of the Texas Transit Association, the Association for Coordinated Transportation, and the Community Transportation Association of America. Further, the director serves on the Texas Client Transportation Network of the Governor's Office of Client Transportation Services.

For more information, contact Jeffrey Pulis at WHEELS, at (817) 336-8714.

SUMMARY

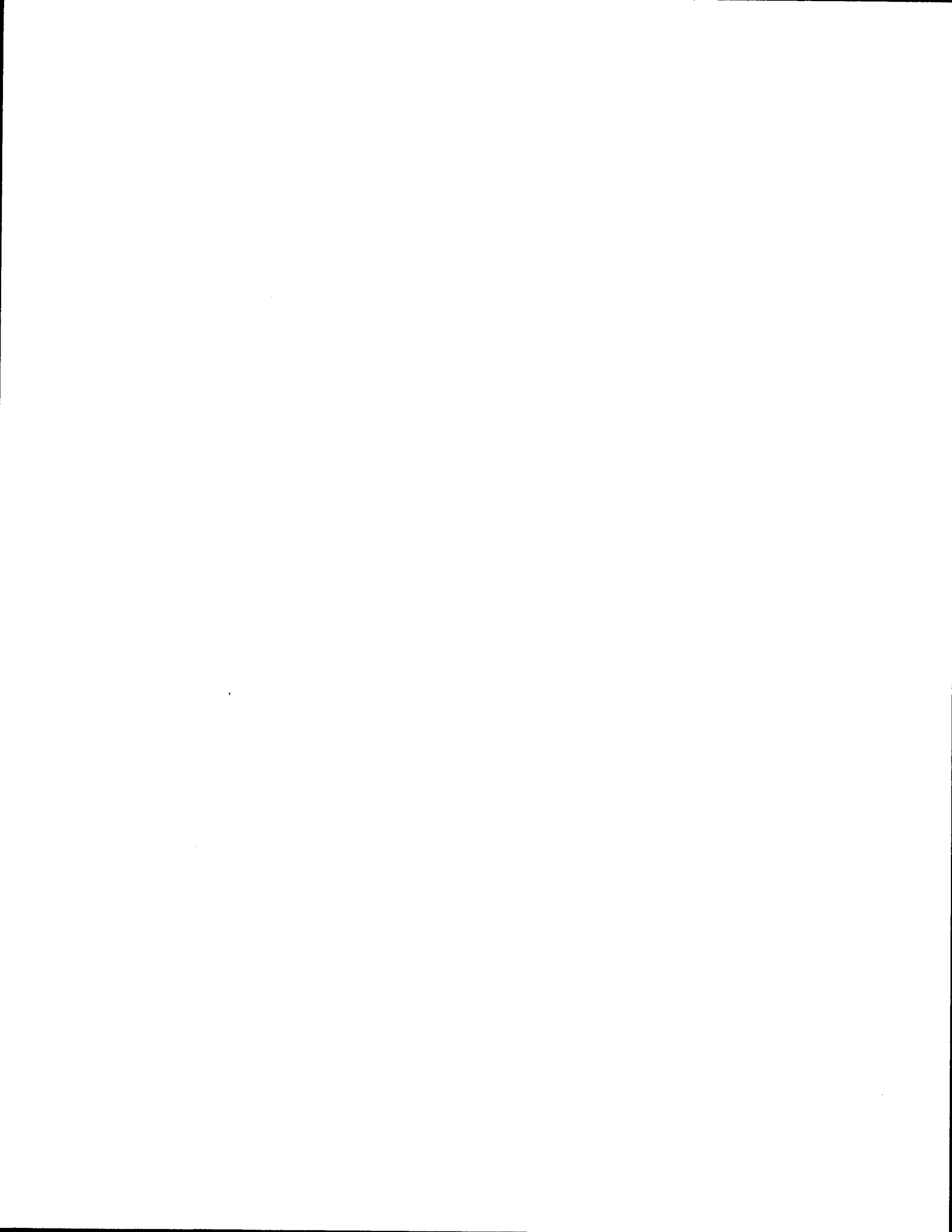
In conclusion, federal transit program guidelines have encouraged states to actively pursue methods to coordinate services at the state, regional, and local levels. As a result, states have developed coordination programs that differ in their structure, degree of complexity, and effectiveness. Some state programs have exceeded the federal coordination requirements.

State-level coordination programs generally fall into one of three administrative categories: interagency task forces, interagency committees, and mandatory coordination programs. Some states have taken the lead in adopting legislation to coordinate statewide transit services. Others have focused efforts at the regional and local levels without adopting formal legislation.

Policies and procedures for Section 18 and Section 16 programs also vary considerably from state to state. States usually differ on the degree that coordination is weighted as an evaluation criteria, the degree of coordination required, and the ways in which applicants are required to document coordination efforts.

Several elements should be considered in the initial stages of establishing a statewide coordination program which may help to improve the potential success of the coordination program. A valuable resource to both initial and ongoing coordination programs is access to current information on coordination activities. Networking with those that oversee state coordination activities can provide additional insight to successful coordination projects.

In Texas, issues associated with coordination are being addressed at the highest levels of state government. The legislature created the OCTS to improve coordination among human services agency transportation providers. Further, TxDOT promotes coordinated planning, funding, and service delivery in part by adopting policies and regulations that encourage or require coordination among transit providers.



4. COORDINATION: GOALS, BENEFITS, AND BARRIERS

Over two decades of research and experience has demonstrated that transit coordination is a cost-effective and efficient method for helping to ensure that people have access to jobs, health care, needed services, and recreational activities. Coordination can result in more efficient use of existing transit resources, in cost savings, and in increased use of transportation services. Coordination also helps to create a link between local transit providers, transit agencies, social service agencies, and different user groups. However, coordination is not an easy process. There are often a number of issues and problems that must be addressed before coordination approaches can be implemented. States, transit providers, agencies, and other groups that want to improve transit service coordination must confront major issues that impact the ease with which coordination can be achieved and the level of success that can be attained. This chapter explores the concept of coordination and examines some of the benefits of a coordinated transit system. Issues commonly confronted when coordination efforts are undertaken are identified, and methods to overcome those concerns are addressed.

COORDINATION: WHAT IS IT?

No single widely-accepted terminology for coordination has emerged from the literature or from the field of practice. Therefore, coordination cannot be described by one definition or be represented by one model. Coordination has been described as a concept with particular goals rather than a technique that can be readily defined and placed into practice (23). Simply stated, transit coordination is a cooperative arrangement between transit providers and organizations that need transportation services. Cooperative arrangements can be between human services agencies and a local public transit provider, among human services groups, among public transit agencies, or between public and private transportation providers.

The basic concept behind coordinating transit resources is simple. Every community has both providers and purchasers of transit services. Transit providers usually include public transit systems, private taxi companies, human services agency-operated services, intercity carriers, and other groups. Transit purchasers include the general public, public and private human services agencies, local governments, and other organizations. The objective of a coordinated transit system is to have providers and purchasers working together, efficiently utilizing people, vehicles, and other community resources necessary for providing transportation.

LEVELS OF COORDINATION

Coordination represents a continuum of activities to share resources in order to avoid duplication of effort, to improve and expand service, to lower unit costs, and to share equipment, facilities, and training. The concept begins with a commitment to one or more of the following objectives (24):

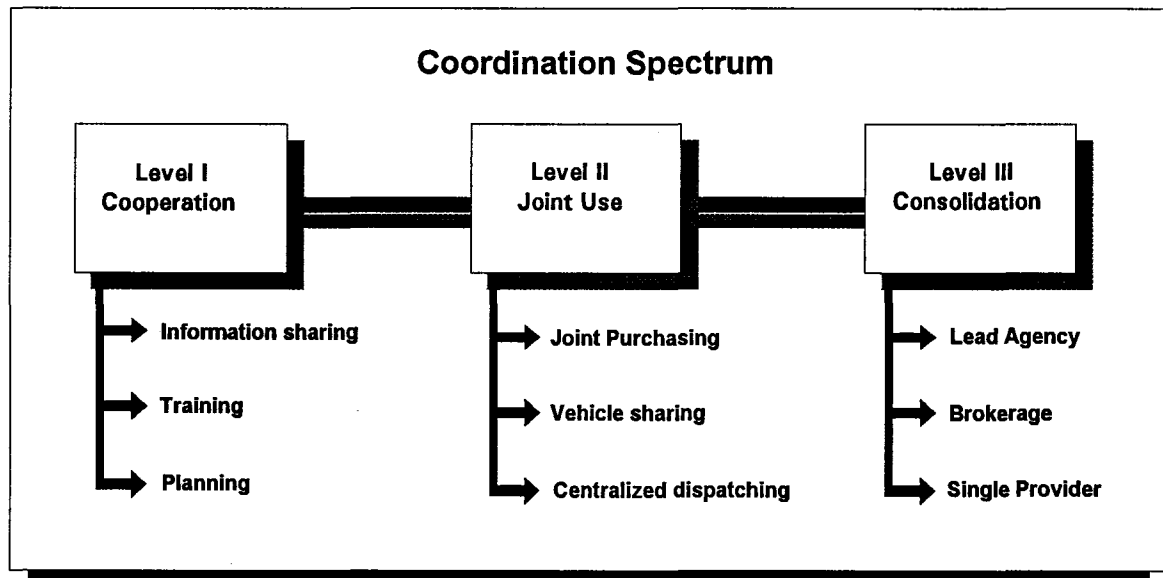
- improve service quality;
- serve a larger client base;
- reduce unit costs;
- increase the service area;
- provide more comprehensive transportation services; and
- eliminate duplication of efforts.

Figure 3 illustrates the spectrum along which coordination activities can take place. Coordination can be as simple as sharing information on the transportation needs of agencies, clients and consumers, and working together to meet those needs through existing programs (Level I). Or it can be as complex as creating an independent agency to assume all the transit responsibilities for a community (Level III).

Coordination can be focused at any point along the continuum; however, some strategies may require special design components. These might include: operations clearinghouse, centralized dispatching, coordinated maintenance, information and referral, and total system consolidation. Other coordination concepts are relatively simple and require very little added design work. These might include: coordinated purchasing, vehicle storage, training, and

management. The different levels of coordination are described next and selected concepts are discussed further in Chapter IV.

FIGURE 3. THREE LEVELS OF COORDINATION



Level I - Cooperation

The word *cooperation* means two or more people or groups working together toward a common end. Cooperation must be present if any level of coordination is to occur. Cooperation can be informal, such as a verbal agreement, or it can be formal, requiring actions by governing boards and the signing of contracts.

One example of *informal cooperation* is when two or more agencies agree to exchange program and service information. Participating agencies can refer inquiries to the agency, organization, or company most likely to be able to provide a needed service.

One example of a *formal cooperation* effort is when two or more agencies take formal action to initiate the development of a joint Section 16 grant application. A second example would be when an agency reimburses clients for transportation costs provided by another group. For example, clients pay for their own transportation from a local taxicab operator up front and are later reimbursed by the agency.

Level II - Joint-Use Arrangements

A *joint-use arrangement* occurs when one or more of the resources of the involved participants are available for use by other participants. Resources could be vehicles, staff time, staff knowledge, or facilities.

Arrangements for joint use can be informal or formal. An example of an *informal joint-use arrangement* is when an agency or company agrees to provide driver training for other agency or company drivers. In exchange, participants might agree to help pay for training costs such as the trainer's time, course materials, and training facilities. Another example would be when one entity takes the lead in putting together an informational brochure that explains all of the transportation services provided in the area. Other participants might help with the development, production, and distribution costs.

An example of a *formal joint-use arrangement* is where one participant pays an agreed upon rate-per-vehicle mile for using another participant's vehicle on certain days and times during the week, or for additional seats for special trips. A second example is the purchase of vehicles or services through a joint contract.

Level III - Consolidation

Consolidation is the most comprehensive level of coordination and entails joining or merging transit resources for the benefit of all participants. Consolidated transit systems combine the services of two or more providers into a single system. Two examples of consolidated systems are single provider and brokerage.

In a single provider system, one existing or newly formed organization assumes the responsibility for all aspects of administration, management, and service operation. The service provider undertakes all activities necessary to provide transportation. In a brokerage system, the responsible entity oversees all of the coordination activities. In some cases, the broker may contract with others to operate vehicles or may also contract selected administrative or management duties. There are no rules as to what activities should be performed by the broker and which should be contracted. The next chapter examines these concepts further. The following case studies highlight transportation programs that incorporate various levels of coordination.

CASE STUDY 3. MCKINNEY, TEXAS

COLLIN COUNTY AREA RURAL TRANSPORTATION (CCART)

The Collin County Area Rural Transportation (CCART) program is consolidated beneath the umbrella of the Collin County Committee on Aging (CCCoA), an agency that has provided transportation services since 1977. Today, CCART operates twenty-three vehicles to provide specialized and rural public transportation in Collin County. Coordination is a top priority for CCART, especially since the program assumed responsibility for rural public transportation in 1992 and received Section 16 funding for senior and disabled transportation in 1994.

CCART cooperates with area medical centers, schools, state and other social service agencies by sharing program information and referring potential clients. It also shares information on vehicle specifications and the vehicle bidding process with agencies applying for Section 16 grants. Further, CCART has a cooperative arrangement with the Dallas Area Rapid Transit (DART) that allows CCART passengers to connect with DART services at specific locations.

CCART has several formal and informal agreements with organizations to provide client transportation services. To simplify accounting procedures, CCART established a monthly billing system for client trips. Agency clients can also use payment vouchers for trips. Dispatchers accept vouchers and issue passes directly to clients, eliminating the need for cash transactions. The voucher system increases service capacity for CCART and improves client access to available transportation services. Further, the Mental Health and Mental Retardation of Collin County (MHMR) recently agreed to allow CCART to administer their transportation program and to provide client transportation on a contractual basis.

CCART has established several joint-use arrangements. For instance, CCART agreed to share its vehicles on an as-needed basis with the Plano Community Home. CCART also agreed to provide specialized staff training for and share training facilities with other Collin County agencies. Vehicle operators from other agencies attend CCART's Passenger Assistance Training Course. To reduce overhead and operating costs, CCART, CCCoA, and the McKinney Service Center agreed to share expenses and facilities to create a sort of "one-stop shopping" center for public and social services. This arrangement makes it easier to refer clients to agency services and to coordinate and consolidate client transportation services.

The CCART program is administered by knowledgeable staff capable of coordinating transportation services for a wide spectrum of human services agencies and clientele. CCART directors frequently meet with County officials and agency program directors to explore further coordination efforts. From the onset, County officials were actively involved in the planning and development of the CCART program ensuring that it would be fully integrated with existing social services agencies.

For more information, contact Joseph Jones at CCART, at (214) 542-0106.

CASE STUDY 4. SHERMAN, TEXAS

TEXOMA AREA PARATRANSIT SYSTEM, INC. (TAPS)

The Texoma Area Paratransit System, Inc. (TAPS) is a nonprofit corporation established by the Texoma Council of Governments specifically to coordinate and provide public transportation for senior citizens, persons with disabilities, and the general public. Beginning in 1986, TAPS consolidated fifteen separate mini-bus or senior center van programs to provide for a more secure and stable funding source. In addition, consolidation maximized the use of vehicles and other resources, enabling TAPS to provide the most trips for available funding.

TAPS achieves various levels of coordination with numerous agencies -- both public and private. For example, as a subcontractor for the council of governments (COG), TAPS provides general public transportation and specialized transportation for other COG programs. The Sherman Taxi Company, a private subcontractor for the City of Sherman, provides transportation for senior citizens to nutrition, medical, and shopping sites but does not own any lift-equipped vehicles. Since more than half of TAPS' fleet is outfitted with ramps or lifts, TAPS provides transportation for physically-challenged individuals for several organizations. TAPS also coordinates transportation contracts with local private bus operators and has an agreement with the intercity bus operator to share the use of their terminal, allowing passengers to transfer from one service to the other.

TAPS has formal agreements with several state agencies and programs to provide transportation. For instance, TAPS supplies individual and contracted transportation services to agency-sponsored workshops and job training centers, group homes, nursing homes, and public housing complexes. TAPS also delivers nearly 22,000 medical trips a year for Grayson, Cooke, and Fannin Counties. These include local trips and those outside the service area to Denton and Paris for dialysis and to Dallas and Ft. Worth for MEDICAID clients. In all cases, TAPS' ability to transport physically-challenged citizens is utilized by nearly every service, educational, employment, and medical provider in the three counties. Moreover, TAPS drivers are specially trained in passenger assistance techniques, CPR, and First Aid. As a result, TAPS' in-house certified instructors are often requested to train vehicle operators of other agencies.

TAPS' management is very active in educating the community on the benefits of coordination. The executive director, as a member of the Transportation Advisory Committee, coordinates public transportation issues with the board and the COG staff. TAPS directors also serve on County Family Self-Sufficiency Committees which are headed by County Judges. These committees help ensure that the needs of social service recipients committed to becoming self-reliant are met. Further, TAPS' monthly meetings with representatives of various human services and local government agencies help to improve the quality of community transportation services and to increase the awareness of other agency needs and programs.

For more information, contact Ven Hammonds, Texoma Area Paratransit System, at (903) 893-4601.

COORDINATION GOALS

The overall goal of transportation coordination is a more responsive, efficient, and reliable transportation system. Moving toward that goal requires the establishment of both service and non-service related coordination goals. For instance, service-oriented goals may include improved service to riders, improved vehicle capacity utilization, lower costs per passenger trip, and higher passengers per trip. Service delivery and rider-service goals appear to be the predominate goals in practice, although financial goals are often thought of as objectives. Political goals may also be relevant but these are often met by achieving the other goals (23).

Examples of potential coordination goals may include:

- increased mobility for persons unable to provide their own transportation;
- enhanced access to transportation services;
- elimination of duplication services;
- reduced duplication of effort;
- increased service capacity;
- improved vehicle productivity and operating efficiency;
- reduced purchasing costs;
- reduced asset input;
- improved service quality;
- improved service availability; and
- better community involvement.

BENEFITS OF COORDINATION

The actual benefits derived from a coordination effort will largely depend on the approach taken and the level of commitment among participating agencies and transit providers. However, participants in coordinated systems generally find that the entire community benefits. For instance, transit providers save costs by eliminating duplicative efforts, while transit patrons benefit from more

reliable and responsive transportation services. Coordinated transit systems may also gain more support from the business community as more patrons are transported to shopping, recreational, and business facilities. Table 4 contains a listing of some potential benefits of coordination for transit providers and human services agencies, transit patrons and agency clients, and the community. Possible benefits, including expanded services, improved service quality, and long-term cost savings, are discussed in more detail (24,25,26).

Expanded Services

Local transit systems and human services agencies are often faced with providing additional services with limited resources. One way to provide more trips for the same amount of funds is to share the use of vehicles.

Figure 4 contains an example of how two agencies can reduce costs, expand services, and improve vehicle utilization through coordination. If Agency A is now operating a service and only one-half of the seats are full, the Agency has additional capacity. Through coordination, Agency A has an opportunity to fill those seats by making them available to Agency B. Now the service costs can be divided between both agencies. As a result, Agency A has saved money. This savings can be used to provide additional service for its clients, assuming that the Agency has either vehicles to provide other service or that the Agency can purchase added services from another public or private service provider.

Improved Service Quality

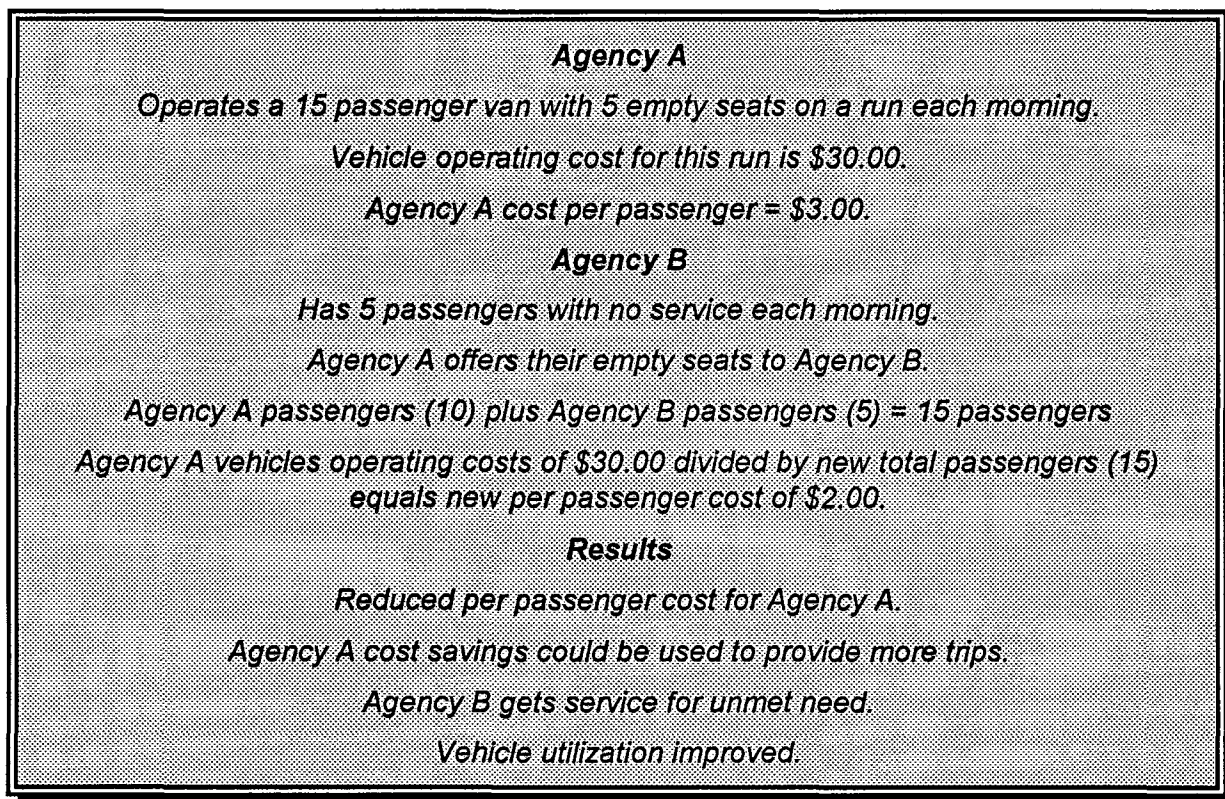
Service quality determines public perception of transit services. One way to measure service quality is on-time performance. Another determinant of satisfaction is vehicle cleanliness. Friendly and professional vehicle drivers can also impact service quality.

A coordinated drivers training program can help improve service quality. Because drivers in smaller transit organizations are typically part-time and many have other non-driver responsibilities, it is both difficult and costly to provide ongoing training and development. Turnover can also be higher among part-time drivers resulting in the need to train new drivers. Coordinated drivers training programs can go beyond the essential skills and cover such topics as defensive driving, passenger assistance techniques, and public relations. Benefits of coordinated training programs can be measured in terms of service quality and increased driver loyalty.

TABLE 4. POTENTIAL BENEFITS OF COORDINATED TRANSIT SYSTEMS

<p>Potential benefits for transit providers and human services agencies</p> <p>Those who participate in coordinated systems find that they can:</p> <ul style="list-style-type: none">■ eliminate duplicative efforts, services, and costs■ provide more trips and serve more clients■ reduce overhead costs■ improve flexible funding opportunities■ increase access to additional funds■ increase cost-effectiveness■ improve operational safety■ improve service quality■ improve program efficiency■ increase productivity■ maximize vehicle usage■ improve vehicle reliability■ improve vehicle maintenance■ effectively utilize equipment, expertise, facilities, and other resources■ improve allocation of staff time■ professionalize drivers■ remove transportation responsibilities from those that do not want it■ increase ability to identify and serve individuals previously not served
<p>Potential benefits for transit patrons and human services agency clients</p> <p>Transit consumers in the community gain from coordination, as well through:</p> <ul style="list-style-type: none">■ more hours and days of service■ greater service area■ easier access to the regional programs■ enhanced quality of life through increased personal independence■ more reliable, higher quality transportation service■ safer transportation with trained drivers and well-maintained vehicles■ lower transportation costs■ ability to "mainstream" with the community
<p>Potential benefits for the community</p> <p>Compared with an uncoordinated community transit system, a community with coordinated transit providers is stronger in terms of:</p> <ul style="list-style-type: none">■ improved business community support – more shopping■ increased community influence and public support■ increased participation in community activities■ better access to jobs - economic development■ improved access to human services programs■ simplified paratransit network

FIGURE 4. SERVICE EXPANSION THROUGH COORDINATION



Source: Ohio Department of Transportation, *A Handbook for Coordinating Transportation Services*, Columbus, OH: ODOT, October 1991, p. 2-4.

Long-term Cost Savings

Coordination of transportation services can potentially lead to long-term cost savings. Savings may result from reducing the number of vehicles needed to provide services or from not purchasing additional vehicles. Vehicle sharing may help lower capital investment requirements and reduce insurance and maintenance costs. In addition, organizations may agree to share the employment costs of a common staff to oversee transit operations. While the addition may increase costs, these costs may be less than if each participant had to hire their own staff.

Consolidation of administration and management transportation functions may also lead to long-term cost savings. Table 5 presents a comparison of several selected systems that have actually documented pre-consolidation and post-consolidation costs, ridership levels, and equipment requirements. The information in this table clearly demonstrates that the consolidation of services in specific areas can lead to cost savings. In all of the case studies, consolidation

TABLE 5. COMPARISON OF COST AND EFFICIENCY OF SAMPLE TRANSPORTATION SERVICES: BEFORE AND AFTER COORDINATION

Measure	Howard Co., MD		Grand Rapids/Kent Co., MI		Washington Co., PA		Greenville Co., SC		Pitt Co., NC	
	Before	After	Before	After	Before	After	Before	After	Before	After
Average Cost/Pass. Trip	\$7.92	\$4.06	\$6.11	\$5.70	\$28.46	\$6.25	\$6.31	\$2.01	\$7.13	\$3.59
Average Cost/Vehicle Hr.	\$12.83	\$6.89	\$26.27	\$18.94	\$22.24	\$13.28	\$21.36	\$12.15	\$10.66	\$12.06
Average Trips Per Month	2,236	4,713	12,180	54,762	2,800	6,300	12,558	15,850	3,880	5,126
Average Pass./Vehicle Hr.	2.1	3.4	4.3	12.8	2.9	9.1	2.4	6.04	1.50	3.36
Total Cost	\$212,500	\$230,000	\$893,000	\$3,745,000	\$956,000	\$472,000	\$283,600(1)	\$350,000(2)	\$331,875	\$220,953
Number of Vehicles	12	12	132	132	N/A	N/A	65	12	41	15
Size (Square Miles)	200	157	862	857	858	795	795	795	657	657
Population	110,000	160,000	356,000	464,500	218,000	215,000	460,000	465,000	94,901	103,889
Population Density (persons per square mile)	550	800	2,268	542	254	251	579	585	145	158
Senior Citizen Population	8,100	12,000	55,000	71,000	32,500	36,000	70,300	70,840	12,463	14,315

Notes: (1) Prior to coordination, not all human service agency costs could be identified. (2) During coordination, this system was opened to the general public and FTA Section 18 funds were utilized to support rural area service.

Sources: Carter Goble Associates, Inc., and COMSIS Corporation, August 1988. Updated by Carter Goble Associates, Inc., July 1990. Reported in Carter Goble Associates Consulting Services, Inc., South Carolina Specialized Needs Assessment and Statewide Coordination Plan. Columbia, SC: CGA Consulting Services, Inc., June, 1989, p. 7-9.

resulted in reduced individual trip costs, expanded ridership, and increased productivity. These examples show that it is feasible to consolidate and realize cost savings and operational efficiencies that result in more service for the tax dollar spent.

BARRIERS TO COORDINATION

If coordination reduces duplication and if the benefits include improved services, then why has the voluntary coordination of transit services not been more widespread? The answer lies in the many challenges that systems face during the implementation of coordination strategies. Numerous issues may prevent the coordination effort from gaining momentum. Those attempting to coordinate services will no doubt confront some problems that will impact the ease with which coordination is achieved and the level of success that is attained. This section discusses some of these major issues that may need to be addressed while planning and implementing coordination strategies.

Coordinating transportation resources can be challenging to a community. Coordination typically fails, especially with non-traditional providers, because of the perceived barriers preventing them from doing so. Barriers to coordination do exist. A barrier is anything that hinders a coordination effort. Barriers may be either perceived or real. Whether the barrier is perceived or real, in general, the greater the degree of coordination, the greater the number of obstacles to be surmounted (3).

To address and eventually overcome some of the barriers to coordination, it is important to first understand why some agencies may resist coordination efforts due to self-interest. For example, many objections to coordination arise from realistic appraisals of the costs and risks of coordination. If the risks or costs are too high or the expected benefits are too small, these costs and expectations become barriers (27). Coordination proponents often assume that because coordination can save money or increase efficiency, agencies should be willing and eager to participate. However, studies have provided strong evidence that, in the short run at least, many coordination efforts have not saved money or substantially increased the quality of service. Also, when cost savings were found, larger governmental units or funding sources were often the benefactors rather than the participating agencies. Agencies not realizing any direct benefits of coordination may be less willing to continue with the

coordination effort. Even if service costs are lower, many participants cannot or are not simply willing to incur the initial start-up costs based on the expectation of future savings.

Given these situations, it is easy to understand why many local transit providers and human services agencies resist coordination efforts. This does not mean that barriers to coordination cannot or should not be overcome, however. When coordination efforts promise real system-wide cost reductions and service improvements – either immediately or in the future – barriers and objections to coordination should be addressed. Table 6 identifies several barriers contained in the literature and provides feasible suggestions to address these barriers. The major concerns are described in more detail next.

Economic Barriers

Economic barriers can include such issues as the lack of available start-up capital, insufficient lines of credit, and the costs of expanding facilities. For example, several prior coordination demonstration projects incurred significant start-up costs and higher ongoing costs. In fact, none of the projects succeeded in reducing direct costs, and one project actually increased maintenance costs (10). Because vehicles in a coordinated fleet are used more often, maintenance costs for the agency owning the vehicle may also increase. Moreover, agency vehicles may not be compatible with the needs of an overall system and may be incapable of operating additional hours or miles without extensive repair and increased routine maintenance.

Another potential economic barrier is the cost involved in expanding facilities. Often, limited funding prohibits transit providers from expanding existing facilities. However, identifying and meeting with other transit providers in the community, determining if they have personnel to share, vehicles and equipment to lease, and building space to use can help overcome this economic barrier.

The establishment of a government sponsored fund for use in the servicing of short-term debt or current operating expenses may help address the problem of limited credit availability and lack of initial start-up funds. This fund could be supported by a transportation user fee, or another alternative is direct federal appropriations.

TABLE 6. BARRIERS TO COORDINATION AND WAYS TO OVERCOME THEM

Barrier	Way to Address
ECONOMIC	
<ul style="list-style-type: none"> • lack of start-up funds • insufficient lines of credit • cost increases • financing expansion of facilities 	<ul style="list-style-type: none"> • establish government sponsored funding to service short-term debt
POLITICAL	
<ul style="list-style-type: none"> • lack of support from local officials • different management styles • fear of shifting cost from one budget to another 	<ul style="list-style-type: none"> • educate community on the benefits of a coordinated system • involve local officials and community in planning and implementation of coordination effort • implement management training program
INSTITUTIONAL	
<ul style="list-style-type: none"> • protection of self-interest 	<ul style="list-style-type: none"> • address real and underlying concerns of agencies
STATUTORY/REGULATORY	
<ul style="list-style-type: none"> • perceived restrictions • inconsistent federal and state requirements • fund use misconceptions • policy misconceptions 	<ul style="list-style-type: none"> • issuance of policy guidelines
PHYSICAL	
<ul style="list-style-type: none"> • geographic 	<ul style="list-style-type: none"> • site-specific
LEGAL	
<ul style="list-style-type: none"> • labor restriction • insurance and liability concerns 	<ul style="list-style-type: none"> • review labor and collective bargaining agreements • review insurance policies

Political Barriers

These barriers involve such issues as the level of commitment by local leaders, differing management styles, and the fear that costs will be shifted from one budget to another. One of the most important factors influencing the success or failure of a coordination initiative is the level of support by elected officials, top agency personnel, and the community. Without the support of all groups, coordination efforts may be less likely to succeed. As a result, it is important for local officials to understand the efficiency gains from a coordinated community transportation network. Increased political support can result by educating key officials on the

benefits of a coordinated system and by involving them and the community in the planning and implementation stages of the coordination effort.

Differing management styles among various agency heads can also hinder coordination efforts. The leadership style and personalities of transit agency managers may influence the success or lack of success of providing a well-managed and coordinated transit system with broad political support. Barriers resulting from differences in management style may be overcome by implementing a training program that includes a meaningful human relations component.

Another political barrier is the fear by local government officials that coordination will lead to the shifting of responsibility for agency budgets. One reason local officials may object to consolidating community transportation services, including human services transportation, within a single transportation department is the fear that the costs of providing client services will be shifted from social service agency budgets to city or county budgets (28).

Institutional Barriers

Proprietary interests frequently keep transit providers and human services agencies from joining forces. Because there is a high resistance to change among institutions and the people served by them, institutional barriers are often the most difficult issues to overcome. In some instances, it is a matter of turf protection or the belief that an institution's power or prestige will be diminished or diffused by the relinquishment of any activity to another group. This resistance may stem from a more complex combination of fear of losing some control and community status plus a concern over diminished quality or a lack of understanding about the abilities and qualifications of the public transit provider.

Historical precedent is a major decision factor for human services agencies when considering transit coordination. Agencies often choose to continue their present mode of service delivery because it is acceptable and because it has "always been done that way." A less costly alternative or better solution is not always a sufficient inducement for many agencies to abandon their current method of service delivery if it is still satisfactory to them.

Turfism results from a number of fears which typically stem from the belief that individual agencies are better qualified to provide client services than a group of agencies or outside providers. Most agencies have two key concerns about any type of service coordination. First, agencies may believe that the

overall service quality will decline in a coordinated system. Agencies may fear that other transit providers cannot or will not provide the same intensity or level of care for their clients. Concerns may include more lengthy waiting and riding times for clients, coping with unfamiliar drivers, and riding with strangers and people unlike themselves.

Some agencies may not believe that a public transit system can provide client service as safely, particularly when clients have special physical or emotional needs. Some riders may also be concerned about their safety while traveling on vehicles with clients whose special needs they may not understand and fear. Concerns relating to potential increased liability for transporting clients on vehicles not owned or operated by an agency have also been raised. In addition, agencies may be opposed to mixing different groups of clients.

Some agencies fear the breakdown of a volunteer network. Volunteers not only help keep costs lower for agencies, but help maintain a personal, hands-on service. Some systems use volunteers as escorts to make clients feel more secure and more comfortable. Volunteers also help with special trips. Participation in a coordinated system may result in volunteers feeling as if they are not needed. Finally, agencies may fear that the cooperative effort might fail, leaving them without needed services.

Many agency concerns have often been dismissed as simply turf protection issues. Any attempt to elicit agency participation in coordinated systems should address the real and underlying concerns of these agencies. One feasible approach may be to help local agencies understand exactly what it costs them in time and resources to deliver transit services to their clients. It may be helpful to assist agencies calculate the increased number of trips they could provide to existing clients or the new clients they could serve within their current budget, if they participated in a coordination program. One example of the approach taken to overcome barriers to coordination is provided in the case study highlighted next.

CASE STUDY 5. DIAL-A-BAT PARATRANSIT SERVICE

DIAL-A-BAT PARATRANSIT SERVICE: BROCKTON, MASSACHUSETTS

Brockton Area Transit (BAT), the regional transit authority in Brockton, Massachusetts was one of the first public transit agencies in the U.S. to tackle the problem of coordinating the transportation services of local human services agencies. BAT has operated demand-responsive paratransit services for elderly and disabled persons, including clients of local human services agencies, since February 1977. By 1978, Dial-a-Bat, the paratransit element of BAT, transported over 10,000 patrons per month, 90 percent of whom were clients of nearly 20 local human services agencies.

Dial-a-Bat services became operational after one year of planning and development. The subscription service was initially designed to address the human services agency client market and would also be supplemented by a dial-a-ride service for elderly and disabled persons.

The primary concern for agencies was that their clients receive adequate transportation services at the same cost. A key step in the implementation planning process was a contract entered into with Self-Help, Inc., a local private, non-profit human services agency that would manage and operate the paratransit system. Because Self-Help accounted for nearly 70 percent of Dial-a-Bat's business, the agreement ensured a significant clientele from the start and allowed BAT to overcome a number of implementation barriers.

One major hurdle BAT had to overcome was the acceptance of the paratransit service by local agencies. Educating agencies on the concept of transportation coordination and ensuring that Dial-a-Bat was closely identified with the human services sector were two methods used to increase acceptance.

Section 13(c) labor issues, another significant barrier, were also addressed in the agreement with Self-Help, Inc. For instance, BAT drivers were union members, but since the Dial-a-Bat service was to be operated by Self-Help, Inc., under contract, Self-Help was free to use its own drivers, at a lower wage rate, to operate its vehicles. BAT agreed to use union drivers only for the two existing Fixette mini-buses which had been purchased previously.

Other institutional and regulatory barriers did not hinder service implementation. Insurance issues were avoided by adding the Dial-a-Bat vehicles to the existing insurance policies covering the BAT buses. A City ordinance that forbade shared ride-taxi service was amended at the initiative of BAT to allow Dial-a-Bat to provide shared-ride services. BAT also contracted with one of the two local taxi companies, although neither company actively opposed the new service.

Another regulatory barrier was the enabling legislation for BAT which forbade operating transportation services outside its jurisdiction unless agreements were reached with the transportation authority or municipality. Dial-a-Bat cannot serve individuals or agency clients seeking transportation into or out of the BAT service area, even though the agency may be responsible for clients outside this area. This regulation is an impediment to Dial-a-Bat expansion in terms of lost business and in making an arrangement with Dial-a-Bat less attractive for an agency.

Source: Allen Cook, "The Dial-a-BAT Paratransit Service of Brockton, Massachusetts, Area Transit – Public Transit in Coordinated Human Services Transportation." Norman, OK: University of Oklahoma, School of Civil Engineering and Environmental Science, 1978.

Statutory and Regulatory Barriers

Statutory and regulatory barriers include such issues as potential restrictions on vehicle sharing, and conflicting regulations related to local, state, and federal programs. Statutory and regulatory requirements of federal and state programs that provide transportation funding to human services agencies may hinder coordination efforts. Due to inconsistencies in federal and state requirements, local agencies may find it difficult to meet requisite obligations of several funding programs. For example, under Title III of the Older Americans Act (OAA), Area Agencies on Aging (AAoA) must prepare a financial plan every three years. This report may be seen as a costly burden to agencies not receiving Title III funds and could deter coordination with agencies that receive Title III funds.

A number of misconceptions involving the use of Title III funds may exist with coordination attempts. Some agencies may believe that vehicles purchased by Title III funds cannot be used to transport ineligible elderly and non-elderly clients and that their capacity to share or contract for the use of their vehicles to other agencies is restricted. The OAA does not restrict agencies from utilizing idle vehicle time to service another age or client group. Another misconception is that Title III funds can not be used to purchase wheelchair lifts or radio equipment. Title III funds can be used for these purposes.

Further, some agencies may believe that Title III funds cannot be used in coordination efforts if there are any elderly citizens that have unmet transportation needs or if the level of service delivered to the elderly after coordination is in any way inferior to that previously delivered. This misconception was noted primarily in states where Title III funds had already been used for coordination projects. Some of these inaccuracies may be a result of state misinterpretation of federal policies rather than agency misconceptions. Therefore, it is necessary that agencies understand that Title III funds may be used directly and indirectly in coordinated systems.

The OAA encourages agencies to coordinate with other transit providers. A few policy guidelines of the OAA may result in misconceptions, however. For instance, agencies must be reimbursed for services rendered; OAA funds cannot be used to directly transport ineligible clients; and the services provided cannot impact the ability of the agency to carry out its primary mission. The issuance of some policy guidelines clearly explaining the permissible uses of OAA funds, the circumstances under which varying coordination methods are possible, and

permissible variances in service quality will help to eliminate many of the misconceptions surrounding Title III funds. Agencies could also evaluate acceptable service levels necessary to achieve cost reductions.

Although federal and state funding sources require recipient agencies to follow specific regulatory guidelines of various programs, these programs do not specifically forbid the coordination of transportation resources. In fact, most federal and state agencies endorse cooperative arrangements that improve the effectiveness of their programs (3). Amending laws and/or regulations is another avenue to pursue in situations where regulatory differences do impede coordination attempts.

Physical Barriers

Real geographic barriers to coordination, particularly in rural areas, may exist. For example, one transit agency may be responsible for an entire county which may be very large and sparsely populated. Jurisdictional problems can also exist. These problems and potential solutions are very site-specific. In some rural areas, human services agencies provide scheduled service, similar to fixed-route service, accessible by meeting the vehicle at a designated location and time. In Texas, agencies reported informal pick-up agreements along joint jurisdictional boundaries; a person is transported to the county line by one provider and picked up by another provider who was going into the urbanized area for medical services or shopping (27).

Legal Barriers

Labor-related restrictions may also constrain cooperative arrangements. As transportation systems move from an independent management structure to larger consolidated systems, employees may move from mostly non-unionized and volunteer workers to higher paid unionized workers. This shift can cause employee and union problems for organizations participating in coordinated systems.

Transit labor and management agreements required under the Section 13(c) of the Federal Transit Act of 1964, protect transit system employees from adverse effects resulting from changes made by a transit system. In most cases, the agreement is similar to a collective bargaining agreement. However, it also guarantees the continuation of these rights and provides protection to transit employees against a worsening of their position as a result of any decision made

by transit management. Transit systems with unionized employees that wish to explore coordination activities should review their Section 13(c) and collective bargaining agreements to assess the impact of that decision on transit labor.

Other legal barriers frequently cited are insurance and liability issues. Transit agencies have voiced concern about the potential increased liability caused by transporting clients on vehicles that they do not own, operated by drivers that they do not hire. A thorough review and understanding of current insurance policies may help to address insurance and liability issues.

TEXAS COORDINATION ISSUES

Rural public transit providers in Texas addressed several common coordination issues and concerns during a workshop conducted in 1991. The workshop resulted in the identification of three broad classifications of issues that may hinder coordination efforts among rural and specialized transit providers. The issues identified were accountability, standardization, and communication (29). The following discussion summarizes these concerns.

Accountability

Accountability issues identified during the workshop related to the need for budget review and financial management, the use of accurate data for both internal program management and external monitoring, and defining the relationship between reporting, pricing, and billing. Budget reviews and sound financial management practices allow transit agencies to improve fund accountability methods. The biggest issues appear to be the requirement of line item budgeting and the documentation and justification behind this budgeting tool.

Participants suggested clarification of data used for both internal program management and external monitoring. Other major issues associated with accountability requirements included determining the cost of data collection, what data should be collected, and how to collect accurate and reliable information.

Standardization

According to participants, the lack of standardization of terminology, program requirements, client tracking methodologies, reporting requirements, forms, and service delivery among Texas Department of Aging (TDoA), TxDOT, and the local Area Agency on Aging is a principal issue impeding coordination efforts. A primary concern among transit providers is the need for uniform TDoA client intake and tracking requirements. Most public transportation agencies have developed their own methods for collecting information required by Title III and other funding programs. These agencies not only lack the necessary resources to collect the detailed information required by the client intake process, but feel that requiring transit agencies to convert to a system designed for social service programs is impractical, cumbersome, and expensive in terms of administrative costs.

The clarification of common definitions used by agencies, providers, and funding agencies may help to improve the potential for coordination. Participants expressed the desire for standardizing data collection terminology, understanding differences between government-funded and non-profit services, and having a clear definition of what constitutes a "fare" and "donation" according to existing rules and regulations.

Communication

Local coordination efforts were thought to be hindered by the lack of communication among transit providers. Participants felt that communication may be improved by changing attitudes, clarifying program goals, and improving technical assistance.

Improving the trust between transit providers and funding agencies is the first step toward improving attitudes. This trust may improve when agencies clearly understand what information is required of them and how that information is to be used. Understanding the program goals of funding agencies, social service agencies, and rural public transportation providers can also lead to improved communication. Many human services agencies do not understand how rural public transit providers can help them and vice versa. In addition, some concern was expressed that state agencies responsible for human services did not fully understand the goals and objectives of public transportation. Finally, establishing a forum by which transit providers and agencies can receive technical assistance with reporting problems may help to

improve communication between agencies that require the information and agencies that must provide the information.

SUMMARY

Over two decades of research and experience has demonstrated that coordination can result in more efficient use of transportation resources. There is no one appropriate level of coordination, however. It can be as simple as sharing information or as complex as creating an independent agency to assume all transit responsibilities.

The major goal of coordination is to have a more responsive, efficient, and reliable transit system. Although the actual benefits of a coordination effort will depend on the approach taken and the level of commitment, some possible benefits include expanded services, improved service quality, and long-term cost savings.

Numerous barriers may prevent coordination efforts from gaining momentum. Many evolve around economic, political, institutional, regulatory, physical, and legal issues. Although some coordination issues may be challenging, many of the barriers discussed can be overcome by carefully evaluating the local situation and by enhancing the awareness of the benefits of coordination through continuous education.

5. TRANSIT COORDINATION STRATEGIES AND IMPLEMENTATION APPROACHES

As noted, numerous strategies and techniques for coordination have evolved over the years. In order to identify potential strategies that may be appropriate for use by public transit operators and service providers in Texas, a thorough review of the literature was conducted to examine which approaches have been more successful. Table 7 provides a listing of the coordination strategies and implementation techniques identified from this review. This chapter discusses potential coordination strategies in more detail. The review did not reveal any one dominate coordination strategy. This further supports the need to tailor coordination efforts to meet local needs and conditions.

Strategies selected for more detailed consideration in this study include those to coordinate vehicle operations, maintenance, and administrative functions. In addition, the use of user-side subsidies and contract services in coordinated systems is explained. Coordination strategies may be implemented separately or in combination. Several potential implementation techniques were selected to illustrate how various strategies may be incorporated into a coordination program. The implementation techniques included in this study are: lead agency, brokerage, and administrative agency.

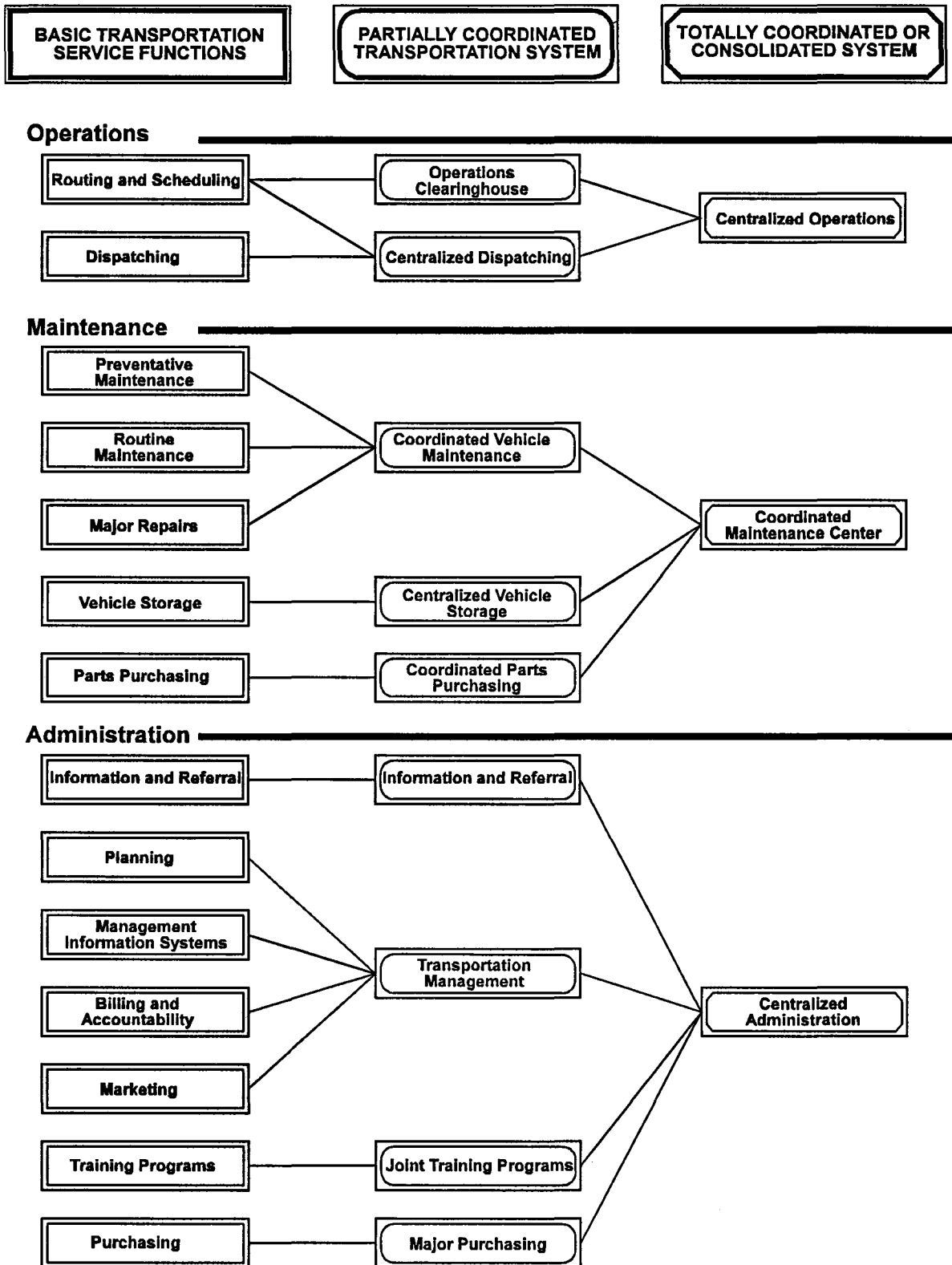
SERVICE DELIVERY COORDINATION APPROACHES

The following discussion applies several coordination concepts to the three program components of transportation service delivery: vehicle operations, vehicle maintenance, and administration (25). Figure 5 illustrates the relationship of the coordination strategies to the three program components. The level of coordination becomes more complex moving from left to right in the continuum; from individual service functions with no coordination to a totally coordinated or consolidated function.

TABLE 7. SELECTED COORDINATION STRATEGIES AND IMPLEMENTATION TECHNIQUES

SELECTED TRANSPORTATION COORDINATION STRATEGIES
Vehicle Operations Coordination <ol style="list-style-type: none">1. Operations Clearinghouse2. Centralized Dispatching
Maintenance Coordination <ol style="list-style-type: none">1. Coordinated Vehicle Maintenance2. Coordinated Parts Purchasing3. Centralized Vehicle Storage4. Coordinated Maintenance Center
Coordination of Administrative Functions <ol style="list-style-type: none">1. Information and Referral2. Training Programs3. Major Purchases4. Transportation Management
Other Coordination Strategies <ol style="list-style-type: none">1. User-Side Subsidies2. Contract Services
IMPLEMENTATION TECHNIQUES FOR COORDINATION STRATEGIES
Lead Agency <ol style="list-style-type: none">1. Existing Human Services Lead Agency2. Pure Transportation Lead Agency
Brokerage <ol style="list-style-type: none">1. Pure Brokerage2. Partial Brokerage
Administrative Agency <ol style="list-style-type: none">1. With Lead Agency2. With Broker

FIGURE 5. RELATIONSHIP OF COORDINATION APPROACHES TO TRANSIT FUNCTIONS



Source: Applied Resource Integration, LTD, *Planning Guidelines for Coordinated Agency Transportation Services*, Boston, MA: Applied Resource Integration, LTD, April 1980, p. 13.

Because every transportation provider within a community must carry out these same basic service functions, the potential exists for the overlap of operations and maintenance and duplication of administrative functions. Implementing some or all of these coordination approaches can lead to a more responsive, efficient, and reliable transportation system.

Vehicle Operations Coordination

Vehicle operations generally consist of two major activities: routing and scheduling, and dispatching. Two possible operations coordination concepts that can be applied to these activities are operations clearinghouse and central dispatching. Both concepts attempt to improve the efficiency of vehicle operations through cost savings and more productive vehicle use.

Operations Clearinghouse

Since many agencies schedule trips in advance, this information represents a valuable resource that can be used to facilitate coordination. An operations clearinghouse is one means to coordinate vehicle operations for several participating agencies. The clearinghouse collects routing and scheduling information, determines available vehicle capacity or vehicle time, and makes trip arrangements. Participating agencies use the clearinghouse to arrange client transportation.

The clearinghouse determines available capacity or available vehicle time, and arranges the actual trip. Service requests may be either time-shared or ride-shared. Participants agree in advance on the use of vehicles on a shared basis, under specific conditions with established reimbursement arrangements. Case Study 6 provides an example of this approach.

Centralized Dispatching

Dispatching is the control over the movement of vehicles in their daily operations. Communication with the driver is essential in order to make adjustments to vehicle schedules or routes and to maintain flexibility. Centralized dispatching involves central control over the daily movements of vehicles and offers advantages beyond the operations clearinghouse. For instance, in situations where the time of a return trip is uncertain, rather than

CASE STUDY 6. OPERATIONS CLEARINGHOUSE

FAYETTEVILLE, ARKANSAS

The operations clearinghouse concept was developed in Fayetteville, Arkansas, as part of the Office of Human Development Services (OHDS) transportation coordination demonstration project. The clearinghouse project was operated by a private nonprofit agency. Sixteen agencies participated in the project, representing a broad range of user groups including children, elderly, developmentally disabled, and persons who are economically disadvantaged. Agencies needing transportation services call the clearinghouse at least one day in advance. The trip is arranged and confirmed by the clearinghouse. As a first choice, an attempt was made to place the trip on a vehicle that was already scheduled to carry passengers. If that did not work, the trip was placed on a vehicle that would be idle at the time. Participating agencies were charged an established fee on a per trip basis for use of the vehicle without a driver or with a driver. The purchasing agency was billed at the end of each month. A portion of the payment for transportation services was retained by the clearinghouse to help cover clearinghouse expenses.

Source: Applied Resource Integration, LTD, *Planning Guidelines for Coordinated Agency Transportation Services*, Boston, MA: Applied Resource Integration, Ltd., 1980, p. 14.

keeping a vehicle on standby to accommodate the return trip, the dispatcher can utilize that vehicle for other trips and provide the passenger's return trip on another vehicle.

Centralized dispatching provides flexibility by allowing for the rearranging of scheduled trips and the insertion of new trips on the same day of service. Information on existing public transportation services can also be used to facilitate linked trips involving local specialized services and fixed-route transit services. Although centralized dispatching requires a great deal of planning and cooperation among agencies, the overall result is more efficient use of vehicles, better back-up service potential, and increased capacity to serve more passenger trips. Participating agencies also benefit through the reimbursement for the use of their vehicles on either a ridesharing or timesharing basis. Case Study 7 provides an example of the use of this technique.

Centralized dispatching offers advantages beyond the operations clearinghouse. However, the two approaches can be integrated to achieve maximum efficiency of vehicle operations. The major benefit of centralized scheduling and dispatching is that clients of other agencies can utilize otherwise

CASE STUDY 7. CENTRALIZED DISPATCH SERVICE

BEXAR COUNTY AREA AGENCY ON AGING: SAN ANTONIO, TEXAS

In 1993, the Bexar County Area Agency on Aging established a centralized radio/dispatch system for use by agencies providing transportation services to Title III recipients in the San Antonio area. Funds allocated under the Older Americans Act were used to purchase new radio and dispatching equipment and to fund a full-time dispatcher to operate the system. The City of San Antonio houses and operates the new centralized dispatching system.

The need for a centralized dispatch system for client transportation trips arose from the problem of clients having to contact several different agencies for transportation, depending on their trip purpose. For example, a client would contact one agency for transportation to a senior center, and a different agency in order to arrange transportation for a trip to the doctor's office. The result was duplication of dispatching services.

Agencies receiving Title III funds are encouraged but not required to use the centralized system to schedule client trips. To date, four agencies have agreed to use the coordinated dispatching system. During the first year of operation, underlying disagreements have evolved over the need to streamline the data entry and reporting system in to avoid unnecessary duplication. Participating agencies are also experiencing increased costs due to increased vehicle usage over larger service areas. In general, however, participants view their experience with the centralized dispatch system as positive. The bottom line is that participants in the centralized dispatch system are eliminating duplication of efforts, thus accomplishing one of the goals of coordination.

For more information on the centralized dispatching system, contact Cecilia Martinez, Bexar County Area Agency on Aging, at (210) 225-5201.

empty seats or unused vehicle time, meeting some additional trip needs at little or no increase in operating costs.

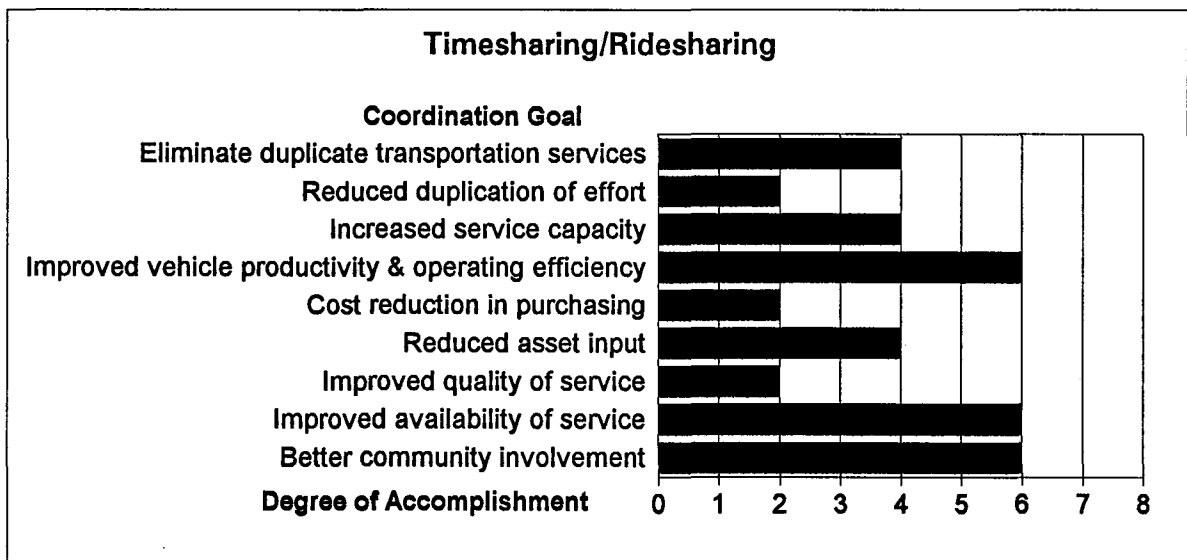
Agencies that choose to establish a centralized dispatching system and/or an operations clearinghouse must address billing and accountability issues. Billing refers to the provider's billing of purchasers for the cost of transportation services provided. Accountability refers to the provider's keeping of records to show the purchaser the number of trips taken, when, and by whom. Participating agencies may choose to delegate billing and accountability responsibilities to the clearinghouse or dispatching center or may elect to retain them.

Ridesharing and timesharing are two techniques that can be implemented using the coordinated operations management approaches previously described. These techniques benefit participants who can utilize available

space through ridesharing or idle vehicle time through timesharing. These concepts are discussed further below.

Ridesharing - Ridesharing is a technique designed to increase the utilization of vehicle time and can be applied in situations when two separate agencies have riders to be picked up in the same vicinity at approximately the same time. In this situation, the two agencies would send only one vehicle to pick up all the riders for both agencies. Although the number of trips would remain the same, agencies would pay for less driver time and save on mileage-related costs. As Figure 6 indicates, both ridesharing and timesharing are likely to lead to improved vehicle productivity and operating efficiency, improved availability of service, and enhanced community involvement.

FIGURE 6. DEGREE TO WHICH TIMESHARING/RIDESHARING ACCOMPLISHES COORDINATION GOALS



Source: Comsis Corporation, *Guidebook for Planning Small Urban and Rural Transportation Programs*, Pittsburgh, PA: Comsis Corporation, June, 1990.

Timesharing - Timesharing is a second technique aimed at improving the efficient use of vehicle resources by reducing vehicle idle time. Under this technique, an agency allows its vehicles to be used by other agencies under a cost-reimbursement plan during periods when agency vehicles are idle. Depending on contract terms, the vehicle may or may not include a driver. Case Study 8 provides an example of timesharing.

Ridesharing and timesharing can work in most situations; however, the ease of implementation depends upon client locations, time of trips, and vehicle availability. Agencies benefit by making use of space available through ridesharing, or by taking advantage of idle time through timesharing. These two concepts can be implemented by establishing an operations clearinghouse and centralized dispatching system.

CASE STUDY 8. TIMESHARING

GOODWILL INDUSTRIES, INC.: LUBBOCK, TEXAS

Goodwill Industries, Inc. has three 7-passenger vans and one lift-equipped van funded through the Section 16 program. The agency uses the vans to transport persons with disabilities to employment sites during the evening hours. Thus, throughout most of the day, the vehicles sit idle.

In 1994, a representative from Citibus, the municipal transit system, approached Goodwill with the idea of allowing other agencies access to the vans during vehicle idle time. As a result, Goodwill entered into a verbal agreement with Marian Moss Enterprises, Inc., allowing the agency to use the vans between 8 AM and 4:30 PM. The agency often needs lift-equipped vehicles to transport physically challenged clients to employment sites. As part of the agreement, Marian Moss supplies a driver and pays a rate of 28 cents per mile.

Timesharing allows Goodwill to improve vehicle productivity while enabling Marian Moss to provide a service to clients that it previously could not. Participation in the coordination effort also resulted in Goodwill seeking more opportunities to share its vehicles. During summer months, the agency leases the lift-equipped van to the Muscular Dystrophy Association to transport children to camp. In addition, Goodwill allows the South Plains Food Bank to use the vehicles for special occasions.

For more information, contact Ann Bacon, Goodwill Industries of Lubbock, Inc., at (806) 744-8419.

Maintenance Coordination

Maintenance functions include vehicle storage, routine and preventative maintenance, major repairs, and maintenance-related purchasing. Several coordination approaches can reduce maintenance costs and/or increase the performance reliability of agency vehicles and transportation services. It is possible to coordinate vehicle maintenance, maintenance-related purchasing, and vehicle storage. The combination of all three activities results in a coordinated maintenance center.

Coordinated Vehicle Maintenance

Vehicle maintenance is more costly and involves more labor than parts purchasing or storage. Therefore, coordinated vehicle maintenance allows providers to build up a volume of work that makes one central maintenance facility cost-effective, or to obtain reduced charges from current maintenance facilities. Another option is to use a maintenance facility that has the capacity to handle additional maintenance work.

Coordinated Parts Purchasing

Potential cost reductions and discounts through volume purchases make coordinated purchasing attractive even if vehicle maintenance is not centralized. Agencies that currently centralize vehicle maintenance may also find it beneficial to coordinate the purchase of gasoline, diesel fuel, and vehicle parts to achieve maximum cost savings.

Centralized Vehicle Storage

Typically, providers store vehicles in the same facility where dispatching takes place. In some cases, however, this may not be feasible. If storage costs are high, or agencies are dissatisfied with current facilities, coordinated storage may prove attractive. One factor to consider with this alternative is the distance from provider service areas to the centralized storage facility.

Coordinated Maintenance Center

A coordinated maintenance center brings together several maintenance activities and allows agencies to purchase one or more of these services at a central facility. In addition to providing maintenance services, a coordinated maintenance center could offer a spare vehicle pool which creates a larger pool of available vehicles. Agencies benefit by allowing time-shared use of agency vehicles on a cost-reimbursement basis when providers' vehicles are being serviced or repaired. Case Study 9 provides two examples of a coordinated maintenance program.

CASE STUDY 9. COORDINATED MAINTENANCE PROGRAMS

GRAND RAPIDS, MICHIGAN AND FAYETTEVILLE, ARKANSAS

The Grand Rapids Transit Authority (GRATA) developed a coordinated vehicle maintenance service as part of the Office of Human Development Services transportation demonstration project. The coordinated maintenance service charged participants a basic hourly rate for preventative and repair maintenance, plus the cost of parts. Parts were discounted at 40 percent off the regular retail price. GRATA also provided regular vehicle inspection programs as an integral part of the maintenance service.

In Fayetteville, the demonstration project offered a parts-purchasing service and a centralized maintenance shop to participating agencies. In this case, parts were discounted at 40-50 percent off the retail price to which agencies were previously accustomed. Repair work had variable rates: a set annual charge for the complete preventative maintenance program and for a number of regular repairs.

Source: Applied Resource Integration, LTD, *Planning Guidelines for Coordinated Agency Transportation Services*, Boston, MA: Applied Resource Integration, Ltd., 1980, p. 16.0

Coordination of Administrative Functions

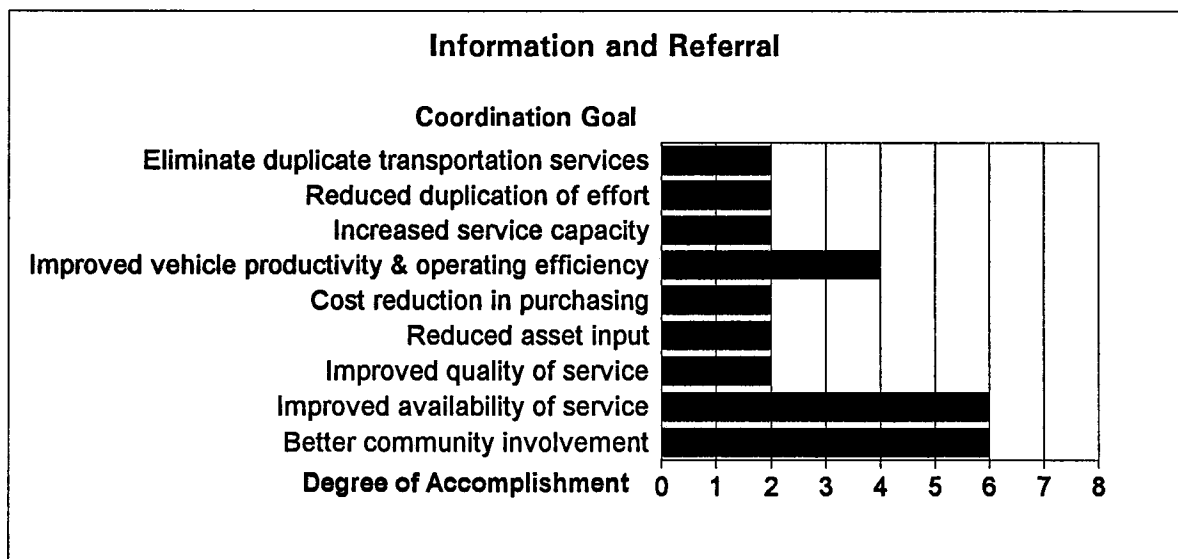
Administration consists of the functions necessary to support vehicle operations and maintenance. These include management supervision, information and referral, billing and accountability, planning and marketing, driver training, record keeping, and purchasing. In some cases, it may be difficult to separate some activities for coordination because they are integrated into the overall administration of an agency's program. Nonetheless, there are advantages to coordinating certain administrative activities, such as information and referral, training, major purchasing, and transportation management.

Information and Referral

The exchange of information is the first step in coordination and introduces participants to the potential benefits of further coordination. When several agencies and transit providers operate within a community, the potential exists for the duplication of effort in the provision of information, as well as creating confusion for clients and patrons. Establishing an information and referral program that provides details on agency transportation services, in addition to public transit and private transportation providers, can eliminate the duplication of effort and lead to improved services and better community involvement.

Figure 7 illustrates the degree to which information and referral programs can accomplish these goals.

FIGURE 7. DEGREE TO WHICH INFORMATION AND REFERRAL ACCOMPLISHES COORDINATION GOALS



Source: Comsis Corporation, *Guidebook for Planning Small Urban and Rural Transportation Programs*, Pittsburgh, PA: Comsis Corporation, June, 1990.

An information and referral program may provide a forum for referrals to a broad range of providers, while at the same time, be more responsive to prospective clients' and patrons' needs. Agency employees aware of the various types of transportation services and providers in the community can help clients effectively utilize existing transportation resources. Case Study 10 provides an example of an information and referral program.

Training Programs

Joint training programs effectively utilize training personnel and materials, as well as maximize constrained training budgets. Typically, participants maximize individual training budgets by sharing the costs of a course, by offering courses that would not be cost effective for a single agency to provide, and by sharing the expense of developing or purchasing expensive training materials. Smaller transit providers, who may not be able to afford individual training programs, also benefit from coordinated training programs. Topics for joint

training programs may include driver and safety training, first-aid and life-saving techniques, and sensitivity training targeted at certain client groups.

CASE STUDY 10. INFORMATION AND REFERRAL PROGRAM

NUTRITION & SERVICES FOR SENIORS: BEAUMONT, TEXAS

Since 1984, the Nutrition & Services For Seniors has provided transportation services for senior citizens in Jefferson and Hardin Counties. The non-profit agency operates twenty-two vehicles and provides approximately 3,300 trips per month to shopping centers, medical appointments, and nutrition centers throughout the two county area. Between 11AM and 1 PM each day, Nutrition & Services For Seniors provides some 1,300 meals; 600 of which are delivered door-to-door. The agency is also a designated Section 16 and Section 18 operator. In this capacity, the agency provides transportation services for senior citizens and persons with disabilities in Jefferson County and demand-response rural transportation in Hardin County for all ages.

Nutrition & Services For Seniors first became aware of the lack of information sharing among area transportation providers following a presentation to a local hospital. To address this deficiency, the agency contacted every transportation provider in the area, both public and private, and developed a community transportation brochure. The brochure included information on the types of transportation services available, eligibility requirements, and telephone numbers for additional information.

All transportation providers received brochures as well as local hospitals. The net result has been a greater awareness by agency employees and clients of the available transportation resources in the two county area. The coordination effort has also led to heightened community involvement as hospitals easily assist patients with their transportation needs. For more information, contact Elaine Shellenberger, Nutrition & Services For Seniors, at (409) 892-4455.

Major Purchases

Economics dictate that buying in volume decreases costs. Items considered for joint purchases should represent a major expense since cost savings will be the only incentive for agencies to go through the effort of joint purchasing. For example, gasoline and vehicles represent major expenses for all transit operations. Public transit systems make perfect candidates to lead in the coordination efforts of purchasing fuel and vehicles because their primary focus is transit service. Moreover, an agency may take the lead in coordinating the purchase of specially-equipped vehicles necessary to deliver transportation to senior citizens and persons with disabilities. Varying vehicle life spans make coordinating new vehicle purchases more difficult. However, those who desire to jointly purchase new vehicles can benefit from the purchasing mechanism

already established by many state agencies, counties, and cities which should simplify the coordination process considerably.

Insurance may also be a good candidate for joint purchasing. By pooling insurance premiums for vehicles, general liability, and personnel, participants may benefit from increased leverage as a result of the dollar volume of the combined policies. Case Study 11 provides an example of the development of an insurance consortium in Connecticut.

CASE STUDY 11. POOLING INSURANCE PREMIUMS

CONNECTICUT DEPARTMENT OF TRANSPORTATION

The Connecticut Department of Transportation expects to save about \$580,000 in 1993-94 by the formation of a new insurance consortium. The consortium, created by the Department's Bureau of Public Transportation, includes 13 transit districts. Prior to the consortium, transit systems purchased individual insurance policies with premiums totaling \$1,197,326. Premiums this year will total \$615,927. Transit officials say the consortium provides more control over costs and long-term stability. In the future, officials expect to use joint purchasing for other transit items. For information, call the CT DOT Office of Communications at (203) 566-4326.

Source: *Urban Transport News*, September 30, 1993, p. 158.

The group purchase of vehicle parts, insurance, and supplies can lead to the standardization of agency fleets and may allow participants to better negotiate lower costs with vendors. If requirements are similar, agencies may wish to consider the joint purchase or lease of office facilities or the development of multi-service facilities. Other administrative functions that can be coordinated are staff supervision, marketing, billing, accountability, record keeping, and planning.

Transportation Management

The goal of transportation management is to ensure that transportation is provided safely, reliably, and efficiently. The concept involves those activities necessary to achieve this goal. Management's responsibilities may include supervising and evaluating dispatchers, drivers, and maintenance personnel, handling client complaints, and overseeing financial transactions related to transportation.

Agencies that want to coordinate transportation management may hire one person or a management team to supervise several individual agency operations. Typically, coordinating transportation management requires the existence of one of the following two situations:

- The management supervision requirements for all participating agencies can be met by one or more of the existing agency staff who have demonstrated experience in transportation management.
- A professional transportation manager or firm can be hired at a cost consistent with the reduction of responsibilities on the part of each of the participating agencies.

Although the concept can be complicated and largely dependent on individual agency attitudes, coordinating transportation management functions should lead to more efficient agency operations. The concept works best with larger agencies whose directors devote excessive time to transportation in relation to other job demands. For a successful coordination effort, however, agency administrators must have a high degree of confidence in the individual or group selected to manage the transportation operations of their agencies. Further, administrators who recognize that substantial gains to efficiency and performance can be achieved are more likely to support transportation management coordination.

Other Service Coordination Alternatives

The previous section included strategies that may be used to coordinate both service and non-service components of public transportation service delivery. Non-service coordination alternatives reduce the per person trip cost by lowering the operating costs of vehicles used for transportation services (8). Agencies can lower vehicle operating costs by working together to obtain fleet discounts for vehicle services. Joint purchasing of preventative maintenance, insurance, fuel, and vehicle parts are examples of non-service coordination alternatives.

Approaches aimed at coordinating transportation service functions reduce the per person trip cost by increasing the number of person trips made with each vehicle. Increasing the number of person trips for each vehicle allows vehicle operating costs to be divided by a larger number, resulting in a reduced per person trip cost. Timesharing, ridesharing, and information and referral services,

were a few of the service coordination approaches previously examined. Two other service coordination alternatives designed to increase ridership levels are user-side subsidies and contract service. A brief discussion of these concepts follows.

User-Side Subsidy Program

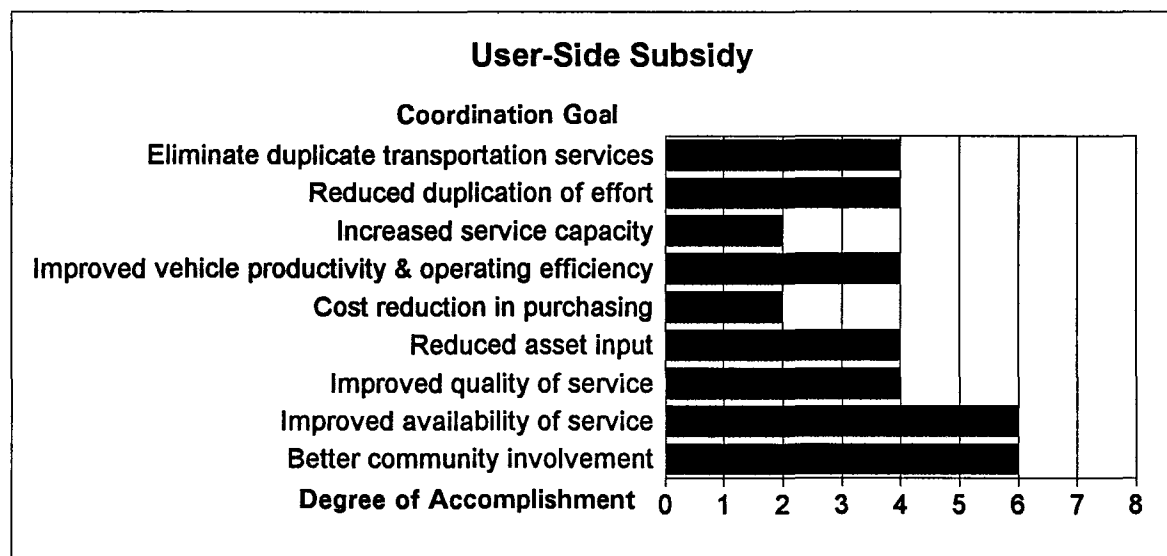
In user-side subsidy programs, agencies provide coupons, tickets, vouchers, or tokens to clients to purchase services from existing community transportation providers, such as taxi cabs, public transit providers, private operators, and other human services agencies. Providers redeem the vouchers from the subsidizing agency for a value established in advance. This value usually represents the difference between the fare paid by the rider and the total cost of the trip. This technique has not been used in Texas, and the implementation of user-side subsidy programs would represent a new approach to allocating transit funds.

Because user-side subsidies tend to involve all transportation providers within a community, these programs are likely to result in improved availability of service and enhanced community involvement. Figure 8 identifies some of the coordination goals met by the user-side subsidy programs.

Contract Service

Contract service is a contractual agreement in which an agency buys some or all of its transportation services from an existing public or private transportation provider. There are several variations of contract service. An agency may contract to have a provider supply vehicles, drivers, insurance, maintenance, vehicle parts, and fuel. In this situation, an agency may purchase a block of service from a transit provider that owns and operates vehicles and equipment.

FIGURE 8. DEGREE TO WHICH USER-SIDE SUBSIDY ACCOMPLISHES COORDINATION GOALS



Source: Comsis Corporation, Guidebook for Planning Small Urban and Rural Transportation Programs, Pittsburgh, PA: Comsis Corporation, June, 1990.

The most common example of this type of coordination is when human services agencies purchase transportation services from the local Section 18 operator. A variation may be when the human services agency continues to operate some service but purchases transportation beyond its in-house capacity from the Section 18 operator. It is not necessary that the agency provide transportation prior to purchasing services from the Section 18 operator, or that the agency ceases to provide transportation after purchasing services. Case Study 12 and 13 provide examples of contract service.

Another variation of contract service is when a service operator leases vehicles from an agency and uses those vehicles to provide transportation for agency clients. In this case, the operator may provide the insurance, maintenance, and repairs for the agency vehicles. Usually this arrangement allows vehicle idle time to be used to serve additional patrons. An agency may also lease private vehicles from a leasing agency that provides contract maintenance service for the vehicles.

CASE STUDY 12. PURCHASE OF SERVICE CONTRACTS

MORGAN COUNTY, ALABAMA

Morgan Accessible Public Transit System (MATS) executed purchase of service agreements with human services agencies that provided client transportation. Participating agencies would pick up MATS clients along their routes and be paid a \$2.00 fare. When these agencies have clients located along MATS routes, MATS provides service and bills the agency \$2.00 per one-way trip. MATS also provides general public demand-responsive service with a 24-hour advance reservation along a flexible route system. When general public riders are along an agency route, the dispatching is referred to the appropriate agency.

There have been no problems in mixing general public and agency clients on the same van because most public riders are in some manner transportation dependent, and there is no fixed route service in the MATS service area. The use of purchase of service contracts has permitted MATS to reduce its service area without reducing client transportation or general public transportation. The agreement also permits other agencies to similarly increase client transportation without direct service expansion.

Source: Erskine S. Walther, *Coordination of Rural Public Transportation Services in Three Southeastern States*, Greensboro, NC: North Carolina A&T State University, Transportation Institute, 1990, pp. 16-19.

Cost is an important factor when considering contracting for services. Several forms of compensation for purchased services exist. The more common forms are:

- fixed price - the exact amount of compensation to be paid for the specified service is agreed to in advance.
- cost plus fixed fee - the transportation provider is reimbursed for all eligible costs incurred, plus a fixed base fee.
- fixed unit cost - a fee per cost unit (dollars per vehicle mile or dollars per vehicle hour) or per service unit (dollars per passenger or dollars per trip) is paid, based on the number of units delivered (30).

CASE STUDY 13. CONTRACT SERVICES

WEST TEXAS OPPORTUNITIES, INC.: ODESSA, TEXAS

West Texas Opportunities, Inc. operates twenty-three vehicles and provides demand response rural public transportation for citizens in west Texas. The service area encompasses 15 counties and some 20,000 square miles. West Texas Opportunities, Inc. delivered 130,893 one-way trips and logged 487,409 vehicle miles in 1994. With offices located in ten counties, the Section 18 provider devotes a lot of time providing medical trips to hospitals in Midland, Odessa, Big Spring, and Lubbock.

In addition to West Texas Opportunities, Inc., the area has eleven Section 16 operators that provide transportation for persons with disabilities and senior citizens. Since many agencies only have one vehicle, an informal verbal agreement was formed with West Texas Opportunities, Inc. to provide transportation for their clients on an as needed basis when demand exceeds capacity. Agency clients pay the same rate as the general public for each one-way trip - 50 cents.

For more information, contact Andy Anderson, West Texas Opportunities, Inc., at (806) 872-8354.

SELECTED COORDINATION IMPLEMENTATION APPROACHES

In real life, most coordinated systems are hybrids. Because no rigid model for implementing transit coordination exists, coordinated systems can be designed to meet the particular needs of an individual community. As more communities implement transportation coordination, an even wider range of options will likely emerge.

Several methods for implementing coordination strategies appear appropriate for use by public transit operators and service providers in Texas. Strategies identified in the previous sections can be implemented separately or in combination in a variety of different ways. The implementation methods selected for further discussion in this report include lead agency, brokerage, and administrative agency.

Lead Agency (24, 31)

Although a number of variations and combinations of coordination models exist, there are primarily two types of consolidated systems – lead agency and brokerage. Consolidated systems are operated under a range of administrative alternatives including:

- an existing human services agency;
- an existing public transit system;
- municipal or county governments;
- a private, nonprofit organization created expressly for the purpose of operating consolidated transit services;
- a public authority; or
- a private management company

Each of these organizational alternatives can further involve private sector participation in all, or part, of the actual delivery of transit services.

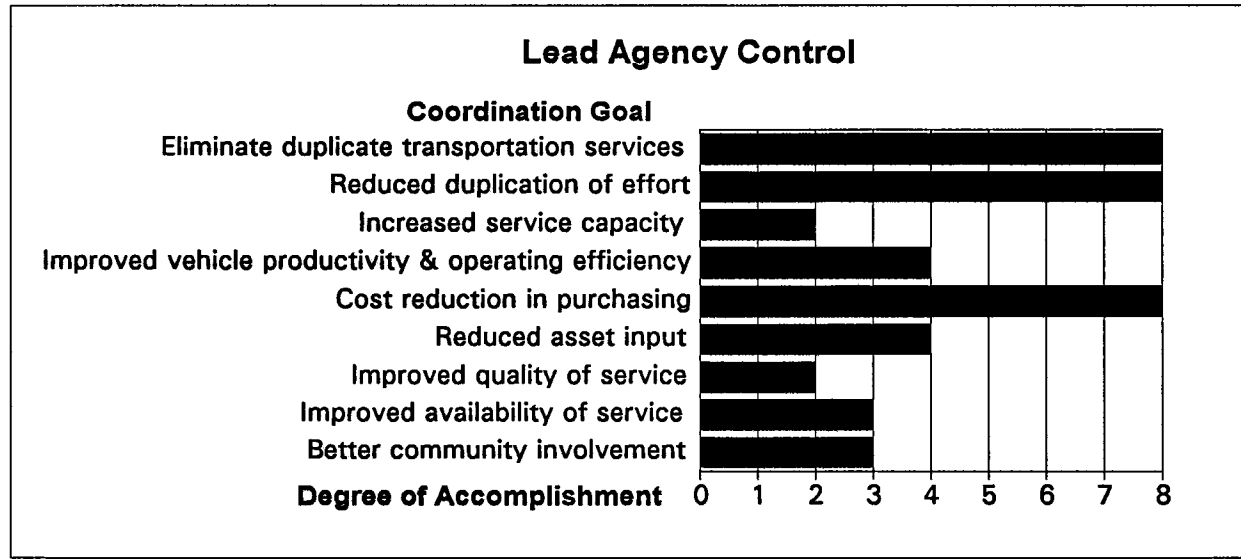
In a lead agency model, one agency takes the lead in the coordination effort and assumes the responsibility for providing transportation for several other participants. In this model, agencies that receive transportation funding may, but do not necessarily, provide the service. They do, however, play a key role in service design, contract negotiations with other transportation providers, and oversight of several transportation functions. Also, if the lead agency contracts with others to provide actual services, it can function as a monitoring system. The lead agency may take on most of the related transportation responsibilities including:

- administration;
- grants administration;
- purchase of service contracts;
- scheduling;
- dispatching;
- operations;
- maintenance; and
- purchase of vehicles and other capital equipment.

The lead agency model is especially appropriate in situations when there is a strong, pre-existing transportation provider such as a human services agency or a Section 18 operator. Participants transfer vehicles and operating control to the consolidated transportation agency.

Although consolidation has clear administrative cost reduction advantages, issues associated with self protection interests may arise. As illustrated in Figure 9, the lead agency approach can help to accomplish three goals of a coordinated system. Implementation may eliminate duplicative transportation services and reduce duplicative efforts. In addition, a lead agency model can lead to cost reductions in purchasing.

FIGURE 9. DEGREE TO WHICH LEAD AGENCY ACCOMPLISHES COORDINATION GOALS



Source: Comsis Corporation, Guidebook for Planning Small Urban and Rural Transportation Programs, Pittsburgh, PA: Comsis Corporation, June, 1990.

The next section describes two approaches to the lead agency model: the lead agency as an existing provider of other services and the lead agency as solely responsible for transportation services.

Existing Human Services Lead Agency - In this variation of the lead agency model, an existing human services agency assumes the responsibility to provide transportation for itself and other participants. Case Study 14 provides an example of this approach. Typically, larger human services programs take the lead in developing this consolidated system since they have the administrative and overhead resources as well as the largest inventory of vehicles. An attractive feature of the model is that administrative costs generated from personnel hiring and benefits, insurance, grants writing, and contracting can be shared among the participants. This is particularly important in the early stages of a coordinated program if start up funds are difficult to find.

Use of an existing human services agency as the lead agency offers several advantages. These include:

- operational stability – because the lead agency provides a variety of services, it is not likely to cease operations;
- funding stability – since the lead agency already has program funding, it is likely to continue providing resources for transportation services;

CASE STUDY 14. EXISTING LEAD AGENCY

YORK COUNTY COMMUNITY ACTION CORPORATION - MAINE

The York County Community Action Corporation (YCCAC) serves York County, Maine, a 1000 square mile area in the southern part of the state. The provision of transportation is an important part of the overall services provided by YCCAC.

Coordination in York, Maine, was assisted by a 1979 act that established a framework for coordinating state and federal transportation funds and provided for state planning assistance. As a result, nine geographic regions were established by the Maine Department of Transportation, and one provider was designated for each region. The role of the provider was to formulate regional operational plans and to provide for maximum coordination of funds among state agencies sponsoring transportation.

YCCAC operates several different types of transportation services for the county including: public fixed-route transit services; demand-responsive services; and subscription services. YCCAC obtains transportation funding from the Social Services Block Grant, Title III, Medicaid, Vocational Rehabilitation, Head Start, and Section 18 and Section 16.

One exemplary feature of YCCAC's transportation services is that it developed an accurate cost allocation model in order to recover its full costs for Medicaid transportation. Other funding sources are then used to pay for trips not covered by Medicaid.

Source: Center for Systems and Program Development, Inc., *Best Practices in Specialized and Human Services Transportation Coordination*, Washington, D.C.: Center for Systems Program Development, Inc., 1989, pp. 13-16.

- staffing stability – larger human services programs are more likely to have less staff turnover due to better employee benefits packages; and
- more political influence – the lead agency is likely to have some political influence in the community.

The model has generated some concern among participants that the level of service will not be consistent across client groups. Further, it may not be the

best choice if the goal is to develop a community-supported transportation system since the lead agency may have an image of only transporting human services agency clients. This image may hinder efforts to secure more public funding and support, and may even discourage general public ridership.

Experience has demonstrated that this model is relatively stable and successful, particularly in rural areas. Despite possible concerns about the client image, often the transportation provided by this type of model is the backbone of many rural transportation systems.

Pure Transportation Lead Agency - The pure transportation system is another variation of the lead agency model. The central purpose of this type of lead agency model is to meet the transportation needs of several participating agencies. Unlike the previous model, its administrative structure is totally dedicated to transportation and is not spread among other social service responsibilities.

Typically, the lead agency is a private non-profit organization created specifically to provide transportation. In practice, many pure transportation lead agencies began as a division within an existing human services program. In these cases, the lead agency would take on the role temporarily and create a new agency as soon as the service could sustain the full administrative costs. Case Study 15 provides an example of the pure transportation agency as the lead group in the coordination effort.

Creating a new organization solely to provide transportation has much appeal. Some advantages of the pure transportation lead agency include:

- less concern that the agency will favor one agency over others, because a new organization is not linked to any of the existing human services programs; and
- more efficient and effective service delivery since the management of the system is dedicated to and dependent upon providing transportation.

Because the system is totally dependent on funding from participating agencies, the model is somewhat unstable. Another disadvantage is that the system often lacks the employee benefits of larger and more established human services programs which may affect recruitment and retention of staff. Similarly, the system may have less political influence since it is often a new entity.

The success of this model depends heavily on the level of funding support from the agencies it serves. If the lead agency is a spin-off from an existing human services program, a financial commitment from the parent agency is necessary until the agency is able to develop other stable sources of funding. The use of general public transportation funding, such as Section 18, may help to stabilize the pure transportation system. This funding is critical if the transportation service will serve the general public as well.

CASE STUDY 15. PURE TRANSPORTATION LEAD AGENCY

PARATRANSIT, INC., - SACRAMENTO, CALIFORNIA

Paratransit Inc. has been an early model for transportation in California. In fact, the California "Social Service Transportation Improvement Act," which created consolidated transportation service agencies, was modeled after Paratransit Inc.

At first, the area Metropolitan Planning Organization (MPO) designated the responsibility for coordinating transportation service to Paratransit Inc. The goal of the coordinated system was cost savings on administration and maintenance. Paratransit Inc. was successful in obtaining a portion of the county sales tax designated to its services.

As resources became tighter, Paratransit Inc. was able to convince several of the small transportation programs to join its coordinated system. Transportation purchasers paid no more than 50 percent of the cost of the trip. Individuals could even purchase transportation directly (by paying a fare) from Paratransit Inc. without contacting a human services agency first. Paratransit Inc. worked closely with the human services programs to encourage schedules to improve productivity.

In addition to providing direct transportation service, Paratransit Inc. also renders preventative maintenance services to organizations with lift equipped vehicles. It played a lead role in creating a shared risk insurance pool which obtained significant savings on insurance rates for itself and other transportation providers.

More recently, Paratransit Inc. has taken on the task of providing ADA complementary paratransit service through a subcontract with the Sacramento Transit Authority.

Source: Community Transportation Association of America, *Coordinating Transportation: Models of Cooperative Arrangements*, Washington, D.C.: Community Transportation Association of America, 1994, p. 4.

Brokerage (31)

A second type of consolidated system is a brokerage. A transportation brokerage system brings together agencies that can provide transportation or transportation-related services with agencies that need those services. The brokerage model is a form of a totally coordinated system in which the overall

management of the system is consolidated, but not the vehicle fleets. The actual operation of the brokerage system is dispersed among the participants. In this model, a broker is used as a middleman to identify the transportation needs of a diverse clientele and to match them with those operators that provide transportation services.

The broker generally handles functions such as:

- registration information for eligible individuals including records of allowed services;
- contracting for transportation with private and private non-profit operators;
- billing and record keeping;
- reimbursing operators for services provided; and
- quality assurance for the transportation.

Depending upon the system design, the broker can also handle other functions such as:

- reservations;
- scheduling;
- dispatching;
- maintenance; and
- insurance.

There are many variations of the transportation brokerage model. Discussed below are two types of brokerages: a pure broker and a partial broker.

Pure Brokerage - A pure brokerage model is one in which the broker is responsible for management of a system to provide transportation for human services programs and others but performs no direct operation of vehicles. Case Study 9 provides an example of this approach used in Philadelphia.

The central focus of a pure brokerage structure is to find the most cost efficient way to provide transportation. Because pure brokers do not operate vehicles directly, there is no bias to use their own system. Choices can be made on the basis of other considerations, such as lowest price transportation that

meets certain service criteria or the best quality transportation service for a given price.

CASE STUDY 16. PURE BROKERAGE

WHEELS, INC., - PHILADELPHIA, PENNSYLVANIA

WHEELS, Inc. is an example of a pure brokerage organization that handles request-taking and scheduling. WHEELS has managed medical assistance transportation for the City and County of Philadelphia since 1983 when it first received a contract award from the Pennsylvania Department of Public Welfare (DPW). WHEELS provides a full range of services except for the on-street provision of transportation.

Responsibilities assumed by WHEELS include:

- direction and management of the program, including liaison with client agencies and other external organizations;*
- submission of monthly invoices and service reports to DPW;*
- negotiation of subcontracts with transportation systems and payment for those providers;*
- monitoring of subcontractor performance including field monitoring; carrier adherence to equipment specifications; and driver training, qualifications, and performance;*
- data collection, record keeping, and generation of client reimbursement payments;*
- client eligibility determinations; and*
- reservations and scheduling to ensure use of low cost transportation modes.*

By 1993, WHEELS' budget had more than doubled from the program's inception in 1983. It uses a highly centralized approach and a sophisticated computer system to manage its large volume of trip requests. The computer system allows WHEELS to schedule 4,500 paratransit trips daily and provide reimbursement for over 4,000 daily trips to clients who must use transit, taxicab, or private automotive service.

WHEELS schedules requested trips and provides schedules to participating private carriers. These carriers are selected by competitive procurement on a per-vehicle-hour basis by type of vehicle or service provided.

WHEELS has been highly successful in reducing per trip costs from around \$21 per trip to under \$6 per trip in FY 93. This success is credited to the use of centralized management and control to determine the least expensive form of transportation required to meet standards, a sophisticated computer system for efficient scheduling, and competitive procurement to hold down direct transportation costs.

Source: Community Transportation Association of America, *Coordinating Transportation: Models of Cooperative Arrangements*, Washington, D.C.: Community Transportation Association of America, 1994, p. 12.

Although management and operation are split in a pure brokerage, there are several ways to organize the transportation service. For example, a broker can handle everything from management, administration, contracting, request taking, and scheduling. Other organizations are utilized solely to perform operations, given the broker's schedule. Brokers focus on procuring the lowest price transportation that meets certain standards and using such transportation efficiently. In another variation, the broker is responsible for management, administration, contracting, and quality assurance. The operators of the transportation are then responsible for taking requests from clients, scheduling, dispatching, and providing the rides.

There several advantages and disadvantages to the pure brokerage model. The advantages include:

- less concern about fairness of the trip assignments since the broker does not operate vehicles;
- cost-effective transportation due to competitive procurement for operators;
- organizational efficiency and increased utilization of service providers, such as paratransit operators, taxi companies, human services agencies, or transit agencies;
- more opportunities for smaller agencies to utilize centralized planning and computer technology;
- more choice among qualified contractors; agencies or operators do not have to give up existing fleets; and
- more trust to provide equal transportation to all participants since the broker is not linked to a specific human services program.

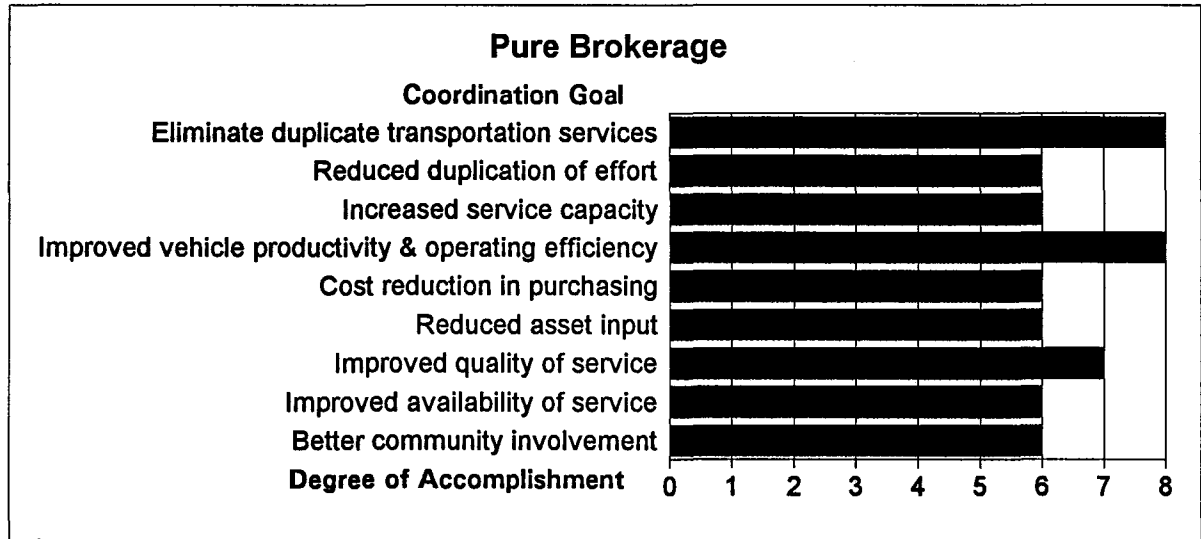
The disadvantages of the pure brokerage are that the model:

- requires significant volume of trips to be able to afford a minimum fixed level of brokerage administrative costs; and
- requires a steady source of public funds or sponsorship to cover administrative costs.

As identified in Figure 10, a pure brokerage can lower per-trip transportation costs, eliminate duplicative services, improve vehicle productivity and operating

efficiency, and improve the overall service quality. However, the downside is that the brokerage operation may require start-up funding in order to keep unit costs more attractive to potential users.

FIGURE 10. DEGREE TO WHICH PURE BROKERAGE ACCOMPLISHES COORDINATION GOALS



Source: Comsis Corporation, Guidebook for Planning Small Urban and Rural Transportation Programs, Pittsburgh, PA: Comsis Corporation, June, 1990.

Partial Brokerage - A partial broker directly operates some services and contracts for additional services. Typically, the partial brokerage starts as a lead agency service provider and adds contracted services to accommodate demand or to improve cost effectiveness.

A common subcontractor for this model is a taxi cab operator. Taxis provide additional transportation during peak and low-demand periods instead of agency vehicles. Taxi cabs can also be used on a per-trip basis, adding flexibility to the brokerage's fleet. Case Study 17 illustrates the use of a partial brokerage system in Yakima, Washington.

The partial brokerage model is advantageous when an existing lead agency will continue to be the main focus of the coordination effort, but could benefit by involving other operators. A key benefit to the lead agency is the ability to expand capacity as needed or the ability to take advantage of lower cost providers for some trips.

The advantages of the partial brokerage model include:

- maximize use of broker's vehicles by using contracted transportation only when there are capacity constraints or when it is more cost effective; and

CASE STUDY 17. PARTIAL BROKERAGE

PEOPLE FOR PEOPLE - YAKIMA, WASHINGTON

People for People (PFP) is a nonprofit corporation established in 1966 to serve clients in central Washington State. The agency handles about 30 local, state, and federal contracts that provide employment and training, volunteer services, and other community services. PFP also provides transportation services and serves as a transportation broker.

Since 1982, PFP has provided transportation services to persons over 60 years of age or persons with disabilities, using a fleet of specially equipped minibuses and vans. It became a broker for the Medical Assistance Administration (MAA) in 1989 and provides brokered services for nine counties. PFP has developed liaisons with most social service organizations with an interest in transportation. It has specified contracts with all transportation systems in the service area including taxi companies, city transit authorities, specialized transportation systems, intercity bus companies, and air services. It has also developed a volunteer transportation network.

To decide which transportation system to use for brokered trips, PFP determines who provides services at the lowest cost. This sometimes means using its own fleet, which is available to provide contracted services for the Area Agency on Aging. However, its fleet only serves a portion of PFP's total service area.

PFP also participated in a demonstration project to expand the brokerage concept to other divisions of the Washington State Department of Social and Health Services and to determine whether a transportation system could also handle brokering responsibilities. PFP was selected because it was a transportation provider acting as a broker and because it had developed a software package that was already in use for eligibility screening. This software package is now being used by other brokers statewide.

Conclusions from the demonstration program indicated that there were no problems associated with using a broker who also provided service. In rural areas where there are few providers, the issue of unfair competition or bias on the part of the broker is often not relevant. In areas with more providers, questions of bias can be handled by monitoring and publicly reporting broker activities.

Source: From DSHS/SWDOT Transportation Brokerage Project Final Report. As reported in *Coordinating Transportation: Models of Cooperative Arrangements*, Washington, D.C.: Community Transportation Association of America, 1994, p. 15.

- administrative functions supporting direct provision of transportation that can be used to support the efforts to contract with other operators. Thus,

start-up administrative costs for contracted transportation are lower than for the pure broker.

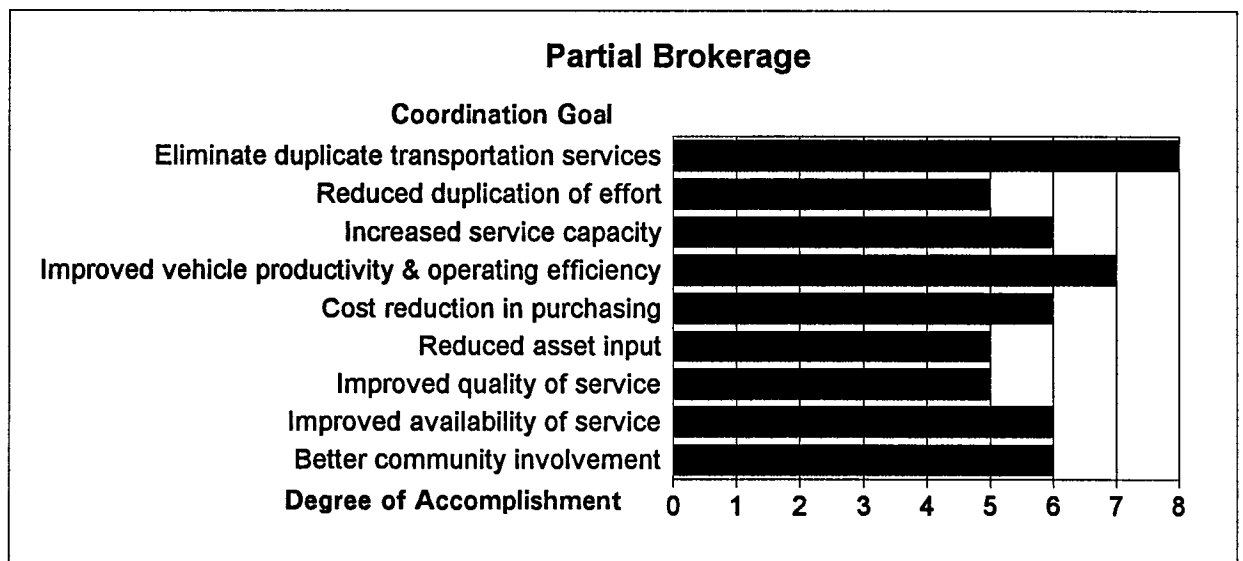
In addition to the advantages listed, Figure 11 shows that a partial brokerage may help to eliminate duplicate services, as well as improve vehicle productivity and operating efficiency.

The disadvantages of the partial brokerage model include:

- partial broker may have a conflict of interest in choosing among its own transportation and contracted transportation; and
- partial broker may be seen as having a bias towards serving its own clients if it is an existing human services program.

Use of the partial brokerage approach is more appropriate in rural areas where fewer providers operate and where the trip volume will not support the start-up and administrative costs of a pure brokerage operation. The approach may also be appropriate when a sponsoring funding agency wants to use the management and operational capacities of an existing entity that lacks the vehicle capacity to handle the full volume of trips.

FIGURE 11. DEGREE TO WHICH PARTIAL BROKERAGE ACCOMPLISHES COORDINATION GOALS



Source: Comsis Corporation, *Guidebook for Planning Small Urban and Rural Transportation Programs*, Pittsburgh, PA: Comsis Corporation, June, 1990.

In practice, many brokers are private, for-profit transportation management organizations. This characteristic is often thought to positively impact the coordination effort for the following reasons:

- a private, for-profit broker with management experience and strong administrative skills can manage the distribution of services in a more professional and effective manner; and
- the private, for-profit broker concept provides greater administrative flexibility to local governments. For instance, in the event of a fiscal crisis or dissatisfaction with the service provided, the services of a contracted broker can be terminated according to the agreement. Such flexibility avoids labor management problems which could result from an agency-operated brokerage system.

Administrative Agency (31)

In an administrative agency model, a public organization assumes the responsibility for coordination and the provision of transportation services to meet the needs of both multiple agencies and the general public. In most cases, the public agency is a regional transit authority with general responsibilities for public transit in the service area.

The administrative agency model is sometimes the end result of a progression that starts with the lead agency and follows with the spin-off of a pure transportation system, the creation of an administrative agency, and ultimately results with the absorption of the pure transportation system by the administrative agency. The administrative agency represents a stable end to the process of developing a transportation system to meet multiple agency and general public needs.

Another impetus to the creation of the administrative agency model comes from the Americans with Disabilities Act. The act mandates that persons with disabilities have the right to fixed-route transit service, or to parallel service when fixed-route service is inappropriate. As a result, many public transportation authorities that did not provide paratransit services are now doing so, and others who had only small programs are expanding them. Some public transportation authorities are actively seeking a role in coordinating services in order to obtain financial participation by human services programs.

The administrative agency model incorporates both the lead agency and brokerage models. The administrative agency provides all of the functions required to operate a totally coordinated system or contracts with a lead agency to handle everything except limited administration and grants management. Moreover, the administrative agency can act as a broker of transportation services or contract with a broker. The next section discusses these variations.

Administrative Agency with Lead Agency - In this variation, the administrative agency takes on all responsibility for coordination in addition to its other functions. For example, a public transit authority would add the coordination of human services transportation to its other responsibilities to provide general public transit service. This is accomplished by taking on all functions or by contracting with a lead agency to be responsible for everything except grant administration, capital responsibilities, and planning. Case Study 18 provides an example of this approach.

CASE STUDY 18. ADMINISTRATIVE AGENCY WITH LEAD AGENCY

MADISON COUNTY TRANSIT - ILLINOIS

In the early 1980s, Madison County Transit's major role was to contract with Bi-State Development Corporation for fixed-route service. At that time, it also contracted with a variety of government and private nonprofit operators for paratransit service. In 1985, Madison County Transit (called Madison Metro) consolidated funding for 23 paratransit programs under the operation of a new, private not-for-profit agency call the Agency for Community Transit (ACT). ACT was created for the sole purpose of providing paratransit service to elderly and disabled residents without the restrictions of governmental boundaries or social service agency eligibility.

Madison Metro handles planning and grants in addition to administration of ACT's contract. ACT manages the service and handles registration, reservations, scheduling, dispatching, operations, and maintenance.

As a public agency, Madison Metro has done extensive planning for improving public and paratransit services in the county. This effort has resulted in ACT operating fixed routes specially designed to meet the needs of human services programs and individuals. These service routes became so popular that the service has been expanded while fixed route service from Bi-State has been reduced.

Source: Community Transportation Association of America, *Coordinating Transportation: Models of Cooperative Arrangements*, Washington, D.C.: Community Transportation Association of America, 1994, p. 23.

Administrative Agency with Broker - Another variation of the administrative model is one in which the administrative agency acts like a broker or contracts with a broker to provide coordinated transportation service. In both cases, the administrative agency handles grants, planning, and sometimes vehicle purchasing. Case Study 19 provides an example of this approach.

If the administrative agency acts as the broker, it handles agreements with human services programs for transportation and reimbursements for such transportation. The agency-broker registers eligible persons and is responsible for contracting with transportation systems and monitoring these contracts. The administrative agency can also handle reservations, scheduling, dispatching, maintenance, and insurance, or it may require that the individual systems remain responsible for these functions.

If the administrative agency contracts with a broker, the broker will be responsible for the agreements with human services programs, reimbursements, registration, and contract monitoring. The broker may also handle reservations, scheduling, dispatching, maintenance, and insurance, or it may have the transportation systems be responsible for these functions.

Use of the administrative agency model can bring about an ideal combination of public planning and funding support and private sector participation. The advantages of using an administrative agency, such as a transit authority, to provide totally coordinated transportation may include:

- increased access to public funding;
- increased access to dedicated taxes and public subsidies which can help support the administrative and operation costs of the program;
- provides bonding authority to help with capital purchases and to serve as a match for federal funds; and
- institutionalizes transportation as a local public service.

The downside to using an administrative model is that transportation costs may increase because the structure adds a layer of management to the operation. Further, human service programs may lessen their financial support as public transportation and local funds increase. This may hinder efforts to expand services beyond the client-based transportation to a more general public paratransit system.

CASE STUDY 19. ADMINISTRATIVE AGENCY WITH BROKER

PORT AUTHORITY OF ALLEGHENY COUNTY - PENNSYLVANIA

The Pittsburgh Paratransit Brokerage Program is an example of an administrative agency model with broker. The Port Authority of Allegheny County (PAT) received funding for a brokerage demonstration program from the Federal Transit Administration in 1978 and has maintained the service since that time. The Port Authority is the public transit operator for the county and operates a fleet of fixed-route buses and a light rail system.

The broker for the service is ACCESS Transportation Systems, Inc. which is a private, for-profit broker. ACCESS provides service for human services programs through a combination of purchase of service contracts, user-side subsidies, two state subsidy programs, and PAT's ADA complementary transit service. The ACCESS service is also available to the general public for a fee.

Both private nonprofit and private for-profit transportation providers are selected by ACCESS through an annual Request for Qualifications process. Compensation rates are negotiated on the basis of costs for private nonprofit operators, on a fixed cost-per-hour basis for dedicated vehicles from private for-profit operators, and a meter rate for taxicab companies. ACCESS also establishes insurance requirements and vehicle standards and handles accounting, billing, communications, and administration.

The PAT region is divided into geographic regions and one operator is designated for each area. Larger carriers are also designated to cover inter-area trips. Most rides are scheduled by having the rider call the designated carrier. This approach was adopted to utilize existing carrier scheduling resources and to minimize the need for ACCESS scheduling resources.

ACCESS's cost experiences demonstrate the importance of developing a volume of service with a pure brokerage model. For instance, in the first year of operation, administrative costs were approximately 30 percent of the total cost for transportation. By the third year, that percentage had been reduced by half, due mostly to trip volumes growing faster than administrative costs. In addition, the total cost per trip had declined by 18 percent. This trend continues at present as the broker's administrative portion has again been reduced by 50 percent.

Source: Community Transportation Association of America, *Coordinating Transportation: Models of Cooperative Arrangements*, Washington, D.C.: Community Transportation Association of America, 1994, p. 23.

SUMMARY

As discussed in this section, there are many strategies and implementation techniques to enhance coordination among transit providers. Some strategies include those designed to coordinate vehicle operations, maintenance, and administrative functions. Two possible coordination strategies involving vehicle operations are operations clearinghouse and centralized dispatching. Ridesharing attempts to increase the utilization of vehicle time while timesharing attempts to reduce vehicle idle time. Both concepts can be utilized when systems implement strategies to coordinate vehicle operations.

Some maintenance activities that can be coordinated include maintenance, parts purchasing, and vehicle storage. A coordinated maintenance center consolidates several maintenance activities and allows participants to purchase services at a central facility.

Coordinating administrative functions might involve establishing information and referral systems, joint training programs, and consolidating management responsibilities. Another possible strategy is to coordinate the purchase of new vehicles and insurance. Two other coordination strategies are user-side subsidies and contract service. The use of these strategies may result in improved availability of service and enhanced community involvement.

Finally, coordination strategies may be implemented separately, or in combination, in a variety of different ways. Some possible implementation methods are lead agency, brokerage, and administrative agency. Both lead agency and brokerage are consolidated systems operating under a range of administrative possibilities, including private sector participation. The administrative agency is also a consolidated system that incorporates both the lead agency and brokerage concepts.

6. PLANNING, SELECTING, AND EVALUATING COORDINATION STRATEGIES AND IMPLEMENTATION APPROACHES

Greater coordination among transit providers is appropriate in many situations. Realizing the potential benefits from coordination requires a great deal of planning, however. This should include an examination of the special characteristics and needs of the transit and social service agencies and their riders, the local situation, and financial and legal restrictions. This chapter contains a four-step planning process for those interested in examining possible coordination strategies. The overall process is described and a series of worksheets provided to assist participants in the coordination planning process. The chapter also contains a series of checklists to assist in selecting the most appropriate implementation approach. The chapter concludes with a discussion of the development and use of an ongoing monitoring and evaluation program. This step is critical to help ensure that the anticipated benefits are actually realized and to identify and address potential issues that may arise.

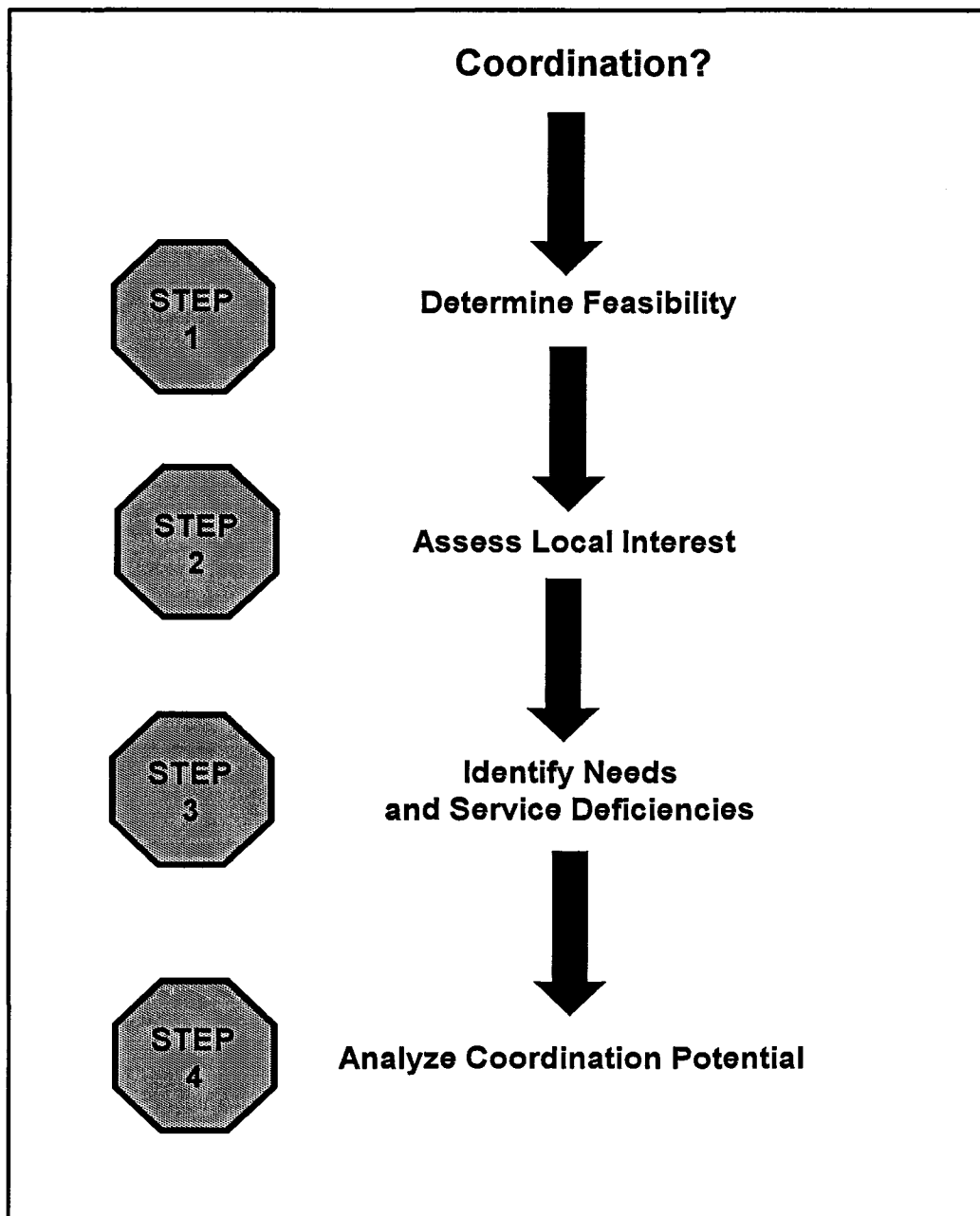
COORDINATION PLANNING PROCESS

As illustrated in Figure 12, the examination of potential coordination strategies involves several major planning steps (26). These steps include: determining the feasibility of a coordination effort; assessing the level of local interest; identifying needs and service deficiencies; and analyzing the potential for coordination. The following includes a discussion of each step.

Step 1. Feasibility Determination

There are situations where coordination may not be a viable option. Urban areas typically have more resources in terms of transportation planning and operations capabilities, and contain more service providers and more opportunities to coordinate transit resources. The problems often inherent in the

FIGURE 12. COORDINATION PLANNING PROCESS



coordination planning process are not finding potential participants but managing a program with a vast array of possibilities. In contrast, fewer public transportation operators and even fewer local planning resources exist in many rural areas. If only one public transportation operator provides services, opportunities to coordinate may be limited, if not impossible. In addition, service

areas tend to be larger in rural areas making coordination challenging at best. Even in these instances, however, coordination may be possible.

Regardless of the exact nature of the transportation environment, a determination of feasibility must be made prior to initiating a coordination effort. Figure 13 provides a checklist that can be used to assist in determining if coordination is possible in an area. The eight questions focus on identifying the number and nature of service providers in the area, and the current interest in exploring coordination.

FIGURE 13. CHECKLIST FOR DETERMINING INTEREST AND FEASIBILITY OF COORDINATION

The following list of questions is intended to help identify the interest in coordination in your area and the feasibility of pursuing coordination planning activities. If the answer to most of the questions is "yes," examining potential coordination strategies in more detail appears warranted.		
	Yes	No
1. Is there more than one organization, agency, or company in your area providing transit services?		
2. Does it appear that there are unmet transit needs in the area or duplication of services?		
3. Is funding for transit services limited or a major problem?		
4. Is there interest among representatives from other agencies, organizations, or companies in examining coordination options?		
5. Will these groups be expected to support coordination if a plan is developed and recommended?		
6. Are the governing boards or immediate supervisors in these groups supportive of coordination?		
7. Is there someone who is willing and able to take the lead in a coordination effort?		
8. Is there a logical lead agency for the coordination effort, and does this group have the commitment, support, time, and resources to proceed?		

Source: Table modified based on information contained in Ohio Department of Transportation, *A Handbook for Coordinating Transportation Services*, Columbus, OH: ODOT, 1991, p. 2-11.

Step 2. Assess Local Interest

This step expands on the information considered in the initial checklist by focusing on possible participants in the coordination effort and determining the level of interest and support within the community. Activities to be completed in this task include developing a more detailed list of service providers, conducting an introductory meeting, and establishing a task force or advisory committee to guide the coordination planning effort. Each of these activities is briefly described next.

Identify Possible Participants

This activity focuses on developing a list of all possible participants in the coordination effort. Potential participants include public transit agencies, social service agencies, local communities, for-profit providers, the MPO, special interest groups, and other organizations. It is important to include not only the obvious service providers, but also those groups or agencies that purchase transportation services. A sample of potential agencies, organizations, and companies to consider in the development of this list is provided in Figure 14.

After identifying potential participants, a letter should be sent outlining the interest in service coordination and the anticipated steps in the planning process. Providing a survey form to obtain basic information on the types of services they provide or their needs for services may be appropriate. Figure 15 contains a sample letter and Appendix C includes an example of a survey that could be used to gather basic information on transportation programs.

Kick-Off Meeting

The letter could also request the participation of representatives from each group in a kick-off meeting. The purpose of this meeting would be to discuss current issues, the general interest in examining coordination strategies, and the planning process to accomplish this. Another purpose of the meeting should be to disseminate information concerning the various coordination strategies. Attendees should also be briefed on the differences between strategies and the potential benefits that each can provide. Inviting an outside speaker with experience in coordination programs may be appropriate.

FIGURE 14. POTENTIAL PARTICIPANTS IN COORDINATION ACTIVITIES

- local elected officials or representatives
- public transportation providers
- private bus companies
- other private transportation companies
- taxi cab operators
- metropolitan planning organizations (MPOs)
- regional planning organizations
- local communities and counties
- Department of Health
- Department of Human Services
- Department of Mental Health and Mental Retardation
- Council of Governments
- Commission for the Blind
- Area Agency on Aging
- Rehabilitation Commission
- human services organizations
- job assistance programs
- vocational education programs
- special education programs
- service organizations
- veteran's organizations
- women's organizations
- youth services
- senior centers
- schools, colleges and universities
- hospitals
- community action agencies
- churches
- YMCA and YWCA
- other agencies or organizations in your area

The agency or group that is logical to assume the lead in the coordination effort or a neutral third party can sponsor the meeting. If the outcome of the meeting is a consensus to proceed with an assessment of potential coordination strategies, a task force or advisory committee can be appointed.

Establish an Interagency Task Force or Coordination Advisory Committee

An interagency task force or coordination advisory committee can help conduct the planning and assessment effort. Such groups also provide a forum for addressing coordination issues and sharing information about programs and services. The task force or committee should consist of representatives from the

FIGURE 15. SAMPLE LETTER TO SOLICIT COORDINATION INTEREST AND PARTICIPATION

Date

Agency/Company Name
Address
City, State Zip Code

Dear Agency/Company Representative:

Limited funding and increased demand for transportation services is making it difficult for many agencies in our community to provide transportation services to their membership and clients. The coordination of transportation services has been suggested as one means to which the problem can be addressed.

Consequently, the (name organizing entity) is examining the potential for greater coordination among traditional service providers and user groups. Our first objective is to obtain a preliminary assessment of the interest in coordination within the area. Your assistance in this effort is requested. Please complete the enclosed questionnaire and return it to this office no later than (insert date).

In addition, a meeting will be held on (insert date) at (insert time) to discuss coordination activities. You, or a representative from your agency, is invited to attend this meeting. An interagency task force may be formed to address the coordination issues, guide the effort, and serve as a forum for information sharing. Please indicate on the survey form if you will be able to attend this meeting and participate in the task force.

Thank you for you assistance. Your timely response is appreciated.

Sincerely,

Signature
Title

Source: Modified from Ohio Department of Transportation, *A Handbook for Coordinating Transportation Services*, Columbus, OH: ODOT, 1991, p. 3-5.

groups included in the initial mailing as well as any other groups interested in participating in the coordination program. The task force's or committee's role may include the following activities:

- conduct assessment of possible coordination strategies;
- recommend plan to participating agencies;
- assess needed start-up resources (funds, equipment, personnel);

- hire outside assistance, if needed;
- develop the coordination organization structure;
- lead in the design of operations and the financial plan;
- monitor contracts; and
- provide staffing.

The task force should be chaired by an individual from the agency anticipated to take the lead in the coordination effort or a neutral third party organization. To be effective, the task force should establish goals and objectives, a work plan and schedule, and regular meeting dates. They should also identify the resources needed to accomplish the planning activities. This may include the use of agency staff or outside consultants.

The task force or committee reviews and approves or modifies coordination plans presented by the lead entity responsible for developing the coordination plan. Once the coordination effort is up and running, the task force/committee will continue to oversee the implementation program, as well as the ongoing monitoring and evaluation effort.

Step 3. Identification of Needs and Service Deficiencies

The intention of this step is to identify any unmet needs, service issues, or opportunities that can be addressed through coordination. As noted previously, coordination should not be pursued only for coordination's sake. Rather, it should be undertaken to address specific issues and concerns. Thus, obtaining a realistic assessment of existing passengers needs, unmet trip demands, potential service duplication, vehicle utilization trends, and operating and financial concerns is a major step in determining the feasibility of coordination strategies.

Data Collection

A number of data collection activities should be conducted to help determine the demand for different types of transit services and the ability of current services to meet these needs. The potential to provide additional service through coordination can then be explored. Further, the cost associated with management and maintenance of different providers can be examined for potential savings through coordination.

The exact information to be examined and the data collection activities will depend on the issues and opportunities in individual communities. Factors that are usually included in preliminary assessments include current ridership levels, unmet demands for service, the number and nature of existing services, vehicle type and vehicle utilization, and operating, maintenance, and management costs.

Some of this information may be available from existing sources. For example, as part of the State Public Transportation Management System (PTMS) required by the ISTEA, TxDOT has developed a database on the facilities and equipment owned and operated by public transit systems in the state. This information is available through the Public Transportation Coordinators in each TxDOT District and the Public Transportation Division in Austin.

Whenever possible, the data collection activities should be based upon available information and resources. If the necessary data are not available, additional surveys may be needed. The survey should include both specific questions and several open-ended questions to allow input regarding transportation issues, the nature and extent of unmet demand, and expectations and inhibitions regarding potential coordination efforts. Appendix C contains a sample survey.

The types of information that should be examined during this step in the planning process are described in more detail next. Possible data sources and data collection techniques are also noted.

- **Current ridership levels by type of service** provides needed information on who uses the existing services. This should include information on the number of trips, special equipment or service requirements, and passenger characteristics.
- **Unmet demands for service** provides information on transit needs that are not currently being met. This information may be obtained through surveys of special user groups and documentation of requests from existing providers.
- **Identification of existing providers** includes the number and nature of providers, service hours, fares, type of service provided, size and geographic location of the service area, miles and hours of service consumed, and the level of assistance provided. This information will be

critical in determining the type of coordination activities that will be the most successful.

- **Identification of vehicle types and vehicle utilization** is essential to determine the characteristics of the existing fleet and how they are currently used. Fleet condition, accessibility, composition, and availability are often major considerations in the decision to join a coordinated service. A fleet roster can be used to collect information on vehicle acquisition schedules and required capacity by vehicle type and accessibility. The fleet roster lists the vehicle's identification number, manufacturer, size, age, mileage, capacity, and accessibility of vehicles. In addition, a vehicle utilization chart can provide information on the operation of each vehicle by day of the week and time of day to help determine the feasibility of a coordination program. The chart is useful in revealing service gaps, service duplication, and excess capacity. Much of this information is available through the PTMS.
- **Assessing detailed financial information** on vehicle operations, maintenance, and management costs can help identify areas of cost savings through coordination. Financial data can also uncover potential resources to support coordination efforts. Expenditure data should include administrative, management, operations, and maintenance costs. Revenue data should include funding sources, funding levels, and real or perceived limitations associated with funding programs. In addition, capital budgets with corresponding sources of funding should also be obtained.

Data Analysis

The survey will provide a variety of information that can be used to assess the potential for the different coordination strategies. The data collected in the survey can be analyzed in a number of ways. The survey response rate can be calculated and follow-up requests made to groups not responding to the initial survey. The analysis should include an examination of the basic level of services and ridership which may focus on the following items:

- the total number of passengers carried;
- the total number of passengers by provider trip purpose and special needs;

- the number of passenger trips per day;
- the number of vehicles operated in the region;
- special vehicle characteristics, including the number of lift-equipped vehicles;
- the service area and the hours of operation;
- fares by providers and rider type
- rider demographics;
- vehicle use; and
- management operations and maintenance costs.

Examining rider demographics can help identify specialized demands and can reveal situations in which client groups may be combined. A rider profile could be developed for each provider that includes the number of groups served, the number of trips made, the number of riders by age, trip purpose, income, and special user characteristics.

The information collected on vehicles can be combined to develop a community fleet roster. The roster should list the age, mileage, capacity, and special equipment for all vehicles. This data, combined with estimates on annual vehicle mileage, can be used to determine the current status of all vehicles, including estimated service life. Also, a vehicle replacement schedule can be generated to indicate when vehicles need to be replaced or rehabilitated. The comparison of vehicle needs with funding availability may illustrate a need for service coordination.

A master chart combining all vehicle utilization charts can then be prepared. This chart should list the number of vehicles in operation, the type of service provided, and the approximate geographic area of operation by the day of week and time of day. This chart can then be used to identify where there is the greatest potential for timesharing, ridesharing, and centralized dispatch. Further, the chart can identify service gaps and duplication of service.

A review of the financial information will help to determine potential funding opportunities and limitations for the coordination effort. A summary of the various funding sources with an explanation of how the funds may be utilized can be developed. In addition, the level of funding for each organization can be

examined along with the projected stability and availability of operating and capital funds.

The analysis of the survey results should be discussed at one or more task force meetings and reviewed by the responding agencies. This will help identify any errors and will help facilitate the discussion of opportunities for coordination.

Identification of Service Duplication and Unmet Needs

The survey results and other information on local conditions can be used to identify service duplication, unmet needs, and other opportunities for service coordination. The following elements can be examined:

- unmet needs;
- inaccessible vehicles;
- limited fleet size and vehicle capacity;
- excessive travel time;
- equipment replacement;
- under-utilization of equipment;
- insufficient personnel; and
- transportation service costs.

Each of these items is described in more detail next. The results of this assessment can be discussed with the task force and other groups to obtain feedback on potential solutions and coordination approaches.

Unmet needs - Both providers and purchasers of transit services may have unmet needs. These needs may be due to funding limitations, grant regulations, lack of adequate vehicles, and growing demands for service.

Inaccessible vehicles - Transit providers may lack sufficient number of accessible vehicles. The analysis can identify where vehicles are needed, as well as the potential availability of assessable vehicles.

Limited fleet size and vehicle capacity - Some fleets may be so small that providers are forced to offer limited services. Matching available vehicles and vehicle capacity to needed population groups can be included in this analysis.

Excessive travel time - The analysis may also indicate excessive travel times for some user groups. Examining ways to address this issue, through re-design of routes or coordinating paratransit services, can be explored.

Equipment replacement - Limited funding for the replacement of vehicles and other capital equipment may be an issue with many agencies and service providers. Potential coordination on vehicle purchases or the pooling of resources may be considered to address this issue.

Underutilization of equipment - The survey results can be used to identify times when vehicles are available. For example, some agencies may fully utilize vehicles during morning and afternoon peak periods or evening hours, while the vehicles remain idle in between these periods. Matching times when existing vehicles are available with unmet needs for services can help identify possible opportunities for coordination.

Insufficient personnel - It is not unusual for human services agency staff, such as caseworkers, to also have responsibilities for client transportation. Such responsibilities may include determining eligibility, scheduling trips, and driving the vehicles. Coordination may allow these individuals to focus on their primary job responsibilities by letting another group take over the transportation responsibilities.

Transportation service costs - Agencies may be spending more on transportation services than they realize. Identifying all costs associated with the provision of transportation services such as vehicles, oil, gas, insurance, recordkeeping, and administrative and management functions is important to develop a true picture of current costs and the potential savings through coordination.

Determining service deficiencies allows for the assessment of problems, the identification of coordination opportunities, and the evaluation of the efficiency and adequacy of existing community transportation services. These results should be presented to and discussed with the task force and other groups.

Step 4. Analyze Potential for Coordination

By this step, several potential opportunities for coordination among local transportation providers may have become apparent. This step analyzes the potential for coordination strategies in greater detail. Presented next is a

description of the more common coordination opportunities, along with guidance to help determine if the opportunities exist within a community.

Common Service Areas

Common service areas can be identified by using the descriptions provided by the survey respondents in Step 3. One method to identify overlaps is to map common service boundaries. Overlapping service boundaries can be identified by using a large map to illustrate the entire area served by transportation providers and to show the different routes. Each route is drawn using a different color marker. The completed map provides a graphic illustration of “who’s operating where.”

Common Operating Parameters

Transit services may be provided on similar schedules or during similar times of the day. Further, the demand for transit services is usually oriented around similar hours. The information collected from the survey can be used to compile a list of organizations with similar operating hours and program schedules. Table 8 provides a sample format to use in the analysis of common operating parameters.

TABLE 8. LISTING OF COMMON OPERATING PARAMETERS

Agency Name	Program Hours of Operation	Transportation Service Hours	Days of Week
EXAMPLE			
Anytown Senior Center	11:00am -1:30pm	9:30am-11:00am 1:30pm-3:00pm	Monday-Friday
Anytown Sheltered Workshop	8:30am-2:45pm	7:15am-8:30am 2:45pm-4:00pm	Monday-Friday

If program activity and transportation service times differ slightly, agencies may be able to adjust schedules in order to coordinate services. It is important to include all agencies in the list, since the objective is to try to identify potential opportunities for coordination.

Similar Ridership Bases

In many cases, clients of human services agencies are eligible to receive services from more than one agency. One example might be senior citizens who use different services to travel to congregate meal sites, health care providers, and recreational activities. The data collected previously, especially any route maps or client locator maps, can be used to examine each transportation provider's route/service patterns and/or client residential locations. This information can be analyzed to determine the potential for servicing similar ridership groups.

Vehicle Utilization Trends

Examination of the vehicle utilization charts collected in Step 3 allows for an initial assessment of both common utilization trends and vehicle idle time. Since many agencies utilize vehicles only during specific times of the day, knowledge of these trends may allow idle vehicles to be used to meet another agency's transportation needs. Figure 16 provides one example of how vehicles could be coordinated among multiple agencies and programs. In this example, the public operator, the sheltered workshop, the Title III van, or a combination of these providers could eliminate the unmet needs of the Medicaid program.

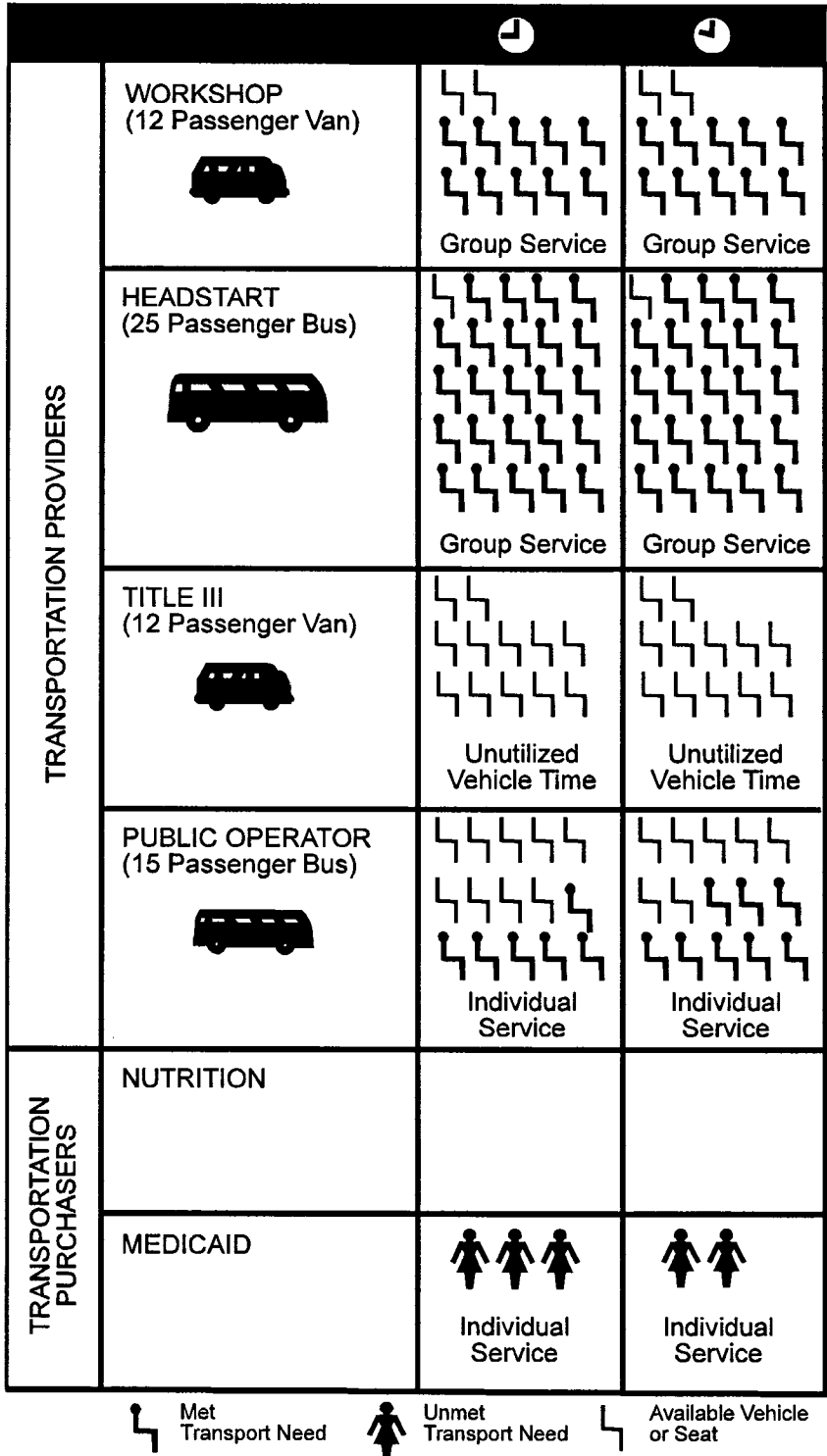
The identification of service deficiencies and the analysis of potential coordination opportunities provides an in-depth understanding of the magnitude of a community's transportation services. The coordination planning process provides decision makers with valuable knowledge necessary to select desired levels of coordination. Equally important, decision makers can evaluate appropriate coordination options with confidence and implement selected coordination strategies more effectively.

EVALUATION OF COORDINATION STRATEGIES

The four-step coordination planning process may have resulted in identifying opportunities for coordinating transit resources. If so, coordination options may be evaluated and selected based on the needs of the community.

Decisions made during the evaluation stage require both qualitative and quantitative analysis. Quantitative analysis determines the *physical capacity* for

FIGURE 16. SERVICE COMPARISON OF TRANSPORTATION RESOURCES AND NEEDS



Source: Applied Resource Integration, LTD., *Planning Guidelines for Coordinated Agency Transportation Services*, Boston, MA: ARI, LTD., April 1980, p. 28.

coordination (e.g., based on measures of cost, vehicle use, and service duplication) and assists in developing a set of coordination alternatives. The *feasibility* of proposed coordination alternatives is decided based on the results of the qualitative analysis.

The analyses presented in this section focus on coordination strategies for vehicle operations, maintenance, and administrative functions. Table 9 provides an overview of the information required for the evaluation of selected coordination strategies. This evaluation involves utilizing data collected from the survey along with some additional information to make decisions about which coordination strategies may be appropriate for a given area.

TABLE 9. DATA REQUIREMENTS FOR EVALUATING COORDINATION STRATEGIES

	Vehicle Operations	Vehicle Maintenance	Administration
DATA COLLECTION	<ul style="list-style-type: none"> • Vehicle and Passenger Location Patterns • Vehicle Inventory Data • Transportation Cost Data 	<ul style="list-style-type: none"> • Present Maintenance Arrangements • Parts and Supplies Purchasing Agreements • Current Storage Facilities 	<ul style="list-style-type: none"> • Staff Hours Spent with Associated Costs • Required Skills • Training Needs • Insurance Costs-per-Vehicles
DATA ANALYSIS	<ul style="list-style-type: none"> • Timesharing • Ridesharing 	<ul style="list-style-type: none"> • Coordinated Parts Purchasing • Centralized Storage Facilities 	<ul style="list-style-type: none"> • Management Supervision • Information and Referral System • Training • Major Purchases

Vehicle Operations Coordination

Evaluating the physical potential for ridesharing and timesharing requires the (1) analysis of individual provider service by examining the operations of each vehicle throughout the day and the (2) analysis of individual agency needs by assessing the requirements for vehicle usage at specific times of the day. These two factors, along with cost and ridership statistics, are used to perform the quantitative analysis of the potential benefits from operations coordination.

The following discussion details procedures to collect and analyze data which can be used in this evaluation.

Data Collection

Data requirements to evaluate the potential for vehicle operations coordination include: vehicle and passenger location patterns, vehicle inventory data, and transportation cost data. If the information was collected during the coordination planning steps, additional data collection may not be necessary.

Vehicle and Passenger Location Patterns - Information about when and where a vehicle is located and how many passengers are being transported is imperative in assessing the potential for ridesharing and timesharing. Appendix D includes a sample form used to collect such data. (See Figure D-1, Inventory of Vehicles and Passengers' Locations.) The following data collection steps should help to determine vehicle and passenger location patterns.

1. **Collect data on the temporal patterns** (i.e., what vehicles are doing during specific time periods of the day). To do this, establish a base period of operation with a span of at least twelve hours (e.g., 6 a.m. to 6 p.m., 7 a.m. to 7 p.m.), and allocate vehicle times into four components indicating how the vehicle is utilized. These components are:
 - ◆ *passenger service hours* - actual hours vehicles are utilized to transport passengers.
 - ◆ *underutilized vehicle hours* - hours when vehicles are not transporting passengers but driver is on duty.
 - ◆ *vehicle hours* - sum total of passenger service hours and underutilized vehicle hours.
 - ◆ *idle hours* - time when vehicles are parked during the day and no driver is on duty. (The sum of the vehicle hours and the idle hours must equal the hours in the base period of operation.)
2. **Complete vehicle and passenger location patterns for every day of the week, even if patterns do not change.** This information will be used to analyze vehicle utilization.
3. **Collect passenger trip data from a dispatcher log, a driver log, or a routing form.** This data provides information on the number of persons

transported during a given period of passenger hours. Calculate the number of passenger trips. (A passenger trip is defined as a one-way trip; that is, one person traveling in one direction is one passenger trip; two people making a round trip are four one-way trips.) This information is useful for determining availability of seating for ridesharing.

4. **Categorize service type provided as either group or individual.** Group service transports individuals to one common destination. Individual service transports persons to any destination for individual trip purposes.
5. **Develop geographic data.** This can be done in two ways: first, by indicating a service area in which the vehicle operates, and second, by plotting a map of specific vehicle routes. In both cases, the geographic data must be associated with specific passenger service hours and vehicles. This information is used to assess the potentials for ridesharing and timesharing. Further, the data may show that two providers can merge routes, thus eliminating duplicative services.

Vehicle Inventory Data - Vehicle inventory data provides information that can be used for both vehicle operations and maintenance coordination. (See Figure D-2, Vehicle Inventory Form in Appendix D.) For maintenance coordination, data regarding the age of the fleet and the mix of vehicles can indicate the amount of preventative maintenance necessary and the diversity of parts that may be needed. The remaining information is useful for evaluating operations coordination. (e.g., to determine seat availability for ridesharing and to match vehicles to customers who require special accessibility.) A brief description of each data required on the vehicle inventory form is presented below.

- vehicle ID number - the identification number that each provider assigns to its vehicle(s).
- vehicle type - indicates the year the vehicle was manufactured, the manufacturer, and the vehicle model.
- vehicle mileage - actual odometer reading at the time of the inventory.
- capacity - number of passenger seats and wheelchair tie-down spaces.
- special equipment - equipment that has been added to the vehicle to assist the driver or passengers.

Transportation Cost Data - The collection of transportation cost data is an attempt to identify all the costs required to support a transportation program. The process should yield a good estimate of the true costs associated with the provision of transportation. The best method to collect these data is by using a chart of accounts such as the one shown in Figure D-3 in Appendix D. In order to capture all cost information, data should be summarized for a one year period.

Transportation costs generally fall into three categories: vehicle operations, maintenance, and administration. The first two categories are direct costs of transportation and can be calculated easily from financial records. The third category, administration, includes areas that provide indirect support for transportation. Some examples are wages and fringe benefits for personnel that maintain records and costs for maintaining facilities, such as rent, utilities, and supplies.

An accurate estimation of transportation costs requires consideration of both avoidable and unavoidable costs. Under a coordinated system, transportation costs are typically classified as avoidable or unavoidable. Avoidable transportation costs include expenses required to support transportation activities and would not occur if the service was not provided. In contrast, unavoidable costs occur regardless of whether transportation is provided or not. These include most administrative costs associated with agency operations such as managerial and accounting staff and office-related expenses. Because transportation programs require staff support and office space, these expenses should be included to determine the true cost of transportation.

Data Analysis

The information on vehicle utilization trends and vehicle idle time is critical in determining if ridesharing and timesharing are possible coordination options. This information, coupled with the knowledge of unmet transportation needs, can be used to construct a service map which can then be used to analyze the potential for both ridesharing and timesharing. A service map shows each provider vehicle's time divided into three segments – idle hours, passenger service hours, and underutilized vehicle hours. (See previous Figure 16.) The mapping can be used to suggest shifts that could be made in order to increase efficiency. It can also point out service duplication and show available idle hours that can be used by agencies that need to purchase transportation services. It does not, however, factor in the costs of service or location of service, which

must be considered before the coordination alternatives can be accurately assessed.

Timesharing - The service map in Figure 16 includes just the first two hours of daily operations for both transportation providers and transportation purchasers. However, to analyze the potential for timesharing and ridesharing, participants should construct a service map for the entire day. The map demonstrates how the vehicle idle time of one program can be productively utilized by an agency with unmet transportation needs. For instance, the Medicaid program can purchase services from the Title III program, thus reducing the vehicle idle time.

Another possibility is that a program currently providing transportation could utilize the idle time of a vehicle in another program, thus eliminating the need to own and operate vehicles. Using Figure 16 again as an example, the Title III program owns and operates a 12 passenger van to transport clients from 11:00 a.m. to 3:00 p.m. daily. Both the Workshop and the Headstart program have underutilized vehicle time during this time period that could be purchased by the Title III program. By purchasing vehicle time, the Title III program would no longer have to operate its vehicle. Using underutilized hours is beneficial to coordinated systems because it effectively uses available resources that are incurring costs such as the driver's salary, insurance, and maintenance.

Ridesharing - Ridesharing is far more dependent on location, capacity, and service type considerations than timesharing. As a result, it may be easier to develop and focus on timesharing programs. Ridesharing services should be developed gradually as participants modify programs or develop greater understanding of the coordination process.

Analyzing the potential for ridesharing involves the use of vehicle and passengers' location patterns and vehicle inventory data. The first step in analyzing the feasibility of ridesharing is to identify the trips required by two participants that are potential ridesharing candidates. This is accomplished by using a map of the service area. If the potential ridesharing trips are recurring, new vehicle routes can be laid out using a transparent sheet over a map that shows trip origins and destinations.

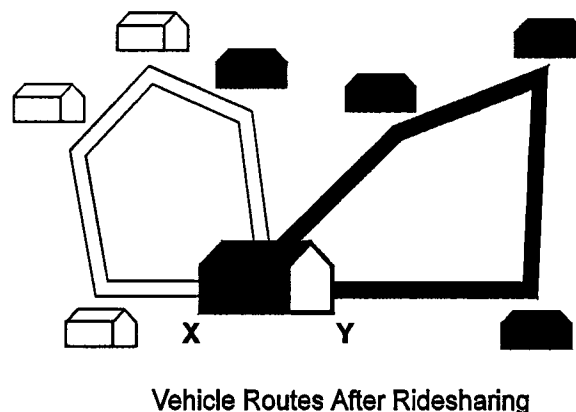
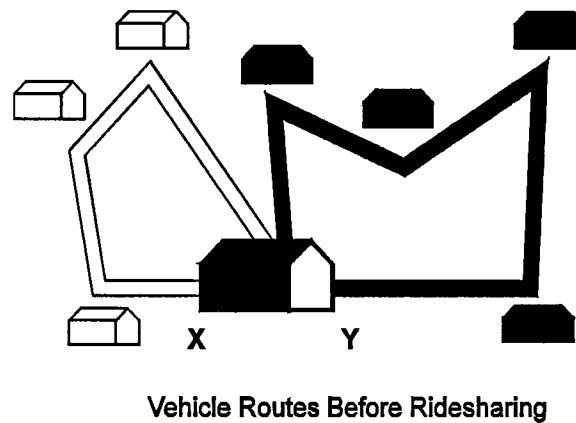
When constructing new vehicle routes, several factors should be considered. These include incorporating as many trips as possible into ridesharing, minimizing vehicle mileage and travel time, and ensuring that

specially equipped vehicles are available when required. In addition, consideration should be given to the amount of time that passengers spend in vehicles.

An example of a simple ridesharing arrangement is illustrated in Figure 17. Suppose that two vehicles operate on the routes X and Y as shown. Some clients on the vehicle route Y can be more easily picked up by the vehicle operating on route X, saving vehicle miles and time.

The fiscal impact from the potential changes from the coordination effort must also be examined before the assessment for timesharing and ridesharing is

FIGURE 17. VEHICLE ROUTES BEFORE AND AFTER RIDESHARING



Source: Applied Resource Integration, LTD., *Planning Guidelines for Coordinated Agency Transportation Services*, Boston, MA: ARI, LTD., April 1980, p. 31.

complete. The potential changes that may result from the coordination effort include:

- provider agency becomes purchaser agency with a potential reduction in costs.
- provider agency increases revenue by expanding services to purchaser agency with the resulting reduction in the unit costs of service.
- purchaser agency either saves money from reduction in provider costs, or is able to purchase service that was previously unavailable.

To analyze any of these changes, participants should compare the costs before coordination to the estimated costs following coordination. Further, there are several major issues that should be addressed before timesharing and ridesharing can be implemented. These issues involve vehicle equipment, client mixing, service compatibility, and reduced vehicle life. For a more detailed discussion on the cost analyses and issues, see *Planning Guidelines for Coordinating Agency Transportation Services* (25).

Vehicle Maintenance Coordination

Coordinated vehicle maintenance programs typically consist of centralized maintenance work, centralized vehicle storage, and coordinated parts purchasing.

Data Collection

Obtain the following data from each participant to analyze the potential for vehicle maintenance coordination programs.

Present Maintenance Arrangements - The following tasks should be completed to collect information on current maintenance arrangements:

- Determine if maintenance is conducted in-house or contracted out.
- Compile vehicle warranty data including expiration dates.
- Calculate total maintenance cost using data from the chart of accounts. For in-house maintenance, calculate the maintenance cost per hour by adding the maintenance labor costs, parts, and cost of maintaining the facility and dividing by the total number of maintenance hours produced. For contracted maintenance, the cost can be given either as the contract rate or the total cost of maintenance for a one-year period.

- List maintenance services provided, e.g., inspection and preventative maintenance, minor repair work, and body work.

Parts and Supplies Purchasing - Parts may be purchased from an automobile parts distributor if maintenance is performed in-house or by the contractor if maintenance is contracted out. Supplies include replaceable items such as gasoline, oil, tires, and batteries. By collecting the following data, opportunities to coordinate parts and supplies purchasing can be explored.

- List of required supplies
- Cost of supplies and parts
- Source of supplies and parts

Storage Facilities - To examine the potential for sharing storage facilities, the following information should be assembled.

- List of participants that have secure storage areas, including indoor facilities
- Location of storage areas
- Capacity of storage areas
- Storage area costs

Data Analysis

The analyses for maintenance coordination is fairly straightforward because it is a function of cost savings and performance. Compare the costs of providing maintenance in-house to the services rendered. The potential for coordination is enhanced if the provider of coordinated maintenance:

- is able to accommodate all vehicle types;
- has adequate facilities to handle additional work; and
- is located near other participants.

If the above conditions exist, participants can assess the services offered and determine whether they want to develop contracts with the coordinated maintenance provider or transfer entire maintenance programs.

Parts Purchasing Coordination - The creation of a centralized parts and supplies purchasing program allows participants to take advantage of cost

savings through bulk purchases. Moreover, participants may be able to take advantage of tax exemptions available to government entities on such items as gasoline. Although not all parts can be jointly ordered, stocks of items such as spark plugs, batteries, or tires can be easily bought in large units.

Participants should develop a list of necessary parts and supplies along with current costs. Feasibility for coordinating parts and supplies purchasing is then determined by comparing each list to investigate the compatibility of the orders and the potential for bulk purchase. Another option is to examine the possibility of joining a state, county, or municipal purchasing program since many areas have such programs.

Centralized Storage - Centralizing storage facilities is a means of providing the best physical situation at a reasonable cost. The major advantages to centralized storage is that it offers increased convenience and the potential for more reliable service. It provides greater back-up vehicle availability, a wider range of vehicle types for various service needs, and can allow the joint maintenance and servicing of vehicles.

Identifying the answers to the following questions will help in assessing the benefits and potential of a centralized storage facility:

- Is there a facility large enough to house all of the participants' vehicles? If not, can a new facility be purchased, leased, or rented at a cost not to exceed the total cost currently paid by all the providers?
- Are there adequate services for performing daily maintenance such as bus washers, fuel pumps, and inspection areas?
- Will the locations create problems in coordinating maintenance or dispatching?

Another option participants may want to consider is a totally coordinated maintenance center. A coordinated maintenance center offers vehicle repairs, parts purchasing, and centralized storage at a single location. Analysts should examine data previously gathered for each of the three concepts and determine whether any single participant can provide a totally coordinated maintenance center. If so, this approach may offer a way for the community to take advantage of all three maintenance coordination concepts. If no single participant is able or willing to provide a coordinated center, solicit bids from outside contractors that can provide the required services.

Coordinated Administrative Functions

Several administrative functions can easily be coordinated. These include management supervision, information and referral services, training programs, and major purchases. The objective of administrative coordination is to simplify the flow of information, reduce duplicative functions, and reduce the amount of time that individual participants spend on transportation functions.

Data Collection

To determine the potential for coordinating management supervision, information and referral services, and training, obtain data on the number of hours spent, and skills and materials required. If the overall staff time spent on transportation can be reduced, then coordination can have a positive impact. For coordinated purchases, the major benefit is cost savings rather than reduced staff time.

Each participant should complete the following data collection steps to effectively assess the potential for coordinating administrative functions:

- Construct a list of staff hours devoted to each transportation function (i.e., management, information and referral, training, and purchasing) and determine the total costs associated with each function. Include time only for those hours spent on administrative functions, and not on day-to-day dispatching, driving, etc.;
- Develop a list of training needs and resources; and
- Calculate the annual insurance cost-per-vehicle.

Data Analysis

Management Supervision - To assess the potential for a coordinated management program, the data gathered on the number of staff hours and costs allocated to transportation functions is used to estimate the avoidable and unavoidable costs of transportation administration. Compare the avoidable cost figure to the estimated cost of hiring a coordination manager.

Participants with transportation programs large enough to require the employment of a transportation manager may have little interest in a this type of coordination. It is possible, though, that the manager may have some extra time to serve as the coordinated service manager. If not, participating entities may

wish to investigate the hiring of an outside management firm or additional personnel. By employing a coordinated transportation manager, staff currently responsible for administrative duties would be freed up to perform other tasks more suited to their skills.

Information and Referral - Information and referral systems can be established in two basic ways: by merging existing services or by establishing a new service. It may be more cost effective and efficient to merge existing services, but both options should be considered. Establishing a new service is costly because it may mean obtaining new equipment and office space, and hiring staff to run the service.

To determine if a coordinated information and referral service has potential for a given area, the information collected on the amount of staff time and costs associated with the provision of information and referral services can be used to determine the avoidable and unavoidable costs. Comparing the avoidable costs with a cost structure for the service provides an idea of the differences. Include an assessment of the benefits to the clients and patrons when deciding whether to establish a coordinated information and referral network.

If the analysis results in the decision to create an information and referral service, participants should supply the network "coordinator" with a description of the transit services they provide by including the following information:

- description of services offered including service areas, days of the week, and times of the day;
- client eligibility requirements including age, income, and other;
- availability of escorts;
- availability of accessible vehicles;
- transportation scheduling requirements and telephone number; and
- fees for transportation services.

Major Purchasing - Significant cost savings can often result from the coordination of major purchases through cost discounts given for bulk purchases. The benefits of joint purchasing are easy to calculate since they are almost always based solely upon cost information. Two key purchases lend themselves to this concept: vehicle insurance and new vehicles.

Substantial savings are possible when transportation providers jointly purchase vehicle insurance. A comprehensive set of insurance specifications satisfactory to all participants should be developed as part of this assessment. The different coverage limits and average seating capacity for each participant should be taken into account and policies with the most favorable terms should be assessed. Policy specifications can be submitted through a broker or agent to interested insurance companies. Compare the lowest rates submitted to the present premiums paid by all participants when deciding whether to coordinate vehicle insurance.

Joint purchasing of new vehicles may lower the overall price that participants pay for vehicles. In addition to cost savings, joint purchasing can lead to standardized fleets which may add long-term benefits to coordinated maintenance programs. Further, by coordinating purchasing, federal, state, and local funding sources may view participants more favorably, and participants may be able to pool funds to attain the required local match.

To analyze the potential for joint purchasing of vehicles, develop a vehicle profile using the data collected on the Vehicle Inventory Form, and construct a vehicle replacement schedule. (See Figure D-2 in Appendix D.) Vehicles that may be required for expanded services should also be included in the replacement schedule. Constructing a replacement schedule over a three to four year time period helps ensure that the average fleet age remains low and that purchases are evenly distributed. The final step in this assessment involves obtaining an agreement on vehicle type and special equipment needs so that a set of vehicle specifications can be developed for the competitive bidding process.

Training - Transit providers often have a variety of training programs for drivers, dispatchers, and support personnel. Some programs are conducted in-house while others are provided by outside agencies or private consultants. Coordinating training programs with other transit providers of similar size and mode is one way to enhance limited training budgets.

Coordinated training programs can lead to cost savings as well as an increased sense of professionalism among personnel. Additionally, training programs may be enhanced through expanded course offerings, joint use of new educational technologies, and improved status of the training department through the increased size of the training effort.

Coordinated training is a logical addition to any coordination project involving vehicle operations and may not be too difficult to establish. The analyses for coordinated training involves examining the list of training requirements and training resources and designing a program to meet the overall needs of all providers and agencies. One participant can take the lead and arrange for all training programs, or several participants can each provide a specific part of the training package. A larger operator may already have an excellent training program and may be willing to offer training to other participants at either no cost or a reduced cost.

SELECTING COORDINATION IMPLEMENTATION APPROACHES

The previous chapter presented several methods to implement coordination strategies. These included lead agency, brokerage, and administrative agency. This section provides several checklists that can be used to help choose the most appropriate approach for implementing selected coordination strategies.

Key Decisions in Choosing a Lead Agency (31)

Figure 18 contains a checklist that can be used to decide between a pure transportation lead agency or an existing human services lead agency. If most of the statements are true, then it may be appropriate to work towards the creation of a pure transportation lead agency to coordinate services. If most of the statements are false, then the use of an existing human services program as the lead agency to provide transit services may be the best approach.

Key Decisions in Choosing a Brokerage (31)

Several key decisions must be addressed when considering the different brokerage options. Such decisions include whether or not the broker will operate vehicles and what other functions the broker will handle. These might include reservations, scheduling, dispatching, maintenance, insurance, and vehicle purchasing.

These functions can be handled by a broker or remain a responsibility of the transportation contractor. Both approaches have advantages and disadvantages. Key issues to consider when determining if the broker should be responsible for a specific function are:

- Whether to make use of the transit contractors' existing scheduling capabilities. Taxi cabs and most private operators may have some existing capability to handle scheduling.
- Whether the desired method of payment will be by the hour (usually for vehicles dedicated to the broker's requests) or by the trip (usually for non-dedicated vehicles).
- Whether there is concern about fraud. If the broker is responsible for the scheduling, there may be less chance that ineligible trips are charged to the broker.

FIGURE 18. CHECKLIST FOR CHOOSING BETWEEN LEAD AGENCY OPTIONS

	True	False
1. There is sufficient transportation demand from cooperating human services programs to require a separate management and administrative function for transportation.		
2. There are sufficient funding commitments from participating agencies to support the required management and administrative function for transportation on an ongoing basis.		
3. Among the human services programs desiring transportation, there is no agency with the transportation experience, resources, and interest to provide consolidated transportation.		
4. There is considerable concern among participating human services programs that their transportation interests will not be well represented by the existing lead human services agency.		
5. The larger human services programs are willing to make at least a three-year commitment to help a new transportation system get started.		

Source: Community Transportation Association of America, *Coordinating Transportation: Models of Cooperative Arrangements*, Washington, D.C.: Community Transportation Association of America, 1994, p. 7.

Since most transit providers have existing resources to handle reservations, scheduling, dispatching, and maintenance, it may be more expensive to locate these services with the broker. However, if the broker can significantly increase the system efficiency through centralized scheduling, the additional overhead may be worth consideration.

Brokers would most likely be responsible for reservations, scheduling, and dispatching in systems with the following characteristics:

- multiple providers with overlapping service areas;
- per-vehicle-hour payment to the operator; and
- if there is concern about fraud.

In contrast, these responsibilities are likely to remain with the transit system when:

- there is one operator or operators with mutually exclusive service areas;
- per-trip payment is made to the operator;
- additional vehicle capacity is required in addition to the capacity of the dedicated vehicles; and
- operators offer seats to non-brokered riders, enabling them to lower the cost to the broker.

There may be several advantages to moving the maintenance function to the broker. A large broker may be able to pool insurance costs and thereby reduce costs. Further, the broker may be able to assist in the specification and purchase of vehicles, particularly those which must meet ADA requirements.

Figure 19 contains a checklist to help decide between a pure or partial brokerage. If most of the statements are true, then working toward creating a pure brokerage may be best. If, however, most of the statements are false, then a partial brokerage may be more appropriate.

FIGURE 19. CHECKLIST FOR CHOOSING BETWEEN BROKERAGE OPTIONS

	True	False
1. The expected trip volume will be sufficient to justify the administrative costs of a pure brokerage model.		
2. There is a source of funding to subsidize the start-up costs of the pure brokerage model.		
3. There is enough interest from private transportation operators to ensure competitive pricing of services.		
4. There is concern on the part of participating human services agencies that the broker not favor its own clients.		
5. There is no existing or potential lead agency.		

Source: Community Transportation Association of America, *Coordinating Transportation: Models of Cooperative Arrangements*, Washington, D.C.: Community Transportation Association of America, 1994, p. 17.

Key Decisions in Choosing an Administrative Agency (31)

An administrative agency wishing to develop a totally coordinated system should consider whether it has the interest and human resources to accomplish each of the functions identified in Figure 20 or whether those functions would be better handled through a contract.

If the administrative agency finds all of the functions are appropriate to keep in-house, then it may wish to act like a lead agency for the provision of coordinated transit services. If the administrative agency is willing to handle the first seven functions, then it may wish to act as a broker. If only the first four functions are appropriate to keep in-house, then the administrative agency may wish to consider contracting with a lead agency or broker.

The administrative agency should consider contracting with a lead agency if the following statements are true:

- The service area is small enough that one organization can provide most of the required transportation for a totally coordinated system.
- An appropriate candidate already exists as a lead agency in the area.
- There are few other operators who could provide transportation.

The administrative agency should consider contracting with a broker when the following statements are true:

- The service area is larger than can be covered practically by one provider.
- Many operators exist in the area who are capable of providing transportation as part of the totally coordinated system.

FIGURE 20. CHECKLIST TO CHOOSE AMONG ADMINISTRATIVE AGENCY OPTIONS

	Keep in-house	Contract out
1. Management		
2. Financing through grants or other sources		
3. Planning		
4. Vehicle and capital acquisition		
5. Liaison and agreements with human services funding agencies		
6. Management of contracts with transportation systems		
7. Contractor and service monitoring		
8. Client registration		
9. Data collection and record keeping		
10. Billing and reimbursements		
11. Reservations and scheduling		
12. Operations		
13. Maintenance		

Source: Community Transportation Association of America, *Coordinating Transportation: Models of Cooperative Arrangements*, Washington, D.C.: Community Transportation Association of America, 1994, p. 25.

ESTABLISHING AN ONGOING MONITORING AND EVALUATION PROGRAM

Once the decision has been made to move forward with any form of coordination, consideration should be given to the development and implementation of an ongoing monitoring and evaluation program. Such a program is important to determine if the goals and objectives of the coordination effort are being achieved. Thus, an ongoing evaluation program is critical to

determining if the anticipated benefits are in fact being realized. In addition, information obtained from the evaluation process can help identify and address potential problems or issues that may arise. Therefore, an ongoing monitoring and evaluation program serves multiple purposes and provides numerous benefits. This section discusses the uses and benefits of an evaluation program and presents a seven-step process for developing and implementing an ongoing monitoring and evaluation effort.

Benefits of an Ongoing Monitoring and Evaluation Program

Multiple benefits can be realized from evaluating coordination efforts. A main reason for monitoring and evaluating coordination programs is to identify the benefits accrued from the project and to determine how well the goals and objectives identified for the project are being met. Evaluations provide an opportunity to ascertain the degree to which the desired results are in fact occurring. Further, evaluation programs provide an official database for the project. This can help ensure that all groups are utilizing the same data and can help to clarify any possible disagreements over the impacts of the project.

Information obtained from the monitoring and evaluation program also helps to identify potential problems or issues that may emerge during implementation of the coordination effort. Corrective measures can be taken or modifications made to the program to address these concerns. Identifying potential problems early and responding appropriately can help ensure successful programs.

Evaluation programs provide a wealth of data that enhance coordination planning and implementation activities. The actual experience realized through the program can be documented, and the results can be transferred to other providers and agencies in the area or region. Thus, the results of the monitoring and evaluation effort provide valuable information for both technical staff and policy makers and can enhance the decision making process on future projects.

Monitoring and evaluation programs may also be needed to meet federal, state, or local requirements. As discussed extensively in previous sections of this report, funding agencies at all levels are placing greater emphasis on coordination efforts. Thus, the results of ongoing evaluation programs can be used to maintain, and perhaps increase, funding from various agencies.

Finally, by providing information on the experience with different coordination approaches and various projects throughout the country, the results

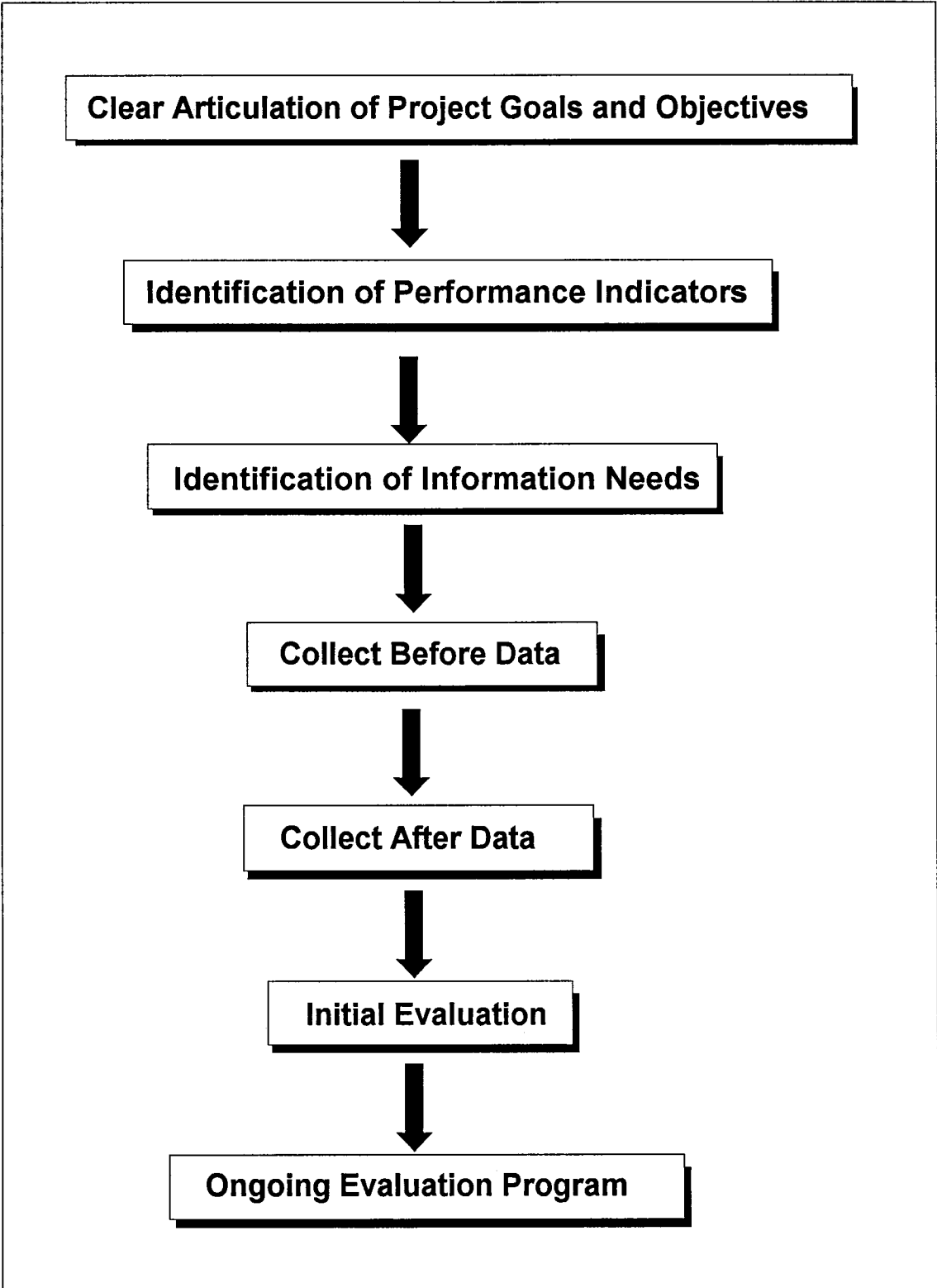
of evaluation studies can assist in establishing an ongoing national database on coordination. Building a common body of knowledge on the use and effectiveness of different coordination techniques is needed to continue to keep pace with the issues facing transportation professionals, social service agencies, and decision makers. A common national transit database on coordination efforts can assist in ensuring that all areas are kept informed of the latest developments in the field.

It is important to remember that the results of the monitoring and evaluation program will be of interest to a variety of groups. These include transit professionals and technical staff, social service agency staff, local, state, and federal decision makers, special interest groups, agency clients and transit riders, and the general public. In general, these groups can be divided into two categories: those with a technical orientation and those with a more general focus. Given the diverse nature of these two groups, it may be appropriate to use different formats and approaches in presenting the results of the evaluation process. The scope, content, and level of detail of any report should be appropriate for the audience being addressed.

Monitoring and Evaluation Program

A comprehensive monitoring and evaluation program should include seven basic steps. These are highlighted in Figure 21 and briefly described next. The process outlined follows the same basic approach that would be utilized to evaluate any type of transportation improvement. The exact level of detail and the extent of the program will obviously depend on the coordination strategy being implemented, as well as the resources available at the local level. Thus, the monitoring and evaluation program should be matched to the nature, scope, and intent of the coordination effort being implemented, and available financial and staff resources.

FIGURE 21. MONITORING AND EVALUATION PROGRAM



Step One - Clear Articulation of Project Goals and Objectives

The goals and objectives the coordination effort or project are intended to accomplish should be clearly defined as the first step in developing the evaluation. This is critical, as the remainder of the evaluation program will be designed to obtain and evaluate information that will largely be used to determine if these objectives have been met. The development of measurable objectives is not an easy task, but time spent on this effort will help ensure a focused evaluation.

The coordination program may have a general goal or a series of goals that identify the overall intent of the project. Developing specific project objectives which clearly and concisely outline the anticipated results is critical to the development of an evaluation plan. Each objective should be a well-defined and measurable statement. A commonly used approach in developing measurable objective statements is to ensure that the statement includes the desired end result, the action that will be taken to achieve this result, and the time frame within which the result will occur.

The objectives should relate to the specific nature of the coordination effort being undertaken. If the coordination effort focuses on sharing maintenance facilities, the objectives may relate to reducing maintenance costs, reducing vehicle down time due to repairs, or improving preventative maintenance. If the coordination program focuses on the shared-use of vehicles, objectives may relate to increasing the number of passengers per mile or increasing the total number of riders.

Step Two - Identification of Performance Indicators.

For each objective, the appropriate performance indicators or measure(s) of effectiveness should be identified, along with the desired threshold level of change that will be used to determine if the coordination program has met the objective. It is important that this activity focus on identifying the performance indicators that most accurately relate to the objectives and that meaningful threshold levels be established. These indicators and thresholds should relate to the key elements identified in the objective statements. Performance indicators commonly used with transit services are highlighted in Table 10.

TABLE 10. COMMON TRANSIT PERFORMANCE INDICATORS

COMMON COST MEASURES	
Cost Per One-way Passenger Trip	(Total Cost/Total one-way Trips)
Cost Per Passenger Mile	(Total Cost/Total Passenger Miles)
Cost Per Vehicle Mile	(Total Cost/Total Vehicle Miles)
Cost Per Vehicle Hour	(Total Cost/Total Vehicle Hours)
COMMON REVENUE MEASURES	
Revenue Per Passenger Trip	(Total Passenger Revenue/Total Passenger One-Way Trips)
Revenue Per Passenger Mile	(Total Passenger Revenue/Total Passenger Miles)
Revenue Per Vehicle Mile	(Total Passenger Revenue/Total Vehicle Miles)
Revenue Per Vehicle Hour	(Total Passenger Revenue/Total Vehicle Hours)
Recovery Ratio	(Total Passenger Revenue/Total Cost)
COMMON DEFICIT MEASURES	
Deficit Per Trip	[(Total Cost - Total Passenger Revenue)/Total One-Way Trips]
Deficit Per Passenger Mile	[(Total Cost - Total Passenger Revenue)/Total Passenger Miles]
Deficit Per Vehicle Mile	[(Total Cost - Total Passenger Revenue)/Total Vehicle Miles]
Deficit Per Vehicle Hour	[(Total Cost - Total Passenger Revenue)/Total Vehicle Hours]
COMMON PRODUCTIVITY MEASURES	
One-Way Trips Per Vehicle Mile	(Total One-Way Trips/Total Vehicle Miles)
One-Way Trips Per Vehicle Hour	(Total One-Way Trips/ Total Vehicle Hours)
One-Way Trips Per Vehicle Per Operating Day	[Total One-Way Trips/(Number of Vehicles x Total Operating Days)]
Vehicle Hours Per Vehicle Per Operating Day	[Total Vehicle Hours/(Number of Vehicles x Total Operating Days)]
Vehicle Miles Per Vehicle Per Operating Day	[Total Vehicle Miles/(Number of Vehicles x Total Operating Days)]
One-Way Trips Per Operating Day	(Total One-Way Trips/Number of Operating Days)
OTHER MEASURES	
Vehicle Miles Per Hour	(Total Vehicle Miles/Total Vehicle Hours)
Average Trip Length	(Total Passenger Miles/Total One-Way Trips)
Vehicle Miles Consumed Per One-Way Trip	(Total Vehicle Miles/Total One-Way Trips)

Source: Ohio Department of Transportation, *A Handbook for Coordinating Transportation Services*, Columbus, OH: ODOT, 1991.

Step 3 - Identification of Information Needs

This step identifies the information needed for the evaluation process. The data needed to determine if the objectives have been realized must be identified for each measure of effectiveness. The appropriate methods to obtain and evaluate the information must also be identified. It is important to ensure that

the same procedures and definitions are used throughout the evaluation to ensure comparability.

Data availability, data collection costs, staff expertise, available staff time, and local resources should all be considered in this step. A uniform data collection and analysis process should be developed to ensure that all providers, agencies, and other groups are using the same methods. This is critical to the validity of the evaluation process and the success of the coordination effort.

Step 4 - Conduct Before Data Collection

In this step, data are collected prior to the implementation of the coordination effort or program. This step is critical. If no before data are collected, it is very difficult to determine the impact of the coordination program. Recreating before data is difficult at best. The before data collection activities will focus on the operations, costs, ridership levels, and other activities of the individual transit providers and human services agencies acting alone.

The timing and duration of the before data collection activities is important. Ideally, the data collection should take place well before any coordination activities begin. This helps ensure that a realistic picture of the before conditions is recorded. Similarly, the duration of the before data collection should be long enough to provide accurate trend data; a single data point is unlikely to accurately reflect before conditions.

Step 5 - Conduct After Data Collection

In this step, the after data are collected. Usually a number of different evaluation time frames are utilized, such as after six months, after one year, after two years, and on an ongoing basis. To ensure comparability of data, it is important that the same procedures, techniques, and definitions be used in both the before and after data collection and ongoing monitoring activities.

Step 6 - Initial Evaluation

Initial evaluations of the coordination effort should occur at six months and one year. The before and after data collected in Steps 4 and 5 should be compared and analyzed during these evaluations. The analysis should focus on the performance indicators and threshold levels established in Step 2. The

results of the coordination effort can then be assessed, and the extent to which the desired objectives are being met can be identified.

The initial evaluations also provide the opportunity to identify potential problems or issues that may have developed during the implementation process. Appropriate actions can then be taken to address these concerns. Thus, the evaluation should provide useful information to enhance the coordination effort.

Step 7 - Ongoing Evaluation Program

After the first year, the monitoring and evaluation program should continue, focusing on annual performance evaluation reviews. This long term perspective is important since many of the significant impacts of successful coordination efforts may occur two to four years after implementation. The ongoing evaluation should continue to focus on the same objectives, performance indicators, and threshold levels. The establishment of longer term trend lines can help determine the overall impact of the project. In addition, areas for continuous improvement can be identified. Further, the results of the ongoing monitoring program should be of interest and benefit to other groups and agencies at the local, state, and federal levels.

SUMMARY

To conclude, the four-step planning process described in this chapter may help realize the benefits from coordinated systems. The process allows for officials to determine the feasibility of a coordination effort, assess the level of local interest, identify service deficiencies and needs, and analyze the potential for coordination.

Feasibility determination consists of identifying service providers in the area and assessing the current interest in exploring coordination options. To estimate the level of local interest, officials should identify possible participants, schedule a kick-off meeting, and form a task force or advisory committee. A major step in assessing the feasibility of coordination strategies is obtaining a realistic picture of the needs, unmet demands, service deficiencies, and financial concerns in an area. This is accomplished through a series of data collection and analyses steps. The potential for coordination can be determined by analyzing common service areas, common operating parameters, similar ridership bases, and vehicle utilization trends.

The planning process may yield opportunities for coordinating transit resources. Data collected in the process can be used to evaluate potential strategies to coordinate vehicle operations, maintenance, and administrative functions. Such strategies might include establishing ridesharing and timesharing arrangements, coordinating purchasing, combining training programs, and setting up an information and referral system.

There are many key decisions that should be made before choosing implementation approaches for selected coordination strategies. Several provided checklists can assist in choosing between a pure transportation lead agency or an existing human services lead agency, a pure or partial brokerage, and an administrative agency model with a lead agency or with a brokerage.

Finally, the development and use of an ongoing monitoring and evaluation program is essential to the success of the coordination effort. Such a program helps to ensure that anticipated benefits are actually realized. In addition, a monitoring program allows the coordinated system's performance to be continuously monitored and evaluated so that necessary adjustments can be made as needed.

7. CONCLUSIONS

This report has sought to provide an enhanced understanding of the various coordination strategies and implementation approaches that may be appropriate for TxDOT, transit agencies, service providers, human services agencies, local governments, and other groups in Texas to pursue to improve transit services. The study examined strategies that have been used or considered to improve coordination among different service providers and agencies on a national basis and within the state. It further identified possible coordination strategies that may be implemented by transit providers in Texas.

Coordination is one approach that can be used to improve the efficiency and effectiveness of transit services. Those who participate in coordinated systems may realize benefits related to increased cost effectiveness, expanded services, higher ridership levels, and improved program efficiency. A number of barriers may prevent coordination efforts from gaining momentum, however. The anticipated benefits and potential issues often associated with coordination techniques should be thoroughly examined before any decision is made to pursue selected coordination strategies.

A number of coordination techniques may be appropriate for further consideration in Texas. These include approaches designed to coordinate vehicle operations, maintenance, and administrative functions. Other possible coordination strategies include contract services and user-side subsidies. In addition, a number of the implementation approaches described in the report could be utilized in Texas. The guidelines for evaluating potential coordination strategies and selecting implementation approaches should assist those groups interested in coordination. Further, the guidance in developing an ongoing monitoring and evaluation program should be of use to transit agencies and other groups.

This chapter discusses several activities that TxDOT, other state agencies, transit providers, and communities could undertake to support coordination efforts and to initiate specific coordination projects. As outlined in Table 11, those activities appropriate for TxDOT and other state agencies to pursue are

discussed first, followed by those related to transit providers and local communities. These suggestions build on and enhance the current efforts of TxDOT, OCTS, local providers, and other groups.

TABLE 11. SUGGESTIONS TO IMPROVE TRANSIT COORDINATION IN TEXAS

TxDOT and Other State Agencies	Transit Providers and Communities
<ul style="list-style-type: none"> • provide start-up funding • sponsor demonstration projects • enhance policy guidelines • promote standardization • support education and training programs • enhance communication • support shared use of facilities 	<ul style="list-style-type: none"> • support coordinated training programs • enhance peer-to-peer training • pursue coordinated maintenance programs • pursue information and referral programs • pursue coordinated services • pursue coordination between systems and industry sectors

TxDOT and Other State Agencies

There are a number of activities that TxDOT, OCTS, and other state agencies could pursue to help support coordination efforts. The Agency Transportation Coordination Council (ATCC), of which TxDOT is a member, provides a forum for discussions of implementing and coordinating these efforts. These range from providing funding for demonstration projects or program start-up costs, to sponsoring education and training sessions, to developing specific policies encouraging coordination activities, to constructing intermodal facilities. Each of these activities are briefly summarized next.

Provide Start-up Funds for Coordination Activities

An economic barrier for many groups interested in pursuing coordination strategies is lack of funding to plan and initiate coordination efforts. Some states have attempted to address this issue through the use of funding to support planning and start-up activities for coordinated systems. For example, some states provide grants for the development and initiation of coordinated efforts. Funding from state income taxes, state lottery proceeds, and other sources have been used to support these programs which usually involve both fixed route and demand responsive coordination strategies. TxDOT and other state agencies

involved in transit service delivery may wish to explore innovative financing methods to support planning activities and initiation of different coordination strategies. This support could take a number of different forms and could include planning grants, start-up funding, technical assistance, as well as other approaches.

Sponsor Coordination Demonstration Projects

This report contains several case studies documenting the results of demonstration projects in other states. Many of these demonstrations were initiated or supported by the state departments of transportation or other state agencies. For example, several states sponsored demonstration projects to evaluate brokerage concepts and other service coordination options. These efforts provide models TxDOT and other state agencies could use to develop similar demonstration projects in Texas. The development of an ongoing demonstration program, designed to explore and test different coordination methods, would help advance the state-of-the-practice within Texas and would help enhance the effective and efficient delivery of transit services.

Enhance Policy Guidelines to Support Coordination Efforts

As discussed in this report, statutory and regulatory barriers, both real and perceived, may hinder coordination efforts. Some of these regulatory barriers may result from inconsistencies in federal, state, and local policies. The federal government has attempted to address many of these inconsistencies by creating or amending transportation-related legislation, sponsoring workshops and roundtable discussions to address coordination issues, and establishing interagency councils to encourage coordination among departments. The ATCC provides a logical focal point for the examination of possible regulatory policies that may be inhibiting coordination efforts. ATCC could evaluate the need for new or revised policy guidelines to address perceived issues or to promote coordination programs. Further, the ATCC provides the opportunity for the ongoing discussion and resolution of policy issues.

Promote Standardization

It appears that one issue limiting transportation coordination in Texas is the lack of standards for terminology, program requirements, client tracking methodologies, reporting requirements, forms, and service delivery. Clarifying

common definitions used by transportation providers, human services agencies, and funding agencies may help address some of these problems and enhance coordination efforts. This is also an issue identified in the OCTS report. The ATCC, working with other groups, may wish to consider establishing common terminology and developing standardized report forms and program requirements.

Support Education and Training Programs

Enhancing educational and training opportunities for personnel from TxDOT, transit agencies, human services agencies, local communities, and other groups can help promote and foster coordination efforts. To further the goal of a coordinated transportation system statewide, TxDOT and other groups could expand on many of the existing successful education and training initiatives. This could involve initiating a series of education and training programs aimed at funding agencies, transportation providers, human services agencies, and local governments. These programs could provide information on the benefits of coordination and could include more detailed training on specific coordination techniques. These education and training programs could be coordinated with the South West Transit Association (SWTA), the Texas Transit Association (TTA), American Public Transit Association (APTA), Community Transportation Association of America (CTAA), and other groups. A series of workshops on initiating and improving coordination efforts could be developed and conducted over a number of years. This effort could further be coordinated with the development of an ongoing demonstration program.

Enhance Communication

Enhancing communication among the variety of groups involved in planning, funding, and operating transit services can further enhance the potential success of coordination efforts. TxDOT can play a major role in improving communication among transit providers, human services agencies, local communities, other state agencies, and federal agencies. A separate report, *Enhancing Transit Communication in Texas* (32), completed as part of this research study, examines communication issues in transit and provides a series of suggested approaches for enhancing ongoing communication among all groups in the state.

Support Shared Use of Facilities

A few examples of coordination among rural, urban, and intercity transit services were described in this report. The development of transfer facilities can greatly enhance the potential opportunities for this type of coordination and can help maximize the effectiveness of all modes. As part of its ongoing efforts to promote the shared use of facilities, multimodalism, and intermodalism, TxDOT may wish to investigate specific opportunities for the development of new or the enhancement of existing facilities to encourage greater coordination between rural, urban, and intercity transit resources.

Transit Providers and Communities

The actual implementation of most coordination techniques rests with local transit agencies, human services agencies, and communities. These are the groups that will ultimately be responsible for the implementation and operation of the different coordination programs. There are a number of activities these groups could undertake to advance coordination efforts within the state. As summarized in this section, these range from pursuing education and training programs to actually implementing different coordination strategies.

Support Coordinated Training Programs

The development of an ongoing coordinated training program was described previously. The success of this effort will depend in large part on the interest and support of transit agencies and other local groups. Representatives from transit agencies, human services agencies, and local communities should be actively involved in the development of education and training courses to help ensure that they focus on the major elements of interest to the groups responsible for implementation of the coordinated programs. Further, the ongoing involvement and support of these groups is critical to the success of these programs. This effort could be accomplished through the coordinated activities of providers, various transit associations, TxDOT, OCTS, and ATCC.

Enhance Peer-to-Peer Training

Peer-to-peer training has proved to be a successful approach that has been used in Texas and throughout the country. The peer-to-peer manual published by TxDOT and examples of training seminars were discussed previously. As noted, these types of training programs provide the opportunity for

representatives from one agency to learn directly from the experiences of another agency or organization. Peer-to-peer programs within Texas are operated in a number of different ways. First, an individual from an agency with experience in a certain coordination technique may spend some time at an agency considering this approach. Second, an individual from the agency considering implementing a certain technique may visit an agency already using that technique. Third, information may simply be exchanged through written or verbal communications. Finally, workshops or conferences may be sponsored where representatives from both groups can share experiences, ideas, and problems with different coordination strategies. Enhancing the current efforts utilizing all of these peer-to-peer training strategies in the state could help promote coordination activities.

Pursue Information and Referral Programs

This report identified examples of information and referral activities as part of coordinated transit programs. These activities are often the easiest to implement and may be the least threatening to existing agencies and service providers. As a result, OCTS, TxDOT, transit agencies, human services agencies, local communities, and other groups in Texas may wish to consider coordinated information and referral programs as both a mechanism to enhance existing services and as a first step in the development of a more comprehensive coordination program. A series of demonstration programs could be undertaken, with the support of TxDOT, OCTS, ATCC, and other agencies, focusing on coordinated information and referral programs. Conducting these as part of an ongoing demonstration program would provide the opportunity to monitor and evaluate different approaches and to identify those techniques that appear to produce the best results.

Pursue Coordinated Maintenance Programs

This report described a number of different approaches to coordinated maintenance programs. Coordinating maintenance activities appears to be one approach that may be especially appropriate for consideration in small communities and rural areas. The large size of the vehicle fleets operated by transit systems in the major metropolitan areas in Texas require extensive maintenance personnel and equipment. Transit agencies and service providers in other areas operate much smaller vehicle fleets, however. Coordinating maintenance activities in these areas with local communities and human

services agencies may provide cost savings and enhance efficiency. A series of demonstration projects, sponsored through the overall program discussed previously, could be undertaken to test different approaches to coordinating maintenance. Documenting the results of these demonstrations would help advance the state-of-the-practice and would provide valuable insight into the best approaches and techniques to use in Texas.

Pursue Coordinated Service

This is one of the more difficult coordination strategies to plan, implement, and operate. Concerns over possible loss of control and other issues can make coordinated services threatening to many agencies and groups. As a result, it is suggested that possible demonstration projects focusing on this approach be carefully considered and planned. Given the potential benefits of this approach, however, pursuing potential demonstration projects should be considered as part of the ongoing program discussed previously. Monitoring and evaluating these projects will be of great value to other groups interested in similar strategies and will help advance the state-of-the-practice in Texas.

Pursue Coordination Between Systems and Industry Sectors

A few examples of coordination between different transit services and industry sectors in Texas were highlighted in this report. There appears to be numerous opportunities to build on the experience gained from these examples and to enhance coordination between different urban, rural, and intercity transit services. Initiating selected demonstration projects could be pursued as one approach to enhancing this coordination. Potential projects could be identified based on travel demands and historical working relationships among different providers. Further, potential demonstration projects should be coordinated with the development of intermodal facilities described previously. Such facilities are critical to the success of service coordination activities. Pursuing an aggressive demonstration program focusing on enhanced connections between service operators and modes could greatly enhance the mobility of Texas residents.

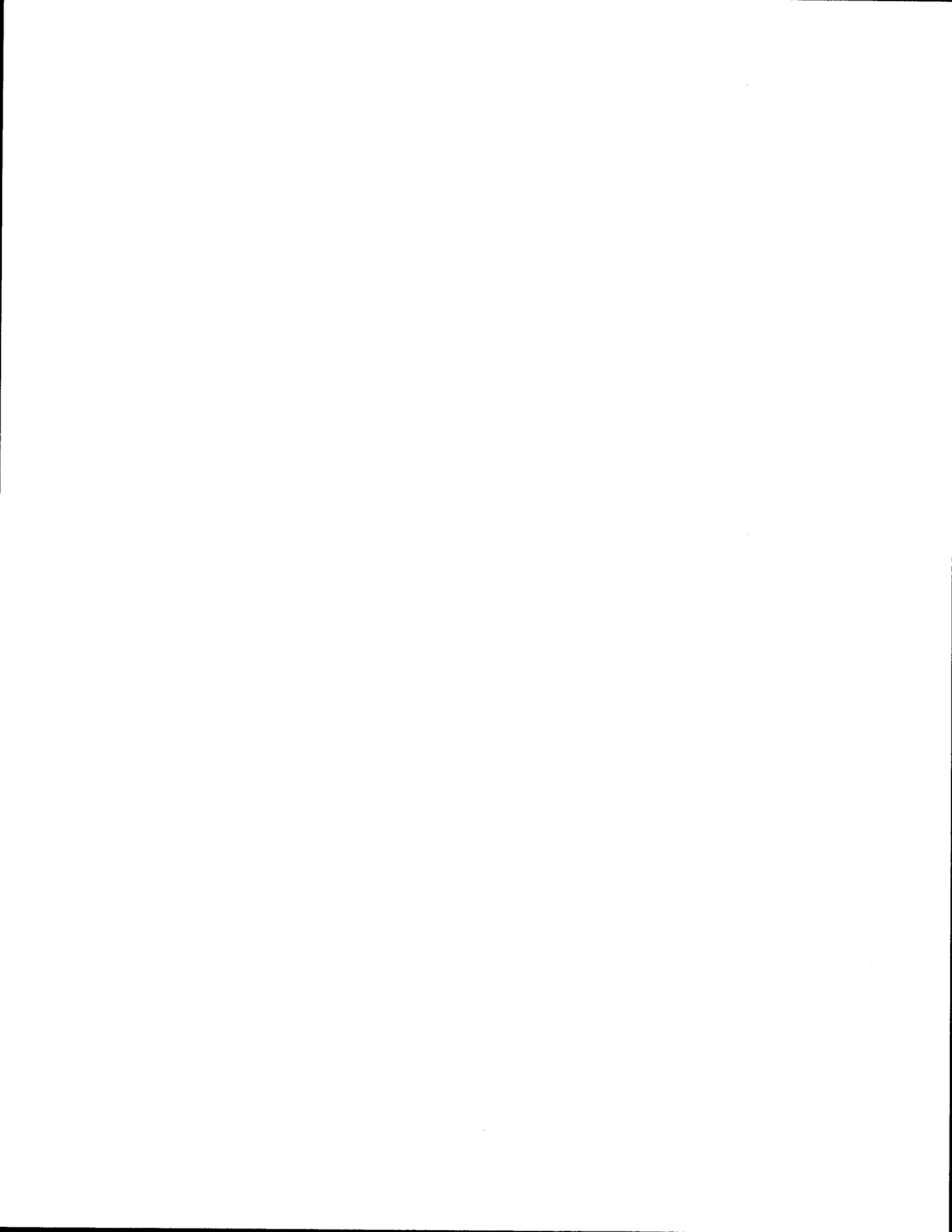


REFERENCES

1. Saltzman, Arthur, *Coordination of Transportation by Human Service Agencies: An Interorganizational Perspective*, Irvine, CA: University of California, 1980.
2. Community Transportation Association of America, *Coordinating Transportation in Your Community. National Eldercare Institute on Transportation Issue Brief No. 4*, Washington, D.C.: Community Transportation Association of America, 1992.
3. Noel, E.C. and H. S. Chadda, "Consolidating Elderly and Handicapped Transportation Services," *Transportation Quarterly*, Vol. 41, No. 2, April 1987.
4. Burkhardt, Jon E., "Coordinated Transportation Demonstration Results," In W. Ashford, et.al., (eds.), *Transportation Studies: Mobility and Transport for Elderly and Handicapped Persons*, New York: Gordon and Breach Science Publishers, Vol. 2, pp. 355-356.
5. United States Department of Transportation, *Intermodal Surface Transportation Efficiency Act of 1991: Flexible Funding Opportunities for Transit*, Washington, D.C.: Federal Transit Administration, 1992.
6. Prater, G. S., et.al., *Analysis of Four Selected State Transportation Coordinated Efforts in Social Services and Rural Public Transportation*, Jackson, MS: Departments of Social Work and Economics, Jackson State University, 1989.
7. Schultz, Paul and George Rucker, "Section 18: A Decade Later," *Community Transportation Reporter*, April 1988, pp. 6-8.
8. Urban Systems, Inc., *Coordinating Special Transportation Services in Louisiana*, New Orleans, LA: Urban Systems, Inc., 1988.
9. United States General Accounting Office, *Hindrances to Coordinating Transportation of People Participating in Federally Funded Grant Programs*, Washington, D.C.: US General Accounting Office, Human Resources Division, 1977.
10. Ecosometrics, Inc., *Coordinated Transportation Demonstration Results*, Bethesda, MD: Ecosometrics, Incorporated, 1980.
11. Greene, Michael J., *Coordinating Rural Transit: Stretching State Resources for Better Service*, Lexington, KY: Council of State Governments, State Government Research Institute, Center for Agriculture and Rural Development, 1987.

12. Garland, Alice and Michael Eberlein, "Coordination at the State Level: Approaches and Importance," Paper presented at the Fourth National Conference on Rural Public Transportation, Vail, CO, June 12-15, 1979.
13. Ecosometrics, *First UMTA and AoA National Conference on Transportation for the Elderly and Handicapped, Final Report*, Bethesda, MD: Ecosometrics, 1985.
14. Center for Systems and Program Development, Inc., *Best Practices In Specialized And Human Services Coordination*, Washington, D.C.: Center For Systems Program Development, Inc., July, 1989.
15. Price, Barbara and Marsha Domzalski, "Coordination: A Tool For Better Transit," *Community Transportation Reporter*, Vol. 6, No.1, January, 1988.
16. Steinman, C.K., *Mobility for Older Americans Federal Initiatives*, Washington, D.C.: American Association of Retired Persons, 1990.
17. Turnbull, Katherine, *Federal and State Legislation and Policies Relating to Transit in Texas*, College Station, TX: Texas Transportation Institute, September 1991.
18. Social Services Research Institute, *Coordination of Specialized Transportation: An Inventory of State Activities*, U.S. Department of Health and Human Services, Office of Human Development Services, June 1981.
19. Carter Goble Associates Consulting Services, Inc., *South Carolina Specialized Needs Assessment and Statewide Coordination Plan*, Columbia, SC: CGA Consulting Services, Inc., June 1989.
20. Center for Urban Transportation Research, *Florida Five-Year Transportation Disadvantaged Plan*. Tampa, FL: Center for Urban Transportation Research, June 1992.
21. Office of Client Transportation Services, *Report to the Commissioner of Health and Human Services, Findings and Recommendations of the OCTS*, September 1994.
22. Fitzpatrick, Kay, et.al., *Intercity Bus Industry in Texas*, College Station, TX: Texas Transportation Institute, 1993.
23. Walther, Erskine S., *Coordination of Rural Public Transportation Services in Three Southeastern States*, Greensboro, NC: Transportation Institute, North Carolina A&T State University, 1990.

24. Community Transportation Association of America, and Region IV Transportation Consortium, *Coordinating Community Transportation Services: A Planning and Implementation Handbook*. Washington, DC: CTAA, 1992.
25. Applied Resource Integration, LTD., *Planning Guidelines for Coordinated Agency Transportation Services*, Boston, MA: ARI, LTD., April 1980.
26. Ohio Department of Transportation, *A Handbook for Coordinating Transportation Services*, Columbus, OH: ODOT, October 1991.
27. Rosenbloom, Sandra, "Barriers to Coordination: Irrational or Valid Objections?" In *Transportation Research Record* 818, 1981.
28. Public Technology, Inc., *Coordination of Paratransit With Conventional Transit*, Washington, D.C. Public Technology, Inc., 1980.
29. Schauer, Peter & Associates, *Proceedings of a Texas Reporting Workshop*. Austin, TX: Texas Department of Transportation, Division of Public Transportation, 1991.
30. Idaho Department of Transportation, "Understanding Your Options for Cost Savings -- Coordinated Transportation," Boise, ID: IDOT, n.d.
31. Community Transportation Association of America, *Coordinating Transportation: Models of Cooperative Arrangements*, Washington, D.C.: Community Transportation Association of America, 1994.
32. Turnbull, Katherine F., Laura Higgins, and Janet Ricci, *Enhancing Transit Communication in Texas*, College Station, TX: Texas Transportation Institute, 1994.
33. Texas Department of Transportation. *Texas Rural Public Transportation System Peer-to-Peer Resource Manual*. Austin, TX: Division of Public Transportation, TxDOT, December 1993.



LITERATURE REVIEWED

- American Association of State Highway and Transportation Officials (AASHTO). *Survey and Summaries of Metropolitan Planning Organizations and State Departments of Transportation*. Washington, D.C.: AASHTO, 1992.
- Anonymous. "Toronto Looks At Coordinating Region's Transit Services." *Passenger Transport*. Volume 51, Number 35, September 6, 1993, p. 5.
- Applied Resource Integration, Ltd. *Implementation Guidelines for Coordinated Agency Transportation Services*. Boston, MA: Applied Resource Integration, Ltd., 1980.
- _____. *Planning Guidelines for Coordinated Agency Transportation Services*. Boston, MA: Applied Resource Integration, Ltd., 1980.
- Bell, William G. and Associates. *Specialized Transportation For Rural Elderly Floridians: A Coordinated Approach*. Tallahassee, FL: Multidisciplinary Center on Gerontology, Florida State University, 1983.
- Bogren, Scott. "NJ Transit: Statewide Coordination." *Community Transportation Reporter*. March 1991, pp. 9+.
- _____. "Rocky Mountain Success." *Community Transportation Reporter*. Volume 8, Number 10, December 1990, pp. 8-9.
- _____. "Coordination: Check LISTS for Success." *Community Transportation Reporter*, Volume 8, Number 9, November 1990, pp. 12-13.
- Burkhardt, Jon E. "Coordinated Transportation Demonstration Results." In W. Ashford, et.al., (eds.), *Transportation Studies: Mobility and Transport for Elderly and Handicapped Persons*, Volume 2. New York: Gordon and Breach Science Publishers, 1982.
- Busko, M.V. and A. Saltzman. "A Behavioral Approach to Interorganizational Coordination Among Human Service Transportation Agencies." In W. Ashford, W.G. Bell and T.A. Rich (eds.), *Transportation Studies: Mobility and Transport for Elderly and Handicapped Persons*, Volume 2. New York: Gordon and Breach Science Publishers, 1982.
- Cardoso, Amrah, et. al. "Integrated Para-Transit Transportation Planning For Off-Peak Low Density Travel Report 1. Off-Peak Trip Characteristics." Chicago, IL: University of Illinois at Chicago Circle, School of Urban Sciences, 1978.
- Carter Goble Associates (CGA) Consulting Services, Inc. *South Carolina Specialized Needs Assessment and Statewide Coordination Plan*. Columbia, SC: CGA Consulting Services, Inc., June 1992.
- Center for Systems and Program Development, Inc. *Best Practices In Specialized And Human Services Coordination*. Washington, D.C.: Center For Systems Program Development, Inc., July 1989.
- Center for Urban Transportation Research. *Florida Five-Year Transportation Disadvantaged Plan*. Tampa, FL: Center for Urban Transportation Research, June 1992.

Charles River Associates. *LISTS: Transportation Brokerage for the Elderly and Handicapped in Lancaster, PA*. Boston, MA: Charles River Associates, 1984.

Community Transportation Association of America. *Coordinating Transportation: Models of Cooperative Arrangements*. Washington, D.C.: Community Transportation Association of America, 1994.

_____. *Coordinating Transportation in Your Community. National Eldercare Institute on Transportation Issue Brief No. 4*. Washington, D.C.: Community Transportation Association of America, 1992.

_____. *National Eldercare Institute on Transportation Focus Group Report*. Washington, D.C.: Community Transportation Association of America, 1992.

_____. *A Directory of UMTA-Funded Rural and Specialized Transit Systems*. Washington, D.C.: Community Transportation Association of America, 1989.

Community Transportation Association of America, and Region IV Transportation Consortium. *Coordinating Community Transportation Services: A Planning and Implementation Handbook*. Washington, D.C.: Community Transportation Association of America, 1992.

Community Transportation Reporter. Volume 11, Number 1, January 1993.

COMSIS Corporation. *Guidebook For Planning Small Urban And Rural Transportation Programs, Volume 1*. Pittsburgh, PA: COMSIS Corporation, June 1990.

"Connecticut Offers Carrots for Coordination." *Community Transportation Reporter*. April 1992, p. 24.

Cook, Allen R. "The Dial-A-Bat Paratransit Service of Brockton, Massachusetts, Area Transit -- Public Transit in Coordinated Human Services Transportation." Norman, OK: University of Oklahoma, School of Civil Engineering and Environmental Science, 1978.

Dockendorf, John. "State Transit Funding Issues." *Transportation Research Circular Number 343*, Washington, D.C.: TRB, National Research Council, 1988, pp. 54-73.

Dooley, Francis. *Public Transportation For Rural and Small Urban Areas: A Report on Coordination in 12 Selected Section 18 Projects*. Washington, D.C.: Federal Highway Administration, 1982.

Ecosometrics, Inc. *First UMTA and AoA National Conference on Transportation for the Elderly and Handicapped, Final Report*. Bethesda, MD: Ecosometrics, Incorporated, 1985.

_____. *Coordinated Transportation Demonstration Results*. Bethesda, MD: Ecosometrics Incorporated, 1980.

Fitzpatrick, Kay, et.al. *Intercity Bus Industry in Texas*. College Station, TX: Texas Transportation Institute, 1993.

Florida Transportation Commission. *A Study of Coordination of Local and Regional Public Bus Transit and Fixed Guideway Transportation Systems in Florida*. Tallahassee, FL: Florida Transportation Commission, April 1991.

- Furniss, Robert E. "The Westport Connecticut Integrated Transit System." Los Angeles, CA: CACI, Inc. - Federal, July 1979.
- _____. "Pre-Demonstration Activities Of The Westport Integrated Transit System." Los Angeles, CA: CACI, Inc. - Federal, July 1977.
- Garber, Connie. "DHHS Coordination Means Increased Mobility." *Community Transportation Reporter*. April 1991, p. 11.
- Garland, Alice, and Michael Eberlein, "Coordination at the State Level: Approaches and Importance," Paper presented at the Fourth National Conference on Rural Public Transportation, Vail, CO, June 12-15, 1979.
- Goldsack, Paul J. "Munich: Truly Coordinated Transit." *Mass Transit*. April 1984, pp. 13+.
- Goodman, Jesse. "Coordination at the State Level: The North Carolina Approach." Presented at the *First UMTA and AoA National Conference on Transportation for the Elderly and Handicapped*, 1984.
- _____. "Integrated Transit Coming, But Slowly." *Mass Transit*. April 1984, pp. 12+.
- Greater Stamford Transit District. "Intermodal Enhancement: Transit Brokerage Study." Stamford, CT: Greater Stamford Transit District, February 1988.
- Greene, Michael J. *Coordinating Rural Transit: Stretching State Resources For Better Service*. Lexington, KY: The Council of State Governments, State Government Research Institute, 1987.
- _____. *State Rural Public Transportation Coordination: A Review*. Lexington, KY: The Council of State Governments, 1986.
- _____, ed. *Rural Public Transportation Symposium: Participant Workbook*. Lexington, KY: The Council of State Governments, 1986.
- Hallock, Peter H. "Iowa Transit Coordination Policy." *Transportation Research Record 1292*. Washington, D.C.: TRB, National Research Council, 1991, pp. 12-14.
- Hart, Marion, Jr. "Florida Statute 427-Rule 41: Coordinated Transportation for Elderly, Handicapped and Economically Disadvantaged in Florida." Presented at the *First UMTA and AoA National Conference on Transportation for the Elderly and Handicapped*, 1984.
- Hutchinson, Jo Ann. "Coordination in Florida: Teamwork Keeps the Wheels Rolling." *Community Transportation Reporter*. Volume 6, Number 7, July, 1988, pp. 14-16.
- _____. "A Case Study: Coordination of Rural Transportation in Florida." In M.J. Greene (ed.), *Rural Public Transportation Symposium: Participant Workbook*. Lexington, KY: The Council of State Governments, 1986.
- Idaho Department of Transportation. "Understanding Your Options for Cost Savings -- Coordinated Transportation." Boise, ID: IDOT, n.d..
- Institute For Technical Research and Education. *The Tenth National Conference on Rural Public Transportation*. Raleigh, N.C.: Institute for Technical Research and Education, University of North Carolina, 1992.

- Kane, Timothy D. and Kenneth J. Dueker. "Establishing An Integrated Regional Transit System In Rural Iowa: A Case Study." Iowa City, IA: Institute of Urban and Regional Research, University of Iowa, 1977.
- Kendall, Don. "Comparison of Findings From Projects That Employ User-Side Subsidies for Taxi and Bus Travel." *Transportation Research Record 784*. Washington, D.C.: TRB, National Research Council, 1980, pp. 45-52.
- Kish, Steven J. "Coordination of Transportation Resources: The Georgia Experience." *Transportation Research Record 1078*. Washington, D.C.: TRB, National Research Council, 1986, pp. 56-61.
- Knapp, Sue F., Frederic D. Fravel, and Jon E. Burkhardt. *Specialized Services Coordination Plan For Southeast Michigan - Final Report*. Bethesda, MD: Ecosometrics, Incorporated, July 1990.
- Kyte, Michael, Nancy Richardson, and Connie McKean. "Coordination of Public Transit and School Bus Transportation Programs: Results of Pilot Projects in Six Iowa Communities." *Transportation Research Record 1202*. Washington, D.C.: TRB, National Research Council, 1988, pp. 29-31.
- Landau, Martin, Donald Chisholm, and Melvin M. Webber. "Redundancy In Public Transit, Vol. I: On the Idea of an Integrated Transit System." Berkeley, CA: Institute of Urban and Regional Development, University of California, August 1980.
- Lave, Roy, and Mallory Nestor. "Unification: Painless Consolidation of Specialized Services." *Transportation Research Record 1292*. Washington, D.C.: TRB, National Research Council, 1991, pp. 1-7.
- Malkowski, Kenneth W. *The Transportation Accounting Consortium: An Overview*. Lansing, MI: Transportation Accounting Consortium, 1981.
- McKnight, Claire E., and Naomi Rotter. "Coordinated Training: A Means to Improve Productivity." Presented at Transportation Research Board 71st Annual Meeting. Washington, D.C., January 12-16, 1992.
- Metropolitan Transportation Commission. *Initial Review of Transit Coordination and Consolidation*. Oakland, CA: Metropolitan Transportation Commission, 1986.
- _____. *Transit Productivity and Coordination Evaluation*. Oakland, CA: Metropolitan Transportation Commission, 1990.
- Miller, J.H. "Performance Evaluation of Alternative Forms of Coordinated Specialized Transportation." In W. Ashford, W.G. Bell and T.A. Rich (eds.), *Transportation Studies: Mobility and Transport for Elderly and Handicapped Persons*, Volume 2. New York: Gordon and Breach Science Publishers, 1982, pp. 195-203.
- Noel, Errol C., and Himmat S. Chadda. "Consolidating Elderly and Handicapped Transportation Services." *Transportation Quarterly*, Volume 41, No. 2, April 1987, pp. 229-246.
- Noel, E.C., and E.S. Graye. *Analysis of Issues in the Consolidation of Elderly and Handicapped Transportation Services*. Washington, D.C.: Howard University, Departments of Civil Engineering and Systems and Computer Sciences, 1983.

- Office of Client Transportation Services. *Report to the Commissioner of Health and Human Services, Findings and Recommendations of the OCTS*. Austin, TX: OCTS, September 1994.
- Ohio Department of Transportation. *A Handbook For Coordinating Transportation Services*. Columbus, OH: Ohio Department of Transportation, October 1991.
- Prater, Gwendolyn S., Alexander McKinley, Jr., and Ruth M. Williams. *An Analysis of Four Selected State Transportation Coordination Efforts in Social Services and Rural Public Transportation*. Jackson, MS: Departments of Social Work and Economics, Jackson State University, 1989.
- Price, Barbara Rasin, and Marsha Domzalski. "Coordination: A Tool for Better Transit." *Community Transportation Reporter*. Volume 6, Number 1, January, 1988, pp. 6-9.
- Public Technology, Inc. *Coordination of Paratransit With Conventional Transit*. Revised Edition. Washington, D.C.: Public Technology, Inc., January 1980.
- Public Transportation Division. *The Ninth National Conference on Rural Public Transportation*. Austin, TX: State Department of Highways and Public Transportation, Public Transportation Division, 1990.
- Rice, Brenda. "Rural Transit Provides Key to National Mobility." *Community Transportation Reporter*, November 1988, pp. 13-15.
- Rosenbloom, Sandra. "Barriers to Coordination: Irrational or Valid Objections?" *Transportation Research Record* 818. Washington, D.C.: TRB, National Research Council, 1981, pp. 33-39.
- _____. "Local Responses to Meeting the Transportation Needs of the Handicapped: The Experiences of Six Texas Cities" *Transportation Research Record* 784. Washington, D.C.: TRB, National Research Council, 1980, pp. 39-45.
- Saltzman, Arthur. *Coordination of Transportation by Human Service Agencies: An Interorganizational Perspective*. Irvine, CA: University of California, 1980.
- Schauer, Peter and Associates. *Proceedings of a Texas Reporting Workshop*. Austin, TX: Texas Department of Transportation, Division of Public Transportation, 1991.
- Schultz, Paul, and George Rucker. "Section 18: A Decade Later." *Community Transportation Reporter*. Volume 6, Number 4, April 1988, pp. 6-11.
- Sen, Lalita, and Atur Radhakrishnan. "Evaluation of Interagency Coordination and Cooperation Between Transportation and Aging Networks in Harris County, Texas." *Transportation Research Record* 1378. Washington, D.C.: TRB, National Research Council, 1993, pp. 34-36.
- Sharpe, Loretta E. "A Statewide Cooperative Approach to Interagency and Intergovernmental Coordination of Public Transportation and Human Services Transportation Resources Through Consolidated Substate Regional Transportation Planning and Operations." In W. Ashford, W.G. Bell and T.A. Rich (eds.), *Transportation Studies: Mobility and Transport for Elderly and Handicapped Persons*, Volume 2. New York: Gordon and Breach Science Publishers, 1982, pp. 365-374.

- Social Services Research Institute. *Coordination of Specialized Transportation: An Inventory of State Activities*, Washington, D.C.: U.S. Department of Health and Human Services, Office of Human Development Services, June 1981.
- Steinman, C.K. *Mobility for Older Americans Federal Initiatives*. Washington, D.C.: American Association of Retired Persons, 1990.
- Stokes, R.W., and E.J. Washington. *Roles For Transit in Texas*. College Station, TX: Texas Transportation Institute, November 1990.
- Stokes, R.W. *Transit Study Needs in Texas*. College Station, TX: Texas Transportation Institute, September 1989.
- Texas Department of Transportation. *Texas Rural Public Transportation System Peer-to-Peer Resource Manual*. Austin, TX: Division of Public Transportation, Texas Department of Transportation, December 1993.
- _____. *Public Transportation in Texas: Profiles and Projections, 1994-1997*. Austin, TX: Division of Public Transportation, Texas Department of Transportation, December 1992.
- Topp, Hartmut H. "Mutual Cooperation in Public Transit." *Transportation Quarterly*. Volume 44, Number 2, April, 1990, pp. 303-315.
- Transportation Accounting Consortium. *Rural Transportation Accounting*. Lansing, MI: Transportation Accounting Consortium, 1986.
- Tudor, Donald N. and Randy Halvorson. "Interagency/Intermodal Coordination." *Transportation Research Circular Number 343*, Washington, D.C.: TRB, National Research Council, 1988, pp. 74-78.
- Turnbull, Katherine F., Laura Higgins, and Janet Ricci. *Enhancing Transit Communication in Texas*. College Station, TX: Texas Transportation Institute, 1994.
- Turnbull, Katherine. *Federal and State Legislation and Policies Relating to Transit in Texas*. College Station, TX: Texas Transportation Institute, September 1991.
- United States Department of Transportation. *Intermodal Surface Transportation Efficiency Act of 1991: Flexible Funding Opportunities for Transit*. Washington, D.C.: Federal Transit Administration, 1992.
- United States General Accounting Office. *Availability of Intercity Bus Service Continues to Decline*. Washington, D.C.: U.S. General Accounting Office, Resources, Community, and Economic Development Division, June 1992.
- _____. *Hindrances to Coordinating Transportation of People Participating in Federally Funded Grant Programs, Volume 1*. Washington, D.C.: U.S. General Accounting Office, October 1977.
- Urban Systems, Inc. *Coordinating Special Transportation Services in Louisiana*. New Orleans, LA: Urban Systems, Inc., December 1988.
- Urbitran Associates, Inc. *Coordination and Implementation of Elderly and Disabled Transportation Services in the Greater Bridgeport Region*. New York: Urbitran Associates, Inc., March 1991.

Urban Transport News, Volume 21, No. 20, September 30, 1993.

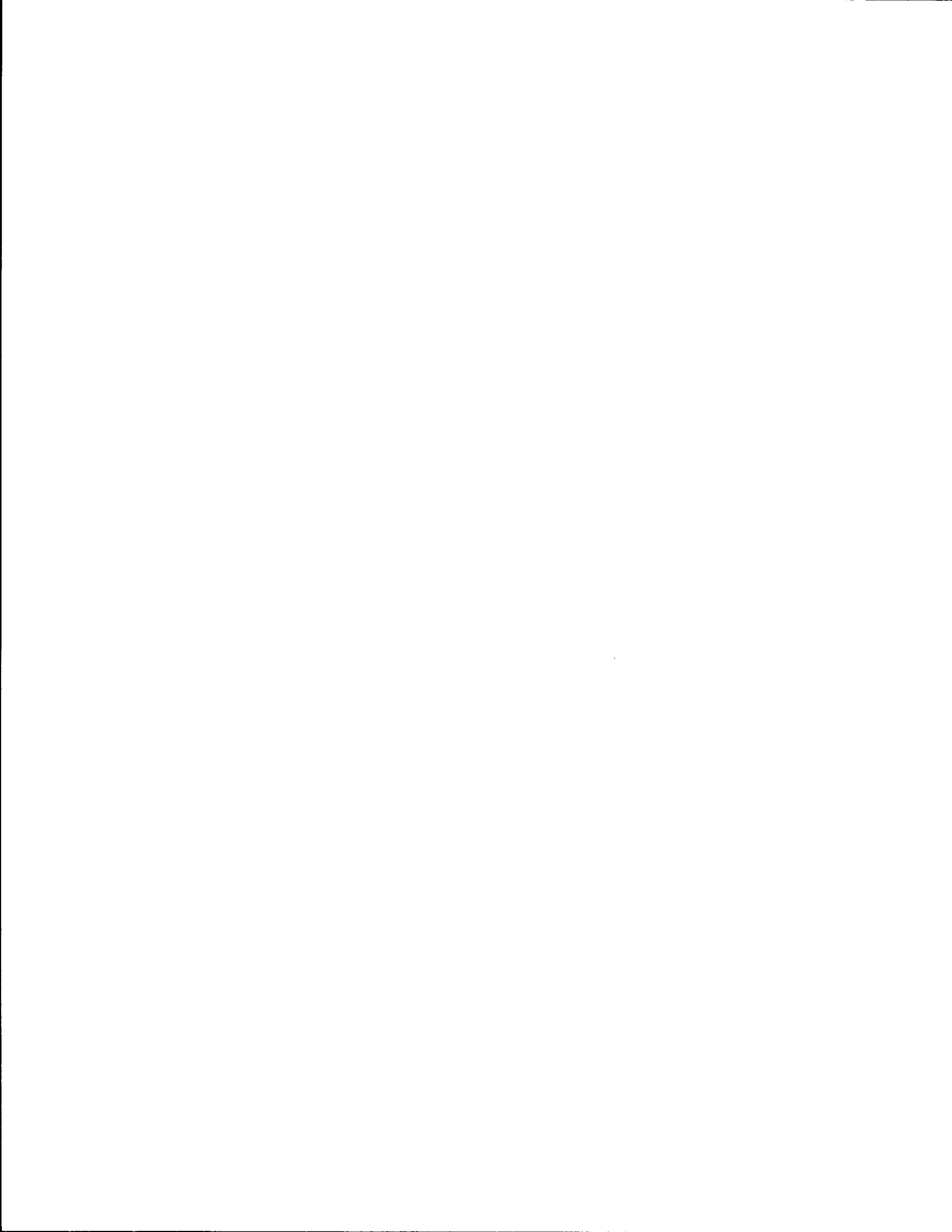
Walsh, Marj. "Care-A-Van and SAINT: Addition of Volunteer Division to Model System." In *Transportation Research Record 1292*. Washington, D.C.: TRB, National Research Council, 1991, pp. 45-47.

Walther, Erskine S. *Coordination of Rural Public Transportation Services in Three Southeastern States*. Greensboro, NC: Transportation Institute, North Carolina A&T State University, 1990.

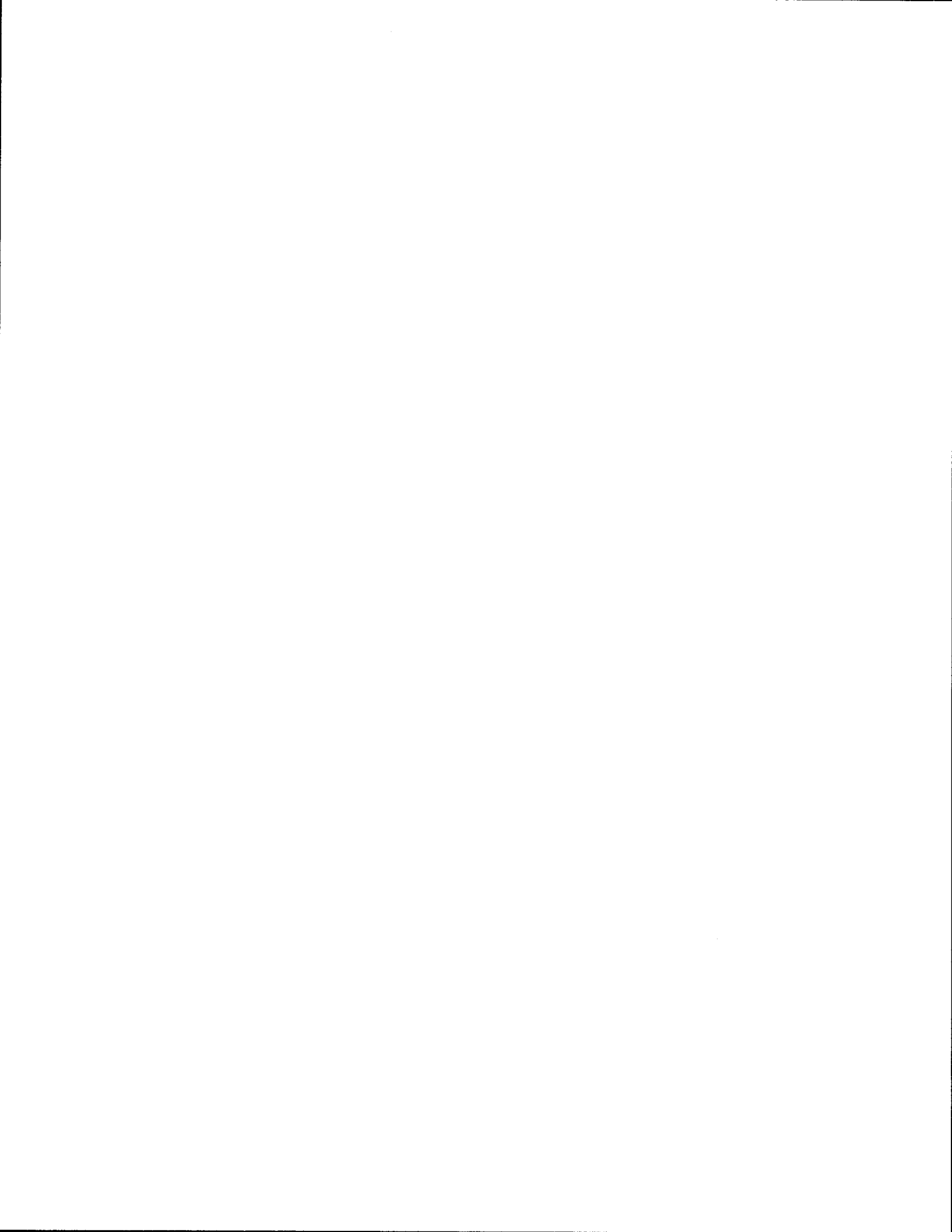
Weiner, Edward. *Urban Transportation Planning in the United States: An Historical Overview*. Revised Edition. Washington, D.C.: Office of Economics, Office of the Assistant Secretary for Policy and International Affairs, November 1992.

Williams, Margaret. "Something Funny Happened on the Way to Coordination." Presented at the *First UMTA and AoA National Conference on Transportation for the Elderly and Handicapped*, 1984.

Zarifi, Sina. "Regional Specialized Transportation: Assessment and Recommendations." *Transportation Research Record 1292*. Washington, D.C.: TRB, National Research Council, 1991, pp. 53-60.



APPENDIX A - FEDERAL FUNDING RESOURCES



FEDERAL FUNDING RESOURCES

Federal funding sources are the backbone of most community transportation agencies. This appendix provides a description of the Federal Transit Administration (FTA), Department of Health and Human Services, and other federal funding programs, eligibility requirements, FY 1994 funding levels, and a contact person. For information on the latest funding resources, consult *CTR*.



TABLE A-1. FEDERAL TRANSIT ADMINISTRATION PROGRAMS

Program and FY'94 National Funding Levels	Eligible Recipients	Program Description	Contact Person
<p>Section 18 Federal Transit Grants for Non-Urban Areas \$129.6 Million</p>	<p>State transportation agencies; eligible subrecipients include local public bodies, private for-profit and non-profit corporations and Indian tribal organizations serving non-urban areas of less than 50,000 population.</p>	<p>Funds are available through Section 18 of the Federal Transit Act to provide operating capital and administrative assistance to transit providers in non-urban areas; 15 percent of these funds are set aside for the development and support of intercity bus transportation.</p>	<p>For information or applications regarding Section 18 funding, contact your state department of transportation.</p>
<p>Section 16 Federal Transit Capital Grants for Transporting Elderly Persons and Persons with Disabilities \$58.7 Million</p>	<p>State transportation agencies; eligible subrecipients are private nonprofit corporations or public bodies providing coordinated transportation services for elders and persons with disabilities.</p>	<p>Funds are available through Section 16 of the Federal Transit Act to provide capital assistance to eligible providers of transportation for elders and persons with disabilities in both urban and non-urban areas.</p>	<p>For information or applications regarding Section 16 funding, contact your state department of transportation</p>
<p>Section 9 Federal Transit Capital and Operating Grants for Urban Areas \$2.2 Million</p>	<p>Public or private providers of transportation services in urban areas of 50,000 or greater population. Private transportation companies may be eligible through contractual arrangements.</p>	<p>Funds are available through Section 9 of the Federal Transit Act to provide operating and capital assistance to transit providers in urban areas.</p>	<p>For information or applications regarding Section 9 funding in urban areas of more than 200,000 population, contact the FTA Regional Office serving that area; For information or applications regarding Section 9 service in small-urban areas, contact your state department of transportation.</p>
<p>Section 3 Federal Transit Capital Grants for Buses and Bus Facilities \$95 Million</p>	<p>Public bodies, including state and local government agencies.</p>	<p>Funds are available through Section 3 of the Federal Transit Act for the acquisition, construction or improvement of buses and bus facilities.</p>	<p>For information or applications, contact the FTA Regional Office serving your area.</p>
<p>Section 26 Federal Transit Planning and Research \$95 Million</p>	<p>State agencies, local public agencies, universities, local or national for-profit or non-profit corporations.</p>	<p>Funds are available through Section 26 of the Federal Transit Act to support national- and state-level research, metropolitan and statewide transit planning, training and demonstration projects.</p>	<p>Lawrence Schulman, Associate Administrator for Technical Assistance and Safety, Federal Transit Administration, U.S. Dept. of Transportation, 400 7th St., S.W., Rm. 6431, Washington, DC 20590, Phone: (202) 366-4052.</p>

Source: "CTR Resource Guide." *Community Transportation Reporter*, Vol. 12, No. 1, January 1994, pp. 14-20

TABLE A-2. DEPARTMENT OF HEALTH AND HUMAN SERVICES PROGRAMS

Program and FY '94 National Funding Levels	Eligible Recipients	Program Description	Contact Person
<p>Title III Grants for Supportive Services And Senior Centers \$296.8 Million</p>	<p>State agencies on aging; eligible subrecipients are designated Area Agencies on Aging.</p>	<p>Funds are available through Title III, Part B of the Older Americans Act to provide community-based systems of transportation, legal, and in-home services for elders, as well as for multipurpose senior centers.</p>	<p>Edwin Walker, Associate Commissioner for State and Community Programs, Administration on Aging, Dept. of Health and Human Services, 330 Independence Ave., S.W., Rm. 4735, Washington, DC 20201, Phone: (202) 619-0011.</p>
<p>Title VI Grants to Indian Tribes for Special Programs for the Aging \$15.1 Million</p>	<p>Tribal organizations and public or private nonprofit organizations which serve native Hawaiian elders.</p>	<p>Funds are available through Title VI, Part A of the Older Americans Act to provide nutrition, information and referral, transportation and other services to Indian elders.</p>	<p>Yvonne Jackson, Associate Commissioner for American Indian, Alaskan Native and Native Hawaiian Programs, Administration on Aging, Dept. of Health and Human Services, 330 Independence Ave., S.W., Rm. 4254, Washington, DC 20201, Phone: (202) 619-2957.</p>
<p>Community Services Block Grant \$372 Million</p>	<p>State community service agencies; eligible subrecipients are locally based non-profit agencies.</p>	<p>Funds are available to assist service providers that meet the employment, education, housing, nutrition, energy, emergency assistance, health and related needs, such as transportation, of low-income persons.</p>	<p>Jacqueline Lemire, Director, State Assistance Div., Office of Community Services, Administration for Children and Families, U.S. Dept. of Health and Human Services, 370 L'Enfant Promenade, S.W., 5th Fl., Washington, DC 20447, Phone:(202) 401-9342.</p>
<p>Title XX Social Services Block Grant \$2.8 Billion</p>	<p>State and local social services agencies.</p>	<p>Funds are available through Title XX of the Social Security Act to enable states to provide needed social services, including transportation, that addresses the goals of: reduced dependency on social programs; maintained self-sufficiency; prevented abuse, neglect or exploitation; reduced use of institutional care.</p>	<p>Jacqueline Lemire, Director, State Assistance Div., Office of Community Services, Administration for Children and Families, U.S. Dept. of Health and Human Services, 370 L'Enfant Promenade, S.W., 5th Fl., Washington, DC 20447, Phone:(202) 401-9342.</p>

TABLE A-2. DEPARTMENT OF HEALTH AND HUMAN SERVICES PROGRAMS (CON'T)

Program and FY '94 National Funding Levels	Eligible Recipients	Program Description	Contact Person
<p>Developmental Disabilities Basic Support Grants. \$67.4 Million</p>	<p>State and local developmental disabilities agencies.</p>	<p>Funds are available to provide medical services, support services and programs that enable persons with developmental disabilities to become independent and productive members of their communities.</p>	<p>Raymond Sanchez, Director, Program Operations Div., Administration on Developmental Disabilities, Administration for Children and Families, U.S. Dept. of Health and Human Services, 200 Independence Ave., S.W., Rm. 337D, Washington, DC 20201, Phone: (202) 590-5962.</p>
<p>Head Start \$3.3 Billion</p>	<p>Local government agencies, private nonprofit agencies and Indian tribes. Subrecipients may be agencies serving children.</p>	<p>Funds are available to provide comprehensive services, including health, educational, nutritional, social and supportive services, such as transportation, to economically disadvantaged preschool children.</p>	<p>Associate Commissioner, Head Start Bureau, Administration on Children, Youth and Families, Administration for Children and Families, U.S. Dept. of Health and Human Services, 330C St., S.W., Rm. 2050A, Washington, DC 20201, Phone:(202) 205-8573.</p>
<p>Job Opportunities and Basic Skills (JOBS) \$1.1 Billion</p>	<p>State welfare agencies.</p>	<p>Funds are available to assure education, training, and employment to avoid long-term welfare dependency for needy; states are required to provide payment or reimbursement for necessary transportation, child care and related expenses for persons participating in the JOBS Program.</p>	<p>Mary Ann Higgins, Director, JOBS Program Div., Office of Family Assistance, Administration for Children and Families, U.S. Dept. of Health and Human Services, 370 L'Enfant Promenade, S.W., 5th Fl., Washington, DC 20447, Phone: (202) 401-9294</p>
<p>Native American Programs \$34.5 Million</p>	<p>Indian tribal organizations and public and private non-profit agencies serving tribal communities.</p>	<p>Funds are available to plan and implement economic and social development activities that promote the self-sufficiency of Native American communities.</p>	<p>Sharon McCully, Director, Planning and Support Div., Administration for Native Americans, Administration for Children and Families, U.S. Dept. of Health and Human Services, 200 Independence Ave., S.W., 336D, Washington, DC 20201, Phone: (202) 690-5804.</p>

TABLE A-2. DEPARTMENT OF HEALTH AND HUMAN SERVICES PROGRAMS (CON'T)

Program and FY '94 National Funding Levels	Eligible Recipients	Program Description	Contact Person
Community Health Centers <i>\$584.6 Million</i>	Private nonprofit corporations	Funds are available to operate centers which provide primary and supplemental health services, including transportation and mobile health units, to medically underserved populations.	Richard Bohrer, Director, Div. of Community and Migrant Health, Bureau of Primary Health Care, Health Resources and Services Administration, Public Health Services, U.S. Dept. of Health and Human Services, 4350 East-West Hwy., 7th Fl., Bethesda, MD 20815, Phone: (301) 594-4300.
HIV Care Grants <i>\$439.9 Million</i>	State health care agencies, consortia of HIV care providers.	Funds are available through the Ryan White AIDS Care Act to assist community health providers and local HIV care consortia in providing home- and community-based health care and support services, including transportation, for individuals with HIV.	Eric Goosby, Director, HIV Services Div., Bureau of Health Resources and Services Administration, Public Health Services, U.S. Dept. of Health and Human Services, 5600 Fishers Ln., Rm. 9A-05, Rockville, MD 20857, Phone: (301) 443-6745.
Migrant Health Centers <i>\$59 Million</i>	Public and private nonprofit corporations.	Funds are available to operate centers which provide primary, environmental and supplemental health services, including transportation and mobile health units, to migrant and seasonal agricultural workers.	Antonio Duran, Chief, Migrant Health Branch, Div. of Community and Migrant Health, Bureau of Primary Health Care, Health Resources and Services Administration, Public Health Services, U.S. Dept. of Health and Human Services, 4350 East-West Hwy., 7th Fl., Bethesda, MD 20815, Phone: (301) 594-4303
Rural Health Services Outreach Grants <i>24.8 Million</i>	Public and private nonprofit corporations serving non-metropolitan areas.	Funds are available to enable health care services to be provided in rural areas not otherwise receiving them, including programs of mobile medical care units or transportation to areas with health care facilities.	Jake Culp, Associate Director, Office of Rural Health Policy, Health Resources and Services Administration, Public Health Service, U.S. Dept. of Health and Human Services, 5600 Fishers Ln., Rm. 9-05, Rockville, MD 20857, Phone: (301) 443-0835
Medicaid <i>\$9.1 Billion</i>	State and local medical assistance agencies.	Funds are available through Title XIX of the Social Security Act to enable states to provide health care services to medically needy low-income individuals; states are required to assure transportation to medical care for Medicaid beneficiaries.	Sally Robertson, Director, Medicaid Bureau, Health Care Financing Administration, U.S. Dept. of Health and Human Services, 6325 Security Blvd., E. High Rise, Rm. 200, Baltimore, MD 21207, Phone: (410) 966-3870.

Source: "CTR Resource Guide." *Community Transportation Reporter*, Vol. 12, No. 1, January 1994, pp. 14-20

TABLE A-3. OTHER AGENCIES' PROGRAMS

Program and FY '94 National Funding Levels	Eligible Recipients	Program Description	Contact Person
<p>Rural Development Grants <i>\$35 Million</i></p>	<p>Public and private bodies serving rural areas with populations less than 50,000.</p>	<p>Funds are available to facilitate the development of private enterprises in rural communities, including facility and infrastructure development or the provision of services, such as transportation, that facilitate the economic development of rural areas.</p>	<p>Director, Community Facilities Div., Rural Development Administration, U.S. Dept. of Agriculture, S. Agriculture Bldg., Rm. 6304, Washington, DC 20250, Phone: (202) 720-1490</p>
<p>Rural Development Loan Fund <i>\$100 Million</i></p>	<p>Private nonprofit corporations, state and local governments, and tribal agencies are eligible re-lenders under this program; eligible loan recipients are private for-profit and nonprofit corporations located in areas with populations less than 25,000.</p>	<p>Funds are available to lend for business facilities or community development projects in rural areas. Two re-lending programs are managed by CTAA; one for financing of transportation-related projects in rural areas, the other for financing housing and community development projects.</p>	<p>For information on CTAA's loan programs, contact Charles Rutkowski, CTAA, 1440 New York Ave., N.W., Suite 440, Washington, DC 20005, Phone: (202) 628-1480. For information on other rural development loan programs, contact Director, Community Facilities Div., Rural Development Administration, U.S. Dept. of Agriculture, S. Agriculture Bldg., Rm. 6304, Washington, DC 20250, Phone: (202) 720-14900</p>
<p>Economic Development Grants <i>\$223.2 Million</i></p>	<p>Public bodies or private nonprofit corporations serving designated economic development districts.</p>	<p>Funds are available for public works and development facilities to support the economic development of urban or rural areas experiencing economic distress.</p>	<p>David McIlwain, Director, Public Works Div., Office of Program Operations, Economic Development Administration, U.S. Dept. of Commerce, 14th St. and Constitution Ave., N.W., Washington, DC 20230, Phone: (202) 482-5265</p>
<p>Centers for Independent Living <i>34.4 Million</i></p>	<p>Private nonprofit corporations designated as Centers for Independent Living in 1992.</p>	<p>Funds are available to provide a full range of independent living services, including information and referral, training, peer counseling, rehabilitation, transportation and other support services, to persons with disabilities.</p>	<p>Ann Queen, Associate Commissioner for Development Programs, Rehabilitation Services Administration, Office of the Assistant Secretary for Special Education and Rehabilitative Services, U.S. Dept. of Education, 330 C St. S.W., Rm. 3038, Washington, DC 20202, Phone: (202) 205-8292.</p>

TABLE A-3. OTHER AGENCIES' PROGRAMS (CON'T)

Program and FY '94 National Funding Levels	Eligible Recipients	Program Description	Contact Person
<p>Vocational Rehabilitation Services Program \$1.9 Billion</p>	<p>State vocational rehabilitation agencies and public and private nonprofit organizations.</p>	<p>Funds are available to assist states in providing comprehensive vocational rehabilitation for persons with disabilities, including transportation, medical, and selected other supportive services.</p>	<p>Mark Shoob, Associate Commissioner, Rehabilitation Services Administration, Office of the Assistant Secretary for Special Education and Rehabilitation Services, U.S. Dept. of Education, 330 C St., S.W., Rm. 3036, Washington, DC 20202, Phone: (202) 205-9406.</p>
<p>Community Development Block Grant \$4.3 Billion</p>	<p>Cities in metropolitan statistical areas or in urban counties of 200,000 or more population, units of tribal government, state agencies (on behalf of cities in areas less than 200,000 population).</p>	<p>Funds are available for a broad range of community development activities benefiting low and moderate income persons, including facility development, neighborhood revitalization, improvement of public services and limited assistance to private corporations providing essential services.</p>	<p>Don Patch, Director, Office of Block Grant Assistance, U.S. Dept. of Housing and Urban Development, 451 7th St., S.W., Rm. 7286, Washington, DC 20410, Phone: (202) 708-3587.</p>
<p>Congregate Housing Services Program \$6.3 Million</p>	<p>Public bodies and private non-profit corporations managing housing for elders and persons with disabilities.</p>	<p>Funds are available to provide meals and non-medical support services, including transportation services, to allow elderly or disabled persons to maintain maximum independence in a home environment.</p>	<p>Director, Office of Elderly and Assisted Housing, Federal Housing Administration, U.S. Dept. of Housing and Urban Development, 451 7th St., S.W., Rm. 6130, Washington, DC 20410, Phone: (202) 708-4542.</p>
<p>Job Training Partnership Act \$4.5 Billion</p>	<p>States, who in turn designate local service delivery areas in which training programs are carried out.</p>	<p>Funds are available to provide employment training and related services, including transportation, to training programs for people facing serious barriers to employment.</p>	<p>Director, Office of Employment and Training Programs, Employment and Training Administration, U.S. Dept. of Labor, 200 Constitution Ave., N.W., Rm. N4709, Washington, DC 20210, Phone: (202) 219-5580.</p>

TABLE A-3. OTHER AGENCIES' PROGRAMS (CON'T)

Program and FY '94 National Funding Levels	Eligible Recipients	Program Description	Contact Person
Senior Community Service Employment Program \$410.5 Million	States and national public and private nonprofit corporations.	Funds are available through Title V of the Older Americans Act to create and support part-time community service jobs held by low- income elders, including jobs in community agencies providing transportation services.	Chief, Older Worker Programs Div., Office of Special Targeted Programs, Employment and Training Administration, U.S. Dept. of Labor, 200 Constitution Ave., N.W., Rm. C4524, Washington, DC 20210, Phone: (202) 219-5904.
Foster Grandparent Program \$64.8 Million	State and local government agencies, private nonprofit organizations.	Funds may be used to provide stipends, transportation, and other support services for low- income elders working as volunteers in programs serving infants, children, or youth with special needs.	Ray Tejada, Program Officer, Foster Grandparents Program Development and Planning Branch, Office of Domestic and Anti-Poverty Operation, ACTION, 1100 Vermont Ave., N.W., Rm. 6100, Washington, DC 20525, Phone: (202)606- 4849.
Retired Senior Volunteer Program \$33.7 Million	State and local government agencies, private nonprofit corporations.	Funds may be used to provide transportation and other support services for elders to work as volunteers in community service activities, such as health care, education, economic development, environmental and social services.	Susan Fahy, Program Officer, Retired Senior Volunteer Program Development and Planning Branch, Office of Domestic and Anti-Poverty Operations, ACTION, 1100 Vermont Ave., N.W., Rm. 6100, Washington, DC 20525, Phone: (202) 606-4853.
Senior Companion Program \$29.5 Million	State and local government agencies, private non-private corporations.	Funds may be used to provide transportation and other support services for low-income elders to work as volunteers in community service activities serving elders with physical, mental, or emotional impairments.	Program Officer, Senior Companion Program Development and Planning Branch, Office of Domestic and Anti-Poverty Operation, ACTION, 1100 Vermont Ave., N.W., Rm. 6100, Washington, DC 20525, Phone: (202) 606-4855.

Source: "CTR Resource Guide." *Community Transportation Reporter*, Vol. 12, No. 1, January 1994, pp. 14-20



**APPENDIX B - STATE COORDINATION CONTACTS AND
COORDINATION ACTIVITIES**

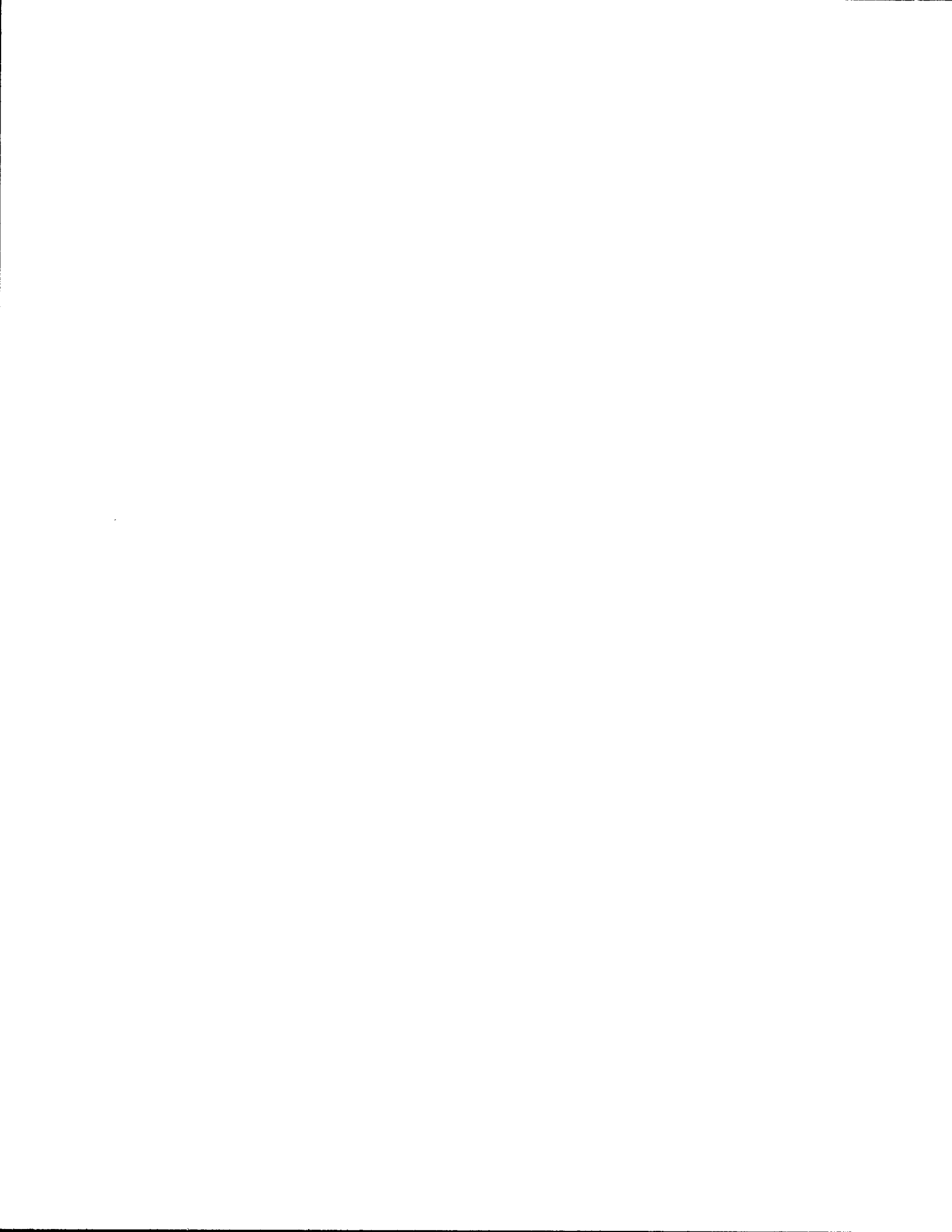


TABLE B-1 STATE COORDINATION CONTACTS AND CURRENT COORDINATION ACTIVITIES

	Coordination Contact			Coordination Activities
	Name	Address	Phone	
Alabama	Jerry Peters	Dept. of Transportation 1409 Coliseum Blvd. Montgomery, AL 36130	(205) 242-6078	Coordinate with local county steering committees to develop state-wide plan for public and human services transportation and fully allocated costs standards
Alaska	Bruce Wells	Dept. of Transportation and Public Facilities P.O. Box Z Juneau, AK 99811	(907) 465-2951	Coordinate training sessions under CTAP program; development of brokerage modes
Arizona	Bob Sherman	Transportation Planning Division Dept. of Transportation 206 S. 17th Ave. Phoenix, AZ 85007	(602)542-4146	DOT is lead agency for coordination; developing new planning guidelines
Arkansas	Jim Gilbert	State Highway and Transportation Dept. P.O. Box 2261 Little Rock, AR 72203	(501) 569-2471	Funding coordination; development of service objectives; information exchange; reducing guideline barriers; development of coordination standards
California	Paul Smith	Div. of Mass Transportation P.O. Box 94274 Sacramento, CA 94274-0001	(916) 323-4691	DOT designates one provider in each transportation service area a "Consolidated Transportation Service Agency" to meet state mandate; develop a complementary paratransit plan
Colorado	Tom Mauser	Dept. of Transportation 4201 E. Arkansas, Rm. 212 Denver, CO 80222	(303) 757-9768	Review local applications for FTA funds; requires Transportation Development Plan with strong coordination component
Connecticut	Brian Chapman	Bureau of Public Transit Dept. of Transportation 24 Woolcott Hill Rd. Weathersfield, CT 06109-0801	(302) 667-7329	Support the formation of local coordination councils
Delaware	Bobby Geier	Admin. for Specialized Transportation P.O. Box 1347 Dover, DE 19903-1347		Coordination handled entirely by state, along with paratransit vehicle maintenance
Florida	Jo Ann Hutchinson	Disadvantaged Commission 605 Suwannee St., M.S. 49 Tallahassee, FL 32399-0450	(904) 488-6036	Contract for local community transportation coordinators; provide planning, data performance standards, training programs at state level

TABLE B-1 STATE COORDINATION CONTACTS AND CURRENT COORDINATION ACTIVITIES (CON'T)

	Coordination Contact			Coordination Activities
	Name	Address	Phone	
Georgia	Troy Bledsoe	Office of Support Services Dept. of Human Resources 47 Trinity Ave., S.W., Rm. 514-H Atlanta, GA 30334-1202		Maintain vehicle titles and provide insurance through state pool
Hawaii	Gregg Matsushima	Statewide Transportation Planning Office Dept. of Transportation 600 Kapiolani Blvd., Rm. 306 Honolulu, HI 96813	(808) 587-1845	Prioritize state transportation needs; review and rank Section 16 applications
Idaho	Connie Swearington	Public Transportation, Dept. of Transportation P.O. Box 7129 Boise, ID 83707-1129	(208) 334-8282	Sponsor regional coordination studies; support coordination demonstration projects
Illinois	David Spacek	Div. of Public Transportation, Dept. of Transportation 310 S. Michigan Ave., Rm. 1608 Chicago, IL 60604	(312) 793-2111	Establish state-wide coordination policies, procedures, and needs assessments
Indiana	Brian Jones, Section 16 Larry Merritt, Section 18	Dept. of Transportation 143 W. Market St., Ste. 300 Indianapolis, IN 46204	(317) 232-1480	Joint review of Section 16 applications; receive input in applications from local advisory committees; state RTAP program sponsors coordination training
Iowa	Peter Hallock	Dept. of Transportation Air and Transit Division 100 E. Euclid, Ste. 7 Des Moines, IA 50313	(515) 237-3302	Assess transportation needs of local organizations that are funded through advisory committee programs; determine method for maximum feasible coordination
Kansas	James Van Sickle	Dept. of Transportation Thatcher Bldg. 217 S.E. 4th Topeka, KS 66603	(913) 296-0343	Provide technical assistance to groups involved in setting up local transit districts
Kentucky	Jerry Ross	Div. of Mass Transportation Transportation Cabinet State Office Bldg., 11th Fl. Frankfort, KY 40622	(502) 564-7433	Transit needs studies in Head Start and Family Support Act programs

TABLE B-1 STATE COORDINATION CONTACTS AND CURRENT COORDINATION ACTIVITIES (CON'T)

	Coordination Contact			Coordination Activities
	Name	Address	Phone	
Louisiana	Carol Cranshaw	Public Transportation Dept. of Transportation and Development P.O. Box 94242 Baton Rouge, LA 70804	(504) 379-1436	Support development of regional transit systems using brokerage approach
Maine	Arnold Levitt	Bureau of Transportation Services Dept. of Transportation State House Station 16 Augusta, ME 04333	(207) 289-2841	Work with citizen's committees to prepare biannual operating plans as basis for program coordination
Maryland	Diane Ratcliff	Mass Transit Administration Dept. of Transportation 300 W. Lexington St. Baltimore, MD 21201-3415	(410) 333-2993	Review Section 18 and 16 funding applications using ranking criteria on coordination, local needs, vehicle use, and fiscal and management capability; provide related training
Massachusetts	Ed Spurlock	Executive Office of Transportation and Const. 10 Park Plaza Boston, MA 02116-3969	(617) 973-7007	Administer Accessibility Improvement Program and Biennial Bind Program
Michigan	Rose Ann Ward	Dept. of Transportation 425 N. Ottawa P.O. Box 3005 Lansing, MI 48933	(517) 335-2598	Help form local coordination committees; provide operating assistance to coordinated programs
Minnesota	Donna Allan	Dept. of Transportation Transportation Bldg., Rm. 815 St. Paul, MN 55155	(612) 296-7052	Develop Greater Minnesota Transit Plan to address transit needs; DOT and DHS funding coordination
Mississippi	C. Jean Bennett	Dept. of Transportation Public Transit Div. 510 George St. Jackson, MS 39202	(601) 359-6623	Conducts local training in coordination; reviews all Section 18 and 16 funding applications
Missouri	Linda Stepnoff	Highway and Transportation Dept. P.O. Box 270 Jefferson City, MO 65102	(314) 751-7479	Provide special tax revenue options for coordinated systems

TABLE B-1 STATE COORDINATION CONTACTS AND CURRENT COORDINATION ACTIVITIES (CON'T)

	Coordination Contact			Coordination Activities
	Name	Address	Phone	
Montana	Michael Davis	Dept. of Transportation 2701 Prospect Ave. Helena, MT 59630	(406) 444-3423	Pool funding through a joint revenue process of project applications; work with local transit advisory committees; hold workshops on coordination
Nebraska	Larry Brown	Dept. of Roads 1500 Nebraska Hwy. 2 P.O. Box 94759 Lincoln, NE 68509-4759		Develop pilot projects for coordinated transit service districts
Nevada	Don Summo	Dept. of Transportation 1263 S. Stewart St. Carson City, NV 89712	(702) 687-3466	Prioritize vehicle funding applications for advisory committee before final funding determination
New Hampshire	Kit Morgan	Dept. of Transportation P.O. Box 483 Concord, NH 03302	(603) 271-2564	Review application for Section 16 funds; give priority ranking to coordinated approaches
New Jersey	Robert Koska	New Jersey Transit Office of Special Services 1 Penn Plaza, 7th Fl. Newark, NJ 07105-2246	(201) 491-7376	Vehicle funding applications reviewed in affected region then reviewed at NJT and Office of Aging
New Mexico	Barbara Brown	Dept. of Transportation Public Transportation Div. P.O. Box 1149 Santa Fe, NM 87504-1149	(505) 827-0410	Help local projects obtain Section 16 vehicles for demonstration grants with programs for artists with disabilities and with AoA transport needs
New York	Michael Baker	Dept. of Transportation Bldg. 4, State Office Campus Albany, NY 12232	(518) 457-2100	Define policies for coordination; select demonstration projects; evaluate policy recommendations
North Carolina	Charles Glover	Public Transportation and Rail Div. Dept. of Transportation Raleigh, NC 27611	(919) 733-4713	Review program and vehicle funding applications as basis for funding decisions; conduct state needs assessment; study human services transportation
North Dakota	Bill Weimer	Public Transit Dept. of Transportation 608 E. Blvd. Bismarck, ND 58505-0700	(701) 224-2194	Make joint review and funding decisions on all Section 16 and Section 18 vehicle applications.

TABLE B-1 STATE COORDINATION CONTACTS AND CURRENT COORDINATION ACTIVITIES (CON'T)

	Coordination Contact			Coordination Activities
	Name	Address	Phone	
Ohio	Rosamary Amiet	Bureau of Transit Assistance Dept. of Transportation 25 S. Front St., Rm. 716 Columbus, OH 43215	(614) 466-8955	Use coordination training workshops and provide incentive funding to help purchase vehicles for coordination systems
Oklahoma	Philip Blue	Special Unit on Aging Dept. of Transportation P.O. Box 255352 Oklahoma, OK 73125	(405) 521-2281	Application for vehicle funding is forwarded to MPOs for review and comment on use and coordination of funds
Oregon	Joni Reid	Public Transit Section Dept. of Transportation 131 Transportation Bldg. Salem, OR 97310	(503) 378-8201	Requires county-level plans for transportation service needs; works with DHS to review vehicle funding requests
Pennsylvania	Laverne Collins	Lottery Transportation Div. Dept. of Transportation 1215 Transportation and Safety Bldg. Harrisburg, PA 17120	(717) 783-8025	State lottery funds assist public and paratransit funding for systems with area service coordinators
Rhode Island	David Martone	Dept. of Transportation Two Capital Hill, Rm 372 Providence, RI 02903	(401) 277-2694	Administer coordinated brokerage program for four of state's five counties to serve clients of Depts. of Elderly Affairs, Mental Health, Rehabilitation and Hospitals, Human Services
South Carolina	Karen Ross Grant	Public Transportation Div. Dept. of Hwys. and Public Transportation P.O. Box 191 Columbia, SC 29202	(803) 737-1280	Conducted county-by-county needs assessment, including coordination policy recommendations for implementation in 1995
South Dakota	Willis McLaughlin	Dept. of Transportation Local Government Assistance 700 Broadway Ave. E. Pierre, SD 57501	(605) 773-3137	DSS transfers AoA Title III funds to DOT to enable single-grant application for coordinated services; Task Force reviews all funding applications
Tennessee	Jean Lyon	Commission on Aging 706 Church St., Ste. 201 Nashville, TN 37219	(615) 741-3745	Council on Aging reviews Section 16 funding requests; Section 18 local programs are provided through human services agencies

TABLE B-1 STATE COORDINATION CONTACTS AND CURRENT COORDINATION ACTIVITIES (CON'T)

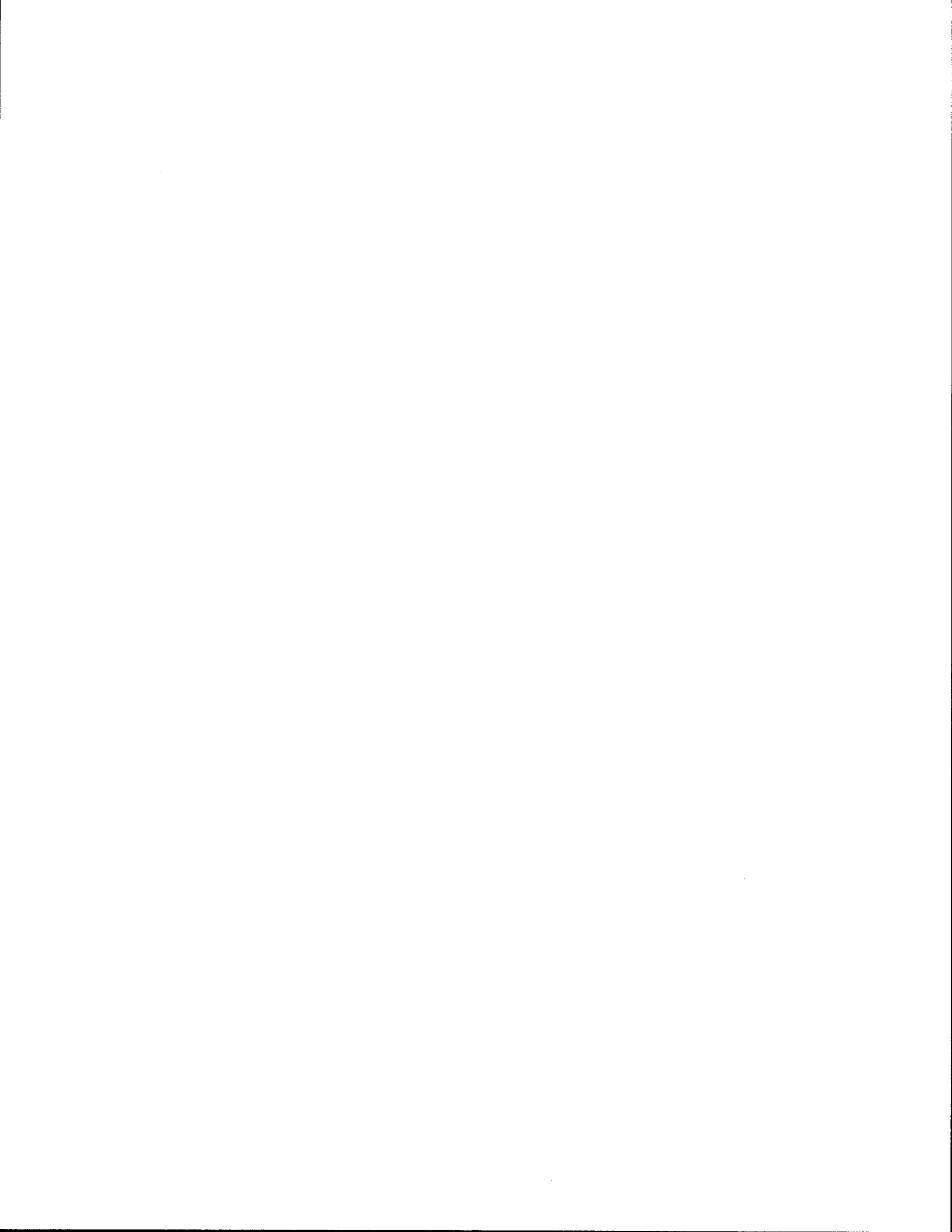
	Coordination Contact			Coordination Activities
	Name	Address	Phone	
Texas	Tina Janek	Office of Client Transportation Services Office of the Governor Rm. 335, Sam Houston Bldg. Austin, TX 78711	(512) 463-8595	Responsible for assessing coordination needs, approaches to consolidation, funding strategies, and devising approaches for local transportation planning
Utah	Glenda Seelos	Section 16 Program Dept. of Transportation Salt Lake City, UT 84119	(801) 965-4141	Review and make funding decisions on Section 16 applications; assessing possible coordination of services at regional Areas of Government agencies
Vermont	Scott Bascom	Agency of Rail, Air & Public Transportation 133 State St. State Administration Bldg. Montpelier, VT 05633-5001		Conduct statewide needs study with strong emphasis on developing coordinated transportation services and funding reviews
Virginia	Bob Knox	Specialized Transportation Council Dept. for the Aging 700 E. Franklin St., 10th Fl. Richmond, VA 23219	(804) 225-3140	Provide start-up grants for coordinated systems from funding provided by a state income tax check-off; serve as forum for technical exchange on coordination
Washington	Gordon Kirkemo	Dept. of Transportation, Public Transportation Office P.O. Box 47370 Olympia, WA 98504-7370	(206) 586-2483	Develop demonstration projects to implement brokerage services and evaluate results; anticipate further development of a state-wide brokerage program
West Virginia	Susan O'Connell	Div. of Public Transit, Dept. of Transportation Bldg. 5, Rm. 716, Capitol Complex Charleston, WV 25305	(304) 558-0428	Instituted three demonstration projects for coordination services; provide data source for further projects
Wisconsin	Larry Kieck	County Aid Program Dept. of Transportation P.O. Box 7914 Madison, WI 53707-7914	(608) 266-9476	Counties develop transportation plans to qualify for state trust fund; other state administered funding; FTA sources go through regional and state agency review
Wyoming	John Blank	Office of Local Government Hwy. Dept. P.O. Box 1708 Cheyenne, WY 82002-9019	(307) 777-4181	Survey fund recipients concerning special transportation service needs

Sources: "CTR Resource Guide." *Community Transportation Reporter*, Vol. 12, No. 1, January 1994, pp. 80-82.

APPENDIX C - TRANSPORTATION SURVEYS



AGENCY/COMPANY TRANSPORTATION PROGRAM SURVEY



AGENCY/COMPANY TRANSPORTATION PROGRAM SURVEY

Agency/Company Name: _____

Address: _____

Contact Person: _____

Telephone Number: _____

1. Does your agency/company use its resources, financial or otherwise, to provide transportation directly or indirectly to your clients or membership?

Yes If Yes, please continue. No If no, please skip to Question 10.

2. Please describe the type of transportation services your agency/company provides. (Attach additional sheets if necessary.)

Service Type (i.e., fixed route, demand response): _____

Service Provision (i.e., directly provided, purchase service): _____

Fares: _____

Days and Hours of Service: _____

Service area: _____

Number and Type of Personnel (i.e., volunteer, paid): _____

3. Does your agency/company own or lease vehicles for transporting your clients or memberships?

Yes If Yes, please attach fleet roster. No

4. Indicate the total number of one-way passenger trips provided directly or indirectly by your agency/company during your last fiscal year. (A "passenger trip" is defined as one person traveling one direction. If a passenger completes a round trip, record this as 2 one-way trips.)

5. How many of these one-way trips require lift-equipped vehicles? _____

6. Indicate the number of passenger trips your agency/company purchased from other public or private operators, the name of the provider, and the per trip cost.

Service Provider	Person Trip	Cost
		\$
		\$
		\$
		\$

7. Are clients, members, or employees reimbursed for mileage when using personal cars for agency/company sponsored programs?

Yes Rate Per Mile \$ _____

Total Cost for Last Fiscal Year \$ _____

No

8. Please indicate sources and amounts of local, state, and federal program funding for your transportation services (i.e., FTA Section 16, Title III, etc.) _____

9. What was your total agency/company transportation budget for your last fiscal year?

What does this budget include (i.e., personnel, fuel, insurance, maintenance, depreciation, overhead, etc.)? _____

10. Does the lack of transportation keep people from participating in your agency's or company's programs, activities, or services?

Yes Somewhat No Don't Know

Please describe the unmet demand. _____

What are the biggest problems facing the transportation program for your agency or company? _____

12. Is your agency or company interested in participating in a coordinated transportation program? To what extent? Under what conditions? _____

13. Would you like your agency or company to be represented on an interagency task force to address the coordination issue and guide the planning process?

Yes Contact Name: _____

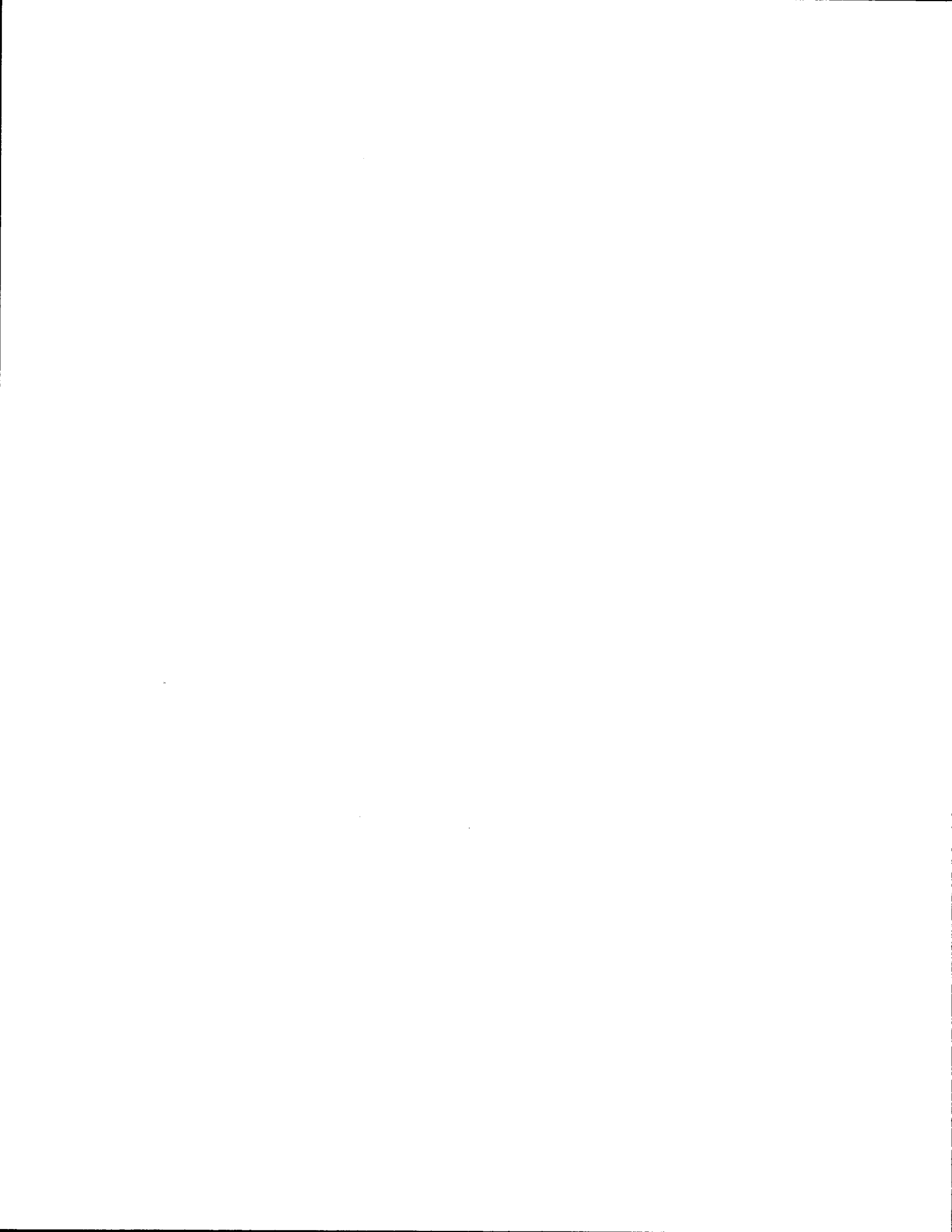
No

Please return this questionnaire to the following address no later than _____

(Address of Agency Conducting Survey)

Thank you for your assistance.

TRANSPORTATION PROGRAM SURVEY



INSTRUCTIONS FOR THE TRANSPORTATION SURVEY

The attached survey is designed to provide vital information to the (insert name of agency or task force) for its planning efforts in assisting agencies in meeting transportation needs of their clients and the general public. Completed surveys need to be received by (insert due date) to be processed.

If your agency has more than one location or program that arranges or provides transportation independently, please complete a separate survey for each.

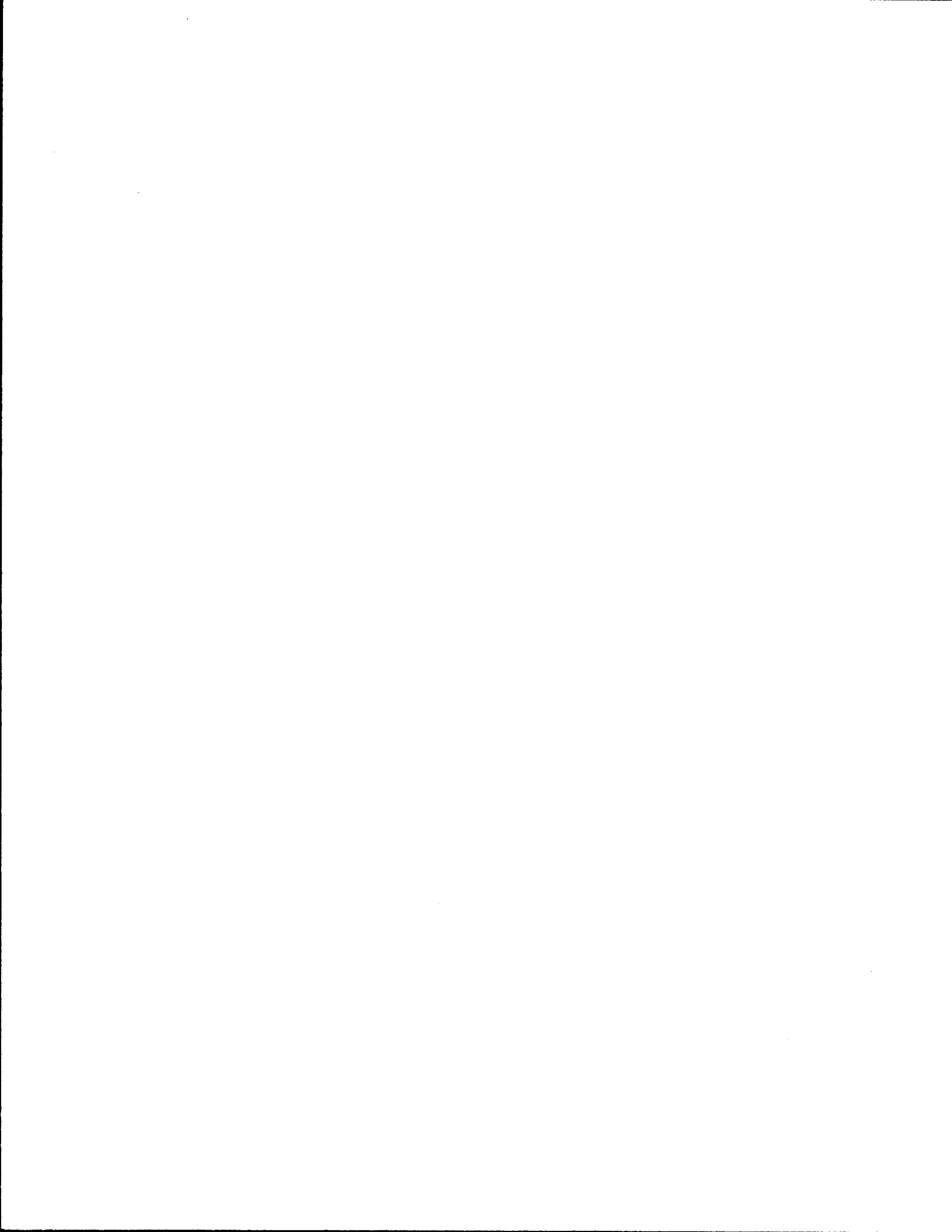
The survey includes questions about your clients' needs and the transportation services you provide either directly or through contracts with private carriers. To clarify the meaning of these questions, please note the following definitions:

- **Clients** refers to all service recipients of your agency.
- **Lease** refers to an arrangement by which vehicles are rented for extended periods of time.
- **Contract Service Provider** refers to an ongoing agreement which a private or public transportation provider (for-profit or non-profit) owns and operates the vehicles used to transport your clients for a fee.
- **Attendant** is a person who accompanies the driver on trips for the purpose of assisting passengers.
- **Standing Order** is a regularly scheduled client trip.
- **Demand Responsive** refers to one-time client trips (responding to individual requests as opposed to standing orders).

Please answer each question to the best of your ability. For each multiple choice question, please check the correct answer in the box provided. If a numerical answer is requested and you cannot give an actual figure, please make an estimate and indicate that it is only an estimate. If you need additional space to explain any of your answers, please use the back of the form or attach additional pages. If more than one answer applies, mark it accordingly and provide an explanation as appropriate.

If you have a question about how to respond, please call (insert contact's name and telephone number).

Thank you for your assistance!



AGENCY TRANSPORTATION SURVEY

Agency Name: _____
Agency Address: _____
Your Name and Title: _____
Telephone Number: _____
Name of Transportation Coordinator: _____

1. How many clients does your agency serve on a typical day (all services)? _____
2. Please estimate the number of your agency's clients that obtain your agency's services on a typical day by each of the following means of transportation.
 use transportation services that your agency operates
 use transportation service for which your agency contracts
 walk
 use private auto (i.e., drive, get dropped off, carpool)
 use other van service; please specify: _____
 use other means; please specify: _____
 total (should equal the number indicated in question 1.)
3. Do you provide transportation service on a regular basis for your clients by operating your own vehicles?
 Yes **(Check all that apply)**
 operate agency vehicle(s)
 contract service provider
 volunteers/private autos
 other
 No
(if No, go to question 20)
4. What percentage of your clients who use any of your transportation services require special equipment?
 % requiring wheelchair lifts
 % requiring car seats
 % requiring personal assistance
 % requiring other; please specify: _____
5. How are clients scheduled to receive service? **(Check all that apply)**
 standing order trips
 demand responsive
 advanced reservation; please specify (i.e., 24 hour): _____
6. Please indicate the types of trips typically served by your agency. **(Check all that apply)**
 Program at your agency (including Day Treatment, Day Training, Recreation, Education, etc.)
 Congregate Meals
 Program at another agency
 Medical appointment
 Employment
 Education
 Shopping /Personal Business
 Field Trip/Recreation
 Other; please specify: _____

7. Please indicate how many vehicles you currently operate to provide client transportation, using the categories listed below.

Type	Number	Number With Two-Way Radios	Average Annual Mileage Per Vehicle	Capital Funding Source
Non-Lift Van				
Lift Van				
School Bus				
Other Bus				
Other Bus w/Lift				
Sedan/Wagon				
Other: Specify				

8. Please attach a current vehicle roster to the survey form. The roster should list each vehicle, vehicle ID number, total vehicle miles (odometer reading), age, seating capacity, lift equipment, radio equipment, and source of funding.

9. When you need to purchase replacement vehicles, what source of funding will you most likely use? _____

10. How many driving hours are spent annually actually providing client-oriented transportation? (Does not include breaks, office time, or other down time). _____

11. Attach a vehicle utilization chart that lists the type of service each vehicle provides by time of day. If service varies substantially by weekday, create one vehicle utilization chart for each day. (See example).

Vehicle Number	5:00 - 6:00 AM	6:00 - 7:00 AM	7:00 - 8:00 AM	8:00 - 9:00 AM	9:00 - 10:00 AM	10:00 - 11:00 AM
Monday	xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx	xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx	xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx	xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx	xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx	xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
000	job training		nutrition trips (site)			demand response
123		xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx	#####	#####	#####	#####
		workshop		dialysis		break

12. How many miles are driven annually providing client-oriented transportation? _____

13. How many client-oriented trips do you serve annually? _____

14. Estimate the percentage of annual passengers that are:

%	Age	%	Income	%	Physical/Mental Capacity
	19 years or under		Less than \$10,000		Able bodied
	20-29 years		\$10,000-\$14,999		Wheelchair
	30-39 years		\$15,000-\$19,999		Ambulatory w/assistance
	40-49 years		\$20,000-\$24,999		Other; Specify:
	50-59 years		\$25,000-\$29,000		
	60-64 years		\$30,000 and over		
	65 years or more				

15. Please attach any route maps or client location maps that will provide an indication of your agency's route/service pattern and/or client residential locations for a sample weekday.

16. Please indicate your current annual operating cost and operating funding for the agency sponsored transportation.

EXPENSES	
\$	dedicated transportation staff labor and benefits
\$	prorated labor and benefits of staff who spend only part of their time on transportation
\$	fuel and oil
\$	maintenance
\$	insurance
\$	leasing (if any)
\$	administrative overhead
FUNDING	
\$	Passengers (attach fare structure if appropriate)
\$	Local government contributions
\$	State subsidies; specify each source:
\$	Federal subsidies; specify each source:
\$	Others; specify:

17. Would these funding sources be available to support a coordinated transportation effort?

Yes No

18. Are clients or employees reimbursed for mileage when using personal cars for agency sponsored programs?

Yes No Rate Per Mile \$ _____ Total Annual Cost \$ _____

19. Please indicate the number of persons on your agency's staff expressed in labor equivalents who serve as:

Category	Full-Time Dedicated Transportation Personnel	Full-Time Partially Dedicated to Transportation	Part-Time Transportation Personnel	Volunteers
Drivers				
Attendants				
Dispatchers				
Other				

20. How do you maintain your vehicle fleet?

- perform in-house
 contract to outside vendor
 other; please specify: _____

21. How much vehicle liability insurance do you carry?

- \$ _____ per person
 \$ _____ per occurrence
 \$ _____ property damage
 \$ _____ combined single limit coverage

22. Looking toward the next five year period, do you see your agency's funding:

- increasing
 decreasing
 remaining stable

23. Do you currently participate in any cooperative transportation program with another transportation agency or provider?

- No
 Yes, please describe the arrangement and specify the type of trip and number of clients: _____

24. Do your clients routinely have transportation needs that you cannot serve?

- No
 Yes, please indicate the estimated volume and nature of these trips: _____

25. Please describe the types of problems that your agency is experiencing with your client oriented transportation. _____

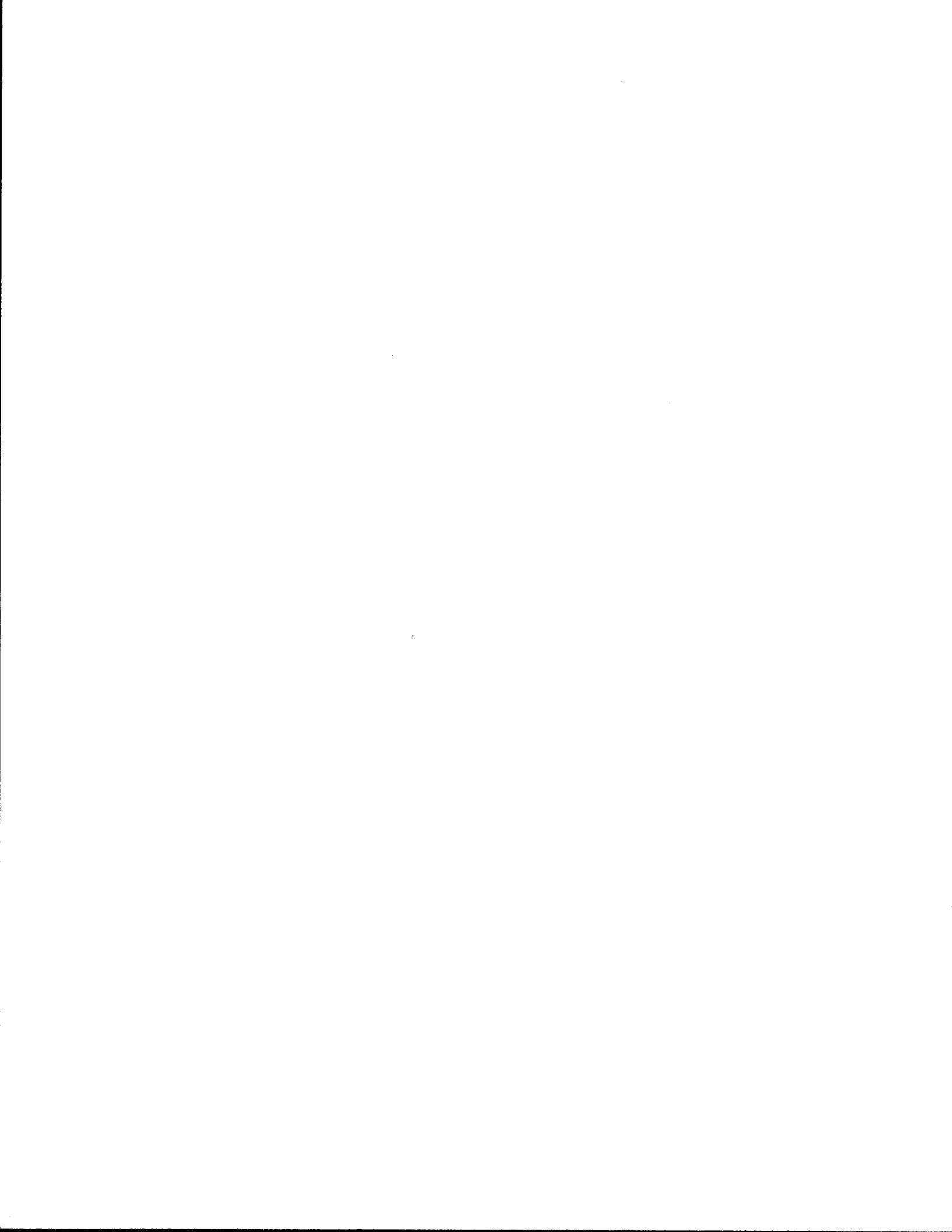
26. Does your agency have any interest in joining a County-wide coordinated transportation system?

- No
- Yes
- Don't Know

If Yes, under what circumstances? _____

We invite any other comments you have on transportation. Use this space to add any explanation, remarks or comments. Thank you! _____

**PLEASE RETURN THIS SURVEY BY- (INSERT DUE DATE) TO:
(INSERT CONTACT'S NAME AND ADDRESS)**



APPENDIX D - INVENTORIES AND EXPENSES

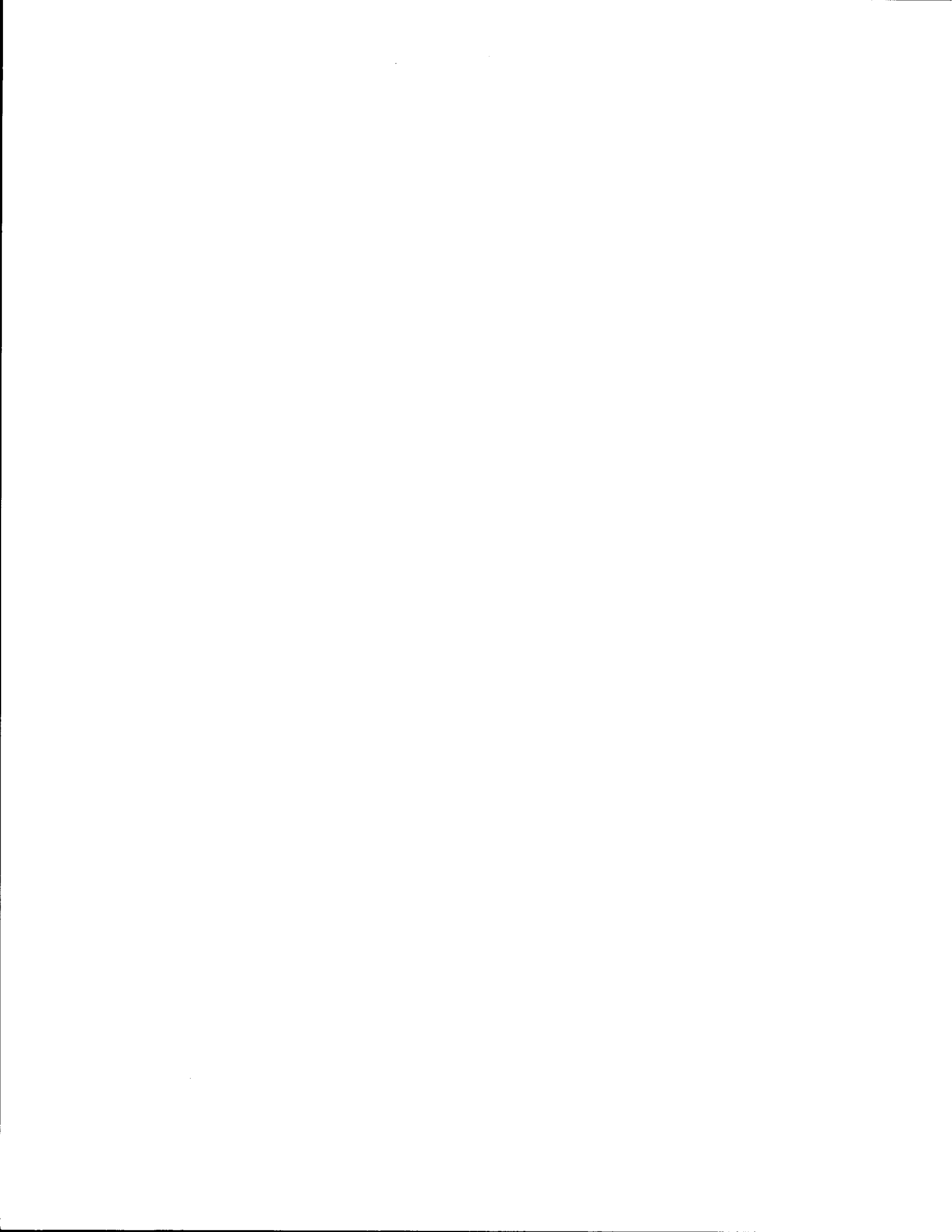


FIGURE D-1. INVENTORY OF VEHICLES AND PASSENGERS' LOCATION

INVENTORY OF VEHICLES AND PASSENGERS' LOCATION (FOR USE IN ESTABLISHING VEHICLE OPERATIONS COORDINATION)							
Directions: Mark the days and hours with an "X" when you provide transportation for your customers. Beside the "X" write a brief description of the person(s) who use the transportation at this day and time.							
	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
6 AM							
7							
8							
9							
10							
11							
12 PM							
1							
2							
3							
4							
5							
6							

Source: Community Transportation Association of America, and Region IV Transportation Consortium.
Coordinating Community Transportation Services: A Planning and Implementation Handbook. Washington, D.C.:
 Community Transportation Association of America, 1992, p. 23.

FIGURE D-3. CHART OF ACCOUNTS: TRANSPORTATION EXPENSES

<i>Transportation Expenses for the Period _____ to _____</i>	
Cost Category	Annual Expenses (\$)
Vehicle Operations	
driver salary	\$
dispatcher salary	\$
fringe benefits	\$
fuel & oil	\$
vehicle insurance	\$
vehicle license, registration, tax	\$
vehicle lease	\$
vehicle depreciation	\$
other	\$
Maintenance	
mechanic salary	\$
fringe benefits	\$
materials & supplies (parts)	\$
maintenance facility rental	\$
equipment rental	\$
maintenance service contract	\$
utilities	\$
other	\$
Administration	
administrator salary	\$
transportation manager salary	\$
secretary salary	\$
bookkeeper salary	\$
fringe benefits	\$
materials & supplies	\$
telephone	\$
office rental	\$
utilities	\$
office equipment rental	\$
purchase of transportation service	\$
other	\$
Total Expenses	

Source: Community Transportation Association of America, and Region IV Transportation Consortium. *Coordinating Community Transportation Services: A Planning and Implementation Handbook*. Washington, D.C.: Community Transportation Association of America, 1992, p. 59.

