

# TCRP

## REPORT 91

TRANSIT  
COOPERATIVE  
RESEARCH  
PROGRAM

### **Economic Benefits of Coordinating Human Service Transportation and Transit Services**

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**TCRP REPORT 91**

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**Economic Benefits of Coordinating  
Human Service Transportation and  
Transit Services**

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## TRANSIT COOPERATIVE RESEARCH PROGRAM

The nation's growth and the need to meet mobility, environmental, and energy objectives place demands on public transit systems. Current systems, some of which are old and in need of upgrading, must expand service area, increase service frequency, and improve efficiency to serve these demands. Research is necessary to solve operating problems, to adapt appropriate new technologies from other industries, and to introduce innovations into the transit industry. The Transit Cooperative Research Program (TCRP) serves as one of the principal means by which the transit industry can develop innovative near-term solutions to meet demands placed on it.

The need for TCRP was originally identified in *TRB Special Report 213—Research for Public Transit: New Directions*, published in 1987 and based on a study sponsored by the Urban Mass Transportation Administration—now the Federal Transit Administration (FTA). A report by the American Public Transportation Association (APTA), *Transportation 2000*, also recognized the need for local, problem-solving research. TCRP, modeled after the longstanding and successful National Cooperative Highway Research Program, undertakes research and other technical activities in response to the needs of transit service providers. The scope of TCRP includes a variety of transit research fields including planning, service configuration, equipment, facilities, operations, human resources, maintenance, policy, and administrative practices.

TCRP was established under FTA sponsorship in July 1992. Proposed by the U.S. Department of Transportation, TCRP was authorized as part of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA). On May 13, 1992, a memorandum agreement outlining TCRP operating procedures was executed by the three cooperating organizations: FTA; the National Academies, acting through the Transportation Research Board (TRB); and the Transit Development Corporation, Inc. (TDC), a nonprofit educational and research organization established by APTA. TDC is responsible for forming the independent governing board, designated as the TCRP Oversight and Project Selection (TOPS) Committee.

Research problem statements for TCRP are solicited periodically but may be submitted to TRB by anyone at any time. It is the responsibility of the TOPS Committee to formulate the research program by identifying the highest priority projects. As part of the evaluation, the TOPS Committee defines funding levels and expected products.

Once selected, each project is assigned to an expert panel, appointed by the Transportation Research Board. The panels prepare project statements (requests for proposals), select contractors, and provide technical guidance and counsel throughout the life of the project. The process for developing research problem statements and selecting research agencies has been used by TRB in managing cooperative research programs since 1962. As in other TRB activities, TCRP project panels serve voluntarily without compensation.

Because research cannot have the desired impact if products fail to reach the intended audience, special emphasis is placed on disseminating TCRP results to the intended end users of the research: transit agencies, service providers, and suppliers. TRB provides a series of research reports, syntheses of transit practice, and other supporting material developed by TCRP research. APTA will arrange for workshops, training aids, field visits, and other activities to ensure that results are implemented by urban and rural transit industry practitioners.

The TCRP provides a forum where transit agencies can cooperatively address common operational problems. The TCRP results support and complement other ongoing transit research and training programs.

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### NOTICE

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The members of the technical advisory panel selected to monitor this project and to review this report were chosen for recognized scholarly competence and with due consideration for the balance of disciplines appropriate to the project. The opinions and conclusions expressed or implied are those of the research agency that performed the research, and while they have been accepted as appropriate by the technical panel, they are not necessarily those of the Transportation Research Board, the National Research Council, the Transit Development Corporation, or the Federal Transit Administration of the U.S. Department of Transportation.

Each report is reviewed and accepted for publication by the technical panel according to procedures established and monitored by the Transportation Research Board Executive Committee and the Governing Board of the National Research Council.

To save time and money in disseminating the research findings, the report is essentially the original text as submitted by the research agency. This report has not been edited by TRB.

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We would like to thank many people for substantial contributions to this project. Our TCRP Project Officer, Gwen Chisholm, directed the Project Panel's efforts on the project. We are grateful for the assistance provided to us by the members of our Project Panel. We appreciate the time and insights given to us by the many human service and public transportation operators who worked with us in our interviews.

## FOREWORD

By *Gwen Chisholm*  
*Staff Officer*  
*Transportation Research*  
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*TCRP Report 91: Economic Benefits of Coordinating Human Service Transportation and Transit Services* examines the net economic benefits associated with various strategies and practices for coordinating human service transportation and general public transit, provides quantitative estimates of these strategies and practices, and identifies innovative and promising coordination strategies and practices. This report includes an executive summary that provides a brief overview of basic coordination concepts and strategies that may enable transportation operators to achieve significant economic benefits from coordinating their operations. This information may be used by federal, state, and local officials in developing strategies and policies for coordinating transportation resources.

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The United States Department of Transportation (U.S.DOT) and the Department of Health and Human Services (DHHS) have been working together for more than 10 years to foster increased coordination among the transportation services sponsored by each agency. Coordination experiences encompass a vast array of strategies, including complementary service planning, joint equipment and vehicle procurements, maintenance and facilities sharing arrangements, coordinated service delivery, and consolidated services operation.

The potential benefits of such arrangements have been long acknowledged and extolled. While many studies have been undertaken to chronicle and analyze successful methods for implementing coordinated transportation services, little has been done to quantify the benefits associated with different coordination strategies. Economic analysis of the coordinated arrangements has not been undertaken, and no quantification of the overall costs and benefits of coordination strategies exists.

As Congress increasingly demonstrates its interest in achieving the goals of coordination and the General Accounting Office undertakes an analysis of U.S.DOT/DHHS coordination efforts, more formal analysis of the coordination outcomes will assist both Congress as it crafts national transportation coordination policies and strategies and local transit/human services agencies as they seek to consider future implementation of coordination activities in their own communities.

Westat, in association with Nelson/Nygaard Consulting Associates, Inc., and Mobilitat, Inc., prepared this report for TCRP Project H-26. The project's primary objective was developing a document that would inform federal, state, and local officials and transit providers about the net economic benefits associated with various strategies and practices for coordinating health and human services.

The first task undertaken in achieving this objective was a focused review of literature on the costs and benefits of coordinating human transportation and transit services. The literature revealed (1) coordination practices that have measurable economic benefits and (2) federal, state, and local strategies including mandates, rules, and reg-

ulations that have an economic impact on coordination. A survey was conducted to identify agencies using innovative and successful coordination strategies and practices in rural, suburban, and urban regions. Based on the data collected, innovative and successful coordination strategies and practices that have wide applicability were identified. The report includes these strategies and practices, estimates of the national economic benefits of coordination, governmental actions that affect coordination, and ways to maximize the probability of successful coordination efforts.

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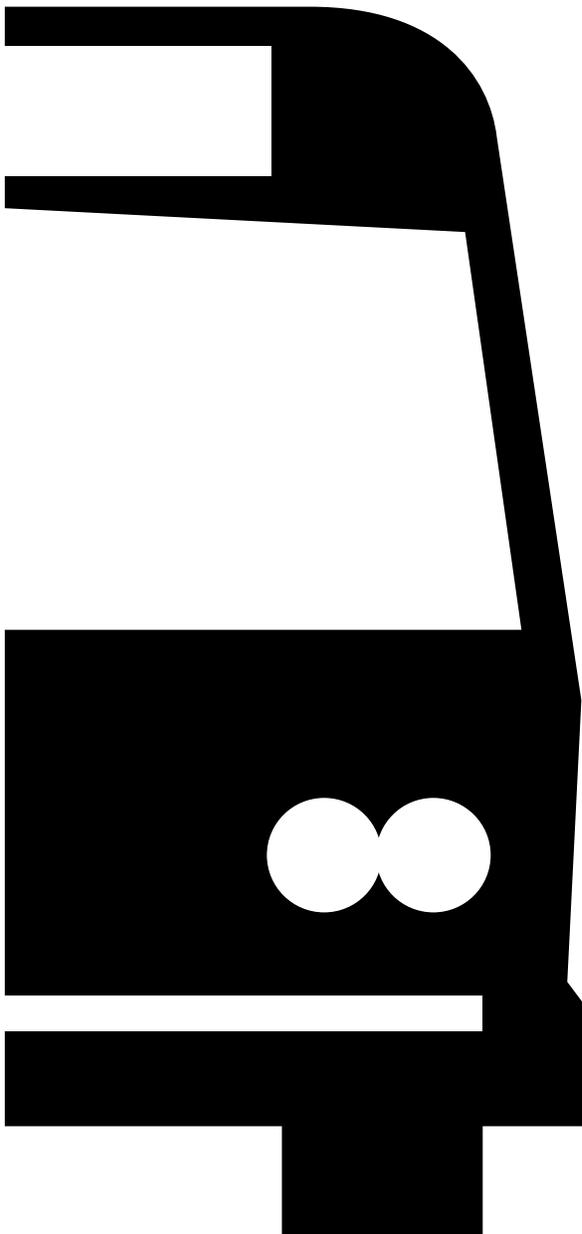
# Economic Benefits of Coordinating Human Service Transportation and Transit Services

## Introduction

Significant economic benefits — including increased funding, decreased costs, and increased productivity — can be obtained by coordinating human service transportation and transit services. Implementing successful coordination programs, such as those described in this summary, could generate combined economic impacts of about \$700 million per year to human service and transit agencies in the United States. Particularly successful coordination strategies could include

- Transit agencies providing trips for Medicaid clients: industry benefits of up to \$50 million per year;
- Nontransit agencies providing Americans with Disabilities Act (ADA) and other paratransit services: up to \$148 million;
- Transportation providers shifting paratransit riders to fixed route services: up to \$300 million;
- Local human service agencies coordinating their trips: up to \$60 million; and
- Communities expanding transportation services to areas not now served: up to \$132 million.

This summary describes basic coordination concepts, typical economic benefits of coordination, strategies that enable transportation operators to achieve significant economic benefits from coordinating their operations, and potential overall industry impacts.



## What Is Coordination?

Coordination is often touted but often misunderstood, thus lessening its potential benefits. **Coordination is a technique for better resource management.** It means working together with people from different agencies and backgrounds. It requires **shared power: shared responsibility, management, and funding.** Many transportation functions, including planning, purchasing, vehicle operations, maintenance, and marketing, can be coordinated.

Typical goals for coordinated transportation services are reduced unit costs, increased ridership, and improved cost effectiveness. Coordination is

effective in reducing service duplication and improving resource utilization. Coordinating transportation services has been called “the best way to stretch scarce resources and improve mobility for everyone.”

Coordinating transportation services offers substantial benefits to many communities, but significant investments of time and energy may be required before the desired results are achieved. Coordinating transportation functions is best understood as **a political process**, which, like many other political processes, may involve changing environments, conflicts regarding power and control over

resources, and competing goals or personalities. Effective transportation coordination requires a focus on the entire community (even on multiple communities and levels of government). Individuals who may not be used to talking to or working with each other will need to develop the increased levels of trust, respect, and confidence that will permit them to share responsibilities. A willingness to be open-minded about changing long-standing operating procedures is often needed. Once these conditions are met, a wide range of coordinated transportation benefits is then possible.

## Expected Benefits of Coordination

The largest and most frequent economic benefits of coordinating human service transportation and regular fixed route transit services often include

- **Additional funding:** more total funding and a greater number of funding sources;
- **Increased efficiency:** reduced cost per vehicle hour or per mile;
- **Increased productivity:** more trips per month or passengers per vehicle hour;
- **Enhanced mobility:** increased access to jobs or health care, or trips provided to passengers at a lower cost per trip; and
- **Additional economic benefits:** increased levels of economic development in the community or employment benefits for those persons associated with the transportation service.

Other impacts of coordinating transportation services, not usually expressed in monetary terms but still important in their own right, include

- Improving service quality (more on-time services, drivers with better training, better vehicles, and more safety equipment);
- Making transportation services available to more people (serving more than just one client group);
- Having transportation services available to larger service areas (by expanding services to areas that previously had insufficient services);
- Centralizing oversight and management (having one central mobility management office instead of many offices); and
- Reporting costs and outputs more accurately (for better systems management and funding accountability).

Coordinating  
transportation  
services has been called  
“the best way  
to stretch scarce  
resources and  
improve mobility  
for everyone.”

— Ohio Department of Transportation



## Strategies for Achieving the Benefits

### Serving more areas



The first step in achieving the potential benefits of coordinated transportation services is to analyze existing conditions in your own community to see if problems such as low vehicle utilization and high trip costs exist. If such problems are evident, the second step is to establish specific goals and strategies for achieving improvements. Having specific goals and strategies greatly enhances the probability of realizing significant results. Specific coordination goals and strategies that could provide significant economic benefits include

- **Generate new revenues:** The transit authority provides Medicaid or other human service agency trips under contract to human service agencies.
- **Generate new revenues:** The transit authority provides trips to students under contracts with local school districts.
- **Save costs:** Human service agencies (or other low-cost operators) provide ADA or other paratransit

services under contract to the transit authority.

- **Save costs:** Incentives or travel training programs are offered to shift paratransit riders to fixed route services.
- **Save costs:** Human service agencies coordinate some or all functions of their transportation programs.
- **Increase efficiency and productivity:** Transportation providers coordinate dispatching and promote ridesharing among cooperating agencies.
- **Increase mobility:** Cost savings from coordinated operations are used to expand transportation services to additional places, times, and persons.

Many communities have applied these and other coordination strategies; illustrative examples are shown below. Quite often, specific strategies generate many kinds of benefits.

### Generate New Revenues: Transit Agencies Provide Trips for Human Service Agency Clients

Large annual transportation cost increases have created concerns for human service program administrators, who have begun to find ways of shifting Medicaid and other human service clients away from expensive paratransit service in favor of less costly fixed route transit. Agencies may purchase bus passes to be distributed to clients, or the transit operator may bill agencies directly for services to designated, eligible clients. The potential benefits to the transit agency include increased ridership and revenues with few, if any, additional costs. The primary benefit to human service agencies is decreased cost. (Note that this strategy may reduce revenues for

demand-responsive services, and some passengers may prefer demand-responsive to fixed route services.)

Florida's **Miami-Dade Transit (MDT)** instituted a "bus pass" approach to moving about 1 percent of the region's Medicaid clients to less expensive fixed route trips from more expensive paratransit trips. This program saved the Medicaid program more than \$9,285,000 per year, and MDT received more than \$1,900,000 per year from the sale of bus passes. Under **Tri-Met's** Medical Transportation Program (MTP) in Portland, Oregon, Tri-Met became the single point of access for non-emergency transportation for Medicaid program

participants in Tri-Met's three-county service area. Through MTP, Medicaid non-emergency trips are now made more often than before on transit. The state of Oregon estimated total savings from this program of more than \$2,670,000 in 2001–02 and 2002–03. The **Lane Transit District (LTD)** in Eugene, Oregon, benefits from Oregon's Medicaid-funded supportive services program, which pays 60 percent of the trip costs of clients whose trip costs would otherwise be incurred by the transit agency's ADA program. Through this program, LTD is paying \$112,100 for \$280,000 worth of trips.

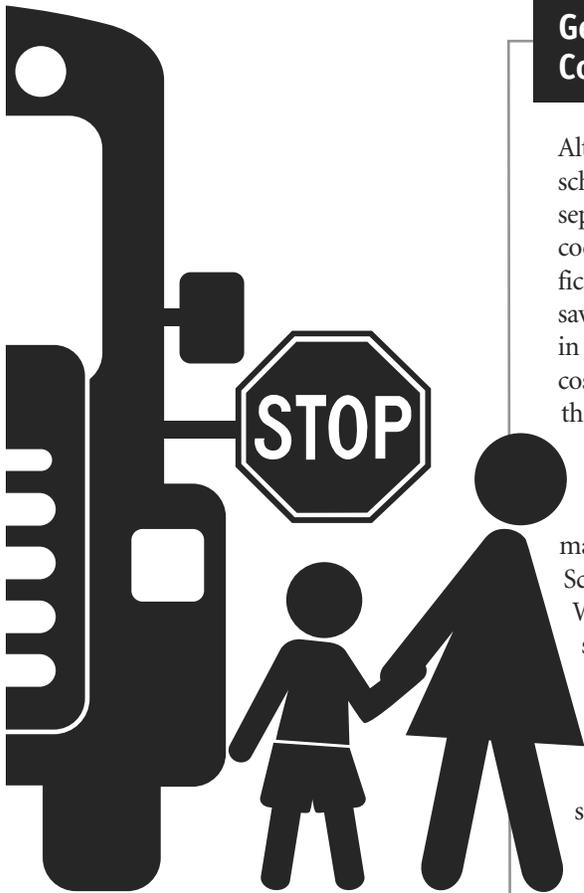
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## Generate New Revenues: Transit Agencies Establish Contracts with Local School Districts

Although public transit agencies and school districts operate distinct and separate services in many communities, coordinating their services can be beneficial to all. Potential savings include savings from eliminating duplication in operating, capital, or administrative costs, as well as increased transportation through ridesharing and the use of savings to expand services to previously unserved areas or populations.

**People for People (PfP)** of Yakima, Washington, operated a successful School to Work program in Mabton, Washington. When not transporting students to and from various industry sites, the vehicle was made available to PfP for other trips, such as senior and Medicaid transportation. The program covered all its costs; the school district saved more than

\$15,000 per year in driver wages paid by PfP. The **Mason County Transportation Authority** in rural Mason County, Washington, coordinates school district and public transit resources, saving Mason Transit and the Mason County School Bus Transportation Co-op over \$20,000 per year in annual operating expenses, \$120,000 in vehicle purchase costs, and \$84,000 in annual fuel costs in 2001. The **Dodger Area Rapid Transit System (DART)** in Fort Dodge, Iowa, operates the small urban transit system in Fort Dodge, the regional transit service in the six counties, and the school bus service. Being able to spread staff costs over multiple contracts reduces staff needs by about three-fourths of a full-time staff member (saving approximately \$20,000 per year).



## Save Costs: Nontransit Agencies Provide ADA and Other Paratransit Services

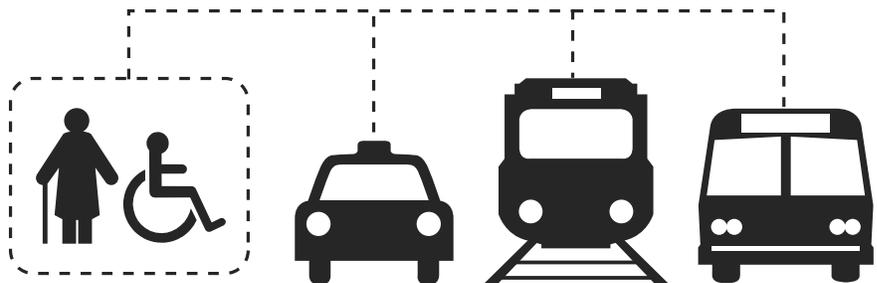
Transit authorities can contract with human service agencies or others to provide ADA paratransit and demand-responsive transit service. These other agencies may have more freedom to combine trips or to use volunteers and may provide service at lower cost. The primary benefits to the transit agency are reduced costs. The primary benefits to the other transportation providers are increased revenues. This strategy may require increased quality control and monitoring by the transit agency. Detailed strategies include using brokers to coordinate services, using taxis for ADA trips, and contracting with volunteer organizations.

**ACCESS** is the name of the private nonprofit county-wide paratransit service brokerage in Allegheny County, Pennsylvania (including the city of Pittsburgh). Services are open to the

public, but riders are primarily seniors and persons with disabilities. Providers are chosen through a competitive bidding process. Uncoordinated services would have cost about \$26 million more for the trips the ACCESS coordinated brokerage provided in 2001. ACCESS has also made great improvements in service quality in Allegheny County. The **Specialized Transit for Arlington Residents (STAR)** program in Arlington, Virginia, uses taxi services

to provide a less costly demand-responsive service alternative to ADA paratransit service. STAR operates as a brokerage and provides annual benefits of at least \$450,000 for its 60,000 annual trips. **Tri-Met**, in Portland, Oregon, contracts with **Ride Connection, Inc.** to provide ADA paratransit and demand-responsive transportation service with volunteers as a supplement to Tri-Met's own ADA paratransit

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## Nontransit Agencies continued

program. It would cost Tri-Met about \$2,885,000 to take over all of the transportation now provided under the Ride Connection umbrella at the current cost per trip on Tri-Met's ADA paratransit system, about \$2 million more than the amount paid to Ride Connection. **Dakota Area Resources and Transportation for Seniors (DARTS)** in Dakota County, Minnesota, combines ADA trips with those provided for seniors and eliminates the need for the regional ADA paratransit provider (Metro Mobility) to extend its service to Dakota County. DARTS provides ADA paratransit trips and trips for seniors for approximately \$230,000 a year less than Metro Mobility could; cost savings from reduced capital needs, centralized dispatching, and centralized maintenance total about \$150,000 more.

## Save Costs: Transportation Providers Shift Paratransit Riders to Fixed Route Services

From a transit agency perspective, the principal benefit of shifting paratransit riders to fixed route services is reducing the demand for ADA complementary paratransit (which is expensive) and increasing fixed route ridership (which can often be accomplished for little or no additional cost). For human service agencies that provide or contract for transporting clients to their programs, or pay a portion of the cost of those trips on ADA paratransit, shifting clients to fixed route services can reduce their cost of transportation too. For human service agencies, using regular buses can help meet a mandate to help their clients become more independent.

The **Charlottesville Transit System (CTS)** in Charlottesville, Virginia, provides free rides on fixed route transit for all paratransit-eligible

persons. The annual cost of trips on the free ride program would have approached \$1,000,000 if they had been made on paratransit services. This free ride program also allows an elderly or disabled passenger to take a spontaneous trip without advance notice. **Paratransit, Inc. (PI)** is a nonprofit corporation that provides paratransit and other related services to a variety of agencies in its area, including ADA complementary paratransit service under contract to **Sacramento Regional Transit (RT)**. Depending on their abilities, people with disabilities and seniors are taught to ride transit to and from particular destinations or to ride throughout the community. In Sacramento, the trips shifted away from ADA paratransit services saved about \$1,050,000 per year.

## Save Costs: Human Service Agencies Coordinate Transportation Programs

Human service agencies can coordinate or consolidate their separate transportation services to create larger transportation services, which form a "critical mass" of service that can qualify for general public transit funding and offer real travel options throughout the entire community. The coordination/consolidation process can be accomplished by a lead agency operating coordinated transportation services, by establishing a local transit body, or by establishing a brokerage system using current agency resources. (Many examples exist of combinations of the above administrative options, such as a lead agency acting as a broker.) Typical benefits to human service agencies include reduced unit costs, improved quality of service, and increased efficiency, effectiveness, and cost effectiveness. The potential for cost reduction depends heavily on the existing transportation infrastructure.

**Martin County Transit** in North Carolina employs a brokerage system with centralized dispatching and vehicle ownership. The 44,000 trips that Martin County Transit provided in 1999 for \$156,000 would have cost an additional \$178,000 if provided at the precoordination cost per trip of \$7.60. **R.Y.D.E. (Reach Your Destination Easily)** Transit in Buffalo County is the first brokered transit system to operate in Nebraska. R.Y.D.E. has expanded operating hours, abolished the waiting time requirements, and expanded transportation access in rural Buffalo County. Prior to coordination, public transportation provided 11,000 annual rides in Buffalo County; R.Y.D.E. planned to provide about 70,000 rides in 2002. R.Y.D.E.'s current operations cost Buffalo County \$400,000 less than the same number of trips would have cost if provided at the precoordination costs.



## Increase Efficiency and Productivity: Transportation Providers Coordinate Dispatching and Vehicle Sharing

Community-wide coordinated dispatching systems and vehicle sharing arrangements allow for all vehicles in use to accommodate all types of passengers at all times. Often referred to as “ridesharing,” this technique ensures a highly cost-effective application of driver and vehicle resources. When properly applied, it can solve a number of the problems associated with noncoordinated transportation systems, such as overlapping routes, duplication of service, inefficient route design, and poorly timed schedules. In particular, a major benefit of providing trips for ADA paratransit clients at the same time and on the same vehicle as other human service clients is a much lower

per trip cost. The primary benefit to transportation providers is increased productivity, which may lead to cost savings. The primary benefit to local communities is better service. Note that this strategy may require increased quality control and monitoring by the lead agency.

**People for People (PfP)** in Yakima and Moses Lake, Washington, generates economic benefits through coordination and ridesharing with Goodwill Industries. Using a PfP vehicle, Goodwill transports 10 people with developmental disabilities from their homes to a Goodwill job site. This arrangement costs PfP \$9,360 per year less than the alternative of inner city bus service and

saves the riders more than \$2,000. Vehicle sharing with a local hospital saves nearly \$3,700 per year in capital costs avoided. PfP’s volunteer Medicaid program drivers generate cost savings of about \$500,000 per year. **King County Metro** (headquartered in Seattle, Washington) and the **Department of Social and Health Services (DSHS)** conducted a demonstration of sharing vehicles to save money on ADA and Medicaid transportation. DSHS brokered nearly 35,200 Metro ADA trips, Metro ACCESS brokered almost 5,100 DSHS Medicaid trips, and the overall annual program benefit from ridesharing was nearly \$101,000.

## Increase Mobility: Communities Expand Transportation Services

Many communities need more transportation services than they now have but find it difficult to fund additional public transit services. Service expansions can be accomplished by coordinating with other agencies with different cost structures. By reducing per trip costs, coordinated transportation services can provide more trips for the same level of expenses.

The **Transportation Reimbursement and Information Project (TRIP)** complements public transportation services in Riverside County, California (east of Los Angeles), by reimbursing volunteers to transport individuals where no transit service exists or when the individual is too frail to use other transportation. Public transit services would cost at least \$1,500,000 more than

transportation provided by TRIP’s volunteers actually costs. **Enabling Transportation (ET)** is a mileage reimbursement and taxi subsidy program for seniors and adults with disabilities in Mesa, Arizona. If the ET program were not available, the city would pay East Valley Dial-a-Ride for ADA paratransit trips now provided by the volunteer drivers. ET saved the city of Mesa more than \$300,000 in FY 2001-02 while providing increased mobility to a transportation-dependent segment of the city’s population. **Mountain Empire Transit** in southwest Virginia is a private, nonprofit corporation that provides demand-responsive transportation to clients of multiple agencies and the general public in a large rural area. The system uses contract revenues from human service contracts to generate matching funds needed to establish and pay for general

Service expansions can be accomplished by coordinating with other agencies with different cost structures.

Expand Transportation Services continued

public transportation service. By coordinating funding, Mountain Empire has significantly expanded service; local governments could not support public transportation's costs. Alternative methods of providing Mountain Empire's transportation services would cost at least \$854,000, plus the \$30,000

in local matching funds. The **Suburban Mobility Authority for Regional Transportation (SMART)** is the transit operator for three counties in southeast Michigan near Detroit. SMART helps fund transportation in 50 local communities through its Community Partnership Program; localities aid regional

transportation by supporting tax referenda and working together for coordinated services. The \$7,000,000 annual program would cost at least \$2,700,000 more if SMART were to provide it without local involvement.

# Aggregate Potential Benefits



Coordination can offer great benefits to human service agencies and transit authorities. By coordinating transportation services, additional revenues can be generated, cost savings can be obtained, and other economic benefits can be created. Actual benefit levels will depend upon the numbers of communities applying different coordination strategies and the levels of effort that they put into these strategies. Still, order of magnitude estimates of overall impacts can be made for each strategy by considering the numbers of communities adopting these strategies [impacts were calculated for 10 percent and 33 percent of U.S. communities receiving Federal Transit Administration (FTA) funds], the number of rides involved, the costs or value of those rides, and the costs of the coordination efforts.

Potential economic impacts are summarized in the table (to the right). Estimated benefits range from tens of millions to hundreds of millions of dollars per year, depending upon the strategy applied and conditions in the communities where the strategies are applied. These estimates have been conservatively generated: specific programs

may have created more than one kind of benefit, but only the primary benefit was estimated. Also, these estimates do not include other important economic benefits (such as the value of increased mobility in terms of employment or independent living, or the multiplier effects that transportation expenses

generate in local areas).

Based on these estimates, transportation planners and operators should seriously consider

- Coordination strategies that involve shifting paratransit riders to fixed route services and having ADA paratransit services provided

**AGGREGATE POTENTIAL INDUSTRY BENEFITS ASSOCIATED WITH VARIOUS TRANSPORTATION COORDINATION STRATEGIES**

Strategy	Potential Aggregate Benefits
Additional revenues generated when transit authorities provide trips for Medicaid agency clients	\$15,000,000 to \$50,000,000
Cost savings realized when nontransit agencies provide ADA and other paratransit services	\$30,000,000 to \$148,000,000
Cost savings realized when paratransit riders are shifted to fixed route services	\$90,000,000 to \$300,000,000
Cost savings realized when local human service agencies coordinate their transportation services	\$35,000,000 to \$60,000,000
Economic benefits realized when transportation services are expanded to areas or populations not now served	\$40,000,000 to \$132,000,000

## Aggregate Potential Benefits, continued

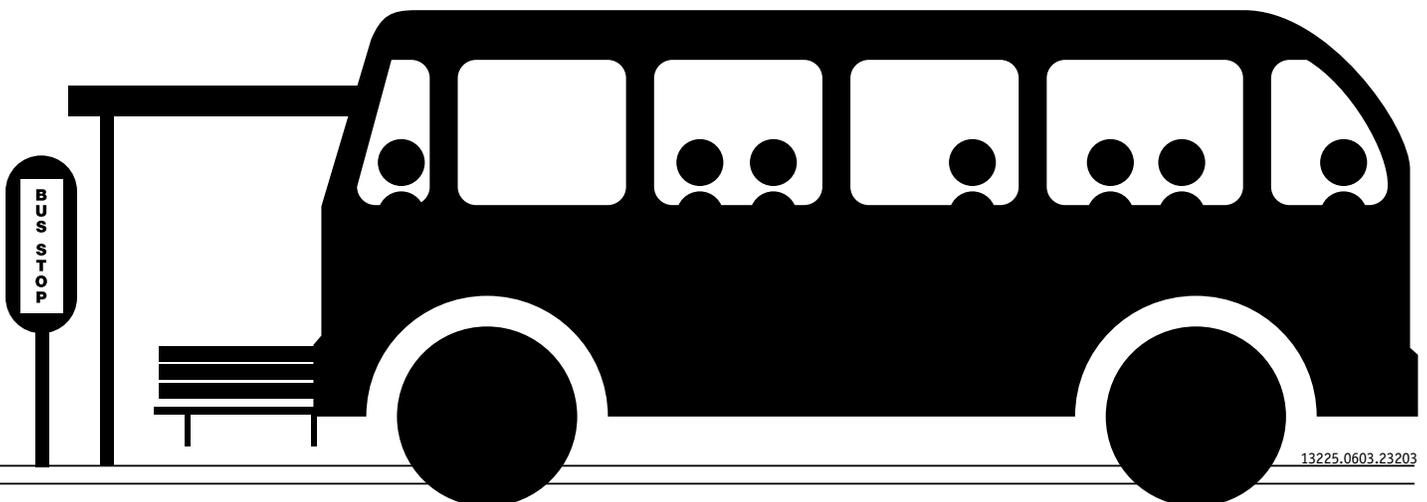
- by nontransit agencies;
- Partnership arrangements that expand transportation services into areas not now receiving public transit services;
- Coordination of the transportation functions of multiple human service agencies; and
- Generation of additional income for transit authorities through the provision of travel services to clients of human service agencies.

As shown in this brochure, benefits are often obtained from other coordination strategies as well.

## Summary

Coordinating human service transportation services and public transit services can provide significant economic benefits.

The coordinating agencies, the riders of the services, and local communities all can receive measurable benefits, including additional funding, more cost-effective operations, and increased mobility.



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# OBJECTIVES AND METHODS

In many communities in the United States, a variety of public and private agencies and organizations provide transportation services to persons who are somehow disadvantaged in their ability to obtain transportation (such as persons with functional impairments or disabilities, older persons, those with low incomes, the young, and others without access to private automobiles). These transportation providers often receive funding from multiple sources, including Federal, state, and local government programs, as well as charitable and nonprofit programs. Funds from such programs are often accompanied by service objectives focused on specific clienteles and by program-specific rules, operating requirements, and reporting requirements. If these services are provided in an uncoordinated fashion, they frequently demonstrate some serious economic and service problems.

Coordination is a resource management strategy capable of addressing such problems. Coordination strives to maximize the efficient use of resources, such as vehicles, personnel, and funding. It attempts to reduce service duplication, increase vehicle sharing, and improve service quality and reporting. Coordination can lower the unit cost of providing transit service, allowing communities either to apply the cost savings to increase the level of service (thereby improving the overall service effectiveness) or to simply reduce costs.

Coordinating transportation services is a management strategy with much intuitive appeal, partly because of its anticipated benefits. However, although anecdotal reports of economic benefits resulting from coordination abound, the measurable economic benefits of coordinated

transportation services had not been measured previously. This project provides such measurements, thereby providing greater incentives to human service and public transit operators to coordinate their operations.

This project's objectives were to develop a document that will (1) examine the net economic benefits associated with various strategies and practices for coordinating health and human services and transit providers and (2) provide quantitative and qualitative information on additional benefits (beyond costs) that might be obtained through further coordination efforts. The information is intended to be useful to Federal, state, and local officials in developing strategies and policies for coordinating transportation resources in rural, suburban, and urban settings.

This project examined the net economic benefits associated with various strategies and practices for coordinating human service transportation and general public

transit, provided quantitative estimates of these benefits, examined qualitative benefits, identified "innovative" and "promising" coordination strategies and practices, and suggested avenues for further investigations. Background information included a survey of coordination practices of all 50 states and case studies of dozens of local coordinated transportation operations. Through personal interviews, published reports, and selected site visits, 28 sites were found where there was sufficient information to make calculations of the economic benefits of coordinating human service transportation and public transit services. From this information, the research team created a list of coordination strategies that communities could pursue with strong expectations of realizing significant economic benefits.

The products of this project should be used as tools to assist Federal, state, and local agencies with coordination efforts in communities across the country.

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# Section I

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## BASIC CONCEPTS

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Coordination has been promoted as a means of improving the delivery of transportation services since the late 1960s. Many direct service providers and agencies at all levels of government have been interested in achieving the benefits expected from coordinated transportation services. In particular, the United States Departments of Transportation (DOT) and Health and Human Services (DHHS) have been working together since the mid-1980s to foster increased coordination among the transportation services sponsored by their respective programs.

Indeed, coordinating human service transportation services and public transit services can provide significant economic benefits. The coordinating agencies, the riders of the services, and the localities all can receive measurable benefits, including additional funding, more cost-effective

operations, and the benefits received from increased mobility.

These potential benefits have been acknowledged and extolled for many years but usually in very general terms. To lay the groundwork for quantifying the benefits associated with different coordination strategies, this section begins with basic coordination concepts and then describes the kinds of economic benefits that can be expected from coordinating human service transportation and public transit.

Section II of this report discusses specific strategies for achieving the potential economic benefits of coordinated transportation services. Section III presents estimates of the national economic impacts of coordinated transportation services. Section IV, the final section, discusses additional considerations, including

governmental strategies that impact coordination and cautions needed when implementing coordinated transportation services.

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# Chapter 1

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## BASIC COORDINATION CONCEPTS

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### WHAT IS COORDINATION?

**Coordination is a technique for managing resources.** Fundamentally, **coordination is about shared power** among organizations that are working together. For coordination to succeed, the organizations involved must have **shared objectives** (like increasing mobility for persons who lack mobility) and a real level of **shared respect**. After these preconditions are met, sharing of the key components of power — **responsibility, management, and funding** — can occur. Coordination can then change practices of independent operations by multiple providers to more integrated service delivery patterns.

Coordinating transportation means doing better (obtaining more results, like trips)

with existing resources by working together with persons from different agencies and backgrounds. Coordination helps to address transportation problems such as duplication of effort and low transportation resource efficiency. “Coordination is the best way to stretch scarce resources and improve mobility for everyone” (Ohio DOT, 1997).

Coordinating transportation systems is best understood as **a political process** in which two or more organizations interact to jointly accomplish their transportation objectives. Like many other political processes, coordination involves power and control over resources. Coordination can be subject to the usual kinds of political problems and pressures, such as changing environments and competing goals or personalities. A broad perspective is critical: effective coordination requires a focus on the entire community or maybe even on multiple

communities. Individuals who may not be used to talking or working with each other will need to develop levels of trust, respect, and confidence that will permit them to share responsibilities. A willingness to be open-minded about changing long-standing operating procedures is needed. Once these conditions are met, the results can include the blending of travel purposes, client types, travel modes, funding sources, vehicle types, and the needs of different political jurisdictions, as well as organizational philosophies and perspectives. The results can be quite beneficial, as described in later chapters.

## WHY COORDINATE TRANSPORTATION SERVICES?

When human service agencies — such as departments of social services, departments of health and mental health, and area agencies on aging — realized that many of their clients had no means of traveling to the services that they needed, many of these agencies started their own transportation systems. In recent years, public transit agencies have also offered what have come to be known as *specialized transportation services*. Each of these agencies and organizations may receive funding for transportation services from one or more sources, including Federal, state, and local programs and nonprofit programs. Such funds are often accompanied by specific objectives for serving limited clientele and by specific rules, accountability procedures, and operating requirements.

Previous research shows that, if transportation services are operated in a separate and uncoordinated fashion, many economic inefficiencies and service problems result (Burkhardt, et al., 1990):

- Multiple transportation providers, each with its own mission, equipment, eligibility requirements, funding sources, and institutional objectives, often resulting in significant duplication of expenditures and services;
- No formal mechanism for cooperation or communication among these operators;
- A total level of service well below the total level of need;
- Vehicles and other resources not utilized to capacity;
- Duplicative services in some parts of the community but other areas have little or no service available;
- Substantial variations in service quality, including safety standards, from provider to provider;
- A lack of reliable information—for consumers, planners, and service operators—about the services being provided and their costs; and
- No comprehensive plan to address these problems.

Coordination has been shown to be capable of resolving such problems and improving specialized transportation services.

## WHAT KINDS OF BENEFITS ARE EXPECTED?

Coordination is expected to provide a wide range of benefits that reduce or eliminate the problems noted above, resulting in more effective and efficient transportation services in a locality. Typical coordination consequences include lowered unit costs and increased ridership.

Four major classes of information are needed to describe and evaluate transportation services: system characteristics, performance measures, service attributes assessments, and users' overall system assessments (Burkhardt, 2003). System characteristics include the resource inputs required for service: funds, personnel, vehicles, etc. The performance measures typically apply ratios of inputs and outputs to measure factors such as resource efficiency (the amount of public transportation service produced in relation to the resources expended), service effectiveness (the consumption of transportation services in relation to the amount of service available), and cost effectiveness (the consumption of transportation services in relation to the resources expended) (Fielding and Anderson, 1993). The service attributes include measures of quality — from both the system and the rider perspectives — such as reliability, accessibility, comfort, and affordability. The service assessments reflect the outcomes of the services or how the services influence the lives of those who use them. Taken together, the service assessments and service attributes can be

used to express customer satisfaction with the services consumed.

Coordination's economic benefits are best described in terms of system characteristics and performance measures. Table 1 shows changes in characteristics or performance that are desired or could be expected from coordinating human service transportation and public transit systems. For most parties, the changes indicated will be seen as positive improvements. Clearly, a large number of these anticipated benefits will vary significantly according to local conditions and programs.

Coordination should have measurable effects on service attributes and users' overall service assessments. In general, these changes will be seen under the overall heading of "improved services." However, although these positive changes are often greatly appreciated by system users, they are not easily measured in economic terms. Table 2 identifies performance indicators for these assessments: coordinating human service transportation and public transit systems should generally lead to more positive assessments in all these indicators.

## WHEN IS COORDINATION EFFECTIVE?

Coordination will not solve all transportation problems in all communities. It needs to be seen as one of several possible management or problem-solving tools. In order to determine whether coordination can improve transportation services in a particular locality, transportation planners

**Table 1**  
**Potential Coordinated Transportation Benefits**

<i><b>Factor</b></i>	<i><b>Desired or Expected Change</b></i>
<b>SYSTEM CHARACTERISTICS (INPUTS)</b>	
Number of transportation providers	Lower
Number of agencies purchasing transportation	Higher
Number of vehicles	Lower
Number of drivers	Lower
Part-time/full-time driver ratio	Lower
Average hourly driver wage	Higher
Total driver wages	Lower
Level and quality of driver training	Higher
Hours when service is provided each day	Expanded
Days when service is provided each week	Expanded
Vehicle hours of service	Maybe lower
Vehicle miles of service	Maybe lower
Total service area	Expanded
Number of persons who can get services	Expanded
Joint purchasing	More frequent
Joint dispatching of agency-owned vehicles	More frequent
Centralized oversight and management	More frequent
Level of route duplication	Lower
Number of funding sources	Higher
Total transportation funding	Higher
One central community information source	More frequent
Segregated client types	Less frequent
Limited trip purposes	Less frequent
Community-wide transportation perspective	More frequent
Time spent in meetings	Higher
Level of planning processes	Higher
<b>PERFORMANCE MEASURES</b>	
Number of passenger trips	Higher
Number of passenger trips per service area population	Higher
Passenger trips per vehicle mile	Higher
Passenger trips per vehicle hour	Higher
Number of driver hours per passenger trip	Lower
Number of admin staff hours per passenger trip	Lower
Cost per vehicle hour	Lower
Cost per vehicle mile	Lower
Cost per passenger trip	Lower
Community benefits	
Economic activity	Higher
Economic growth	Higher
Nursing home admissions per 1,000 population	Lower
<b>SERVICE ATTRIBUTE ASSESSMENTS</b>	More positive
<b>USERS' OVERALL SERVICE ASSESSMENTS</b>	More positive

**Table 2**  
**Service Quality Assessment Measures**

<i>Indicators</i>	<i>Examples</i>
<b>SERVICE ATTRIBUTE ASSESSMENTS: EXAMPLES</b>	
Acceptability	Reliability, comfort
Accessibility	Can physically use, proximity
Adaptability	Flexibility, responds to specific requests
Affordability	Not excessive money, time, or effort
Availability	Frequency, hours/days available
<b>USER'S OVERALL SERVICE ASSESSMENTS</b>	
Alternatives	This service is preferable to other means of making this trip
Assessment	Would rate this service as excellent Would recommend this service to a friend Would use this service again
Achievement	This service has had great impacts on users' lives

must first gather data about the potential users of services and the current transportation providers. The next step is to analyze the effectiveness and efficiency of current services in meeting the service population's needs.

Coordination may be an effective action strategy in communities where there is substantial unused vehicle time, substantial unused vehicle capacity, or a lack of economies of scale in planning,

administration, operations, purchasing, or maintenance. Without these conditions, strategies other than coordination are better suited to improve transportation services. Thus, **coordination has its most substantial impact where transportation efficiency can be improved.** In communities where persons who need transportation are not being served but existing services are already highly efficient, coordination by itself will not be an effective strategy: in these cases, **additional resources are needed.**

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# Chapter 2

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## THE ECONOMIC BENEFITS OF COORDINATION

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### INTRODUCTION

Coordination helps to eliminate the inefficiencies usually found in the disparate operations and service patterns that often result from a multiplicity of providers. Through coordination, transportation services that were overlapping, duplicative, and inefficient can be combined for more efficient service delivery.

The more integrated services resulting from coordination may achieve economies of scale not available to smaller providers; they may also often provide higher quality services. Greater efficiency helps to stretch the limited (and often insufficient) funding and personnel resources of these agencies. In certain instances, coordination can lead

to significant reductions in per trip operating costs for transportation providers.

Many communities use these savings to expand services to persons or areas not previously served. Persons with special transportation needs often benefit from the greater amount of transportation and higher quality services when transportation providers coordinate their operations.

### POTENTIAL BENEFITS OF COORDINATION

Coordination has a wide range of potential benefits. Major potential benefit categories include

- Coordinated transportation services often have access to **more funds** and

thus are better able to achieve economies of scale. They also have **more sources of funds** and other resources and thus create organizations that are more stable because they are not highly dependent on only one funding source.

- Second, **higher quality and more cost-effective services** can result from more centralized control and management of resources.
- Third, the **enhanced mobility** created by better access to jobs, health care, shopping, or community facilities has substantial personal and community benefits.
- Finally, coordinated services can offer **more visible transportation services** for consumers and less confusion about how to access services.

Some of the more important specific benefits can include

- Providing additional funding for agencies that offer transportation services;
- Generating cost savings to some participating agencies in special forms of coordinated transportation service;
- Providing trips to consumers at lower costs;
- Filling service gaps in a community by offering services to additional individuals and geographic areas within existing budgets;
- Providing more trips for community members, thus enhancing their mobility and their quality of life and providing economic benefits to their communities; and

- Reducing total vehicle trips within a community, thus enhancing air quality and making other positive environmental contributions.

## THE COSTS OF COORDINATION

Coordination has its costs. It may be initially more expensive, more difficult, and more time consuming to achieve than most agency representatives initially perceive. Coordination may increase overall cost-effectiveness or reduce unit costs (for example, costs per trip), but coordination may not necessarily free up transportation dollars for other activities. Some agencies have hoped to see money returned to them — this has seldom happened because any cost savings realized are most often devoted to addressing unmet travel needs. Also, coordination agreements can unravel over time, so constant work is necessary to ensure that all parties keep working together. Coordination depends on mutual trust and good will among all parties involved; therefore, long-standing coordination arrangements can be jeopardized by antagonistic or self-serving individuals.

Despite these concerns, the economic and other benefits of coordination typically outweigh coordination's costs in many communities.

## KEY ECONOMIC BENEFITS

The three basic kinds of economic benefits resulting from the coordination of

transportation services are benefits accruing from additional funding, benefits from the more efficient and effective use of transportation resources, and benefits related to increased mobility. This report focuses on the first two kinds of benefits.

## **ADDITIONAL FUNDING**

Coordination between transit operators, who have transportation services to offer, and human service agencies, with clients who need transportation, can provide significant amounts of additional funds for public transit authorities. Contracts or other types of agreements can be made between transit operators and organizations serving individuals with developmental disabilities, agencies funded by Medicaid programs, school districts, and many other agencies. Particularly where large numbers of agency clients can ride existing fixed route services, the gains in transit system revenues can be large.

## **EFFICIENCY AND EFFECTIVENESS IMPROVEMENTS**

Coordination can increase the efficiency and effectiveness of transportation services in two ways:

- Reducing cost inputs and
- Increasing service outputs.

A before and after coordination comparison of the efficiency and effectiveness of transportation services at five sites suggested that coordination can offer real

improvements in efficiency (as in service cost per vehicle hour or number of vehicles required for service); productivity (trips per month, passengers per vehicle hour); and cost effectiveness (cost per trip) (CGA, 1992). Later chapters examine a wide range of sites to observe coordination's economic benefits.

### ***Techniques for Reducing Costs***

The major expenses for transportation services are labor (drivers' wages); administration (administrative wages, rent, and similar expenses); and capital costs (vehicles and other equipment). If coordination is going to reduce cost inputs, reductions will need to be made in these categories.

A basic premise of coordination is that pre-coordination circumstances will show evidence of duplicative resources. In fact, a similar argument has been made in favor of corporate mergers and consolidations. Therefore, coordination asks the following kinds of questions:

- Why should 2 organizations pay for 10 drivers when the work can be done by 1 organization that employs 8 drivers?
- Why should there be 2 transportation providers, each with its own executive director and other administrative staff, when the work could be done with 1 executive director and limited administrative staff?
- Why should 2 organizations pay for 10 vehicles when the trips can be provided by 1 organization that owns 6 vehicles?

These **reduction of resources** questions may often uncover situations of duplication and overlap that could reasonably be improved by judicious oversight and management. However, it is important to note that some persons who were previously employed as transportation personnel may no longer be employed in those positions if the “improved resource allocations” are implemented.

**Economies of scale** can also often lead to cost reductions as suppliers are often willing to provide reduced unit prices to customers who buy supplies in large volumes. This can be important in terms of vehicles, gasoline, and (sometimes) maintenance services. On the other hand, we have seen instances where small transportation operations receive insurance rates that are much lower than those received by larger (and presumably, more professional) transportation operations because of the increased risk exposure created by more frequent services. Both positive and negative impacts related to operational size need to be estimated.

### ***Techniques for Increasing Service Outputs***

For the transportation services being considered here, service outputs are the number of passenger trips consumed per unit of services provided: in other words, passenger trips per vehicle hour or per vehicle mile. Techniques for increasing service outputs include coordinated dispatching so that more riders and more

different types of riders — such as persons qualified for Americans with Disabilities Act (ADA) paratransit services offered by public transit agencies and persons receiving rides from Area Agencies on Aging — all ride on the same vehicle at the same time. (This strategy is sometimes referred to as “ridesharing.”)

Larger transportation operators are likely to be able to amortize capital expenses, such as the costs of automated vehicle location (AVL) systems and automated dispatch services, over large numbers of passengers. Therefore, larger services (such as those formed by coordinating or consolidating the operations of several smaller services) should be able to afford the infrastructure and technology that enable them to achieve greater productivity. Transit agencies have reported reductions in fleet requirements ranging from 2 percent to 5 percent as a result of efficiencies in fleet utilization gained from AVL systems (Goeddel, 1996).

### ***The Results of Cost Effectiveness***

Greater cost effectiveness results from reducing costs while holding service outputs constant, or increasing service outputs while holding costs constant, or reducing costs while increasing service outputs. Cost effectiveness, measured in terms of cost per trip, is one of the fundamental measures of transportation system performance. Coordinated transportation services are expected to be more cost effective than noncoordinated operations.

## THE ECONOMIC BENEFITS OF INCREASED MOBILITY

Transportation's "mission" has been succinctly expressed as follows:

"Transportation is necessary to support overall economic growth and activity in the national economy, but it also is expected to serve other goals of the community, support the desires of those who use its services, and do all this with the least expenditure of scarce resources" (Fuller, 2000). The kinds of goals that transportation is expected to address include "facilitate welfare reform, narrow regional wealth or opportunity disparities, manage growth, and help produce more livable cities or neighborhoods . . .," accomplishing this as it "provides employment, facilitates changed land uses, links businesses and employees, broadens distribution, enhances recreation, and in short is called upon to put in place the agenda of every political body" (Fuller, 2000).

The American Public Transportation Association (APTA) lists the following major benefits from transit investments:

- Mobility benefits;
- Efficiency benefits;
- Economic development benefits; and
- Economic productivity benefits.

Overall, the ratio of benefits to public costs is said to range between 4.0 and 5.1 to 1 (APTA, no date).

Specialized transportation services commonly provided by human service

agencies and public transit operators focus on individuals with limited mobility. This means that the economic benefits of mobility to this group of individuals could be different from the broad range of benefits listed above. Still, many of the same benefit categories listed by APTA for general public transit riders apply also to travelers with special needs.

A recent economic impact study of public transportation services found large economic benefits, demonstrating that public transportation is a good investment. The kinds of benefits that transit systems (Burkhardt, Hedrick, and McGavock, 1998) generate for their communities include

- Riders have better access to jobs: employment increases, workers get better jobs, labor markets broaden;
- Riders get better access to health care, welfare, and shopping: riders become (and stay) more independent;
- Riders can now shop where prices are lower;
- Riders save on their travel costs when using transit;
- Local businesses increase their level of activity: more money is spent locally, and new businesses and visitors are attracted to the community; and
- Communities benefit by the best use of their unique environments.

(In addition to such benefits, transit impacts communities through the wages paid and benefits provided to transit employees, local purchases of goods and services by the transit system, and the multiplier effects

of wages and system purchases in the local economy.) Such benefits have been shown, by both national and local analyses, to create positive returns on investments for local communities. The ratios of benefits to costs of these returns have been shown to be approximately four or five to one in urban areas (APTA, no date) and three to one in rural areas (Burkhardt, Hedrick, and McGavock, 1998).

## **SUMMARY OF BENEFITS**

The economic benefits of coordinating human service transportation and regular fixed route transit services include

- Additional funding (more total funding; a greater number of funding sources);
- Increased efficiency (lower production costs, measured as reduced cost per vehicle hour or per mile);

- Increased productivity (greater service consumption, such as more trips per month or passengers per vehicle hour);
- Enhanced mobility (such as increased access to jobs or health care or trips provided to passengers at a lower cost per trip); and
- Additional economic benefits, such as increased levels of economic development in the community or employment benefits for those persons associated with the transportation service.

The other benefits of coordination, not usually expressed in monetary terms but still important in their own right, include improving service quality, making transportation services available to more people, having transportation services available to larger service areas, centralizing oversight and management, and more accurately reporting costs and outputs.

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# Section II

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## **STRATEGIES FOR ACHIEVING THE ECONOMIC BENEFITS OF COORDINATED TRANSPORTATION SERVICES**

Attempts to coordinate transportation services are more likely to succeed when specific coordination objectives are identified and appropriate strategies are employed. Major strategies addressed in this section include tapping currently unused sources of funding, decreasing the direct costs of providing transportation, increasing transportation system productivity, and expanding transportation services. Detailed case studies document how coordination efforts have achieved significant economic benefits in particular communities.

A key issue is how the benefits derived from coordination are actually used. Frequently, the typical efficiency and productivity benefits of coordination are used to expand services to previously unserved portions of the community, unserved client types, or unserved hours and days.

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# Chapter 3

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## COORDINATION PRACTICES WITH MEASURABLE ECONOMIC BENEFITS

Section I examined the types of economic benefits that can be expected from coordinated transportation services.

Section II focuses on the “how did they do that?” question, with this chapter providing an overview of possible coordination strategies. Although no one “formula for success” is obvious, a number of key strategies can provide substantial benefits, depending on local objectives and conditions.

### KEYS TO SUCCESS

Certain strategies are often associated with transportation operations that generate large economic benefits from

coordinated operations. These strategies include

- Tapping currently unused sources of funding, including
  - Using new funds to expand services and
  - Using new funds to provide and upgrade existing services;
- Decreasing the direct costs of providing transportation;
- Increasing the productivity and utilization of vehicles on the road;
- Achieving the benefits (and avoiding the disbenefits) of economies of scale;
- Capturing the opportunities available from multiple providers and multiple modes of travel; and

- Instituting transportation services in areas lacking such services.

Use of these strategies appears to be much more important in generating economic benefits than the following issues:

- Who is the lead agency (for example, a public transit authority, a human service agency, a nonoperating brokerage, or a planning agency);
- Which services are emphasized (for example, ADA paratransit services, welfare to work trips, agency trips, general public trips, Medicaid trips, or others); and
- What particular coordination technique is used (coordination, consolidation, or brokerage, for example).

## HIGH-IMPACT COORDINATION STRATEGIES FOR TRANSPORTATION OPERATORS

Case studies were used to generate information about high-impact transportation coordination strategies. Information was gathered on more than 60 potential coordination examples; the sites that were chosen

- Demonstrated a potential for measurable economic benefits and in-depth data to support benefit calculations;
- Were interested in cooperating with this study;

- Were continuing their coordination efforts;
- Demonstrated coordination strategies or outcomes not duplicated at other sites; and
- Offered new information not available in other reports.

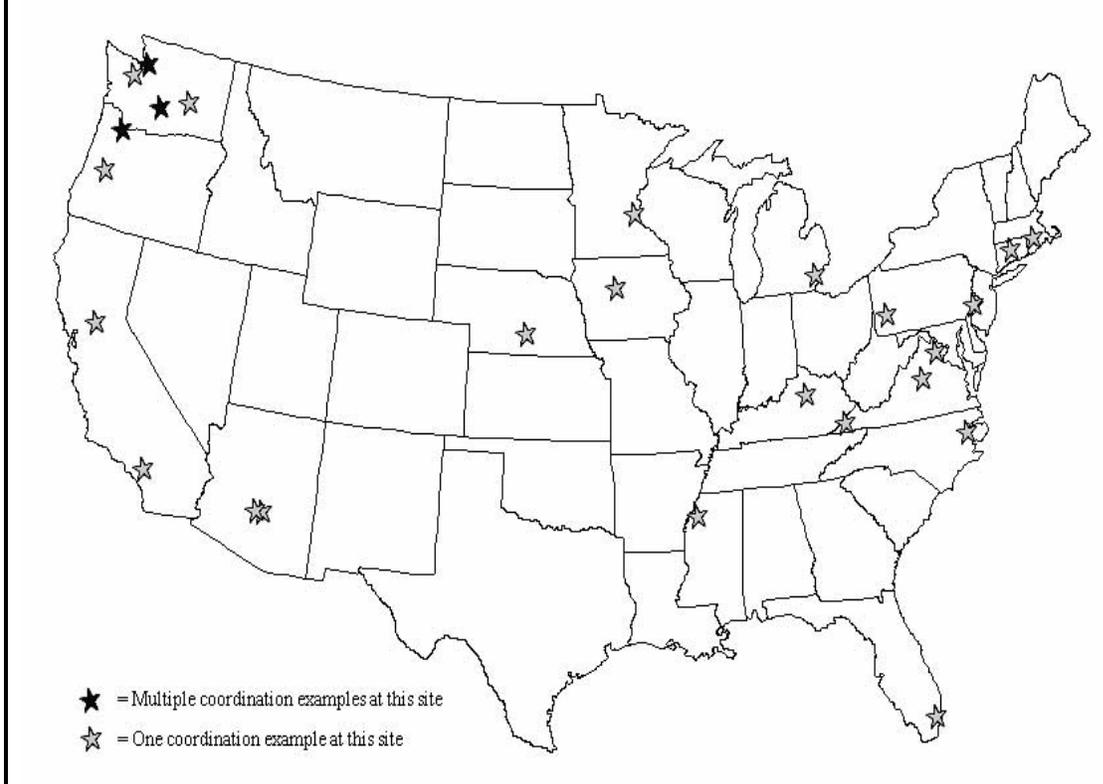
In the end, 28 cases at 25 sites were found with sufficient data to estimate the economic benefits of coordination there. In-depth personal interviews and written reports were used as the primary sources of information; on-site visits were made to several sites. Case study locations are shown in Figure 1.

The case studies described in the following chapters show that there are strategies that can generate large economic benefits for public transit operators and human service agencies involved in coordinated transportation systems (and their communities too):

- **The transit authority contracts to provide trips to Medicaid or other human service agency clients.** In many communities, Medicaid agencies have not made full use of fixed route transit services, opting for more costly paratransit services instead. As shown in numerous cases, moving only a small proportion of Medicaid clients to fixed route transit service saves the Medicaid agency very large sums of money, substantially increases revenues of the transit authority at no additional operating cost, and provides mobility benefits for Medicaid clients. Public transit providers can also coordinate

**Figure 1**

**LOCATIONS OF CASE STUDIES USED TO ESTIMATE ECONOMIC BENEFITS  
OF COORDINATED TRANSPORTATION OPERATIONS**



with local school districts to transport students for regular classes or for special purposes or special events. Welfare to work programs will also benefit from coordination with transit providers. These can be considered to be key **business expansion** strategies.

- **Human service providers provide ADA paratransit services under contracts to transit authorities.** In a number of communities, human service agencies have been providing paratransit services for a longer period of time than have transit agencies. Typically operating as private nonprofit organizations, the human service agencies often have cost structures that are less expensive than those of the transit agencies and can thus create significant savings for the transit agencies in providing the ADA-mandated services. (Using volunteers for drivers or other staff positions is one important way that human service agencies can generate large cost reductions.) For transit operators, contracting with human service transportation providers can be considered to be a key **cost reduction** strategy.
- **Transit authorities and/or human service providers offer incentives to paratransit riders to use fixed route transit services.** Paratransit trips are often substantially more expensive than fixed route trips. By offering incentives, including travel training, to frequent paratransit users, some of those paratransit riders will switch their regular travel mode to the fixed route service. This strategy has real **cost reduction** benefits for the paratransit program, the fixed route operator, human service agencies who sponsor trips for particular clients, and the riders themselves.
- **Human service agencies coordinate or consolidate their separate transportation services and functions to create a general public transportation system.** Sometimes referred to as the “classic” coordination example, human service agencies band together to form a “critical mass” of service that can qualify for general public funding and offer real travel options throughout the entire community. This is a key **productivity enhancement** strategy that can be referred to as a **synthesis** or **synergy** strategy. It is often combined with cost reduction, service enhancement, and mobility enhancement strategies.
- **Transportation providers institute a community-wide coordinated dispatching operation so that all vehicles in use can accommodate all types of passengers at all times.** Often entitled “ridesharing,” this technique ensures the most cost-effective application of driver and vehicle resources. Judiciously applied, it can eliminate the typical precoordination situation of overlapping and inefficient routes and schedules. In particular, the benefits of providing trips for ADA paratransit clients at the same time and on the same vehicle as other traveler creates much lower per trip costs, thus generating real savings for public transit operators. This is a key **productivity enhancement** strategy.
- **Travel services are expanded to more residents of the community through a variety of low-cost strategies.** Some of the largest dollar savings evidenced in the case studies of coordinated systems are those generated by the effective use of volunteers. Volunteers are most cost effectively used when specific trips have special requirements, such as

the need for hands-on or escorted services; when providing the trip would ordinarily tie up a vehicle and a driver for a relatively long time; or in other circumstances where ridesharing would be difficult to implement. This is a key **service expansion** strategy that strongly relates to some cost reduction strategies.

Key coordination strategies at each of the sites are shown in Table 3. Most of these sites had applied multiple coordination strategies. Only the strategy for which economic benefits were calculated is indicated in the table.

Just as there are transportation coordination strategies to embrace, there are also significant transportation service strategies to avoid. Most characterize situations of little or no coordination. They include

- **Vehicles and drivers used to serve only one client or trip type:** agencies provide trips for only their own clients; agencies provide trips only to certain destinations (e.g., medical facilities) and not to other needed destinations.
- **Multiple dispatch facilities and other administrative operations:** each agency using dispatch personnel dedicated to only the needs of that particular agency; multiple agencies in the same community investing in independently operated geographic information systems (GISs) and AVL systems.
- **The existence of significant unutilized vehicle capacity: routes being run with less than full passenger capacity;** vehicles idle during large portions of the day.

- **Low productivities (passengers per hour, passengers per mile):** performance statistics significantly below other operations of a similar nature in similar communities.
- **Duplication of routes and services:** vehicles of different agencies running the same routes, perhaps even at the same times of day (this is especially a problem when there are also areas lacking any service at all in a given community); and
- **Unusually high per trip costs:** per trip costs significantly higher than other operations of a similar nature in similar communities.

If any of these conditions are present in a locality, their presence should be taken as a clue that the coordination of human service transportation and public transit services may bring real benefits. These strategies are summarized in Table 4.

## HOW TO USE THE BENEFITS OF COORDINATION

There are basically two ways to use the efficiency and productivity benefits of coordination. The first is to take the cost savings on a unit cost basis—that is, cost per trip, per mile, or per hour—and use the savings from these greater efficiencies to **serve more passengers**. This is the approach used by the vast majority of communities because transportation services in most communities usually meet only a fraction of the total travel needed. The most frequent use of coordinated transportation’s economic

**Table 3**  
**Coordination Strategies Studied at Specific Sites**

SYSTEM/PROGRAM	LOCALITY	STATE	<i>Save Costs</i>					<i>Increase Efficiency, Productivity</i>	<i>Expand Services</i>
			<i>Increase Revenues</i>						
			TRANSIT AGENCIES SERVE HS CLIENTS	ESTABLISH CONTRACTS WITH SCHOOLS	HS AGENCIES PROVIDE ADA TRIPS	SHIFT PARATRANSIT RIDERS TO FR	HS AGENCIES COORDINATE	RIDESHARE / COORDINATE DISPATCHING	EXPAND TRANSIT SERVICES
Miami Dade Transit	Miami	FL							
King County Metro Medicaid Pass Program	Seattle	WA							
Lane Transit District	Eugene	OR							
Philadelphia, Pennsylvania	Philadelphia	PA							
State of Connecticut	Hartford	CT							
State of Rhode Island	Providence	RI							
Tri-Met Medical Transportation Program	Portland	OR							
Dodger Area Rapid Transit System	Fort Dodge	IA							
Mason County Transportation Authority	Shelton	WA							
People for People (Mabton school program)	Yakima	WA							
ACCESS	Pittsburgh	PA							
Dakota Area Resources and Tr Services	Dakota County	MN							
Ride Connection	Portland	OR							
STAR Paratransit	Arlington	VA							
CTS / JAUNT	Charlottesville	VA							
Phoenix Travel Training	Phoenix	AZ							
Sacramento RT Contract w Paratransit, Inc.	Sacramento	CA							
Kentucky Coordinated HS Tr System	Lexington	KY							
Martin County Transit	Williamston	NC							
R.Y.D.E.	Kearney	NE							
King County Metro / DSHS Demo	Seattle	WA							
People for People	Yakima	WA							
People for People	Moses Lake	WA							
Delta Area Rural Tr. System (DARTS)	Clarksdale	MS							
Enabling Transportation (ET)	Mesa	AZ							
Mountain Empire Transit	Big Stone Gap	VA							
SMART	Detroit region	MI							
TRIP	Riverside	CA							

benefits is the expansion of service to previously unserved portions of the community, to previously unserved client types, or to previously unserved hours and days.

Another way to apply the cost per trip benefits is to return the money that some agencies may save through coordination to those agencies. Because these cases are not frequent, they are notable. The use of transit passes to serve Medicaid clients needing frequent trips is a key example of such savings. Transit passes cost only a fraction of comparable paratransit trips; the Medicaid program saves money, the transit agency receives more revenue (while seldom incurring any marginal cost increases), and the Medicaid clients receive additional mobility. Lee County, North Carolina (Community Transportation Association, 1994), and

Sweetwater County, Wyoming (Burkhardt, 2000), are examples of cases where all human service agencies participating in the coordinated transportation services paid less on a per trip basis after coordination. Some agencies actually paid less in total for their trips after services were coordinated, but other agencies simply purchased more trips for the same or even increased levels of expenditure.

## CONCLUSION

There are numerous viable strategies for coordinating the operations of human service transportation and public transit operations. Many of these strategies generate significant economic benefits. The next several chapters discuss these strategies in detail.

**Table 4**  
**Strategic Approaches to Coordinating Transportation Services**

<i>General Category</i>	<i>Examples of Detailed Operating Strategies With Economic Consequences</i>
<i>Strategies to adopt</i>	<p>Transit authority contracts to provide Medicaid, other human service agency trips, or school trips.</p> <p>Human service agencies provide ADA paratransit services under contract to local transit authorities.</p> <p>Incentives are offered to paratransit riders to shift their trips to fixed route services.</p> <p>Human service agencies coordinate/consolidate to create general public transportation system.</p> <p>Transportation providers coordinate dispatching and promote ridesharing among cooperating agencies.</p> <p>Transportation services are expanded to previously unserved areas by using volunteers and other low-cost strategies.</p>
<i>Strategies to avoid</i>	<p>Only one type of passenger/client on the vehicles.</p> <p>Multiple vehicles and dispatch/administrative/intelligent transportation system or GIS facilities.</p> <p>Significant unused vehicle capacity.</p> <p>Duplication of routes and services.</p> <p>Unusually high per trip costs.</p>

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# Chapter 4

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## TAPPING CURRENTLY UNUSED SOURCES OF FUNDING

Coordination can be a major business opportunity for transit providers and can lead to increased funding. For example, in many communities, Medicaid agencies have not made full use of fixed route transit services, opting for more costly paratransit services instead. As shown in numerous cases, moving only a small proportion of Medicaid clients to fixed route transit service saves the Medicaid agency very large sums of money, substantially increases revenues of the transit authority at no additional operating cost, and provides mobility benefits for Medicaid clients. Coordination with welfare to work programs is another strategy that can also prove to be mutually beneficial for the agencies and transit providers.

The following cases demonstrate the economic benefits of coordination

strategies that focus on increasing funding and expanding business opportunities.

### COORDINATING PUBLIC TRANSIT SERVICES AND MEDICAID TRANSPORTATION

Large annual transportation cost increases have created concerns for human service program administrators, who have begun to find ways of shifting Medicaid and other human service clients away from expensive paratransit service in favor of less costly fixed route transit. Agencies may purchase bus passes to be distributed to clients, or the transit agency may bill agencies directly for services to designated, eligible clients. The potential benefits to the transit agency

include increased ridership and revenues without additional costs. The primary benefits to human service agencies are decreased costs. However, this strategy may reduce revenues from demand-responsive services, meaning that paratransit providers may oppose it. Changes from demand responsive to fixed route services also may be seen as a reduction in the level of service provided or the quality of service.

### **MEDICAID TRANSIT PASSES**

The rising demand for transportation services is creating large annual cost increases for many human service agencies throughout the United States, especially for the Medicaid program. According to a 1998 report, nationwide non-emergency Medicaid transportation costs increased from \$750 million to \$1.2 billion between 1994 and 1997 (Health Care Financing Administration [HCFA], et al., 1998). Several states, such as Kentucky and Washington, have experienced higher-than-average increases in non-emergency Medicaid transportation (NEMT) costs. In Kentucky, for example, NEMT costs increased by an average of 26 percent annually between 1990 and 1996. Statewide NEMT per trip costs vary considerably, with some states, such as the District of Columbia, spending over \$40 per trip, and others, such as Rhode Island, spending less than \$1 per trip. The primary reason for this discrepancy is that some states rely on expensive modes of transportation, such as paratransit and taxi services, whereas others find more economical modes of transportation for their NEMT clients, such as fixed route transit services. Human

service agencies and transportation providers at the local level are feeling the pinch of increased demand and limited resources. According to National Transportation Database reports, demand-responsive transportation usage increased 25 percent between 1996 and 2000. Over that same period, paratransit costs increased 39 percent. Many human service agencies, Medicaid transportation contractors, and paratransit providers have begun to find ways of shifting Medicaid and other human service clients away from expensive paratransit service in favor of less costly fixed route transit.

### **METROPASS: DADE COUNTY, FLORIDA**

Florida's **Miami Dade Transit (MDT)** provides an excellent example of the "bus pass" approach to moving clients to fixed route services. Since 1990, the state Medicaid office had purchased door to door paratransit trips for medical clients from the local Community Transportation Coordinator (CTC) at a cost of approximately \$16. The Medicaid office and CTC analyzed their client base and found that many Medicaid eligible individuals were transit dependent and used conventional fixed route transportation for all their daily nonmedical trips. These same clients used door to door Medicaid paratransit trips for their medical appointments. The Metropass program was created to shift these transit-dependent clients to fixed route service for their medical trips by providing them with monthly bus passes free of charge. In order to qualify for the Metropass program, the Medicaid recipient must be able to use

public transportation on a regular basis and must make six or more Medicaid-funded round trips per month for 3 consecutive months. Once an individual becomes part of the Metropass program, Medicaid will no longer pay for door to door medical trips.

Metropass users ride regular fixed route transit services; no operating changes were made to accommodate these riders. Thus, other than the administrative expense of handling an increased number of passes per month, MDT incurred no additional marginal costs related to transporting clients of the Medicaid program.

Between 1993 and 1998, over 9,000 Dade County residents participated in the Metropass program for at least 1 month. MDT reported 4,943 registered users in the Metropass program in December 2002. Each of those registered users had been making at least 12 paratransit trips each month at a cost of \$16 per trip (many Medicaid clients had been making more than 20 trips per month). Thus, in the absence of the Metropass program, transporting those clients would have cost at least

$$4,943 \text{ clients} \times 12 \text{ monthly trips} \times \$16 = \$949,056 \text{ per month.}$$

Over an entire year, transporting these clients would have cost the Medicaid program \$11.4 million.

The cost of providing monthly bus passes for the MetroAccess clients can be calculated as

$$4,943 \text{ clients} \times \$31.44 \text{ average bus pass cost} = \$155,408 \text{ per month.}$$

(The updated \$31.44 average bus pass cost figure was based on 2002 data showing that about 7 percent of the bus passes purchased by the MetroAccess program were full fare passes at \$50 each, whereas almost 93 percent were discounted passes at \$30 apiece.) MDT also receives a \$7.20 administrative fee for every bus pass sold to the Medicaid program, which is

$$4,943 \text{ passes purchased per month} \\ \times \$7.20 \text{ administrative fee per pass} \\ = \$35,590 \text{ per month.}$$

The total economic benefit to the Medicaid program is thus the alternative cost of paratransit trips minus the actual cost of the bus passes (direct costs plus administrative costs) or

$$\$949,056 - (\$155,408 + 35,590) = \$758,058 \\ \text{per month or } \$9,096,696 \text{ per year.}$$

Because there were no marginal cost increases to MDT in transporting the Medicaid clients and the administrative fee received by MDT presumably covers any increased marginal administrative costs, the total annual economic benefits to the MDT are derived from the sale of bus passes plus the administrative fees; the total is calculated as

$$\$190,998 \text{ per month} \times 12 \text{ months} = \\ \$2,291,976 \text{ per year.}$$

This matches the MDT estimate of revenues from Medicaid bus passes of \$2,292,000.

Although MDT and the Medicaid program still have not reported any major problems with the implementation of their bus pass

program, there are potential problems that could arise with a similar arrangement. Paratransit providers may oppose the loss of ridership and revenue (although most paratransit providers contacted were operating well above capacity and would welcome the relief). It is also possible that advocacy groups might see the effort as a reduction in service, rather than a voluntary program. Neither problem should present any serious barrier to obtaining significant economic benefits from coordination.

### **MEDICAID TRANSIT PASS PROGRAMS IN OTHER LOCALITIES**

In most states, the Medicaid program spends vast sums of money to ensure that Medicaid clients can access needed medical services. Fixed route public transit services can often provide trips to Medicaid clients at a mere fraction of the costs required by alternative modes of transportation. A growing practice is to have the state or local Medicaid program purchase transit passes that they then distribute to Medicaid clients who need frequent trips. Because the Medicaid clients ride on existing fixed route public transit services, the transit agency incurs no additional costs but obtains substantial additional revenues from the transit passes purchased by Medicaid. The transit passes cost the Medicaid agency much less money than it would spend in reimbursements for fewer paratransit trips. Finally, the Medicaid clients get reliable transportation for their appointments and other travel needs. Such programs have provided significant benefits in areas such as Miami, Florida (discussed above); Philadelphia, Pennsylvania; and the states

of Connecticut, Rhode Island, and Washington (Ecosometrics and American Public Works Association, 1999). Estimates of the benefits from these different programs are shown in Table 5.

### **NON-EMERGENCY MEDICAL TRANSPORTATION BROKERAGE: TRI-MET — PORTLAND, OREGON**

Tri-Met is a public transportation district that operates transit services in large parts of a three-county area in northwestern Oregon, centered on the city of Portland. Under an agreement with the state Office of Medical Assistance Programs (OMAP), Tri-Met also operates a brokerage for non-emergency medical transportation in the entire three-county area.

The objectives of the Medical Transportation Program (MTP) for OMAP are to

- Reduce the cost of transportation by ensuring that Medicaid clients in the tri-county area are transported to covered medical services by the least costly mode suitable to the client's needs;
- Reduce inappropriate utilization; and
- Ensure adequate access to quality non-emergency transportation services.

From Tri-Met's point of view, the program is intended to be cost neutral. However, from the outset it was recognized that economic benefits could accrue to Tri-Met from increased use of bus passes and reduced use of LIFT, Tri-Met's ADA paratransit program.

**Table 5**  
**Estimates of Annual Benefits Derived From**  
**Selected Medicaid Transit Pass Programs**

<i>Site</i>	<i>Additional Revenues to Transportation Providers</i>	<i>Estimated Savings to Medicaid Programs</i>
State of Connecticut	\$1,802,000	\$4,250,000
Dade County, Florida	\$2,292,000	\$9,097,000
King County, Washington	\$300,000	\$3,610,000
Philadelphia, Pennsylvania	\$2,089,000	\$2,700,000
State of Rhode Island	\$2,100,000	\$4,050,000

Sources: Interviews with Miami-Dade Transit staff and the Medicaid Transit Passes brochure

### ***History and Background***

MTP was established in September 1994 to broker all non-emergency Medicaid transportation in the three-county region within which Tri-Met operates. The brokerage is authorized under a Section 1915(b) freedom of choice waiver. The waiver has been renewed twice and is currently set to expire in July 2003. The entire Medicaid program in Oregon is the subject of a demonstration waiver under which Medicaid has become part of a managed care program known as the Oregon Health Plan (OHP), which aims to ensure that all Oregon residents have access to health care. The Medicaid component of OHP was implemented in February 1994.

Before MTP was initiated, non-emergency transportation in the three-county regional was provided under a decentralized, fee for service basis. Clients requested service through 25 branch offices of the state

Department of Human Services (DHS) charged with administering various programs for seniors, children, and people with disabilities. OMAP, the state Medicaid agency, oversaw a wide array of providers and processed their reimbursement requests. Providers included taxi companies, private lift-van operators, and stretcher car by ambulance. OMAP also paid for Tri-Met bus passes and tickets.

Under MTP, Tri-Met became the single point of access for Medicaid non-emergency transportation for OHP participants in the three-county area. It receives inquiries and requests for transportation from eligible clients, verifies eligibility based on daily reports from OMAP, authorizes and schedules all trips, subcontracts with providers, monitors fraud and service quality, and investigates grievances.

The main source of anticipated savings was that more trips could be directed to bus passes and tickets instead of the more expensive taxis. In addition, it was anticipated that there could be savings by more effective grouping of trips, negotiating lower rates with providers, and reducing misuse, particularly rides taken after 5:00 p.m. when riders were able to call taxi companies directly.

MTP was housed in the same building that houses Tri-Met's LIFT program. However, a strict separation was established between the two programs. Currently, there is some sharing of staff and information, but the two programs continue to operate in separate offices, with separate management, separate provider contracts, and separate software.

One element of coordination between the two programs relates to trip referral and scheduling. In some cases, a trip request that initially comes to LIFT may be referred to MTP. Also, MTP schedules some of its trips on LIFT. In this case, LIFT is treated as a provider for which it is paid a negotiated cost per trip.

### ***Economic Analysis***

Tri-Met staff provided cost and trip data from OMAP for 1993 (the last year that Medicaid non-emergency transportation was provided under the prebrokerage system), for fiscal year 1994–1995 (the first year of the brokerage), and 2000–2001 (the most recent full fiscal year). Unfortunately, in the period before Tri-Met began operating the brokerage, OMAP did not

estimate the number of trips provided using bus passes and tickets, even though cost data indicate that many trips were provided that way. Further, OMAP did not include the cost of administering its transportation program. Staff at DHS branch offices were responsible for making transportation arrangements among their other duties. Their time was not charged to OMAP's transportation budget. Also, unit costs for the lift van have escalated sharply over the years. For all these reasons, a simple before and after comparison is not feasible.

In 1998, Internal Audit Services of the Oregon Department of Transportation (ODOT) prepared an independent assessment of the cost efficiency of MTP. The audit was prepared to determine whether OMAP should receive an extension of the Medicaid waiver that permitted continued operation of the brokerage. Such waivers can only be extended if it is determined that they result in cost savings. Cost savings were estimated by comparing projected total costs under the waiver (that is, using the brokerage) with what costs would be without the waiver (that is, using conventional Medicaid transportation arrangements). As shown in Table 6, the assessment estimated that cost per trip was about \$0.50 less using the brokerage than if OMAP were arranging transportation using more traditional methods. However, because fewer rides would be provided without the brokerage, the total cost would be about the same.

This assessment was based on projected costs and used extremely conservative assumptions. For example, the assessment

assumed that 59 percent of rides would use bus passes and tickets under a brokerage compared with 53 percent without a brokerage. In fact, in 1999–2000 and 2000–2001, according to Tri-Met’s figures, 65 percent of rides were provided using bus passes and tickets. The assessment also assumed that volunteer transportation would continue to be available as an option to OMAP, which was not the case before the brokerage.

(At the time of the assessment, some volunteer transportation was available under the brokerage. This is no longer the case. OMAP did not have access to volunteer transportation under the brokerage, and the assumption was that volunteer transportation would be low cost and the brokerage could make use of it. Because of the types of organizations involved and their in-house structures, volunteer transportation has not been an effective option. When the broker did use some volunteer transportation, it was not always the most cost-effective mode. Insurance issues have also prevented volunteer programs from participating.)

The assessment also attempted to determine what rate OMAP would be paying for each type of trip in the absence of the brokerage. For example, in the case of wheelchair vehicle trips and taxi trips, the assessment applied inflation rates for the 6 years from 1993 to 1999 to project hypothetical OMAP rates per trip.

From the state’s point of view, the fact that more trips are being provided with the

brokerage is not necessarily a problem. Recall that the stated objectives of the waiver included ensuring adequate access to quality non-emergency transportation services, in addition to reducing inappropriate utilization. For example, in information provided to the Federal Medicaid agency in support of a waiver renewal, the state cited an increase in utilization per eligible person from 4.071 rides before the start of the waiver to a projected 6.661 during the renewal period (Center for Medicare and Medicaid Services, 2001).

On this basis, the economic benefit of the brokerage would be the difference between the cost to OMAP of paying the broker compared with the cost of providing the same number of rides as the brokerage using prebrokerage methods. With the use of Tri-Met’s operating data from 2000–2001 and prebrokerage data on the percentage of rides transported by each mode, these savings can be estimated as shown in Table 7.

This estimate makes a variety of important assumptions about hypothetical conditions without the brokerage, including

- The percentage of use of modes would be the same as experienced in the last prebrokerage year, 1993. For this calculation, the use of bus passes and tickets, which was not counted by OMAP, had to be estimated from expense data.

**Table 6**  
**Transportation Costs With and Without**  
**ODOT Waiver (Brokerage)**

	<i>Total Rides</i>	<i>Total Cost</i>	<i>Cost Per Ride</i>
<b>1999</b>			
Without brokerage	870,315	\$8,162,633	\$9.38
With brokerage	916,121	\$8,142,934	\$8.89
<b>2000</b>			
Without brokerage	894,648	\$8,644,912	\$9.66
With brokerage	941,735	\$8,612,638	\$9.15

Source: ODOT Audit & Review Services

**Table 7**  
**Cost Comparison of Brokerage and**  
**Prebrokerage Transportation, OMAP**

	<i>With Brokerage (Fiscal Year 2000-01)</i>			
	<i>Rides</i>	<i>Percent of Rides</i>	<i>Cost Per Ride</i>	<i>Cost</i>
Wheelchair car/van	64,845	5.4%	\$22.12	\$1,434,320
Taxi	345,182	28.9%	\$14.26	\$4,923,229
Stretcher Car	4,409	0.4%	\$181.68	\$801,006
Bus Passes	703,216	58.8%	\$0.81	\$572,793
Bus Tickets	76,602	6.4%	\$1.13	\$86,526
Volunteer Transport	55	0.0%	\$15.58	\$857
Secured Transport	1,500	0.1%	\$133.51	\$200,261
Administration*			\$1.57	\$1,871,476
<b>Totals</b>	<b>1,195,809</b>		<b>\$8.27</b>	<b>\$9,890,468</b>

\*Including provider credits

	<i>Without Brokerage (Hypothetical)</i>			
	<i>Rides</i>	<i>Percent of Rides</i>	<i>Cost Per Ride</i>	<i>Cost</i>
Wheelchair car/van	91,801	7.7%	\$22.12	\$2,030,555
Taxi	469,803	39.3%	\$14.26	\$6,700,660
Stretcher Car	752	0.1%	\$181.68	\$136,669
Bus Passes**	507,615	42.4%	\$0.81	\$413,470
Bus Tickets**	125,838	10.5%	\$1.13	\$142,141
Volunteer Transport	0	0		\$0
Secured Transport	0	0		\$0
Administration			\$1.57	\$1,871,476
	<b>1,195,809</b>		<b>\$9.45</b>	<b>\$11,294,971</b>
<b>Savings</b>			<b>\$1.17</b>	<b>\$1,404,503</b>

\*\*Estimated from prebrokerage expenses

- Cost per ride for each mode would be the same as paid by the broker. This ignores any cost savings the broker may have been able to achieve by negotiating with providers, as well as any increased cost that could have resulted from enforcing higher service quality standards.
- Administrative cost per ride would be the same as with the broker. Although OMAP did not count administrative costs in the prebroker period, those costs were incurred by other departments of DHS. An analysis by Crain & Associates for Tri-Met conducted in 1994 (Koffman, 1994) indicated that those costs were, if anything, higher than those which were later experienced by the broker.

According to the Federal Centers for Medicare and Medicaid Services fact sheet cited earlier, the most recent waiver renewal application submitted by the State of Oregon estimated savings of \$2,671,742 in 2001–02 and 2002–03.

### *Service Quality*

The ODOT Public Transit Section conducted a nonfinancial assessment of the program in 1998 (Palmateer, 1998). The assessment included interviews of case managers and service providers and reviewed a 1998 client satisfaction survey conducted by OMAP. The assessment found that “the project appears to be an unqualified success. The general level of satisfaction by case managers, service providers and clients is higher than in 1996, with only few specific issues primarily related to unique

problems, not systemic problems associated with either the brokerage design or implementation.”

The assessment quotes the following results from the survey of 1,322 clients:

- 88 percent gave the program ratings of good or higher;
- 85 percent reported on-time pickups always or most of the time;
- 88 percent reported on-time delivery always or most of the time; and
- 63 percent reported no problem with the program.

Other findings include

- Quality of service provided improved;
- Providers were satisfied with financial arrangements and the billing system;
- The most common complaint from case managers was lateness, particularly for return trips and particularly for dialysis centers. Tri-Met staff work hard to resolve these issues so that case managers felt the majority of needs were being met; and
- Providers felt that Tri-Met has been responsive in addressing concerns about customer no-shows.

Based on the success of the brokerage in the Tri-Met area, the state has implemented similar programs in two other parts of Oregon and is in the process of implementing a fourth.

## **OREGON'S MEDICAID-FUNDED SUPPORTIVE SERVICES**

While Medicaid transit pass programs bring additional funds to transit agencies, Oregon's Medicaid-funded supportive services have paid for some expenses that the transit agencies would otherwise have paid themselves, freeing up transit funds for other purposes.

### ***Overview***

The State of Oregon has obtained a Medicaid waiver that allows it to use Medicaid program funds to provide supportive services, including transportation, to help frail seniors and people with developmental disabilities to reside in community-based settings and to remain out of institutions. If these same people had to be institutionalized, their institutional care (which would be much more expensive than the costs of the supportive services) would be an eligible Medicaid expense. Under the waiver, supportive services can be paid for instead, which creates substantial savings for the Medicaid program.

Within the State DHS, there are two distinct programs that operate under this waiver:

- The Department of Senior and Disabled Services has 25 contracts with transportation providers throughout Oregon. The contractors, including public transportation agencies, bring eligible seniors to services such as adult day care and health programs. Such services assist seniors to remain living in their own homes.

- Oregon Development Disabilities Services contracts with four providers around the state (including some public transit operators) to provide transportation that allows people with developmental disabilities to remain in the least intrusive most appropriate setting. Rides are provided between the riders' homes and workshops and training centers. This program is known in Oregon as the DD 53 program, which refers to a state accounting code which is used for billing.

Oregon's current Medicaid match rate for program services is 60 percent Federal and 40 percent state. To operate under one of these programs, the local provider is required to provide the 40 percent state matching funds. The 60 percent Federal match, once received by the state, is passed through to the local provider.

### ***Benefits in a Local Application of the Waiver Program: Eugene, Oregon***

One example of a locality that operates services under both programs is the paratransit operator that works in conjunction with Lane Transit District (LTD) in Eugene, Oregon. The DD 53 program saves the LTD money by providing funds for riders whose rides would otherwise be paid for through the transit agency's ADA services. For the DD 53 program, the transit district's ADA contractor provided 16,173 rides in fiscal year 2000–01 at a total cost of \$280,000 or \$17.33 per ride. The local public transit agency pays for 40 percent of the cost and

receives 60 percent from the state. As a result, the net cost to the local public transit agency is only \$6.93 per ride. Because most of the individuals who use this service are ADA eligible and either used to ride the ADA paratransit service or would use ADA paratransit services if the DD 53 service were discontinued, LTD is paying \$112,100 for \$280,000 worth of trips.

Estimates of actual savings to the transit agency should be calculated on a with and without basis as shown in Table 8. To do this, it is necessary to take account of fare differences. Rides provided using Medicaid funds are free to the rider, whereas rides provided under the transit agency's ADA

paratransit program have a fare (\$2.00 cash or \$1.50 with a prepaid ticket). If riders now sponsored by the current no-fare DD 53 service had to pay the ADA fare, ridership for the DD program could be lower. As the following calculation shows, even if ridership were 25 percent lower, the local transit agency would still be paying 60 percent more per year (about \$68,000) in the absence of the DD 53 program.

From a larger perspective, it would be necessary to consider the overall cost of services, comparing the transportation and supportive services received by these individuals, compared with the cost of supporting them in an institutional setting.

**Table 8**  
**Benefit Estimates for LTD**  
**Medicaid Waiver Program**

	<i>With DD 53</i>	<i>Without DD 53</i>
Rides	16,173	12,130
Fully allocated cost	\$280,285	\$210,214
Fare revenue	\$0	\$30,324
State payments	\$168,171	\$0
<b><i>Net local cost</i></b>	<b><i>\$112,114</i></b>	<b><i>\$179,889</i></b>
<b><i>Savings</i></b>	<b><i>\$67,775</i></b>	

## COORDINATION WITH SCHOOL PROGRAMS

Although public transit agencies and school districts operate distinct and separate services in many communities, coordinating their services can be beneficial to all. Potential savings include savings from eliminating duplication in operating, capital, or administrative costs, as well as increased transportation through ridesharing and the use of savings to expand services to previously unserved areas or populations.

**People for People (PfP)** of Yakima, Washington, operated a successful school to work program in Mabton, Washington. When not transporting students to and from various industry sites, the vehicle was available to PfP to use for other trips, such as senior and Medicaid transportation. The school district benefited because the program did not cost it anything and saved the school district about \$15,210 per year. The **Mason County Transportation Authority** in rural Mason County, Washington, coordinates school district and public transit resources, saving the Mason Transit and the Mason County School Bus Transportation Co-op over \$20,000 per year in operating expenses, \$120,000 in vehicle purchase costs, and \$83,000 in fuel costs in 2001. The **Dodger Area Rapid Transit System** in Fort Dodge, Iowa, operates the small urban transit system in Fort Dodge, the regional transit service in the six counties, and a school bus service. Being able to spread staff costs over multiple contracts produces an efficiency equivalent to three-fourths of a full-time staff member, which is about \$20,000.

## PEOPLE FOR PEOPLE — YAKIMA, WASHINGTON

Although it is not currently in operation, for several years PfP operated a successful school to work program for a rural school district composed of one elementary and one high school in Mabton, Washington, southwest of Grandview. PfP expected the program to resume in 2002. PfP leased a nine-passenger van for \$2 a month from the district. In return, it transported high school students to and from various industry sites for job shadowing programs. The school district fueled and maintained the vehicle and gave a small amount of matching dollars. The vehicle was then available to PfP to use for other trips—such as senior and Medicaid transportation—while the students were at their job shadowing programs.

The school district also benefited, because the school to work transportation program did not cost the district anything and the district did not have to provide a driver for its bus. The school district estimates that driver wages and benefits total approximately \$18 per service hour. When operated as an exclusive program, the school to work program required the district to staff approximately 5 hours of service daily. The following is an estimate of the total annual cost savings to the district:

$$5 \text{ hrs} \times \$18 \text{ per hr} = \$90 \text{ per day} \times 169 \text{ school days} = \$15,210.$$

The vehicle sharing arrangements, like the volunteer-driver arrangements, will require special attention from the coordinating agency in order to monitor complaints and

maintain acceptable quality control. If the quality of service can be maintained, there are no serious flaws to this type of arrangement.

### **DODGE AREA RAPID TRANSIT SYSTEM – FORT DODGE, IOWA**

The State of Iowa has promoted coordinated transportation services for many years. Sixteen regional transit systems provide coordinated services throughout the state. Region 5 in north central Iowa includes six rural counties and the city of Fort Dodge. The **Dodger Area Rapid Transit System** in Fort Dodge provides service to the Mid Iowa Development Association (MIDAS), the council of governments, and the coordinated provider for the six-county region of 101,000 persons in an area of 3,455 square miles (29 persons per square mile). DART operates the small urban transit system in Fort Dodge, the regional transit service in the six counties, and a school bus service. The system provided about 306,000 rides with 42 vehicles (mostly small buses) and a budget of about \$1.0 million in fiscal year 2000–01, excluding school transportation, which is not reported to the state DOT.

School transportation is specifically exempted from the coordination requirements of the Iowa State Code, so the fact that the school system has chosen to contract with DART is a strong indication of the cost effectiveness of coordination in this region. School rides and transit rides are not combined on the same vehicles, so vehicle productivity gains (passengers per

hour) are not possible in this case through coordination. However, the administrator of DART believes that combining these services makes more efficient use of staff time. For example, the school bus service was added without any increase in staffing for vehicle maintenance, dispatching, or drug and alcohol testing. He estimates that being able to spread these staff costs over multiple contracts produces savings equal to three-fourths of one full-time staff member, which is about 10 percent of the total nondriving staff and is equivalent to an annual savings of about \$20,000.

### **MASON COUNTY TRANSPORTATION AUTHORITY — MASON COUNTY, WASHINGTON**

The **Mason County Transportation Authority (Mason Transit)** provides public transportation in Mason County, Washington — a geographic area of 700 square miles with a population of about 40,000. The county is quite rural and has only one city, Shelton, home to approximately 8,000 residents. Much of the remaining population is scattered to the north and east of Shelton and around the many bays that penetrate the county from the Puget Sound.

The transit authority was voted into existence in 1992 and began providing general public dial-a-ride service shortly thereafter. Mason Transit now provides fixed route, dial-a-ride, and commuter services. Ridership on the system grew from 60,000 trips during its first year to over 300,000 in 2001.

Mason Transit is a publicly funded transit authority with 30 vehicles and a \$1.2 million annual operating budget. It contracts out all of its services to a private provider. Mason Transit receives both Federal and state operating funds but is funded in large part by a local sales tax. Mason County is one of only a few rural counties in Washington to have passed a replacement sales tax after a 2000 ballot initiative drastically cut statewide transit funding. (Initiative-695 eliminated motor vehicle excise taxes, which previously generated 40 percent of the operating revenue for transit agencies throughout Washington.) In 2000, Mason Transit began receiving annual funding from Washington's Agency Council on Coordinated Transportation (ACCT) to act as lead agency on coordination in Mason County.

### ***History of Coordination in Mason County***

Since its inception, Mason Transit has been coordinating with social service providers in the county. Even before the Washington ACCT was formed, Mason County had its own Coordinated Transportation Coalition. The Coalition is still very active and currently has 66 members, including approximately 15 that provide transportation services. The transit authority subcontracts trips to social service providers, including a large disabled transportation service called Exceptional Foresters, Inc. (EFI). Mason County is home to one of the largest disabled populations in the state of Washington, due

in part to a large sheltered workshop located in Shelton. EFI is the primary transportation provider for disabled citizens attending the workshop. Mason Transit contracts with EFI to provide general public demand-response trips on a space available basis. Mason Transit dispatchers can track EFI vehicles and contact their drivers when an EFI vehicle is in the range of a desired general public pickup.

Over 1,200 Mason County residents work at the Puget Sound Naval Shipyard located in Kitsap County, which borders northeast Mason County. About 35 percent of the service deployed by Mason Transit goes to meeting the commuting needs of these and other residents working in neighboring counties.

Mason Transit has a cooperative agreement with the Puget Sound Naval Shipyard to operate a worker/driver program. This is a cost effective solution for providing Mason County residents transportation to shipyard jobs in Bremerton. The program trains shipyard workers to drive transit vehicles, and the vehicles are then loaned to employees to operate. The Navy pays Mason Transit \$100 for each participating employee per month for the loan of two 35-foot transit coaches. During the year 2001, Mason Transit received \$75,000 from the Navy to provide services that cost the system \$28,800 per year, for a total benefit of \$46,200.

Were Mason Transit to provide the service itself, the annual operating cost for this service would be \$45,720. This cooperative agreement with Puget Sound Naval Shipyard administration and workers allows

Mason Transit to operate what might otherwise be a revenue neutral program at a profit. The program requires minimal staff time; its revenues help to support other poorly funded services.

### ***Coordination with School Districts***

One of the more exciting outcomes of Mason Transit's long-standing commitment to utilizing community resources is a program developed to coordinate school district and public transit resources. Mason Transit received a 1997 demonstration grant of \$69,410 from the ACCT for a 1-year demonstration project. The four primary objectives of the project were to

1. Build a transportation coalition with local agencies to establish community consensus relative to rational expectations and achievable goals;
2. Identify transportation deficiencies;
3. Develop coordination and collaboration addressing identified deficiencies in the transportation system; and
4. Increase transportation opportunities.

Even before the Mason Transit received the ACCT grant, community activist groups had been meeting to discuss methods for providing afternoon transportation for students in the Shelton School District. Citizen groups had approached the transit authority about providing this service, but the authority's resources and vehicles were already spread thin, due to significant demand for evening commuter service. In fact, Mason Transit was already cutting service to rural areas in order to provide

additional vehicles for the evening commute. With the impetus of the ACCT grant and several vocal community activists, Mason Transit and the Shelton School District developed a coordination plan to address these two major gaps in service: (1) insufficient service to rural areas of the county and (2) no transportation home for students attending after-school activities. The shared service on the school buses allows Mason Transit to provide service to previously unserved areas.

In the spring of 2000, Mason Transit contracted with the Shelton School and North Mason School Districts to use late afternoon school bus service (around 5:00 p.m.) to provide public transportation in rural areas of the county. This demonstration program combined the transportation of middle and high school students needing a ride home from after school programs with general public passengers.

Mason Transit agreed to pay the Shelton School District \$19.86 per hour and an additional \$0.85 per mile to provide service on three rural routes using the district's yellow bus vehicles. The school district also contributed funds to pay for students traveling to and from after-school activities. The resulting per hour cost to provide this service is slightly less than the per-hour rate Mason Transit pays its contractor to operate its own coaches. Two of the initial routes were deviated fixed routes and a third operated as a zone route. The zone route allowed Mason Transit to remove a demand-response vehicle it regularly deployed to serve the zone area and utilize

the vehicle elsewhere. Coordination with the Shelton School District also eliminated the need for Mason Transit to purchase new vehicles.

Mason Transit is also exploring the coordinated use of school buses that transport special needs students out of the county. These buses currently deadhead empty from Thurston County in the morning and back in the afternoon. Mason Transit has proposed using the school bus vehicles to transport general public passengers between counties, rather than simply deadheading back to the garage or to the pick-up site. The school districts and transit providers in neighboring Thurston County have expressed significant interest in coordinating these services.

Although the school/transit bus demonstration program ended in June 2001, Mason Transit was able to continue funding for two of the three routes serving the Shelton School District. North Mason District is very interested in reinstating the third route, and Mason Transit expects that funding will be available to revive service on that route later this year. The county's third school district, Pioneer, is also very interested in the program.

Mason Transit also runs a worker/driver program for employees of the Puget Sound Naval Shipyard. The program trains workers at the site to drive transit vehicles, and the vehicles are then loaned to employees to operate and to transport other Shipyard employees. The Navy pays approximately \$100 per employee per month for the service. In turn, Mason Transit loans two 35-foot coaches to

employees of the Naval Shipyard. Loads on both vehicles are consistently high, and there is often only standing room available.

### ***Economic Benefits of Transit/School Coordination in Mason County***

As is the case in many rural areas where transportation funding is limited, Mason Transit has found that transportation coordination programs generate significant benefits. The school district coordination program has shown quantifiable economic benefits for Mason Transit in terms of (1) operational cost savings, (2) capital cost savings, and (3) fuel cost reductions.

**Operational Cost Savings.** The school/transit bus coordination project in Mason County has economic benefits to both the transit district and the school district's transportation co-op. Mason Transit reimburses the school district \$0.85 per mile and \$19.86 per hour for driver salaries. The school district transportation director estimates that each of the two 1.5-hour daily routes cost \$29.79 for driver pay and \$25.50 for mileage, a total of \$55.29 per route per day.

The school year in Mason County is 169 days. Therefore, operating the service on every school day (a total of 507 revenue hours) costs

$$\begin{aligned} \$55.29 \times 2 \text{ routes} &= \$110.58 \text{ per day} \times 169 \\ \text{days} &= \$18,688 \text{ annually.} \end{aligned}$$

Comparatively, Mason Transit contracts for paratransit services at a cost of \$44.33 per revenue hour. Were Mason Transit to provide this service using paratransit

services, the estimated annual costs would be

$$3 \text{ rev. hrs/day} \times 169 \text{ days} = 507 \text{ rev. hrs} \times \\ \$44.33 \text{ per hour} = \$22,475 \text{ annually.}$$

Although this total annual operating costs savings of \$3,789 is not large, the subsidy of the school service can be assumed to provide an economic benefit by replacing traditionally duplicative service.

Future expansion of the program, now being studied, could significantly increase the economic benefits generated annually by the coordination program.

**Capital Cost Savings.** Mason Transit's fixed route fleet is composed primarily of 35-foot Gillig buses. These vehicles cost approximately \$300,000 in 2002 dollars. The school/transit bus coordination program allows Mason Transit to provide service at a time when its fleet resources are fully utilized serving the regional commuter demand. In other words, the program allows Mason Transit to provide service that would otherwise require the addition of two passenger service vehicles to its fleet. Assuming these vehicles would be full sized coaches that Mason Transit would buy from Gillig, the school/transit bus coordination project has eliminated the need for over \$600,000 in vehicle purchase costs. Because Mason Transit is eligible for FTA Section 5309 capital grants, which typically fund 80 percent of vehicle purchase requests, the actual capital cost savings to the Mason Transit authority may be closer to its 20 percent local share or \$120,000. Assuming that the service life of

such vehicles is 10 years, the annual capital cost savings to Mason Transit is \$12,000.

If the program expands into additional areas and Mason Transit is able to provide new general public service with no expansion to its fleet, capital costs savings from the program will continue to grow.

**Shared Fuel Purchasing.** The school/transit bus coordination project has allowed Mason Transit to purchase diesel and unleaded fuels through the school district's co-op program. Since they began participating in the fuel co-op program, Mason Transit has been the largest annual consumer of diesel fuel. Instead of paying retail prices at the pump, as they did previously, Mason Transit now pays the district's fuel cost plus an 8 percent administrative fee for fuel purchased from the district. Mason Transit paid \$91,000 for diesel fuel and \$320 for unleaded fuel in 2001. During that year, Mason Transit purchased approximately 110,000 gallons of fuel at an average of \$0.80 per gallon. In addition, Mason Transit is eligible to receive an exemption from the Washington state gasoline tax of \$0.23 per gallon. Therefore, Mason Transit's average annual cost per gallon was just \$0.57 during 2001.

According to the Energy Information Administration Retail Diesel Fuel Price Index, the average retail cost per gallon for diesel fuel in the Northwest was \$1.33 for the year 2001 (Energy Information Administration, 2002). This means that Mason Transit may have saved as much as \$0.76 per gallon of diesel fuel purchased during this year, amounting to an annual cost savings of about \$83,600. (It should be

noted that actual diesel prices in Mason County might have varied slightly from the regional averages used in this calculation.)

**Overall Benefits to Mason Transit.** The overall economic benefits to Mason Transit total nearly \$100,000 per year from the following sources:

- Operating cost savings: \$3,789;
- Capital cost savings: \$12,000; and
- Fuel cost savings: \$83,600.

**Benefits to the School District.** Without the coordination program, the school district would be required to duplicate the service provided by Mason Transit. To do this, Mason School District would need to expend an additional \$18,688 annually.

This is a significant benefit to this poorly funded school district transportation program.

**Other Key Benefits.** The following is a summary of other noneconomic benefits of coordination with school districts in Mason County, focusing primarily on the school/transit bus program:

- Provides rides for school children attending after school programs and allows many children who were previously unable to attend after-school activities.
- Fills gaps in Mason Transit's rural service during the afternoon commute when commuter services utilize all available vehicles.
- Creates a much larger pool of certified transit drivers in the area. School bus

drivers operating the shared routes are required to participate in Mason Transit's driver training program. This is an important benefit as it can be difficult to find certified drivers in a rural area like Mason County.

- Generated community interest in the transit system and acted as an educational process. After some initial confusion about the school/transit bus program, its success has become a point of pride for citizens of Shelton and all of Mason County.

## **CHALLENGES AND HIDDEN COSTS OF COORDINATION EFFORTS**

Mason Transit and the participating school districts have faced a number of challenges over the course of the school/transit bus coordination project. Despite some significant cost savings (discussed above), Mason Transit has also incurred some capital and administrative costs in running the school/transit bus program. The following list outlines a number of obstacles, challenges, and costs faced by Mason Transit in coordinating general public transportation services with the local school district and other regional providers.

- **School buses do not have programmable headsigns and all carry school logos.** Magnetic signs announcing Mason Transit were placed over the school district signs when the bus was being used for public transportation. The initial set of signs purchased by Mason Transit blew off because they did not fit between the rivets on the bus. Mason Transit spent quite a bit of money replacing the lost signs.

- **Safety and stop lighting are different on school buses than on public transit vehicles.** The transit authority agreed not to use the school bus' safety equipment to stop on rural roads. Rather, buses are required to move off the road for pickups and drop-offs.
- **Fare collection on school buses is problematic.** Mason Transit is a fare free system. Over the last year the transit agency's board has been looking into implementing fares for fixed route and demand-responsive trips. Were it to implement a per-trip fare, this could cause significant problems on the shared vehicle routes as the school district is not interested in installing fareboxes or asking drivers to collect fares.
- **Communication systems are not compatible.** Communications are an issue that is yet to be resolved. Mason Transit is not able to communicate with drivers on school bus vehicles due to configurations of the different radio systems. Mason Transit is currently working with the school district to resolve this issue. The solution will most likely require Mason Transit and/or the district to purchase new radio equipment.
- **Administrative costs have increased.** Administrative demands of the school/transit bus program have required Mason Transit to hire additional administrative staff. Initially demands came from stakeholder and policy group meetings; now with the program's nationally recognized success, the dissemination of information has become very demanding on staff time.
- **School buses are not lift equipped.** Because the larger vehicles on the school/transit routes are not lift equipped, the district has a smaller lift equipped school bus on stand-by to pick up any wheelchair passengers. This requires that the district pay a standby driver during the time these routes are in service.
- **Concerns have surfaced about the safety of school children riding with the general public.** Mason Transit and the Shelton School District had to overcome the Washington State Superintendent of Public Instruction's edict that no members of the general public share a school vehicle with school age children. A legal review by the state showed that there was no Washington law that clearly prohibited such sharing of vehicles.
- **The public is confused about the identity of buses.** There was a lot of confusion and curiosity when the school buses with magnetic Mason Transit logos first rolled out. In fact, Mason Transit's director claims that this was probably their best advertising as people were calling in constantly to see what was going on. The success of the program has now become a real source of pride in this relatively poor rural area.
- **There is a low level of financial contribution by the school districts.** Mason Transit currently pays the majority of the costs for the school/transit services even though a greater percentage of the ridership is school children. The school districts realize that they will have to find a way to pay a higher percentage of the cost to make the service more sustainable.
- **Stable funding to keep the program running and to expand is lacking.** Mason Transit faces the challenge of keeping a very popular program running with limited financial support. In the face of pressure by the public and school districts to expand the

program, Mason Transit is being forced to make difficult decisions about how much service its budget can support. For example, Pioneer School District wants to join the program, in part to provide additional revenue to pay drivers who are currently being paid for hours they are not actually driving, but does not have funding to contribute to additional service.

## CONCLUSION

When transit agencies coordinate with human service agencies to provide trips to human service agency clients, the transit agencies can realize significant additional funds. At the same time, human service

agencies typically receive substantial trip cost savings. Florida's Miami-Dade Transit and Tri-Met in Portland, Oregon, achieved very large funding increases by providing trips to Medicaid clients. The Medicaid program seems to present larger funding opportunities than does coordination with most other human service programs. Coordination of public transit services with pupil transportation services has also been beneficial in a number of communities. The applicability of various strategies to a particular community will depend on local conditions. Coordination strategies that increase transit funding and save money for human service agencies should be worth pursuing in many communities.

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# Chapter 5

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## REDUCING TRANSPORTATION SERVICE COSTS

There are many ways in which coordinating human service transportation and public transit services can save costs. Transit authorities can contract with human service agencies or others to provide ADA paratransit and demand-responsive transit service. These other agencies may have more freedom to combine trips or to use volunteers (see Chapter 7 for a discussion of using volunteers as a means of expanding transit services to previously unserved areas); sometimes they provide service at substantially lower costs. The primary benefits to the transit agency are reduced costs. The primary benefits to the other transportation providers are increased revenues. This strategy may require increased quality control and monitoring by the transit agency. Detailed strategies include using brokers to coordinate

services, using taxis for ADA trips, and contracting with volunteer organizations.

Another significant way of reducing costs is coordinating fixed route and ADA paratransit services to encourage more travelers to use the fixed route services. In some communities, persons eligible to receive ADA paratransit can ride fixed route services free. The shift from demand-responsive paratransit to fixed route transit service (both usually paid for by public transit operators) can save transit agencies millions of dollars per year. Providing travel training so that potential paratransit riders can use fixed route services is another significant way of shifting riders from a more expensive to a less expensive travel mode.

Human service agencies at the local, regional, or state level can coordinate or consolidate their separate transportation services to create larger transportation services, can qualify for general public transit funding, and can offer real travel options throughout the entire community. Typical benefits to human service agencies include reduced unit costs; improved quality of service; and increased efficiency, effectiveness, and cost effectiveness.

## **NONTRANSIT AGENCIES PROVIDE ADA AND OTHER PARATRANSIT SERVICES**

**ACCESS Transportation Systems, Inc.** brokers countywide paratransit services in Allegheny County, Pennsylvania (including the city of Pittsburgh), for the public, but riders are primarily seniors and persons with disabilities. Providers are chosen through a competitive bidding process. The ACCESS coordinated brokerage provided an estimated cost saving of \$26 million in 2001 and has also made great improvements in service quality in Allegheny County. The **Specialized Transit for Arlington Residents (STAR)** program in Arlington, Virginia, uses taxi services to provide a less costly demand-responsive service alternative to paratransit service. STAR operates as a brokerage and provides annual benefits of at least \$450,000 for its 60,000 annual trips. **Tri-Met**, in Portland, Oregon, contracts **Ride Connection, Inc.** to provide ADA paratransit and demand-responsive transportation service with volunteers as a

supplement to Tri-Met's own ADA paratransit program. At the current cost per trip on Tri-Met's ADA paratransit system, it would cost Tri-Met about \$2,885,000 to take over all of the transportation now provided under the Ride Connection umbrella, about \$2 million more than the amount now paid to Ride Connection.

**Dakota Area Resources and Transportation for Seniors (DARTS)** in Dakota County, Minnesota, combines ADA trips with those provided for seniors and eliminates the need for Metro Mobility to extend its service to Dakota County. Direct cost savings are estimated at approximately \$230,000 a year; indirect cost savings are about \$150,000 more.

## **ACCESS — PITTSBURGH, PENNSYLVANIA**

### *Overview*

Pittsburgh's ACCESS program is one of the longest-running public paratransit programs in the country. Started in 1979, ACCESS Transportation Systems, Inc. (a contractor to the Port Authority of Allegheny County, the local transit authority) arranges paratransit transportation in Allegheny County, Pennsylvania (which includes the city of Pittsburgh). ACCESS is open to the general public, but it primarily serves persons with disabilities, clients of human service agencies, and older persons. Trips are provided through contracts with eight for-profit and nonprofit authorized carriers chosen through competitive bidding. For FY 2001, ACCESS had 121 local sponsors; nearly all of the human service agencies and organizations that fund or provide

transportation in the Pittsburgh area now voluntarily contract with ACCESS for trips for their clients.

Public transportation, state-funded transportation, human services paratransit, and paratransit for persons with disabilities come together under ACCESS. Pennsylvania's DOT (PennDOT) requires coordinated shared-ride operations and designated ACCESS the shared-ride provider in Allegheny County. The Port Authority of Allegheny County sponsors ACCESS, which is operated through a contract with ACCESS Transportation Systems, Inc. The Port Authority designated ACCESS as the ADA complementary paratransit service. In addition, ACCESS provides its third-party human service agency sponsors (such as the Area Agency on Aging and the Medicaid program) with a wide variety of services, including eligibility screening, trip monitoring, and invoicing.

For FY 2001, total expenditures in the ACCESS program were \$29.5 million. More than 43 percent of the funding was from the Pennsylvania State Lottery Fund, and another 37 percent was from the Port Authority. Contracts with human service agencies provided 12 percent of the funding, and the remaining 7 percent came from fares. The minimum fare is \$12.00; the average fare is \$17.12, but the average out-of-pocket fare is \$2.15.

In FY 2001, 6 for-profit transportation companies and 2 nonprofit human service agencies, operating from 13 distinct facilities, provided ACCESS-administered services. These carriers are responsible to

ACCESS for providing service in designated service areas and for meeting service standards set forth in their contracts. ACCESS compensates these providers for their services. Service assignments are not exclusive; in many of the more densely populated areas, consumers have a choice of service provider. Most service is purchased by ACCESS on an hourly basis. About 475 vehicles are now actively used in hourly service, including a combination of lift-equipped vans, specially equipped ambulatory passenger vans, wheelchair accessible minivans, and sedans. Services are generally available between 6:00 a.m. and midnight, 6 days a week. Three carriers provide services 24 hours a day. Some trips can be requested with as little as 2 hours' notice, although 24-hour notice is still required for agency-sponsored trips.

ACCESS provided 2.059 million trips per year (about 7,500 trips per day) in a service area of 775 square miles in FY 2001. Statistics for that fiscal year include a vehicle productivity of about 2.35 passengers per hour, on-time performance of 94 percent, and a complaint rate of 50 per 100,000 trips, which are all high-performance measures in comparison with systems of similar size, according to ACCESS staff.

### ***Benefits***

ACCESS has reduced per trip costs over the years. This has been done through the active competition between service providers and the flexibility operators have in the types of vehicles, computer systems, and other components of operations used by

ACCESS. In 1980, ACCESS trips cost \$12.58. In FY 2001, an ACCESS trip cost \$14.34, or \$6.67 in 1980 dollars. Applying standard inflation rates, the \$12.58 1980 trip would have been expected to cost \$27.04 in 2001. In fact, this is approximately what ADA paratransit trips cost in many cities in 2001. At that inflated rate, ACCESS's 2,058,578 trips in 2001 would have cost \$55,663,949 instead of the \$29,527,883 actual cost. The difference is a savings of \$26,136,066 for the FY 2001. (Note that the number of trips provided by ACCESS in 2001 would, most likely, have been lower than the actual number of 2,058,578 trips had the trips actually cost \$27.04 instead of \$12.58; fewer trips would have made the total 2001 benefit lower than \$26 million.)

ACCESS has also contained administrative costs, which were 6.14 percent of the total costs for FY 2001. According to National Transit Database statistics, the national average for administrative costs incurred by public transit operators is 17 percent of total costs.

ACCESS staff report that a key to ACCESS's success in its brokerage efforts is its use of system performance and cost data in developing the annual contracts. ACCESS monitors on-time performance, vehicle condition, target revenue passengers per billable hour, complaints, and responsiveness for each individual provider. These data are developed into system performance and cost measures for each provider, and that information is then used to allocate trips. ACCESS will shift trips to less expensive providers away from expensive or lower quality systems. This

has had a twofold success: local providers have improved their service across the board in an effort to keep market share, and agencies have confidence that ACCESS is making the best use of their transportation funds. The system's success is illustrated by the fact that 110 of the 116 human service agencies in Allegheny County use the ACCESS system.

ACCESS has made substantial improvements to local transportation services since it started. Service hours have greatly expanded. (Prior to ACCESS, paratransit services were available only during regular agency working hours, Monday through Friday.) Performance and complaint monitoring have improved service quality (on-time performance and directness of the trip). Service has been extended to all parts of Allegheny County. More lift-equipped vehicles are now available. ACCESS now has one of the lowest complaint rates (0.5 per 1,000 trips) among the 15 largest paratransit systems in the country and an on-time performance rate of 94 percent (ACCESS, 2001). Over the years, increases in transportation costs to human service agencies have been controlled through ACCESS's competitive bidding procedures.

### **DAKOTA AREA RESOURCES AND TRANSPORTATION FOR SENIORS – DAKOTA COUNTY, MINNESOTA**

The Dakota Area Resources and Transportation for Seniors (DARTS) is a volunteer-based, nonprofit organization that provides senior and transportation services in Dakota County, Minnesota. Located in

the southern Minneapolis/St. Paul metropolitan area, Dakota County has an area of approximately 570 square miles and a population of over 350,000 people. Most of the population in the county is located in the northern suburban cities of Burnsville, Eagan, Inner Grove Heights, Mendota Heights, Apple Valley, Lakeville, West St. Paul, South St. Paul, and Rosemount. Although the communities in the north part of the county continue to grow and add new jobs, the southern part of the county remains mostly rural with several small towns scattered throughout.

### ***History of DARTS***

When DARTS first started in the early 1970s, it primarily provided supportive services for seniors. By the end of the 1970s and into the 1980s, DARTS began to branch out by providing transportation to day training services for the developmentally disabled. By the mid-1980s and into the 1990s, DARTS was getting more involved in transportation. When the ADA was enacted in 1990, DARTS was seen as the natural choice to begin providing the required ADA paratransit service in Dakota County. The ADA service, which now makes up a large portion of the agency's transportation services, complements the fixed route services of the regional transit system, Metro Transit, and the Minnesota Valley Transit Authority (MVTA) fixed route service. It is provided only in northern Dakota County. Senior transportation services are provided throughout the county.

### ***Vehicles, Service Provided, and Maintenance***

The agency has approximately 35 vehicles that are stored and maintained at the DARTS Transportation Center in West St. Paul. To minimize deadhead in such a large county, DARTS also coordinates with the cities of Burnsville, Eagan, Farmington, and Lakeville to store some of their vehicles off site. In exchange for local use of these vehicles, the cities offer DARTS free fueling privileges and reserve parking spaces for the vehicles. The DARTS Transportation Center also has space available for training courses and on-site dispatch and administration. Also located at this facility is its maintenance facility and garage.

### ***Funding and Budget***

As the ADA provider for Dakota County, DARTS currently receives the large majority of its transportation funds from the Metropolitan Council, the regional planning agency that serves the seven-county Twin Cities area. When the agency first started out, most of the funding for the agency came from Title III of the Older American's Act. These funds support the senior services that continue to be a significant component of DARTS' activities. To supplement the state and Federal funding sources, DARTS covers about 10 percent of its operating expenses with fares and receives about 18 percent of its funding from various contracts with Dakota County.

## ***Coordination Efforts***

In addition to providing both senior and ADA paratransit in the county, DARTS is involved in a number of collaborative partnerships in the county. The following is a brief summary of the important coordinated transportation efforts DARTS currently has in place:

- **Metro Mobility** (the paratransit service for the Twin Cities) – DARTS provides the ADA paratransit services in Dakota County.
- **United Way of Minneapolis** – DARTS offers scheduling and dispatch services to United Way funded agencies.
- **Access to Work Initiative** – DARTS contracts with Dakota County to provide FTA Job Access van service and previously led the McKnight Access to Jobs initiative to get Welfare-to-Work clients to work.
- **Exurban Transit Services** – DARTS partners with the cities of Lakeville and Farmington to provide localized services.
- **Flex-route services** – DARTS is the contracting agency that provides a flexible fixed route service to the Dakota County Technical College.

In addition to the community partnerships, DARTS provides the following professional services and logistical support

services to other transit providers in the county:

- **Vehicle Maintenance** – DARTS' maintenance garage has provided services to some 30 different agencies, including nonprofits and one school district. DARTS also was contracted to prepare 65 paratransit vehicles for Metro Mobility (the ADA paratransit provider in Minneapolis and St. Paul).
- **Driver Training** – DARTS offers training in a wide variety of transit driver issues, ranging from first aid to passenger assistance. Fees are charged for the classes with a reduced rate for nonprofit agencies.
- **Transportation Staff Development** – DARTS offers professional training in customer service for transit professionals.
- **Transit Planning** – DARTS transportation managers and administrators also offer help in operating procedures, operating service standards, and customer service practices and standards.

## ***Economic Benefits of Coordination***

According to DARTS staff, the nonprofit community views DARTS as a reliable resource for many of its senior and transportation needs. DARTS' Vice President provided several examples where DARTS' coordination efforts have reduced total transportation costs in the county and improved resources for those who provide transportation.

- The largest cost-saving program offered by DARTS is its arrangement

with Metro Mobility to provide the ADA paratransit service in the county. By combining ADA trips together with those provided for seniors, DARTS eliminates the need for Metro Mobility to extend its service to Dakota County. DARTS' current cost per trip (for both senior and ADA trips) is approximately \$17.00, including recovered fares. In contrast, Metro Mobility's average cost per ADA trip, including fares, is \$20.50. In 2001, DARTS provided about 65,000 ADA-only trips and another 30,000 trips to seniors who are ADA eligible. If Metro Mobility were to provide the ADA service in Dakota County, this would theoretically increase its costs by approximately \$195,000 a year. Because this is more inefficient for both agencies, these costs would probably be even higher as the average cost per passenger increased. The current arrangement is also good for seniors. DARTS primarily provides senior transportation services Monday–Friday from 8:00 a.m. – 4:30 p.m., while the ADA service is available from 5:00 a.m. – 11:00 p.m., 7 days a week. Although ADA passengers are given priority, seniors are allowed to utilize the service during this time if space is available. DARTS staff estimate that approximately 5 percent of the seniors use DARTS do so, taking trips that would otherwise cost about \$35,000 annually to provide.

- In 2000, DARTS began working with the Volunteers of America (VOA) Transit Collaborative in Minneapolis. The goal of the collaborative is to improve access to services for all agency customers. Based on a recommendation by DARTS, the collaborative pooled its resources and centralized dispatch and schedule functions at the DARTS facility. DARTS has been in charge of implementing this collaborative effort

and ensuring that it runs smoothly. DARTS staff estimate that this arrangement has saved the VOA and DARTS from \$10,000–\$20,000 in administrative costs.

- DARTS and the city of Farmington were jointly granted a Federal 5310 grant to purchase a new vehicle for use by the Farmington Senior Center. In exchange for exclusive use of the vehicle 1 day a week, the city allows DARTS drivers fueling privileges and a parking space. When the vehicle is not being used in the Farmington area, DARTS uses it for other purposes in the county. This agreement has not only enabled the city of Farmington to provide more localized service but also made more efficient use out the vehicle and saved Farmington an estimated \$60,000 to purchase a new vehicle.
- DARTS provides vehicle maintenance services for as many as 127 vehicles from 30 different agencies. Providing these services has resulted in an estimated income of \$75,000 for DARTS. It is estimated that the agencies that use DARTS' maintenance facilities save an equal amount by not having to hire their own maintenance staff.
- DARTS offers training classes geared toward professional transit drivers. Classes are published in a brochure and range from passenger assistance to first aid. Costs are \$25.00 per class if held onsite. Off-site training is also offered. In 2001, DARTS trained more than 30 drivers from 8 different United Way agencies.
- To assist small transit providers with scheduling and dispatching, DARTS developed the EZ-Trip Scheduling software package. The software is designed for the small paratransit provider (between 1 and 10 vehicles)

and helps automate routine functions, maintains a database of current users, and tracks compliments and complaints. DARTS charges around \$1,000–\$2,000 for the software package.

Total annual benefits from DARTS' coordinated transportation services are estimated as \$380,000, as shown in Table 9.

### ***Challenges and Drawbacks for the Agency***

Although many nonprofits agencies have seen the benefits of DARTS' coordination efforts, some smaller nonprofit agencies fear that DARTS may eventually take them over. Despite repeated attempts to coordinate with these smaller agencies, at least two nonprofits have been hesitant in fear of losing control of very localized, homegrown services.

Another challenge awaits DARTS in 2003. Previously, the Metropolitan Council allowed DARTS to estimate the number of ADA riders as a basis for its funding. For the next funding cycle, however, DARTS will have to certify all ADA riders and funding will be based only on those that are certified.

### ***Potential for More Consolidation Efforts***

DARTS is looking into providing transportation services for Medicaid patients in Dakota County. However, they are somewhat reluctant to start providing

this service because the billing process for Medicaid is very onerous and the health care providers typically require as-needed, spur-of-the-moment service – not something DARTS can guarantee at this time.

## **RIDE CONNECTION — PORTLAND, OREGON**

Ride Connection is a not-for-profit corporation that coordinates transportation provided by 30 community-based organizations in the three-county Portland Metropolitan Area, including Clackamas, Multnomah, and Washington Counties.

Ride Connection was formed in 1988 (originally under the name Volunteer Transportation, Inc.), following a collaborative process involving a citizen committee and Tri-Met, the principal public transit operator in the region. The process recognized that the elderly and people with disabilities had transportation needs that were not served by existing programs and determined that a volunteer program could meet those needs.

Transportation is provided through a network of over 30 partner agencies. These include religious and ethnic organizations, medical and senior centers, youth clubs, public agencies, and general social service organizations such as the American Red Cross. Ride Connection has gone beyond its original mandate of serving the elderly and people with disabilities and is now also involved in Job Access programs.

**Table 9**

**Estimated Annual Benefits of DARTS' Coordinated Operations**

<i>Benefit Type</i>	<i>Estimated Annual Value</i>
Provide ADA paratransit trips for Metro Mobility	\$195,000
Provide trips for seniors	\$35,000
Centralized dispatching functions	\$15,000
Joint use of city of Farmington vehicle	\$60,000
Maintenance income to DARTS from 30 different agencies	\$75,000
Driver training for 30 drivers of 8 United Way agencies	(not included)
Software provided to small paratransit providers	(not included)
<b>Total annual benefit estimate</b>	<b>\$380,000</b>

Ride Connection is also responsible for coordinating all applications for community transportation funding in the three-county area. As in other parts of Oregon, a unified process has been established for applications for Federal Section 5310 funding; the state Special Transportation Fund (cigarette tax); and the recently created Oregon Transit Network funding, which supplemented other sources with state general fund revenues. Ride Connection has been able to supplement these public sources with private donations and grants from foundations. From the beginning, volunteer time has been a major resource in the programs under the Ride Connection umbrella. In the most recent fiscal year, the combined efforts of Ride Connection, its partner agencies, and over 370 volunteers provided 236,000 rides, a 13 percent increase over the prior year. The trips totaled 957,374 miles of service.

Ride Connection provides capital and operating funds to some of its member organizations and loans out vehicles to others that have their own source of operating funds. Most drivers are volunteers, who are required to take training courses offered by Ride Connection. Its elderly and disabled passengers need not be ADA-eligible and can request any type of trip. In one county, Ride Connection also brokers trips for the general public on the same vehicles as its elderly and disabled riders. Ride Connection pursues cost savings through vehicle sharing, insurance pooling, and operational efficiency.

***Benefits***

Benefits of Ride Connection work were explored using interviews with the

agency's staff, interviews with staff of Tri-Met, and analysis of operating data. In addition, an assessment of the program from the perspective of Tri-Met was reviewed. The assessment was prepared by Crain & Associates in 1994 at a time when Tri-Met needed to determine whether to make changes to its contract with the agency, which was then known as Volunteer Transportation, Inc. (VTI). That assessment included a survey of riders who received service from VTI's partner agencies, interviews with staff of three of the largest partner agencies, and interviews with 11 board and staff members of Tri-Met and VTI. Based on more recent discussions with Tri-Met staff, they continue to see similar benefits from working with Ride Connection today. Benefits that have been documented include

- **Reduced management cost.** Ride Connection's work in coordinating funding applications reduces Tri-Met's administrative and management costs. Under state law, Tri-Met is responsible for coordinating community transportation funding in the three-county region within which it operates. Without Ride Connection, Tri-Met would have to coordinate this application process and would need to conduct post-award contract management as well.
- **Added resources.** As a nonprofit agency, Ride Connection is able to tap into resources that would not be available to Tri-Met or other public agencies in the region. These resources include foundation grants and donations from individuals and corporations.

- **Volunteer rides in place of publicly provided rides.** Ride Connection and its partner agencies are able to mobilize volunteers to provide rides; otherwise, many of these rides would need to be provided by Tri-Met or other organizations using paid drivers. Based on the rider survey, 67 percent of riders on Ride Connection services would probably be eligible for ADA paratransit. At the time of the rider survey, only 10 percent of riders indicated they would have used Tri-Met's LIFT service if the volunteer ride had not been available. However, in the 8 years since the survey was conducted, the LIFT program has grown from 462,000 rides per year to 782,000 rides per year.
- **Personalized service.** Riders are receiving a level of service that would probably not be available otherwise. Volunteers are able to provide personalized service that is difficult to provide in a publicly operated, shared-ride paratransit system. In the rider survey, many riders indicated they preferred volunteer rides over the Tri-Met LIFT service for a variety of reasons:
  - Like to travel with a volunteer driver (54 percent);
  - Driver waits for me while I'm doing my business (33 percent); and
  - Need special help getting between my home and the vehicle (21 percent).

This level of personalized service probably enables some people to make trips that could not be made using LIFT.

- **Preservation of human service transportation.** Ride Connection has

helped to maintain a viable social service transportation network. This network allows agencies to provide services that meet their own needs and potentially reduces the pressure for Tri-Met to take on more service. Service is also provided to portions of the three-county area beyond the Tri-Met district. About 17 percent of Ride Connection trips are provided beyond the Tri-Met district boundaries.

### ***Economic Benefits***

Of the benefits described, the one that is most amenable to quantitative estimate is the potential reduction in operating cost for the Tri-Met LIFT program. This benefit calculation assumes that LIFT would take over the transportation now provided under the Ride Connection umbrella using volunteers. (Ride Connection’s primary source of funding is the contract with Tri-Met.)

For purposes of this research, Ride Connection separated its volunteer driver programs from its paid driver programs. In 2000–01, the volunteers drove 726,846 miles in 42,925 hours to deliver 150,722 trips. The cost to provide these trips was \$1,467,239, which is paid for by revenues from Tri-Met, rider donations, and funding contributed by the 30 organizations under the Ride Connection umbrella. As shown in Table 10, these contributions account for over half a million dollars, so the amount billed to Tri-Met is reduced by more than a third. Table 10 shows the net cost to Tri-Met is \$6.05 per trip. If the contributions of the partner agencies are counted, the cost per trip is about \$9.73.

Table 10 shows what it would cost Tri-Met to take over all of the transportation now provided under the Ride Connection umbrella at the current cost per trip on the LIFT ADA paratransit system. Tri-Met’s most recent audited data show that LIFT cost \$19.14 per trip in 2000–01. As shown in the table, that would result in a cost of nearly \$2 million over the amount paid to Ride Connection.

Without Ride Connection, some portion of the trips would continue to be provided by agencies other than Tri-Met. Many of the partner agencies would continue their transportation programs, although perhaps at a reduced scale of operations. Also, about 17 percent of Ride Connection volunteer trips are provided in areas beyond the Tri-Met district. Without Ride Connection, it is possible that Tri-Met would face additional political pressure to expand its service area, at least for specialized transportation. In addition, it is possible that the Ride Connection trips have significantly different trip lengths than the average LIFT trip. It is also possible that some of the clientele served would find LIFT too difficult to use and would forgo the travel that they currently make.

## **STAR PARATRANSIT — ARLINGTON, VIRGINIA**

### ***Overview***

Arlington County, Virginia, is located directly across the Potomac River from Washington, DC, bordering Fairfax County, the city of Alexandria, and the city of Falls Church. Arlington is the smallest county in

**Table 10**  
**Estimated Tri-Met Costs for Ride Connection Trips**

<i>Factor</i>	<i>Value</i>	
1. Total Ride Connection trips	\$236,000	
2. Volunteer trips only	\$150,722	
3. Cost of volunteer trips	\$1,467,239	
4. Partner agency funding	<u>-555,371</u>	
5. Amount billed to Tri-Met	\$911,868	
6. Cost per trip to Tri-Met	\$6.05	<i>(\$911,868 /150,722)</i>
7. Tri-Met LIFT cost per trip	\$19.14	
8. Tri-Met cost to provide trips	\$2,884,819	<i>(\$19.14 x 150,722)</i>
Possible cost savings to Tri-Met	\$1,972,951	<i>(\$2,884,819 – \$911,868)</i>

the United States, with a land area of just over 26 square miles. This small size, combined with a 2000 population of just under 190,000 residents, provides a population density of over 7,000 persons per square mile. Arlington is home to nearly 18,000 persons over the age of 65.

Since the inception of the ADA in 1990, paratransit services in Arlington County had been provided solely through a contract with the Washington Metro Area Transit Authority (WMATA). WMATA, which also provides contracted fixed route services to Arlington County, provides complimentary ADA-paratransit services to Arlington residents under the MetroAccess program. ADA-certified paratransit clients call WMATA directly to schedule trips with MetroAccess, which then bills the county of origin for each passenger trip. Arlington pays WMATA a fixed fee for the operating and administrative costs of each

trip provided by MetroAccess, which is currently just over \$30 per trip.

Three years ago, Arlington and WMATA officials instituted a program that would send overflow trips to local taxi service providers. The taxi service turned out to be substantially less expensive than the MetroAccess paratransit service, which inspired Arlington officials to create the STAR program.

STAR was established as a lower cost alternative to MetroAccess paratransit service, with cost savings realized through the use of less costly local providers. STAR operates as a brokerage, contracting with Red Top Cab; Diamond Cab; and Answers, Inc. (a paratransit van operator). Currently, the county pays STAR between \$20 and \$22 per trip, which represents a substantial cost saving over MetroAccess.

STAR believes that it offers several advantages to clients, such as better

customer service and improved quality control and oversight. The vast majority of paratransit clients in Arlington seem to agree, because they are choosing STAR over MetroAccess. STAR officials estimate that they provide 5,000 paratransit each month, whereas MetroAccess is currently providing 850 trips per month.

The success of their paratransit service has allowed STAR to branch out into other areas of service. It has contracted with the local Area Agency on Aging to provide door-through-door service to county residents who are too frail to use traditional paratransit. STAR officials estimate that between 10 and 50 clients use the door-through-door service each month. STAR has also implemented the Senior Loop route, a free fixed route service operating between the hours of 10:00 a.m. and 2:00 p.m. 2 days per week, provided by a grant from the Area Agency on Aging. The Senior Loop uses a bus belonging to Arlington Transit (a commuter bus service), which previously sat idle during midday hours. The route stops at several apartment buildings, medical offices, Arlington Hospital, and the grocery store/pharmacy. The overall length of the route is short enough to allow five or six circuits to be completed in the 4 hours that the route is run. STAR officials estimate that between 150 and 200 seniors ride the Senior Loop each week.

### ***Benefits Calculation***

The major benefit of the STAR paratransit service is that it shifts paratransit passengers away from the MetroAccess service to less costly local alternatives. The

major benefit of the Senior Loop service is that it shifts passengers away from paratransit to less costly fixed route service.

Each paratransit trip provided by STAR represents savings of between \$7 and \$8 versus the same trip using the MetroAccess paratransit service. Thus, the benefits generated by the STAR system can be calculated as

$$\begin{aligned} \$7.50 \times 60,000 \text{ annual trips} &= \$450,000 \\ &\text{annual economic benefit.} \end{aligned}$$

(This calculation assumes that STAR is not generating any new trips. In fact, if Arlington residents can get same-day service from the taxi operators, more trips could be generated and the actual benefits would be greater than those shown here.)

The benefits generated by the Senior Loop route are not as clearly defined. If a paratransit-eligible passenger rides the Senior Loop service instead of using paratransit, then that action represents a savings of approximately \$21 (the cost of a STAR paratransit trip) for Arlington County. Assuming that only one-half of the current Senior Loop riders would use paratransit in the absence of the Senior Loop route, the benefits can be calculated as

$$\begin{aligned} 87 \text{ seniors} \times 2 \text{ one-way trips per week} &\times \\ \$21/\text{trip} \times 52 \text{ weeks} &= \$190,008 \text{ annual} \\ &\text{economic benefit.} \end{aligned}$$

In total, the coordination/brokerage activities provide an estimated annual benefit of approximately \$640,000 for Arlington County.

## SHIFT PARATRANSIT RIDERS TO FIXED ROUTE SERVICES

From a transit agency perspective, the principal benefit of shifting paratransit riders to fixed route services is reducing the demand for ADA complementary paratransit (which is expensive) and increasing fixed route ridership (which can often be accomplished for little or no additional cost). For human service agencies that provide or contract for transporting clients to their programs or that pay a portion of the cost of those trips on ADA paratransit, shifting clients to fixed route services can reduce their cost of transportation too. For human service agencies, using regular buses can help meet a mandate to help their clients become more independent.

The **Charlottesville Transit System** in Charlottesville, Virginia, provides free rides on fixed route transit for all paratransit-eligible persons. The cost of trips on the free ride program would have approached \$2.5 million if those trips had been made on paratransit services. This free ride program also allows an elderly or disabled passenger to take a spontaneous trip without advance notice. **Paratransit, Inc.** is a nonprofit corporation that provides paratransit and other related services to a variety of agencies in its area, including ADA complementary paratransit service under contract to **Sacramento Regional Transit**. Depending on their abilities, people with disabilities and seniors are taught to ride transit to and from particular destinations or to ride throughout the community. In

Sacramento, the trips shifted from ADA paratransit saved about \$1,050,000 per year.

## CHARLOTTESVILLE ADA PARATRANSIT SERVICES

Charlottesville Transit System (CTS) has been providing fixed route service to the City of Charlottesville and urbanized areas of Albemarle County since 1976. Using a fleet of 13 lift-equipped vehicles, CTS provides service to 13 routes between 6:15 a.m. and 6:45 p.m., Monday through Saturday. There are also four nighttime routes (geared toward night-shift jobs and entertainment centers) that operate from 7:00 p.m. until 11:45 p.m. The regular fixed routes were recently rearranged to cover a wider geographic area, and the night service has been expanded. In addition, CTS has recently added a free trolley service operating on Main Street, between the downtown area and the university.

JAUNT was formed in 1975 as a coordinated transportation system for human service agencies in the City of Charlottesville and to provide demand-responsive public transportation to rural areas of Albemarle County. The system grew quickly, expanding on the success of its initial services, and introduced service to three additional outlying rural counties in the Charlottesville area (Fluvanna, Nelson, and Louisa). In 1982, the Jefferson Area Planning District Commission (the local metropolitan planning organization [MPO]) implemented a policy naming JAUNT as the sole provider of human service transportation for its four counties and

requiring all human service agencies to contract with JAUNT. The menu of services was later expanded to include fixed route service to the rapidly growing outlying areas, as well as route deviation service. Since the inception of the ADA, JAUNT has provided the complimentary ADA service under contract to CTS for the City of Charlottesville. JAUNT is now providing service Monday through Friday, 6:30 a.m. to 6:30 p.m., with 29 vehicles.

CTS ridership dropped from 691,000 in 1993 to a low of 649,000 in 1997, but ridership has been on an upswing since then, increasing slightly for 1998, 1999, and 2000. For the 2001 fiscal year, ridership jumped to an all-time high of more than 1 million annual passenger trips, a 30 percent increase over the previous year's total. At the same time, JAUNT's ridership has reached an all time high of more than 300,000 annual passenger trips, and ridership on its fixed route feeder service has doubled in the past 3 years. These dramatic increases can be attributed to several factors, such as the geographic expansion of the routes, the extension of nighttime services, and the free trolley. It can also be attributed to enhanced coordination efforts between CTS and JAUNT, efforts that have provided positive results for both systems.

The most successful (and beneficial) coordination efforts in Charlottesville involve the mainstreaming of elderly and disabled paratransit passengers. In 1994, at the request of CTS, the Charlottesville City Council passed an ordinance, which provided free CTS rides for all JAUNT-eligible persons. The intent was to offer

additional opportunities for the elderly and persons with disabilities to be in the mainstream of transportation services. Because JAUNT requires 24 hours advance notice for paratransit trips, this free CTS ride program allows an elderly or disabled passenger to take a spontaneous trip without advance notice. In addition, the program was intended to lower demand for paratransit trips and to slow the rapidly escalating cost of paratransit service. In conjunction with the free rides, CTS has instituted a travel training program in partnership with the local Independence Resource Center.

Judging by the ridership totals for recent years, the free rides program has become very successful. For FY 1999, CTS reported 58,801 trips on the free ride program. For FY 2000, CTS reported 70,668 trips on the free ride program. For FY 2001, CTS projected 76,800 trips on the free ride program. If all these trips had been made using JAUNT paratransit, assuming a cost per trip of approximately \$12 (provided by JAUNT officials), the cost for these trips would have approached \$2.5 million for those 3 years. Even if only one-half of the free ride trips in FY 2001 had been made on paratransit, it would have cost the city \$460,800. The director of CTS reported that the paratransit ridership (and costs) have subsequently leveled off since the free ride program gained momentum, so that the FY 2001 annual cost savings of \$921,600 is about what can be expected on a continuing basis.

The CTS director devised the idea for the free ride program while attending an ADA workshop sponsored by the FTA. She was

shocked to learn that almost no other fixed route transit systems had instituted a similar free pass program for paratransit clients. Her short assessment of this program is the following: “To me, local funding is the big issue. You have a finite amount of resources for a community, and some of these resources will go to fixed route service, some will go to demand-responsive service. If you can save money with the fixed route passes, you are **not** generating a new cost. Also, I believe that fixed route systems should want to mainstream paratransit passengers and increase their independence.”

## **TRAVEL TRAINING IN SACRAMENTO, CALIFORNIA**

### ***Overview***

When transit and human service agencies collaborate on training people with disabilities to use fixed-route transit services, both types of agencies can benefit. Teaching people with disabilities to travel independently on public transit is commonly called travel training or sometimes “mobility training.” From the point of view of transit agencies, the principal benefit of travel training is reducing the demand for ADA complementary paratransit. For human service agencies that provide or contract for transporting clients to their programs or that pay a portion of the cost of those trips on ADA paratransit, travel training can reduce their cost of transportation as well. For human service agencies, travel training can help meet a mandate to help their clients become more independent.

One organization that operates a successful travel training program is Paratransit, Inc. in Sacramento, California. Sacramento, the capital of California, is in the north central part of the state. The metropolitan area has a population of about 1.2 million people, of whom 407,000 live in the city of Sacramento. Paratransit, Inc. (PI) is a nonprofit corporation that provides paratransit and other related services to a variety of agencies in its area. PI provides ADA complementary paratransit service under contract to Sacramento Regional Transit. It is also one of several organizations that provide transportation for people with developmental disabilities to and from their day programs under contract to the Alta California Regional Center.

PI has been providing travel training since 1982 and estimates that it has trained about 7,600 people since then. Depending on their abilities, people with disabilities and seniors are taught to ride transit to and from particular destinations or to ride throughout the community. PI’s travel training program is funded with contributions from multiple agencies: the Alta California Regional Center for their clients with developmental disabilities; Sacramento Regional Transit (RT) for people with disabilities who apply for ADA paratransit; the Sacramento Employment and Training Agency for low-income seniors and people with disabilities; and the State Department of Rehabilitation. In practice, there is a fair amount of overlap among the target groups of the funders. PI’s Mobility Training Department employs a staff of 11 people, including 7 full-time trainers, a manager, his assistant, and 2 support staff.

**Benefits**

According to data provided by PI staff, the agency successfully trained 587 people in FY 2001–02. A total of 10,442 trainer hours were needed to complete these trainings (and 30 unsuccessful training attempts) or about 18 hours per completed training. PI estimates the number of trips per month that each person trained will take on fixed route transit that he or she would have taken on ADA paratransit and uses that number to project savings from the training. In doing so, it conservatively projects only for the months remaining in the fiscal year in which the person was trained. (For a person trained 7 months into the year, only 5 months of savings are projected.) PI also assumes that 20 percent of those trained stop using transit after the end of the training, based on the results of a recent followup survey. On this basis PI, estimates that the 587 trained individuals took 74,781 trips on transit in FY 2001–02 that they would have taken on ADA paratransit (an average of roughly 20 trips per person per month).

The trips shifted from ADA paratransit would have cost about \$1,321,000 to provide at a cost per trip of \$17.67. By comparison, the travel training program cost about \$275,000, of which RT contributes \$50,000 per year plus the value of free passes for the trainers and trainees. This leads to a total annual benefit estimate of \$1,046,000.

The program also provides a significant benefit to other agencies, most notably the Alta California Regional Center. However,

PI has not calculated the size of that benefit.

**PHOENIX PEER TRAINING PROGRAM**

The Phoenix, Arizona, Peer Travel Training Program has been provided for many years. (More or less service has been provided based on budgetary considerations.) Officially, staff services come out of another contract, and the budget for Peer Training includes only Peer Trainer salaries, bus tickets, and some program associated costs such as bookkeeping. The usual allocation is \$15,000 for the year; usual annual expenditures are between \$11,000 and \$12,000.

For FY 2000–2001,

- 36 people were trained to use fixed route transit. Of these, 32 continued to use the bus 1 to 6 months after their training.
- By using the bus instead of Dial-a-Ride for three trips each week (156 trips a year), each Dial-a-Ride user who switched to the bus after training saved the City of Phoenix about \$3,655 during FY 2000–2001:

<i>One trip on Phoenix Dial-a-Ride</i>	<i>\$24.53</i>
<i>One trip on a Phoenix Bus</i>	<i><u>\$1.10</u></i>
<i>Difference per trip</i>	<i>\$23.43</i>

- On average, it takes 15 hours for one trainer to train one person to use the bus. Peer Trainers are paid \$10.00 an hour, so the direct training cost is about \$150.00 per person.

The time staff devote to this project adds another \$7,000.00 to the cost of the program. This represents a total of about 10 hours a week from two persons. That brings the cost estimate for training 36 people to about \$19,000.

Other significant issues regarding the Phoenix program include the following:

- There is no charge to the student being trained, as bus tickets are supplied by the program.
- In the past, the system has not paid for Train the Trainer time, but plans to do so in the future. This would add about an additional 5 hours per trainer.
- The net cost of a Phoenix Dial-a-Ride trip is about \$27.00 in FY 2002 and the net cost of a bus trip is \$1.44, so the difference has increased to \$25.56 per trip.
- Trainers are matched with trainees in terms of their disability, age, and interests. The trainers achieve a high level of customer satisfaction.
- Getting trainees is more difficult than getting trainers. Many times agencies ask the system to bring a bus and train a group of their clients. Individual training is offered as a followup option, but rarely does anyone request this option.

On a continuing basis, if 36 persons were trained per year and 32 remained in the program taking an average of three trips per week, the net savings in Phoenix would be about \$107,600 per year (assuming that the training costs remain similar to current costs, about \$20,000 per year).

## **HUMAN SERVICE AGENCIES COORDINATE THEIR TRANSPORTATION EFFORTS**

Human service agencies can coordinate or consolidate their separate transportation services to create larger transportation services, which form a “critical mass” of service that can qualify for general public transit funding and offer real travel options throughout the entire community. The coordination/consolidation process can be accomplished by a lead agency operating coordinated transportation services, by establishing a local transit body, or by establishing a brokerage system using current agency resources. There are also many examples of a coordinated system functioning as a combination of the above strategies, such as a lead agency acting as a broker. Typical benefits to human service agencies include reduced unit costs; improved quality of service; and increased efficiency, effectiveness, and cost-effectiveness. However, the potential for cost reduction depends heavily on the existing transportation infrastructure. Agency vehicles in poor condition may require large initial capital investments, and implementation of area-wide service can prove costly. Sometimes anticipated savings do not materialize.

**Martin County Transit** in North Carolina employs a brokerage system with centralized dispatching and vehicle ownership. Based on 1999 figures, the coordinated system’s benefits are about \$156,000. **R.Y.D.E. (Reach Your**

**Destination Easily) Transit** in Buffalo County is the first brokered transit system to operate in Nebraska. R.Y.D.E. has expanded operating hours, abolished the waiting time requirements, and expanded transportation access in rural Buffalo County. Prior to coordination, public transportation provided 11,000 annual rides in Buffalo County; R.Y.D.E. will provide about 70,000 rides in 2002. R.Y.D.E.'s current operations cost Buffalo County \$400,000 less than the same number of trips would have cost if provided at the precoordination costs.

## **MARTIN COUNTY TRANSIT — WILLIAMSTON, NORTH CAROLINA**

### ***Overview***

Martin County is located in the upper area of the eastern part of the state, bordering the counties of Bertie, Washington, Pitt, Edgecombe, and Beaufort. The county's 2000 population was 25,593, which was a 2 percent increase over the county's 1990 population of 25,078. Approximately 75 percent of the county is rural in nature.

Martin County Transit was formed in 1993 to coordinate human service transportation in Martin County. Previously, human service agencies in Martin County provided their own in-house transportation service using their own vehicles and drivers. The agencies providing or purchasing transportation in Martin County included

- Martin County Council on Aging;
- Martin Enterprises (ADAP);

- Martin County Community Action Agency;
- Tideland Mental Health Center;
- Tideland Child Development Center;
- Martin Health Department;
- Martin County Department of Social Services;
- Martin General Hospital; and
- Martin County Board of Education.

There were coordination agreements among certain agencies (such as the informal coordination between the DSS, Council on Aging, and Health Department) but no overall coordination of transportation activities in the county. Transportation Development Plans completed in 1987 and 1992 recommended a coordinated system to address several problems with human service transportation in Martin County. According to those studies, a coordinated system could

- Reduce the duplication of administrative tasks and transportation services;
- Allow for real-time dispatching from a centralized location;
- Allow for centralized maintenance either through a maintenance contract or through the construction of a maintenance facility;
- Allow for cost-effective joint purchasing of vehicles and supplies;
- Provide out-of-county medical trips to satisfy unmet demand; and

- Provide for group insurance coverage at a substantially lower rate.

Martin County Transit, established in 1993, set out to achieve the service goals listed above. The service design employs a brokerage system with centralized dispatching and vehicle ownership. There are 2 full-time administrative employees, 25 full-time drivers, and a fleet of 9 vehicles (as of FY 1999).

In 1991, according to a Transportation Development Plan prepared for Martin County, county human service agencies were spending more than \$125,000 to provide 20,871 passenger trips and 125,557 miles of service using a fleet of seven vehicles (Weslin, 1992). (It should be noted that the cost figures for agency transportation are almost always under-reported because it is usually agency staffers who drive the vehicles. Human service agencies usually do not recognize the cost of having in-house staff driving vehicles rather than doing their regular jobs and thus do not include it when calculating their costs. Based on local and national financial breakdowns of demand-responsive transportation costs, we estimate that driver salaries normally account for approximately one-third to one-half of typical transportation operating costs.)

### ***Benefits***

Since the coordination efforts take time to achieve the desired results, data were examined for 5 years after coordination took place. Five years after coordinating, one would expect that the changes should

be established and the system should be mature enough to stand on its own merits. The most recent and complete data available for Martin County Transit are for the 1997, 1998, and 1999 fiscal years. These data, along with the 1992 data, are summarized in Table 11.

Looking at the results, it is clear that the coordination efforts have produced quantifiable benefits. Although the ridership numbers have increased significantly (more than doubling), the costs actually decreased for several years before increasing to their current level. The large jump in costs from 1998 to 1999 can be attributed to the introduction of out-of-county medical trips (which also resulted in a large increase in mileage). These trips are longer and more expensive to make, but they are a necessity for area residents, and the increased efficiency of a coordinated system makes them viable. Another clear improvement brought about by the coordinated system is the reduction in miles per trip. Before coordination, the average trip took more than 6 miles. After the coordinated system was implemented, the process of combining and organizing trips and schedules reduced that number significantly. The miles per trip figure increases again in 1999, which is again a result of the introduction of out-of-town medical trips, but it is still substantially less than the precoordination numbers. The same is true for the cost per trip figures, which fall dramatically with the implementation of the coordinated system, and then rise slightly with the introduction of out-of-county medical trips.

**Table 11**

**Martin County Transit Operating Statistics  
Before (1992) and After Coordination Efforts**

	<i>1992</i>	<i>1997</i>	<i>1998</i>	<i>1999</i>
Fleet	7	6	7	9
Trips	20,871	31,263	41,737	44,005
Miles	125,557	122,812	108,771	150,075
Cost	\$125,315	\$83,167	\$96,131	\$156,163
Cost/Trip	\$6.00	\$2.66	\$2.30	\$390.55
Cost/Mile	\$1.00	\$0.68	\$0.88	\$1.04
Miles/Trip	6.02	3.93	2.61	3.41

How much has coordination saved Martin County? It is difficult to give a precise answer, but it is possible to make an estimate. Applying an inflationary adjustment to the 1992 total cost figure of \$125,315 yields a 1999 value of \$158,701 for the 1992 costs. Dividing that current value by the number of trips provided in 1992 produces an adjusted cost per trip figure of \$7.60. Then applying the adjusted cost per trip figure to the number of passenger trips provided in 1999 provides a hypothetical total cost figure of \$334,610. This is a conservative estimate of what it would cost to provide the current level of service under the system that preceded coordinated transportation in Martin County. Thus, this process produces an estimate that coordinated transportation saved Martin County \$178,447 in fiscal year 1999. By the same logic, coordinated transportation saved Martin County \$154,533 in 1997, and \$221,233 in 1998. Over the 3-year period of FY 1997-1999,

coordinated transportation probably saved Martin County more than \$500,000.

***The State's Role in Martin County's Coordination Project***

In 1978, Governor Jim Hunt signed an Executive Order which mandated coordination of human service transportation in the State of North Carolina. In doing so, he placed North Carolina at the forefront of coordination efforts nationwide and took a strong step toward improving the safety, reliability, and cost effectiveness of transit and paratransit services throughout the state. Today, there are 55 human service transportation systems in North Carolina operating under three types of service arrangements:

- ***Coordinated systems*** - These consist of two or more service agencies working together through a lead agency to maximize resources and efficiency.

- ***Consolidated systems that provide their own services*** - These consist of a single transportation program that uses its own vehicles and drivers to provide service to a variety of agencies. In most cases, the agencies handle eligibility and screening.
- ***Consolidated systems contracting for transportation services*** - These consist of a single transportation program that purchases transportation services and contracts for operations with private transportation companies.

Core agencies that utilize human service transportation in North Carolina transportation include county social service departments (for Title XX, Work First, and Medicaid recipients); county, private, and nonprofit programs for the aging; mental health programs; sheltered/vocational workshops; and county health departments.

Coordinated and consolidated transportation systems have resulted in increased efficiency and more cost-effective services for the State of North Carolina and are also providing higher quality transportation than their uncoordinated predecessors.

## **R.Y.D.E. TRANSIT — BUFFALO COUNTY, NEBRASKA**

### ***Overview***

Buffalo County, Nebraska, is located in south central Nebraska. With a population of 37,477 and 968 square miles, Buffalo County is situated in the heart of Nebraska's farmland. The county's only city is Kearney, which has various medical

and major shopping facilities. With many persons traveling to Kearney from outlying areas, transportation was always a problem.

Many different systems of delivering transportation were in place in Buffalo County in 1996, yet many people were still unable to make the necessary connections to primary life maintenance activities such as medical appointments, employment, and shopping. In early 1996, four separate committees in Buffalo County were looking into ways of delivering transportation services. Coordination was found to be the factor lacking for a viable transportation service.

R.Y.D.E. (Reach Your Destination Easily) Transit started operation in Buffalo County on January 3, 2000, after 4 years of research, planning, and hard work by the Buffalo County Community Health Partners Transportation Goal Work Group. The Goal Work Group brought together representatives from over 20 different agencies in the city of Kearney and from Buffalo County. Diverse agencies represented included the local university, the City of Kearney, Buffalo County, employment specialists, health care representatives, local cab and livery companies, representatives from state agencies on transportation and human services, and local school district representatives. The Transit Division of the State of Nebraska Department of Roads gave valuable input to the process by providing leadership and resources for this group. This unique planning process made R.Y.D.E a community effort. From the beginning, the Working Group realized that eliminating duplication and coordinating

resources offered the best solution to its rural county's transportation needs.

The Transportation Goal Work Group focused on commonalities inherent in community transportation, thereby allowing a greater breadth of partnership to develop. R.Y.D.E. Transit serves the city of Kearney and Buffalo County with on-demand public transportation and represents the first brokered transit system to operate in Nebraska. The idea is based on the utilization of existing community resources to meet the need of public transportation in rural areas. Mid-Nebraska Community Action, Inc. (MNCA), the local community action agency, took the lead in the effort by offering office space, salaries, and executive direction for the transit operation.

R.Y.D.E. began operation by assuming the responsibilities of a vehicle owned and operated by the local hospital, Good Samaritan Health Systems, the "Health Express." R.Y.D.E. operates this vehicle through a contract with the hospital to provide the service. This vehicle was underutilized in its role of connecting people with mobility limitations to health care. Immediately, the ridership of the vehicle grew from an average of 5 boardings a day to more than 15 boardings a day within the first 2 weeks of operation. R.Y.D.E. then assumed the operational duties of the two existing public transit vehicles in the city of Kearney, operated by MNCA.

These three vehicles were brought under one dispatch system to help better utilize the resources more effectively. MNCA then allowed R.Y.D.E. to rehabilitate two

vehicles to expand the fleet to five.

R.Y.D.E. contracted with a local agency, which provides transportation services to the disabled. A few months later a contract with a local employment agency was written allowing R.Y.D.E. to provide transportation for them. This brought the number of vehicles in the system to seven. These vehicles, when not in use for the contracts, are used to provide public transportation for the city of Kearney and Buffalo County.

The Buffalo County Community Health Partners Transportation Goal Work Group and State of Nebraska Department of Roads Transit Division still provide direction and leadership for R.Y.D.E. Through this collaboration, R.Y.D.E. Transit has been able to be involved with many different projects.

By bringing these vehicles "under one roof," R.Y.D.E. has been able to be more responsive to the customer needs in Buffalo County. R.Y.D.E. eliminated barriers to providing transportation to the public. Original operating hours before R.Y.D.E. took over were 7:00 a.m. to 4:00 p.m. and were expanded to 6:00 a.m. to 6:00 p.m. Monday through Friday. This has allowed R.Y.D.E. to better serve those members of the community who need public transportation to and from work.

R.Y.D.E. also abolished the waiting and time requirements. Prior to R.Y.D.E., there were strict rules requiring that rides be scheduled 24 hours in advance. Intake information also needed to be recorded before rides were given. R.Y.D.E. dropped these requirements in an effort to be more

responsive to the demands of the customers. R.Y.D.E. has also established operations on holidays to give mobility-limited customers access to health care, employment, and social activities on those days.

R.Y.D.E. has also expanded transportation access to rural Buffalo County. R.Y.D.E. now has vehicles available to serve residents outside of Kearney 5 days a week. Prior to R.Y.D.E., established routes served only part of Buffalo County once a week. The expansion of these routes has been offset in part by the contract with the hospital. This has allowed for better service to mobility-limited clientele outside of the City of Kearney. R.Y.D.E. plans to further expand service to rural residents as part of the 2000 Job Access Reverse Commute/Job Access Grant, which was awarded to them in January of 2001. This grant will help R.Y.D.E. better serve customers in rural Buffalo County.

The system has also been granted funds to implement intelligent transportation systems (ITS) into rural transit. R.Y.D.E. is using these funds to upgrade the radio dispatch system to include telephone line access for the drivers, giving access to emergency personnel and the dispatch staff in times of emergency. The system is also implementing computer-aided dispatch software to increase the reliability of the system for the customers.

### ***Benefits***

R.Y.D.E. has seen a rapid growth in its ridership. R.Y.D.E. planned to provide 70,000 rides in 2000. In 1999, public transportation provided 11,000 rides in Buffalo County. During the July–September 2002 quarter, the system provided the equivalent of 78,220 rides in Kearney and Buffalo County. The local taxi company is involved in coordinated transportation, providing approximately 300 rides per month. Fourteen agencies now coordinate their trips through R.Y.D.E.

In January 2000, local agencies were providing 1,100 rides per month at a cost of \$9.24 per ride. During the last reported quarter (July through September 2002), R.Y.D.E. provided an average of 6,518 rides per month at a cost of \$4.16 apiece. Total annual benefits of the coordinated services are slightly more than \$400,000, as shown in Table 12.

### **KENTUCKY COORDINATED HUMAN SERVICE TRANSPORTATION SYSTEM**

In 1996, Empower Kentucky (a gubernatorial advisory committee) released a report that provided the impetus for statewide coordination of special-needs transportation. The report suggested that the consolidation of State Human Service Transportation systems under a managed care approach would be the best way to control the rapidly escalating costs of

**Table 12**

**Estimated Annual Benefits of R.Y.D.E.'s Coordinated Operations**

<i>Per Trip Cost</i>	<i>Current Number of Trips</i>	<i>Total Cost</i>
Pre-coordination: \$9.24 @	78,220	\$722,753
Post-coordination: \$4.16 @	78,220	\$325,395
<b>Total savings</b>		<b>\$400,358</b>

agency transportation. The consolidated approach was also suggested to address the growing problem of non-emergency Medicaid transportation (NEMT) fraud and to meet the needs of the state's Welfare Reform program.

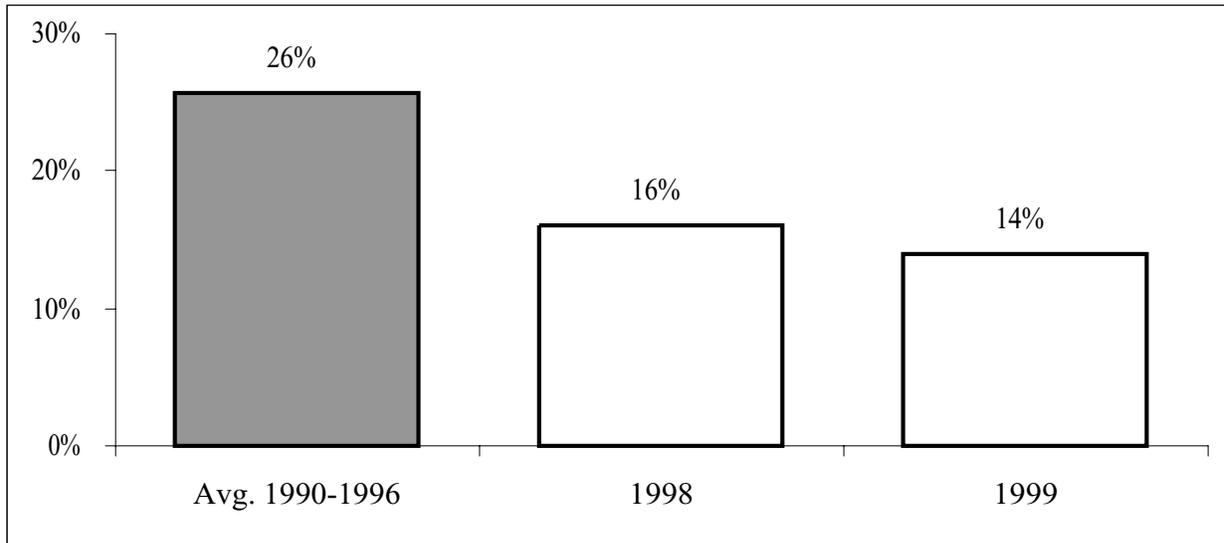
In 1998, the Kentucky General Assembly formalized the proposed coordinated system with the passage of House Bill 468. Kentucky's umbrella human services transportation program, considered by some to be a model undertaking, functions under contracts between the Transportation, Health Services (Medicaid), and Families and Children Cabinets. Contracts total almost \$46 million annually. The program operates under a network of brokers who are responsible for the delivery of services to Medicaid non-emergency clients, Temporary Assistance for Needy Families (TANF) clients, and clients of human service agencies throughout the state. The brokers provide services that include recruiting transportation subcontractors, payment administration, gatekeeping,

reserving and assigning trips, assuring quality, and providing oversight. A capitated rate system provides brokers with a certain amount of money for each eligible recipient each month.

According to a 1999 Progress Report by the Legislative Research Commission, the Coordinated Human Services Transportation System made several major improvements over the previous system. In terms of controlling costs, the report shows that the rate of increase for non-emergency medical transportation costs has decreased since the inception of the managed care system. Figure 2 illustrates the decline in annual NEMT cost increases since the inception of the Coordinated Human Service Transportation Program. From FY 1989 to FY 1997, NEMT costs had increased by an average of 26 percent each year (see shaded bar). For FY 1998 and 1999, under the coordinated system, NEMT costs increased 16 and 14 percent, respectively (Legislative Research Commission, 2000).

**Figure 2**

**Annual Cost Increases for  
Non-Emergency Medicaid Transportation in Kentucky**



While the NEMT costs are still increasing year to year, the coordinated system has succeeded in slowing the rate of increase. There are several explanations for the reduction in growth:

- Under the old voucher payment system, providers were paid on a fee-for-service basis. Their gross income depended on how many trips and miles they reported, and thus they had an incentive to make (and report) as many trips as possible. The capitated rate system, which replaced the old voucher payment system, pays the brokers a fixed amount. The more trips and miles that are claimed, the less money that the broker keeps. Thus, under the capitated system, it is in the broker's interest to monitor providers and ensure that trips and miles are billed appropriately. Of course, the capitated

system requires vigilant monitoring to ensure that financial incentives do not result in trip denials or poor service.

- The old voucher system was also susceptible to fraud and abuse, and generated several infamous examples. In one county, every single passenger transported was classified as "disoriented," which meant that the Medicaid reimbursement was paid at a rate that was nearly 10 times higher. Another county reported providing 15,000 trips annually before the coordinated system was established. After the brokerage system was implemented, its annual trip total dropped to 4,500, and there were no complaints from passengers. In another instance, two eastern Kentucky ambulance service operators were indicted by a grand jury for defrauding the state by providing unnecessary

ambulance service to NEMT passengers.

- The statewide brokerage system is also far easier and less expensive to operate. The old voucher system required 55 full-time employees to issue and process more than 1 million vouchers each year. The current system reportedly requires far less paperwork and staff (although the staff reductions at the state level may have been offset by staffing increases at the brokerage offices). The voucher system required a large budget for oversight, investigations, and audits (which still proved inadequate). The coordinated system requires far less in terms of investigations and audits, although it does require vigilant oversight of service quality and passenger satisfaction. The voucher system also required more time from caseworkers, in that they were charged with determining eligibility, determining need level, and issuing vouchers. Under the current system, the client simply calls their local broker.

As NEMT costs have increased at a lower rate, the number of trips provided by the Coordinated Human Service Transportation System has increased sharply. For FY 1997, the final year under the old voucher system, Kentucky provided 720,000 one-way NEMT passenger trips. The number of passenger trips increased to 1,084,875 in FY 1999, under the coordinated system. For FY 2000, the number of trips provided jumped to 2,400,361 trips, an increase of 121 percent. At the same time, the total cost to provide was increasing at a much slower rate, which meant that the unit costs were decreasing. Figure 3 shows the average cost per trip for 1997, 1999, and 2000.

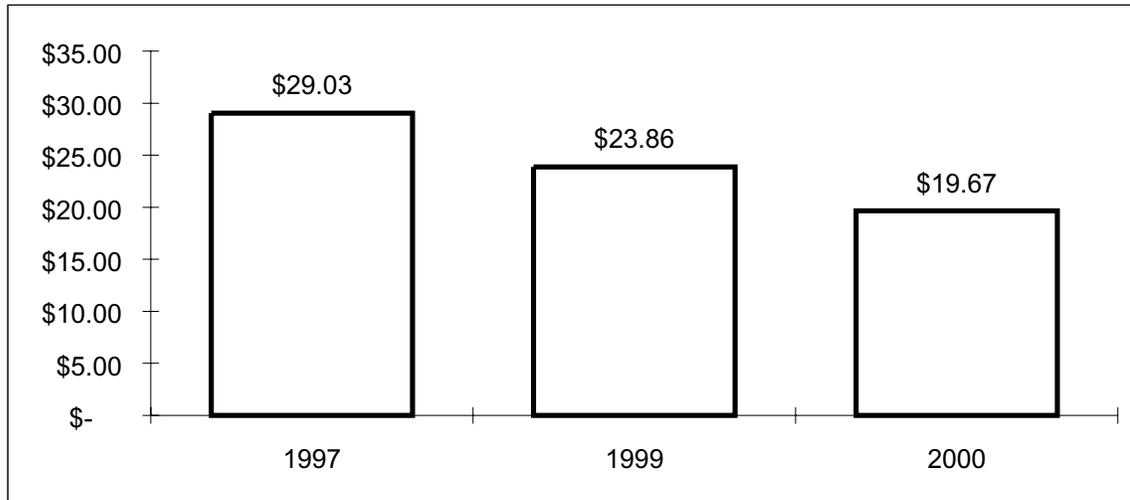
The FY 2000 cost per trip figure of \$19.67 represents a 48 percent decrease from the 1997 figure of \$29.03. Kentucky's coordination effort has shaved nearly half of all NEMT costs. If Kentucky were to provide the FY 2000 2,400,361 passenger trips with the cost efficiency of the 1997 voucher system (which recorded a per-trip cost of \$29.03), it would cost them nearly \$70 million dollars. The cost savings from coordination can be calculated as the current trips times the previous costs, generating a total cost of \$69,682,480, minus the present trips times the present cost, or \$47,215,101. The savings is \$22,467,379, nearly half the amount now spent with the coordinated transportation system.

The Coordinated Human Service Transportation System also provides rural general public and special needs transportation in Kentucky. The coordination of these services has not yet been implemented in most of the counties in the state, which makes it nearly impossible to draw any conclusions at this point. However, the potential for cost savings is there, just as it is with the NEMT services.

Future efforts of the Coordinated Human Service Transportation System include plans to focus on implementing the general public and special needs services statewide and to keep careful oversight on customer satisfaction and complaint issues. Consolidated system staff will also be working with brokers and providers on establishing fair and reasonable capitation

Figure 3

### Kentucky Non-Emergency Medical Transportation Cost Per Trip, 1997, 1999 and 2000



rates, which has been a sore point since the inception of the system. The state must find a balance that provides efficient service, yet allows the providers to make a fair profit.

## CONCLUSION

Coordinated cost reduction strategies generated impressive savings for transportation providers in the cases examined. Transit authorities can receive substantial cost savings through contracts with other agencies that may have more freedom to combine trips or to use volunteers and may provide service at lower cost. Such arrangements often lead to

significantly increased revenues for the other transportation providers. Coordinating fixed route and ADA paratransit services to encourage more travelers to use the fixed route services — through fare reductions, travel training, or other strategies — is a significant way of shifting riders from a more expensive to a less expensive travel mode. When human service agencies coordinate or consolidate their separate transportation services to create larger transportation services, the typical benefits to human service agencies include reduced unit costs; improved quality of service; and increased efficiency, effectiveness, and cost effectiveness.

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# Chapter 6

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## INCREASING TRANSPORTATION SYSTEM PRODUCTIVITY

Community-wide coordinated dispatching systems and vehicle sharing arrangements allow for all vehicles in use to accommodate all types of passengers at all times. Often referred to as “ridesharing,” which means that clients of different agencies are on one vehicle at the same time, this technique ensures a highly cost-effective application of driver and vehicle resources. When properly applied, it can solve a number of the problems associated with noncoordinated transportation systems, such as overlapping routes, duplication of service, inefficient route design, and poorly timed schedules. In particular, the benefits of providing trips for ADA paratransit clients at the same time and on the same vehicle as other human service clients creates much lower per trip costs, thus generating real savings for

public transit operators. The primary benefit to transportation providers is increased productivity, which may lead to cost savings. The primary benefit to local communities is better service. Note that this strategy may require increased quality control and monitoring by the lead agency.

Examples of coordinated dispatching and ridesharing can be found in the two People for People operations and in King County, Washington. A number of the sites described in other chapters also used coordinated dispatching and ridesharing strategies (for example, see Martin County, North Carolina). Computer-aided dispatching should be a powerful technique for increasing productivity, and it is a key factor at the People for People Yakima site.

## **INCREASED VEHICLE UTILIZATION THROUGH RIDESHARING**

### **PEOPLE FOR PEOPLE — YAKIMA, WASHINGTON**

People for People (PfP), in Yakima and Moses Lake, Washington, provides an outstanding example of how coordination and ridesharing can provide substantial economic benefits. Founded in 1965 as an employment and training agency, PfP offers a variety of service programs to its communities. Employment services remained the agency's sole mission until the 1980s, when it started a transportation program. Today, these two programs have both flourished and remain the focus of PfP's efforts to build a collaborative network of services and improve the lives of disadvantaged people in central and eastern Washington. (One of the center's more innovative new programs provides goal setting and training for out-of-work citizens who have lost their drivers' licenses. The program has been very successful at getting low-income residents back to work).

PfP's Transportation Program alone now employs over 190 people and has an annual operating budget of approximately \$9 million. PfP operates several transportation programs, including Medicaid brokering services, elderly and disabled transportation, Medicaid transportation service, rural intercity bus service, public transit services, private employment transportation services, job access and reverse commute transportation,

and collaborative transportation planning. PfP operates a nine-county Medicaid brokerage, providing non-emergency medical services to all people certified under the Washington State Department of Social and Health Services (DSHS). PfP's program operations are broken into two subregions: (1) a six-county region served by the Yakima headquarters office and (2) a three-county region served by a Moses Lake office. The program provides gas vouchers or mileage reimbursements to clients with transportation. Those without their own transportation are provided rides on one of the several area providers to whom PfP brokers rides. These include public transit, private providers, volunteers, and nonprofit agencies. In FY 2000–01, PfP's Medicaid Brokering Division brokered 126,008 rides, an average of more than 500 trips per day.

The state contracts with PfP under a purchase of service agreement to provide senior and disabled transportation in Yakima County, using FTA Section 5311 rural transportation dollars. PfP provides senior and disabled transportation in all of Yakima County except the three urbanized areas, a total area of 4,200 square miles. Past attempts to raise taxes to institute public transit in these rural areas of the county have been turned down by the citizens. PfP is the only agency coordinating transportation in the county.

PfP runs the Community Connector as a deviated fixed route in the lower part of Yakima County. The route begins in Grandview and works its way up to Yakima. Because the Connector is funded with State Rural Mobility funds, the bus is

free to riders. The bus will deviate up to 1 mile off the route. Riders who live more than 1 mile from the route are scheduled onto the Medicaid dial-a-ride buses. Except for the Connector, most service provided by PfP is demand response.

PfP Yakima has several small coordination projects involving shared vehicles. The three following programs have quantifiable economic benefits:

- Goodwill Industries,
- Hospital transportation, and
- The Mabden School to Work program (as discussed in Chapter 4).

### ***Goodwill Industries***

PfP coordinates with Goodwill Industries to help the organization transport people with developmental disabilities from their homes in Yakima to a Goodwill job-site in Selah. PfP leases a vehicle to Goodwill for \$1 a month; Goodwill provides a driver and fuels and maintains the vehicle. In return for leasing Goodwill a vehicle at essentially no cost, PfP is able to broker trips for others who need to go to Selah by paying to place riders in empty seats on the Goodwill vehicle. This shared vehicle arrangement saves money because PfP does not have to incur the operational costs of providing intercity service between Selah and Yakima. The number of rides that PfP brokers to the service varies significantly from month to month, so it is difficult to estimate a monthly or annual cost savings. However, it is possible to estimate an average operating cost savings per trip

versus directly operated service, based on a 10-mile round trip between Selma and Yakima:

*PfP's average cost per service mile is \$1.80 x 10 miles = \$18.00 savings per round trip.*

Assuming that PfP would need to make two round trips to Selma on weekdays in the absence of the Goodwill Industries arrangement, the coordination with Goodwill Industries is saving PfP approximately

$$\begin{aligned} & \$18 \text{ per trip} \times 10 \text{ weekly trips} \\ & \times 52 \text{ weeks} = \$9,360 \text{ per year.} \end{aligned}$$

The program has also benefited Goodwill clients who previously paid \$8 per round trip for transportation to the Selah job site. Under the new arrangement, monthly operating costs are totaled and divided among the riders. The average cost per round trip is now approximately \$4, a 50 percent cost savings for Goodwill clients.

### ***Hospital Transportation***

In 2001, PfP instituted another shared vehicle arrangement with a local hospital. PfP assisted the hospital in preparing a successful grant for the acquisition of a federally funded vehicle. PfP now leases the vehicle from the hospital at a nominal cost; in return it provides patient transportation to cancer treatments. Through the agreement, PfP is not required to use the hospital's vehicle to provide these medical trips. PfP simply dispatches these trips to the most readily accessible vehicle in its fleet.

The hospital provides vehicle maintenance and \$9,000 in matching grants for this transportation service. PfP insures the vehicle and uses it to provide other types of trips in addition to those for cancer patients. PfP estimates that, based on a typical 5-year payment plan to cover the 20 percent match on the \$65,000 vehicle (\$13,000 paid by the hospital), the vehicle-sharing program will save them approximately \$257 per month in vehicle payments and \$50 per month in maintenance costs. This amounts to an annual benefit of

$$(\$257 \text{ per month} + \$50 \text{ per month}) \\ \times 12 = \$3,684$$

for the vehicle sharing arrangement with the hospital.

### ***Cost Savings from Volunteer Driver Program***

A key element of PfP's Medicaid brokerage service is its large volunteer program. PfP has 36 trained volunteer drivers that provide Medicaid trips in the nine-county area and beyond to Seattle and Spokane. PfP has determined that volunteer drivers are often the most cost-effective way to provide transportation for long-distance medical trips, especially those trips that originate in rural areas. Volunteers are reimbursed for mileage traveled at the state mileage reimbursement rate (currently \$0.35 per mile). Volunteer drivers are screened for vehicle driving safety and history and undergo a thorough training program.

Based on actual figures from the first three quarters of FY 2001–02, PfP projects that

volunteer drivers will provide approximately 7,000 passenger trips during FY 2001–2002. Projected year-end service hours are 14,000, and service miles are projected to total more than 531,000. This means the average volunteer-provided trip is over 75 miles long. The total projected cost through volunteer reimbursements to provide these trips is \$194,000 or just slightly over \$0.35 per service mile.

The average cost per service mile for PfP provided services is \$1.80. Were PfP to have provided these services itself, costs would have been significantly higher. Due to the rural nature and distance of these trips, there is little opportunity for ride grouping. Table 13 provides a range of estimated cost savings based on the number of passengers PfP could have carried per trip.

It is very difficult to group rides on long distance rural medical trips. Most medical trips end up being brokered to volunteers because they are extremely long or originate in out-of-the-way locations. PfP estimates that, were it to provide these rides itself, it would not be able to achieve more than 1.5 passengers per vehicle trip. Therefore, we can assume that the PfP volunteer driver program saves PfP close to \$500,000 per year in operational costs over PfP provided services.

### **PEOPLE FOR PEOPLE — MOSES LAKE, WASHINGTON**

PfP's Moses Lake operation serves three eastern Washington counties: Lincoln, Adams, and Grant. It has about 35

**Table 13**

**Range of Possible Cost Savings to PFP from Volunteer Services**

<i>Average Persons Carried Per Trip</i>	<i>Annual Service Miles</i>	<i>Hypothetical Annual Trip Cost for PFP (Service Miles X \$1.80)</i>	<i>Actual Annual Trip Cost for Volunteers</i>	<i>Total Cost Savings from Volunteer Program</i>
1	531,000	\$956,000	\$194,000	\$762,000
1.5	398,250	\$716,850	\$194,000	\$522,850
2	256,500	\$478,000	\$194,000	\$284,000
3	128,250	\$318,000	\$194,000	\$124,000

Calculations assume that all volunteer trips carry only one passenger. Although volunteer rides are occasionally grouped, the average number of passengers carried per trip is just marginally higher than 1.0.

paratransit mini-buses and vans and 35 full-time and part-time paratransit drivers. It is the contract service provider for the Grant Transit Authority (GTA), providing its fixed route and ADA paratransit services. Grant Transit Authority owns about 40 vehicles, and PFP provides the drivers, dispatching, etc., to operate the system. In addition, it has contracts with the Area Agency on Aging (AAA), Medicaid, and Work First (welfare-to-work) and has state Rural Mobility grants and Federal Section 5310 and 5311 funds to provide service for the elderly, people with disabilities, and the general public. PFP also receives Job Access and Reverse Commute (JARC) funding to provide transportation to recipients of TANF and their children. PFP's annual contract with Grant Transit Authority is \$1.2 million. The Medicaid contract is \$540,000, and an additional \$250,000 is from grants.

With the exception of the Grant Transit Authority (GTA) fixed route service, PFP mixes all its clients on shared vehicles.

Client trip costs are billed to specific programs or funding sources according to a time-based cost allocation formula. For example, if a Medicaid client trip overlaps with a JARC trip or a GTA paratransit trip on the same vehicle (shared ride), the cost for the shared portion of the trip is divided by the number of clients on board. PFP's billing software calculates cost allocations by matching each client trip to a program-funding source. Drivers track trip length (minutes) for each trip, which is entered later to complete the calculation.

This cost allocation method provides an excellent means for quantifying the overall economic benefit of coordinating rural human service transportation programs and public transit services through shared rides. PFP does not track the actual cost savings it achieves by combining multiple program clients trips, but it can be calculated on a daily basis using the agency's cost allocation formula. Using this procedure, the operations manager calculated the cost savings of providing shared rides for 5

sample days throughout the year. The calculation derives the cost saved by combining program client trips versus providing exclusive program specific trips. In other words, the calculation shows the average daily economic benefit of coordination as a relationship of service hours required under shared services (actual) to nonshared service hours (hypothetical).

For 5 sample days, the Pfp operations manager calculated the hours that would have been dedicated to each client's riders under an exclusive contract or if that agency provided its own transportation. She did this by looking at the dispatch schedule where each client's riders had been scheduled in a number of Pfp vehicles. She then made up hypothetical schedules that placed the same riders in vehicles dedicated exclusively to a single client. The result was that an exclusive contract would have charged clients for an average of 39 percent more total daily service hours than the actual shared ride arrangement.

Pfp's cost to provide service in Lincoln, Grant, and Adams Counties is approximately \$40 per vehicle service hour. Based on year-to-date figures for FY 2001–02, Pfp projects that it will provide 13,600 trips. These trips will total 17,100 hours of service operated by Pfp vehicles (excluding other providers where ride sharing is less prevalent) at an approximate cost of \$685,000. Without coordinated service provision, the same 13,600 trips provided exclusively would have required 23,700 vehicle service hours and cost approximately \$949,000. Pfp estimates that coordinated service provision in the three

county area will save almost \$265,000 in FY 2001–02 alone.

### ***Pfp Methodology to Determine Shared Ride Costs***

This section describes the methodology that Pfp uses to calculate shared ride costs savings. Vehicle service hours were defined using the following parameters.

1. Driver report time to first pickup is billed to first client's contract.
2. Any gaps in service are billed to next client's contract except for "off the clock" hours, which are not billed to any contract.
3. End of day after last dropoff to final checkout (fueling and paperwork) is billed to last client's contract.
4. Deadhead miles and hours are prior to first pickup and after last dropoff. Time before first pickup is charged to first rider; after the last dropoff it is charged to last rider.

Using the service hour allocation described above the following shared rides algorithm was applied:

1. Day is broken into allocation periods.
2. Allocation periods are between the times the bus is empty (empty to empty).
3. Contract minutes are determined by calculating total length of time during each allocation period that a rider for that specific contract is on board. (Further clarification: If two AAA clients are on board for 10 minutes each, regardless of whether

they overlap or not, the total for that contract is 20 minutes.)

4. A total number of minutes for each contract is derived according to “3” above. This total number of minutes for each contract is added to the total number of minutes for all other contracts during that allocation period to arrive at a grand total number of minutes on-board for all riders.
5. The total number of minutes for each contract is then divided by the total number of minutes for that allocation period (all contracts) and then multiplied by the *actual* number of minutes for that allocation period (time elapsed).

The relationship between the total service minutes for a specific program to the total minutes for all programs in an allocation period is the most accurate measure of cost savings because it accounts for geographic variability. In other words, using single vehicle allocation periods allows PFP to make accurate assumptions about the feasibility of shared rides if each program was providing its own transportation.

Table 14 provides a sample of how each allocation period is calculated.

### ***Barriers to Coordination***

Even a well-established coordinated lead agency like PFP with a multimillion dollar transportation budget faces barriers to improving coordination in its service area.

These issues include the following:

- **Turf issues have prevented full coordination.** Other agencies that provide transportation include a fleet operated by the Washoe Migrant Council for migrant workers; the school districts; Epic, which provides transportation for Head Start; and the Department of Social Health Resources, which operates two vans transporting the developmentally disabled.
- **Unreliable funding from the state is a hindrance to coordination.** The budget for the Rural Mobility Program is unreliable in that it changes from year to year. PFP anticipates that its grant funds from the legislature will decrease next fiscal year (FY 2002–03). PFP’s director says that riders give up on the transportation system when they are denied rides because of a decline in funds.
- **A continuing challenge is finding local match funds for state and Federal funding sources.** Most Federal grant funds require a 20 percent local match, which is often a challenge to raise. The State of Washington Agency Council on Coordinated Transportation (ACCT) is pushing lead agencies on coordination to work toward increasing local transportation funding. This is very difficult, especially due to the slumping economy and the decline of the fruit growers market in central Washington.
- **A comprehensive inventory of service providers is needed in the PFP service area.** PFP staff stressed that one of the major challenges of improving coordination efforts in such a large region is to fully understand what agencies and organizations are providing service and what types and levels of service area being provided.

**Table 14**  
**PfP Allocation Procedures**

***Example***

***Sequence of Events:***

- a. Vehicle empty
- b. AAA client on board from 8:00 am to 8:25 am = 25 minutes
- c. Another AAA client on board from 8:05 am to 8:20 am = 15 minutes
- d. Medicaid client on board from 8:15 am to 8:30 am = 15 minutes
- e. 8:30 am: Vehicle empty

***Calculation Of Total Passenger Minutes = 25 + 15 + 15 = 55 Minutes:***

Total vehicle time = 30 minutes

***Allocations:***

AAA share of passenger minutes =  $(25+15) / (55) = 72.7\%$

Vehicle time charged to AAA =  $72.7\% \times 30 \text{ minutes} = 21.8 \text{ minutes}$

Medicaid share of passenger minutes =  $15 / 55 = 27.3\%$

Vehicle time charged to Medicaid =  $27.3\% \times 30 \text{ minutes} = 8.2 \text{ minutes}$

***State Incentives for Coordination***

PfP is one of 17 agencies that receive state funding from ACCT to coordinate transportation services with other agencies. The Local Area Planning Group has reformulated itself into the Special Needs Transportation Coalition. Members include school districts, the Department of Human Services, Campfire Girls, the Red Cross, Boys and Girls Club, job corps, churches, retirement homes, mental health agencies, and transit agencies. The coalition is conducting surveys and holding monthly meetings to assess available resources, including agencies' vans, taxis, and fire and police vans. Insurance agencies are emerging as a large hurdle to sharing vehicles.

The goal of the project is to compile a complete picture of transportation for special needs populations, which includes people who cannot access transportation because of age, income, or disability. As resources are identified, the Coalition is working to draw up a plan to increase coordination, such as combining dispatching or pooling insurance or fueling. ACCT is pushing for every county to have one point of contact that people could call for information, eligibility screening, etc. PfP feels that the State of Washington (ACCT) has been very supportive of coordination, as evidenced by the state grants funded by the legislature. It is not clear if the state will also help fund the coordination plans that the coalition produces.

## **THE KING COUNTY METRO AND DSHS DEMONSTRATION PROJECT — KING COUNTY, WASHINGTON**

**King County Metro** (headquartered in Seattle, Washington) and **DSHS** conducted a demonstration of sharing vehicles to save money on ADA and Medicaid transportation. Metro and DSHS both contract separately with the Multi-Service Center (MSC, recently renamed “Hope Link”) to broker transportation services. For DSHS, MSC arranges Medicaid related transportation for all of King County. Trips include medical appointments, dialysis, and workshops for people with developmental disabilities. For Metro, MSC arranges ADA paratransit trips in a portion of Metro’s service area, which includes the urban and some close-in rural portions of the county. (At the time of the demonstration, ADA service in a second portion of Metro’s service area within King County was served under a separate turnkey service contract.) MSC schedules eligible trips on a variety of private providers who participate in the two different programs under different service and compensation arrangements. Metro and DSHS each download eligibility files to the broker for their separate programs. Separate MSC staff use similar but different software to broker the trips for Metro and DSHS.

The demonstration funds were used to support a staff position at the MSC call center who would identify overlapping demand and arrange for shared use of the providers under contract for each program. When this arrangement resulted in placing both ADA and Medicaid clients on the same vehicle, the cost of paying the

provider was divided between Metro and DSHS. After an initial period devoted to resolving technical and institutional issues, actual trip sharing was in place between April 1998 and June 1999. The report *ACCT 1: Report on 1997-1999 Demonstration Projects* (Agency Council on Coordinated Transportation, 2000) provided the results shown in Table 15.

A total of \$87,372 in grant funds was spent. In addition, Metro and DSHS pledged \$93,875 in local match. Thus, the demonstration project costs of \$181,247 generated benefits of \$307,460, creating cost savings of \$126,213 over the 15-month demonstration period (assumed to be equivalent to \$100,970 on an annual basis).

## **CONCLUSION**

Coordinated dispatching systems and vehicle sharing arrangements ensure a highly cost-effective application of driver and vehicle resources. Ridesharing can solve a number of the problems associated with noncoordinated transportation systems, such as overlapping routes, duplication of service, inefficient route design, and poorly timed schedules. In particular, the benefits of providing trips for ADA paratransit clients at the same time and on the same vehicle as other human service clients creates much lower per trip costs, thus generating real savings for public transit operators. Although ridesharing did not generate savings as large as some other coordination strategies, it has obvious applications to a wide variety of communities.

**Table 15**  
**Trips Brokered in the King County Metro / DSHS**  
**Demonstration Project**

<i>Factor</i>	<i>Value</i>
<b>METRO ADA TRIPS BROKERED BY DSHS</b>	
Number of trips	35,181
Cost if Metro ACCESS had provided the trip	\$21.37
Cost when provided by DSHS broker	\$14.24
Savings to Metro ACCESS	\$250,679
<b>MEDICAID TRIPS BROKERED BY METRO ACCESS</b>	
Number of trips	5,076
Cost if DSHS Medicaid provider had provided the trip	\$20.22
Cost when provided by Metro ACCESS	\$9.04
Savings to DSHS Medicaid Program	\$56,781

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# Chapter 7

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## EXPANDING TRANSPORTATION SERVICES

Many communities need more transportation services than they now have but find it difficult to fund additional public transit services. One means of accomplishing service expansions can be coordinating with other agencies with different cost structures. By reducing per trip costs, coordinated transportation services can provide more trips for the same level of expenses.

Service expansions have been made possible for many communities through coordination. In southeastern Michigan, Suburban Mobility Authority for Regional Transportation's (SMART's) Community Partnership Program now provides as many daily trips as SMART's official paratransit services. By supporting local tax referenda, localities support both their own services and

SMART's regional operations. In Riverside County, California, and Mesa, Arizona, volunteer transportation services have significantly expanded transportation options for older persons. In southwest Virginia, Mountain Empire Transit has used coordination to provide public transit services to an impoverished region that could not otherwise afford to pay the local matching funds required for Federal rural transportation funds. In Mississippi, the Delta Area Rural Transportation System provides transportation to a relatively impoverished, high unemployment region. The economic benefits have been substantial, both on personal and community-wide bases. Significant reductions in unemployment, welfare, and poverty have resulted from long-distance employment transportation.

## **EXPANDING TRANSPORTATION SERVICES THROUGH LOCAL GOVERNMENT PARTNERSHIPS**

### **SUBURBAN MOBILITY AUTHORITY FOR REGIONAL TRANSPORTATION**

#### ***Overview***

SMART is the suburban transit operator for three counties in southeast Michigan, covering a service area of 1,200 square miles. SMART operates 419 vehicles in fixed route and paratransit service, taking people to and from Detroit to Wayne, Oakland, and Macomb counties. In addition, SMART helps fund transportation operated by 50 local communities with an additional 137 vehicles, which primarily serve people who are elderly or disabled. Service within the city of Detroit is provided by a separate system funded and operated by the city's DOT. The 50 local transportation services belong to SMART's Community Partnership Program. SMART coordinates with the communities by giving them local property taxes earmarked for transit and a percentage of the Federal dollars SMART receives. Its three ombudsmen develop unique plans with each community.

SMART considers the Community Partnership Program the third tier of its system, along with fixed route and paratransit. According to the Director of Service Development, SMART's paratransit vehicles and the vehicles

operated by the Community Partnership Program make about the same number of trips per day — 2,000 daily trips in each system. Therefore, the Community Partnership Program has allowed SMART to double the mobility of riders in its three-county service area.

#### ***Program Evolution***

SMART is the successor to SEMTA, the Southeast Michigan Transportation Authority, which was formed in 1967 to take over failing private transportation companies. An umbrella agency composed of the executive administrators of the three counties and the mayor of the city of Detroit pass Federal funding to SMART. Federal funds are supplemented by state funding and by a transportation property tax initiated in 1995.

In 1994, SMART was \$20 million in debt. To address this crisis, voters were asked to pass a 0.3 mill property tax, amounting to \$15 a year for each \$100,000 of assessed valuation. The tax passed with 60 percent of the vote in the three counties.

Communities were allowed to opt out of the tax. In Oakland County, for example, 22 of the 60 communities passed the tax and receive SMART service and a portion of the millage for their own local transportation. Communities that opted out no longer receive SMART service.

An incentive for passing the tax was the creation of the Community Partnership Program. Under this program, each community receives property tax funds to operate its own transportation services.

These local programs often were already in operation at senior centers. The property tax funds enable communities to operate and expand their programs as well as to pay the local share of new vehicles, which SMART procures for them using Federal funding.

According to state law, the transportation property tax must be renewed at least once every 5 years. (The alternative of a sales tax is not permitted under Michigan's Constitution.) In 1998, the tax received between 70 and 80 percent approval in the three counties, but in 2002, the referendum in Wayne County was only narrowly approved with a 54 percent affirmative vote. Factors such as a depressed economy and an increase in the millage to 0.6 mills contributed to the close vote.

### ***Community Partnership Program Structure***

SMART contracts directly with municipalities because they are taxing districts. Although most communities operate their own local service with one to two vehicles from the Community Partnership Program, some choose to subcontract the service. The local plans developed for each community focus on niches that complement rather than compete with SMART service. For example, in Troy, the Troy Medigo Plus service provides door-to-door service with driver assistance to the frail elderly, whereas SMART's paratransit service is curb-to-curb only. SMART does some of the vehicle maintenance for some communities, whereas other communities

do their own maintenance. SMART continues to provide group trips to sheltered workshops itself.

Most of the local services are free or rely on donations. Some collect a fare. Some also purchase bus tickets for SMART's regular service with their tax rebate.

All vehicles are painted in SMART's colors and inscribed with a statement that the service is a partnership between SMART and the local community. The local community can add its name and any logo it chooses. Because the vehicles are purchased with Federal funds, communities must follow Federal regulations, such as establishing a preventive maintenance program and drug and alcohol testing for drivers.

Some communities' services also provide feeder buses to and from SMART's fixed routes for work trips to employment sites. Because most of the local buses now serve seniors and people with disabilities, work trips for the general public do not conflict with the times that the buses are in use. To take advantage of this opportunity to expand feeder service for work trips, SMART has set aside \$1 million of the transportation tax. Its staff is meeting with chambers of commerce and employers to encourage the local communities to add this additional service.

SMART purchased an unlimited license for scheduling software, which it provides to the local communities along with training and service planning. Five or six providers now log in to schedule their own trips on the centralized database. Riders benefit

because SMART's reservation clerks, who are typically available for longer hours than are the local reservation clerks, can schedule the local trips when the local offices are closed. The long-term vision is to have a centralized reservation system as an electronic medium to coordinate public paratransit. Eventually, local communities could schedule riders either on their own buses or on SMART's paratransit buses.

### ***Benefits of the Community Partnership Program***

The Community Partnership Program has strengthened the relationship between SMART and the municipalities it serves. Benefits include

- Active participation by the communities in supporting the passage of a transportation tax;
- Responsiveness to its constituency by SMART, which must prove its value for the renewal of the tax every 5 years;
- Expansion of available transportation to seniors and persons with disabilities without increased demand on ADA-paratransit;
- Better utilization of each community's vehicles;
- Personalized service tailored to individual communities' needs; and
- Feeling of ownership by local riders.

The Community Partnership Program also has significant economic benefits to the municipalities themselves. According to SMART's Director of Service Development, about three-fourths of the

programs would disappear without assistance from the dedicated property tax and the 80 percent Federal share of new vehicles that SMART contributes. He said that, because of budget cutbacks that are occurring from the downturn in the economy, municipalities would deem the transportation program expendable when measured against retaining police and fire services. In fact, one municipality that is in state receivership has indeed cut its transportation program because it has no staff to operate it. The director predicted that others would shut down without SMART's assistance because they would have no resources to replace worn-out vehicles. In societal terms, the loss of these programs could mean decreased mobility and higher medical costs without trips for preventive care, both of which would diminish the quality of life for citizens of these communities.

### ***Quantifying Economic Benefits of the Community Partnership Program***

SMART's 2002 budget for community transit — that is, the paratransit program operated by SMART — is \$10,646,400. With this annual budget, it operates 124 vehicles carrying 504,100 customers over almost 3 million miles at a cost of \$21.12 per customer. Service is Monday through Friday, generally from 6 a.m. to 6 p.m., with some night and weekend service for ADA-eligible passengers.

The Community Partnership Program is carrying 601,545 passengers over more than 2 million annual miles. The service hours vary from community to community,

with some operating from 9 a.m. to 3 p.m. and others offering weekend trips. Because their service areas are contained within the municipalities, the Community Partnership providers can carry more passengers in fewer miles than SMART's paratransit service, which travels across all three counties.

SMART has allocated \$3 million for the Community Partnership Program. The money can be used for both operating and capital expenses. In addition, the municipalities receive \$4 million from the state, which can only be used for operating expenses. One of the reasons for the lower cost of the Community Partnership Program is that the administrative overhead costs of overseeing a one to two vehicle program can be absorbed within existing city budgets. Another reason is the use of part-time drivers (who receive few, if any, employment benefits such as health insurance).

For purposes of this analysis, the cost of the Community Partnership Program is estimated to be \$7 million dollars. (Because some of the municipalities use their state funds to subsidize tickets on SMART's regular services, not all of the \$4 million can be attributed to the Community Partnership services. On the other hand, costs of the administrative overhead contributed by the municipalities are not necessarily accounted for in the \$7 million.) If this coordination of services between the municipalities and SMART did not exist, the cost to the public to provide this same level of service would be \$9.7 million. This figure is found by multiplying the 601,545 passengers on the Community Partnership

Program by SMART's \$21.12 per passenger paratransit cost and subtracting the \$3 million of the property tax program that SMART would instead keep and use for other purposes. (Note that SMART would not be eligible for the \$4 million that the municipalities receive from the state to use toward the program.) Thus, the Community Partnership Program costs \$2.7 million less than service provided directly by SMART would cost.

Absent an additional \$2.7 million, SMART's alternative would be to serve fewer trips. Therefore, coordination between SMART and the municipalities through the Community Partnership Program has greatly increased mobility at substantially lower cost to the public than SMART would have been able to provide without its partners.

## **EXPANDING TRANSPORTATION SERVICES THROUGH HUMAN SERVICE AGENCY PARTNERSHIPS**

### **ENABLING TRANSPORTATION— MESA, ARIZONA**

#### *Overview*

Enabling Transportation is a mileage reimbursement and taxi subsidy program for seniors and adults with disabilities in Mesa, Arizona. Dubbed ET, the program was started in March 1999 to supplement sparse or nonexistent public transportation in rapidly growing Mesa, a city of 430,000

people located about 25 miles southeast of Phoenix. ET was created by Mesa Senior Services, Inc., a nonprofit agency whose goal is “to provide ET passengers with the ability to remain mobile and independent in their community.” The city of Mesa funds the program.

ET participants must find their own volunteer drivers. Participants then submit mileage logs of their trips to Mesa Senior Services. Participants are funded at the rate of 34 cents a mile, which they use to pay their drivers for ET travel.

In FY 2000–01, the ET program served 344 clients, who took 15,870 one-way trips, an increase of 59 percent over the previous year. ET passengers were reimbursed for a total of 72,170 miles. By FY 2001–02, one-way trips had increased to 21,127. The average cost per trip was \$4.50.

ET Coupons for Cabs, a user side subsidy taxi service, was added as a 6-month pilot program in July 2002. Participants can purchase up to four coupon booklets a month for a cost of \$2.50 each. Each booklet contains \$10 worth of taxi coupons.

### ***Program Evolution***

Mesa is served by East Valley Dial-a-Ride, which is a door-to-door van service, and by Valley Metro, a fixed route transit system operating in the greater Phoenix metropolitan area. The transit system has been unable to keep up with the population explosion that has occurred, especially within the last 10 years, according to Mesa Senior Service’s Transportation

Coordinator for the ET program. Many areas of East Mesa have limited or no public transportation available.

Mesa, which is Arizona’s third largest city, has many retirement complexes for seniors, who compose 15 percent of the city’s year-round population. While East Valley Dial-a-Ride serves those who are eligible under ADA as well as those who are not ADA-eligible, some of these riders experience long waits. In addition, the cost to the city for Dial-a-Ride is \$19–20 a trip, the transportation coordinator reported. Consequently, the Executive Director of Mesa Senior Services spent 2 years researching other alternative transportation programs to serve the growing need for senior transportation.

### ***ET Mileage Reimbursement Program***

ET is modeled after the Transportation Reimbursement and Information Project (TRIP) in Riverside County, California, which began in 1993 (see next case study). Like TRIP, ET participants must find their own drivers. (TRIP has recently added a driver recruitment component by collaborating with service clubs to identify additional volunteer drivers, a new feature that ET does not have.) The trip is arranged between the rider and the driver, and the only involvement of ET is mileage reimbursement to the rider. The participant must provide the driver’s name to Mesa Senior Services, and both the participant and the driver must sign in the appropriate sections of the mileage reimbursement form verifying the accuracy of the reported mileage.

The ET program has no income restrictions. There are no limits on the types of trips that can be taken within the area. Socialization is considered important to people's health, so trips to hair appointments, shopping, senior activities, and church are just as acceptable as trips to meals programs and doctors' appointments. Most seniors have difficulty walking the distance to a bus stop or waiting for a bus in the Arizona heat. Therefore, the ability to take public transit is not a criterion for eligibility.

Potential ET passengers must complete a written application and be preapproved before they can use the ET services. Approved passengers must be comfortable completing mileage logs or be able to rely on others for assistance. Eligibility is restricted to

- Mesa residents who cannot drive either temporarily or permanently;
- Persons who are 65 years or older;
- Disabled adults 18–64 years old who possess a current Valley Metro photo identification card; and
- Those who are able to provide a volunteer driver who is a friend, neighbor, or relative who does not reside in the same household.

The monthly reimbursement limit is 300 miles, and there is a limit of 40 miles for a one-way trip. The ET transportation coordinator can approve exceptions to the mileage limit on the basis of need, such as for daily dialysis treatments. ET passengers averaged 100 miles per month in the first quarter of FY 2002–03.

The average age of seniors participating in the program is 82 years old, and 78 percent are female. The most common disability of the senior passenger is low vision. Therefore, volunteer drivers are encouraged to offer assistance with the ET paperwork, which is very helpful to the passengers.

The mileage reimbursement concept was not easily understood initially by the seniors. However, as more seniors use the ET program, they have been able to explain it to others. Therefore, word of mouth has become a very successful marketing technique. In addition, publicity has been placed in two major newspapers and in newsletters targeted to seniors and adults with disabilities. A 3-minute video, developed by Mesa Senior Service's Transportation Coordinator in collaboration with the city of Mesa's video department, has been shown on Mesa's cable television channel. A 30-second Public Service Announcement was created in June 2002 to promote the Coupons for Cab program and to announce opening the ET program to adults with disabilities.

The transportation coordinator notices a difference between clients who use the ET program and the clients who use East Valley Dial-a-Ride. ET clients enjoy a relationship with their chosen drivers and find the program closer to the independence they had when they were able to drive themselves. They are also more comfortable managing their own transportation, including the paperwork involved for the mileage reimbursement program.

One of the initial goals of the ET program was to increase the efficiency of East Valley Dial-a-Ride service by reducing the overall demand in Mesa. This goal has been difficult to measure due to continued population growth in the area and improvements by East Valley Dial-a-Ride: newer vehicles have been added and the reservation system has been changed, resulting in improved service.

The transportation coordinator educates clients on how to best use all forms of transportation interchangeably—not only the ET mileage reimbursement and taxi subsidy programs but also East Valley Dial-a-Ride. For example, she advises clients on the hours when Dial-a-Ride has its lowest traffic volume or how to work with medical offices to accommodate the passenger's transportation challenges within the doctor's schedule.

### ***ET Coupons for Cabs Program***

Mesa Senior Services and the City of Scottsdale, Arizona, have collaborated on the design of their alternative transportation programs for seniors. Scottsdale modeled its mileage reimbursement program after the ET program, which was started first in Mesa. In turn, Mesa Senior Services modeled its Coupons for Cabs program after Scottsdale's Cab Connection service.

Scottsdale developed Cab Connection, a user side subsidy taxi program, in 2000. Vouchers are issued with the specified destination for each trip, including a percentage factored for a driver's tip. Mesa Senior Services modified the concept by

allowing the coupons to be used by approved participants for any destination they choose. Coupons, which have a value of \$1 each, may be also applied toward a tip.

Coupons for Cabs is funded as a pilot from July through December 2002. Only advance mail orders accompanied by a check are accepted for the coupons. Approved passengers can purchase up to four coupon booklets a month for a co-payment of \$2.50 each. Each booklet contains \$10 worth of taxi coupons. Mesa had about 40 applicants in the first 2 weeks. Clients who have registered for the ET Coupons for Cabs program are also informed of the mileage reimbursement program, which has resulted in a slight increase in applications for the reimbursement program as well. Passengers can participate in both programs simultaneously.

Six taxi companies are participating in Coupons for Cabs. Two have wheelchair accessible vans. In order to establish a direct partnership with the taxi companies, Mesa Senior Services called an initial meeting to explain the program to them and gain their input. Just as with the mileage reimbursement program, Mesa Senior Services has no further involvement with the cab drivers. It does not investigate or regulate the companies, drivers, or vehicles. Clients are given guidelines and advice, such as making sure that the taxi that arrives is one that is participating in the program and that it is from the same company the client called. Here again, the ET program's philosophy is to allow individuals to be responsible for managing their own transportation.

### ***Benefits of ET Mileage Reimbursement Program***

ET Coupons for Cabs is too new for evaluation. Demonstrated benefits of the mileage reimbursement program for volunteer drivers include the following:

- Expands available transportation to seniors and adults with disabilities;
- Fosters independence both by enabling people to manage their own transportation and by giving them an alternative that allows them to stay active in their community and remain in their own homes;
- Potentially lowers the cost of transportation to the city, compared with the cost to the city if East Valley Dial-a-Ride provided the same trips;
- Requires minimum administration, since the transaction is between the rider and the driver; and
- Avoids capital costs for vehicles.

### ***Economic Benefits of the ET Mileage Reimbursement Program***

The ET program is wholly funded by the city of Mesa, which also provides in-kind office space. The FY 2002–03 budget is \$110,000, which includes one full-time coordinator and one half-time assistant. Budget categories are as follows:

- Staff support and administration-\$50,000;
- Reimbursement and coupons-\$50,500;
- Printing and postage-\$ 6,000; and
- Marketing-\$ 3,500.

In the first quarter of the 2002–2003 fiscal year, 200 people are enrolled in the ET mileage reimbursement program, and 134 people are enrolled in Coupons for Cabs.

If the ET program were not available, the city could pay East Valley Dial-a-Ride for the trips now provided by the volunteer drivers. The transportation coordinator indicated that the average senior adult would be unable to take public fixed route transit. Therefore, it can be assumed that most participants would be ADA-eligible.

If ET were not available, the 21,127 one-way trips it provided in 2001–02 would have cost the city \$401,413 at the rate of \$19 a trip for East Valley Dial-a-Ride. At ET’s cost of \$4.50 per trip, these same trips cost the city \$95,072. The difference of \$306,342 is the savings to the city of Mesa in FY 2001–02. It can also be assumed that there would be capital costs for the additional Dial-a-Ride vehicles that would have been needed to serve these trips. Therefore, the city of Mesa’s investment in the Enabling Transportation mileage reimbursement program has substantial economic benefits for the city’s budget, while providing a transportation-dependent segment of its population with increased mobility.

## **TRANSPORTATION REIMBURSEMENT AND INFORMATION PROJECT — RIVERSIDE COUNTY, CALIFORNIA**

### ***Overview***

TRIP complements public transportation services in Riverside County, California, by

reimbursing volunteers to transport individuals in areas where no transit service exists or in situations in which the individual is too frail to use other transportation. By using volunteers, a needed service is provided at a small fraction of what it would cost using more conventional methods.

There is an interesting nuance to TRIP's organization. Riders are supposed to recruit the drivers, and the program pays the rider, who is supposed to pay the driver. All this means there is no actual relationship between the program and the drivers. As described in an October 2000 Beverly Foundation report (2001), "As was mentioned earlier, one of the reasons TRIP developed as a rider-oriented driver recruitment program is because of liability concerns associated with the recruitment of drivers. Discussions with its insurance provider have reduced concerns to the point that TRIP is now gearing up to develop a driver recruitment program. Currently, 85 percent of riders have secured their own volunteer drivers; the remaining 15 percent have been referred to a volunteer driver."

Riverside County is located in Southern California west of Los Angeles. The county includes several cities, the largest of which is Riverside (population 255,000). Much of the county consists of sparsely populated rural areas. Nearly a third of the county's 1.5 million residents live in unincorporated areas.

The target populations for TRIP are the frail elderly and persons with disabilities. Only individuals who are unable to use public transportation are eligible for the program.

Applicants must be 60 years or older or have a verifiable disability. Seventy percent of the riders are 70 years of age or older and 100 percent have one or more health-related problems. The program addresses the need for transportation to medical providers and services, as well as transportation to meet other subsistence and quality of life needs.

TRIP is administered by the nonprofit Partnership to Preserve Independent Living for Seniors and Persons with Disabilities. In the western portion of the county, funding comes mostly from the Riverside County Transportation Commission and the county Office on Aging. In the eastern county, funding is provided by the Office on Aging, SunLine Transit Agency, and the City of Blythe. A very similar program has recently been initiated in neighboring San Bernardino County.

Participants are responsible for finding their own volunteer drivers, although the TRIP program does provide assistance in finding a volunteer in some cases. Volunteers are usually friends or neighbors of the client, but the program has a referral list of people interested in helping others. TRIP will also reimburse family members when the situation warrants. Clients are reimbursed for mileage at the rate of \$0.28 per mile; the

client is to pay this amount to the volunteer. The maximum reimbursement per client varies from 300 miles to 460 miles per month, depending on where the client lives.

Some indication of benefits to the participants is available from a 2001 survey of program participants. The survey found that

- 94 percent of the TRIP participants were not always able to travel to their doctor when needed before beginning use of the TRIP program;
- 93 percent said that it was difficult for them to get groceries and other needed things before being enrolled in the TRIP program;
- Before being enrolled in the program, 13 percent said that they never left their residence and 49 percent said that they could only travel once or twice a month; and
- After enrolling in TRIP, 96 percent of the riders reported an increase in their ability to travel.

From a cost point of view, the reimbursement rate of \$0.28 per mile is clearly much lower than the cost for other types of specialized transportation services.

### ***Benefits***

TRIP's FY 2000–01 expenses were \$350,157. In a typical year, about 60 percent of the program's expenses are for mileage reimbursement; the balance covers office operations and customer information and referral. With these funds, TRIP provided 48,350 one-way trips in

FY 2000–01 at a cost of \$7.24 per trip, when 537 people participated in the program. (The average trip is 40 miles.)

Four demand-responsive programs in Riverside County operated by various cities had an average operating cost of \$1.72 per mile in 1997–98. (To be conservative, no inflation factor was applied.) This cost, multiplied by the average 22.6 miles per trip for TRIP clients in 2000–01, equals a cost of \$38.87 per trip if done by one of the city programs. Instead, TRIP's cost per trip was \$7.24.

At the \$1.72 per mile 1997–98 rate, the mileage covered by TRIP in 2001 would cost

$$1,090,876 \times \$1.72 = \$1,876,307.$$

Based on these figures, the annual savings from TRIP is

$$\$1,876,307 - \$350,157 = \$1,526,150.$$

Note that TRIP's services include a personalized escort, with help to and from destinations, which the city programs do not. TRIP's savings would be even greater if the 2000–01 public transportation costs were used and if the value of a personalized escort service were included.

In addition to quantifiable costs, other social service agencies benefit from the counseling and support TRIP staff provides to clients. This service not only reduces the amount of staff time other agencies would need to spend but also may defer or prevent costs of health care and institutionalization. TRIP also aids public transit marketing efforts by teaching seniors how to access public transportation.

## **EXPANDING TRANSPORTATION SERVICES BY COORDINATING AGENCY SERVICES**

### **MOUNTAIN EMPIRE TRANSIT — BIG STONE GAP, VIRGINIA**

#### ***Overview***

Mountain Empire Transit is a private, nonprofit corporation that was founded in 1974 for the purpose of providing human service transportation in Southwest Virginia. Mountain Empire provides demand-responsive transportation to agency clients and the general public using a fleet of 43 vehicles. Services are available between the hours of 7:00 a.m. and 5:00 p.m., Monday through Friday, excluding holidays. For the fiscal year ending September 30, 2002, Mountain Empire provided approximately 122,322 one-way passenger trips at a cost of just more than \$1,014,269. Even though its overall cost per trip figure of \$8.29 has increased in recent years, it is still outstanding for a rural demand-responsive transportation system.

Mountain Empire Transit is recognized as the official Coordinated Transportation Provider in the Lenowisco Planning district, which includes the counties of Lee, Scott, Wise and the city of Norton. As the Coordinated Transportation Provider, it provides service for the following agencies:

- Local Mental Health Organizations (Community Service Board funds);

- Association for Retarded Citizens;
- Medicaid;
- Retired Senior Volunteer Program;
- Area Agency on Aging;
- Appalachian Agency for Senior Citizens;
- Department of Health;
- Department of Social Services;
- VIEW (Virginia Initiative for Employment, not Welfare); and
- Other local human service agencies.

In addition to contracting with these agencies, Mountain Empire also receives funding from the following sources:

- F.T.A. Section 5311;
- F.T.A. Section 5310;
- Virginia Department of Rail and Public Transportation (DRPT) public transportation funding; and
- Rural Transit Assistance Program (RTAP).

Each contract or funding source has its own set of requirements and regulations that govern how the money or resources can be utilized. Mountain Empire's Director likens coordinated transportation to a three-dimensional puzzle, in that it is very difficult to fit all of the pieces together and removing one piece can cause the entire arrangement to fall apart. The key, according to the director, is to find a way to balance or integrate the numerous sets of rules and then take advantage of the

resulting economies of scale. Using a deliberate and strategic coordination of funding sources, Mountain Empire creates an overall funding effect that is greater than the sum of its components.

By coordinating funding, Mountain Empire has been able to qualify for the additional funds available to provide general public service, thus creating a significant expansion of persons served in their large rural area. The local governments in the Mountain Empire service area cannot support the 50 percent local match requirements for general public transportation funding. Mountain Empire uses contract revenues from human service contracts to generate the matching funds needed to pay for general public transportation service. With the introduction of the VIEW program and Welfare-to-Work transportation in 1998, Mountain Empire has broadened its human service base considerably, creating sufficient matching funds for general public service funding.

Another example of coordinated funding is found in the administrative staffing. Mountain Empire uses Section 5311 administrative funds to help pay for an accounts receivable clerk. This clerk primarily handles the billings and collections for Mountain Empire's general public passengers, which is a difficult and ongoing process. Even though fare collection involves some difficulties, Mountain Empire believes that the general public service is important for the persons in its service area. The accounts receivable clerk also spends approximately 2 days per month preparing the billing statements for

the various agency contracts and serves as a back up dispatcher. Without the combination of funds from various sources, Mountain Empire could not afford a full-time billing clerk, and the general public service would have to be provided solely on a cash basis. This would be a serious financial problem for many Mountain Empire fixed route passengers. The local service area is one of the poorest areas in Virginia, sometimes referred to as a "mailbox economy" because the only income arrives in the form of Supplemental Security Income, disability, and TANF checks at the beginning of each month. Without monthly billing or punch pass service, ridership for the general public routes would all but disappear.

Although the benefits of such a complex juggling of funds are great, the risks are also great. Losing one funding component can ripple across the entire spectrum of services, causing difficulties at all levels. For example, Virginia's Department of Medical Assistance Services (DMAS) recently awarded a statewide contract through June of 2004 for Medicaid transportation to a large, private brokerage firm. Mountain Empire has not contracted with the brokerage firm because of disadvantageous cost provisions. Now that fewer Medicaid trips are coordinated through Mountain Empire's services, the system experienced a loss of 18,000 annual trips from FY 2001 to FY 2002. (Mountain Empire still provides 520 Medicaid trips per month.) Mountain Empire officials are currently making every effort to deal with the loss of Medicaid funding and the associated impacts. As indicated above, the loss of Section 5311 funding would be

disastrous for its general public service and would also result in cutbacks for its agency service.

### ***Benefits***

In the fiscal year ending September 2002, Mountain Empire generated about \$30,000 in contract revenues that were used to match Federal funds that support general public transportation services. Without the coordinated services that generate these funds, it is likely that there would be no public transit services in the region, as this “is a very impoverished area and has been for many years,” according to Mountain Empire’s Transit Director. Local governments do not have an additional \$30,000 in general tax revenue to support public transportation, nor would they be likely to find other sources for matching Federal dollars.

Were Mountain Empire’s 122,000 trips provided by another organization, its likely costs would be much greater. Using faith-based services in nearby Bedford, Virginia, as an example, Mountain Empire’s likely savings over alternative providers is probably on the order of \$7 per trip or more. On an annual basis, this would be about \$854,000. Adding the \$30,000 generated in contract revenue creates a total annual benefit of \$884,000.

Mountain Empire’s Transit Director believes that the system’s greatest economic benefits lie in the multiplier effects of the Federal dollars used locally for transportation. He reports that 90 percent of the system’s million-dollar budget is spent locally, and this expenditure

creates about \$3 million in additional revenues for the region as the effects of the Federal funds multiply through the local economies. (This project did not include detailed estimates of the multiplier effects of transportation expenditures in local economies.)

### ***Coordination Issues***

Although Mountain Empire has taken advantage of the various funding sources provided by state and Federal entities, it cited several barriers to coordination that have hindered its efforts in the past. It reports that the biggest hindrance to coordination comes from the overall fragmentation of the Federal transportation funding. Federal funds for programs such as Medicaid and TANF all flow through the states to localities, and each program includes money for transportation. The problem is that the final recipients are not *required* to spend any of the transportation funds on transportation, and this puts a budgetary squeeze on Mountain Empire. As mentioned previously, when one of its funding sources is removed, the ripple effect is felt in all areas of service.

Mountain Empire staff also pointed to Federal drug and alcohol regulations that are difficult for a rural system covering a large geographic area (most coordinated rural transit systems *have* to cover a large geographic area). These regulations require a drug/alcohol test within 1 hour of notification. With a service area of more than 1,400 square miles, it is often impossible for a driver to get to a test on time.

Looking toward the future, current state practices regarding Medicaid transportation services in Virginia present a challenge to Mountain Empire's coordinated funding effort. DMAS, the state Medicaid agency, is apparently willing to drop its support of coordinated community transportation services and contract with lower-quality providers (operators with lower-quality vehicles, less driver training, and lower insurance coverage) in order to obtain small cost savings in their program's transportation costs. Mountain Empire is also committed to making its service more "transparent" to its clients. Anyone who calls in for a ride should be able to get a ride and have it charged to the appropriate agency with all of the associated details handled behind the scenes by transit personnel. The major goal for the future is to deal with the various regulatory conflicts that arise from state and Federal funding sources and to come up with creative ways of addressing those conflicts.

## **DELTA AREA RURAL TRANSPORTATION SYSTEM — CLARKSDALE, MISSISSIPPI**

### ***Overview***

The Mississippi Delta has traditionally been among the most impoverished regions in the United States. In spite of understated unemployment rates, official unemployment rates for counties in the Delta region frequently exceeded 30 percent until the 1980s.

The arrival of riverboat gambling created an enormous growth in employment. In

2000, Tunica (where several casinos were located) had 9,227 residents but provided 12,227 jobs, 11,500 of which were in the casinos. Tunica became the employment center for the entire Delta region, but there were serious questions about how to get casino workers to their jobs.

The Delta Area Rural Transportation System (DARTS), established in 1990, provides transportation services for employment, job-training, medical purposes, and personal purposes to residents of five counties. (See Burkhardt, Hedrick, and McGavock, 1998, for further details.) Since the introduction of riverboat gambling in the Delta area, the number and percentage of employment trips have increased sharply. In 1993, DARTS provided 4,051 employment trips, which was 17 percent of the total trips provided (23,355). In 1994, after the inception of casino gambling, DARTS provided 44,603 employment trips, which was 64 percent of the total trips provided for that year (69,810). Of the 109,930 trips provided by DARTS between October 1995 and September 1996, 87,513 (80 percent) were employment related. In the year 2000, DARTS provided approximately 194,000 trips, and 158,000 of them were employment related.

In addition to its regular employment transportation services, DARTS received a demonstration grant from the JOBLINKS program to focus on unemployed persons living below the poverty level in the northern Mississippi area, especially those without cars. It was intended to improve the availability and accessibility to coordinated community transportation services,

especially for small communities, and to make improvements in efficiency. The project also included the development of a transit center, which would provide job training to unemployed individuals, and coordination with key public and private agencies in the region.

### ***Benefits***

The JOBLINKS program kept track of the number of riders and clients served. Therefore, benefit calculations will focus on those benefits realized through the JOBLINKS program.

In a 1-year period in 1997 and 1998, JOBLINKS transported a total of 347 clients for employment or job interviews. The program helped 283 persons find employment and provided nearly 18,000 passenger trips. DARTS officials estimate that its employment transportation clients earn an average of \$15,000 per year. This amounts to a total annual earnings figure of \$4,245,000 for the JOBLINKS clients. DARTS officials estimate that 60 percent of its JOBLINKS clients live below the poverty level. In addition, the average length of the employment trips (3–6 hours, round trip) and the cost of these trips, \$50 prepaid for 2 weeks, provides a strong indication that the vast majority of DARTS employment transportation clients are captive riders. For the purposes of these calculations, assume that 90 percent of the employment transportation clients would become unemployed in the absence of DARTS services. This gives a figure of

$$(\$4,245,000 \times 0.9) = \$3,820,000$$

as the total earnings that would be lost in the absence of DARTS employment transportation.

Furthermore, persons who are employed through the JOBLINKS program are no longer taking AFDC/TANF payments, which amount to approximately \$5,000 per person per year. If 75 percent of the JOBLINKS clients were taking welfare payments, the cost would amount to \$1,061,000 each year.

Fares on the employment routes cover approximately one-third of the cost to provide the service, which means that DARTS provides approximately \$10 for each passenger trip. Multiplying \$10 by the total number of trips (18,000) provided by the JOBLINKS program gives a figure of \$180,000 as the cost to provide transportation. In total, the earnings and welfare savings generated by the DARTS/JOBLINKS program add up to nearly 5 million dollars annually (\$3,820,000 + \$1,061,000). The cost to provide trips totals approximately \$180,000 annually. Thus, the total benefits of the program amount to \$4,881,000 minus \$180,000 or \$4.7 million per year.

Data on the current number of persons taking employment trips are not available. If, in the year 2000, all persons taking employment trips were employed full time, then DARTS would have been providing trips to and from work for about 3,600 persons. (Because it is likely that some workers were employed part time, DARTS could have provided work trips for 4,500 workers or more in 2000.) Because of the previously described employment

conditions in the area, it is possible that 50 percent or more of those using DARTS's services for work trips could become unemployed if DARTS's services were no longer available. Using the previous figures

$$50\% \times 4,000 \text{ persons} \times \$15,000 \text{ in wages} \\ \text{person per year} = \$30,000,000$$

as the total annual earnings that might be lost in the absence of DARTS employment transportation. Based on the prior calculations, having these persons working instead of on public support programs would be worth about another \$7 million. Therefore, the total year 2000 employment benefits derived from the presence of the DARTS program could be on the order of \$35 million or more.

through coordination and can provide substantial economic benefits. With the use of examples from southeastern Michigan; Riverside County, California; Mesa, Arizona; southwest Virginia; and Clarksdale, Mississippi, significant economic benefits have been demonstrated. Even without including obvious economic development and multiplier benefits, the economic benefits from well-designed service expansions created through coordination are very large. In fact, it is likely that funding for these service expansions would not have been found if the much larger funding for noncoordinated operations were required. Using coordination strategies to achieve service expansions should be seriously considered in many communities.

## CONCLUSION

Service expansions to areas with little or no transportation services can be accomplished

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# Section III

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## **ESTIMATING THE NATIONAL ECONOMIC IMPACTS OF COORDINATED TRANSPORTATION SERVICES**

Major coordination strategies were addressed in the previous section, including tapping currently unused sources of funding, decreasing the direct costs of providing transportation, and increasing the productivity and utilization of vehicles on the road. This section examines the potential national impacts of applying the kinds of strategies previously documented to communities across the Nation.

From an overall impact perspective, the following specific strategies stand out as worthy of close examination: coordinating with human service programs (for example, Medicaid) to transport their clients; using

human service and other nontransit agencies to provide ADA paratransit services; shifting paratransit riders to fixed route services; coordinating the efforts of various human service agencies; and expanding transportation services to communities not previously served by public transportation.

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# Chapter 8

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## POTENTIAL NATIONAL BENEFITS OF COORDINATED TRANSPORTATION

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Many localities have developed some form of coordination between their human service transportation providers and local public transit authorities. Similarly, many states are engaged in some form of supporting coordinated transportation (see Chapter 9 for details). Still, it appears that coordination could be a much more widely applied management strategy than it currently is.

This chapter examines potential benefits that could be achieved if high-payoff strategies could be applied on a national basis. Although many of the strategies discussed are indeed possible at a wide variety of locations, it is important to remember that local conditions and resources may limit or enhance the applicability of particular strategies for specific communities. This means that real

caution is needed when creating estimates of the potential national economic benefits of coordinating human service transportation and public transit services.

### HIGH-PAYOFF STRATEGIES

Twenty-eight sites were found where sufficient information existed for the purpose of estimating the economic benefits of coordinated transportation services. Table 16 summarizes the economic benefits realized by human service agencies and transit operators from applying specific coordination strategies. (Note that most of these sites had applied multiple coordination strategies, but

Table 16

**Estimated Economic Benefits of Coordination for Human Service Agencies and Transit Providers by Strategy and Site**

		<i>New Revenue Sources</i>			<i>Cost-Saving Measures</i>		<i>Rideshare Expansion</i>	<i>Benefit</i>	
System/Program	Locality	State	Additional funding	Contracts with schools	HS agencies provide ADA	Shift paratransit riders to FR	HS agencies coordinate	Rideshare/ coordinate dispatching	Expand transit services
Dade County, Florida	Miami	FL	\$2,292,000						\$2,292,000
King County Metro Medicaid Pass Program	Seattle	WA	\$300,000						\$300,000
Lane Transit District	Eugene	OR	\$67,775						\$67,775
Philadelphia, Pennsylvania	Philadelphia	PA	\$2,089,000						\$2,089,000
State of Connecticut	Hartford	CT	\$1,802,000						\$1,802,000
State of Rhode Island	Providence	RI	\$2,100,000						\$2,100,000
Tri-Met's Medical Transportation Program	Portland	OR	\$1,404,503						\$1,404,503
Dodger Area Rapid Transit System	Fort Dodge	IA		\$20,000					\$20,000
Mason County Transportation Authority	Shelton	WA		\$99,377					\$46,200
People for People (Mabton School Program)	Yakima	WA		\$15,210					\$15,210
ACCESS	Pittsburgh	PA			\$26,136,066				\$26,136,066
Dakota Area Resources and Tr. Services	Dakota County	MN			\$395,000				\$395,000
Ride Connection	Portland	OR			\$1,972,951				\$1,972,951
STAR Paratransit	Arlington	VA			\$640,000				\$640,000
CTS/JAUNT	Charlottesville	VA				\$921,600			\$921,600
Phoenix Travel Training	Phoenix	AZ				\$107,600			\$107,600
Sacramento RT Contract w Paratransit	Sacramento	CA				\$1,046,000			\$1,046,000
Kentucky Coordinated HS Tr. System	Lexington	KY					\$22,467,379		\$22,467,379
Martin County Transit	Williamston	NC					\$178,447		\$178,447
R.Y.D.E.	Kearney	NE					\$400,358		\$400,358
King County Metro/DSHS Demo	Seattle	WA						\$100,970	\$100,970
People for People	Yakima	WA						\$13,044	\$13,044
People for People	Moses Lake	WA						\$265,000	\$265,000
Delta Area Rural Tr. System (DARTS)	Clarksdale	MS							\$4,700,000
Enabling Transportation (ET)	Mesa	AZ							\$306,342
Mountain Empire Transit	Big Stone Gap	VA							\$884,000
SMART	Detroit Region	MI							\$2,700,000
TRIP	Riverside	CA							\$1,526,150
Combined economic benefits of coordination strategies studied at these sites									\$74,950,772

benefits were calculated for only the primary coordination strategy at each site.)

From reviewing this table, it is clear that major economic benefits are possible from many of the specific strategies examined. The following strategies appear to hold particular promise:

- Generating additional income by coordinating with human service programs like Medicaid to transport their clients;
- Saving costs by using human service and other nontransit agencies to provide ADA paratransit services;
- Saving costs by shifting paratransit riders to fixed route services;
- Saving costs by coordinating the efforts of various human service agencies; and
- Expanding transportation services to communities not previously served by public transportation.

Two other strategies — transit authority contracts with local school districts and using coordinated dispatching to achieve higher levels of ridesharing and vehicle sharing — did not have economic benefits as large as the economic benefits of the above strategies in the communities studied. (Even though the economic benefits produced may not be as large, these strategies still offer significant benefits; for example, see Multisystems, et al., 1999).

## **INCOME GENERATED FROM COORDINATING PUBLIC TRANSIT SERVICES AND MEDICAID TRANSPORTATION**

Several of the cases examined — Miami, Philadelphia, the State of Connecticut, and the State of Rhode Island — generated about \$2 million per year in additional revenues for transit authorities when significant numbers of Medicaid clients who formerly used paratransit services became fixed route transit riders. Savings to the Medicaid program in each case were often two to four times as large as the additional revenues generated for transit operators. These savings and new revenues were achieved by transferring relatively small numbers of Medicaid clients from paratransit to fixed route transit services.

The number of local transit authorities offering transit passes to Medicaid clients is unknown but, based on anecdotal evidence, the number of times this is happening in 2002 seems to be a fraction of the overall potential market. There were 587 transit agencies receiving FTA Urban Area Formula Program funds in 2000 and about 1,270 recipients of FTA Nonurbanized Area Formula Grants. Therefore, the total number of transit operators that could participate in such programs is very large.

At any point in time during 2002, there were an estimated 36 million low-income persons in the United States (12.8 percent of the total U.S. population) receiving assistance with medical services through the Medicaid program. [Altogether, about 42,763,000 individuals were expected to receive Medicaid payments in 2002 (Centers for Medicare & Medicaid Services, 2002)]. Transportation assistance within the Medicaid program varies from state to state and, sometimes, from locality to locality.

Public transportation services are available to about two-thirds of all Americans, about 183,200,000 persons (for example, the National Health Interview Survey on Disability, Supplement on Aging II, reported that 65.1 percent of persons 69 and older had access to public transportation services, see Burkhardt et al., 2002). Assuming that Medicaid recipients live in communities served by transit at about the same proportion of all U.S. citizens, about 24 million Medicaid clients could possibly be served through the kinds of transit pass programs discussed earlier in this report.

Florida's Miami-Dade Transit (MDT), through a long-standing and well-documented program transporting Medicaid clients using MDT's bus pass program, serves about 1 percent of local Medicaid clients. This service generates revenues of about \$464 per year for each Medicaid client transported using bus passes. (As noted in Table 5 in Chapter 4, MDT actually receives revenues of about 25 percent of the savings generated for the Medicaid program through the local transit pass program. Some other programs

received a higher proportion of the savings. Some other programs also received greater revenues for their transit passes.)

If 20 percent of transit operators in the United States were involved in coordinated programs providing transit passes to Medicaid clients, and about 1 percent of the potential Medicaid clients were provided transit passes to shift their rides to public transit, approximately 48,000 Medicaid clients would be affected. Using these figures, transit operators that participated in transit pass programs aimed at Medicaid clients would receive total new revenues of

$$\begin{aligned} & \$464 \text{ per client per year} \times 48,000 \\ & \text{clients} = \$22,272,000. \end{aligned}$$

If these operators served not 1 percent but 2 percent of the Medicaid clients in their communities, they could receive \$44,544,000 in additional revenues based on the MDT figures. If 50 percent of the transit operators in the United States each provided trips for 2 percent of their local Medicaid clients using bus passes, the transit agencies could receive \$111,360,000 in additional revenues. The same additional revenue figure of \$111,360,000 could be achieved if 20 percent of all transit operators each provided bus pass trips for 5 percent of their local Medicaid clients. Considering this entire range of estimates, figures of from \$50 million to \$100 million per year in additional revenues to transit properties seem well within the range of possibility.

Because some of the properties identified in Chapter 4 received more revenues on a per client basis than MDT, the above figures can still be considered as conservative estimates of the potential level of benefits. Extending such programs beyond transit-oriented center cities to suburban and non-urban communities would increase the numbers of individuals served and thus the total level of benefits; so would serving a greater percentage of Medicaid clients; so would charging more for transit passes. Under such expanded scenarios, annual benefits of more than \$100 million per year or more could well be possible. Programs with benefits of this magnitude obviously deserve substantial support from policymakers and operators.

## **SAVINGS ACHIEVED WHEN NONTRANSIT AGENCIES PROVIDE ADA AND OTHER PARATRANSIT SERVICES**

Pittsburgh, Pennsylvania, and Portland, Oregon, have achieved very substantial economic benefits when nontransit agencies provide ADA and other paratransit services there. In Pittsburgh, the private broker service, ACCESS, provided trips in 2001 at about 53 percent of the cost of the trips that it provided in 1980. ACCESS's 2001 per-trip cost of \$14.34 is less than one-half of the cost of ADA paratransit trips in some major metropolitan areas. In the Portland region, Ride Connection, using volunteer drivers and other cost-saving measures, is able to provide paratransit trips for about 32 percent of the cost of similar trips on Tri-

Met's LIFT service (which focuses on ADA paratransit trips). In the Washington, DC, metropolitan area, Arlington County uses taxi operators for its STAR program, which provides paratransit services to ADA clients and other persons at about 73 percent of the costs of WMATA's MetroAccess program.

According to the National Transit Database, there were about 45 million ADA paratransit trips taken in 2000 (representing 40.2 percent of all paratransit trips made that year). Considering all 104 million paratransit trips made in 2000, the average cost for all these trips was \$17.28. ADA paratransit trips are likely to be more expensive than this average because of regulatory requirements and the need to serve persons with significant disabilities. Assuming a national average ADA paratransit per trip cost of \$25, a number of calculations can be made. If the U.S. total of 45 million ADA paratransit trips had been made using nontransit agencies as the trip providers,

- \$479,000,000 could have been saved with ACCESS's \$10.66 per trip cost savings;
- \$852,750,000 could have been saved with Ride Connection's \$18.95 per trip cost savings; and
- \$303,750,000 could have been saved with STAR's \$6.75 per trip cost savings.

Certainly, the services provided by Ride Connection would not qualify to serve all 45 million ADA paratransit trips, so the \$853 million savings figure is a significant overestimate of potential savings. However,

if the estimates used in the previous examples — from 10 to 33 percent of current service providers adopting a new coordinated services strategy — are applied, then the cost savings from contracting with nontransit agencies for ADA and other paratransit services could conservatively range from \$30 million to \$158 million per year, based on the kinds of savings achieved by STAR and ACCESS and depending on many local conditions. Again, these estimates are large enough to warrant serious in-depth examinations of their potential benefits to many communities.

## **GENERATING COST SAVINGS BY SHIFTING PARATRANSIT RIDERS TO FIXED ROUTE SERVICES**

Charlottesville, Virginia, and Sacramento, California, are communities that succeeded in generating large cost savings by shifting paratransit riders to fixed route services. In Charlottesville, this was accomplished by offering fixed route trips for free to individuals who qualified for paratransit services. The Sacramento strategy was to provide travel training to teach certain persons to ride fixed route transit to reach certain destinations. In FY 2001, the Charlottesville Transit System reported 76,800 trips on the free ride program, a substantial number for a city of 45,000 persons. Estimated annual cost savings

were \$921,6000. Sacramento, with a city population of 407,000 persons, successfully trained 587 persons in FY 2002 to ride fixed route transit instead of paratransit services, generating a savings after program costs of \$1,046,000.

If paratransit and transit services were coordinated across the Nation as they are in these two communities, substantial paratransit costs could be saved. Assume that programs like these could apply to one-half of the 104 million paratransit trips in the United States, or 52 million trips. In this instance, apply the national average paratransit trip cost of \$17.28.

Charlottesville was able to achieve its savings at essentially zero program costs because no costs were incurred for additional fixed route services, although some funding should be included for marketing the program. In Sacramento, program costs were 20.8 percent of the savings realized. Using these figures provides the following estimates:

- If 10 percent of all U.S. communities used this coordination technique, 5.2 million paratransit trips might be taken for an overall savings of \$89,856,000; and
- If 33 percent of all U.S. communities used this coordination technique, 17.2 million paratransit trips might be taken for an overall savings of \$296,524,800.

Again, the potential cost savings are very large.

## **HUMAN SERVICE AGENCIES COORDINATE THEIR TRANSPORTATION EFFORTS**

The State of Kentucky and Buffalo County, Nebraska, are two examples where the coordination of transportation services led to large cost savings. In Kentucky, statewide program management substantially reduced the growth in expenditures for non-emergency Medicaid trips, saving \$22 million; in Buffalo County, the disparate efforts of 14 agencies were combined to generate an increase of almost 600 percent in the number of rides over a 2-year period and a cost savings of more than \$400,000. These programs have enough differences that they need to be treated separately.

The Kentucky example of providing more oversight for Medicaid transportation (nearly always the largest transportation program in terms of numbers of dollars and trips in any state) has 50 potential sites for replication. Some of these, such as the State of Washington, have had Medicaid transportation brokerage operations in place for some time. Other states are struggling with the brokerage concept, and a number of states have implemented Medicaid transportation brokerages but have ignored the opportunities for coordination with the transportation services of other programs. If 10 of the 50 states (20 percent) were to implement a program such as that being created in Kentucky, annual benefits to the Medicaid program could reach \$100 million per year. If, as in other cases, transit operators were to receive from 20 to 50

percent of the Medicaid program savings in new revenues, benefits to the transit industry could range from \$20 million to \$50 million per year; \$35 million is the mid-point of these estimates.

FTA's National Transit Database records 5,252 agencies providing demand-responsive services in the United States in 2000. We know that about 1,200 of these are rural public transportation services (with an additional 100 rural operations that do not offer demand-responsive services) and that about 3,500 others receive funds from FTA's Elderly and Persons with Disabilities (Section 5310) Program. In Buffalo County, 14 distinct operations were replaced by one coordinated operator; in Pittsburgh, ACCESS now performs the functions of 112 previous transportation providers. Of the 3,041 counties in the United States, if 5 percent of them could achieve Buffalo County's \$400,000 annual level of benefits, the total annual benefits could reach \$60,800,000.

## **EXPANDING TRANSPORTATION SERVICES THROUGH LOCAL GOVERNMENT OR HUMAN SERVICE AGENCY PARTNERSHIPS**

The SMART system in the suburban Detroit region, the DARTS system in Mississippi, and TRIP in southern California are three fine examples of the economic benefits that can be gained by expanding public transportation services through partnerships with other agencies. In

these cases, the partnership arrangements have allowed large expansions of transportation services into communities that previously had no public transportation. The partnerships have allowed the service expansions to occur for substantially lower costs than would have been possible without coordination.

In the Detroit region, the partnership between the regional public transit operator, SMART, and the localities has greatly increased mobility at substantially less cost to the public than SMART alone would be able to provide. The program costs \$7 million; alternative services would cost \$9.7 million. Therefore, the Community Partnership Program operates at about 72 percent of the potential program cost. In Riverside County, the TRIP program, which costs \$350,000 a year, would cost \$1,876,307 to operate under alternative circumstances. This means TRIP operates at about 19 percent of the potential program cost. DARTS' JOBLINKS program provides about 18,000 passenger trips at a cost of \$180,000. For the year 2000, DARTS averaged about 100,000 miles per month or 1,200,000 miles per year. At 27.5 cents per mile (a typical volunteer driver reimbursement), this program would have cost \$330,000 for the year or \$150,000 more than it actually did. DARTS has thus been operating at 54.5 percent of alternative program costs.

Most communities in the United States need additional public transportation services. If the total capital and operating expenses for the 2,262 bus system operators were added to the total capital and operating expenses for the 5,252 paratransit

system operators for the year 2000, the total expenses for transportation in the United States would be \$18.15 billion. Assuming that a 1 percent additional expense would be needed to initiate new services (\$181.5 million), if that expense were coupled with the kinds of coordinated partnership arrangements noted above, the additional benefits could range from \$40 million to \$132 million per year. A \$90 million benefit would not be an unreasonable assumption; exact figures would depend on the nature of the communities and the transportation systems implemented.

## CONCLUSION

Additional coordination of transportation services could provide very substantial economic benefits. Although some but not all of the strategies noted above could be applied simultaneously, a conservative approach to benefit estimation suggests that these strategies be considered by themselves.

On a national level, great benefits are possible from coordinating transportation services. Actual national benefit levels will depend on the numbers of communities applying different coordination strategies, the levels of effort that they put into these strategies, and a complete determination of all parties affected by the coordination actions (not just transit providers and human service agencies). Still, some order of magnitude estimates of overall impacts are possible for each strategy. The potential impacts that were discussed in this chapter are summarized in Table 17. Additional revenues can be generated, cost savings can

**Table 17**

**Aggregate Potential Annual Industry Benefits Associated with Various Transportation Coordination Strategies**

<i>Strategy</i>	<i>Potential Aggregate Benefits</i>
Additional revenues generated when transit authorities provide trips for Medicaid agency clients	\$15,000,000 to \$50,000,000
Cost savings realized when nontransit agencies provide ADA and other paratransit services	\$30,000,000 to \$148,000,000
Cost savings realized when paratransit riders are shifted to fixed route services	\$90,000,000 to \$300,000,000
Cost savings realized when local human service agencies coordinate their transportation services	\$35,000,000 to \$60,000,000
Economic benefits realized when transportation services are expanded to areas or populations not now served	\$40,000,000 to \$132,000,000

be obtained, and other economic benefits can be generated by coordinating transportation services. Estimated benefits range from tens of millions to hundreds of millions of dollars per year, depending upon the strategy applied, the number of localities where it is applied, and the resources and conditions in the localities where the strategies are applied. These estimates have been conservatively generated; they do not include all possible benefits at each site or other important economic benefits (such as the value of increased mobility in terms of employment or independent living or the multiplier effects that transportation expenses generate in local areas). The estimates also do not include important negative impacts or costs, such as impacts on paratransit providers who may no longer be providing services.

Based on these estimates, transportation planners and operators should look closely into the cost savings that could potentially be derived from coordination strategies that involve shifting paratransit riders to fixed route services and having ADA paratransit services provided by nontransit agencies. Other priorities should include partnership arrangements to expand transportation services into areas not now receiving public transit services and to generate additional income for transit authorities through the provision of travel services to clients of human service agencies. Although not offering benefits as large as the previous four strategies, the coordination of services by local human service agencies still has a significant level of benefits to offer on a national basis. All of these strategies deserve strong support from policymakers and transportation operators.

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# Section IV

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## ADDITIONAL CONSIDERATIONS FOR COORDINATED TRANSPORTATION SERVICES

Coordination involves a wide range of considerations beyond those of its anticipated benefits. This section addresses two of those areas: governmental activities that may facilitate or hinder coordination efforts, and instances where coordination's intended objectives were not met. In Chapter 9, we see that as of 2002 all states are now engaged in some kind of effort to support or encourage the coordination of human service transportation and public transit. As might be expected, some states have put more energy and funding into these efforts than others. A review of transportation legislation and regulation shows that, although there are no actual barriers per se to coordinated transportation services, there are some obstacles and hindrances that have vexed certain coordination efforts. On the other hand, there are instances where some

coordination efforts have succeeded under conditions in which other efforts have failed to establish viable transportation operations.

Chapter 10 discusses cautions needed when implementing coordinated transportation services, including unintended consequences. First is the need for greater understanding of the fluid nature of coordination agreements, which still depend on the good will and positive efforts of the individuals involved for their permanence. Second is the need to better understand what coordination can and cannot do under various circumstances. This increased understanding can significantly reduce the problem of unrealistic expectations that has plagued coordination efforts for many years.

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# Chapter 9

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## **FEDERAL, STATE, AND LOCAL STRATEGIES THAT HAVE AN ECONOMIC IMPACT ON COORDINATION**

This chapter examines Federal, state, and local strategies that have an economic impact on the coordination of human service transportation with public transit operations. Both positive incentives for coordination as well as obstacles and barriers to coordination are noted.

Federal, state, and local governmental activities can have a significant influence on the efforts required of local stakeholders who are interested in coordinated transportation services. More incentives for coordinating transportation would certainly be welcomed in most communities. Although various governmental rules and

procedures sometimes make the coordination process arduous, there are no outright barriers to coordination that are impossible for dedicated personnel to surmount.

### **INCENTIVES FOR COORDINATION**

To have real economic impacts, governmental strategies need to address the kinds of economic benefits from coordination as previously described: new revenue sources for transportation services, cost savings for particular programs or providers, mobility increases, user cost savings, and service quality improvements.

Indeed, some governmental strategies directly affect program or provider revenue generation or cost savings, but the other kinds of economic benefits of coordination are seldom affected by governmental strategies.

### **DIRECT FISCAL INCENTIVES**

The first category of strategies could be called **coordination incentives**. Direct economic incentives are not frequently found, but transportation operators have a keen interest in seeing such incentives come into place. At the July 1, 1998, meeting of the Advisory Panel to the DHHS/DOT Transportation Planning Workgroup, transportation providers recommended the following kinds of incentives:

- Provide funding for both coordination planning and operations;
- Provide “bonus points” in funding applications for coordinated services;
- Provide additional funding for the most cost-effective operations;
- Insert coordination requirements into grant applications; and
- Investigate how to implement disincentives to uncoordinated planning and operations (Burkhardt, 1998).

Table 18 identifies some of the cases where direct economic incentives for coordination have been applied.

### **GENERAL SUPPORT AND ENCOURAGEMENT**

Another category of governmental strategies could be considered that of **general support for coordination**. Although these are important activities to support coordination, they seldom result in direct economic benefits. Key items in this list include

- Inclusion of coordination encouragement or requirements in legislation or regulation, such as in
  - The Older Americans Act;
  - The coordination requirements for rural public transit services in the Federal Aid Highway Act of 1978;
  - Planning coordination requirements in TEA-21;
  - Planning and operational coordination requirements in FTA’s Job Access program;
  - OMB Circular A-87, “Cost Principles for State, Local, and Indian Tribal Governments,” and its implementation guide, “Cost Principles and Procedures for Developing Cost Allocation Plans and Indirect Cost Rates for Agreements with the Federal Government”; and
  - State laws in various states, including California, Florida, Iowa, and Pennsylvania.

**Table 18  
Economic Incentives for Coordination**

<i>Types of Incentives</i>	<i>Examples Where Such Incentives Have Been Applied</i>
Provision of funds for both planning and operations	Florida Maryland New Jersey North Carolina Ohio
Additional funding provided to the most cost-effective operations	Indiana
Coordination required in order to receive funding, or bonus points awarded to coordinated applicants	Job Access and Reverse Commute Program, FTA Florida North Carolina

- Instructions and encouragement to various levels of government, such as the letter from the Secretaries of U.S. DHHS and U.S. DOT encouraging and supporting the coordination of the transportation activities of their grantees (U.S. DHHS and DOT, 2000).
- The establishment of mechanisms, such as interagency coordinating councils, to support and encourage coordination
  - At the Federal level, the Coordinating Council on Access and Mobility serves as a discussion forum for programs administered by U.S. DOT and U.S. DHHS; the participation of other agencies is expected in the near future; and
  - There are interagency coordinating councils within many states (see table in the following section)

(National Transportation Consortium of States, et al., 2000).

- Convening and reporting on regional meetings to discuss coordination and specific coordination plans within states, such as the regional coordination meetings spearheaded by FTA in 1998 and 1999.

### **IMPLEMENTATION STRATEGIES FOR COORDINATION INCENTIVES**

Table 19 shows the basis for the coordination activities within various states. A comparison of Tables 18 and 19 suggests that the states that have been most successful in implementing economic incentives for coordination are those whose coordination efforts are supported by legislation or executive orders.

**Table 19**  
**How Coordination Activities Have Been Implemented**

<i>Source of Authority for Coordination</i>	<i>States or Agencies Using This Technique</i>
Legislation	Arkansas California Florida Idaho Iowa Kansas Maine Missouri Pennsylvania South Carolina Texas Virginia
Executive order	Alabama Louisiana Maryland North Carolina
Interagency agreement/committee/working group	U.S. DOT/U.S. DHHS Georgia Kentucky Massachusetts Michigan Minnesota Mississippi Montana Nebraska Nevada New Hampshire New Mexico North Dakota Ohio Oregon Tennessee Utah

Source: 2002 Survey of states conducted by Westat for the Transportation Research Board's Transit Cooperative Research Program, Project B-24, "Toolkit for Rural Community Coordinated Transportation Services"

## OVERVIEW OF INCENTIVES

Coordination incentives that produce direct economic impacts are seldom found in practice. More could be done in several areas:

- **Funds could be provided for planning** coordinated transportation systems, thus saving expenditures that are otherwise required of the parties engaged in coordination.
- **Eligibility requirements for receiving funds could be tightened** so that funds from particular programs would be less likely to be received by noncoordinated transportation systems.

The first of these could be an action item at either the Federal or state level; the second is more likely to be a state-level effort.

## INSTITUTIONAL BARRIERS TO COORDINATION

Agencies in many localities have succeeded in coordinating the transportation resources provided through various Federal- and state-funded programs. They have done so by finding workable solutions to the same administrative, personal, and institutional obstacles that individuals in other communities considered as “barriers” and found difficult to surmount. To be sure, the very mention of coordination suggests the meshing of different operating styles and procedures, which can be challenging due to personalities as well as to institutional issues. The major lesson from the successful coordination experiences of some communities, as well as from

numerous studies, is that what gets in the way of successful coordination usually falls more into the realm of “obstacles” than “barriers.”

The major institutional barrier is found at the very heart of coordination: the need to work with other persons from different agencies and perspectives. The key strategy to ensure that this obstacle does not become an insurmountable barrier is **education**: to obtain detailed knowledge about the programs, objectives, regulations, and operating procedures of persons representing other agencies. Another major strategy would be that of **flexibility**: one agency agreeing to accept some variations to its usual procedures to accommodate the operations of a coordinated service.

**Successful coordination will take real work.** Part of that work will involve dealing with persons who are unfamiliar with the missions, objectives, terminology, rules, and regulations of agencies other than their own. Other persons may not be used to cooperation as an operating procedure.

Serious coordination efforts constitute a new way of doing business, outside of the traditional programmatic boundaries of service delivery. Generally, these “bumps in the road” are worth handling and eliminating because of the substantial benefits that coordination can provide.

## ADMINISTRATIVE AND PERSONAL HINDRANCES TO COORDINATION

During hearings in 1975, the U.S. Senate became concerned about the lack of coordination of human service transportation and commissioned a review

by the General Accounting Office (U.S. GAO, 1977) that resulted in a detailed report to the Comptroller General of the United States, *Hindrances to coordinating transportation of people participating in federally-funded grant programs*. In this review, the GAO identified 114 Federal programs that provided transportation. (For a more recent review of Federal programs funding transportation services, see Community Transportation Association of America, 1996.) The report could not identify any specific legislative or regulatory restrictions on coordination, but it did point out a number of “hindrances.” **Many of the hindrances were inherent to the categorical nature of Federal grant programs:** these grant programs originate from separate Congressional sources and are supported by distinct national constituencies. Federal funding reaching the localities often comes from many categorical programs generally developed to serve specific target groups with different needs. Problems in coordinating transportation services for multiple clients groups often stem from the incompatibilities or perceived incompatibilities in program purposes or services for the members of these different client groups. After some substantial efforts in investigating this issue of barriers, it is clear that many operators are responding to **perceived rather than actual barriers**. Issues that have been described as barriers or “hindrances” in the past include

- Problems in dealing with the various requirements of a large variety of Federal funding programs;
- Not being certain that coordination is allowed or authorized [For example, a

relatively new concern is that the Federal anti-kickback law (passed in 1972) inhibits coordination with hospitals and federally funded health care programs. The law makes it a felony to receive or pay anything of value to influence the referral of Federal health care program business. Exceptions to these prohibitions are known as “safe harbors.” Although no safe harbor specifically addresses transportation, U.S. DHHS officials have stated that coordinated transportation services were not intended to be included as a prohibited practice under the anti-kickback law.];

- Problems with accountability, cost allocation, paperwork, and reporting;
- Funding issues, including matching requirements for Federal funds, funding cycles, and lack of sufficient funding;
- Perceived incompatibility of goals, needs, or client eligibility;
- Expectations of no significant benefits from coordinated operations;
- Regulatory requirements (like prohibitions on crossing local or state boundaries); and
- Lack of concerted Federal effort to encourage or require coordination (U.S. GAO, 1977; U.S. Department of Health, Education, and Welfare, 1976).

To this list should be added the inability of some agencies and individuals to understand the true costs (sometimes called the “fully allocated resource costs”) of operating transportation services. Another hindrance has been the inability of some agencies and individuals to address issues of service quality. **All of these barriers have been addressed and resolved in one**

**community or another.** Several of these issues should be assessed in detail.

### **PROBLEMS WITH ACCOUNTABILITY, COST ALLOCATION, PAPERWORK, AND REPORTING**

Problems in this area can create economic impacts in terms of increased costs for agencies in coordinated transportation systems. Although not constituting “barriers” that are impossible to surmount, the burdens imposed by differing regulations and procedures can be quite expensive for local transportation operators. Recently completed case studies showed that overall administrative accounting and reporting burdens can be extremely expensive (Hendrick and Burkhardt, 1999): 24 percent of all administrative costs of the Pee Dee Regional Transportation Authority in South Carolina are devoted to accounting and reporting; administrative costs account for 58 percent of the total cost of Medicaid transportation provided by the Community Transit service in York, Pennsylvania. Many billing and accounting burdens originate not at the Federal level but at state and local levels. We are aware of one state that administers its funds from the Federal Transit Administration by requiring its subgrantees to keep detailed records on trips and expenditures by type **for each vehicle**. Obviously, accumulating data at this level of detail requires a large amount of time; the benefits of having such data are questionable. Other kinds of unusual kinds of billing or operating requirements include

- A separate bill for each subarea of the county;

- Separate billing to each case worker for all trips by clients assigned to that caseworker;
- Billing by each individual for each day of month — so that the agency can check and question client trips;
- Billing by each day of month for each agency facility;
- Billing using only the specified agency invoice form; the submission of a bill on any other form is not acceptable; and
- Preauthorization required for each trip for each individual; preauthorization form must be completed and signed by agency caseworker.

It is possible to develop strategies to overcome such problems. For example, the billing and accounting procedures that used to consume vast amounts of administrative manpower for large coordinated transportation services (like previous practices of the OATS system in Missouri) are now handled with relative ease because of the installation of computerized accounting systems (like that now used by JAUNT in Virginia) that allow detailed reporting to a wide variety of funding sources.

### **NOT BEING CERTAIN THAT COORDINATION IS ALLOWED OR AUTHORIZED**

Despite the perception that categorical funding does not permit the sharing of resources among client groups of different types, both U.S. DOT and DHHS instructions are clear on such issues: as long

as there is “excess capacity” and service is not being denied to the primary client group, it is indeed possible to use vehicles and other resources to serve a variety of client types, and it is possible to have clients from different sponsoring agencies riding on vehicles at the same time. (The shared use of resources such as vehicles is expressly permitted by DHHS when certain conditions are met, see 45 CFR 74.34). If there are misperceptions about the possibilities of resource sharing, these misperceptions should be relatively easy to resolve with appropriate detailed information.

### **LACK OF CONCERTED FEDERAL EFFORT TO ENCOURAGE OR REQUIRE COORDINATION**

Federal agencies have recently made significant progress in efforts to encourage coordinated transportation services by their respective grantees. The recent publication of the Coordinated Planning Guidelines by the U.S. DOT/DHHS Coordinating Council on Access and Mobility formalizes Federal encouragement to coordinate transportation resources (U.S. DHHS and U.S. DOT, 2000). On January 9, 2003, the FTA Administrator and the DHHS Assistant Secretary for Aging signed a Memorandum of Understanding designed to increase coordination of transportation services for older adults. The Memorandum covers five areas: public awareness and outreach, data collection and promising practices, technical assistance, stakeholder input, and local and state transportation plan development. The overall goal of the

Memorandum is to make it easier for local transportation providers to serve older people and help them remain independent to participate fully in their communities. FTA plans to execute similar agreements with other DHHS agencies. The Coordinating Council will be sponsoring another round of coordination roundtables in 2003. Still, at this time, it appears that the persons who wish to see more than encouragement from Federal agencies, such as requirements or mandates for coordination, are likely to be disappointed.

### **PROBLEMS IN DEALING WITH THE VARIOUS REQUIREMENTS OF A LARGE VARIETY OF FEDERAL FUNDING PROGRAMS**

To a large extent, problems in dealing with the various requirements of a large variety of Federal funding programs are more a matter of administrative processing than of economic costs. Of course, if the administrative requirements become large, administrative costs may be a serious concern. (These problems are also discussed in U.S. DHHS and U.S. DOT, 2000, pp. 11–12. Jon Burkhardt, the lead author for this report, was also the lead author for the *Planning guidelines . . .* report.)

**The key strategy for dealing with differing organizations, planning requirements, and review procedures is understanding these organizations and the missions of their programs.** It is very important to recognize the **basic categorical nature of Federal grant**

**programs:** these grant programs originate from separate Congressional sources and are supported by distinct national constituencies. Federal funds reaching the localities often come from many categorical programs developed to serve distinct and specific target groups with different needs.

Some of the factors that must be considered when coordination is attempted include

- There are many different Federal programs that are interested in transporting individuals in need of human services. Just the large number poses a challenge to persons wishing to coordinate transportation services. Underlying all the work necessary to coordinate transportation services is **the complexity of working with multiple administrative entities**, each with their own requirements and procedures.
- Most of the U.S. DOT programs that could potentially be coordinated fall under FTA's administration. On the DHHS side, there are multiple divisions and agencies involved. Agencies which operate under the DHHS umbrella have very different legislative mandates, regulations, administrative structures, funding flows, administrative oversight, and planning procedures from each other.
- These DHHS programs and their features are all different from the programs of the U.S. DOT.
- **The basic missions of U.S. DOT and DHHS are different:**
  - U.S. DOT/FTA programs are established and operate for the express purpose of supporting **agencies** that are providing transportation services, usually designed for all members of the

general public (except for services provided under ADA, which are restricted to a specific segment of the general public). **The primary purpose of the FTA programs is to support transit systems.**

- DHHS programs operate for the express purpose of providing a variety of specified social or health services to specific, restricted groups of **individuals** whose receipt of such services is often tightly controlled by programmatic eligibility requirements. **The transportation services provided to DHHS clients are not primary but secondary services:** they are provided solely for the purpose of accessing targeted services or achieving other stated objectives. Indeed, most DHHS programs would probably not fund rides or transportation services if the existing public transit systems provided adequate transportation for their clients.
- Operating under differing Congressional mandates, **U.S. DOT and DHHS have different program management styles.** Compared with the DHHS programs, the U.S. DOT/FTA programs have more central office direction and involvement. By contrast, most (but not all) of the DHHS Federal offices are restricted in the procedures that they can impose on and the data they can collect from state and local grant recipients.
- **Many of the programs have real structural differences** regarding eligible recipients, eligible activities, appropriations, allocations, requirements for matching Federal funds, funding availability, funding cycles, planning procedures, and reporting requirements.

- A real policy issue is **how to coordinate programs that have strong Federal requirements for planning (like those from U.S. DOT) with programs that less formally incorporate planning or performance monitoring requirements (like those from DHHS)**. U.S. DOT grantees generally have more stringent requirements to monitor and to report the results of their efforts to their Federal funding sources than do DHHS agencies. Data on transportation expenses and outcomes are easier to obtain from U.S. DOT's grantees, whose primary missions are to provide transportation, than from DHHS's grantees, whose primary missions are to provide human services, not transportation.
- Another significant policy issue is **where to require coordination in the chain of command**. For many programs, the obvious answer would be within the departments in state governments that administer the Federal funds, but significant DHHS and U.S. DOT programs bypass states altogether; they either establish a direct Federal-local linkage, or they work through a Federal-regional-local model.

Obviously, some of these policy and programmatic issues can create real hindrances to joint efforts. Moving beyond these hindrances is possible but requires addressing and finding solutions for each of these impediments. Successfully addressing these issues requires an in-depth understanding of the advantages,

disadvantages, and processes involved in coordination and the programs of the major agencies now providing funds for human services transportation.

## CONCLUSION

For coordination to increase in usefulness as a management strategy for transportation services in local communities, more attention will need to be paid to how Federal, state, and local governments can influence incentives for and hindrances to coordination. Not many of the needed actions involving incentives and hindrances are likely to have direct economic consequences.

Among the needed governmental actions with economic consequences, actions that influence an agency's eligibility for funding will have the strongest impact on revenues and receipts. In the area of agency expenditures, actions that decrease billing and reporting expenses will probably have the greatest impact, followed by programs that accept the expenses associated with planning coordinated transportation services as allowable expenses. Overall government agency enthusiasm and support for coordination will have the greatest impact on other economic benefits, such as mobility increases, user cost savings, and service quality improvements.

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# Chapter 10

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## CAUTIONS NEEDED WHEN IMPLEMENTING COORDINATED TRANSPORTATION SERVICES

If coordinating human service transportation and public transit services were so easy, it would happen everywhere—but it does not. To increase the probability of successful coordination efforts, this chapter examines some instances where coordination efforts did not produce the anticipated results and sometimes produced conditions that were less positive than those conditions that preceded the coordination efforts.

The fact that some communities have been more successful than others in

coordinating human service transportation with public transit operations should not be seen as criticism of the less successful communities or coordination in general. Coordination should be recognized as a strenuous process that requires constant nurturing and that a situation apparently successful at one point in time may unravel in a subsequent year. Similarly, with appropriate efforts, localities with little coordination may suddenly leapfrog others who have had years of coordination accomplishments.

## **POTENTIAL PROBLEMS IN APPLYING COORDINATION**

### **POLITICS, POLITICS, POLITICS**

Not recognizing coordination as a political process has led to the downfall of some otherwise vital and beneficial coordinated transportation operations. If successful, a coordinated transportation system becomes much larger than the individual operations that it replaces and becomes a new force within the community to be reckoned with. Larger transportation operations attract more attention, not all of which may be positive or friendly. Political individuals and organizations with vested interests in “the status quo” will often view expanded transportation services as a threat to their own power or influence and may, therefore, take steps to derail both personal and organizational capital invested in the coordinated transportation system. (Some persons have suggested that organized labor might oppose certain kinds of coordination efforts. Although this could possibly occur, this study did not find any instances of organized labor opposition to coordinated transportation services.)

In a large number of instances in which coordination attempts have had detrimental effects, it is the individuals directing coordinated operations that often suffer personal damage to their occupations and incomes. Table 20 describes these and other situations where shifting power structures and personal alliances led to the demise of coordinated transportation services.

## **DIFFERING SERVICE PRIORITIES**

Recent experiences in one California county illustrate how differing objectives and priorities can impact coordination. A nonprofit agency provides coordinated services including ADA paratransit and transportation to adult day services, a large senior meal program, and day programs for people with developmental disabilities. All of the services are provided under contracts with the various responsible public and quasi-public agencies. The coordinated provider is the sole applicant for FTA Section 5310 vehicles, which it uses initially for the ADA service and then for the human service transportation. Although riders are not mixed together on vehicles, drivers and vehicles are shared among the programs, and costs for facilities, administration, driver training, and dispatching costs can be spread over multiple programs.

In 2002, the regional agency responsible for services to people with developmental disabilities decided to terminate its contract with the coordinated provider and contract instead with several for-profit and nonprofit organizations. The decision was based on the agency’s urgent need to control costs and the ability of the other providers to offer a substantially lower cost, at least partly due to increases in overhead at the coordinated provider. These overhead increases appear to be largely a result of pressure to respond to concerns about service quality for ADA paratransit services. For example, driver wages and benefits were improved to help reduce turnover.

**Table 20**  
**Communities in Which Coordination Efforts Led to Unintended Results**

<i>Location</i>	<i>Situation</i>	<i>Actions Taken</i>	<i>Transportation Service Results</i>	<i>Other Effects</i>
Southeastern large city	Concern about cost-effectiveness of separate human service and transit operations; state pressures to coordinate	Analysis of potential savings completed; lack of political will to coordinate eliminates the possibility of achieving economic benefits	ADA paratransit services continue to be provided by transit authority contractor at low productivity and high cost; other local paratransit services are fragmented	Coordination of human service transportation (not including transit) is threatened by lack of commitment to coordination by the agency funding the greatest number of trips
Southeastern medium-size city	Transit authority wishes to exert greater control over paratransit by consolidating operations formerly coordinated by private nonprofit agency	Competitive bid process results in coordinated (lowest cost) provider being replaced by for-profit contractor; paratransit services to general public riders replaced by ADA-only services	From coordination to consolidation, 1989 - 2002 (after adjusting for inflation), service hours down 7.3%, service miles up 12.6%, costs increase 60%, and passenger trips decrease 19%. Cost per passenger and per hour up substantially; passengers per mile, per hour, and cost per passenger are now significantly worse than peer averages	Former nonprofit agency closes; director and other key staff are unemployed for several years; drivers continue with new contractor; non-ADA human service agency trip needs are no longer met
Midwestern small rural community	Research study demonstrates feasibility of multicounty coordinated transportation operations	Local governments reluctant to invest marginal amounts needed to match state funds. Local human service agency pulls back its coordination commitment and fires previous Transportation Director	Service quality declines dramatically, clients left waiting for hours; preventive maintenance deferred creating serious safety issues; drivers attempt to unionize but are threatened with dismissal	Former director now underemployed; many elderly riders switch to carpools (with elderly drivers of questionable driving skills)

Table 20

## Communities in Which Coordination Efforts Led to Unintended Results (continued)

<i>Location</i>	<i>Situation</i>	<i>Actions Taken</i>	<i>Transportation Service Results</i>	<i>Other Effects</i>
Western rural county	Human service agencies form very successful transit authority; some private operators threatened by growth and success of coordinated services	Board of Directors fires skilled and dynamic manager who was largely responsible for coordination, service quality, and success in grant acquisition	Ridership in 2002 declined to levels of 10 years prior; service hours down by 25 percent; vehicles down 20 percent	Executive director is fired but creates a new company that reaches clients beyond the confines of this small community
Western medium-size city	Transit authority wishes to exert greater control over paratransit by consolidating operations formerly coordinated by private nonprofit agency	Transit authority creates unacceptably stringent micro-management of human service transportation provider, which declines to operate under these conditions	Transit authority contracts with transit management company; services, rides, and costs all increase substantially; some major trip scheduling problems arise; probable increase in overall safety	Former private nonprofit agency no longer exists; Executive Director is unemployed

Staff of the coordinated provider expressed concerns about driver qualifications and benefits at the new providers. Staff at the development disabilities agency implicitly acknowledge some start up problems with the new providers but feel that the service is in “pretty good shape” now. The coordinated provider indicates that it has been able to find other business to use the capacity left by the loss of this one large contract.

In this case, one agency’s priority regarding cutting costs conflicted with another agency’s need to maintain a high level of service quality in order to maintain ADA compliance. The case also illustrates that coordination is commonly implemented through contracts between agencies that are voluntary and subject to modification and cancellation.

## **LOCAL CONTROL AND COST ISSUES**

An unsuccessful attempt at service consolidation illustrates the importance of political support and also appropriate cost accounting. This effort occurred in a rural Northern California county and involved several cities, a county rural transit system, and human service agencies. A major consolidation study demonstrated significant benefits from consolidating and developed support from representatives of transit-dependent groups. However, political leaders from the largest city were troubled by likely loss of policy control and cost increases.

The largest city’s fixed route budgeted hourly operating costs for FY 2001 were \$41.89 (for 35,888 service hours), while the county intercity system had per hour operating costs of \$58.71 (for 16,730 service hours). A second city’s fixed route services were in the \$55 range. Paratransit services throughout the county were generally in the mid-to-upper \$30/hour range. A single contractor already operated services for the two cities and the county. In estimating potential costs for a combined service contract, the contractor proposed an hourly cost somewhere in the middle of the city and county service costs. The result was dramatic savings for the county but increases for the largest city and two smaller systems. The county liked the expected cost savings, but the largest city was not willing to pay a higher cost per hour under a new countywide service contract. The city was also concerned about loss of control with a combined governing body. Despite exploring a variety of creative ways of allocating service costs among the jurisdictions, no solution was found that satisfied all the parties.

This effort did finally result in significant coordination. The study showed that there would be substantial savings from consolidating administration of several services. As a result, two cities contract with the county to administer their transit services along with the county’s transit services, and a third city is planning to do the same. These jurisdictions all use the same private contractor. However, all the entities maintain separate policy control; set their own routes, schedules, and fares; and fund their services separately.

## **LACK OF STABLE FUNDING**

Lack of stable funding is a serious deterrent to coordination between human service transportation and transit service. One rural public transportation provider spent significant political capital changing buses dedicated to individual agencies' clients into geographically based routes. Funded clients were assigned to routes based on where they lived and not on routes exclusive to the agency that funded their trips. The goal was to offer a fixed transit route with scheduled stops to the public by overlaying a rural transit route on existing subscription services. After enthusiastic community acceptance of the new coordinated system, the agency lost a key contract to a competitor. In this case, the contractor, which was another government agency, chose a lower bid price over the concept of coordinated services with other agencies. As a result, the public transportation provider had to abandon the coordinated system that made the fixed route general public service possible.

Funding problems of this nature are now occurring in various states with regard to state non-emergency Medicaid transportation programs. Whereas Medicaid transportation costs are still, on average, less than 1 percent of all state-Medicaid expenses, Medicaid transportation costs are very substantial and are increasing rapidly. In contrast to other sources of transportation funds, Medicaid looms large as a potential funder. In many states and localities, Medicaid funding is the backbone that enables community transportation services to grow and prosper. Therefore, much consternation is being felt

in a number of states in which the Medicaid program has decided to cut transportation expenses to the bare minimum, often eliminating higher quality coordinated transportation providers from lowest cost competitions. Without Medicaid funding, some coordinated operators will not be able to achieve the economies of scale that they need to offer competitive services to other agencies. In this case, looking beyond the needs of only one agency may be necessary to maintain vital transportation services.

## **BUILDING MORE PERMANENT COORDINATION RELATIONSHIPS**

If the potential fluidity of coordination relationships is a major factor in the longevity of coordination arrangements, then steps should be taken to increase the permanence of these relationships. One fruitful approach would be to make coordinated services less dependent upon the persons involved and more dependent upon long-standing written agreements between agencies. Key individuals in the coordination process should strive to make their agreements relatively permanent by committing these agreements to paper with the signatures of the heads of the respective agencies involved. These papers should include action plans that specify lists of activities to be undertaken over time, with milestones for joint meetings and jointly developed products.

Developing realistic expectations about coordination's expected outcomes is

another key tool in implementing successful coordinated transportation. For a number of reasons, coordination seldom returns funds to agency budgets. First, some agencies may have developed transportation operations that are already highly cost effective through the use of volunteer labor or other cost-saving strategies. Second, if coordination succeeds in improving efficiency (say, by reducing per trip costs), the savings are usually reinvested in additional trips because very few communities currently have too much specialized or public transportation service. Therefore, benefit discussions regarding potential cost savings need to be made clearly and precisely to avoid generating unrealistic expectations.

## CONCLUSION

The best way to maximize the probability of successful coordination efforts is to fully understand coordination's potential

achievements and potential pitfalls. Fundamentally, coordination is a fluid process involving working relationships among persons who come from different backgrounds and may have at least some differing objectives. Coordination needs to be understood and respected as a political process, one in which power and administrative responsibilities are shared, not controlled by one party or another. For coordinated relationships to survive and prosper, they need to have the continued support of key decisionmakers, they need to continue to demonstrate real benefits to all the parties involved, and they need to be relatively free from the influence of personal political agendas.

Coordination is also best applied to certain circumstances, such as the inefficient use of resources, and not to others, like the insufficiency of resources. Having a realistic understanding of the benefits that coordination can be expected to produce will eliminate most cases of unrealistic and unsatisfied expectations.

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# Chapter 11

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## CONCLUSION

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This report has identified numerous viable strategies for coordinating the operations of human service transportation and public transit operations. Probably the biggest surprise of this research effort is that the most effective and beneficial techniques are not actually in greater use. This suggests the need for a focus on the dissemination of information about the economic benefits of coordination.

Many communities lack detailed information about how transportation services were provided before coordination was implemented. This means that precise before and after measures of financial and service changes are seldom possible. To address this issue, more data should be collected on the outcomes of the application of coordination strategies at sites that have applied the various strategies identified in this report. Preparing more precise estimates of the national economic impacts

expected from specific strategies will only be possible after that additional data collection task is accomplished.

Still, the magnitude of probable national economic impacts identified by this research suggests that ideas about coordinating human service transportation and public transit services should shift from the research arena to operational practice (as has already happened in the communities identified here). Although challenges to the ready application of coordination still exist, the benefits are undeniable. Coordination can assist in making transportation services more efficient and effective in communities where efficiency and effectiveness improvements are still possible. Judiciously applied, specific strategies for coordinating human service transportation and public transit services offer significant economic benefits.

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**NOTES:**

A current list of classic and newer  
coordinated transportation references may  
be found on the web site of the  
Coordinating Council for Access and  
Mobility at [www.fta.gov/ccam](http://www.fta.gov/ccam).

Copies of many of these references are  
available from The National Transit  
Resource Center. Call 1/800/527-8279.

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# GLOSSARY OF TECHNICAL TERMS

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## GLOSSARY

### AAA

Area Agency on Aging. The local entity that plans senior services and advocates for the elderly within their communities, administering provisions of the Older Americans Act (see *OAA*).

### Access

The opportunity to reach a given *destination* within a certain time frame or without being impeded by physical, social, or economic barriers.

### Access Board

Common name for the Architectural and Transportation Barriers Compliance Board, an independent Federal agency whose

mission is to develop guidelines for accessible facilities and services and to provide technical assistance to help public and private entities understand and comply with the *Americans with Disabilities Act (ADA)*.

### Accessibility

The extent to which facilities, including *transit* vehicles, are barrier-free and can be used by persons with disabilities, including wheelchair users.

### Access to Jobs

Federal funding for programs to increase work-related transportation available to low-income individuals, authorized in *TEA-21*. Nonprofit organizations and

Note: Items shown in boldface and italics are defined in this glossary.

municipalities can apply to *FTA* for funding.

## **ADA**

See Americans with Disabilities Act.

### **ADA Complementary Paratransit Service**

*Demand-responsive service* that is operated in addition to *fixed route* service to accommodate persons who cannot ride the *fixed route* service because their disability prevents it. Under the *Americans with Disabilities Act*, public entities that operate *fixed route service* (excluding *commuter service*) are required to provide complementary paratransit with service characteristics equivalent to the *fixed route* service. The *ADA* is very specific in what constitutes equivalent service and what kinds of persons must be provided this service. A plan describing the service, which documents the planning process, must be submitted to the *Federal Transit Administration* regional office and updated annually. Many rural operators are not required to provide complementary paratransit service because they typically do not operate pure *fixed route* service.

### **Advance Reservation Scheduling**

Passengers call ahead and reserve, in advance, a ride for a particular date and time. This is used in *demand-responsive* transportation systems. *Transit* systems may set limits on the minimum and maximum advance reservation times before the requested trip. Advance reservation of trip requests allow the scheduler/dispatcher

to identify *ridesharing* opportunities and assign rides to vehicles for the most efficient service delivery. A drawback to allowing requests far in advance of the desired trip is that *no-shows* may be more frequent than with *real-time scheduling*.

## **AFDC**

Aid to Families with Dependent Children. The joint Federal-state welfare program until 1996 when welfare reform ended AFDC and created *TANF*.

## **Allocation**

An administrative distribution of funds among the states, done for funds that do not have statutory distribution formulas.

## **Americans with Disabilities Act of 1990 (ADA)**

Federal law that requires public facilities, including transportation services, to be fully accessible for persons with disabilities. ADA also requires the provision of complementary or supplemental *paratransit services* in areas where *fixed route* transit service is operated. Expands definition of eligibility for accessible services to persons with mental disabilities, temporary disabilities, and the conditions related to substance abuse. The Act is an augmentation to, but does not supersede, Section 504 of the Rehabilitation Act of 1973, which prohibits discrimination on the basis of disability against otherwise qualified individuals in programs receiving Federal assistance.

### **AoA: Administration on Aging**

The agency within the U.S. Department of Health and Human Services that oversees the implementation of the *OAA*, including senior nutrition programs, senior centers, and supportive services for elders.

### **Apportionment**

A term that refers to a statutorily prescribed division or assignment of funds. An apportionment is based on prescribed formulas in the law and consists of dividing authorized *obligation authority* for a specific program among the states.

### **Appropriations Act**

Action of a legislative body that makes funds available for expenditure with specific limitations as to amount, purpose, and duration. In most cases, it permits money previously authorized to be obligated and payments to be made.

### **Arterial**

A class of street serving major traffic movement that is not designated as a *highway*.

### **Arterial Route**

A bus route that runs on major arterial streets, out along a straight line and back, often in the form of a *radial network* and often connecting with other routes at a transfer point. This route design is used to provide a high frequency of service in a limited geographic area (as opposed to a

loop route design). Arterial routes are recommended for higher density areas.

### **Attainment Area**

An area considered to have air quality that meets or exceeds the *U.S. Environmental Protection Agency (EPA)* health standards used in the Clean Air Act. An area may be an attainment area for one pollutant and a nonattainment area for others.

Nonattainment areas are areas considered not to have met these standards for designated pollutants.

### **Authorization Act**

Basic substantive legislation or that which empowers an agency to implement a particular program and also establishes an upper limit on the amount of funds that can be appropriated for that program.

### **Brokerage**

In general, an institutional organization that functions as an interface between transportation providers and users. More specific roles include

1. *Coordination* of transportation services in a defined area. The transportation broker may centralize vehicle dispatching, recordkeeping, vehicle maintenance, and other functions under contractual arrangements with agencies, municipalities, and other organizations. This type of brokerage may be appropriate when full *consolidation* of services is not the best option.
2. A method of matching travelers with a variety of transportation providers and

*modes* through use of central dispatching and administrative facilities. Volunteer drivers are often coordinated by a broker. A *ridesharing* broker provides assistance in forming *carpools* or *vanpools* as well as identifying *transit* options.

### **Budget Authority**

Empowerment by Congress that allows Federal agencies to incur obligations to spend or lend money. This empowerment is generally in the form of appropriations. However, for the major *highway* program categories, it is in the form of “*contract authority*.” Budget authority permits agencies to obligate all or part of the funds that were previously “authorized.” Without budget authority, Federal agencies cannot commit the government to make *expenditures* or loans.

### **Capital Costs**

Refers to the costs of long-term assets of a public *transit* system such as property, buildings, and vehicles. Under *TEA-21*, *FTA* has broadened its definition of capital costs to include bus overhauls, preventive maintenance, and even a portion of *ADA* paratransit expenses.

### **Carpool**

A carpool is a type of transportation arrangement (usually for commuter trips) in which two or more individuals share a regular trip in an automobile. The driver may be the same for every trip, or may rotate among the riders. Carpools typically provide *door-to-door service*, change when

a rider’s travel needs change, and may be arranged on an informal basis or through a *rideshare program* or *brokerage*.

### **Central Business District (CBD)**

The most intensely commercial sector of a city.

### **Central Transfer Point**

A central meeting place where routes or zonal *demand-responsive* buses intersect so that passengers may transfer. Routes are often timed to facilitate transferring. That is, routes with the same *headways* are scheduled to arrive at the central transfer point at the same time and depart once passengers have had time to transfer. When all routes arrive and depart at the same time, the system is called a *pulse system*. The central transfer point simplifies transfers when there are many routes (particularly *radial routes*), several different *modes*, and/or paratransit *zones*. A downtown retail area is often an appropriate site for a central transfer point, as it is likely to be a popular *destination*, a place of traffic congestion and limited parking, and a place where riders are likely to feel safe waiting for the next bus. Strategic placement of the transfer point can attract riders to the system and may provide an opportunity for joint marketing promotions with local merchants.

### **Charter Service**

Transportation service offered to the public on an exclusive basis (either as individuals or as groups). It is provided with a vehicle that is licensed to render charter service and

engaged at a specific price for the trip or period of time, usually on a reservation or contractual basis. Typically charter service is contracted on a one-time or limited basis and is used to provide transportation on sight-seeing tours and to recreational *destinations*, sometimes on an overnight basis. Over-the-road coaches (intercity buses), typically equipped with baggage compartments, comfortable seats, and restrooms, are typically used in charter service. Public transportation operators that receive Federal and other public subsidies may only operate charter services under limited conditions.

### **Checkpoint Service**

This term is commonly used interchangeably with *point deviation service*. Riders are picked up and taken to their own *destinations* or to transfer points.

### **Circulator**

A bus that makes frequent trips around a small geographic area with numerous stops around the route. It is typically operated in a downtown area or area attracting tourists, where parking is limited, roads are congested, and *trip generators* are spread around the area. It may be operated all day or only at times of *peak* demand, such as rush hour or lunch time.

### **Commercial Drivers License (CDL)**

The standardized driver's license required of bus and heavy truck drivers in every state. Covers drivers of any vehicle manufactured to seat 15 or more passengers

(plus driver) or more than 13 tons gross vehicle weight. The CDL was mandated by the Federal government in the Commercial Motor Vehicle Safety Act of 1986.

### **Congestion Management and Air Quality Improvement Program (CMAQ)**

A categorical funding program created with the *ISTEA*. Directs funding to projects that contribute to meeting national air quality standards. CMAQ funds generally may not be used for projects that result in the construction of new capacity available to *SOVs*.

### **Connector Service**

Service in which a transfer to or from another *transit* system or *mode* is the focal point. An example of this is service provided under the Greyhound Rural Connector program: local *transit* providers operate service that brings people to and from the Greyhound station. This type of connector service is also known as *feeder service*. Connector service may also connect two different *transit* systems (such as in two adjacent cities). It is often useful in improving service efficiency and effectiveness when important *destinations*, such as medical centers, are located beyond the *transit* system's service area.

### **Consolidation**

Restructuring transportation services to serve the same market with fewer service providers (sometimes only one provider).

### **Contract Authority**

A form of *budget authority* that permits obligations to be made in advance of appropriations. The Federal-Aid Highway Program operates mostly under contract authority rules.

### **Coordination**

Coordination means pooling the transportation resources and activities of several human service agencies with each other or with mass *transit* operations. The owners of transportation assets talk to each other to find ways to mutually benefit their agencies and their customers. Coordination *models* can range in scope from sharing information, to sharing equipment and facilities, to integrated scheduling and dispatching of services, to the provision of services by only one transportation provider (with other former providers now purchasing services).

### **Curb-to-Curb Service**

A service that picks up and delivers passengers at the curb or roadside, as distinguished from *door-to-door service*. Passenger assistance is generally not rendered other than for actual boarding and alighting. The passengers are responsible for getting themselves from their homes or other buildings to the curb. *Fixed route* service is always provided curb-to-curb, while *demand-responsive service* may be provided curb-to-curb or *door-to-door*. Curb-to-curb is more efficient for the *transit* system, but *door-to-door* provides a higher level of service.

### **Demand-Responsive Service**

Service activated based on passenger requests. Usually passengers call the scheduler or dispatcher and request rides for particular dates and times. A trip is scheduled for that passenger, which may be canceled by the passenger. Usually involves *curb-to-curb* or *door-to-door service*. Trips may be scheduled on an advanced reservation basis or in “real-time.” Usually smaller vehicles are used to provide demand-responsive service. This type of service usually provides the highest level of service to the passenger but is the most expensive for the *transit* system to operate in terms of cost per trip. However, in rural areas with relatively high populations of elderly persons and persons with disabilities, demand-responsive service is sometimes the most appropriate type of service. Sub-options within this service type are discussed in order of least structured to most structured, in terms of routing and scheduling.

- **Pure Demand-Responsive Service**

Drivers pick up and drop off passengers at any point in the service area, based on instructions from the dispatcher. In pure demand-responsive systems, the dispatcher combines immediate requests, advance reservations, and *subscription service* for the most efficient use of each driver’s time.

- **Zonal Demand-Responsive Service**

The service area is divided into *zones*. Buses pick up and drop off passengers only within the assigned *zone*. When the drop off is in another *zone*, the dispatcher chooses a meeting point at

the *zone* boundary for passenger transfer or a central transfer is used. This system ensures that a bus will always be within each *zone* when rides are requested.

- **Flexible Routing and Schedules**

Flexible routing and schedules have some characteristics of both *fixed route* and *demand-responsive service*. In areas where demand for travel follows certain patterns routinely, but the demand for these patterns is not high enough to warrant *fixed route*, service options such as *checkpoint service*, *point deviation*, *route deviation*, *service routes*, or *subscription service* might be the answer. These are all examples of flexible routing and schedules, and each may help the *transit* system make its *demand-responsive services* more efficient while still maintaining much of the flexibility of demand responsiveness.

### **Destination**

A place at which a passenger ultimately disembarks from a *transit* vehicle; the point at which a trip terminates.

### **DHHS**

U.S. Department of Health and Human Services. Funds a variety of human services transportation through *AoA*, *Head Start*, *Medicaid*, and other programs.

### **Dial-A-Ride Service**

A name that is commonly used for *demand-responsive service*. It is helpful in marketing the service to the community, as the meaning of “dial-a-ride” is more self-evident than “*demand-responsive*” to

someone unfamiliar with transportation terms.

### **Disabled Individual**

Any person who by reason of illness, injury, age, congenital malfunction, or other permanent or temporary incapacity or disability is unable, without special facilities, to use local *transit* facilities and services as effectively as persons who are not so affected. This definition is part of the *Americans with Disabilities Act*.

### **Door-to-Door Service**

A service that picks up passengers at the door of their place of *origin* and delivers them to the door of their *destination*. The driver pulls the vehicle off the road if possible and escorts or physically assists the passenger if needed. Door-to-door service provides a higher level of assistance than *curb-to-curb* service and is typically used for passengers with severe physical disabilities.

### **Elderly and Handicapped (E&H)**

Anachronistic designation for special transportation planning and services for persons with special needs; current *FTA* terminology is elderly and persons with disabilities.

### **Empowerment Zones/Enterprise Communities (EZ/EC)**

These areas, so designated by the Department of Housing and Urban Development (HUD) and the Department of Agriculture (USDA), are eligible for

preferences and flexibility in many Federal *grant* programs. EZ/ECs are chosen competitively based on community poverty characteristics and local strategic planning processes.

### **Enhancement Activities**

Refers to activities related to a particular transportation project that “enhance” or contribute to the existing or proposed project. Examples of such activities include provision of facilities for pedestrians or cyclists, landscaping or other scenic beautification projects, historic preservation, control and removal of outdoor advertising, archeological planning and research, and mitigation of water pollution due to *highway* runoff.

### **Environmental Impact Statement (EIS)**

Report that details any adverse economic, social, and environmental effects of a proposed transportation project for which Federal funding is being sought. Adverse effects could include air, water, or noise pollution; destruction or disruption of natural resources; adverse employment effects; injurious displacement of people or businesses; or disruption of desirable community or regional growth.

### **Environmental Protection Agency (EPA)**

A Federal agency whose responsibilities include development and enforcement of national air quality standards and support of anti-pollution activities by state and local governments.

### **Expenditures (Outlays)**

A term signifying disbursement of funds for repayment of obligations incurred. For example, an electronic transfer of funds, or a check sent to a state *highway* or transportation agency for voucher payment, is an expenditure or outlay.

### **Expressway**

A controlled *access*, divided *arterial highway* for through traffic, the intersections of which are usually separated from other roadways by differing grades.

### **Fare Structure**

Fare structure is the basis for determining how fares are charged. Common types of structures are distance-based (the longer the trip is, the higher the fare will be), time-based (higher fares for trips made during *peak hour* service than during the “*off peak*”), quality-based (*demand-responsive* trips are typically charged a higher fare than *fixed route* trips), or flat fares (the same fare is charged for all trips). In addition to these four methods, a fare structure may differentiate among passengers based on age, income, or disability (often lower fares are charged for elderly persons, children, *Medicaid* recipients, and persons with disabilities).

### **Federal Highway Administration (FHWA)**

The agency within the U.S. Department of Transportation that administers Federal aid *highway* programs.

### **Federal Transit Administration (FTA)**

The agency within the U.S. Department of Transportation that administers Federal aid transit programs.

### **Financial Capacity, Capability**

Refers to U.S. Department of Transportation requirement that an adequate financial plan for funding and sustaining transportation improvements be in place prior to programming federally funded projects. Generally refers to the stability and reliability of revenue in meeting proposed costs.

### **Fiscal Year (FY)**

Since FY 1977, the Federal yearly accounting period beginning October 1 and ending September 30 of the subsequent calendar year. Prior to FY 1977, the Federal fiscal year started on July 1 and ended the following June 30. Fiscal years are denoted by the calendar year in which they end; e.g., FY 1991 began October 1, 1990, and ended September 30, 1991.

### **Fixed Route**

Bus service on a prescribed path or route that never varies. The schedule may be fixed or flexible (see *jitney or shuttle service*). Passengers may be required to wait at designated stops, or *flag stops* may be permitted. Usually larger vehicles are used to provide fixed route service.

### **Fixed Schedule**

Predetermined times at which a vehicle is to arrive at a certain location. The actual bus route may be fixed or flexible. A flexible route combines fixed schedule stops with *demand-responsive* stops (see *checkpoint, point deviation, and route deviation*).

### **Flexible Routing and Schedules**

Flexible routing and schedules have some characteristics of both *fixed route* and *demand-responsive service*. In areas where demand for travel follows certain patterns routinely, but the demand for these patterns is not high enough to warrant *fixed route*, service options such as *checkpoint service, point deviation, route deviation, service routes, or subscription service* might be the answer. These are all examples of flexible routing and schedules, and each may help the *transit* system make its *demand-responsive services* more efficient while still maintaining much of the flexibility of demand responsiveness.

Flexible route service follows a direction of travel but allows for deviation or rerouting along the way to accommodate for specific trip requests. Examples of flexible route systems are *route deviation* and *point deviation*. The schedule may be fixed or flexible.

### **Fragmentation**

A situation stemming from the lack of effective and efficient integration of programs, facilities, and services.

### **Freeway**

A divided *arterial highway* designed for the unimpeded flow of large traffic volumes. *Access* to a freeway is rigorously controlled and intersection grade separations are required.

### **Grant**

The award of funds to an entity. Federal funds are typically awarded either as formula (or “block”) grants, where a predetermined legislative process establishes the level of funding available to an entity, or discretionary grants, where the funding agency is free to determine how much (if any) funding an entity will be given based on the relative merits of the proposal. Private foundations also give grants based on much the same criteria.

### **Group Service**

Used most often in *charter* or contracted service, a bus trip is provided to a group of passengers who ride between a single *origin* and *destination*. The riders have some demographic variable in common and travel together in the same vehicle. This type of service is commonly used by senior centers and other human service agencies that take their clients on field trips and shopping trips as a group.

### **Guaranteed Ride Home**

Refers to programs that encourage employees to *carpool*, use *transit*, or bike or walk to work by guaranteeing them a ride home in case they cannot take the same *mode* home (e.g., if they need to work late or if an emergency occurs).

### **Head Start**

A program of comprehensive services for economically disadvantaged preschool-age children. Services, including transportation, are provided by local *Head Start* agencies and are funded by the Administration for Children and Families, part of *DHHS*.

### **Headway**

The length of time at a stop between buses following the same route. If buses operating along Route A arrive at Stop 1 at 9:00, 9:30, 10:00, 10:30, and 11:00, it is operating on half-hour headways during the period between 9:00 and 11:00. Headways are short if the time between them is short and long if the time between them is long. When headways are short the service is said to be operating at a high frequency, whereas if headways are long, service is operating at a low frequency. In rural areas, headways tend to be very long—a week is not uncommon.

### **High Occupancy Vehicles (HOVs)**

A term generally applied to vehicles carrying three or more people. *Freeways*, *expressways*, and other large volume roads may have lanes designated for HOV use.

HOV lanes may be designated for use by *carpools*, *vanpools*, and buses. The term HOV is also sometimes used to refer to high occupancy vehicle lanes themselves.

### **Highway**

Term applies to roads, streets, and parkways and also includes rights-of-way, bridges, railroad crossings, tunnels, drainage structures, signs, guard rails, and protective structures in connection with highways.

### **Home-Based Work Trip**

A trip to or from home for the purpose of one's employment.

### **Human Service Agency Transportation**

Transportation for clients of a specific agency that is usually limited to a specific trip purpose. Human service agency trips are often provided under contract to a human service agency and may be provided exclusively or rideshared with other human service agencies or general public service.

### **Infrastructure**

A term connoting the physical underpinnings of society at large, including, but not limited to, roads, bridges, *transit*, waste systems, public housing, sidewalks, utility installations, parks, public buildings, and communications *networks*.

### **Intercity Bus Service**

Intercity bus service provides long distance service between cities, often as part of a

large *network* of intercity bus operators. Both *express* and *local* bus service may be provided. The Greyhound and Trailways systems are national intercity bus *networks*.

### **Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA)**

Legislative initiative by the U.S. Congress that restructured funding for transportation programs. ISTEA authorized increased levels of *highway* and transportation funding and an enlarged role for regional planning commissions/*MPOs* in funding decisions. The Act also requires comprehensive regional long-range transportation plans extending to the year 2015 and places an increased emphasis on *public participation* and transportation alternatives.

### **Jitney Service**

Vehicles travel along a *fixed route* with no time schedule and passengers are picked up anywhere along the route (*flag stops*). Because there are no schedules, *headways* are usually 5 to 10 minutes so passengers have only brief waiting periods. Jitney service is often used in the United States to provide *seasonal, tourist, or park and ride service*. Jitney service is a more common public transportation *mode* in other countries where private entrepreneurs are often the providers of service.

### **Land Use**

Refers to the manner in which portions of land or the structures on them are used, i.e., commercial, residential, retail, industrial, etc.

### **Limitation on Obligations**

Any action or inaction by an officer or employee of the United States that limits the amount of Federal assistance that may be obligated during a specified time period. A limitation on obligations does not affect the scheduled *apportionment* or *allocation* of funds, it just controls the rate at that these funds may be used.

### **Local Bus Service**

Local bus service is a term used to describe a route along which many stops are made, allowing flexibility in where passengers may board and depart. It is typically used in contrast to *express bus*, a bus that makes a limited number of stops and is targeted more at long distance riders. Local bus service is important in rural areas unless *feeder* or *connector service* is available to bring people to the station.

### **Local Street**

A street intended solely for *access* to adjacent properties.

### **Long Range**

In transportation planning, refers to a time span of more than 5 years. The *Transportation Improvement Program (TIP)* is typically regarded as a short-range program.

### **Management Systems**

Six systems required under *TEA-21* to improve identification of problems and opportunities throughout the Nation's entire

surface transportation *network* and to evaluate and prioritize alternative strategies, actions, and solutions. The six *management systems* include: Pavement Management System (PMS), Bridge Management System (BMS), Highway Safety Management System (HSMS), Congestion Management System (CMS), Public Transit Facilities and Equipment Management System (PTMS), and *Intermodal* Management System (IMS).

### **Medicaid**

Also known as Medical Assistance, this is a health care program for low-income and other "medically needy" persons. It is jointly funded by state and Federal governments. The Medicaid program pays for transportation to non-emergency medical appointments if the recipient has no other means of travel to the appointment.

### **Metropolitan Planning Organization (MPO)**

The organizational entity designated by law with lead responsibility for developing transportation plans and programs for *urbanized areas* of 50,000 or more in population. MPOs are established by agreement of the Governor and units of general purpose local government that together represent 75 percent of the affected population of an *urbanized area*.

### **Mobility**

The ability to move or be moved from place to place.

### **Mode, Intermodal, Multimodal**

Mode refers to a form of transportation, such as automobile, *transit*, bicycle, and walking. Intermodal refers to the connections between modes, and multimodal refers to the availability of transportation options within a system or corridor.

### **Model**

A mathematical or geometric projection of activity and the interactions in the transportation system in an area. This projection must be able to be evaluated according to a given set of criteria that typically include criteria pertaining to *land use*, economics, social values, and travel patterns.

### **Network**

All component paths in a transportation system.

### **National Ambient Air Quality Standards (NAAQS)**

Federal standards that set allowable concentrations and exposure limits for various pollutants.

### **National Highway Systems (NHS)**

A Federal transportation program authorized by *ISTEA* that designates nationally significant Interstate Highways and roads for interstate travel, national defense, intermodal connections, and

international commerce. Other eligible activities include bikeways and park-and-ride lots. The NHS is being developed as the first component of a larger, *intermodal National Transportation System*.

### **National Transit Database Reports**

Annual reports formerly known as Section 15 reports, based on financial and operating data, required of almost all recipients of transportation funds under *FTA*'s urban transit program.

### **National Transit Resource Center**

A resource center housed at the Community Transportation Association of America (CTAA). Provides technical assistance, information, and support to the community transportation industry. Most services and materials are available at no charge.

### **National Transportation System (NTS)**

*ISTEA* called for the development of a "National Intermodal Transportation System that is economically efficient and environmentally sound, provides the foundation for the Nation to compete in the global economy, and will move people and goods in an energy efficient manner." The NTS is intended to allow for the development of transportation planning, program management, and investment strategies that will bring about a transportation system that will move people and goods more effectively and efficiently and thereby advance our economic, environmental and social goals.

### **No-Show**

A passenger scheduled for a *demand-responsive* trip who does not appear at the designated pick-up point and time and does not cancel the trip in advance. Frequent no-shows can hurt the efficiency and effectiveness of the service, particularly in rural areas where passengers live in very remote areas that take time to get to and return from the pick-up point.

### **OAA: Older Americans Act**

Federal law first passed in 1965. The act established a *network* of services and programs for older people. This *network* provides supportive services, including transportation and nutrition services, and works with public and private agencies that serve the needs of older individuals.

### **Obligation Authority**

See “Limitation on Obligations.”

### **Obligations**

Commitments made by Federal agencies to pay out money (as distinct from the actual payments, which are “outlays”). Generally, obligations are incurred after the enactment of *budget authority*. However, because *budget authority* in many *highway* programs is in the form of *contract authority*, obligations in these cases are permitted to be incurred immediately after *apportionment* or *allocation*. The obligations are for the Federal share of the estimated full cost of each project at the time it is approved, regardless of when the

actual payments are made or the expected time of project completion.

### **Operating Costs**

Noncapital costs associated with operating and maintaining a *transit* system, including labor, fuel, administration, and maintenance.

### **Origin**

A place at which a passenger boards a *transit* vehicle; the point at which a trip begins. Often this term is used to refer to a passenger’s home, even though the home actually becomes the *destination* of a return trip.

### **Paratransit Service**

Paratransit is a broad term that may be used to describe any means of shared ride transportation other than *fixed route* mass transit services. The term paratransit usually indicates that smaller vehicles (less than 25 passengers) are being used. These services usually serve the needs of persons that standard mass transit services would serve with difficulty or not at all. A paratransit service is typically advanced reservation, *demand-responsive service* provided *curb-to-curb* or *door-to-door*. *Route deviation* and *point deviation* are also considered paratransit. Paratransit is often more appropriate than *fixed route* services in rural areas and in areas with large populations of elderly persons or persons with disabilities. Paratransit services that are provided to accommodate passengers with disabilities who are unable

to use *fixed route* service and that meet specific service equivalency tests are called *ADA complementary paratransit services*.

### **Peak/Off-Peak**

The period during which the maximum amount of travel occurs. This is also the period during which the demand for transportation is usually highest. It may be specified as the morning (a.m.) or afternoon or evening (p.m.) peak, typically between 6:30 to 9:30 a.m. and 3:30 to 6:30 p.m. on weekdays when commuters are traveling to and from work and school. The actual times vary according to local employer shift times, school hours, and population density. Typically, during the peak period in urban *transit* systems, the maximum number of vehicle are placed in service, *headways* are shorter, and higher fares are charged than during the off peak period. In rural areas where the bulk of the ridership may actually be seniors going to nutrition sites, this concept may not apply.

### **Penalty**

An action that does not allow a recipient to use the full amount of its apportioned funds. Applied to state recipients from Federal programs, the action may be a withholding of project approvals or withholding of a percentage of the state's *apportionment*. The action may be taken when the state does not comply with a required provision of law.

### **Person-Trip**

A trip made by one person from one *origin* to one *destination*.

### **Point Deviation Service**

A type of *flexible route transit* service in which *fixed scheduled* stops (points) are established but the vehicle may follow any route needed to pick up individuals along the way if the vehicle can make it to the fixed points on schedule. This type of service usually provides *access* to a broader geographic area than does *fixed route service* but is not as flexible in scheduling options as *demand-responsive service*. It is appropriate when riders change from day to day but the same few *destinations* are consistently in demand. Also sometimes called *checkpoint service*.

### **Privatization**

The supplying of traditionally government-supplied goods and services through for-profit business entities. Enhanced public cost efficiency is a primary goal of such actions.

### **Provider of Transportation**

An agency that offers or facilitates client transportation (as opposed to an agency whose role is limited to funding programs).

### **Public Authority**

A Federal, state, county, town, or township, Indian tribe, municipal, or other local government or instrumentality with authority to finance, build, operate, or maintain transportation facilities.

### **Public Participation**

The active and meaningful involvement of the public in the development of

transportation plans and improvement programs. The *ISTEA* and subsequent regulations require that state departments of transportation and *MPOs* proactively seek the involvement of all interested parties, including those traditionally underserved by the current transportation system.

### **Public Road**

Any road or street under the jurisdiction of and maintained by a *public authority* and open to public traffic.

### **Pulse System**

A type of *fixed route transit* system (usually involving a *radial network*) in which all routes arrive at and depart from the *central transfer point* at the same times. This timing facilitates transferring but necessitates a transfer facility where simultaneously all buses can safely drop off passengers, wait, and passengers can easily and safely get to the bus to which they are transferring.

### **Radial Network**

A public *transit* route service pattern in which most routes converge into and diverge from a *central transfer point* or hub, like the spokes of a wheel. *Arterial* or *loop routes* may be used. If the routes are timed to arrive and depart at the same time, it is called a *pulse system*.

### **Real-Time Scheduling**

Passengers call and request *demand-responsive* trips a short time before the trip is needed, and the dispatcher is responsible for assigning vehicles and drivers to meet passengers' requests. This type of scheduling is most convenient for passengers but most costly for a *transit* system to implement as a large fleet of vehicles and drivers is needed to ensure all trip requests are met. This type of scheduling is most frequently used by *taxi* services.

### **Region**

An entire metropolitan area, including designated urban and rural subregions.

### **Regionally Significant**

A term that has been defined in Federal transportation planning regulations as “a project...that is on a facility which serves regional transportation needs...and would normally be included in the modeling of a metropolitan area's transportation *network*, including, at a minimum, all principal *arterial highway* and fixed guideway *transit* facilities that offer a significant alternative to regional *highway* travel.”

### **Rescission**

A legislative action to cancel the *obligation* of unused *budget authority* previously provided by Congress before the time when

the authority would have otherwise lapsed. Rescission may be proposed by the Executive Branch but requires legislative action in order to take effect.

### **Reverse Commute**

Commuting against the main directions of traffic. Often refers to travel from the central city to suburbs during *peak* period commuting times.

### **Rideshare/Ridematch Program**

A rideshare program facilitates the formation of *carpools* and *vanpools*, usually for work trips. A database is maintained of the ride times, *origins*, *destinations*, and driver/rider preferences of users and potential users. Persons requesting to join an existing pool or looking for riders are matched by program staff with other appropriate persons. In rural areas, a rideshare program is often used to coordinate *Medicaid* or volunteer transportation.

### **Ridesharing**

Ridesharing is the simultaneous use of a vehicle by two or more persons.

### **Route Deviation Service**

*Transit* buses travel along a prescribed route at scheduled times and maintain scheduled or unscheduled *checkpoint* stops. The vehicle may leave and return to the route to pick up persons who have requested *demand-responsive* trips near the route. Passengers may call in advance for route deviation or may *access* the system at

predetermined route stops. The limited geographic area within which the vehicle may travel off the route is known as the route deviation corridor. This type of *flexible routing* essentially meets *demand responsive* service requests with a *fixed route*. It is often the best option for higher density rural areas where travel patterns are consistent but isolated riders cannot get to the route because they cannot walk the distance needed or they use a wheelchair and there are no sidewalks.

### **Right of Way (R-O-W)**

Priority paths for the construction and operation of *highways*, light and heavy rail, railroads, etc.

### **Service Route**

Service routes are *transit* routes that are tailored to meet the needs of a specific market segment (such as older person or persons with disabilities) in a community. Service routes often evolve out of a pattern of *demand-responsive* travel within a community. Characteristics of a service route include stops at high-density residential complexes or group homes, shopping areas, medical facilities, and *destinations* specific to the target population such as senior centers or sheltered work sites. Stops are usually positioned near an accessible entrance of a building instead of on the street, and the ride times are typically longer than on a “conventional” *fixed route* covering the same general area. Service routes may be operated instead of, or in conjunction with, a “conventional” route in the same area. Vehicles tend to be smaller and accessible

to persons with disabilities, and drivers usually offer a relatively high level of personal assistance. Service routes are used widely in Europe and are gaining greater popularity in the United States since the passage of the *Americans with Disabilities Act*.

### **Shared Ride Taxi**

A shared ride taxi service provides taxi transportation in which more than one passenger is in the vehicle at the same time, usually at a reduced rate for each of the passengers. Shared ride taxi service is a way of using taxicabs for *paratransit service*.

### **Shuttle Service**

Shuttle service refers to *fixed route* service that connects only a small number of fixed stops and operates at a high frequency (or short *headways*). The vehicle follows a repetitive back-and-forth route. This type of service is related to *circulator* service but connotes a more linear route structure. A *parking shuttle* is an example of use that could apply to areas that have a seasonal tourist attraction.

### **Single-Occupant Vehicle (SOV)**

A SOV is a vehicle used to transport just one person to a *destination*.

### **Social Equity, Justice**

The provision of affordable, efficient, and accessible transportation services to all people regardless of race, ethnicity, income, gender, or disability. A socially equitable

transportation system provides all people with convenient *access* to meaningful jobs, services, and recreational opportunities.

### **State Highway Department**

The department, commission, or board of any state responsible for *highway* construction, maintenance, and management.

### **State Implementation Plan (SIP)**

Required documents prepared by states and submitted to *EPA* for approval. SIPs identify state actions and programs to implement designated responsibilities under the Clean Air Act.

### **Subscription Service**

When a passenger or group of passengers requests a repetitive ride (such as on a daily or weekly service on an ongoing basis), trips are often scheduled on a subscription or “standing order” basis. The passenger makes a single initial trip request, and the *transit* system automatically schedules them for their trip(s) each day or week. This type of service is frequently used in transporting human service agency clients to regular agency programs.

### **Surface Transportation Program**

A new categorical funding program created with the *ISTEA*. Funds may be used for a wide variety of purposes, including roadway construction, reconstruction, resurfacing, restoration, and rehabilitation; roadway operational improvements; *capital costs* for *transit* projects; *highway* and

*transit* safety improvements; bicycle and pedestrian facilities; scenic and historical transportation facilities; and preservation of abandoned transportation corridors.

### **Temporary Aid to Needy Families (TANF)**

Created by the 1996 welfare reform law, TANF is a program of block *grants* to states to help them meet the needs of families with no income or resources. It replaces *AFDC*, *JOBS*, Emergency Assistance, and some other preceding Federal welfare programs. Because of TANF-imposed time limits, states are trying to place recipients in jobs as quickly as possible, often using program funds to pay for transportation, childcare, and other barriers to workforce participation.

### **Taxi**

*Demand-responsive* transportation vehicle offered to individual members of the public on an exclusive basis, in a vehicle licensed to render that service, usually operated by a private for-profit company. Fares are usually charged on a per-mile or per-minute (or both) basis on top of a base fare charged for all trips. Passengers may call the dispatcher to request a trip (*real-time scheduling*) or hail a passing unoccupied taxi.

### **TEA-21**

See *Transportation Equity Act for the 21st Century*.

### **Telecommuting**

The substitution, either partially or completely, of the use of computer and telecommunications technologies (e.g., telephones, personal computers, modems, facsimile machines, electronic mail) for transportation to a conventional place of work. Implies either working at home or at a satellite work center that is closer to an employee's home than the conventional place of work.

### **Title III**

An important Title of the *Older Americans Act* that authorizes *expenditures* for nutrition and transportation programs that serve older persons.

### **Title IV**

An important Title of the Civil Rights Act of 1964 that ensures that no person in the United States will be discriminated against on the basis of race, color, or national origin. The transportation planning regulations, issued in October 1993, require that metropolitan transportation planning processes be consistent with Title IV.

### **Transit**

Generally refers to passenger service provided to the general public along established routes, with fixed or variable schedules, at published fares. Related terms include public transit, mass transit,

public transportation, urban transit, and *paratransit*.

### **Transit Dependent**

Persons who must rely on public *transit* or *paratransit* services for most of their transportation. Typically refers to individuals without *access* to personal vehicles.

### **Transportation Control Measures (TCMs)**

Local actions to adjust traffic patterns or reduce vehicle use to reduce air pollutant emissions. These may include *HOV* lanes, provision of bicycle facilities, *ridesharing*, *telecommuting*, etc.

### **Transportation Disadvantaged**

A term used to describe those persons who have little or no *access* to meaningful jobs, services, and recreation because a transportation system that does not meet their needs. Often refers to those individuals who cannot drive a private automobile because of age, disability, or lack of resources. See also “*Social Equity, Justice.*”

### **Transportation Equity Act for the 21st Century (TEA-21)**

The 1998 Congressional legislation that reauthorized *U.S. DOT*'s *surface transportation programs* is called the Transportation Equity Act for the 21st Century (TEA-21). This legislation replaces the 1991 authorizations known as *ISTEA* but essentially continues the program

changes initiated under *ISTEA* (increased levels of *highway* and transportation funding, an enlarged role for regional planning commissions/*MPOs* in funding decisions, and requirements for comprehensive regional long-range transportation plans and for *public participation* and transportation alternatives).

### **Transportation Improvement Program (TIP)**

This is a document prepared by states and planning commissions citing projects to be funded under Federal transportation programs for a full-year period. Without TIP inclusion, a project is ineligible for Federal funding.

### **Transportation Management Area (TMA)**

Defined by *TEA-21* as all *urbanized areas* over 200,000 in population. Within a TMA, all transportation plans and programs must be based on a continuing and comprehensive planning process carried out by the *Metropolitan Planning Organization (MPO)* in cooperation with states and *transit* operators. The TMA boundary affects the responsibility for the selection of transportation projects that receive Federal funds.

### **Transportation Management Association (TMA)**

A voluntary association of public and private agencies and firms joined to cooperatively develop transportation-enhancing programs in a given area. TMAs

are appropriate organizations to better manage transportation demand in congested suburban communities.

### **Transportation System Management (TSM)**

The element of a *Transportation Improvement Program* that proposes noncapital-intensive steps toward the improvement of a transportation system, such as refinement of system and traffic management, the use of bus priority or reserved lanes, and parking strategies. It includes actions to reduce vehicle use, facilitate traffic flow, and improve internal *transit* management.

### **Travel Time**

Customarily calculated as the time it takes to travel from “*door-to-door*.” Used in transportation planning. In forecasting the demand for *transit* service, measures of travel time include time spent accessing, waiting, and transferring between vehicles, as well as that time spent on board.

### **Trip Generator**

A place that generates a demand for frequent travel is called a trip generator. Trip generators may be *origins* or *destinations*. For example, a high-density residential area generates a need for all kinds of trips outside of the residential area into commercial areas, a medical center generates trips for medical purposes, and a downtown area may generate trips for retail, recreational, or personal business purposes.

### **Trust Funds**

Accounts established by law to hold receipts that are collected by the Federal Government and earmarked for specific purposes and programs. These receipts are not available for the general purposes of the Federal Government. The Highway Trust Fund is comprised of receipts from certain *highway* user taxes (e.g., excise taxes on motor fuel, rubber, and heavy vehicles) and reserved for use for *highway* construction, mass transportation, and related purposes.

### **U.S. Department of Transportation (U.S. DOT)**

The principal direct Federal funding and regulating agency for transportation facilities and programs. Contains *FHWA* and *FTA*.

### **Urbanized Area (UZA)**

An area that contains a city of 50,000 or more population, plus incorporated surrounding areas, and meets set size or density criteria.

### **U.S. Department of Agriculture (USDA)**

The Federal agency charged with oversight of Federal agricultural programs. Among its many other functions, USDA is the Federal Government’s primary agency for rural economic and community development.

### **User-Side Subsidy**

A transportation funding structure in which qualified users (usually economically

disadvantaged persons) are able to purchase vouchers for transportation services at a portion of their worth. The users may then use the vouchers to purchase transportation from any participating provider; the vouchers are redeemed by the provider at full value and the provider is reimbursed by the funding agency for the full value.

### **Vanpool**

An organized *ridesharing* arrangement in which a number of people travel together on a regular basis in a van. The van may be company owned, individually owned, leased, or owned by a third party. Expenses are shared, and there is usually a regular volunteer driver. In terms of service design, a vanpool is basically a *carpool* that uses a vehicle larger than a car. In rural areas, vanpools can be an important form of employment transportation where densities are not high enough to justify commuter bus service.

### **Vehicle Miles of Travel (VMT)**

A standard areawide measure of travel activity. The most conventional VMT calculation is to multiply average trip length by the total number of trips.

### **Volunteer Network**

A volunteer network matches requests for transportation with a volunteer driver who is typically reimbursed on a per-mile basis for providing the trip. Persons requesting service call the network; the network calls

the driver and schedules the trip. Volunteer networks are frequently used in rural areas where resources are scarce, persons needing transportation may live in remote areas, and a sense of community is not uncommon.

### **Workforce Development Boards**

Formerly known as Private Industry Councils (PIC), Workforce Development Boards are concerned with training and developing workers to meet the needs of local businesses. Workforce Development Boards are responsible for most local job training programs and related welfare-to-work efforts.

### **Zone**

A defined geographic area. Zones are used in *demand-responsive service* for dispatching purposes and in *fixed route* and *demand-responsive service* for fare determination. In zonal *demand-responsive service*, each vehicle travels only within a particular zone. Trips that originate in one zone and end in another involve a transfer at the zone boundary or a *central transfer point*. In a *zonal fare structure*, the service area is divided into zones, and the fare is determined according to the number of zones traveled (the higher the number of zones, the higher the fare). This is a method of charging a distance-based fare. Zones can assume a number of different forms depending on the route design, including concentric circles, key stops along a route, a grid system, or a hybrid of these.

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Abbreviations used without definitions in TRB publications:

AASHO	American Association of State Highway Officials
AASHTO	American Association of State Highway and Transportation Officials
APTA	American Public Transportation Association
ASCE	American Society of Civil Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
ATA	American Trucking Associations
CTAA	Community Transportation Association of America
CTBSSP	Commercial Truck and Bus Safety Synthesis Program
FAA	Federal Aviation Administration
FHWA	Federal Highway Administration
FMCSA	Federal Motor Carrier Safety Administration
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
IEEE	Institute of Electrical and Electronics Engineers
ITE	Institute of Transportation Engineers
NCHRP	National Cooperative Highway Research Program
NCTRP	National Cooperative Transit Research and Development Program
NHTSA	National Highway Traffic Safety Administration
NTSB	National Transportation Safety Board
SAE	Society of Automotive Engineers
TCRP	Transit Cooperative Research Program
TRB	Transportation Research Board
U.S.DOT	United States Department of Transportation