TCRP

REPORT 143

TRANSIT
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PROGRAM

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Resource Guide for Commingling ADA and Non-ADA Paratransit Riders

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TCRP REPORT 143

Resource Guide for Commingling ADA and Non-ADA Paratransit Riders

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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.

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This work was guided by the TCRP Project B-34 panel. The research team is grateful for the panel's insights and support.

FOREWORD

By Dianne Schwager
Staff Officer
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TCRP Report 143: Resource Guide for Commingling ADA and Non-ADA Paratransit Riders will be of interest to public transit agencies wishing to explore whether and how to commingle ADA paratransit and non-ADA paratransit riders. The core features of the Resource Guide are two decision-making processes: (1) planning and (2) operations. The Resource Guide presents important lessons from transit agencies that have made decisions both to commingle and not to commingle their ADA paratransit and non-ADA paratransit riders.

"Commingling" ADA and non-ADA riders is a newly coined term for a practice that has been operating in many communities since transit agencies began operating paratransit services required by the Americans with Disabilities Act of 1990 (ADA). For this project, "commingling" is defined as "routinely transporting ADA eligible paratransit riders with 'other' non-ADA paratransit riders on the same vehicles at the same time."

The intent of this Resource Guide is to suggest a roadmap for navigating through the process of planning for commingled services that will feed into the operations of that service, including development of operating policies and procedures.

The decision process regarding the planning for commingling ADA and non-ADA riders presented in the Resource Guide is organized into the following four major components:

- Define purpose and objectives for commingling riders
- Identify available capacity and funding
- Evaluate service compatibility
- Consider primary service parameters

The operations decision process, which focuses on developing policies, procedures, practices, and performance-monitoring strategies to ensure successful commingling of riders, also includes four major components:

- Establish passenger eligibility requirements
- Develop operating and cost allocation policies and procedures
- Identify reporting requirements and assess technology needs
- Develop marketing, education, and monitoring programs

Readers of the electronic version of the report (available online at www.trb.org by searching for "TCRP Report 143") will find that the components of the two decision-making flow charts—planning and operations—are color coded, which facilitates their readability and use.

CONTENTS

1 Summary

7 Background
- 7 Overview
- 9 ADA Complementary Paratransit Regulatory Requirements
- 10 Models for Commingling ADA and Non-ADA Paratransit Riders
- 11 Resource Guide Approach

12 **Section 1** Planning Decision Process
- 14 A. Define Purpose and Objectives for Commingling
- 17 B. Identify Available Capacity and Funding
- 26 C. Evaluate Service Compatibility
- 27 D. Consider Primary Service Parameters

30 **Section 2** Operations Decision Process
- 32 A. Establish Passenger Eligibility Requirements
- 34 B. Develop Operating and Cost Allocation Policies and Procedures
- 41 C. Identify Reporting Requirements and Assess Technology Needs
- 44 D. Develop Marketing, Education, and Monitoring Programs

48 **Section 3** Lessons Learned

51 References

52 Abbreviations and Acronyms

54 **Appendix A** Transit Agency Survey Highlights

68 **Appendix B** Case Study Summaries

89 **Appendix C** Additional Resources

Note: Many of the photographs, figures, and tables in this report have been converted from color to grayscale for printing. The electronic version of the report (posted on the Web at www.trb.org) retains the color versions.

SUMMARY

Resource Guide for Commingling ADA and Non-ADA Paratransit Riders

The primary purpose of the Resource Guide is to provide practical planning and operating assistance to fixed route transit agencies that are deciding whether or not to commingle their ADA eligible paratransit riders with "other" paratransit riders and, if so, how to implement the practice.

"Commingling" ADA and non-ADA riders is a newly coined term for a practice that has been operating in many communities since transit agencies began operating paratransit services required by the Americans with Disabilities Act of 1990 (ADA). For this project, "commingling" is defined as "routinely transporting ADA eligible paratransit riders with 'other' non-ADA paratransit riders on the same vehicles at the same time."

The following are examples of other paratransit riders who might be commingled with ADA paratransit riders:

- Medicaid beneficiaries
- Older adults with transportation service funded by Title III of the Older Americans Act or other programs
- Job Access and Reverse Commute (JARC) program beneficiaries
- New Freedom program beneficiaries
- Other individuals with disabilities or older adults who participate in support services programs, for example:
  - Developmentally disabled individuals
  - Rehabilitation services participants
  - Human service agency customers
  - Adult day care program participants
  - Hospital discharges
  - Dialysis patients
  - Children (including Head Start participants)

The research found three basic factors that seemed to affect decisions regarding whether or not to commingle:

- **Evolution.** For a number of transit systems, paratransit service was historically part of the mix of services that they operated and when the ADA was passed in 1990, the transit system added ADA paratransit into the paratransit mix of services that they already offered.
- **Cost-sharing.** Another reason for commingling was the need for public transit and local human service agencies to cooperate, particularly related to managing costs and cost-sharing for paratransit service. Before passage of the ADA, many human service agencies were responsible for their own program participants' transportation. With implementation

of the ADA, many of these program participants were determined ADA eligible, but rather than just shifting their riders and the associated transportation costs to the public transit authority as some human service agencies have done, these organizations worked together to coordinate service and developed agreements for equitable cost-sharing.

In contrast, some transit agencies decided **not** to commingle or after a time to discontinue commingling their ADA and non-ADA riders. Factors contributing to a transit agency's decision not to commingle tend to focus on cost allocation or service quality/control issues.

- **State-level commitment to coordination.** In some cases, coordination requirements and incentives at the state level may influence or require commingling of ADA and non-ADA riders. A 2005 report published by the National Conference of State Legislatures found 21 states with specific legislation related to human service transportation coordination and another 16 states that require human service coordination but not specifically public transportation. Governors have executed executive orders in 9 states, and at least 27 states and the District of Columbia have attempted local coordination initiatives without a state requirement (Sundeen et al. 2005). Some transit agencies with designated funding set aside for coordinated transportation efforts provide services in a commingled fashion.

To better understand the decision-making processes employed by transit agencies when considering commingling ADA and non-ADA riders, the project's research team used an online survey tool to collect relevant information from fixed route transit agencies and to identify approaches used by transit agencies to commingle ADA eligible and other paratransit riders on the same vehicles. The survey was supplemented by telephone calls to clarify information, along with a review of system brochures, reports, and other information provided by transit agencies that described the approach taken for providing paratransit services. The survey information was further supplemented by a series of site visits and telephone interviews with 18 transit agencies selected from the survey respondents, along with additional research and the research team's own knowledge of the industry.

Findings

During the course of this project, four models for commingling ADA and non-ADA paratransit riders were identified, representing the spectrum of commingled approaches. The first three models were the most commonly observed in the project survey; the fourth model may not truly fit the definition of commingled service used for this project, but was identified as a commingling strategy by several transit agencies. The four models include the following:

- **Model #1: Human Service Transportation + ADA Paratransit**

  Pre-ADA human service transportation providers that added ADA paratransit services after passage of the ADA. This model includes programs with roots in human service transportation that have been expanded to include ADA paratransit service. In practice, this model includes two subtypes: non-profit agencies that have become the ADA paratransit service provider for the local transit agency and transit agencies that have incorporated former non-profit transportation programs into their paratransit service structure. That latter practice was more common when ADA paratransit was first introduced and systems were merged. It is less likely to occur now.

- **Model #2: ADA + Human Service Transportation**
  ADA paratransit service providers that added human service transportation (HST) service after their ADA paratransit service. This model is the focus of this research project and of the decision-making processes described in the Resource Guide. It includes transit agencies that started as ADA paratransit service providers and later added HST or other paratransit services to their service structure.
- **Model #3: General Public Dial-A-Ride + ADA Paratransit Service**
  Public dial-a-ride services that operate in coordination with ADA paratransit service (or serve "would-be" ADA customers). This example includes a coordinated system of local dial-a-ride service providers that have been expanded to include ADA paratransit in commingled services.
- **Model #4: Two-Tiered ADA Paratransit Service**
  ADA paratransit service providers that offer enhanced demand response services outside the ADA service area. The research found several transit providers that consider their provision of ADA-type paratransit service beyond the required ¾-mile fixed route corridors to be "commingled" services. Under this model, transit agencies are basically providing ADA paratransit service beyond the minimum service required by the ADA and not truly commingling riders. Although not the focus of this report, this model is what some agencies labeled "commingled" and it was included in the review.

Transit agencies considering whether to commingle passengers today would most likely identify with Model #2, which is the intended focus of the Resource Guide.

Resource Guide Approach

All the background information and research efforts of the project were used to help develop the Resource Guide. The Resource Guide is designed for use by fixed route public transit agencies wishing to explore whether and how to commingle ADA paratransit and non-ADA paratransit riders. The core features of the Resource Guide are two decision-making flow charts: (1) planning and (2) operations. In the ideal application of the Resource Guide, transit agencies would begin with the planning process and then move to the operations process.

The planning decision process is organized into four major components that should be undertaken prior to making a decision about whether to commingle ADA and non-ADA riders.

A. Define purpose and objectives for commingling riders
B. Identify available capacity and funding
C. Evaluate service compatibility
D. Consider primary service parameters

The operations decision process focuses on developing policies, procedures, practices, and performance monitoring strategies to ensure successful commingling of riders. As with the planning decision process, the operations decision process is organized into four major components:

A. Establish passenger eligibility requirements
B. Develop operating and cost allocation policies and procedures
C. Identify reporting requirements and assess technology needs
D. Develop marketing, education, and monitoring programs

Although it is useful to follow the operations process as described in the flow chart, it is possible to work through individual components, as needed.

Conclusions and Recommendations

This research revealed numerous lessons learned from transit agencies that have opted to commingle—or not to commingle—their ADA paratransit riders with other non-ADA paratransit riders. Among the most common lessons learned were the following:

- **There is no one "right" answer.** First and foremost, it should be remembered that there is no one right answer and a decision **not** to commingle may be just as valid as a decision to commingle.
- **ADA regulatory requirements must be met.** The Americans with Disabilities Act is civil rights legislation. As such, the U.S. DOT regulatory requirements for ADA paratransit service must be met, even if that negatively affects service for other non-ADA riders. ADA paratransit service must be provided for any trip purpose and no trip purpose may be prioritized over another. There may not be a pattern or practice of trip denials for eligible ADA paratransit trips. These requirements—and others—can sometimes conflict with trip requests from non-ADA riders.
- **There's no such thing as a free ride.** Be careful about well-intentioned efforts to extend service to non-ADA riders who are not supported by an identified or adequate source of funding. Where commingling is successful, funding for expanded paratransit service is available. Although this point may seem obvious, the case study research found that the sources of funding for non-ADA riders varied for agencies that commingle, but the key was to ensure that adequate and sustainable funding is available to support service for the non-ADA riders. When funding (a) becomes problematic, (b) is cut significantly, or (c) is withdrawn, commingling becomes difficult if not impossible to sustain.
- **State and local conditions matter.** The factors that enter into the decision whether or not to commingle ADA and non-ADA riders vary locally and often are dependent on (a) specific state and local regulatory requirements and ordinances; (b) recognition of the compatibility of rider groups to be served by the commingled program; (c) the availability of adequate funding to sustain the service; (d) an identification of appropriate cost allocation strategies among participating program sponsors; and (e) other specific local resources and conditions that may affect the success of the local effort. Florida is an example of a state with a long-standing history of coordinating and commingling service for persons defined as transportation disadvantaged. In addition to coordinated planning and service provision, the Florida Commission for the Transportation Disadvantaged provides funds through its Transportation Disadvantaged Trust Fund.
- **Some areas may find commingling to be inherently easier than others.** Transit agencies in small urban and rural settings generally seem to have found it easier to commingle services, where there may be a history of coordination given scarce local resources. Similarly, as was the case for Pittsburgh, systems with paratransit programs that predate the ADA seem more likely to be agencies that commingle, adding the ADA service to their existing mix of specialized and human service transportation. Finally, it generally appears that transit agencies without a history of providing paratransit service before adoption of the ADA have tended to shy away from introducing non-ADA paratransit into the ADA paratransit program.
- **Planning is key.** Ideally, planning should commence at the beginning as part of a formal process to assess the pros and cons of commingling and to develop strategies for success. Even if a "decision" to commingle was already made as a result of political or regulatory

processes, it is still important for the transit agency staff to identify key aspects of the service to be provided, to work through any potential obstacles to commingling, to develop contingency plans, and to ensure that adequate resources and adequate funding are available to sustain service. Any potential obstacles should be identified and resolved before implementing service.

- **Be flexible.** While planning is important, it is also important to understand that even the best plans cannot account for all contingencies. Assumptions made during planning may not be entirely correct or circumstances may change. Transit agencies should be prepared to be flexible going forward and strive to find solutions that make sense for their area.
- **Determining rider eligibility is critical.** An important aspect of a commingled system is to identify individual rider's eligibility for each of the various services offered as part of a commingled system. This effort is important both to ensure that the proper agency is billed for the cost of the trip as well as to ensure that riders are getting the appropriate level of service based on their program eligibility (e.g., ADA paratransit, Medicaid Non-Emergency Medical Transportation, Title III of the Older Americans Act, and others).
- **ADA paratransit service standards are often higher than other program standards.** It is generally recognized throughout the transit industry that even the minimum ADA paratransit service criteria often exceed the service standards for other programs such as Medicaid. As a result, the cost of commingled service may in fact increase overall, as it is common for the ADA service standards to be applied to other riders in a commingled system to make operating policies and procedures consistent.
- **Ongoing performance monitoring is a must.** Service standards should be set and measured at regular intervals in order to ensure that programmatic requirements are being met, particularly with respect to ADA regulatory compliance.
- **Technology is a useful tool.** Recent advances in technology allow transit agencies to better serve their customers in a variety of ways from reserving, scheduling, and dispatching trips, to record-keeping and performance monitoring. Technology and electronic fare media are especially helpful for accounting for trip-making by individual riders and collecting fares that may vary by passenger type. Technology can also assist with real-time and retrospective performance monitoring to ensure that service standards are being met for on-time performance, ride times, and other important service parameters.
- **Educate board members and other policymakers.** Many transit agencies mentioned the importance of educating their boards and other policymakers about the nature of commingled services, regulatory requirements, operating practices, funding, and program performance. An educated board can more readily understand and support the transit agency when issues arise, particularly related to funding, programmatic differences, and service provision.
- **Educate transit agency staff.** It is important that everyone involved in the commingled program understands how it is organized, how eligibility is determined for various program sponsors to ensure riders receive the appropriate service and pay the appropriate fare, and how the funding sources are structured to ensure accurate and appropriate billing and financial reporting.
- **Educate riders.** An equally important aspect is to educate riders, their families and caregivers, and sponsoring agencies about the services offered by the commingled system and why there may be variations. This is especially important when there are variations in service levels offered (e.g., service area or service hours), fares, and other aspects of day-to-day service delivery. Some agencies have found that marketing and branding the different services help to explain the differences for passengers and the general public. They also found that education efforts cannot be a one-time event, for example, when riders begin using the program, but must be continual and sustained over time. Education materials also need to be provided in various formats including written materials (brochures,

newsletters, updates), presentations at meetings and activity fairs, written and audio public service announcements, and other efforts.

- **Manage demand.** One issue that eluded a consensus "lesson" was what to do if there is rapid growth in ridership, making it difficult to meet the demand for ADA and non-ADA riders, keeping in mind the requirement to serve all eligible ADA paratransit trips.

  To address paratransit demand, transit agency managers are well-advised to be proactive, to control elements that can be controlled, and to acknowledge those elements that may be out of the control of the transit agency, such as population growth, demographics of aging, and so on. By being proactive and monitoring service and market trends, growth-related issues may be spotted early and brought to the attention of policymakers and funding agencies before service deteriorates. For example, while transit agencies are required to provide unconstrained ADA paratransit service and not to exhibit a pattern or practice of trip denials, it is understood that from time to time trips may be denied during unexpected peaks in demand. However, having said that, FTA expects and requires that transit agencies plan for future growth through the budgeting process and make funding adjustments to stay compliant with the regulations.

  An obvious starting point is to be sure that the eligible riders are properly screened for both ADA and non-ADA services, keeping in mind that ADA paratransit service should be viewed as a safety net for passengers who are unable to use fixed route service for some or all of their trips because of the nature of their disability. It is not intended for use by riders who are able to use fixed route, nor is it intended to be a comprehensive system of transportation that meets all the travel needs of persons with disabilities. By practicing proper eligibility determination—particularly from the start—the transit agency can help to curb unnecessary growth. Additionally, it is mutually beneficial to encourage use of fixed route, shuttles, and other flexible routing that will meet rider needs and that will be more cost-effective as measured by cost per trip than paratransit.
- **Allocate costs and invoice properly.** It also is important to work with funding agencies on an ongoing basis to ensure that all costs are properly allocated among the funding partners. It is also important to ensure that the funding sources are being properly invoiced for trips they sponsor and that riders who are eligible for multiple programs have trips assigned appropriately for invoicing purposes.

BACKGROUND

This Resource Guide for Commingling ADA and Non-ADA Paratransit Riders was prepared as part of TCRP Project B-34, funded by the FTA and was conducted through the TCRP, which is administered by the TRB of the National Academies. The primary purpose of the Resource Guide is to provide practical planning and operating assistance to fixed route transit agencies that are deciding whether or not to commingle their ADA eligible paratransit riders with "other" paratransit riders and, if so, how to implement the practice.

Commingling ADA and non-ADA riders is a newly coined term for a practice that has been operating in many communities since transit agencies began operating paratransit services required by the ADA. For this project, "commingling" is defined as "routinely transporting ADA eligible paratransit riders with 'other' non-ADA paratransit riders on the same vehicles at the same time."

The following are examples of other paratransit riders who might be commingled with ADA paratransit riders:

- Medicaid beneficiaries
- Older adults with transportation service funded by Title III of the Older Americans Act or other programs
- Job Access and Reverse Commute (JARC) program beneficiaries
- New Freedom program beneficiaries
- Other individuals with disabilities or older adults who participate in support services, for example:
  - Developmentally disabled individuals
  - Rehabilitation services participants
  - Human service agency customers
  - Adult day care program participants
  - Hospital discharges
  - Dialysis patients
  - Children (including Head Start participants)

Most, but not all, of these categories of riders fall under the broad definition of "human service transportation" or "transportation disadvantaged" individuals. These are described in more detail below.

Overview

The concept of commingling—although it was not called that—began in the early years of the ADA as one approach to addressing the anticipated costs of complying with the ADA service requirements. Besides, it was anticipated that many riders currently being served by existing

specialized transportation programs would be determined to be eligible for the new ADA paratransit service.

At the time, commingling was referred to as "selling transportation services to non-ADA eligible riders" and listed as one of a number of "heretical ways to increase revenues and reduce costs in ADA paratransit services" in a paper written in 1993 (Rosenbloom and Lave 1993). The authors examined several approaches that transit agencies could use to reduce the cost of delivering ADA paratransit service or increase revenues for providing the service.

Specifically, their "commingled" approach proposed that transit agencies might obtain additional revenues by selling paratransit services to human service agencies that wanted transportation for their clients. The paper notes this approach would not be appropriate in all situations but could be worthwhile to pursue when the marginal cost of the additional trips for non-ADA riders is less than the average cost of the transit agency's paratransit trip and where the human service agencies are interested in purchasing service. The paper qualified the approach by noting that transit agencies will have to estimate the cost implications of providing the non-ADA service as part of its ADA paratransit service. This notion of the importance of assessing the cost implications of providing non-ADA service is one of several lessons learned through this research project.

Since the mid-1990s, there have been many permutations of commingling. According to the survey of transit agencies conducted late in 2006 as part of this research project, 61% of the transit agencies indicated that they serve both ADA and non-ADA riders, with just over one-half (53%) commingling ADA and non-ADA riders on the same vehicles and 8% serving both ADA and non-ADA riders but using separate vehicles for the two rider groups. The remaining 39% of the survey respondents indicated that they served only ADA riders, however about one third of this group (18 respondents) indicated that while they had commingled ADA and non-ADA riders in the past, they no longer do so. A summary of the survey results is included in Appendix A.

The survey results were somewhat unexpected, given current concerns in the transit industry about increasing costs for ADA paratransit services. This project's case study research provided the opportunity to examine the practice of commingling in greater detail and understand the genesis of commingling and the operational parameters of the practice (see summaries in Appendix B).

Note that for this project, commingling riders on the same vehicles is viewed as distinct from a transit agency providing paratransit services to ADA eligible and other paratransit riders using separate vehicles (i.e., perhaps coordinating service but not typically mixing passengers). As directed by the TCRP B-34 Project panel, the research team focused on transit systems that commingle their ADA customers with other riders funded by human service agencies and other community programs, medical services (including non-emergency medical transportation funded by Medicaid), and other programs that specifically subsidize transportation service for their customers (e.g., JARC and New Freedom). The research team did not focus on systems that coincidentally mix ADA and non-ADA riders on the transit agency's vehicles as a result of loosely defined eligibility criteria or grandfathering of non-ADA eligible riders.

Much has been written over the years about coordinating human service transportation services and in recent years this topic has become a focal point of the FTA's United We Ride and Mobility Services for All Americans (MSAA) initiatives. It is not the intent of this project to repeat the findings from these efforts but to use those resources to help inform decisions about how and whether to commingle. A summary of relevant resources is included as Appendix C.

The research found three basic factors that seemed to affect decisions regarding whether or not to commingle:

- **Evolution.** For a number of transit systems, paratransit service was historically part of the mix of services that they operated and when the ADA was passed in 1990, the transit system added ADA paratransit into the paratransit mix of services that it already offered. ACCESS in Pittsburgh

is probably one of the best known examples. The ACCESS program predates the ADA by more than a decade and has evolved to incorporate ADA paratransit into its service mix. Designed as an administrative paratransit brokerage, ACCESS is responsible for coordinating the provision of approximately 2 million trips annually for 120 agencies through a network of about a dozen for-profit and non-profit transportation providers. General public customers also may use ACCESS services, but must pay a fare that covers the full cost of their trip.

- **Cost-sharing.** Another reason for commingling was the need for public transit and local human service agencies to cooperate, particularly related to managing costs and cost-sharing for paratransit service. Prior to passage of the ADA, many human service agencies were responsible for their own program participants' transportation. With implementation of the ADA, many of these program participants were determined ADA eligible, but rather than just shifting their riders and the associated transportation costs to the public transit authority as some human service agencies have done, these organizations worked together to coordinate service and develop agreements for equitable cost-sharing.

  In contrast, some transit agencies decided **not** to commingle or to discontinue commingling their ADA and non-ADA riders (e.g., Maryland Mass Transit Administration and Broward County in Florida). Factors contributing to a transit agency's decisions not to commingle tend to focus on cost allocation or service quality/control issues.
- **State-level commitment to coordination.** In some cases, coordination requirements and incentives at the state level may influence or require commingling of ADA and non-ADA riders. A 2005 report published by the National Conference of State Legislatures found 21 states with specific legislation related to human service transportation coordination and another 16 states that require human service coordination but not specifically in public transportation. Governors have executed executive orders in 9 states, and at least 27 states and the District of Columbia have attempted local coordination initiatives without a state requirement (Sundeen et al. 2005). It is clear that transit agencies in states such as Florida and Pennsylvania, with designated funding set aside for coordinated transportation efforts, tend to provide services in a commingled fashion.

ADA Complementary Paratransit Regulatory Requirements

It is important to remember that fixed route public transit agencies must maintain their ADA complementary paratransit services in accordance with U.S. DOT regulations under the ADA. As long as a transit system meets the ADA regulatory criteria without capacity constraints, it is free to tailor its operations in response to the needs of the community it serves, including commingling ADA and non-ADA riders if desired. However, if there are capacity constraints for ADA riders, the transit agency must make that aspect of the service compliant.

Public entities operating non-commuter fixed route transportation services for the general public are required by the U.S. DOT regulations that implement the ADA to provide ADA complementary paratransit service for individuals who are unable to use the fixed route system because of their disability. The FTA is responsible for ensuring compliance with the ADA and the U.S. DOT regulations. In addition to the ADA paratransit eligibility standards described in 49 CFR §37.123, these regulations include service criteria, which must be met by ADA complementary paratransit service programs as outlined in 49 CFR §37.131. These criteria are meant to ensure that paratransit service is comparable to service that is provided by the fixed route system. These criteria state that the ADA complementary paratransit service must, at a minimum

- Operate in the **same service area** as the fixed route system, which generally includes a ¾-mile corridor on either side of a fixed route as described in 49 CFR §131(a).

- Have a **comparable response time,** where response time is defined as the elapsed time between a request for service and the provision of service. Comparability is defined as accommodating trip requests for ADA paratransit eligible individuals at any requested time on a particular day in response to a request for service made during normal business hours on the previous day as described in 49 CFR §131(b).
- Have **comparable fares.** Comparability is defined as fares that are no more than twice the base, non-discounted adult fare for fixed route services as described in 49 CFR §131(c).
- Meet requests for **any trip purpose** (i.e., no trip purpose restrictions) as described in 49 CFR §131(d).
- Operate during the **same days and hours** as the fixed route service as described in 49 CFR §131(e).
- Operate without **capacity constraints** for ADA trips requested by ADA eligible passengers (e.g., no waiting lists, trip caps, or patterns and practices of a substantial number of trip denials, untimely pick-ups or excessively long trips). 49 CFR §131(f).

Finally, 49 CFR §131(g) allows for public entities to provide ADA complementary paratransit service to ADA paratransit eligible individuals that exceeds the minimum criteria included in this section.

If transit agencies commingle ADA and non-ADA riders, they must preserve the integrity of the ADA paratransit service (i.e., ADA service criteria must be met for all ADA eligible trips), even it means curtailing other non-ADA-required services.

Before passage of the ADA, many fixed route transit agencies provided or supported some level of specialized transportation for people with disabilities and older adults. These services were sometimes supported by human service agency funds, such as from Title III of the Older Americans Act or through limited locally generated (i.e., non-sponsored) funds. After the ADA was passed and the requirement to provide ADA complementary paratransit for all eligible persons with disabilities came into effect, many transit agencies had to make a decision about whether and how to provide non-ADA specialized transportation.

Models for Commingling ADA and Non-ADA Paratransit Riders

During the course of this project, four models for commingling ADA and non-ADA paratransit riders were identified, representing the spectrum of commingled approaches. The first three models were the most commonly observed in the project survey; the fourth model does not truly fit the definition of commingled service used for this project but was identified as a commingling strategy by several transit agencies. The four models include the following:

- **Model #1: Human Service Transportation + ADA Paratransit**
  Pre-ADA human service transportation providers that added ADA paratransit services after passage of the ADA. This model includes programs with roots in human service transportation that have been expanded to include ADA paratransit service. In practice, this model includes two subtypes: non-profit agencies that have become the ADA paratransit service provider for the local transit agency and transit agencies that have incorporated former non-profit transportation programs into their paratransit service structure. That latter practice was more common when ADA paratransit was first introduced and systems were merged. It is less likely to occur now.
- **Model #2: ADA + Human Service Transportation**
  ADA paratransit service providers that added human service transportation service after their ADA paratransit service. This model is the focus of this research project and of the

decision-making processes described in the Resource Guide. It includes transit agencies that started as ADA paratransit service providers and later added HST or other paratransit services to their service structure.

- **Model #3: General Public Dial-A-Ride + ADA Paratransit Service**
  Public dial-a-ride services that operate in coordination with ADA paratransit service (or serve "would-be" ADA customers). This example includes a coordinated system of local dial-a-ride service providers that have been expanded to include ADA paratransit in commingled services.
- **Model #4: Two-Tiered ADA Paratransit Service**
  ADA paratransit service providers that offer enhanced demand response services outside the ADA service area. The research found several transit providers that consider their provision of ADA-type paratransit service beyond the required ¾-mile fixed route corridors to be "commingled" services. Under this model, transit agencies are basically providing ADA paratransit service beyond the minimum service required by the ADA and not truly commingling riders. Although not the focus of this report, this model is what some agencies labeled "commingled" and it was included in the review.

Transit agencies considering whether to commingle passengers today would most likely identify with Model #2, which was the intended focus for this Resource Guide.

Resource Guide Approach

The core features of the Resource Guide are two decision-making flow charts designed for use by fixed route public transit agencies wishing to explore whether and how to commingle ADA paratransit and non-ADA paratransit riders. The flow charts are presented and discussed within two sections in this Resource Guide:

- Section 1: Planning Decision Process
- Section 2: Operations Decision Process

Section 3 of the Resource Guide highlights the lessons learned from this project.

Supplemental information is included in several appendices including a summary of the results of the transit agency survey that was conducted at the onset of this project (Appendix A), a summary of the case study findings (Appendix B), and highlights from the reference review (Appendix C).

SECTION 1

Planning Decision Process

Section 1 provides guidance to fixed route transit agencies and others that are exploring options for commingling ADA and non-ADA paratransit riders on the same vehicles. This guidance was developed based on the research conducted for this project, including a survey of 121 transit agencies of all sizes from throughout the country, supplemented by site visits and extensive interviews with more than a dozen transit agencies. The research team also reviewed a variety of recent publications from national and local sources. A summary of relevant materials is included in Appendix C.

The intent of this Resource Guide is not to duplicate those resources, but to suggest a roadmap for navigating through the process of planning for commingled services that will feed into the operations of that service, including development of operating policies and procedures. The operation of commingled ADA and non-ADA paratransit services is the focus of Section 2 of this Resource Guide. During the planning of commingled paratransit services, transit agencies are encouraged to take an inclusive approach, involving all of its stakeholders including human service agencies, consumers, and others as appropriate.

The issue of whether to commingle ADA and non-ADA riders may be seen as a facet of transportation coordination, which has been a topic in the transportation industry since the 1970s as an approach for providing more effective and efficient specialized transportation service. Transportation coordination has become a more relevant focus since 2007, when the Federal Transit Administration (FTA) adopted a requirement for development of a "coordinated public transit-human services transportation plan," from which all projects funded with FTA Section 5310, 5316, and 5317 must be derived.

Despite the emphasis on transportation coordination, the research team recognizes that for some transit agencies the answer is to **not** commingle riders, based on local resources and circumstances. However, even if the decision is not to commingle riders, there may be other options for coordination identified as part of the process, including providing paratransit service for non-ADA riders using different vehicles or coordinating services with other existing transportation programs.

As described in the introduction, the research team recognizes that sometimes the decision to commingle riders is based on the outcome of a formal planning process; other times the decision is based on political or funding decisions made with little formal planning input. Even if a formal planning decision process was not followed prior to the decision to commingle services, the information in this section will be useful to consider as a backdrop for establishing operating parameters and program guidelines.

A graphic overview of the planning decision process is shown in Figure 1-1. In the electronic version of this report (available online at www.trb.org by searching for TCRP Report 143), each major component of the planning decision process is color coded as follows:

A. "Define Purpose and Objectives for Commingling" is shown in red.
B. "Identify Available Capacity and Funding" is shown in blue.

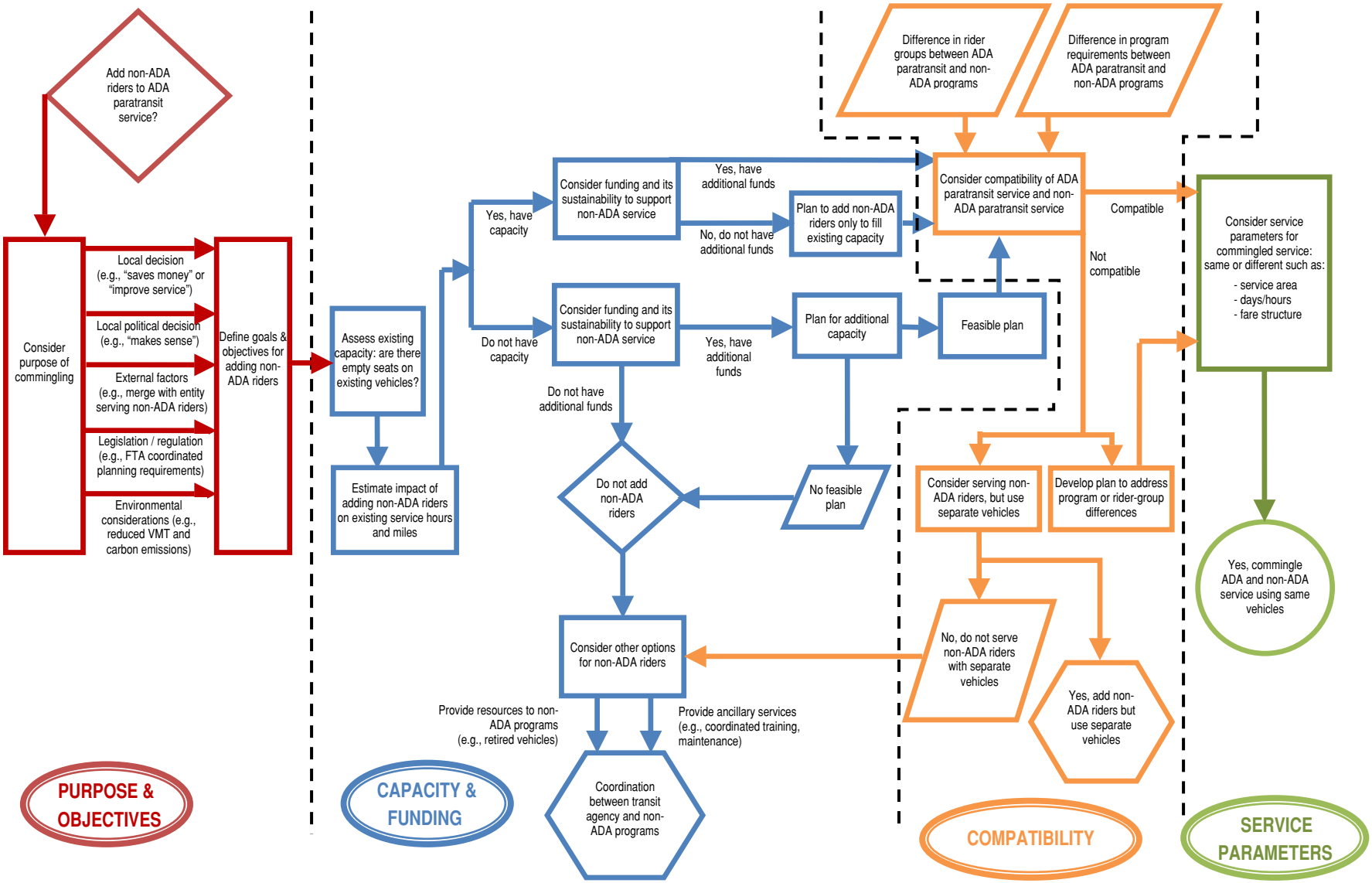

Figure 1-1. Planning decision flow chart.

C. "Evaluate Service Compatibility" is shown in orange.
D. "Consider Primary Service Parameters" is shown in green.

As with most projects of this nature, there are no "right" or "wrong" answers; however, commingling ADA and non-ADA riders without considering how the service will be organized and operated can lead to significant issues down the road. Even if the decision to commingle has already been made, careful planning will help to ensure successful implementation and ongoing success.

A. Define Purpose and Objectives for Commingling

Define Purpose

What is the purpose of commingling ADA and non-ADA paratransit riders? The variation in answers may be surprising.

For some communities, considering whether to expand the ADA paratransit service to include non-ADA paratransit riders may be out of necessity: there may simply be no other service available and people who do not qualify for ADA paratransit need transportation. In other communities, there may be a desire to eliminate what is perceived as duplication or fragmentation of existing services by combining resources so that service quality and availability may be improved. For other communities, the purpose may be to take advantage of available funding or a political requirement to provide service.

With the advent of the FTA's coordinated planning requirements, there also may be a desire to explore options that include expanding ADA paratransit. Finally, as environmental concerns grow, there also may be an interest in commingling trips from different services in an effort to reduce the number of vehicles needed and to take advantage of the associated reductions in vehicle miles traveled (VMT) and carbon emissions.

Regardless of whether the decision is made by the transit agency and its partners or in response to forces outside the agency, it is important to understand and document the purpose of commingling trips. This effort will help the transit agency in developing an approach to providing the service that meets the needs of the target ridership and will also be important for subsequent evaluation of the commingled service. Because this Resource Guide is intended specifically to aid transit agencies that are considering commingling their ADA paratransit riders with non-ADA paratransit riders using the same vehicle fleet, it is important for transit agencies to ensure that the quality of their ADA paratransit service continues to meet the requirements of the ADA, even if that affects non-ADA riders.

Discussion

Seventy-four (60%) of the 121 transit agencies that replied to the survey conducted for this research reported that they provided trips to ADA and non-ADA paratransit riders. Of those, 64 transit agencies reported that they commingled riders; 10 reported that they provided service using different vehicles. As shown in Table 1-1, respondents to the survey question on factors influencing the decision to commingle indicated that the most common reason for initiating commingling on their paratransit service was the "demand for service" (78%). Where there is demand for specialized service from population groups in the community, such as older adults and others not eligible for ADA paratransit, it may be possible to open up the ADA paratransit service to serve other population groups.

The second most common reason cited in the survey for the decision to commingle was "passenger needs" (57%), which can be seen as another version of "demand for service." Both of

Table 1-1. Factors influencing the decision to provide "other" paratransit service.

Factor	ADA + "Other" on Same Vehicles (N=58)	ADA + "Other" on Different Vehicles (N=9)
Demand for service	78%	67%
Passenger needs	57%	67%
Transit management decision	54%	33%
Transit board decision	45%	44%
Funding change from public sources	29%	44%
Funding change from program sources	24%	0%
Other external factors	24%	44%
Coordination requirements	21%	11%
Cost allocation	16%	0%
Funding program requirements	16%	11%
Scheduling/dispatching	16%	11%
Other Internal factors	14%	11%
Availability of technology	12%	11%
Funding program reporting requirements	7%	11%
ADA capacity constraints	4%	11%
Insurance	4%	0%

these reasons can also be seen as underlying a local political decision to commingle. These were also the top two reasons for providing service to ADA and non-ADA riders on different vehicles. Responses from nine agencies are shown in the second column of data in Table 1-1 (67% each).

The other two most frequent reasons given for deciding to commingle riders, according to the study's survey, included a "transit management decision" (54%) and a "transit board decision" (45%). In a slight contrast, the agencies that chose to provide service to both rider groups using different vehicles cited "transit board decision," "funding changes from public sources," and "other external factors" as their third most common reasons for providing service to both rider groups (44% each).

Interestingly, few survey respondents cited *coordination requirements* (21% of agencies commingling on the same vehicles and 11% of those using separate vehicles) as a reason behind their decision to commingle. It is possible that the decision-making reasons may change now that the FTA requirements for coordinated planning have been implemented as part of the United We Ride program.

Another key interest for the study was identification of the non-ADA rider types that are being served by other paratransit services, particularly where ADA and non-ADA service is commingled on the same vehicles. A related issue was whether the other passenger groups that are served differ based on the practice of serving the varying passenger types on the same or different vehicles. Table 1-2 summarizes survey responses to the question: *what types of "other" paratransit passengers are served?* The responses are categorized by transit systems that commingle different passenger types on the same vehicles versus those that provide ADA and other paratransit services using different vehicles.

The table shows that providing paratransit service for non-sponsored older adults continues to be part of many transit agency programs whether the riders are commingled on the same vehicles (60% of respondents commingling on the same vehicles) or served with different vehicles (44% of respondents commingling using separate vehicles). For commingling agencies using the same vehicles, providing trips for non-sponsored riders with disabilities (57%), other agency funded (57%) and/or general public riders (54%) were almost equally represented. In contrast, 67% of systems that provided service using different vehicles served general public riders,

Table 1-2. Composition of "other" paratransit passengers.

"Other" Paratransit Passengers	ADA + "Other" on Same Vehicles N=63	ADA + "Other" on Different Vehicles N=9
Non-Sponsored Older Adults	60%	44%
Non-Sponsored Persons with Disabilities	57%	33%
Other Agency Funded	57%	22%
General Public	54%	67%
Medicaid	46%	11%
Title III	44%	0%
Non-Sponsored Low Income Persons	33%	22%
Head Start	10%	0%

33% serve non-sponsored riders with disabilities, and only 22% serve other agency funded trips (again, representing only 9 respondents).

The case study research allowed for more in-depth assessment of the reasons underlying the decision to commingle ADA and non-ADA riders. According to this research, presented in Appendix B, common reasons for commingling included the following:

- **State coordination legislation:** for several transit agencies, state legislation or even executive orders require the provision or coordination of transportation services for people who are transportation disadvantaged, for example, Florida and Pennsylvania.
- **External factors:** at several transit agencies, a separate specialized transportation program and the ADA paratransit service were commingled after a merger between two organizations.
- **A local political decision made by the transit agency governing board:** this decision was typically made at a city or county level, and was often articulated as "it just makes sense" to serve the additional non-ADA riders along with ADA paratransit riders.
- **A financial decision made by the transit agency governing board:** in one case, the governing board determined that it would be more cost-effective to provide the specialized transportation service along with the ADA paratransit service, and in another case, the decision to add non-ADA riders was made after dedicated transit funding provided to the transit agency was reduced and the agency wanted to capture the transportation funds of the community's human service agencies.

Define Goals and Objectives

Once the purpose of commingling is defined and documented, the transit agency should identify specific goals and objectives to support the decision. Although this step is sometimes neglected, it is important that all of the partners involved with commingling make this effort together. Articulating specific goals and objectives provides the transit agency and its partners with the foundation upon which to develop rider eligibility, service policies and operating procedures, and a framework for monitoring and evaluating the service over time. The specific goals and objectives will depend upon the purpose of commingling; the objectives should be measurable.

For instance, a transit agency may decide it wants to expand paratransit service to provide trips for low-income individuals using funds from the Job Access and Reverse Commute (JARC) program. Goals should be set to target the specific types of trips to be served. For example, the goal may be to provide demand response service for job interviews and short-term training programs to help non-working individuals gain employment. An objective may be to provide 20 trips per week, based on program eligibility. This information can be used later to set eligibility and operating parameters for the service so that it may be dovetailed into the existing ADA paratransit service, without compromising the quality of ADA service provided.

Discussion

In relation to defining goals and objectives for commingling ADA and non-ADA riders, there was little evidence from this research that the transit agencies that commingle their ADA riders with non-ADA riders have established goals and objectives specifically addressing commingling. However, based on the case study research, there are several examples where defined goals and objectives for commingling would have been particularly useful for the transit agency.

For example, in one case, the decision to commingle non-ADA riders with the transit agency's ADA paratransit service was made by the state legislature, which mandated that anyone receiving dialysis treatment would be automatically eligible for ADA paratransit service. Although this did not measurably impact the ADA program in the first few years, in more recent years the transit agency found that this group of riders had added significantly to the growing demand and costs for ADA paratransit service, a service that now consumes more than one-third of the transit agency's total operating budget. The decision by the state legislature to commingle riders receiving dialysis treatment, regardless of ADA status, came only with a modest initial grant, but without any continuing funding. By defining the purpose behind commingling and identifying program goals and objectives when the decision was first made, the transit agency may have been able to better define service parameters and more quickly identify the need to secure additional funding to sustain service.

B. Identify Available Capacity and Funding

The second set of planning decisions shown in Figure 1-1 involves an identification of whether there are sufficient resources—both in terms of capacity and funding—to add trips to existing ADA paratransit service. The capacity issue is really two-fold: (a) is there sufficient capacity already in place to meet the ADA paratransit regulatory requirements and (b) is there sufficient excess capacity to add service to accommodate non-ADA riders without affecting the transit agency's ability to meet its ADA obligations? If capacity is not available, then funding to support adding capacity becomes the next critical issue.

Assess Existing Capacity: Are There Empty Seats on Existing ADA Paratransit Vehicles?

One of the key considerations when planning for commingling riders is system capacity. Does the transit agency have "empty seats" (i.e., capacity) on its ADA paratransit service to accommodate non-ADA riders? Is there capacity during all parts of the service day or just during certain parts, for example, off-peak times? Or would the addition of non-ADA riders require adding capacity to continue to meet the demand for ADA paratransit service?

Discussion

Capacity can be assessed initially by analyzing existing ridership and trip patterns by time of day and comparing this information with available revenue hours of service. A simplified example of this assessment uses a fictitious transit agency that operates from 6 a.m. to 9 p.m. weekdays with 12 revenue service vehicles. The existing capacity of this agency is shown in Figure 1-2, with revenue hours shown by time of day. In this example, the assessment for one sample weekday is shown. In practice, however, the assessment should be done for a longer sample time period such as two weeks using different months that exhibit normal to high ridership (for example, during fall or spring, avoiding holidays), depending on the seasonal ridership patterns of the individual paratransit service. The assessment should be done separately for weekday and weekend days, since ridership patterns vary by day of the week. If ridership varies significantly by weekday, then

Vehicles in Service	Sample Day: Hours of Service Beginning at:															
	6am	7am	8am	9am	10am	11am	12pm	1pm	2pm	3pm	4pm	5pm	6pm	7pm	8pm	Total
Vehicle 1	oooo	oooo	oooo	oooo	oo	oooo	oooo	oooo	oo							8
Vehicle 2	oo	oooo	oooo	oooo	oooo	oo	oooo	oooo	oooo							8
Vehicle 3			oooo	oooo	oooo	oo	oooo	oooo	oooo	oooo	oo					8
Vehicle 4			oooo	oooo	oooo	oooo	oo	oooo	oooo	oooo	oo					8
Vehicle 5			oo	oooo	oooo	oooo	oooo	oo	oooo	oooo	oooo					8
Vehicle 6			oo	oooo	oooo	oooo	oo	oooo	oooo	oooo	oooo					8
Vehicle 7				oooo	oooo	oooo	oooo	oooo	oooo	oooo	oooo	oooo	oooo			10
Vehicle 8				oooo	oooo	oooo	oooo	oooo	oooo	oooo	oooo	oooo	oooo			10
Vehicle 9				oooo	oooo	oooo	oooo	oooo	oooo	oooo	oooo	oooo	oooo			10
Vehicle 10				oooo	oooo	oooo	oooo	oooo	oooo	oooo	oooo	oooo	oooo			10
Vehicle 11					oo	oooo	oooo	oooo	oooo	oooo	oooo	oooo	oooo	oooo	oo	10
Vehicle 12						oooo	oooo	oooo	oooo	oooo	oooo	oooo	oooo	oooo	oooo	10
Revenue Hours	1.5	2	5	10	10	11	11	11.5	11.5	10	9	6	6	2	1.5	108
Note:	oooo 1 hour revenue service oo ½ hour revenue service															

Figure 1-2. Simple example of assessing capacity by time of day.

the assessment should be done by day of the week, so that Mondays are assessed, Tuesdays are assessed, and so forth.

Ridership patterns are then assessed, with an examination of scheduled trips and completed trips by time of day, and these patterns are then reviewed in light of available capacity. Figure 1-3 depicts this assessment, using the same fictitious transit agency, with capacity shown in terms of revenue vehicles deployed by hour of the day. The analysis shows the productivity (passenger

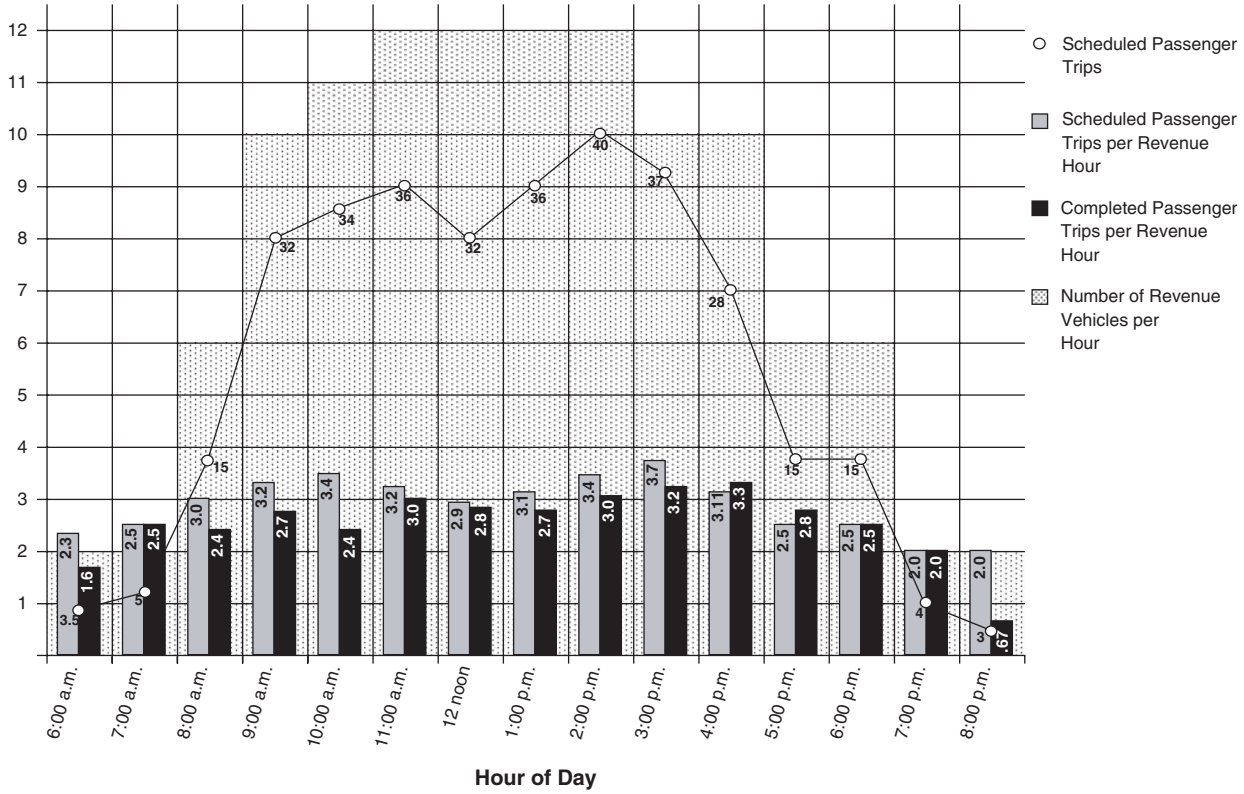

Figure 1-3. Example of scheduled versus completed passenger trips per revenue hour.

trips per revenue hour) throughout the service day, for both scheduled and completed passenger trips. For time periods during the service day that show a productivity below a certain threshold, for example below the system's average productivity or below a level that the system manager believes is achievable, there may be "empty seats" available.

Of course, the transit agency would need to analyze those specific periods in more detail. How much service is actually provided during those time periods? Do those time periods have lower productivity because the passenger trips are long with limited opportunity for shared riding? Are there proportionately more riders in wheelchairs served during those time periods, which will tend to increase dwell times and impact productivity? Are there other legitimate factors that impact the lower productivity during those times?

This more detailed analysis also may indicate that the paratransit system could accommodate additional passenger trips during those times. (It may also be possible to adjust revenue hours to add some capacity, depending on operator shifts and staffing arrangements.)

In Figure 1-3, the data indicate that there are lower productivity periods during the early morning and early evening hours given the current vehicle and operator schedule. However, these are time periods with a limited number of revenue vehicles in service. The data indicate that the midday hour also shows some capacity, as there are just 32 passenger trips scheduled and all 12 vehicles are deployed. If the transit agency could serve as many passenger trips that hour as it does during the 2 p.m. hour (40 passenger trips served), then there is available capacity.

This assessment of capacity can also be done with some computerized scheduling/dispatch systems, which can estimate slack time and also run "what if" test scenarios with various assumptions about productivity, trip length, and distribution, among other factors. If potential available capacity is identified, the transit agency would then need to consider whether or not it would be adequate to support the trip demand and patterns of non-ADA riders that might be commingled.

This is clearly a simplistic example for a very small transit agency. But the point is an agency that is considering adding non-ADA riders to its ADA paratransit service should formally assess its capacity and its ability to serve additional passenger trips and plan to make adjustments accordingly.

Estimate Impacts of Adding Non-ADA Riders

Once the transit agency has assessed its current capacity, it can then estimate the impacts of adding non-ADA riders: how will the additional riders impact service hours and miles? Is there enough capacity on the existing system to accommodate the additional trips? This will likely be a rough estimate, unless there are good data on the ridership numbers and patterns of the non-ADA riders that will be added. However, a rough estimate is adequate for planning purposes.

Discussion

Estimating demand for paratransit services is complicated by the fact that an individual's choice to use a particular paratransit service is partially related to service attributes and cost, which vary by individual paratransit service. Compared with fixed route transit, the service attributes that affect paratransit demand and ridership are more complex and include factors such as the advance notice required to book a trip and whether a trip can be scheduled at the desired time (Spielberg et al. 2004). The degree of driver assistance to riders is another attribute that may affect individuals' demand for and use of paratransit.

To estimate the additional ridership that might be expected, data are needed on the following:

- The size of the non-ADA market group that will be served
- The number of estimated trips that this group might take on the paratransit service

Depending on the non-ADA riders to be added, information on the estimated size of the group can be obtained through Census data or potentially through local sources. If clients from one or more human service agencies are to be added to the ADA paratransit program, information could be obtained from the relevant agencies.

Assuming, as one example, the transit agency's governing body has proposed that non-ADA eligible seniors in the community should be served by the ADA paratransit service, information about that group is needed including the following:

- What is the definition of "senior" for purposes of eligibility for the service (e.g., 55 and older, 60 and older, 65 and older, 70 and older, 75 and older)?
- What is the estimated size of the senior group (using available Census data)?
- What is the overlap of that senior group with ADA eligible riders?

With information on the estimated size of the non-ADA rider group to be added, the next step is to estimate their potential trip-making on the ADA service. Generally, this would require information on their trip rate; that is, how many trips they would be expected to take on the ADA paratransit service on an average week or month.

There is some information available about trip demand for paratransit and specialized transportation services available from various sources that may be useful. Appendix C identifies a number of published sources that could be consulted.

If trip rate data are not readily available for the non-ADA ridership group that is being added, the transit agency could develop an estimate based on its current ADA ridership. For example, the agency can identify the average number of trips per week or per month by an active rider, defined as those riders who actually use the service, as opposed to those who have become certified but are not active riders. The definition of an active rider may depend on the transit agency, but often it is defined as an eligible person who took at least one trip during a 12-month period. Depending on the similarity of the non-ADA rider group being added to the current ADA ridership, this average could serve to estimate expected trips from the non-ADA riders that are being commingled. It may be useful to use a high and low figure, based on the current ridership patterns, which would frame a range of estimated trips that might be expected per new rider.

With the estimated size of the non-ADA rider group to be commingled and a trip rate, the number of new trips that might be expected can then be determined. This should be seen as a rough number but will provide useful information for planning purposes. However, unless there is primary data on the trip-making of the non-ADA riders to be added, the estimate will not indicate the time periods during the day when the new trips might be needed, although the estimate can serve to show the extent to which existing capacity can meet the increased demand.

Developing such an estimate of the new demand for service that will be experienced with new, non-ADA riders added is less science than art, but it is a useful exercise to try to anticipate the ridership impacts of adding the non-ADA riders to the ADA paratransit service.

Funding and Sustainability

Once capacity is considered, the transit agency must assess its existing resources to determine whether there is adequate funding to support the addition of non-ADA riders for the foreseeable future. The project's case study research demonstrated that commingling is more successful and sustainable when funding is provided for the non-ADA riders that are added. This may seem an obvious point but it is one that the research team found deserves emphasis.

When assessing funding, the "foreseeable future" is likely a short time horizon since transit funding can change year to year based on factors outside the control of the transit agency. Despite

this, the transit agency should take stock of its funding resources and the sustainability of that funding. Experience in the transit industry with ADA paratransit has shown that costs to operate ADA paratransit services have often grown significantly year to year with increases in demand, particularly in larger urban areas. The addition of new non-ADA riders on the ADA service will impact funding requirements into the future.

Should the transit agency have capacity to add the non-ADA riders, then funding may not be a significant concern in the short term. In such cases, the transit agency can accommodate the non-ADA riders to the extent that there is space to serve the additional passenger trips without negatively impacting the ADA paratransit service. Nonetheless, an assessment of funding available to support the non-ADA service is recommended.

Discussion

As might be expected, the study's survey findings indicate that funding has played an important role in transit agencies' decisions regarding commingling. For those transit agency respondents that indicated that they commingle their ADA paratransit riders with non-ADA riders, funding was among the most frequently cited factors impacting the agencies' decision to commingle. (The most frequently mentioned factor was demand for service. Three funding-related factors combined to become the second most frequent factor, and passenger needs was the third most cited factor.)

For those transit agency respondents that indicated they had commingled their ADA paratransit service with non-ADA riders in the past but no longer did so (16 agency respondents), funding was the second most frequent reason noted for the discontinuation of commingling, tied with transit management decision. (ADA capacity constraints were the most frequent reasons cited.)

Transit agencies that do not commingle were also asked through the survey what factors, if any, would lead them to add non-ADA riders to their paratransit service in the future. According to the 23 agencies that responded to the question, funding from an agency or program sponsor, along with demand for service, were the top two factors.

The case study research also underscored the importance of funding in relation to decisions about commingling and the sustainability of commingling. Most of the case study sites spoke to the importance of funding and maintaining funding resources; in several cases, funding was a key factor in decisions to maintain commingling.

Funding Sources Used to Support Commingling. According to the study's case study research, transit agencies that commingle use a variety of funds to support commingling. Table 1-3 shows the sources of non-FTA funding, beyond passenger fares that were used to fund operations for those case study transit agencies that commingle ADA and non-ADA riders.

Table 1-3. Sources of operating funds beyond FTA and fares supporting commingled services.

Other Operating Funds	No. of Transit Agencies N=14
Medicaid	6
Older Americans Act funds (Title III)	4
Other federal human service agency funds	9
State funds, dedicated to transit	8
State funds, discretionary	2
Local funds, dedicated to transit	3
Local funds, discretionary	1

Although human service transportation funds from programs such as Medicaid and Area Agencies on Aging are important for supporting the practice of commingling, there are numerous transit agencies that commingle non-ADA riders without human service program funding. According to the study's survey, transit agencies that commingle ADA and non-ADA riders using the same vehicles (53% of survey respondents) indicated that "non-sponsored older adults" are the most frequent of the "other paratransit" passengers that they served; funding for these non-sponsored riders comes from state and local sources, typically state funding dedicated to transit.

When funding for the commingled service becomes insufficient or is no longer available, a transit agency may have to reconsider its decision to commingle. Of the case study sites included in this project, two completely ended commingling due to funding cutbacks, and another two "un-mingled" (i.e., separated) a previously commingled non-ADA rider group because of funding issues. Both of these latter sites involved Medicaid transportation, and this experience raises important considerations for commingling with Medicaid.

Several points to consider follow.

ADA Paratransit Level of Service Requirements. As described in the introduction, when providing ADA paratransit service, a transit agency must meet the U.S. DOT's ADA regulatory requirements. For example, in addition to the ADA paratransit eligibility standards described in 49 CFR §37.123, these regulations include service criteria, which must be met by ADA complementary paratransit service programs as outlined in 49 CFR §37.131. These criteria are shown in Table 1-4.

Some of these ADA requirements function essentially as performance standards, establishing a level of service that is often higher than required by other specialized transportation services (Kittelson et al. 2003). What this means in practice is that the service, in terms of attributes such as trip reservations and on-time performance, is often better—for all riders including non-ADA riders—than other specialized transportation services in the community.

Commingling ADA and Medicaid riders. The case study research revealed significant findings for commingling ADA paratransit service with Medicaid transportation; in particular, when the level of transportation service required (e.g., on-time performance, on-board travel time) is less rigorous for Medicaid customers than that required by ADA paratransit (this issue may

Table 1-4. Key ADA paratransit service criteria.

Same Service Area	Operate in the **same service area** as the fixed route system, which generally includes a ¾-mile corridor on either side of a fixed route as described in 49 CFR §131(a).
Comparable Response Time	Have a **comparable response time**, where response time is defined as the elapsed time between a request for service and the provision of service. Comparability is defined as accommodating trip requests for ADA paratransit eligible individuals at any requested time on a particular day in response to a request for service made during normal business hours on the previous day as described in 49 CFR §131(b).
Comparable Fares	Have **comparable fares**. Comparability is defined as fares that are no more than twice the base, non-discounted adult fare for fixed route services as described in 49 CFR §131(c).
No Trip Priorities	Meet requests for **any trip purpose** (i.e., no trip purpose restrictions) as described in 49 CFR §131(d).
Same Day/Hours of Service	Operate during the **same days and hours** as the fixed route service as described in 49 CFR §131(e).
No Capacity Constraints	Operate without **capacity constraints** for ADA trips requested by ADA eligible passengers (e.g., no waiting lists, trip caps, or patterns and practices of a substantial number of trip denials, untimely pick-ups or excessively long trips) as set out in 49 CFR §131(f).

also apply to other agency-funded transportation). The higher level of service provided by ADA paratransit service compared with various other paratransit services has cost impacts, resulting in costs for ADA paratransit service and specifically costs per trip that are typically higher than other specialized transportation services. When the cost for transportation service exceeds what Medicaid or other program sponsors of specialized transportation are willing to fund, commingling ADA paratransit with the non-ADA riders becomes problematic.

The Medicaid Non-Emergency Medical Transportation Program (NEMT) does not have specific level of service requirements set at the federal level; however, there may be requirements established at the state level because Medicaid is administered at the state level as a joint federal-state program. Experience with Medicaid transportation across the country, however, indicates that typically Medicaid NEMT does not have the range of requirements that govern ADA paratransit, which then subsequently raises the level of service to riders.

Impact on operating costs. Applying a higher level of service as required by ADA to other riders will likely impact operating costs for the transit agency. As operating costs increase, sponsors of non-ADA riders in commingled ADA paratransit services may question whether they want to fund the trips at the higher cost. This has been a particular issue with Medicaid transportation, as Medicaid agencies in many states have increasingly moved to new models and structures to contain costs, including capitated rates. These agencies may offer payment schemes that provide reimbursement at levels considerably less than the actual cost of the trips. Where a transit agency commingles Medicaid trips, it may determine at some point that it cannot continue to serve the Medicaid trips at the maximum reimbursement levels offered.

In some Florida communities with an extensive history of coordinated and commingled transportation, the transit agency has determined that it can no longer commingle ADA and Medicaid riders because payment levels from the Medicaid sponsor did not cover operating costs. Furthermore, this project found that, at one transit agency, some of the Medicaid riders who are also ADA eligible have continued to ride the transit agency's ADA paratransit service rather than move to the new Medicaid transportation provider, presumably preferring the higher level of service provided by ADA paratransit, even though Medicaid transportation is free, whereas ADA paratransit requires a fare. This situation leaves the transit agency with the responsibility for providing those Medicaid trips, but without any funds from the Medicaid agency.

On the other end of the spectrum is the coordinated and commingled paratransit service in Pittsburgh, known as ACCESS. This program, which began in the late 1970s as a federal demonstration program testing the brokerage concept for specialized transportation in a large metropolitan region, recognizes that the addition of ADA paratransit into the coordination mix in the 1990s generally increased the overall level of service because of ADA's high service standards. This higher level of service improves paratransit service for all riders, including those who are not ADA eligible. That the other agencies involved with ACCESS have continued to participate and to fund trips that are now somewhat more expensive given the higher level of service resulting from ADA's requirements is a testament to ACCESS's success and, significantly, the availability of funding from sponsors of non-ADA riders.

*If Funding **Is** Available to Support "Other" Riders*

Available funding to support the non-ADA riders is a preferred scenario for a transit agency that pursues commingled service. The use levels of the non-ADA riders that are commingled should be tracked and monitored against the funding that is provided to ensure that all sponsoring agencies are paying their fair share of the operating costs. This will allow the transit agency to monitor whether the funding is sufficient to support the non-ADA riders' trip-making and to negotiate changes over time.

*If Funding Is **Not** Available to Support "Other" Riders*

Should the transit agency find that there is not sufficient additional funding for commingled service or that the funding appears to be very short term, it has three basic options:

- To commingle only to the extent that capacity allows (if the capacity estimate suggests excess capacity),
- To seek additional funding to support the non-ADA service, or
- Not to commingle its ADA paratransit service with non-ADA riders.

These options, discussed below, assume that the transit agency is responsible for decision-making on commingling, which is not always the case.

Commingle to the Extent Capacity Allows. This is a straightforward option. Should the determination of capacity find that there is existing capacity on the existing ADA paratransit service, the transit agency may decide to add other non-ADA service to the extent that new trips can be accommodated, keeping in mind the need to provide unconstrained ADA paratransit service. This decision and the fact that commingling is being implemented without new funding or with limited short-term funds should be documented. Ridership by the non-ADA riders should also be tracked and monitored. If demand grows later and operating funds become limited, the decision framework for commingling may need to be re-visited.

Seek Additional Funding. Alternatively, the transit agency can try to find other funding to support the non-ADA service. Depending on the non-ADA rider group to be commingled, there may be funding sources available locally, such as human service agencies.

A case in point: One of this project's case study sites was able to secure local human service agency funding when it lost state transit funding. When the state announced transit funding reductions, the transit agency promptly approached the key human service agencies in its community whose clients used the transit agency's paratransit service and requested funding. With very few transportation options in the rural area, the human service agencies agreed to the request and provided lump sum payments to the transit agency, ranging from $5,000 up to $65,000, with several of the agencies continuing to provide the payments each year. Even though these annual subsidy amounts are not guaranteed, and not all agencies provide an annual subsidy each year, these local contributions are a significant source of the agency's operating budget. In a year with generous contributions, the annual subsidy funds from the human service agencies constitute as much as one-third of the transit agency's total operating funds.

Decide Not to Commingle. If the transit agency is responsible for the decision concerning whether or not to commingle, it may decide not to commingle riders because of the lack of funding to support the added transportation service. This is not necessarily a negative outcome, as there are other ways that the transit agency can support specialized transportation in the community.

Consider Other Options to Support Transportation for Non-ADA Riders

Even if a transit agency decides not to commingle ADA and other riders, it can still support and participate in coordinated transportation efforts to improve specialized transportation locally. In fact, FTA now requires a local coordinated planning effort. Additionally, there are various ways that a transit agency might coordinate, short of commingling non-ADA service with its ADA paratransit program, including the following options.

Provide Retired Paratransit Vehicles to Other Community-Based Paratransit Providers

The transit agency could consider a program where retired paratransit vehicles, still in operable condition, are provided to non-profit organizations in the community that operate specialized transportation. A number of larger transit agencies have such programs; one of the agencies has a well-organized process that includes an application form for non-profits to express their interest in obtaining a donated vehicle. This transit agency also informs the non-profits about the costs for maintaining the vehicles, based on its own experience, so they have a better understanding of ongoing operating costs. In addition, the transit agency provides information for obtaining vehicle insurance. In some cases, transit agencies also support the provision of service by providing maintenance, insurance, driver training, and other in-kind services.

Coordinate Vehicle Operator Training Program with Other Community-Based Providers

With this option, the transit agency could consider expanding its vehicle operator training program to include other transportation organizations. Such a coordinated vehicle operator training program could be managed and conducted by a transit system itself, or the coordinated training could be organized through a third-party such as the state's RTAP program (Rural Transit Assistance Program).

Share Maintenance Capabilities

Where a transit agency has capacity in its maintenance function, it may be possible to offer maintenance services to small agencies in the community that have transportation programs but lack in-house maintenance. One example of such an arrangement was planned and spearheaded by the Illinois Department of Transportation (IDOT), which partnered with the Springfield Mass Transit District (SMTD) to offer maintenance services to smaller community-based agencies operating in the rural areas around Springfield. This arrangement resulted in the Regional Maintenance Center, provided through SMTD's maintenance department. This center serves non-profit agencies within a 60-mile radius of Springfield, providing non-routine maintenance and repair services for paratransit vehicles on a pre-scheduled basis (KFH Group et al. 2001).

Develop Partnerships with Community-Based Human Service Agencies

The development of partnerships with local human service agencies is a form of transportation coordination, with an objective of improving specialized transportation effectiveness and efficiency. Coordination can take various forms, and recent research found a number of public transit agencies that have developed partnerships with local human service agencies, allowing these agencies to transport their own clients in a more cost-effective manner than possible for the public transit system (KFH Group et al. 2008). The specific parameters of the partnerships vary: some have the transit agencies providing vehicles and additional support such as driver training and vehicle maintenance to the human service agencies; others involve provision of operating funds to support the agencies' own transportation service and the agencies become contractors to the public transportation system, serving riders who otherwise might be passengers of the public transit system's paratransit service.

The human service agencies also benefit in that they have more control over their transportation service, with the ability to schedule trips and outings for their clients as they see fit, without having to conform to the public transit agency's hours and other operating policies and procedures.

Support Mobility Management Initiatives

Local communities are increasingly implementing mobility management as a strategy to improve the use of transportation resources and link those needing transportation with

available services. In some communities, the public transit agency has taken on the role as the mobility manager. This may be more responsibility than some transit agencies may want, but there may be related activities that the transit agency could extend to non-ADA riders, such as a travel training program.

A transit agency might also lend its experience in operating a call center to another local agency developing a one-stop transportation information center, which is among the common mobility management strategies. Or the transit agency could even offer its call center as the provider of one-stop transportation information. A large suburban county in Virginia that operates extensive transit service is considering designation of its transit information center, operated by a contractor, as the county's designated one-stop center for all transportation information. Additional funding available for mobility management, such as that included within FTA's New Freedom and JARC programs, could be sought to help finance the extra resources that would be needed to expand the call center for a more broad-based information provision.

C. Evaluate Service Compatibility

The third component in the planning phase shown in Figure 1-1 is evaluating whether riders and transportation services are compatible and, if not, can adjustments be made to serve them or do the transit agency and its partners need to find another solution to provide service.

When planning the commingling of ADA and non-ADA riders, the issue of service compatibility must be considered. This analysis involves considering both the mixing of various types of riders on the same vehicle and the mixing of different types of transportation service. Will the different types of riders be compatible on the same vehicle, sharing rides together? What about the different types or levels of transportation service that the different groups receive? Are the types of transportation service related to driver assistance policies and rider policies similar or different?

Compatibility of Different Types of Rider Groups

The issue of mixing types of riders is subjective, and it may involve stereotyping of certain types of paratransit riders, which should be avoided. But the reality is that there may be certain types of rider groups that would typically not do well traveling together on the same paratransit vehicle. One of the case study transit agencies, a paratransit program serving as the public transit system in its very rural area, indicated that among its non-ADA riders are middle and high school students who have been temporarily banned from the public school bus service because of poor behavior. When these students then turn to the public transit system for some of their trip needs, there can be concerns when such students are traveling on the same vehicle as seniors or very young children. In such cases, the vehicle operators may be given discretion to appropriately modify their manifest so as to minimize the shared time on the vehicle for the different rider types.

On the issue of rider type compatibility, ACCESS in Pittsburgh, another case study transit system, noted that it takes a "common sense" approach to commingling. With the size of the ACCESS service and high degree of coordination that the system achieves, there have been situations where the mixing of different rider types on the same vehicle has caused problems. When this happens, ACCESS takes steps to mitigate problems by separating riders onto different vehicles if necessary. The transit agency also educates its riders on the benefits of ride-sharing, particularly those benefits that result in a higher level of service and lower fares.

Another consideration under compatibility is vehicle operators' ability to serve different rider types. Toward this end, operator training is critical to ensure that the staff understands

the range of disabilities that may be encountered when providing service. This includes not only physical disabilities but cognitive disabilities as well, which riders may exhibit in unexpected ways. Operator training should expose the operators to the range of both physical and cognitive disabilities that riders may have and help them understand how best to assist these differing needs.

Compatibility of Different Types of Transportation Services

Closely related to compatibility of types of riders is the compatibility of different types of transportation service. In this context, transportation service refers predominately to the assistance provided to riders in using the service but also includes, among other service attributes, fare payment procedures for the riders. The transit agency must consider whether the service it provides through its ADA paratransit program is appropriate for the rider group(s) to be commingled.

If, for example, the transit agency's ADA paratransit service is primarily a curb-to-curb model with door-to-door service provided only for those riders who require such assistance, then it may not be appropriate to commingle a rider group when all the riders in that group need door-to-door or door-through-door service to effectively travel. On the other hand, if the to-be commingled service is primarily subscription service, the transit agency may determine that it can commingle the rider group on its paratransit service if the sponsoring agency provides or funds an aide on the vehicle to assist with the riders' needs in boarding and alighting. Or there may be other arrangements that could be designed such that the non-ADA rider group could be successfully added onto the agency's ADA service.

Sometimes questions arise when different geographic areas are served to accommodate different sponsoring agencies. For example, one transit agency that was not part of this study received complaints from its ADA customers when service was provided to JARC beneficiaries to locations outside of the ADA service area. The bottom line is that transit agencies should review any differences in service requirements for the rider group(s) that may be commingled and determine their effect on daily operations. If there are differences, they will need to be clearly communicated to customers to minimize confusion and misunderstanding.

In the final analysis, it may be determined that it is not possible to commingle all riders. In that case, the transit agency may either elect to serve some customers using separate vehicles or not to serve them at all. This decision will likely be based on a combined analysis of resources and compatibility and may require backtracking to reexamine funding and/or capacity factors.

If at this point it is decided that any differences can be accommodated, it is time to move into the final planning phase, which considers practical matters such as defining service area, days and hours of service, and so on.

D. Consider Primary Service Parameters

Finally, assuming the plan is to move forward to commingle ADA and other riders, the transit agency needs to consider the primary service parameters and how they should be structured to accommodate the needs of riders and funding providers. Service or operating parameters refer to the key characteristics of the paratransit service that define and structure the paratransit operation, including the service area, service span (days and hours of service), reservation time period, and fare structure. These parameters are governed initially by ADA regulations, which means that a transit agency contemplating—or implementing—commingled ADA and non-ADA paratransit services must consider the extent to which the ADA paratransit service parameters

(i.e., ADA paratransit service criteria) would also apply to or conflict with the other non-ADA service.

If external factors require that a transit agency commingle its ADA service with non-ADA service, rather than making that decision as part of a formal planning process, there may be little choice as to the new parameters that must be incorporated. For example, if the transit agency's governing board determines that Medicaid NEMT service will also be provided beyond the ADA paratransit service area, then the service policies and procedures governing that service will need to be incorporated and implemented, regardless of whether the service mix is a "good fit." The transit agency will then need to operationalize those new parameters and, to the extent they are different from the ADA service parameters, the transit agency will need to ensure that riders understand the differences in practice.

On the other hand, a transit agency may have some discretion on setting the service parameters for the non-ADA service. In this instance, the transit agency may decide to blend certain of the parameters so that they are the same for both ADA and non-ADA riders. The transit agency could decide to use the ADA fare structure for the non-ADA riders (assuming there are no fare structure restrictions that apply to the non-ADA service). Or, the transit agency may set up different parameters for the non-ADA riders from the ones that structure service for the ADA eligible riders. But again, where the service parameters are different, it is critical that the riders and vehicle operators understand the differences in those parameters and know which ones apply for any given rider.

Discussion

From a transit agency as well as a rider perspective, key parameters to be considered for commingled service include those related to the ADA paratransit requirements (listed in Table 1-4) including, for example, the geographic service area where riders may travel, the days and hours that paratransit service is offered, advance reservation policies, and fare structure, including policies for attendants traveling with the passenger and companions. During the planning stage, it is recommended that these operating parameters be considered at a policy level, that is, to what extent the transit agency can adopt the same parameters for the commingled paratransit service, or whether there must be differences to meet programmatic requirements of the commingled services. From both a policy and an operational perspective, implementation of commingled service will likely be more feasible if operating parameters are uniform across the entire service. This may not be possible, though, due to requirements of the commingled services. It is during the planning process when the transit agency should consider these issues and their impact on commingled operations. Section 2 of this Resource Guide addresses the operationalizing of operating parameters into service policies.

There is no "right" or "wrong" way to address this aspect of commingling, as long as the ADA requirements are met. What is important is ensuring that the service parameters can be implemented by the transit agency and, once operationalized as service policies, are clearly defined and continually articulated to the riders. Operations staff must be thoroughly familiar with the service policies and procedures as well and rider and caregiver education must be conducted, which is particularly critical when the operating parameters are different.

One of the project's case study transit agencies was required to add service for seniors to its ADA paratransit program, resulting in a commingled service. The funding program sponsor for the senior service required that each of its riders sign the trip manifest, attesting to the fact that the trip was taken. This was not a difficult practice to implement, but the transit agency determined that it would also apply the policy to its ADA riders. While the ADA has no requirement for riders to sign manifests, the transit agency decided it would be better to have a standard policy that applies to all riders rather than differentiate among riders regarding this service

requirement. Establishing a standard policy also eliminates the need to educate the different rider groups on different policies and makes vehicle operator training somewhat easier, as there is no need to differentiate the practice by type of rider.

The survey data and the case study research findings show that transit agencies that commingle do not necessarily use the same parameters for their paratransit service. If there are differences, they tend to be with the service area and fare structure. Differences in service area seem to cause problems for several of the transit agencies interviewed, and this could be because the difference is so readily apparent to riders. Differences in reservation hours or fares are less visible to riders, but if some riders can access certain valued destinations and others cannot, this will be more difficult for riders and the community to accept.

SECTION 2

Operations Decision Process

This section of the Resource Guide provides a suggested operations decision process developed for use by transit agencies that are planning to commingle ADA and non-ADA paratransit riders using the same vehicles, although the decision process also can be used by agencies choosing to provide ADA and other paratransit services using separate vehicle fleets. This guidance is based on the background research conducted as part of this project, including a survey of 121 transit agencies of various sizes from across the country. The survey information was supplemented by site visits and telephone interviews with 18 transit agencies, along with additional research and the research team's own knowledge of the industry.

As stated in Section 1, the research team recognizes that sometimes the decision to commingle paratransit riders is made based on the outcome of a formal planning process and other times the decision may be based on political decisions or other external influences with little formal planning input. Even if the decision already has been made, it is useful to review the steps outlined in the planning decision process described in Section 1 to identify any areas that warrant further discussion prior to moving into the operations decision phase. In particular, it is useful to document in writing the stated purpose and goals for commingling riders. This exercise is very helpful if issues arise later because service has evolved or changed from its original design or implementation. It is also critical to identify any potential capacity and/or funding constraints that could affect sustainability of the program, particularly any potential negative impacts on the provision of required ADA paratransit service.

The materials in this section are designed to stimulate a logical thought process to ensure that what has been planned—formally or informally—is put into operational practice to achieve the stated purpose and goals of the commingled services. This document is not intended to provide a step-by-step guide to operating paratransit services; there are many other resources that provide that type of information, some of which are documented in Appendix C. Additionally, there are numerous reports, trainings, workshops, and webinars that are offered through government and trade associations including the American Public Transportation Association (APTA), Community Transportation Association of America (CTAA), Easter Seals Project ACTION (ESPA), FTA, National Transit Institute (NTI), and the TCRP. A 43-page resource document—*Innovative Practices in Paratransit Services*—was published by ESPA in 2002 and may be useful as a supplement to this report (Multisystems 2002).

The operations decision process presented in this section focuses on developing policies, procedures, practices, and performance monitoring strategies to ensure success. An overview of the operations decision process is shown in Figure 2-1. In the electronic version of this report (available online at www.trb.org by searching for "TCRP Report 143"), each major component of the operations decision process is color coded as follows:

A. "Establish Passenger Eligibility Requirements" is shown in red.
B. "Develop Operating and Cost Allocation Policies and Procedures" is shown in blue.

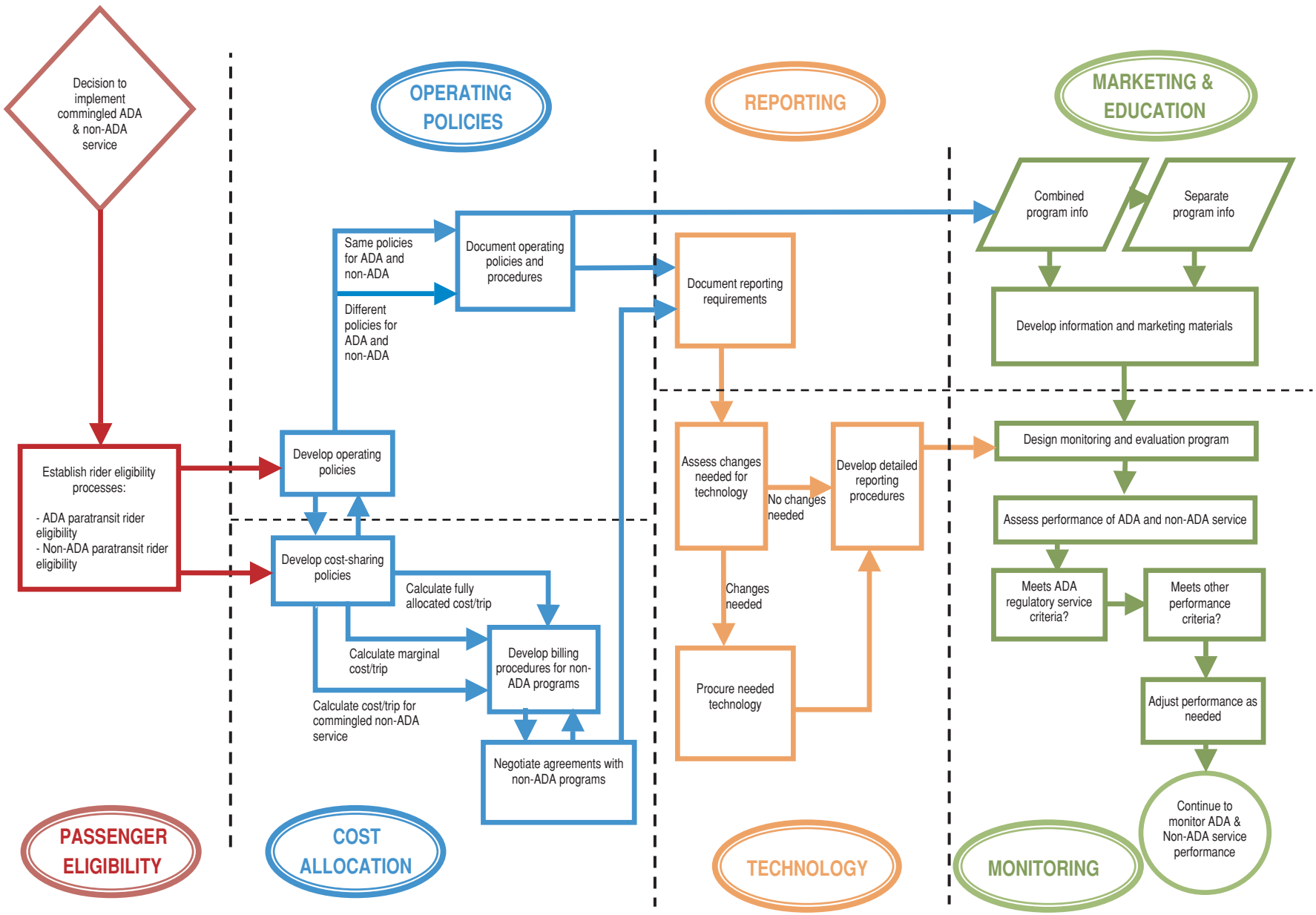

Figure 2-1. Operations decision flow chart.

C. "Identify Reporting Requirements and Assess Technology Needs" is shown in orange.
D. "Develop Marketing, Education, and Monitoring Programs" is shown in green.

As with the planning decision process described in Section 1, there are no right or wrong answers to the various operational issues, other than the fact that compliance with the ADA must be maintained for those riders that are ADA eligible, and the decisions made relative to structuring and commingling paratransit services are ultimately local decisions and should be based on the specific characteristics of the service to be provided.

A. Establish Passenger Eligibility Requirements

Without a doubt, one of the most important aspects of any successful paratransit service is to establish the eligibility requirements for the riders who will be served under a particular program or programs, and then to develop a thorough eligibility determination process to ensure that potential riders who meet specific programmatic requirements are able to access those services.

In addition to identifying who is allowed to use service and for which types of trips, eligibility transcends all aspects of commingled paratransit services and may be used to calculate fares for individual riders, establish when and where trips may be taken, what performance criteria must be met to satisfy the funding agency requirements, and how much a sponsoring agency will be billed for some or all of the trip cost. Because of the potential complexities of cost allocation and other programmatic requirements, eligibility also becomes a factor in determining what technologies might be used for reservations, scheduling, and dispatching, as well as for recordkeeping, invoicing, and performance monitoring.

This section describes the basics of eligibility determination and discusses the importance of accurate eligibility determination, particularly when riders may be eligible both for ADA and non-ADA paratransit service, depending on the trip.

ADA Paratransit Eligibility

ADA is civil rights legislation that requires transit agencies operating fixed route bus and rail service to provide ADA complementary paratransit service for individuals who cannot use fixed route service for some or all of their trips. The U.S. DOT ADA regulations include specific ADA paratransit eligibility standards, which are described in 49 CFR §37.123, and ADA determination process requirements, which are described in 49 CFR §37.125.

Although transit agencies may provide paratransit service for other riders who do not qualify for ADA paratransit service, the ADA regulations require that transit agencies meet the ADA paratransit service criteria described in 49 CFR §37.131 for ADA paratransit eligible customers; the service criteria requirements are listed in the next section (Developing Service and Cost Allocation Policies). Specifically, ADA paratransit service must be provided for all eligible trips and there may not be a pattern or practice of trip denials nor can trip priorities be applied to ADA paratransit eligible individuals.

The ADA eligibility determination process has evolved over the past two decades and many transit agencies have developed sophisticated processes, which include written applications, in-person interviews, and functional assessments of individuals' cognitive, physical, and visual functional abilities to determine whether and to what extent they may be able to use fixed route services for some or all of their trips. As such, ADA paratransit eligibility may be "unconditional," allowing customers to use the service for all of their trips, or "conditional," meaning that ADA eligibility applies only to certain trips under particular circumstances as identified during the

eligibility determination process. (Visitor and temporary ADA paratransit eligibility also must be offered as described in the regulations.)

Non-ADA Paratransit Rider Eligibility

Non-ADA services will have their own eligibility requirements and determination processes, based on the particular non-ADA riders who are being commingled. The non-ADA riders may be sponsored or affiliated with a particular human service agency or funding program, or they may be non-sponsored or unaffiliated, generally meaning they are part of the general public. Such non-sponsored riders may be funded through local transit agency dollars provided through the city or county as well as through federal Section 5311 in rural areas. The funding programs often provide funds to serve particular categories of riders, for example, riders categorized by age, economic status, or disability type. It is also important to note that riders may be eligible for more than one program—including ADA paratransit service—depending on the trip type.

For example, Title III of the Older Americans Act (OAA) funds certain trips for persons aged 60 and older under a program administered by local Area Agencies on Aging (AAA). As such, a local AAA may provide its own transportation service or may purchase service. A fare may not be charged, although donations are accepted. Many OAA eligible riders also may qualify for ADA paratransit so it becomes important to properly identify the trip type in order to bill the proper program for the cost of the trip and to properly account for any applicable fare.

The Medicaid Non-Emergency Medical Transportation (NEMT) program is another example. Each state is responsible for managing its own Medicaid services and a variety of transportation service options are possible, ranging from fixed route passes, to taxi vouchers, to mileage reimbursement, as well as contracting for paratransit trips. As with OAA-funded trips, a fare may not be charged, although donations are accepted. Once again, ADA eligible individuals may also qualify for Medicaid NEMT service and identifying and appropriately billing Medicaid for those trips is an important consideration (as well as not charging a fare for Medicaid eligible trips).

There are many other funding partners that also have specific eligibility requirements and include overlapping eligibility among themselves and with ADA paratransit riders. Notable state-level examples include the Shared Ride Program (SRP) in Pennsylvania and the Transportation Disadvantaged (TD) program in Florida. Both programs identify eligible riders and provide funding to subsidize the cost of eligible trips.

In Pennsylvania, the SRP pays 85% of the trip costs for seniors age 65 and older. Riders or their sponsoring agencies (including senior centers and other program sponsors) pay the remaining 15%. Both ACCESS in Pittsburgh and Southeastern Pennsylvania Public Transportation Authority (SEPTA) in Philadelphia commingle ADA and SRP trips (see case study descriptions in Appendix B) and both programs are able to charge eligible trips for seniors to the SRP, while using transit agency funds to subsidize ADA paratransit trips for individuals younger than 65 or for trips that are not eligible under SRP.

The Florida TD program funds trips for persons who are transportation disadvantaged as defined in the Florida Administrative Code (generally seniors, people with disabilities, low-income individuals or children-at-risk who do not have access to a vehicle). Similar to the Shared Ride Program, but with more limited funding, the TD Trust Fund subsidizes the cost for eligible trips and individuals may be eligible for TD, ADA, NEMT and other sponsored trips.

Discussion

In most cases, the research team suggests that the transit agency staff manage the eligibility determination process, particularly for ADA paratransit eligibility, conducting functional assessments

or applicant interviews. Having said that, the transit agency may choose to contract for the provision of functional assessments by occupational therapists, physical therapists, orientation and mobility specialists, and others who are well-qualified to assess an applicant's functional ability to use fixed route transit. By either method, the information gained through these assessments can then be used to make a final eligibility determination.

ACCESS Transportation Systems in Pittsburgh (described in Appendix B) has developed a rigorous and highly regarded ADA eligibility determination process and the agency's manager is one of the primary trainers for a National Transit Institute training course, "Comprehensive ADA Paratransit Eligibility" (NTI 2010). ACCESS is a non-profit brokerage and not the local transit agency, with a long history of providing coordinated transportation services predating the ADA; the ADA paratransit actually constitutes only a portion of its overall service.

Most of the time, eligibility for non-ADA paratransit is made by the agency sponsoring the trips (e.g., the AAA or other human service agency). It is important to develop a mechanism for updating eligibility rosters on a regular basis. It also is important to code riders according to their program eligibility. Not only is this step important for billing and fare payment purposes, but it also helps to identify the payer of choice for the trip, based on program rules (e.g., charging Medicaid for eligible trips rather than using transit agency funds, when appropriate). This information also assists with monitoring to ensure that performance requirements are met for each program.

B. Develop Operating and Cost Allocation Policies and Procedures

The concept of developing policies and procedures for paratransit services is familiar. These policies and procedures create a set of expectations for how service will be operated, coupled with a set of procedures designed to support the stated operating policies. These policies and procedures define the level of service to be offered and will affect the cost and quality of that service.

The groundwork for establishing policies and procedures was introduced during the planning process described in Section 1, where the importance of defining the purpose and goals for commingling services was discussed and the consideration of service parameters was introduced. Section 2 continues with a more detailed discussion of specific policies that should be addressed when establishing commingled service operations. The focus of the discussion here is on those policies and procedures that are unique to ADA paratransit and non-ADA paratransit pairings and not the multitude of operating policies and procedures that are commonly addressed as part of normal service operations (e.g., maintenance procedures, personnel policies, and so on).

As shown in Figure 2-1, the topics of developing service operating policies and determining cost allocation are somewhat intertwined and, therefore, the research team has chosen to address them together. The level of service to be offered is typically defined first so that costs can be identified and allocated among the partners. The process may require some negotiation, as indicated by the two arrows connecting the operations policy and cost-sharing policy boxes. This can be a complicated process if operating policies are significantly different among participating programs. Clearly, defining the service to be provided and negotiating any changes should result in a better integration of services and will reduce the likelihood of misunderstandings related to service quality and cost issues that could arise down the road.

Operating Policies

A useful way to begin is to compare the ADA paratransit service requirements with non-ADA service requirements for the programs that will be commingled with the transit agency's ADA

paratransit service. The easiest way to do this is to start with the ADA minimum service criteria included in 49 CFR §37.131 (see the following bulleted list). It should be noted that the ADA allows public entities to provide service to ADA paratransit eligible individuals that exceeds the minimum criteria included in this section; however, the ADA-required service must be operated without capacity constraints. The ADA minimum service criteria include the following:

- **Service area.** ADA paratransit service is required to be operated in the same service area as the fixed route system, which generally includes a ¾-mile corridor on either side of a fixed route. This is one of the operating policies where there is likely to be a difference between the ADA and non-ADA paratransit service, according to the project's research efforts. When commingled services have different service areas, it will be important to educate riders, call-takers, and vehicle operators about the differences.
- **Comparable response time.** Response time is defined as the elapsed time between a request for service and the provision of service. The ADA requires that requests for trips be accepted through normal business hours the day before service is to be provided. When possible, it is helpful to have the same advance reservation period for all rider types, which makes it easier for call-takers to handle trip requests and easier for riders to understand, especially for those who may be eligible under multiple trip sponsors. This approach is taken by most of the project's survey respondents that serve both ADA and non-ADA riders.
- **Comparable fares.** Comparable fares are required for ADA paratransit, which means they may be no more than twice the base, non-discounted adult fare for fixed route services. In contrast, many human service transportation programs do not allow a fare to be charged, although donations may be accepted (e.g., Medicaid and Title III of the OAA). In some cases, transit agencies may charge a premium fare for non-ADA service provided to non-sponsored or general public riders. Again, fare differences must be explained to riders, vehicle operators, and call-takers.
- **No trip priorities.** No trip priorities are allowed for ADA paratransit and there may be no trip limits for individual ADA riders. In contrast, most HST service is intended only for agency-approved travel (often to/from agency activities). Service for non-sponsored riders may also be restricted, based on local or other funding parameters. For example, if a community provides funds for non-sponsored seniors, that funding may have a cap and that total amount may then be spread out over a year with a set number of trips available each month or week. In addition, the ADA regulations do allow for subscription/standing order trips to be offered; however, if there are any service constraints, then no more than 50% of trips may be subscription based during any given time of day.
- **Days and hours** of service for ADA paratransit must be the same as for the fixed route service operating in the same area. For most large urban systems, this means that ADA paratransit service is operated seven days a week. For smaller or rural systems, fixed-route service days and hours vary, and ADA paratransit must be offered during those same time periods.
- **Capacity constraints are not allowed** for ADA paratransit service. This means that there can be no pattern or practice of a substantial number of trip denials, no wait lists for trips, no trip caps or limits on how many trips an individual may make and no untimely pick-ups or excessively long trips. In practice, HST service is usually restricted to approved programs and services because of funding source restrictions (e.g., Medicaid or OAA Title III). The non-ADA funding programs may also choose to limit how many trips an eligible participant may make during a certain period of time. However, for certain policies, notably timely pick-ups and reasonable trip lengths (measured by time), good practice suggests that the ADA service and non-ADA service should match.

An important decision to make is whether the operating policies for ADA and non-ADA paratransit will be the same, although in practice it is rare for all aspects of service to be identical given fare restrictions and so forth. When setting service providers, consider the following:

- Involve as many stakeholders as possible (including funding agencies, customers, and vehicle operators)

- Identify those operating policies that can be universally applied to all programs (e.g., on-time pick-up and drop-off windows, driver wait time, and no-show/late cancellation policies)

To the extent appropriate and feasible, the establishment of consistent operating policies makes it easier for vehicle operators, customer service and call-takers staff, and riders to understand, manage, and use the system. While there may be necessary differences among program requirements (e.g., different fare requirements), on-street operations should be as consistent as possible among rider types served. The following are examples:

- Call center policies and procedures should be consistent.
- The on-time pick-up window should be the same for all riders (e.g., vehicles arrive within a 30-minute on-time pick-up window).
- The on-time drop-off window for appointment-based trips should be the same (e.g., riders will be dropped off on-time up to 30 minutes in advance of their scheduled arrival time but not after).
- When possible, no-show policies should be the same for all passengers (e.g., suspension levels and procedures for forgiving no-shows beyond the rider's control).
- On-board travel time standards should be consistent for all riders.

The issue of trip denials can be an important one for commingled services. Specifically, transit agencies must ensure that there are no trip denials for eligible ADA riders. Negotiation is permitted within the ADA regulatory structure for pickup times; however, all eligible trips must be accommodated. For non-ADA riders, denials may be permitted, depending on any specific parameters of the non-ADA funding program or agreements between the transit agency and funding partner. For example, given funding limitations, a senior center program may only be able to fund a specific number of trips per day or month. In that case, trips may be allowed on a first-come/first-served basis or based on a specific number of trips permitted to be taken by an individual during a specified period of time. Once those trips have been scheduled, no further trips may be accommodated for that particular senior center program.

Another important area is telephone hold times and ensuring that riders are able to get through to the call center in a reasonable amount of time. If hold times are too long or callers encounter busy signals, it can dissuade them from using service and that can be construed as a barrier to service. Although there is no "standard" for telephone hold times, the American Public Transportation Association (APTA) has established a working group to address this concern, and it has drafted a recommended practice for call center hold times, which is due to be published in 2010. Along with ensuring the policies developed meet the minimum ADA requirements, it is important to understand the specific policy requirements for non-ADA service being commingled with the ADA service. Because human service agencies typically provide transportation as a support service for agency programs, they may not have well defined transportation policies to govern the provision of service, which may translate to service requirements that are less stringent than that required by ADA standards.

Once the policies have been developed, they should be documented into standard operating procedures. The policies and procedures will then need to be incorporated into training programs for vehicle operators and customer service/call center staff. Riders also must be educated about the policies and procedures affecting them, including any changes as a result of commingling service. It is important to document the following:

- Minimum ADA requirements and how they will be implemented (e.g., no trip priorities, advance reservation policies)
- Required and optional service policies of the ADA program (e.g., use of will calls for return trips or subscription trip protocols)
- Non-ADA minimum program requirements and how they will be attained (e.g., allowable trips, any trip purpose restrictions)

- Required and optional service policies of the non-ADA programs (e.g., how many times a vehicle will attempt to pick up a rider who has been no-showed, whether there are any special documentation requirements such as signing driver manifests)

Placing the policies in a chart makes for easy review and identification of similarities and differences. It is important to reach consensus on service policies so that all appropriate stakeholders understand how the commingled service will operate. There is not a right way or wrong way to structure service policies for commingled service. The development of service policies should fit the unique circumstances of each transit agency and service area.

Discussion

The project's research efforts revealed that transit agencies take different approaches to defining their service operating policies for commingled services.

Relevant Survey Results. The survey of transit systems found some differences in service policies for those agencies that commingle ADA and non-ADA paratransit service.

- **Service Area**

  The survey asked respondents to define their ADA paratransit service area as well as the service area of their other non-ADA service area. Agencies that provided ADA service within only the required ¾-mile corridors and also provide additional non-ADA service tended to serve a larger service area for their non-ADA riders, for example, serving the entire city or county rather than just the ADA-required service area. Those agencies that provided ADA service to an area beyond the ADA-required minimum, such as an entire city or county and also served non-ADA riders, tended to use the same service area for their ADA and non-ADA riders.

  More specifically, the survey showed that the majority of commingling transit agencies provide their ADA paratransit service only within the required ¾-mile corridors (60%) and provide their other service to a larger area, most frequently within a county (47%), with the next most frequent service area being a city or town (38%).
- **Response Time (i.e., Advance Reservation Period)**

  Survey respondents were also asked about their advance reservation time period. The responses show that the most frequent time period, for both ADA paratransit and non-ADA service, is from one day in advance up to "more than seven days in advance." For those respondents who commingle ADA and non-ADA riders, the most frequent response was that riders must reserve "a minimum of one day in advance" for both ADA and non-ADA service (44 respondents, 77%). For the "maximum number of days in advance" for reserving trips, the most common response was "more than seven," for both ADA and non-ADA service (35 respondents, 66%).
- **Service Days and Hours**

  Those transit agencies that commingle ADA and non-ADA riders using the same vehicles were asked about differences in service days and hours for their different rider groups: ADA and non-ADA. A total of 61 transit agencies provided a response for weekday service, with 64% indicating that the same service hours are used for ADA and non-ADA service. For Saturday service, 54 agencies responded, with 63% citing the same service hours for both services. For Sunday, 41 agencies answered the question, with 66% indicating the same service hours for the two services. The large majority did not differentiate their service hours by weekday or weekend day. However, the question did not capture the extent to which transit agencies may provide service on different days, depending on whether the service is ADA or the other non-ADA paratransit.

Relevant Case Study Observations. Our case study research found transit agencies that mix ADA and non-ADA service have taken various approaches toward using the same or different service policies for their different rider groups.

- **Service Area**

  Of the 15 case study transit agencies that commingled ADA and non-ADA paratransit service and have authority over the non-ADA service, 11 agencies have different service areas for their ADA and non-ADA service. Of these, half reported that they provide ADA paratransit service within the required ¾-mile corridor of fixed route service and non-ADA service countywide.

  The remaining agencies with different service areas for their ADA and non-ADA riders have varying approaches, primarily providing slightly larger service areas for their ADA riders in order to match specific fixed routes that travel outside jurisdictional boundaries.

  One of the transit agencies with different service areas specifically noted that the differences have caused confusion for the riders. One transit agency that no longer commingles riders noted that even its then small differences in service area for ADA and non-ADA riders generated complaints, in this case, from the non-ADA riders who were not able to access a certain destination (a regional transfer point, located at a shopping area) available only to ADA riders.
- **Response Time (i.e., Advance Reservation Period)**

  Seven of the case study transit agencies that commingled non-ADA service with their ADA paratransit had different advance reservation time periods for their riders. Typically, the ADA riders have somewhat greater opportunity to book trips, for example, the ability to book Monday trips on the preceding Sunday to ensure compliance with ADA requirements, while non-ADA riders must book Monday trips by the preceding Friday.

  The remaining agencies use the same advance reservation hours established for their ADA riders for the non-ADA riders.
- **Fare Structure**

  Eleven of the case study transit agencies have established different fare structures for their ADA and their non-ADA service, with the remaining using the same structure.

  Several of the agencies with differing fare structures have adopted specific procedures for operationalizing the differences. One agency quotes the fare to the rider when the rider books his or her trip, so that riders know exactly what must be deposited in the farebox. Another agency requires riders to pay by ticket and provides tickets of varying colors to the riders, with the color depending on the particular type of rider. ADA riders, for example, have tickets of a certain color, and non-ADA riders, sponsored by various agencies, have tickets of different colors.
- **Service Days and Hours**

  Ten of the case study transit agencies operate different service hours/days for their ADA and non-ADA service, although the differences tended to be minor. For example, one of the larger commingling agencies provides service from 6 a.m. to 12 midnight daily. Trips for ADA riders only will be provided outside these hours if there is comparable fixed route service at those times and only for trips where the origin and destination are within the ¾-mile ADA fixed route corridor. The remaining agencies operate the same hours/days for all their paratransit service.
- **Capacity Constraints**

  The ADA service criterion related to capacity constraints is a key area that transit agencies must consider when operationalizing their policies. Trip denials, for example, were not addressed in the survey of transit agencies but were discussed during the case study research. This in-depth research found several examples where the commingling transit agency turned down trip requests for their non-ADA riders when capacity was a problem. The specifics varied by the individual case study transit agencies but, in at least one case, the denials of non-ADA riders became a lightening rod that ultimately undermined the commingled service. It is critically important for commingling transit agencies to monitor their capacity and take action when capacity begins to become a problem. Such action should include, as a start, discussions with the transit agency governing body so that the policymakers are made aware of the situation.

Cost Allocation Policies and Procedures

Proper cost allocation policies and procedures are particularly important when commingling paratransit riders to ensure the programs pay their fair share and that programs are not inadvertently subsidizing the cost of service being provided for other riders. The more similar the operating policies and procedures are for each rider group, the easier this is to do.

Over the years it has been sometimes difficult, particularly for human service agencies, to identify the full cost of providing service often because staff and resources are shared within the agency or because some in-kind services are performed and never show up as an actual expense. As a result, agencies are sometimes surprised to find out the full cost of providing paratransit trips. A resource to help agencies with cost allocation titled "Transportation by the Numbers: Getting the Most out of Human Service Transportation, Understanding Costs, Benefits, and Opportunities" is available on-line and in print from Easter Seals Project ACTION (ESPA, 2007). The document is a workbook with an accompanying spreadsheet to help agencies—in particular human service agencies—determine their full costs of operating transit service. The workbook is designed to help human service organizations identify expenses related to the provision of transportation services. Understanding the true cost of providing transportation will help to facilitate the discussions needed when human service agencies and transit agencies are looking to consolidate services. The workbook also includes a discussion of contracting for transportation services including a discussion of billing rate structures and a discussion of policies and procedures that should be included in contract negotiations.

When looking at cost allocation, be sure to identify the following:

- Calculate fixed costs—items that must be covered irrespective of the number of trips, including facility rent and utilities, costs for management labor.
- Calculate variable cost of providing service—operating staff labor, particularly drivers, additional vehicle mileage costs including fuel and maintenance, etc.
- Consider the marginal costs of adding service, especially when that added service comes from non-ADA service requirements or demands.
- Determine cost allocation/cost sharing policies and impacts.
- Estimate a reasonable level of productivity (i.e., number of trips per revenue hour).
- Develop detailed billing procedures for non-ADA program trips.
- Determine whether there are special requirements for non-ADA riders that cost extra (e.g., excessive administrative expenses related to eligibility verification, special training required for personnel or other activities that are atypical to transit-based services).
- Negotiate contracts with HST agencies.

Discussion

A careful review of the required standard operating procedures and any added costs that may be incurred for special procedures required by a particular service is one component of the final contract to be negotiated to cover the cost of non-ADA riders. It also helps to build in a periodic review of the assumptions that have gone into the cost allocation process in case things have changed over time.

For example, suppose an agreement was made to serve riders from an agency that projected 10% of its riders would require accessible boarding via lift- or ramp-equipped vehicles. That mix of passengers may appeal to an agency that has an average wheelchair boarding rate of something like 25% or 30%, and an assumption is made that the current fleet will be sufficient to serve that mix of passengers. If, however, it turns out that the non-ADA agency's riders who use wheelchairs is actually 30%, it may mean that there are not enough wheelchair securements in service at one time to accommodate all the trip requests, especially during peak hours in the morning and afternoon. In that case, the transit agency may need to acquire additional vehicles to avoid

potential service denials for its ADA riders. The cost of the new vehicles will need to be added to the mix (i.e., marginal costs) and an adjustment may be necessary.

Another factor to consider when contracting with human service agencies is whether additional service requirements are necessary. If, for example, an agency requires the transit provider to have a van aide on-board when transporting its clients, the additional costs associated with that aide must be recognized, including the labor costs for the aide and the additional cost of picking up the van aide. Special reporting needs and the cost to implement and manage the monthly reporting requirements also need to be considered and factored into the cost allocation.

The three most common measures for allocating transportation costs among different programs are

- Cost per trip,
- Cost per mile, and
- Cost per hour.

Cost per trip. The cost per trip is essentially an average cost computed by dividing the total cost of providing all trips by the number of trips, either projected or actual. For example, if it costs $1 million to provide 100,000 trips, each agency purchasing trips would be charged $10 per trip ($1 million divided by 10,000 trips). Using a straight average cost is the easiest cost allocation to understand and implement. If a human service agency's clientele is taking 25,000 trips out of 100,000 trips, the agency will pay 25% of the cost of service. This method works best if the service area, days, and times of service are fairly consistent across all transportation services being provided. When using this method, one service factor to be aware of is the trip lengths taken by various passengers. If an agency has trips that are shorter than other agency or ADA trips, the agency may feel that it is paying more than its fair share for service. If, on the other hand, an agency has longer trip lengths than other commingling agencies or the ADA services, the transit agency may feel the non-ADA agency is not paying a fair share of costs associated with the service. It is important that some assessment and comparison of trip lengths be made when developing a cost allocation procedure.

Cost per mile. The cost per mile is also an average cost computed by dividing total costs by projected or actual number of miles driven. If it costs $1 million to provide service and it is estimated that vehicles will travel 500,000 miles the rate would be $2 per mile. This method works well if clients of a human service agency have exclusive use of a vehicle for a specific period of time. This cost allocation method becomes more complicated when riders from more than one organization are traveling on the vehicle at the same time, which is often the case for paratransit services. When rides are shared, a question arises as to how the shared time on the vehicle is to be billed to each agency. Are costs to be shared among organizations? If so, how are they shared? Or does the transit agency record how many miles each passenger traveled while sharing the vehicle? Whatever the answer, additional data collection and recordkeeping are needed by the transit agency. Also to be considered is how the cost of deadheading (garage to first pick up and last drop off to garage) is paid for by the participating agencies.

Cost per hour. The cost per hour is calculated in the same manner as cost per mile except that the denominator in the unit cost calculation is hours instead of miles. Like cost per mile, this method works well if an agency has exclusive use of a vehicle for a specific period of time. This method also raises the same issues and questions about shared time on the vehicle and the issue of who pays for deadhead time. As with cost per mile, this method will likely require additional effort and recordkeeping effort on the part of the transit agency.

It is important to understand that these three methods of cost allocation described may be the most common ones used, but are not the only ones. A transit agency may decide to use a com-

bination of the methods described or use a different unit to allocate costs. When determining what method of cost allocation to use, the transit agency should consider the effort and record-keeping required to adequately implement a cost allocation process. The advantages and disadvantages of each suggested cost allocation method need to be weighed.

C. Identify Reporting Requirements and Assess Technology Needs

When developing protocols for commingling riders, it is especially important to ensure comprehensive data capture that reflects all the required elements and rider types represented in the system. Each funding agency as well as the transit agency usually has its own reporting requirements and proper data are needed to substantiate invoices, provide statistical reporting, and monitor performance. The source of the data may either be reported manually (e.g., from paper driver manifests, scheduling and dispatch logs, and similar sources) or captured electronically from transportation operations software.

Paratransit Reporting

There are three main types of reporting:

- Service delivery statistics
- Performance statistics
- Billing and invoicing statistics

All three are inter-related and depend on capturing valid service delivery statistics including number of trips, revenue miles, revenue hours, origin/destination locations, no-shows, missed trips, cancellations, scheduled/actual arrival and departure times at the pick-up and drop-off locations, and other data elements that reflect service on the street. Such service delivery statistics are used to generate a variety of reports, including annual National Transit Database (NTD) reporting and are the source data used for performance monitoring and billing/invoicing.

Performance statistics use the base data collected by service delivery statistics to calculate outcomes, which are measured against the service policies that have been set for on-time performance, productivity, travel time, and the like.

Finally, billing and invoicing statistics are derived from the service delivery statistics, as well as information from billing codes attached to each trip (i.e., funding sources such as Medicaid, Title III or transit agency funds for ADA service). Although ADA paratransit does not require documentation of trip type or individual service usage by individuals, that information may be required by some funding agencies for invoicing purposes.

Other areas to incorporate into performance reporting include eligibility determination documentation, no-shows and late cancellation information, telephone call center performance, and maintenance performance. For example, a tracking system should be developed to ensure adherence to the 21-day rule for reviewing completed ADA paratransit applications. Specific information about no-shows and late cancellations is needed to review riders' adherence to any established policy on no-shows/late cancels and then to document to riders who may fail to adhere to those policies with a pattern or practice of no-shows and late cancels. To establish any pattern or practice, detailed data are needed. Any appeals for eligibility denials or no-show suspensions must also be tracked. Complaints should be kept in a central file, preferably electronically. It is important to track denials and no-shows by ADA versus non-ADA riders. Complaints should also be distinguished between the two rider types as well.

The collection and assessment of performance statistics are necessary to ensure compliance with the ADA but doing so is also just good practice to ensure that service is being operated efficiently and effectively.

Technology as a Tool

Advancements in technology have enhanced the ability of paratransit providers to coordinate different transportation programs, and the federal government and many state governments have funded projects to continue the advances. For example, Mobility Services for All Americans (MSAA), which is an ongoing project sponsored by the U.S. DOT's ITS Joint Program Office, is highlighting the use of technology as a tool to assist with coordination efforts, including commingling ADA and non-ADA riders. The initiative identifies many technologies that may be beneficial for this type of application including the following two categories of software (SAIC 2005):

- "Transportation operations software" [e.g., reservations, scheduling, and dispatching software, often including geographic information systems (GIS)]
- "Cost sharing, billing, and reporting software" (e.g., automated billing linked to reconciled trip status)

The two types of software are supported by other software and hardware applications including automatic call distribution (ACD) systems, automatic vehicle location (AVL), electronic fare payment, Advanced Traveler Information Systems (e.g., kiosks and Internet-based services), along with GIS, and other emerging technologies.

Technology Interface

Effective use of paratransit technology should begin with an assessment of data needs and reporting needs, which then leads to an assessment of technology needs. The technology assessment is straightforward and should include the following:

- Analyzing what technology is currently available and being used in the industry
- Establishing what technology is needed to manage commingled service
- Determining whether and what new technologies (or technology enhancements) are desirable

The technology needs assessment should describe the existing systems, the anticipated enhancements or new systems needed, and an estimate of cost, called a Systems Implementation Plan (SIP). Included in the estimate of cost is not only the cost of acquisition, but the operating and maintenance costs for the various technologies selected. The SIP is not only an assessment of the additional hardware and/or software required and the cost of procurement. It should also include an assessment of the impact on current personnel and any additional personnel or skills needed to implement and maintain the technology. For example, the implementation of new technology may require the hiring of a systems administrator or database administrator.

The assessment of technology needs should also include identifying data to be collected and required report formats. Once a clear understanding of the data to be collected and required report formats are obtained, the transit agency can complete the assessment of any changes needed to current technology and make the necessary revisions to current technology. When the technology assessment is complete, the agency can then develop specific procedures for reporting and revise current report formats or create new report formats, if necessary.

A summary of the factors to consider includes the following:

- Ascertain program reporting requirements
- Review non-ADA program requirements in terms of standards set in previous section

- Develop reporting procedures
- Establish reporting format and protocols
- Assess technology requirements including the following:
  - Telephone system capability
  - Reservations/scheduling software and hardware
  - Accounting system
  - Two-way radios
  - Mobile data terminals (MDTs)
  - Fare payment and collection including smart cards and other cashless payment systems
- Procure needed technology
- Develop detailed reporting policies and procedures

It should be remembered that technology is only a tool; it is not a substitute for sound decision-making and staff expertise. There is no substitute for a well-thought-out approach to providing service and monitoring performance. In addition to technology needs, a staffing assessment must also be performed to ensure that there are enough people employed to support the work at hand. Adding commingled service may also mean adding call center staff and telephone lines. If separate telephone lines will be needed for different programs, there may be a need to produce reports from the telephone system showing calls to the various lines.

Discussion

Not surprisingly, a large percentage of survey respondents indicated that they use some form of technology to manage their programs. The majority of the responses indicated that they use paratransit scheduling and dispatching software, AVL, and MDTs or mobile data computers (MDCs) to manage service. Table 2-1 shows the responses to the project's survey question on the use of technology.

The majority (89%) of commingled systems reported using computerized scheduling and dispatching software; 100% of systems that provided ADA and non-ADA paratransit service using different vehicles reported using computerized scheduling and dispatching software. Almost half (48%) of commingled systems use MDCs/MDTs, 42% reported using AVL, and 25% used electronic recordkeeping and billing. In contrast, for systems that are not commingled, 67% use MDCs/MDTs and AVL; however, the number of respondents is very low.

During the case study interviews, use of technology was explored. The large majority of transit agencies participating in the case study research use some form of advanced technology, most

Table 2-1. Technologies used for paratransit service.

Technology	ADA + Other Same Vehicles N=52	ADA + Other Separate Vehicles N=9
Scheduling and dispatching software	89%	100%
Mobile data terminals/computers	48%	67%
Automatic vehicle locator	42%	67%
Electronic recordkeeping and billing	25%	0%
Interactive voice recognition	0%	22%
Internet access for passengers for scheduling	6%	11%
Electronic fare payment	2%	11.1%
None	8%	0%
Other	17%	22%

commonly reservations, scheduling, and dispatching software, which also was used to generate billing statistics, although this was not always directly connected through the software's programming. The one notable exception is ACCESS Services of Pittsburgh, Pennsylvania. ACCESS operates as a decentralized brokerage, subcontracting with eight carriers, and only one of the eight contracted carriers uses technology to provide service.

During the interviews, case study agencies were also asked about their use of technology for reporting. Most of the sites indicated that they were using software for reporting purposes. The Regional Transportation Program (RTP) in Portland, Maine, indicated that its use of paratransit scheduling and dispatching software is beneficial for categorizing trips by funding source or program and, therefore, has been helpful in the billing process. However, RTP noted that the use of technology has not helped with the scheduling of rides as much as was anticipated. PARTA in Kent, Ohio, also found that the software enhanced the ability to commingle trips by accurately tracking the individual trips, which then enabled the agency to properly account for trips to its funding source.

Other sites noted some problems using the technology for reporting purposes. Ottumwa Transit Authority (OTA) indicated it uses software for collecting the information necessary for required state and NTD reporting. However, OTA also reported that it was not able to use the software directly to generate reports and invoices for the various funding sources. Waukesha Metro Transit also indicated that data reporting by its non-profit provider has been problematic, in particular because the NTD definitions do not address commingled service. While not a "technology" problem per se, Waukesha Metro Transit believes that the introduction of MDC technology would help to resolve this issue.

Transit Authority of River City (TARC) in Louisville, Kentucky, has a state-of-the-art reservations/scheduling/dispatch system and all authority-owned vehicles are equipped with MDTs with AVL. It was anticipated that this technology would be useful in tracking the riders by various programs, although TARC has had problems using the system to maintain the recordkeeping relative to rides by funding source.

The issues raised with regard to reporting problems seems to indicate that it is important to understand the reporting needs for all types of service. The research findings also suggest the need to account for and ensure that available or future technology has the capability of capturing and reporting the necessary data.

D. Develop Marketing, Education, and Monitoring Programs

Now that the transit agency has progressed through the initial planning phase, established the service operating policies and procedures, and moved to implementation, it is time to market the program and, once service begins, to perform ongoing monitoring to ensure that the program is providing service in accordance with the stated performance standards.

Marketing and Education Program

Transit agencies sometimes express concerns about "marketing" and "promoting" the use of paratransit services, which are expensive on a per trip basis when compared with fixed route, but agencies will acknowledge that it is important to educate riders and stakeholders about the availability of the service, who is eligible to use it for what types of trips, and how to use the service. Education is particularly important for commingled systems where it may be confusing for riders

and potential riders to understand service eligibility and operational differences when traveling with others in a commingled, shared ride system.

It is also important to thoroughly educate and train transit agency staff that will be providing the service: everyone from vehicle operators to call center staff, customer service, and managers. It is especially important for staff to understand the different program eligibility requirements to understand why service is provided as it is. For instance, vehicle operators at one transit agency said it was difficult to explain to riders why one particular rider who was funded by the JARC program was able to travel outside the ADA paratransit service area when others riding on the same vehicle could not travel to the same destination. Similarly, riders will notice when other passengers are not asked to pay fares and may question the vehicle operator about why the rider was given a "free ride." Such questions should be anticipated and included in the vehicle operator training sessions.

Discussion

Traditional written marketing methods were used by most of the transit agencies interviewed in the research project, which often included short descriptive brochures highlighting service and providing contact information and specifics about how to schedule a trip. Some agencies prepared lengthier user guides with more detailed information about the program.

More transit agencies are also now relying on their own Internet sites to post information about their services, along with Twitter, YouTube, and other social networks—a recent phenomenon for marketing transit services. Pace in suburban Chicago, which manages one of the largest ADA paratransit and Dial-a-Ride networks in the country, makes extensive use of its website to provide information about the various paratransit programs that are available.

Transit agencies that commingle ADA and non-ADA services should consider creating both general overview materials as well as materials that are targeted to the specific commingled rider groups. All riders may not need to have the specifics of every commingled service, so a lengthy user guide with information about all the programs may be too cumbersome as well as expensive to produce. It may be appropriate to have a short "overview" piece with general information, which also indicates that different services are provided, and separate marketing pieces targeted to the individual commingled groups. The transit agency may also need to consider the amount of information that is needed depending on the different commingled rider groups. If the service is more public—obviously the ADA paratransit service is an example—then more detailed information may be appropriate. But if the transit agency has a small contract to provide service to a small group of sponsored riders traveling to and from a senior center program, for example, then less marketing information may be required for the small group of riders.

In Olympia, Washington, Intercity Transit operates commingled paratransit services and has separate marketing and public information materials for the individual programs that are commingled, as the programs have differing service requirements, policies, and procedures.

However, even if detailed descriptions of the services offered on the commingled system are not provided to all riders, it may be helpful to list the various commingled programs so that riders will know about other programs that they might also be able to use.

It should go without saying that any written materials should also be made available in accessible formats such as large print, audiotape, Braille, or electronic files that can be read by screen readers. Education materials should be provided in various formats including written materials (e.g., brochures, newsletters, and bulletins), presentations at meetings and activity fairs, through written and audio public service announcements, and other efforts. Some agencies have found that marketing and "branding" services help to explain the differences for passengers and the

general public. They also found that education efforts cannot be a one-time event—for example, when riders begin using the program—but must be continual and sustained over time.

Monitoring

Monitoring is essential for any paratransit service but critically important for ADA paratransit. A commingled ADA and non-ADA paratransit program must establish a comprehensive monitoring program to collect operational data and analyze that data on a routine basis to track trends, review performance, and watch for unexpected system usage or changes.

When monitoring service, it is important to track performance of the overall paratransit system, as well as track the individual performance of the commingled components. As has been stated throughout this report, it is critical to track ADA paratransit performance and to flag any issues that may arise relating to below par service performance. Remember ADA paratransit is a civil rights program that must afford unrestricted access to service for eligible trips. Transit agencies that commingle services must be sure to monitor the following six key ADA service criteria:

- Service area—sometimes fixed route service areas change; do not forget to make adjustments as needed
- Service days/hours—service may need to be adjusted if fixed route service changes.
- Fares
- Trip purpose
- Service availability
- Capacity constraints—service may not be constrained based on capacity constraints [examples of capacity constraints are substantial trip denials, substantial untimely pick-ups, substantial missed trips, or substantial long trips (compared with fixed route service)]

Capacity constraints is perhaps the most critical ADA service criterion to monitor. Ridership patterns and increasing demand from riders may impact or degrade service performance. In such cases, transit agencies must make adjustments to ensure there are no capacity constraints. If on-time performance decreases, for example, or travel times begin to lengthen, it may be that the system is at or over capacity and some action will be needed to relieve the pressure. Additional capacity may be needed, or other actions need to be considered to improve service performance.

If service performance remains sub-standard, the transit agency may need to consider limiting service for non-ADA riders. Keep in mind, however, that the ADA does not require perfection. But if a pattern or practice of denying trips, providing long ride times, making late pickups and/or drop-offs are noted, they must be corrected.

Beyond the six ADA criteria, transit agencies should monitor and evaluate service performance through other efforts and assess the different individual services that are commingled to look for any performance differences between the commingled rider groups that merit additional attention. These additional efforts and operational issues to review may include the following:

- Customer comment/complaints—establishing a customer comment process so that riders, their caregivers, and other stakeholders can provide feedback (either compliments or complaints) to the transit agency.
- Driver wait time—measuring whether the vehicle operator waited the appropriate amount of time and at the correct location before requesting a rider be marked as no show.
- No show/late cancel policy with consequences—establishing a clear, measurable, and enforceable no show/late cancel policy with appropriate consequences.
- Agency/program specific policies—monitoring policies such as service only to a specific group of clients (e.g., age, income, or residence); or for specific trips (e.g., medical, senior center, or jobs).

It also is important to monitor the performance of all trip categories provided individually and in the aggregate. If, for example, the transit agency is under contract to a senior center to provide service for that center's participants, then it is still expected that the transit agency's commingled service will meet the agreed-upon service level. Group subscription trips are one area to watch because trips attempting to serve larger groups of people on a demand response basis can become excessively long if too many riders are grouped on one vehicle at the same time.

Procedures and protocols should be monitored at least monthly. Decide whether to review all the trips provided or a representative sample of trips, depending on the number of trips provided. The review should include whether or not the six ADA criteria and other relevant service criteria are being met.

ADA requirements are a priority, so if adjustments to policies and service provisions are needed to ensure adequate service performance, the adjustments for ADA purposes must come first. Following this, other service adjustments can be made.

System policies and performance measures should be reviewed at least annually and be revised and updated as needed.

Finally, monitoring data and information can inform the transit agency's service planning process. Information gathered and trends that are tracked through service monitoring can be very beneficial for supporting and informing planning decisions as well as providing realistic estimates of service growth or patterns of change.

SECTION 3

Lessons Learned

This research revealed numerous lessons learned from transit agencies that have opted to commingle or not to commingle their ADA paratransit riders with other non-ADA paratransit riders. Among the most common lessons learned were the following:

- **There is no one "right" answer.** First and foremost, it should be remembered that there is no one right answer and a decision **not** to commingle may be just as valid as a decision to commingle.
- **ADA regulatory requirements must be met.** ADA is civil rights legislation. As such, the U.S. DOT regulatory requirements for ADA paratransit service must be met, even if that negatively affects service for other non-ADA riders. ADA paratransit service must be provided for any trip purpose and no trip purpose may be prioritized over another. There may not be a pattern or practice of trip denials for eligible ADA paratransit trips. These requirements and others can sometimes conflict with trip requests from non-ADA riders.
- **There's no such thing as a free ride.** Be careful about well-intentioned efforts to extend service to non-ADA riders who are not supported by an identified or adequate source of funding. Where commingling is successful, funding for expanded paratransit service is available. Although this point may seem obvious, the case study research found that the sources of funding for non-ADA riders varied for agencies that commingle, but the key was to ensure that adequate and sustainable funding is available to support service for the non-ADA riders. When funding becomes problematic, is cut significantly, or is withdrawn, commingling becomes difficult, if not impossible, to sustain.
- **State and local conditions matter.** The factors that enter into the decision whether or not to commingle ADA and non-ADA riders vary locally and often are dependent on (a) specific state and local regulatory requirements and ordinances; (b) recognition of the compatibility of rider groups to be served by the commingled program; (c) the availability of adequate funding to sustain the service; (d) an identification of appropriate cost allocation strategies among participating program sponsors; and (e) other specific local resources and conditions that may affect the success of the local effort. Florida is an example of a state with a long-standing history of coordinating and commingling service for persons defined as transportation disadvantaged. In addition to coordinated planning and service provision, the Florida Commission for the Transportation Disadvantaged provides funds through its Transportation Disadvantaged Trust Fund.
- **Some areas may find commingling to be inherently easier than others.** Transit agencies in small urban and rural settings generally seem to have found it easier to commingle services, where there may be a history of coordination given scarce local resources. Similarly, as was the case for Pittsburgh, systems with paratransit programs that predate the ADA seem more likely to be agencies that commingle, adding the ADA service to their existing mix of specialized and human service transportation. Finally, it generally appears that transit agencies without

a history of providing paratransit service before adoption of the ADA have tended to shy away from introducing non-ADA paratransit into the ADA paratransit program.

- **Planning is key.** Ideally, planning should commence at the very beginning as part of a formal process to assess the pros and cons of commingling and to develop strategies for success. Even if a "decision" to commingle was already made as a result of political or regulatory processes, it is still important for the transit agency staff to identify key aspects of the service to be provided, to work through any potential obstacles to commingling, to develop contingency plans, and to ensure that adequate resources and adequate funding are available to sustain service. Any potential obstacles should be identified and resolved prior to implementing service.
- **Be flexible.** While planning is important, it is also important to understand that even the best plans cannot account for all contingencies. Assumptions made during planning may not be entirely correct and/or circumstances may change. Transit agencies should be prepared to be flexible going forward and strive to find solutions that make sense for their area.
- **Determining rider eligibility is critical.** An important aspect of a commingled system is to identify individual rider's eligibility for each of the various services offered as part of a commingled system. This effort is important both to ensure that the proper agency is billed for the cost of the trip and to ensure that riders are getting the appropriate level of service based on their program eligibility (e.g., ADA paratransit, Medicaid Non-Emergency Medical Transportation, Title III of the OAA, and others).
- **ADA paratransit service standards are often higher than other program standards.** It is generally recognized throughout the transit industry that even the minimum ADA paratransit service criteria often exceed the service standards for other programs such as Medicaid. As a result, the cost of commingled service may in fact increase overall, as it is common for the ADA service standards to be applied to other riders in a commingled system in order to make operating policies and procedures consistent.
- **Ongoing performance monitoring is a must.** Service standards should be set and measured at regular intervals to ensure that programmatic requirements are being met, particularly with respect to ADA regulatory compliance.
- **Technology is a useful tool.** Recent advances in technology allow transit agencies to better serve their customers in a variety of ways from reserving, scheduling, and dispatching trips, to recordkeeping and performance monitoring. Technology and electronic fare media are especially helpful for accounting for trip-making by individual riders and collecting fares that may vary by passenger type. Technology can also assist with real-time and retrospective performance monitoring to ensure that service standards are being met for on-time performance, ride times, and other important service parameters.
- **Educate board members and other policymakers.** Many transit agencies mentioned the importance of educating their boards and other policymakers about the nature of commingled services, regulatory requirements, operating practices, funding, and program performance. An educated board can more readily understand and support the transit agency when issues arise, particularly related to funding, programmatic differences, and service provision.
- **Educate transit agency staff.** It is important that everyone involved in the commingled program understands how it is organized, how eligibility is determined for various program sponsors to ensure riders receive the appropriate service and pay the appropriate fare, and how the funding sources are structured to ensure accurate and appropriate billing and financial reporting.
- **Educate riders.** An equally important aspect is to educate riders, their families and caregivers, and sponsoring agencies about the services offered by the commingled system and why there may be variations. This is especially important when there are variations in service levels offered (e.g., service area or service hours), fares, and other aspects of day-to-day service delivery. Some agencies have found that marketing and branding the different services help to explain the differences for passengers and the general public. They also found that education efforts cannot be a one-time event, but must be continual and sustained over time. Education materials

also need to be provided in various formats including written materials (brochures, newsletters, updates), presentations at meetings and activity fairs, through written and audio public service announcements, and other efforts.

- **Manage demand.** One issue that eluded a consensus lesson was what to do if there is rapid growth in ridership, making it difficult to meet the demand for ADA and non-ADA riders, keeping in mind the requirement to serve all eligible ADA paratransit trips.

  To address paratransit demand, transit agency managers are advised to be proactive, to control elements that can be controlled, and to acknowledge those elements that may be out of the control of the transit agency, such as population growth, demographics of aging, and so on. By being proactive and monitoring service and market trends, growth-related issues may be spotted early and brought to the attention of policymakers and funding agencies before service deteriorates. For example, while transit agencies are required to provide unconstrained ADA paratransit service and not to exhibit a pattern or practice of trip denials, it is understood that from time to time trips may be denied during unexpected peaks in demand. However, having said that, FTA expects and requires that transit agencies plan for future growth through the budgeting process and make funding adjustments to stay compliant with the regulations.

  An obvious starting point is to be sure that the eligible riders are properly screened for both ADA and non-ADA services, keeping in mind that ADA paratransit service should be viewed as a safety net for passengers who are unable to use fixed route service for some or all of their trips because of the nature of their disability. It is not intended for use by riders who are able to use fixed route, nor is it intended to be a comprehensive system of transportation that meets all of the travel needs of persons with disabilities. By practicing proper eligibility determination—particularly from the start—the transit agency can help to curb unnecessary growth. Additionally, it is mutually beneficial to encourage use of fixed route, shuttles, and other flexible routing that will meet rider needs and that will be more cost-effective as measured by cost per trip than paratransit.
- **Allocate costs and invoice properly.** It is also important to work with funding agencies on an ongoing basis to ensure that all costs are properly allocated among the funding partners. It is also important to ensure that the funding sources are being properly invoiced for trips they sponsor and that riders who are eligible for multiple programs have trips assigned appropriately for invoicing purposes.

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Abbreviations and Acronyms

AAA	Area Agencies on Aging
ACCESS	ACCESS Transportation Systems (Allegheny County, Pennsylvania)
ACD	Automatic Call Distribution
ADA	Americans with Disabilities Act of 1990
AHCA	Agency for Health Care Administration (Florida)
APTA	American Public Transportation Association
ARC	Association of Retarded Citizens
ASI	Access Services, Inc.
AT	Assistive technologies
AVL	Automatic vehicle location
AVTA	Antelope Valley Transit Authority (Lancaster, California)
BTA	Brevard Transit Authority (Brevard County, Florida)
CARTA	Chattanooga Area Regional Transportation Authority
CASD	Computer assisted scheduling/dispatch
CATS	Charlotte Area Transit Service
CATS	Consolidated Agencies Transportation System (Florida)
CCAM	Federal Interagency Coordinating Council on Access and Mobility
CCRTA	Cape Cod Regional Transit Authority (Cape Cod, Massachusetts)
CFR	Code of Federal Regulations
CRRAFT	Client Referral, Ridership, and Financial Tracking System (New Mexico)
CTA	Chicago Transit Authority
CTAA	Community Transportation Association of America
CTC	Community Transportation Coordinator
DAR	Dial-a-Ride
DAST	Delaware Administration for Specialized Transportation
DelDOT	Delaware Department of Transportation
DOAP	Downstate Operating Assistance Program (Illinois)
DTC	Delaware Transit Corporation (Wilmington, Delaware)
EBT card	Electronic Benefits Transfer card
ESL	English as a second language
ESPA	Easter Seals Project ACTION
FTA	Federal Transit Administration
GAO	Government Accountability Office (formerly General Accounting Office)
GIS	Geographic Information Systems
HST	Human service transportation
ICCT	Illinois Interagency Coordinating Committee on Transportation
IDOT	Illinois Department of Transportation
ITS	Intelligent transportation systems

IVR	Interactive voice recognition
JARC	Job Access and Reverse Commute
JPA	Joint Powers Authority
JPO	U.S. DOT Joint Program Office
JTA	Jacksonville (Florida) Transit Authority
LTD	Lane Transit District
MDC/MDT	Mobile data computer/Mobile data terminal
Metro	Waukesha Metro Transit (Waukesha, Wisconsin)
MOU	Memorandum of Understanding
MSAA	Mobility Services for All Americans
MTM	Medical Transportation Management (St. Louis, Missouri)
NCD	National Council on Disability
NEMT	Non-Emergency Medical Transportation (i.e., Medicaid)
NTD	National Transit Database
NTI	National Transit Institute
OAA	Older Americans Act
OMB	Office of Management and Budget (United States)
OTA	Ottumwa Transit Authority (Iowa)
PARTA	Portage Area Regional Transportation Authority (Kent, Ohio)
PASS	Passenger Adaptive Suburban Service (Grand Rapids, Michigan)
PennDOT	Pennsylvania Department of Transportation
RTA	Regional Transportation Authority (Chicago/Northeastern Illinois)
RTAP	Rural Transit Assistance Program
RTP	Regional Transportation Program (Portland, Maine)
SCAT	Space Coast Area Transit (Cocoa, Florida)
SEPTA	Southeastern Pennsylvania Regional Transportation Authority (Philadelphia)
SIP	Systems Implementation Plan
SMTD	Springfield Mass Transit District (Illinois)
SRP	Shared-Ride Program (Pennsylvania)
TARC	Transit Authority of River City (Louisville, Kentucky)
TCRP	Transit Cooperative Research Program
TD	Transportation Disadvantaged (often identified with the Florida TD Program)
TDA	Transportation Development Act (California)
TMA	Transportation Management Association
TRB	Transportation Research Board
U.S. DOT	U.S. Department of Transportation
UWR	United We Ride
VMT	Vehicle miles traveled
Votran	Volusia Transit Company (South Daytona, Florida)

APPENDIX A

Transit Agency Survey Highlights

Survey Overview

A primary focus of this project was to better understand whether and how fixed route transit agencies commingle ADA paratransit and "other" paratransit riders. To better understand the decision-making processes, we wanted to identify examples of transit agencies that (1) have recently begun to commingle riders, (2) have been commingling riders for several years or more, (3) no longer commingle riders, and (4) have never commingled riders.

Transit agency contact information was obtained from the American Public Transportation Association (APTA). The APTA distribution list was supplemented by our industry knowledge of other transit agencies to include some that were not APTA members and several systems that represented smaller agencies that were known to be ADA paratransit providers, but were not members of APTA. The survey was conducted at the end of 2006.

We used an on-line survey tool to collect information from fixed route transit agencies to identify approaches to commingling ADA eligible and other paratransit riders on the same vehicle. The survey was supplemented by telephone calls to clarify information, along with a review of system brochures, reports, and other information provided by transit agencies that described the approach taken for providing paratransit services.

The questionnaire was designed to direct transit agencies to answer the questions that were relevant to the type of service they offered. Specifically, we asked whether they provided the following:

- ADA paratransit services only
- ADA paratransit service AND other paratransit services using the SAME vehicles (i.e., commingling riders)
- ADA paratransit services AND other paratransit services using DIFFERENT vehicles

The remainder of the appendix provides an overview of the major survey findings.

Characteristics of Survey Respondents

Of the 275 transit agencies that were sent surveys, 121 responded for a response rate of 44%. Not included in that total were a few surveys that were eliminated either because they were duplicates or were substantially incomplete. Respondents represented 30 states and all 10 FTA regions and included a cross section of small, medium, and large transit agencies:

- 39% of respondents represented service areas with a population from 200,000 to 999,999
- 32% represented service areas with a population from 50,000 to 199,999
- 24% represented service areas with a population of 1 million or more
- 6% represented small urban and rural areas with a service area population of less than 50,000

These results are not surprising given that ADA complementary paratransit service is provided in areas with fixed route service and because the primary source for the survey distribution was APTA members, which tends to represent large and medium sized operators. We also included about a dozen agencies that provide ADA paratransit services that were not included in the APTA membership database.

Most respondents (95%) represented transit agencies (a few respondents were private contractors responding on behalf of transit agencies). Nearly half (47%) said they represented an independent agency with an appointed board of directors and about a quarter (22%) indicated that they represented a unit of city or municipal government.

We asked survey respondents to define both their ADA service area as well as their "other" paratransit service area (if applicable). A total of 120 respondents reported on their ADA service areas and 86 respondents reported on their "other" paratransit service areas. Table A-1 shows the results. The first two columns indicate the responses to how the ADA paratransit service area was defined. The remaining columns describe how the "other" paratransit service area was defined compared with the corresponding ADA service area shown in the far left column.

For example, the most frequent response was to define an ADA service area as a ¾-mile corridor around fixed routes, as cited by 57% of respondents. Reading across the row, it can be seen that 8% of the respondents defined the "other" paratransit service area as the same ¾-mile corridor, 22% defined it as a city/town, 32% defined it as a county, and so on. Also note that the total on the bottom of the ¾-mile corridor column indicates that 7% of the "other" paratransit service areas corresponded to an ADA-defined ¾-mile corridor service area. Overall, the most common "other" paratransit service area was described as a county (32%), followed by a city/town (26%) or other (25%).

Respondents were also asked to indicate the level of passenger assistance provided for ADA paratransit and "other" paratransit riders, either: "curb-to-curb," "door-to-door," or "door-through-door." Respondents were allowed to check more than one type of passenger assistance for each service. A total of 126 answers were given for ADA paratransit and 105 for "other" paratransit (see Table A-2). As in the previous table, the first two columns indicate the level of passenger assistance provided by ADA paratransit service and the remaining columns indicate the level of passenger assistance provided by "other" paratransit services. For example, 50% of the respondents reported providing "curb-to-curb" assistance for ADA paratransit riders. Reading across

Table A-1. ADA and "other" paratransit service areas.

ADA Paratransit		Other Paratransit Service Area					
Service Area	Total	3/4 Mile Corridor	City/Town	County	Multi-County	Other	Total
3/4 Mile corridor	57% (68)	8% (5)	22% (13)	32% (19)	7% (4)	32% (19)	100% 60
City/town	23% (28)	9% (3)	40% (14)	31% (11)	9% (3)	13% (4)	100% 35
County	12% (14)	11% (2)	16% (3)	58% (11)	0% (0)	16% (3)	100% 19
Multi-county region	4% (5)	0% (0)	14% (1)	14% (1)	57% (4)	14% (1)	100% (7)
Other	4% (5)	0% (0)	25% (5)	15% (3)	20% (4)	40% (8)	100% (20)
TOTAL	100% (120)	7% (10)	26% (36)	32% (45)	11% (15)	25% (35)	100% (141)

NOTE: Although respondents were asked to indicate one answer in each category, several selected more than one answer. This is why the total answers in the "Other" paratransit section total more than 120.

Table A-2. Level of passenger assistance provided.

ADA Paratransit		"Other" Paratransit Service			
Passenger Assistance	**Total**	**Curb-to-Curb**	**Door-to-Door**	**Door-through-Door**	**Total**
Curb-to-Curb	50% (63)	77% (36)	19% (9)	4% (2)	100% (47)
Door-to-Door	44% (55)	31% (15)	58% (28)	11% (5)	100% (48)
Door-through-Door	6% (8)	30% (3)	50% (5)	20% (2)	100% (10)
TOTAL	100% (126)	52% (54)	38% (42)	10% (9)	100% (105)

NOTE: Although respondents were asked to indicate one answer in each category, several selected more than one answer. This is why the total answers in the "Other" paratransit section total more than 122.

the row, 77% of respondents reported providing curb-to-curb service for "other" paratransit riders, 19% provided "door-to-door" service for "other" paratransit services, and 4% reported providing "door-through-door" service. Overall, 52% (54) of the "other" paratransit service provided curb-to-curb service.

We also asked how far in advance trips requests were accepted for ADA paratransit trips and "other" paratransit trips (if applicable). First, we asked the *minimum* number of days in advance that a trip could be booked and then we asked the *maximum* number of days in advance a trip could be booked. Respondents could check one answer for each category of trip. The most common answer for the *minimum* number of days reserved in advance was 1 day for both: ADA (75%) and "other" paratransit (62%). Same-day reservations were allowed by 20% of ADA paratransit and 23% of "other" paratransit services. Table A-3 illustrates the range of responses. The most common answer for the *maximum* number of days in advance was more than 7 for both: 51% for ADA paratransit and 54% for "other" paratransit service. Table A-4 illustrates the range of responses.

We asked respondents to indicate the technologies currently being used in the provision of paratransit service; 105 answered. Of those responding, 91% indicated that they used scheduling and dispatching software, 44% used mobile data computers (MDCs) or mobile data terminals (MDTs), 41% used automatic vehicle location (AVL), and 19% used electronic record keeping and billing (see Figure A-1). This question is important in that we believe, as suggested in the literature review, that technology may be a useful tool to assist in facilitating coordination efforts by making it easier to communicate and easier to track eligibility and billing/invoicing.

Table A-3. Minimum days in advance for trip requests.

ADA Paratransit		"Other" Paratransit Service				
Days In Advance	**Total**	**Same Day**	**1 Day**	**2 Days**	**Other**	**Total**
Same Day	20% (22)	89% (10)	11% (1)	0% (0)	0% (0)	100% (11)
1 Day	75% (81)	12% (7)	77% (44)	5% (3)	5% (3)	100% (57)
2 Days	3% (3)	0% (0)	0% (0)	100% (2)	0% (0)	100% (2)
Other	2% (2)	0% (0)	0% (0)	32% (1)	68% (2)	100% 0)
TOTAL	100% (108)	23% (17)	62% (45)	10% (6)	5% (5)	100% (73)

Table A-4. Maximum days in advance for trip requests.

ADA Paratransit		"Other" Paratransit Service						
Days In Advance	Total	Same Day	1 Day	2 Days	3-5 Days	6-7 Days	> 7 Days	Total
Same Day	1% (1)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)
1 Day	5% (5)	0% (0)	50 % (2)	0% (0)	25% (1)	0% (0)	25% (1)	100% (4)
2 Days	7% (7)	0% (0)	0% (0)	100% (5)	0% (0)	0% (0)	0% (0)	100% (5)
3-5 Days	13% (13)	0% (0)	0% (0)	0% (0)	75% (6)	0% (0)	25% (2)	100% (8)
6-7 Days	24% (25)	0% (#)	6% (1)	0% 0)	0% (0	94% (16)	0% (0)	100% (17)
> 7 Days	51% (54)	5% (2)	0% (0)	0% (0)	3% (1)	3% (1)	89% (34)	100% (38)
TOTAL	100% (105)	3% (2)	4% (3)	7% (5)	11% (8)	23% (17)	54% (37)	100% (71)

Overall Findings

The respondents to the TCRP Project B-34 survey represent a cross section of transit systems from 30 states and all 10 FTA regions. The large majority (100 out of 121 of the respondents) were from areas with populations of 50,000 and above, representing predominately urban areas.

More than half of survey respondents mix ADA and other passenger trips on the same vehicle (64 transit systems [53% of respondents]). Adding in the respondents that serve ADA and

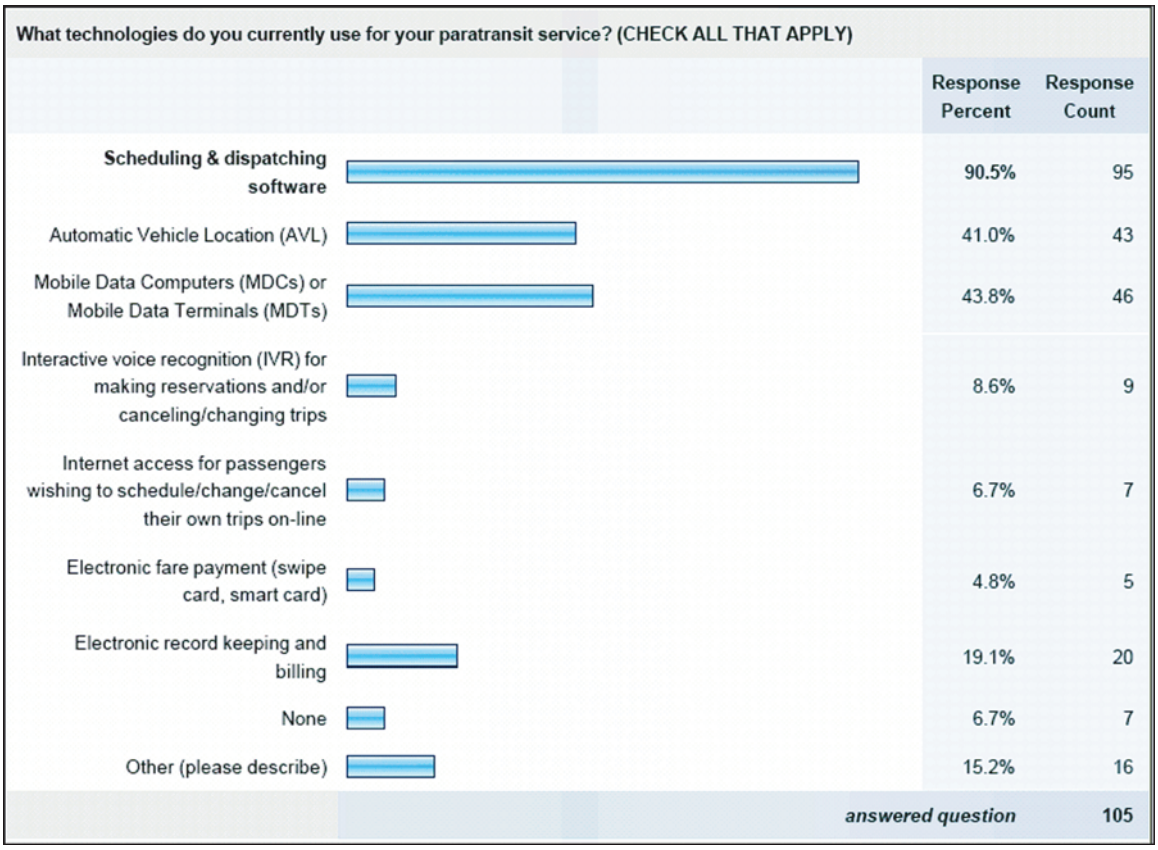


Figure A-1. All respondents: use of technology.

"other" passengers on different vehicles (10 systems) brings the total to 74 transit systems or 60% of respondents that serve both ADA and non-ADA paratransit riders. With the focus of the transit industry in recent years on ADA paratransit and concerns about regulatory compliance and increasing costs and demand, this finding may be somewhat surprising, that is, that the majority of transit systems *do* commingle.

Almost all respondents (91%) have invested in scheduling and dispatching software, and many (41% and 44%, respectively) have also invested in AVL or MDC/MDT technology. The one area where there is a difference in technology is in the use of electronic recordkeeping and billing software. The group of transit systems that commingle riders but on separate vehicles reports *no* use of electronic recordkeeping and billing software. While the size of this group is small, it is telling that this group is using separate vehicles for ADA and "other" paratransit service. Also, although there were only six systems serving areas of population less than 50,000, they represent half of the group using separate vehicles to provide "other" paratransit service.

The survey asked respondents to indicate their reasons for providing "other" paratransit service beyond ADA. The primary reason indicated was "passenger needs." Factors that would influence those agencies not currently providing additional service to do so in the future are "demand for service" and "funding from agency/programs sponsor for additional trips" (55% for each factor). The survey also asked questions about what factors led to the decision to provide "other" paratransit trips and who was involved in the decision-making. Table A-5 provides a summary of the factors that appear to influence the decision to provide "other" paratransit trips. As shown in the table, the top two factors stated for providing ADA and "other" paratransit trips were "demand for service" and "passenger needs." This was true whether agencies use the same or different vehicles to provide ADA and "other" paratransit.

A key interest for the study was identification of the non-ADA eligible passenger types that were being served by "other" paratransit services, particularly where ADA and non-ADA service was commingled on the same vehicles. A related issue is to explore whether the "other" passenger groups that were served differed according to the practice of serving the different passenger types on the same or different vehicles. Table A-6 summarizes survey responses to the question that asked *what types of "other" paratransit passengers are served,* categorized by transit systems that commingled different passenger types on the same vehicles versus different vehicles.

Table A-5. Factors influencing decision to provide "other" paratransit.

Factor	ADA + "Other" on Same Vehicles (N=58)	ADA + "Other" on Different Vehicles (N=9)
Demand for Service	78%	67%
Passenger Needs	57%	67%
Transit Management Decision	54%	33%
Transit Board Decision	45%	44%
Funding Change from Public Sources	29%	44%
Funding Change from Program Sources	24%	0%
Other External Factors	24%	44%
Coordination Requirements	21%	11%
Cost Allocation	16%	0%
Funding Program Requirements	16%	11%
Scheduling Dispatching	16%	11%
Other Internal Factors	14%	11%
Availability of Technology	12%	11%
Funding Program Reporting Requirements	7%	11%
ADA Capacity Constraints	4%	11%
Insurance	4%	0%

Table A-6. Composition of "other" paratransit passengers.

"Other" Paratransit Passengers	ADA + "Other" on Same Vehicles N=63	ADA + "Other" on Different Vehicles N=9
Non-Sponsored Older Adults	60%	44%
Other Agency Funded	57%	22%
Non-Sponsored Persons with Disabilities	57%	33%
General Public	54%	67%
Medicaid	46%	11%
Title III	44%	0%
Non-Sponsored Low Income Persons	33%	22%
Head Start	10%	0%

Perhaps equally important to investigating the different passenger types served by transit systems that mix passenger types is determining the funding sources used for serving the "other" passengers, particularly since "funding from agency/program sponsors" was noted as a primary factor that would influence those not commingling to do so. Interestingly, the responses shown in Table A-6 suggest that a number of "other" passenger groups that are commingled do not have specific programmatic funding sources attached, for example, the "non-sponsored" older adults, "non-sponsored" persons with disabilities, and general public riders. In some cases it may be that there are local or other funding sources that contribute to a transit systems' ability to serve these riders in addition to their ADA riders.

The findings from the survey also provided the research team with baseline information from which to determine potential case studies and to structure the interview guide for the case study research. Responses to the survey questions about factors that contributed to a decision to commingle—or not—provided material for the initial structuring of the decision framework developed for the Resource Guide.

Detailed Survey Findings

The survey asked respondents to indicate whether they (1) provided ADA complementary paratransit only, (2) provided a combination of ADA complementary paratransit and "other paratransit" services using the SAME vehicles for both (i.e., commingling), or (3) provided a combination of ADA complementary paratransit and "other paratransit" services using DIFFERENT vehicles for each rider type. More than half of the respondents (53%) reported that they provided both ADA paratransit and other paratransit services using the same vehicles; about 39% indicated that they provided ADA paratransit service only; and about 8% indicated that they provided ADA paratransit and other paratransit services using different vehicles (see Figure A-2).

It is interesting to note that these results are comparable when the same question was asked in a survey of fixed route transit agencies conducted for *TCRP Synthesis of Transit Practice 60*. In that survey, 39% reported that they provided ADA complementary paratransit only, 49% provided ADA and other paratransit using the same vehicles, and 12% provided ADA and other paratransit using different vehicles (Gerty 2005).

The remainder of the survey highlights focuses on the results for each of these three paratransit service delivery strategies:

1. Transit agencies providing ADA and "other" paratransit service using the same vehicles (i.e., commingling riders)

Please indicate which statement best describes the paratransit service currently provided by your transit agency: (CHECK ONE)

	Response Percent	Response Count
ADA complementary paratransit ONLY (this selection will advance you to Section II of the Survey)	38.8%	47
ADA complementary paratransit service AND "other paratransit" services combining passengers on the SAME vehicles (this selection will advance you to Section III of the Survey)	**52.9%**	64
ADA complementary paratransit service AND "other paratransit" services separating passengers on DIFFERENT vehicles (this selection will advance you to Section IV of the Survey)	8.3%	10
	answered question	**121**

Figure A-2. Paratransit service currently provided.

2. Transit agencies providing ADA and "other" paratransit services using different vehicles; and
3. Transit agencies providing ADA-only paratransit service

Agencies Providing ADA and Other Paratransit Services on the SAME Vehicles—Commingling

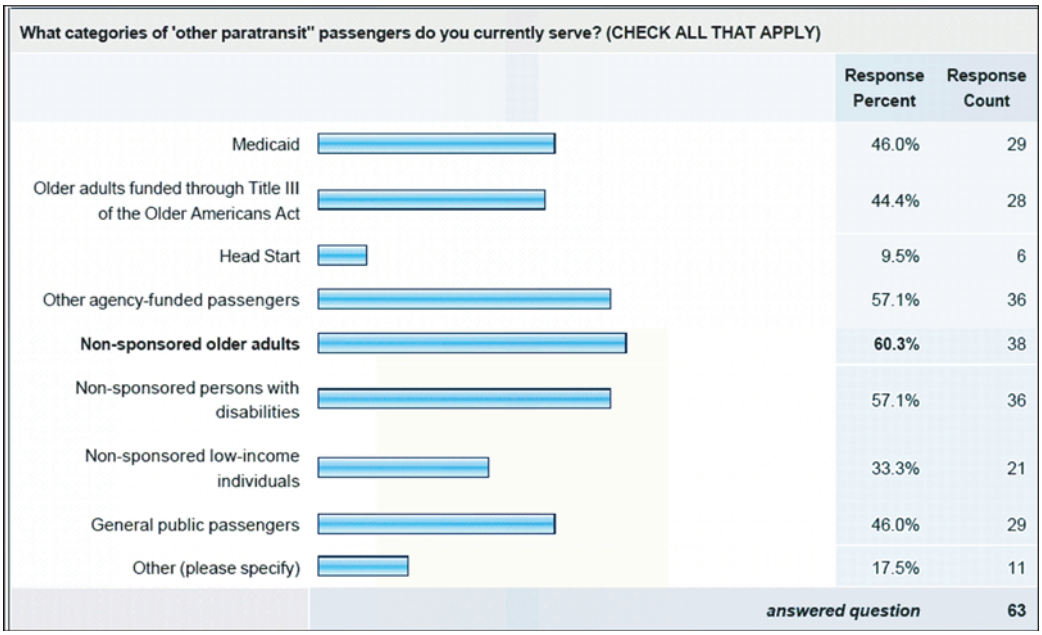
Highlights

A total of 64 (53%) of the survey respondents indicated that they currently provide ADA and "other" paratransit service on the SAME vehicles. In response to the question of when ADA service was started, 69% answered before 1996. The three most cited categories of "other" paratransit passengers served were "non-sponsored older adults" (60%), "non-sponsored persons with disabilities" and "other agency funded passengers" (both 57%), and "Medicaid" and "general public" (both 46%). Figure A-3 shows the range of "other" passenger groups served.

We asked respondents whether the service days and hours varied for ADA versus "other" paratransit services. A total of 61 respondents answered the question for weekdays. Out of that number, 64% indicated they had the same service hours for ADA and "Other" on weekdays. For Saturday, 52 respondents answered and 63% indicated that the hours were the same for ADA and "other" service. For Sunday, 41 respondents answered and 66% indicated that the hours were the same for ADA and "other" service.

Respondents were also asked to select the factors that led to the decision to provide "other" paratransit service. They were allowed to select more than one response from the list of factors provided. An overwhelming number of respondents cited "demand for service" (78%) as a factor. "Passenger needs" (57%), "transit management decision" (54%), and "transit board decision" (45%) were the top four factors. Figure A-4 shows the range of responses to this question.

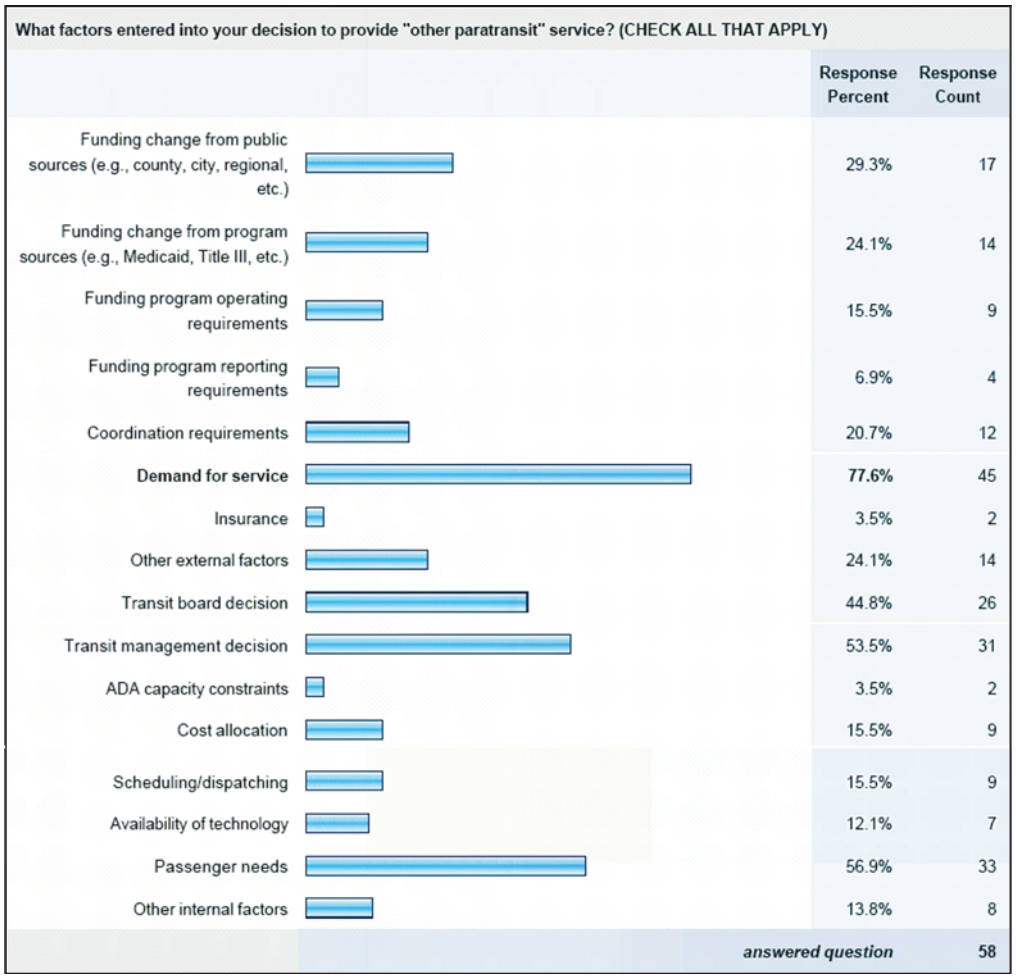
Of the 64 respondents who indicated that they provide ADA and "other" paratransit services on the same vehicles, 91% indicated that they utilize a form of technology to assist with providing



What categories of 'other paratransit" passengers do you currently serve? (CHECK ALL THAT APPLY)

	Response Percent	Response Count
Medicaid	46.0%	29
Older adults funded through Title III of the Older Americans Act	44.4%	28
Head Start	9.5%	6
Other agency-funded passengers	57.1%	36
Non-sponsored older adults	**60.3%**	38
Non-sponsored persons with disabilities	57.1%	36
Non-sponsored low-income individuals	33.3%	21
General public passengers	46.0%	29
Other (please specify)	17.5%	11
answered question		**63**

Figure A-3. Serving ADA and "other" riders using the same vehicle: categories of "other" passenger groups served.



What factors entered into your decision to provide "other paratransit" service? (CHECK ALL THAT APPLY)

	Response Percent	Response Count
Funding change from public sources (e.g., county, city, regional, etc.)	29.3%	17
Funding change from program sources (e.g., Medicaid, Title III, etc.)	24.1%	14
Funding program operating requirements	15.5%	9
Funding program reporting requirements	6.9%	4
Coordination requirements	20.7%	12
Demand for service	**77.6%**	45
Insurance	3.5%	2
Other external factors	24.1%	14
Transit board decision	44.8%	26
Transit management decision	53.5%	31
ADA capacity constraints	3.5%	2
Cost allocation	15.5%	9
Scheduling/dispatching	15.5%	9
Availability of technology	12.1%	7
Passenger needs	56.9%	33
Other internal factors	13.8%	8
answered question		**58**

Figure A-4. Serving ADA and "other" riders using the same vehicle: factors affecting the decision to provide "other" paratransit service.

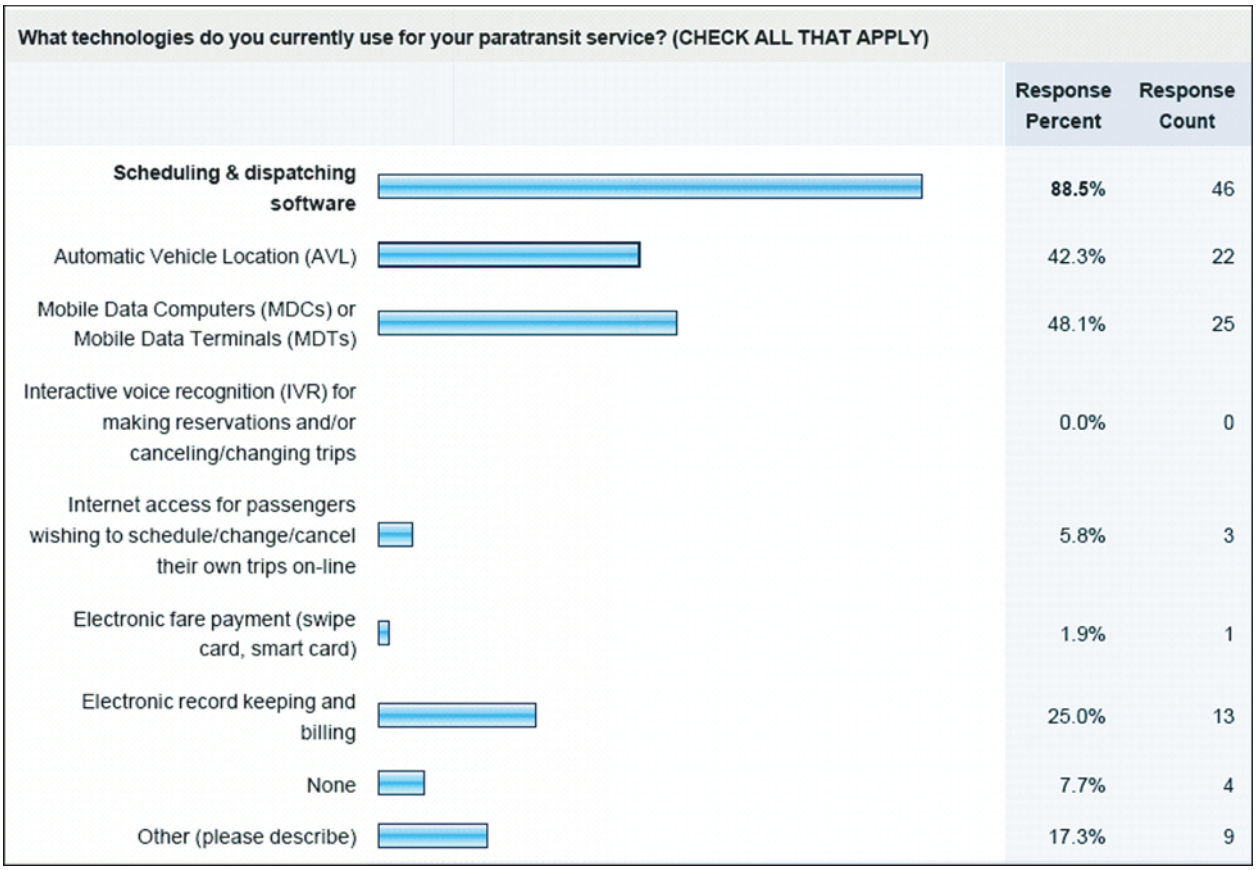


Figure A-5. Serving ADA and "other" riders using the same vehicle: use of technology.

service. Most agencies (89%) indicated that they used scheduling and dispatching software. In addition, 42% indicated they used AVL and 48% indicated they used MDCs or MDTs. Additionally, 25% indicated using electronic recordkeeping and billing software (see Figure A-5).

Discussion

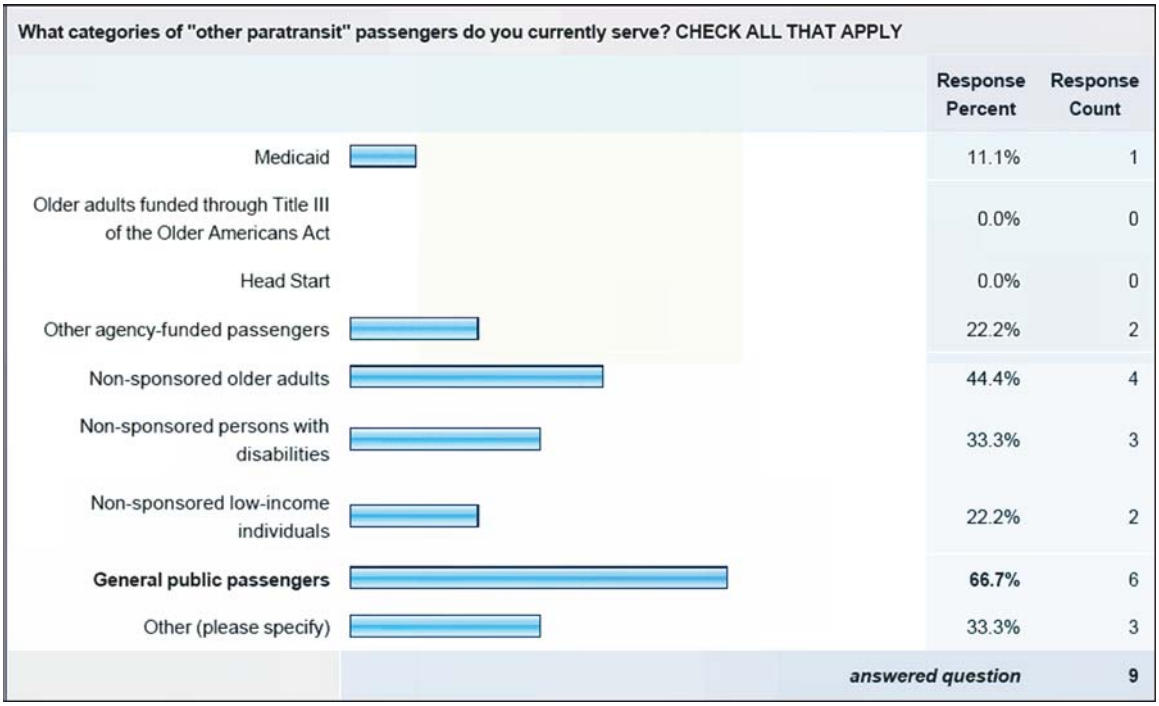
Interestingly, of the more common "other" passenger types that are mixed with ADA riders, two are "non-sponsored seniors" and "non-sponsored people with disabilities," suggesting that the transit systems do not receive specific programmatic funding to transport these riders.

The use of technology appears to be prevalent among those that commingle riders on the same vehicles, with the large majority using scheduling/dispatch software and more than one-third using MDTs/MDCs and AVL.

Agencies Providing ADA and Other Paratransit Service Using DIFFERENT Vehicles

Highlights

Ten of the agencies responding to the survey indicated that they provided ADA and "other" paratransit service on DIFFERENT vehicles. Nine of the agencies started providing ADA service prior to 1996; six agencies indicated that they were providing "other" paratransit service prior to 1996. One agency started providing "other" paratransit service between 1996 and 2000, and three agencies started "other" paratransit service in 2000 or later.



What categories of "other paratransit" passengers do you currently serve? CHECK ALL THAT APPLY

	Response Percent	Response Count
Medicaid	11.1%	1
Older adults funded through Title III of the Older Americans Act	0.0%	0
Head Start	0.0%	0
Other agency-funded passengers	22.2%	2
Non-sponsored older adults	44.4%	4
Non-sponsored persons with disabilities	33.3%	3
Non-sponsored low-income individuals	22.2%	2
General public passengers	**66.7%**	6
Other (please specify)	33.3%	3
	answered question	9

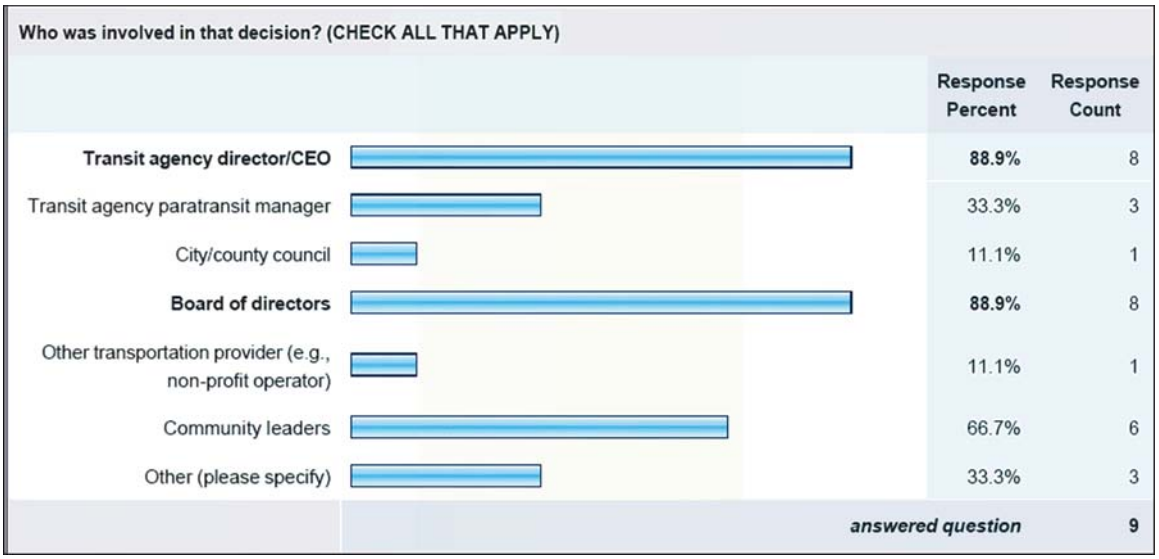
Figure A-6. Serving ADA and "other" paratransit riders using different vehicles: categories of "other" passengers served.

As with agencies providing other service on the same vehicles, respondents were asked who they served, and what factors led to the decision to provide other service. Two-thirds (6) of respondents mentioned serving "general public" paratransit trips, followed by non-sponsored older adults (4). Figure A-6 shows the range of answers to this question. It should be noted that the passenger groups specified in the "other" category included JARC and a suburban service for general public, other agency non-funded, sedan vouchers, and will call programs.

We asked respondents whether the service days and hours varied for ADA versus "other" paratransit services. A total of 9 respondents answered the question for weekdays. Out of that number, 22% indicated they had the same service hours for ADA and "other" on weekdays. For Saturday service, 9 respondents answered and 22% indicated that the hours were the same for ADA and "other" service. For Sunday service, 9 respondents answered and 22% indicated that the hours were the same for ADA and "other" service.

With regard to the factors that led to the decision to provide other service, the most frequently cited factor was "demand for service" and "passenger needs" (6 out of 9 for each factor). Other factors cited were "funding change from public source," "transit board decision," and other "external factors" (4 out of 9 for each). When this group was asked who was involved in the decision to provide "other" paratransit service, "transit agency director/CEO" and "transit agency board" were indicated in 8 out of the 9 responses. It is important to note that in two-thirds of the responses "community leaders" were identified as being involved with the decision. Figure A-7 shows the range of responses to this question. The "who" in the other category included: a court settlement agreement, a mobility advisory board, and human service agencies.

Finally, this group of respondents was asked what factors led to the decision to provide other service on DIFFERENT vehicles. Two-thirds (6) of the respondents to this question indicated "demand for service" as the primary factor; "transit management decision" was the second most frequent factor mentioned (4 out of 9).



Who was involved in that decision? (CHECK ALL THAT APPLY)

	Response Percent	Response Count
Transit agency director/CEO	**88.9%**	8
Transit agency paratransit manager	33.3%	3
City/county council	11.1%	1
Board of directors	**88.9%**	8
Other transportation provider (e.g., non-profit operator)	11.1%	1
Community leaders	66.7%	6
Other (please specify)	33.3%	3
	answered question	**9**

Figure A-7. Serving ADA and "other" paratransit riders using different vehicles: who was involved in the decision to serve "other" passengers?

Out of the nine agencies in this category that responded to the technology question, all indicated that they used scheduling and dispatching software. Two-thirds (6) indicated that they used AVL or MDC/MDT software to provide service. None of the respondents indicated that they used electronic recordkeeping and billing software.

Discussion

Based on the survey results, this group of transit systems that served a mix of ADA and non-ADA passengers using different vehicles is the smallest cohort with only 10 respondents in this group. Recognizing that this is a small sample of systems, the most commonly cited group of "other" passenger type was general public. This can be contrasted with systems that mix riders using the same vehicles, which more frequently indicated that they serve seniors and persons with disabilities.

Agencies Providing ADA-Only Paratransit Service

Highlights

As stated earlier, 39% of the survey respondents indicated that they provided ADA paratransit service only. These respondents were asked when they began providing ADA paratransit service. Of the 44 respondents answering this question, 80% began providing ADA service prior to 1996 and 20% began providing ADA service during or after 1996.

Respondents also were asked whether they ever had provided "other" paratransit service since beginning ADA service. Forty-one of 47 respondents answered the question. Of those, more than half (56%) indicated they had not. Of the 18 respondents that had provided "other" paratransit services, the most common trips provided were for Medicaid eligible individuals, other agency-funded passengers, and non-sponsored older adults (39% for each); along with non-sponsored persons with disabilities (28%) (see Table A-7).

A follow-up question was asked to find out from agencies that had formerly provided "other" paratransit service when the "other" service was stopped. Fourteen respondents answered this question. Of those, almost half (43%) indicated that "other" paratransit service was stopped

Table A-7. ADA-only—"other" paratransit trips provided at any time since ADA service began.

Other Service	Number of Responses	Percentage
Medicaid	7	39%
Other Agency Funded	7	39%
Non-Sponsored Older Adults	7	39%
Non Sponsored Persons with Disabilities	5	28%
Title III	2	11%
Head Start	2	11%
General Public	3	11%
Non-Sponsored Low Income Individuals	1	6%

before 1996 and 57% indicated that "other" paratransit service was stopped after 2000; no respondents reported ending "other" service between 1996 and 2000. Respondents were then asked why they stopped providing "other" paratransit service. Sixteen respondents answered this question. More than half (56%) cited "ADA capacity constraints." A "transit management" or "transit board" decision was cited by 38% and 31% of the respondents, respectively. Figure A-8 shows the full range of responses to that question.

In addition to asking what "other" paratransit services had been provided in the past, we asked whether agencies have considered providing "other" paratransit services in the future. Forty-five

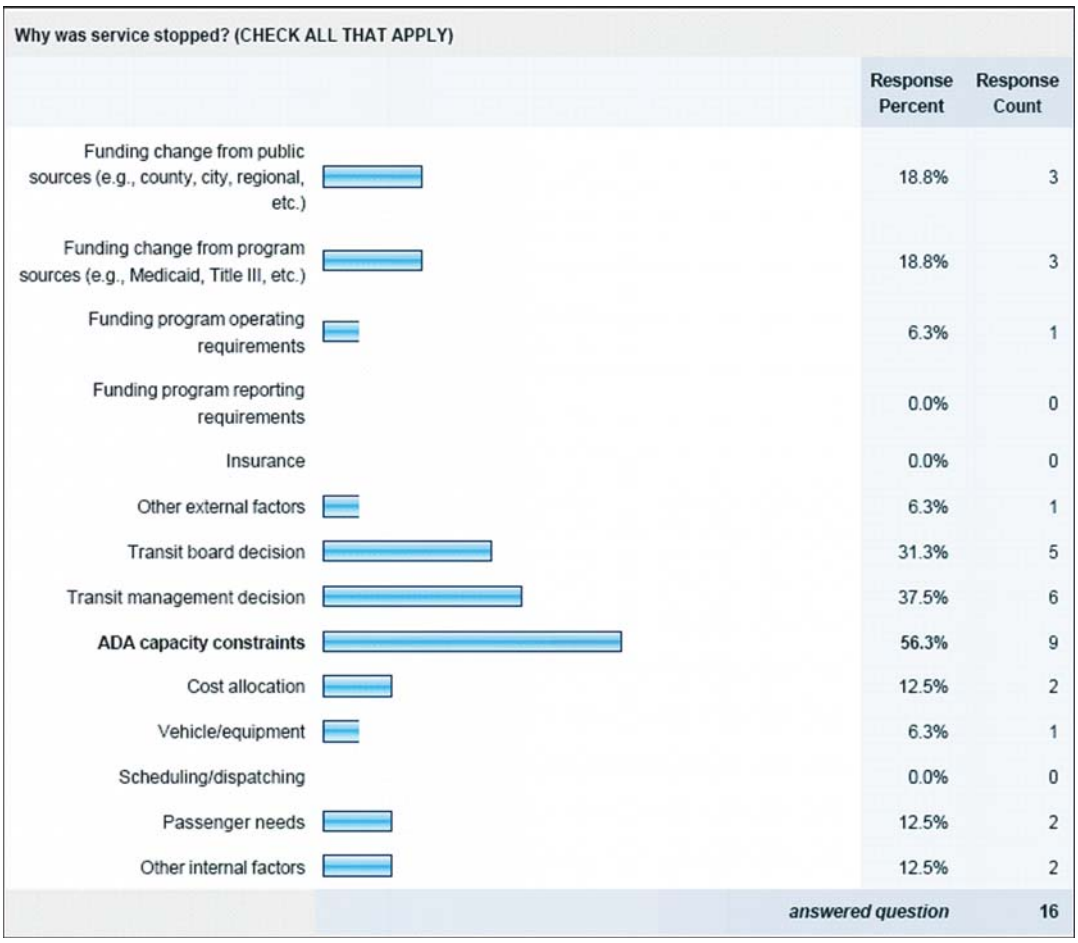


Figure A-8. Serving ADA-only: why "other" paratransit service was stopped.

respondents answered this question. Of those, more than half (58%) answered "no" or "don't know." Of the 19 respondents that indicated they have considered providing "other" service in the future, 13 of them have considered providing service for older adults, 11 for Medicaid passengers, 10 for other people with disabilities, and 7 for the general public.

When asked what factors would enter into the decision for providing "other" paratransit service, 33 respondents answered. Thirty percent indicated "N/A" (not applicable). Of the remaining 23 respondents, the most commonly cited factors were "funding from agency/program sponsor" and "demand for service" (78% each), followed by "ADA paratransit capacity constraints" (70%), coordination requirements (61%), funding from city/county council (52%), and regulatory/policy change (48%). Table A-8 shows the range of factors and the frequency with which they were selected.

Respondents also were asked if they were to provide "other" paratransit services, would they do so using the same vehicles used to provide ADA paratransit or different vehicles. Thirty-seven respondents answered this question. Of those responding, 35% indicated they would consider using the same vehicles, 3% indicated they would consider using different vehicles, and 16% said they did not know. Another 46% indicated the question was not applicable.

Out of the 47 respondents who indicated providing ADA service only, 43 indicated that they utilize some form of technology to provide service. Ninety-one percent of agencies indicated that they used scheduling and dispatching software. In addition, 33% indicated they used AVL technology, 33% used MDCs/MDTs, and 14% indicated using electronic recordkeeping and billing software.

Discussion

Assuming that the survey respondents are generally representative, at least of those in urban areas, the results indicate that transit systems that provide ADA-only paratransit service are in the minority. This finding was somewhat surprising, that is, the majority of transit systems **do** serve "other" paratransit rider types, particularly given that the focus of the transit industry since the mid-1990s has been on providing ADA complementary paratransit with ongoing concerns about funding, demand, and the ability to meet ADA regulatory requirements.

The survey was designed to include questions that captured basic information about those transit systems that currently serve only ADA riders and did serve "other" rider types in the past. Survey results show that the four most common types of rider groups formerly served include the following:

- Medicaid passengers
- "Other agency" funded passengers
- Non-sponsored older adults
- Non-sponsored persons with disabilities

Table A-8. ADA-only—factors that would enter into the decision to provide "other" paratransit service.

Factors	Number of Responses	Percent
Funding from City/County Council	12	52%
Funding from Agency/Program Sponsor	18	78%
ADA Capacity Constraints	16	70%
Regulatory/Policy Change	11	48%
Coordination Requirements	14	61%
Availability of Technology	4	17%
Demand for Service	18	78%
Insurance	4	15%
Other	1	4%

The primary reason cited for discontinuing the mixing of passenger types was, as might be expected, ADA paratransit capacity constraints. As the transit system worked to ensure that it could meet demand from ADA riders, it was apparently difficult to also ensure capacity and service for non-ADA riders, given available resources. The survey results indicate other reasons for the discontinuance, such as transit board and transit management decision and funding program changes.

References

Gerty, R. *TCRP Synthesis of Transit Practice 60: Practices in No-Show and Late Cancellation Policies for ADA Paratransit.* Transportation Research Board of the National Academies, Washington, DC, 2005.

APPENDIX B

Case Study Summaries

A primary focus of this project was to better understand whether and how fixed route transit agencies commingle ADA paratransit and other paratransit riders. In addition to the survey of transit agencies, case studies were selected by the TCRP Project B-34 panel based on a list of recommended case studies proposed by the research team. Full case studies were conducted at five sites (indicated with an asterisk "*") and 13 other transit agencies were interviewed by telephone or in-person for "mini" case studies.

- ACCESS Transportation Systems (ACCESS) in Pittsburgh, Pennsylvania
- Antelope Valley Transit Authority (AVTA) in Lancaster, California
- Chattanooga Area Regional Transportation Authority (CARTA) in Chattanooga, Tennessee*
- Delaware Transit Corporation (DTC) in Wilmington, Delaware*
- Intercity Transit in Olympia, Washington
- Jacksonville Transportation Authority (JTA) in Jacksonville, Florida*
- Kitsap Transit in Bremerton, Washington*
- Modoc Transportation Agency in Alturas, California
- Ottumwa Transit in Ottumwa, Iowa
- Pace Suburban Bus in Arlington Heights, Illinois
- Portage Area Regional Transportation Authority (PARTA) in Kent, Ohio
- Regional Transportation Program (RTP) in Portland, Maine*
- Southeastern Pennsylvania Transportation Authority (SEPTA) in Philadelphia, Pennsylvania
- Space Coast Area Transit (SCAT) in Cocoa, Florida
- The Rapid in Grand Rapids, Michigan
- Transit Authority of River City (TARC) in Louisville, Kentucky
- Votran in South Daytona, Florida
- Waukesha Metro (Metro) in Waukesha, Wisconsin

Case study results are highlighted below. The information gathered from the case studies was used throughout development of the Resource Guide.

ACCESS Transportation Systems (ACCESS)

Pittsburgh, Pennsylvania

Overview

ACCESS Transportation Systems (ACCESS) is a coordinated paratransit system sponsored by the Port Authority of Allegheny County (Port Authority), the transit provider in the Pittsburgh metropolitan area. ACCESS is a decentralized brokerage, with one entity under contract to the Port Authority managing the service as the broker and subcontracting with various providers in the area to provide day-to-day service. ACCESS is responsible for managing the brokerage and

coordinating the services. Transportation is available to the general public, but the vast majority of the riders are seniors and persons with disabilities. ACCESS also provides ADA paratransit service on behalf of the Port Authority.

Pittsburgh's history with coordinated service stretches back to the late 1970s, with ACCESS' start as a federal demonstration program testing the brokerage concept for specialized transportation in a large metropolitan region. After passage of the ADA, ACCESS also became the ADA paratransit provider for the Port Authority. ADA services were layered into the services ACCESS already provided, including service for the Allegheny County Area on Aging and Medicaid Non-Emergency Medical Transportation (NEMT).

Given the high level of coordination with a myriad of agencies now numbering more than 100, the ADA paratransit service comprises less than a third of the total ridership. Thus, ACCESS is not primarily an ADA paratransit service, nor do the requirements of the ADA drive ACCESS' services. Although the agency carefully adheres to the ADA requirements, and in fact has developed model ADA eligibility certification procedures, it is not first and foremost an ADA paratransit program, but a coordinated paratransit program that also provides ADA paratransit service. However, the addition of ADA service into the coordinated mix has improved the general level of service for all riders, including non-ADA riders, and also provides an operating structure for the overall program.

There are eight geographic parts of the ACCESS service area, with one provider designated as the primary provider in each area. ACCESS has developed detailed contracts for its service providers, structured to encourage effective and efficient service and competition among its service providers. The agency relies more on the "carrot" rather than the "stick" approach with its contractors, rewarding good performance, rather than penalizing poor performance. Each contract provider is responsible for trip reservations, scheduling, and dispatch for trips originating in its area. Riders call different providers to arrange their trips depending on where they live; there is *no single number* to call for trip scheduling.

Service and operating policies and parameters vary somewhat for ADA and non-ADA riders, ensuring that ADA mandates are met. For example, during peak periods, it sometimes happens that a small number of non-ADA trips are denied. Fares and service area also vary for the different rider types.

Eligibility for ACCESS is determined by the sponsoring program. ACCESS has developed a nationally recognized ADA eligibility determination process. Notably, ACCESS, through an arrangement with the Allegheny County Department of Human Services that provides funds for NEMT transportation, requires certain Medicaid eligible clients to go through the ADA eligibility certification process. This arrangement was implemented in 2004. Prior to that, Medicaid eligible riders needing transportation were given a choice as to type of transportation, including a subsidized gas card, a pass for riding fixed route transit, or ACCESS door-to-door service. Many choose the convenience of door-to-door service. Under the current agreement with the Department of Human Services, Medicaid eligible individuals who request door-to-door service go through ACCESS' ADA certification process to determine if they are able to ride fixed route. This approach transitioned almost 21,000 trips to fixed route service in fiscal year 2006, representing an actual saving of close to $500,000 for that year.

The largest component of ACCESS' operating budget come from Pennsylvania's lottery funds, which subsidize transportation for all adults 65 years of age and older, constituting 38% of FY 2006 operating funds. The second largest component comes through the Port Authority for the ADA services—37% of total funds. Remaining funds come from the human service agencies that sponsor trips, at 17% of the total, and 8% comes from passenger fare revenues.

With the size of the service and high degree of coordination that ACCESS achieves, there have been situations where the mixing of different rider types on the same vehicle has caused problems, for example, when there are serious behavior issues of certain riders. In such cases, ACCESS takes steps to mitigate problems by separating riders onto different vehicles, if necessary. ACCESS has the resources and flexibility to take such action when this is necessary and appropriate and sees this as a common sense approach to coordination. Importantly, ACCESS educates its riders as to the benefits of ride-sharing, particularly those benefits that result in a higher level of service and lower fares.

Lessons Learned

Mixing different rider types on the same service and on the same vehicles is a practice with a long history in Pittsburgh that underlies Pittsburgh's highly regarded coordinated paratransit service, which is well-accepted by the community. The approach to coordination and rider commingling was already developed and refined for many years before the passage of the ADA. When the ADA was implemented, it was not a major undertaking to roll ADA service into the ACCESS mix, although certain policies and procedures were modified to ensure ADA regulations were met, for example, the requirement for booking next-day service.

The addition of ADA paratransit into the ACCESS coordination mix has generally increased the overall level of service, improving paratransit service for all riders, including non-ADA riders. That the other agencies involved with ACCESS have continued to participate and to fund trips that are now somewhat more expensive, given the higher level of service caused by ADA's requirements, is testament to ACCESS's success, as well as the availability of funding.

It is important to recognize the large role that the Pennsylvania lottery funds play. This particular funding source subsidizes all trips for adults 65 years of age and older on ACCESS, contributing more than $12 million in fiscal year 2006.

Antelope Valley Transit Authority (AVTA)

Lancaster, California

Overview

The Antelope Valley Transit Authority (AVTA) is a Joint Powers Authority (JPA) created in 1992 by the cities of Lancaster and Palmdale and the County of Los Angeles to provide public transportation in the Antelope Valley, a large region in northern Los Angeles County. AVTA provides local fixed route and demand response service for adults over 65 and persons with disabilities, as well as commuter service to downtown Los Angeles, more than 60 miles distant. All transit services are operated by a private contractor. Access Services, Inc., (ASI) is a private, non-profit entity that provides ADA paratransit service in Los Angeles County on behalf of the numerous fixed route operators in Los Angeles County and is the broker providing AVTA's ADA complementary paratransit services.

In 1996, AVTA began providing ADA paratransit service in the Antelope Valley on a contract basis for ASI. This arrangement, worked out cooperatively between AVTA and ASI, built on the demand response service already being provided by AVTA in its region. This seemed a cost-effective approach, with AVTA adding ADA paratransit service onto its already established demand response service, gaining service efficiencies in its relatively self-contained part of the county, and allowing ASI to concentrate on providing ADA paratransit service in the remaining portions of vast Los Angeles County.

ADA paratransit ridership demand grew at a fast pace. By 2000, ADA ridership constituted 17.7% of AVTA's total demand response ridership. By 2003, ADA ridership was 33% of total

demand response ridership, and by fiscal year 2005, the last full year of the arrangement, ADA ridership had grown to almost half (47.1%) of AVTA's demand response ridership. To meet ADA prohibitions of capacity constraints, it became increasingly necessary for AVTA to reschedule or turn down trips already scheduled for non-ADA riders, leading to complaints by the non-ADA riders. These complaints and the fact that the AVTA Board did not want to expand transit service resulted in the decision to terminate the relationship with ASI. AVTA had kept ASI apprised of the situation, including the growing problems with demand, so ASI was not surprised by AVTA's decision. In October 2005, ASI took back responsibility for ADA service provision, contracting with a different provider for ADA service in the Antelope Valley.

Lessons Learned

Commingling the Los Angeles County ADA service with AVTA's local demand response service appeared to be a good idea at the outset; one that had the potential to lead to cost efficiencies. But in practice, given the growing demand for ADA service, the requirement that such demand had to be met, the constrained capacity of AVTA's demand response service, and the fact that ADA service was the ultimate responsibility of another county entity with its own funding base, the decision was made to return service responsibility to ASI. While AVTA service operates more smoothly without the commingled ADA component, AVTA noted that the existence of two different demand response services in its area probably introduces some complications for riders who are eligible for both types of service.

Chattanooga Area Regional Transportation Authority (CARTA)

Chattanooga, Tennessee

Overview

Chattanooga has a long history of providing public transportation, dating back to 1875 when horse-drawn trolley cars first appeared on Market Street. By 1889, electric streetcars replaced the horse-drawn trolleys. The streetcars as well as motor buses were operated until Southern Coach Lines assumed control and discontinued the streetcar line at the end of World War II. In 1973, the City of Chattanooga purchased Southern Coach Lines and created the Chattanooga Area Regional Transportation Authority (CARTA). CARTA now operates fixed route bus service, the Lookout Mountain Incline Railway, the Downtown Electric Shuttle, and Care-A-Van, which is the ADA paratransit service for people with disabilities. In addition to its diversified array of services, CARTA is known for its use of transit intelligent transportation systems (ITS) technologies.

From 1979 to 1993, CARTA purchased demand response services from Easter Seals Transportation Service, which provided a variety of demand response trips for different funding sources. In 1993, the demand response operation was brought in house and CARTA assumed responsibility for operating the service, with a focus on providing ADA paratransit service. Although it primarily provides ADA paratransit service, just prior to the site visit in 2007, CARTA began providing selected Medicaid Non-Emergency Medical Transportation (NEMT) through a contract with Blue Cross. Eligible riders would be assigned to CARTA by TennCare, the state agency that is responsible for managing the Medicaid program in Tennessee. These customers were also eligible for ADA service, making it possible to charge Medicaid for transportation services that might otherwise have been billed as ADA. At the time of the interview, CARTA was considering adding other similar contracts to provide subsidized rides.

Lessons Learned

Although CARTA was just embarking on this new commingled service with TennCare, there were several lessons learned suggested by staff. First, make standard operating procedures

consistent for all contract types. This effort will make it easier to provide consistent service to a variety of rider types and makes internal management easier. The manager also mentioned the importance of being sure that recordkeeping and billing information can be formatted to interface with other contract requirements, particularly Medicaid and other programs that may require specific information by rider that is beyond what is typically collected by a transit agency.

Delaware Transit Corporation (DTC), D/B/A DART First State

Wilmington, Delaware

Overview

The Delaware Transit Corporation (DTC) is a division of the Delaware Department of Transportation (DelDOT), serving the entire state of Delaware with fixed route and paratransit service, as well as commuter rail service in the northern part of the state.

DTC was created in 1995 to manage and operate the various transit programs in the state, merging fixed route service in the northern Delaware/Wilmington area; paratransit service in the southern part of the state, originally called DAST (Delaware Administration for Specialized Transport); resort transit service operating summer months in the beach communities; rail service in the northern part of the state; and commuter bus service in the urban areas. This merger also included a name change to DART First State.

This merger brought the different paratransit operations together into one service: from the north, DTC gained the ADA complementary paratransit requirement for the Wilmington area fixed route service; and from the south, DTC took over DAST, a long-established paratransit program serving elderly and disabled riders in the southern, more rural part of the state. With the merger, the State determined that it would continue to serve seniors as well as riders with disabilities.

The evolution of paratransit rider commingling continued. In 1997, dialysis trips were brought into the paratransit mix when the state legislature determined that any resident undergoing dialysis treatment would be eligible for ADA paratransit, regardless of whether they met the ADA criteria. In about 2003, Medicaid trips were also added when DTC began providing some Medicaid trips on behalf of the statewide broker on a contract basis.

Paratransit ridership grew over the years, and it became increasingly difficult to meet demand from seniors, particularly in the northern part of the state. DTC developed several strategies to meeting this challenge. First, it ensured that all senior centers and other agencies serving seniors in the state had access to a vehicle through the Sec. 5310 funds. Second, DTC became very proactive in ensuring its fixed route service was accessible to seniors, with a strong focus on travel training. Third, DTC introduced services that improved the productivity of paratransit, focusing particularly in the more rural parts of the state.

Funding has been a challenge; DTC uses federal and state funds for paratransit. The original decision to add dialysis transportation to the paratransit mix was accompanied by a modest amount of state funds; however, this funding did not continue in subsequent years, while needs for the service continued to grow.

Lessons Learned

Given its experience, DTC staff recommends that any organization interested in commingling paratransit riders sponsored by different programs clearly differentiate among the programs, so

that riders are clear as to which program is theirs and exactly what their eligibility provides. Identifying and "branding" the different services and then ensuring that riders know *which* service they are entitled to, once eligible, will help the riders understand the transportation services that they can use. Unless this is made clear at the outset and reinforced over time, riders may, understandably perhaps, assume that they are entitled to *all* the services that are operated by the commingling transit agency.

DTC's experience also shows the importance of developing relationships with the various other agencies that serve paratransit riders. While establishing such relationships with, for example, the state agency responsible for Medicaid, is likely easier when the transit system is also a state agency (as is DTC), it is nonetheless important to develop relationships with those other agencies whose missions intersect with that of the paratransit system.

Intercity Transit

Olympia, Washington

Overview

The Thurston County Public Transportation Benefit Area (Intercity Transit) was formed as a Public Benefit Authority in 1981 to serve the cities of Lacy, Olympia, and Tumwater in Washington State. Services currently provided include 22 fixed routes, Dial-a-Lift service for customers unable to use fixed route service (ADA complementary paratransit service), the Village Van service for welfare-to-work recipients, and a Car Pool program.

When Intercity Transit started operating paratransit for people with disabilities, Dial-a-Lift was operated in house and no other demand response services were offered. With passage of the ADA in 1990, the Dial-a-Lift operation took on its present form and in 1993 a new program called "Custom Bus" was started. This program was a general public dial-a-ride service and was also operated in house. The Custom Bus service ran later into the evening and may have been operated on separate vehicles. Dispatching trips for Custom Bus was handled by the Dial-A-Lift office. Riders were commingled with ADA passengers, and the manager maintained a separate count of passengers to report to the FTA. In addition to providing service for Custom Bus riders, Dial-A-Lift vans met fixed route buses at the transit centers, and picked up Custom Bus riders needing rides from the transit center to their final destination. Because of cuts in state transit funding, the Custom Bus service ended in 2000.

From 2000 to 2002, only ADA complementary paratransit services were provided by Intercity. In 2002, using Job and Access/Reverse Commute (JARC) funds, the Village Van program was created, housed within the Development Department. Service is provided on separate vehicles, using drivers who are participants in the JARC program.

Service policies for each program are different and each program has its own marketing and public information materials, although each program is managed using the same paratransit scheduling and dispatching software. However, since the databases for each program are separate, there are no concerns over privacy regarding client information.

Lessons Learned

Intercity Transit reported that it found commingling passengers to be difficult because of the differences in the program requirements for the Dial-a-Lift (ADA complementary paratransit service) and the Village Van (JARC) service. They indicated that the decision not to commingle ADA and JARC riders was not influenced by previous experience with the Custom Bus program.

Jacksonville Transportation Authority (JTA)

Jacksonville, Florida

Overview

The Jacksonville Transit Authority (JTA) serves the City of Jacksonville and all of Duval County. The city and county governments were consolidated in 1968, making Jacksonville the largest city in the country in terms of land mass, at 840 square miles. Formed in 1971, JTA is a multimodal transportation authority that provides public transportation services and is also responsible for developing and improving the local, state-, and city-owned roadways and bridges.

In Florida, transportation services for seniors, people with disabilities, low-income individuals, and others identified as "transportation disadvantaged" (TD) are coordinated through the state's Commission for the Transportation Disadvantaged (TD) program. The TD program requires that each county identify a Community Transportation Coordinator (CTC) to be responsible for coordinating all publicly funded transportation for those who are transportation disadvantaged. Partial funding is provided by the state TD Trust Fund.

In 2001, the TD Commission designated JTA as the CTC for Jacksonville/Duval County. Prior to 2001, a private entity under contract to the city/county functioned as the CTC for Duval County. This entity was responsible for coordinating ADA paratransit service as well as Medicaid Non-Emergency Medical Transportation (NEMT), and other specialized transportation services including the TD program. As a result, service was already commingled when JTA took over in 2001.

While JTA's paratransit program continues to mix its ADA riders with non-ADA riders, there has been a significant "un-mingling" of one of the transportation services at JTA. Starting in August 2006, JTA determined that it would no longer provide NEMT service because of inadequate funding for the service. NEMT is now provided by a private company serving as the Medicaid transportation broker.

Funding for JTA comes from several sources. The ADA service is funded through JTA's operating budget, which includes an annual appropriation from the city/county. The TD service is funded through the state's TD Trust Fund, which until recently was sufficient to reimburse JTA for all its TD ridership. Finally, a small portion of the service is funded by several participating agencies whose clients are transported by JTA. These human service agencies have entered into Memoranda of Understanding (MOUs) with JTA, agreeing to reimburse JTA for the cost of their sponsored trips.

Cost savings have been realized as a result of commingling on JTA vehicles. If an applicant is determined to be ADA eligible but lives outside the ¾ mile ADA service area or needs to travel beyond the ADA service area, JTA staff can determine if the rider is also eligible for the TD program. If so, that person can use the paratransit service to travel throughout Duval County. Such trips are then billed to the TD program. If an individual is ADA eligible but does not meet the requirements for TD, that rider can travel only within the defined ADA service area. This same approach was also used when JTA provided Medicaid transportation; that is, if a rider was eligible for both ADA and Medicaid, when that rider took a Medicaid eligible trip, the trip was billed to the Medicaid program at the established rates; otherwise it was considered an ADA trip.

JTA has a sophisticated computer assisted scheduling/dispatch (CASD) system, and mobile data terminals (MDTs) and automatic vehicle location (AVL) devices were installed in 2006. The CASD system has facilitated the use of a fare structure that varies by distance, as the system computes the appropriate fare depending on the type of rider, trip distance, and JTA's trip billing process.

Lessons Learned

JTA's experience shows that commingled paratransit service can work well, as long as funding is available to support the various programs beyond ADA. JTA's experience with the Medicaid NEMT program reflects the difficulty in sustaining transportation services for a program that has withdrawn significant funds for its provision. JTA provided Medicaid transportation as part of its commingled mix from the time it became the CTC in 2001 until August 2006. The Medicaid program was billed for all Medicaid trips provided by JTA through the agency's grid-based method. However, when the funding for Medicaid transportation was significantly reduced, the transportation agency decided to end its formal relationship. Experience has further shown, however, that some Medicaid eligible riders continue to use the JTA paratransit program for Medicaid eligible trips. The difference, however, is that JTA can no longer bill Medicaid for those trips, but absorbs the costs for those trips from its operating budget.

Kitsap Transit

Bremerton, Washington

Overview

Kitsap Transit was created in the early 1980s as a Public Transportation Benefit Area. It subsequently purchased the assets of a private provider, Kitsap Community Resources, which was providing fixed route service in Bremerton, and expanded the service to other small cities in Kitsap County. Kitsap is a multimodal service provider with fixed route, ADA paratransit, public Dial-a-Ride, ferry service, as well as Vanpool, VanLink, and worker/driver programs. All services are provided directly by Kitsap Transit and are not outsourced. Supplemental taxi service is used as needed, but it is a small part of total service.

Initially, Kitsap contracted with Paratransit Inc., an existing non-profit provider, to provide all ADA service. At that time, Paratransit Inc. was also providing up to 80% of Medicaid NEMT trips in the county. Later, Kitsap made the decision to bring ADA paratransit in house, including call-taking, scheduling, dispatching, and operation. It called the program ACCESS.

Around the same time that paratransit service was brought in house, general public Dial-a-Ride services began, largely as a result of residents inquiring as to how they could ride the ACCESS vehicles. In response, Kitsap Transit set up public Dial-a-Ride service in areas where fixed route was not feasible, given lower levels of trip demand, population density, and size of the particular service area. The general public program was operated as part of ACCESS Services.

The service policies vary slightly between the ACCESS program and Dial-a-Ride program, including differences in service area and hours of service. Also, no application is required to use the Dial-a-Ride program, while use of ACCESS requires ADA certification. The fares for both programs and the VanLink program (described below) are the same, so there is no incentive or disincentive for riding with one program or another.

In 2000, Kitsap Transit developed VanLink as part of ACCESS Services. VanLink vans are provided to social service agencies to provide service to ACCESS eligible passengers. When needed, ACCESS has requested that the agency running a VanLink vehicle add an ACCESS rider to its run if the trip could be accommodated by that vehicle. In this way, service can be provided to an ADA eligible passenger without allocating existing ACCESS vehicles to provide the trip.

Kitsap Transit also operates a Vanpool program as part of "routed" or fixed route services. As with VanLink, Kitsap Transit may ask the Vanpool to pick up an ACCESS client if that is an acceptable alternative. Again, this allows the provision of an ADA eligible trip without the need to use ACCESS service resources.

Lessons Learned

According to Kitsap staff, the major lesson learned was that open and ongoing communication with agencies and employers about the need to coordinate transportation with work schedules is essential. Kitsap also indicated that it tries to take a practical approach to meeting the transportation needs of their customers. It was mentioned several times during the visit that Kitsap Transit tries to find a solution that makes the most sense to provide the needed transportation to the customer.

Modoc Transportation Agency

Alturas, California

Overview

The Modoc Transportation Agency, known as the "Sage Stage," is the public transportation provider in Modoc County, California. The agency, a Joint Power Authority between the County of Modoc and City of Alturas, began providing transportation service in 1999. Day-to-day service is operated on a contract basis by a private transportation company.

Modoc County is a rural county, located in the far northeastern corner of the state of California. The county, situated on a high desert plateau, has small, dispersed communities, the largest of which is Alturas, with a population of 2,800.

Modoc County began its public transportation program in January 1999, providing intercity and demand response transportation services. Known as Dial-A-Ride, the demand response service is open to all riders, including riders with disabilities who are considered ADA riders and provides a higher level of service and discounted fares.

When Modoc County's primary local transit funding, which comes from the state's Transportation Development Act (TDA) program, was reduced substantially, the Executive Director approached the county's key human service agencies, whose clients relied on the transportation service, and suggested that they could help maintain transit service with financial contributions. Most of the half dozen agencies that were approached provided a lump sum payment, ranging from $5,000 to $65,000. In addition, these agencies subsidize transit service for their clients, providing vouchers for them to ride transit, for which they later reimburse the transportation agency at rates established by the fare structure. Under these arrangements with the local human service agencies, Modoc County's transportation agency is committed to commingling all types of riders on its demand response service.

Although the annual subsidy amounts paid by the contributing human service agencies are not guaranteed, and not all agencies provide a subsidy each year, these local contributions are a significant source of the agency's operating budget. In a year with generous contributions, the annual subsidy funds from the human service agencies constitute as much as one-third of the agency's operating funds.

Lessons Learned

The successful commingling of the various rider types on the Modoc County Transportation Agency's demand response service results in large part from the entrepreneurial ability of the agency to ensure funding from the key local human service agencies in the county whose clients ride the service. The rural nature of Modoc County also contributes to successful commingling. In the large and very rural area, the transportation agency is the only transportation option available and it "does what it takes" to provide the needed transportation and to get the different riders to their various destinations. On occasion, this may mean that the driver has to revise his

prescheduled manifest on the fly when there are riders on the vehicle who should not be riding together at the same time.

Ottumwa Transit Authority (OTA)

Ottumwa, Iowa

Overview

Ottumwa Transit Authority (OTA) was created by voter referendum in 1972 as a unit of municipal government and is considered an enterprise fund. Currently, Ottumwa Transit provides general public fixed route service, general public dial-a-ride (Ten-Fifteen), ADA service (OTA Lift), and JARC transportation. Collectively Ottumwa Transit, OTA Lift, and Ten-Fifteen Transportation serve 11 different school districts, Head Start, and Sheltered Workshops in 9 out of the 11 counties in the service area.

OTA started serving people with disabilities in 1982, under Section 504 regulations. At the time that OTA was created, lift-equipped vehicles were purchased for use on all fixed routes. No paratransit service was provided until the passage of the Americans with Disabilities Act.

The OTA Lift program was created in 1992. At about the same time, Ten-Fifteen Transit was also created to serve the transportation needs of residents of the outlying counties who were not eligible for service under the ADA requirements. Passengers of both programs were commingled on paratransit vehicles to maximize vehicle utilization. Other factors that influenced the decision to commingle were the large size, rural nature, and low population density of the service area.

Except for hours of service and reservation hours, service polices for all programs are the same, although general public riders do not need to fill out an application for service. Paratransit scheduling and dispatching software is used to operate all service. Given the long trip distances and the rural nature of the service area, staff tries to coordinate as many rides as possible on each vehicle.

Lessons Learned

OTA indicated that commingling trips taught them two things. First, it is important to make sure that all partners understand that coordination is the key to the effective provision of service. Second, all partners must understand that when solving a transportation problem, it is important to look to solutions that make sense. For example, all OTA services are commingled in order to maximize vehicle usage.

Pace Suburban Bus

Arlington Heights, Illinois

Overview

The Regional Transportation Authority (RTA) was created in 1974 by state legislation and is responsible for financial oversight and regional planning for a six-county area in Northeastern Illinois, which includes Cook County and the City of Chicago. RTA is also responsible for administering the ADA paratransit eligibility determination process and providing travel training. Three service boards operate transit service in the region: Pace, Chicago Transit Authority (CTA), and Metra. Pace is responsible for providing suburban bus service throughout parts of Cook, DuPage, Kane, Lake, McHenry, and Will counties, as well as into Indiana; CTA operates bus, subway, and elevated services in Chicago and some nearby suburbs; and Metra operates commuter rail service throughout the region.

In addition to providing ADA paratransit service in its own service area, as of July 2006, Pace became responsible for providing all ADA paratransit and overseeing the Taxi Access Program service for the CTA service area. Within the city of Chicago, Pace oversees ADA paratransit service operated by three private contractors. In Chicago, the service is ADA-only and riders are not commingled with other non-ADA riders. However, outside the Chicago ADA paratransit service area, demand response service is provided through some 70 paratransit/dial-a-ride (DAR) programs under a variety of contract arrangements including contracts with private operators, brokering service to contract operators, and directly operated services. Some DAR services commingle ADA and non-ADA riders; others are open to the general public, while other DARs focus on serving seniors and/or people with disabilities. ADA service is provided within the ¾-mile service area on either side of fixed route service; however, dial-a-ride service areas vary depending on the funding source. Most reservations are made one day in advance, although some dial-a-ride programs allow reservations to be made up to a week in advance. Fares vary among the programs, as do service hours and days.

Lessons Learned

There are many coordination lessons to be learned from this complicated region. Pace views itself as a service operator more than a policy-making entity. When opportunities arise to commingle customers and avoid duplication of service, they will work with local entities to operationalize those decisions. In particular, Pace staff said that developing standard operating policies and procedures for hours/days of service, fares, reservations, and so on would make it easier for riders to use commingled services and make it easier for operators to provide service. Standardizing service would also help to simplify invoicing. For example, currently some projects are billed based on the number of trips provided, while others are calculated based on revenue hours or miles of service. Further, because different performance measures are used to monitor service, it makes it difficult to mesh program requirements.

Developing passenger information and the ability to provide it in a centralized manner is important. Staff noted that while all of the paratransit/DAR services Pace providers are listed on its website, there is a need for more centralization of information, at least at the county level.

Finally, Pace advises transit agencies to be cautious about demonstration projects with limited funding and uncertain sustainability. With multiple players, it is important that service sustainability factor into all decisions to start new and commingled service; taking away a program can be difficult both for riders and operators.

Portage Area Regional Transit Authority (PARTA)

Kent, Ohio

Overview

In the mid-1970s, Kent State University started a campus bus service, primarily providing service to the Kent State campus and students, with some fixed route service in the surrounding community. In 1992, in order to access federal funding for the purchase of vehicles, the university created the Portage Area Regional Transit Authority (PARTA), a regional transit authority with 501(c)(3) non-profit status. PARTA started out by providing the human service transportation in the community to agencies such as the Office on Aging and the Office of Mental Retardation and Developmental Disabilities. Initially, neither Kent State nor PARTA provided ADA complimentary paratransit service.

In the late 1990s, Kent State decided that, given federal requirements, it would cease operating fixed route service outside of the campus. Fixed route service and the requirement for ADA

complementary paratransit service was turned over to PARTA, along with three buses that had been purchased with federal funds.

ADA service was added to the existing non-ADA transportation program with little noticeable impact. For the most part, service policies are the same for all services, although there are some differences with regard to eligibility, days and hours when reservations can be made, and days and hours of service. PARTA provides all services using its own vehicles and employees, and paratransit trips are provided using the same vehicles for all programs. A paratransit scheduling and dispatching software program is used to manage service and data are kept in one database. According to PARTA staff, most applicants prefer to register and ride under the non-ADA programs when possible, due to the fact that the ADA service area (strictly defined as the ¾-mile corridor around fixed route service) limits the destinations that a passenger may travel to, since the non-ADA service encompasses the entire county.

Lessons Learned

Funding for non-ADA trips was a particular issue for PARTA. At the time of the interview, PARTA had a dedicated funding source—a 0.25% sales tax levy. However, funding from its non-ADA funding partners (including the Office on Aging and Office of Mental Health/Developmental Disabilities) had either remained the same or had been reduced for the upcoming fiscal year, although the expectation of providing the needed trips remained. As a result, PARTA noted that this has placed a heavier burden on the dedicated funding available since there is no requirement for the agencies sponsoring trips to pay for their portion of trips.

Regional Transportation Program (RTP)

Portland, Maine

Overview

The Regional Transportation Program (RTP) is a private, non-profit agency that was created in 1976. It is located in Portland, Maine, and provides service to all of Cumberland County. The RTP was originally formed by combining the transportation services provided by three different organizations: the Portland Chapter of the American Red Cross, York Cumberland Senior Services, and Social Services of the Greater Portland Transit District.

The history of coordinated services in the Cumberland County-City of Portland area began in the 1970s when a state law mandating coordination was passed. Prior to the passage of this legislation, three agencies, the Red Cross, Cumberland Senior Services, and Social Services of the Greater Portland Transit District provided paratransit services. The Maine Department of Transportation (Maine DOT) designated RTP to coordinate paratransit service for eligible participants of various health and human services agencies and the Maine Department of Human Services required its agencies to work with RTP in the provision of paratransit service. Service was provided "in house" by RTP, including a volunteer driver component.

With the passage of the Americans with Disabilities Act (ADA), RTP also became the ADA complementary paratransit provider, under a contract with the cities of Portland, South Portland, and Westbrook. The ADA riders were added to existing service with little apparent effect on operations. Service was provided using existing resources, vehicles, and volunteer drivers, although policies were put into place to ensure that ADA service met the regulatory requirements (e.g., providing previous day reservations for ADA service, versus two-day advance reservations for all other services).

Currently, the ADA service component makes up only a small part of the total services provided by RTP. MaineCare, Maine's Medical Assistance Transportation Program, is the largest source of funding and passengers.

Customers from all programs are commingled on paratransit vehicles and service policies are generally the same for all programs operated by RTP. They describe the eligibility process as "layered" due to the number of different programs served. The one basic requirement for eligibility is that the rider must be a Cumberland County resident.

Lessons Learned

RTP indicated that commingling riders presented both lessons and challenges. An important lesson RTP learned was that transporting non-ADA riders helped to stimulate other funding partners (although this lesson may be more applicable to non-profit providers than transit agencies). Additionally, commingling riders lends itself to increasing productivity by adding multiple riders to existing runs.

The primary challenge in commingling is in dealing with the bureaucracy and lack of coordination among agencies at the state level. As an example, at the time of the site visit, RTP had four mileage reimbursement rates, depending on the particular funding program. Another ongoing challenge is looking for other modes of transportation to add to the mix of transportation modes currently offered.

RTP indicated that the use of paratransit scheduling and dispatching software has been beneficial in categorizing trips by funding source or program and, therefore, has been helpful in the billing process. However, RTP noted that the use of technology has not helped with the scheduling of rides as much as was anticipated.

Southeastern Pennsylvania Transportation Authority (SEPTA)

Philadelphia, Pennsylvania

Overview

The Southeastern Pennsylvania Transportation Authority (SEPTA), based in Philadelphia, is the fifth largest public transit operation in the country, providing transportation in a five-county region including Philadelphia, Bucks, Chester, Delaware, and Montgomery counties. SEPTA operates fixed route bus, trolley, commuter rail, and subway-elevated service throughout the region. Additionally, SEPTA administers the provision of demand response paratransit service through Customized Community Transportation (CCT Connect), formerly SEPTA ParaTransit.

CCT Connect includes two types of service: ADA paratransit service, provided in all five counties; and Shared-Ride Program (SRP) service for senior citizens in Philadelphia County only. The same vehicles are used for both services. The average total monthly ridership is about 138,000, with roughly an even split between SRP and ADA eligible individuals. SEPTA manages the eligibility determination process for both programs.

The SRP is funded by the Pennsylvania Lottery and administered by Pennsylvania Department of Transportation (PennDOT). The Lottery program pays for 85% of SRP trip costs, with customers or their sponsors paying the remaining 15% (currently $4), which is the same fare paid by ADA paratransit riders.

The Philadelphia SRP was added to SEPTA ParaTransit in 1992. In the four suburban counties, SEPTA provides ADA paratransit service only, using contract carriers. SEPTA schedules and dispatches service, which is provided in SEPTA-owned vehicles using contracted drivers. In Chester and Delaware counties, the suburban providers use their own vehicles to transport SRP and other customers under separate non-SEPTA contracts.

SEPTA also oversees the carriers, provides centralized driver training, and directly manages the reservation, scheduling and service monitoring functions for Philadelphia, Bucks, Chester, Delaware, and Montgomery counties. The private carriers are responsible for hiring and supervising drivers, maintaining vehicles, and providing rides to customers as well as training drivers. Riders will soon be able to use an interactive voice recognition (IVR) system to schedule, verify, and cancel trips.

Lessons Learned

SEPTA was asked to take over provision of the Philadelphia SRP service as a result of service problems with the previous contractor. Customers from both programs had concerns about being mixed together and SEPTA conducted numerous meetings to explain the service changes and assure both sets of riders that the transition would go smoothly. SEPTA negotiated a long transition period with PennDOT to ensure that service would be provided without disruption.

The service transition was coordinated over nearly a year, which allowed for a systematic hand-off of passenger eligibility information, subscription trip information, and reassignment of carrier contracts. Service delivery was also made easier by adopting the same operating policies and procedures for both programs and by commingling customers on the same vehicles. Because the SRP pays 85% of the cost of providing transportation for individuals aged 65 and older, SEPTA allocates trips between the SRP and ADA paratransit programs based on age, helping to reduce the cost to the agency of providing ADA paratransit service. Furthermore, recent improvements in the scheduling and dispatching software have made it easier to manage trips and have enhanced recordkeeping.

Space Coast Area Transit (SCAT)

Cocoa, Florida

Overview

Space Coast Area Transit (SCAT) is located in Cocoa, Florida, and serves Brevard County, part of the Palm Bay–Melbourne Metro area located on the Atlantic Coast, 76 miles southeast of Orlando. The County is approximately 1,000 square miles and home to the Kennedy Space Center and Patrick Air Force Base.

SCAT traces its origins to two separate entities, both created in 1974, to serve the population of Brevard County. Taking advantage of increased federal support for transit, the Brevard Transit Authority (BTA) was created. The goal of BTA was to provide service throughout the county; however, the Brevard County Board of Commissioners and the municipalities in the central and northern areas of the County declined to participate. As a result, BTA served only the southern half of the county, providing fixed route service, with some contracts to provide door-to-door service for various social service agencies.

At the same time, the Brevard County Board of Commissioners set up a transportation system called CATS, the Consolidated Agencies Transportation System, as a county agency under the Board of Commissioners. The system was made up of several non-profit agencies that operated transportation services such as the Area Agency on Aging and the local Association for Retarded Citizens (ARC). CATS' mission was to provide service to senior citizens for medical, shopping, and congregate meal services, as well as providing service to economically disadvantages people for medical trips. Since CATS had financial support from a number of sources, the cost to the County was minimal and there were no fares charged. Subscription service transportation for agencies was provided in the morning and afternoon and demand trips for seniors were provided midday.

Between 1974 and 1983, there was very little cooperation between BTA and CATS. In 1983, during an update of the area's Transit Development Plan, a two-year cooperative demonstration project was recommended. By October 1984, it was apparent that the project was succeeding and at the end of September 1985, the services were combined and SCAT was created to meet the needs of the seniors and people with disabilities.

Initially, SCAT service was provided on a demand response basis; it was not until 1991 that fixed route service was initiated. With the passage of the ADA, SCAT was required to provide ADA complementary paratransit service. The service is provided on the existing paratransit fleet. The Transportation Disadvantaged (TD) service area includes all of Brevard County, while the ADA service area encompasses only the ¾-mile corridor around fixed route services, a significantly smaller service area. The primary difference between ADA service and Paratransit service is that there is no eligibility required for Paratransit service. SCAT is responsible for the application process for ADA service. A person who rides under the Transportation Disadvantaged (TD) program must go through the ADA eligibility determination process in order to receive higher-level ADA service.

In 1985, SCAT took over the Vanpool Program started by BTA and subcontracted the service to VPSI. Since then, the program has grown from six to more than 100 vehicles. SCAT purchases the vehicles and leases them to VPSI; VPSI then subleases vehicles to human service agencies or commuters. The vans are leased at a flat rate that includes maintenance, insurance and administration. Agencies are able to provide a higher level of subscription service to their clients than SCAT paratransit service could provide. Agencies participating in this program may work together to help each other provide client transportation services, but there is no formal mechanism for doing this.

SCAT directly provides service, called "contracted routes," for some human service agencies. This service is demand response service using 30-foot buses. The agencies purchasing the service are responsible for eligibility determination and providing schedules to SCAT.

A fourth program, Volunteers in Motion, was started in 1996 and provides service to those senior citizens considered "frail or elderly" who are living independently. The program is provided in cooperation with the local Area Agency on Aging (AAA). SCAT provides the vehicles for use in the service. When the program started, the riders were required to be receiving other supportive services from the AAA. The Volunteers in Motion program is now a separate service within the AAA and the riders do not need to be receiving other services in order to receive transportation through the volunteer program.

SCAT leverages its TD funds by directing paratransit passengers to the TD program, which allows for greater mobility for SCAT customers. In addition to the local TD funds, SCAT also receives state operating funds, federal operating funds, and has a contract with the Department of Children and Families for workshops.

Lessons Learned

According to the transit director, there are two lessons learned from the Brevard County experience related to commingling. The first is that you tend to do what makes sense to get the job done. For example, for service to the VA clinic, Paratransit will provide service to a secure transfer point so that if able, the customer can take fixed route for part of the trip to the clinic. The second lesson is that there are still some "territorial" issues with riders, who may be sharing rides: the "it's my bus" syndrome. In the case of senior riders, it appears to be a matter of security or safety when dealing with different passengers.

The Rapid

Grand Rapids, Michigan

Overview

Grand Rapids is located in Western Michigan and is the fourth largest population center in the state. The Rapid, formerly Grand Rapids Area Transit Authority, is organized under Michigan Act 196 of 1967. As an authority organized under this act, it has the power to pass and levy a millage on property tax to support services. This authority does not extend to the entire county but provides fixed route and paratransit service in the following municipalities: Grand Rapids, Wyoming, Kentwood, East Grand Rapids, Walker, and Grandville. Paratransit service is also provided, under contract, to Ada, Alpine, Byron, Cascade, and Gaines townships. Paratransit service is provided by one contract operator.

Prior to the passage of the ADA, paratransit service was provided for people with disabilities and for seniors (65 years of age and older). The service policies were the same; however, senior riders paid a higher fare than the passengers with disabilities. With passage of the ADA, the demand response system was named Go!Bus, which provided advanced reservation, door-to-door service for people age 65 and older or who qualify for ADA paratransit service.

In 2000, with the passage of the first millage, a new program called Passenger Adaptive Suburban Service (PASS) was started. This service, initially designed as a deviated fixed route, was designed to facilitate access to bus routes for customers who were unable to access the nearest bus stop. Initially the service was provided separately by fixed route drivers. However due to the cost of the service, the program was made demand responsive. When this change occurred, service for PASS riders, Go!Bus riders, and senior riders were combined onto the paratransit fleet. However, in early 2004 the operators Union brought an action stating that it did not have the opportunity to bid on the PASS service. A settlement agreement was reached in which it was agreed that the Union would operate the PASS service during the evenings and weekends.

In 2004, a transportation program funded by the Job Access and Reverse Commute (JARC) program called County Connection was created. JARC service was provided by the contracted carrier and by cab companies using separate vehicles. Service is available 24 hours a day. In an effort to better utilize vehicles and to promote on-time performance, the County Connection service began commingling riders with other paratransit service. For example, if a Go!Bus vehicle is running late and a County Connection vehicle is available, the County Connection vehicle will be sent to assist; or if a County Connection vehicle is running late a Go!Bus vehicle will be dispatched to assist. Cabs provide holiday and midnight to 6:00 a.m. service for County Connection service.

There are differences in service policies among the three programs. Eligibility requirements also vary among passenger types. The service areas for each program are different and fares are markedly different, ranging from $2.60 for people with disabilities to $7 for seniors on Go!Bus. Fares for the PASS program are also $2.60 per ride, including a free transfer to a fixed route bus. The County Connection riders pay $14 per trip for advance reservations.

The Rapid uses software to manage its programs. The data for all programs are maintained in one database. MDTs were installed and became operational in October 2007. In addition to required NTD reporting, quarterly reports are made to the townships. Monthly board reports containing passengers, trips, and cost per program are prepared. Service for the Go!Bus program is split out by ADA service and senior service.

Lessons Learned

There were four lessons learned at this site. First, plan ahead, but be flexible and adapt as needed. An example of this was the union issue with regard to the PASS program. It was also

mentioned that no matter how well you plan, you cannot account for all contingencies. Second, make sure that as you add new programs you continue to meet your ADA paratransit requirements. Third, keep the board and public informed of your plans and progress. Try to minimize change as much as you possibly can. And fourth, as you move forward, take baby steps. It is easier to add new features than to take them away.

Transit Authority of River City (TARC)

Louisville, Kentucky

Overview

The Transit Authority of River City (TARC) was created in 1974 as an independent transit authority with a board of directors appointed by the mayor of Louisville. TARC is the largest public transit agency in Kentucky with a fleet of 280 fixed route transit vehicles and 90 paratransit vehicles. All but four fixed routes are operated internally and all paratransit service is provided by contractors.

When the authority was created in 1974, it provided fixed route services with vehicles that were not accessible. In response to the needs of people with disabilities, TARC contracted for the provision of paratransit service. From the inception of the service, paratransit service was for persons with disabilities who were unable to use fixed route service.

During the 1990s, TARC started a Job Access and Reverse Commute (JARC) program and trips were provided using the same vehicles as ADA paratransit. More recently, contracts were entered into to provide human service transportation. The newest contract, begun in 2007, is with the Area Agency on Aging (AAA) to provide medical transportation under Title III of the Older Americans Act (OAA). The AAA continues to provide its own transportation service to its congregate meal sites at senior centers. TARC also has two other small contracts: one with Catholic Charities and the other with the Health Department. Both of these services are provided using the same vehicles as the paratransit service. The Catholic Charities service is for elderly refugees going to English as a Second Language (ESL) classes. The Health Department contract is for a program called Healthy Start, which is designed to transport unwed mothers who are economically disadvantaged to classes.

The basic service policies for all services are the same including days and hours of service and the advance reservation period; however, for trips provided under Title III, a 30-day advance reservation is allowed (compared with up to 7 days in advance for other services). Catholic Charities and the Health Department furnish a list of clients needing rides to be picked up and TARC schedules the rides. The Night Owl Service transports passengers, regardless of disability, if they have a job that starts or ends between 11:00 p.m. and 5:00 a.m.

There is some variation in the service area with ADA paratransit provided within the ¾-mile corridor around fixed route service. The service area for the Title III medical transportation covers all of Jefferson County and TARC will go out of county to provide the service as long as one of the legs or the trip originates within Jefferson County. The JARC transportation program also serves the entire county. The Healthy Start Program primarily serves the City of Louisville, but there is no restriction limiting this service to the city.

The service and operating parameters are the same for all services including the on-time pickup window; drivers will wait up to 5 minutes for passengers within the on-time pickup window and the maximum ride time for all services is set at 1 hour and 20 minutes.

TARC's ADA service uses advanced technology. The transit agency has a sophisticated scheduling/dispatch system and all authority-owned vehicles have MDTs with AVL. It was anticipated that this technology would be useful in tracking the riders by various programs, though

TARC has had problems in using the system to maintain the recordkeeping relative to rides by funding source.

With regard to OAA Title III funds, the budget is limited and TARC has not found an effective way to set up the software to help ensure that they do not over-expend on the Title III service.

Responsibility for ADA eligibility determination rests with TARC, although each contracting agency handles its own eligibility determination. Increasingly, TARC is seeing passengers with dual eligibility, particularly between ADA and Title III, because customers are becoming familiar with the benefits of each program and registering for both. For example, if eligible, an ADA customer will also register under Title III for free rides to medical appointments. Or, a Title III rider will sign up with ADA to take advantage of the ability to take a trip for any purpose. This crossover between programs is about 5:1 in favor of the ADA riders calling and qualifying for free OAA trips. Far fewer OAA riders have crossed over to paratransit.

Fares for ADA, Healthy Start, and JARC are $2.50 per ride. Title III regulations do not permit charging fares for service, but do allow donations for service. Because TARC does not want to have drivers responsible for accepting donations from riders, every two to three months a letter is sent to Title III riders asking for a donation. The letter details the regular fare for service and also details the cost to provide a trip. TARC does get a small amount of contributions using this method. The service provided for Catholic Charities is paid for by Catholic Charities with money from a federal grant and trips for the Health Department are paid for using local funds. ADA service is paid through federal formula funds (Section 5307), the Local Mass Transit Trust Fund, and fares. The State of Kentucky provides a small amount of additional funding.

Most of the reporting is geared toward reconciling the invoices from the contractors. In addition to reporting required for the National Transit Database (NTD), data such as mileage, trips, fares collected, and no shows are collected and used to verify vendor billing. On-time performance and ride length data are routinely collected. In addition, for the OAA program, data reporting unduplicated persons served must also be collected.

TARC has experienced problems keeping track of trips by program using the current software. The agency is required to maintain information on the different programs and planned to use the tools in its software to help with this, but the agency has been unable to successfully do so.

Lessons Learned

TARC reported no resistance from riders to commingling on the same vehicles; it was accepted as a logical course of action to improve productivity. What TARC did find as a result of commingling was that some passengers (about 100 of the approximately 4,000 active) decided to become dually registered for both ADA and Title III trips.

One challenge that TARC specifically mentioned was the ability to maintain the necessary information on the different programs for billing purposes. Gathering accurate information, trip counts, and/or unduplicated persons served, are vital. As noted, the use of software to do this makes this process easier. According to TARC, the software vendor said that the software could perform this function, but TARC had not been able to make that happen as of the time of the case study research.

Votran

South Daytona, Florida

Overview

Votran operates transit service in Volusia County, which is located on the Atlantic coast of Florida, approximately 100 miles south of Jacksonville. The county covers 1,207 square miles

with a population of approximately 470,000. The City of De Land is the county seat and has a population of approximately 22,000 people. Major population centers are located in Daytona Beach and Deltona.

In 1975, the Volusia County Council created the Volusia Transit Company (Votran). At the time it was created, Votran was responsible for providing fixed route service in the Greater Daytona Beach area and countywide paratransit service was provided by the Council on Aging. The Council on Aging provided service from 1975 through 1994, when Votran assumed the operation of the countywide paratransit service.

In 1979, the State of Florida created the Transportation Disadvantaged (TD) Program. The act, reenacted in 1989 created the Transportation Disadvantaged Commission (now the Commission for the Transportation Disadvantaged) and created a network of local community transportation coordinators (CTCs) for each county; Votran is the CTC for Volusia County. Under this program, transportation services are provided for those persons who are considered to be transportation disadvantaged, including children, or those who because of physical or mental disability, income status, or inability to drive due to age or disability are unable to transport themselves or to purchase transportation and have no other form of transportation available. These persons are, therefore, dependent upon others to obtain access to health care, employment, education, shopping, or medically necessary or life-sustaining activities.

In 1994, as a result of the passage of the Americans with Disabilities Act, an ADA workgroup identified the need for improvement in the provision of paratransit service in Volusia County. This workgroup was composed of Votran staff and disability advocates, including members of a local group called the Handicapped Adults of Volusia County. With Votran's General Manager playing an instrumental role, and with the backing of Volusia County, Votran assumed operation of the countywide paratransit program from the Council on Aging. The services assumed by Votran included services for Council on Aging passengers, TD passengers, and Medicaid passengers. Since the effort was a cooperative effort, the process of assuming operation of paratransit services went smoothly and quickly.

A recent change in the paratransit service occurred on February 1, 2008. On that date, Votran ceased to be the Medicaid provider in Volusia County. The decision was based upon a change in how Votran was going to be reimbursed for service. Votran had been getting reimbursed for Medicaid service on a per trip basis. Florida's Agency for Health Care Administration (AHCA), the state agency with responsibility for the Medicaid program, changed the method of reimbursement to a flat rate per month. Votran would be paid a set amount for Medicaid service each month and any expense for Medicaid service incurred above the flat rate would have to be absorbed by Volusia County. An analysis showed a potential $100,000 liability for the County. As a result, it was decided not to bid on the contract. Votran continues to provide Medicaid transportation under the Medicaid Waiver program, which is funded from a different funding stream.

Votran demand response service is operated directly by Votran and under contract with private providers. Taxi service is used to supplement this service. About 60% of the service is provided directly by Votran and the balance is provided by the subcontract providers. Each of the subcontractors is assigned to a service area. Votran operates 11 runs on the west side of the county and 23 on the east; vendors operate 5 runs on the west and 13 on the east. Votran is responsible for taking trip reservations and scheduling trips to runs and each operator is responsible for dispatching its own vehicles. McDonald Transit contracts with Volusia County to provide Votran's management.

Votran has made a conscious decision that all customers are treated the same, regardless of program participation. All riders are subject to the same policies, which are detailed in the Votran Gold Riders Guide. Eligibility determination for ADA or TD services is the responsibility of

Votran. The Council on Aging determines which of its clients they will fund, and Medicaid coordinators verify eligibility for the Medicaid Waiver Program.

The service area for the ADA program is different from the service area for the TD, Aging, and Medicaid Waiver Programs. The TD, Aging, and Medicaid program service area includes all of Volusia County; the ADA service area is ¾-miles around the fixed route service. This difference has caused some confusion among customers. The fare is $2.50 per trip; however, as stated in the Riders Guide, the fare may depend upon sponsorship. For example, a Council on Aging rider pays no fare because the Council on Aging pays the entire cost of the trip. This, too, can cause some confusion if a rider is not sponsored by an agency and wonders why they must pay a fare and some other customers do not have to pay a fare. Votran receives funding from Section 5307 (Urban) transportation funds, Section 5311 (Rural) funds, funds from the Florida Commission for the Transportation Disadvantaged, and Medicaid. Votran also receives some funding from the School Board for the transportation of students with disabilities.

Votran uses software to manage all of its programs. The data for all programs are maintained in one database. Mobile data terminals (MDTs) were installed and became operational in January 2007. Automatic vehicle location (AVL) has been installed on all Votran vehicles and partial AVL installation has occurred on vendor vehicles. Votran is also planning to install interactive voice recognition (IVR) technology.

Votran collects all data from its vehicles via the use of the MDTs and manually inputs data from vendor runs. Using both the software's standard and custom reports, Votran reports trips by funding source, trips, miles and hours of service by vendor, Canceled/No Show trips by vendor, and On-Time Performance by vendor. Staff indicated that they are able to use the software to generate the necessary billing and reports. It was indicated that the technology has helped with the scheduling. The new technology has not had an effect on commingling of service.

Lessons Learned

There were two lessons cited. First, time should be taken to educate riders on how to use the service. It is important that the riders understand that the service is shared ride. Second, providers must ensure that the agencies and their clients understand the differences in service area, based upon the program. Because the TD program encompasses the entire county while the ADA program covers a much smaller service area, questions about inconsistencies in service area continue to arise from time to time.

Waukesha Metro Transit (Metro)

Waukesha, Wisconsin

Overview

Waukesha Metro Transit (Metro) began as a city transit service more than 25 years ago, serving the City of Waukesha; a separate transit service for Waukesha County was operated by the County. In 2003, it was determined that the City and County transit systems should be merged, providing for improved cost efficiency with one administrative structure. After developing the appropriate inter-governmental agreements, the City assumed responsibility for transit service provision in the county. With the merger, the City's transit system essentially doubled in size with both fixed route and ADA paratransit services provided through a mix of direct operation and contracting.

In the mid-1990s, ADA paratransit was provided directly by Waukesha Metro. With the merger of the City and County transit services in 2003, the City took over the County's ADA paratransit service, which was run on a contract basis by a private, non-profit agency. After the

merger, Metro then had two different ADA paratransit operators—its own directly operated service and the private agency. This non-profit had been operating commingled service for the County, mixing the County's ADA paratransit riders with other non-ADA riders, primarily non-emergency Medicaid riders on the same vehicles. This practice has continued after the merger of the City and County transit services, with Metro "inheriting" commingled ADA paratransit service. Waukesha Metro, however, subsidizes only the trips for ADA paratransit riders, not the other non-ADA riders.

Service and operating parameters are basically the same for the City and County ADA paratransit services. However, the policy and procedures that govern the non-ADA riders, those that are commingled on the County service by the private contractor, are different and not under the purview of Waukesha Metro. Waukesha Metro has no authority over or responsibility for the other non-ADA riders.

Waukesha Metro's city-based ADA service uses advanced technology. The transit agency has a sophisticated scheduling/dispatching system and the vehicles have mobile data terminals (MDTs) with automatic vehicle location (AVL). Use of MDTs/AVL by the contractor would greatly improve the contractor's ability to track operating data by rider, particularly revenue hour and revenue mileage data. Such data would improve the level and detail of operating data reported to Waukesha Metro and would help resolve reporting issues, which is the one area where the commingling of riders practiced by the private contractor has caused problems. Waukesha Metro has had difficulty with NTD reporting; figures for the contractor's hours and miles seem to over-report the data, since only a portion of those data can truly be attributed to the ADA service.

Given the commingled service, Waukesha Metro management takes particular effort to review operating data of the contractor, including a review of driver manifests on an ongoing basis, to ensure that its ADA paratransit riders are receiving effective and quality service. With a commingled service and ADA and non-ADA riders traveling on the same vehicles, and where the transit agency has no contractual or financial responsibility over the other riders, travel time is one area where there could potentially be problems. Waukesha Metro's review, however, has not found performance issues arising from the practice of commingling.

Lessons Learned

Waukesha Metro was somewhat skeptical when it "inherited" the commingled service from the County at the time of the merger. However, experience has shown that the mixing of ADA riders who are Waukesha Metro's passengers and the non-ADA riders runs smoothly, at least from the perspective of Waukesha Metro. Furthermore, the transit agency realizes that it benefits from commingling, as the contractor is able to provide the ADA service at a lower passenger trip cost than it would otherwise, if the service was dedicated to ADA paratransit. The contractor's costs compare favorably with that of the directly operated ADA paratransit service, with the contractor's cost per passenger trip at $18.31, compared with the directly operated service at $26 per passenger trip. Data reporting, however, has been one area where the commingled service has been an issue.

APPENDIX C

Additional Resources

A literature review was conducted as part of this research project. The objective of the review was to glean insights relevant for the project from existing reports, studies, and published materials. In particular, we were seeking information on practices related to the commingling of ADA and non-ADA (other) paratransit riders. There is a large and growing body of literature on transportation coordination, with recent interest spurred by the federal United We Ride (UWR) initiative. Commingling of paratransit riders is one aspect of coordination; commingling ADA and non-ADA riders using ADA vehicles is a specific type of commingling and the primary focus of this project.

In the review, however, we found little discussion that targeted the specific commingling of ADA and non-ADA riders using ADA paratransit vehicles, except in the general context of the desire for expanded coordination of services in order to gain increased capacity, greater economies of scale, or a reduction in the duplication and/or fragmentation of services offered by multiple service providers operating in the same geographic area. Given the large amount of material on coordination, we focused our review on more recent materials and those that might potentially offer relevant information for the study. We grouped the documents into several primary topical areas:

- Coordination research
- Government documents
- Technology tools

Table C-1 lists the primary resource documents reviewed and brief summaries of each are provided following the table.

Research Documents

Burkhardt, Jon E., Koffman, David, and Murray, Gail. *TCRP Report 91: Economic Benefits of Coordinating Human Services Transportation and Transit Services.* Transportation Research Board of the National Academies, Washington, DC, 2003.

Summary: As the title states, this TCRP report attempted to identify the economic benefits of coordinating human service transportation and transit services. It quantified the high impact benefit of coordination and providing the most cost-effective transportation services; for example, the cost savings associated with transferring Medicaid paratransit trips to fixed route, which is much cheaper to provide on a cost per trip basis and has the added benefit of permitting program beneficiaries to use transit passes for their other transit trips. The report also documented economic benefits associated with coordinating human service transportation with transit, as well as encouraging human service transportation providers to coordinate among themselves. The report pointed out that not all coordination benefits translate into lower total costs, but that they may result in increased productivity, improved mobility for customers, and overall reductions in cost per trip, allowing for increased ridership.

Table C-1. Primary resource review items.

Document Title	Sponsor/Author
Research Documents	
Economic Benefits of Coordinating Human Services Transportation and Transit Services, 2003.	*TCRP Report 91*/Westat and Nelson\Nygaard
Toolkit for Rural Community Coordinated Transportation Services, 2004.	*TCRP Report 101*/Westat et al.
Medical Care and Community Transportation: Perfect Together, *Community Transportation*, Summer 2006.	Community Transportation Association of America (CTAA)
Transit Agency Participation in Medicaid Transportation Programs, 2006.	*TCRP Synthesis of Transit Practice 65*/KFH Group
Coordination Primer: A Guide to Help Your Community Navigate Transportation Coordination, August 2006.	Illinois Interagency Committee on Coordinated Transportation
Coordinated Human Service Transportation: State Legislative Approaches, January 2005.	National Conference of State Legislatures
Barriers and Obstacles to Coordination of Public and Human Services Transportation: Final Report and White Paper, 2005.	National Consortium on the Coordination of Human Services Transportation/TranSystems
Strategies to Increase Coordination of Transportation Services for the Transportation Disadvantaged, 2004.	*TCRP Report 105*/TranSystems et al.
Transportation Services for People with Disabilities in Rural and Small Urban Communities, 2006.	Easter Seals Project ACTION/TranSystems
Government Documents	
Final Policy Statement on Coordinated Human Service Transportation Planning, October 1, 2006.	Federal Interagency Coordinating Council on Access and Mobility (CCAM)
Vehicle Resource Sharing, Policy Statement, October 1, 2006.	CCAM
Framework for Action: Building the Fully Coordinated Transportation System: Self-Assessment Tools for Communities, n.d.	CCAM
The Current State of Transportation for People with Disabilities in the United States, 2005.	National Council on Disability (NCD)
Transportation-Disadvantaged Seniors, Efforts to Enhance Senior Mobility Could Benefit from Additional Guidance and Information, GAO-04-971, August 2004.	U.S. Government Accountability Office (GAO)
Transportation-Disadvantaged Populations: Federal Agencies Are Taking Steps to Assist States and Local Agencies in Coordinating Transportation Services, GAO-04-420R, February 2004.	GAO
Transportation Disadvantaged Populations: Some Coordination Efforts Among Programs Providing Transportation Services, but Obstacles Persist, GAO-03-697, June 2003.	GAO
Transportation Coordination: Benefits and Barriers Exist, and Planning Efforts Progress Slowly, GAO/RCED-00-1, October 1999.	GAO
Technology Solutions Documents	
Mobility Services for All Americans Phase 2: Foundation Research Final Report, 2005.	USDOT Joint Program Office/SAIC et al.
ITS Applications for Coordinating and Improving Human Services Transportation, August 2006.	USDOT, FHWA-JPO-05-056.

Relevance to Commingling: Regarding the commingling of ADA and other non-ADA riders, the report included the following:

- The largest magnitude of economic benefit described in the report had to do with bus pass programs, which began with Medicaid but could be extended to other customer groups. By transferring passengers from expensive paratransit to fixed route service, transit agencies and human service agencies can save a lot of money, sometimes in the millions of dollars for larger programs.
- Because some ADA paratransit customers may also be eligible for human service transportation, if the transit agency provides commingled service, the transit agency can invoice human service providers for eligible trips, helping to manage the demand for and cost of providing non-sponsored ADA trips. Working cooperatively with human service agencies can also reduce the amount of trips that are transferred to ADA service when they could have been paid for by another source.
- The report also points out that the transfer of trips from ADA paratransit to human service transportation providers may benefit the transit agency by freeing up ADA resources and also affording customers more personalized service, appropriate to their needs.

Burkhardt, Jon E., et al. TCRP Report 101: *Toolkit for Rural Community Coordinated Human Services Transportation and Transit Services*. Transportation Research Board of the National Academies, Washington, DC, 2004.

Summary: This TCRP report reviewed strategies and practices that are used for coordinating rural transportation services and identified model practices used to coordinate services in rural communities. The report also identified ways to improve coordination, documenting the key factors that help determine whether coordination will be successful or not in sustaining rural public transportation services.

Relevance to Commingling: The focus of the report is coordination within rural communities, but the issue of coordinating services specifically with ADA paratransit programs include the following:

- The report's planning guidelines note that public transit agencies and specifically their ADA paratransit services should be included in local planning efforts for coordination.
- One of the coordination strategies included involves human service agencies providing ADA paratransit services under contract to the transit agency. While the description does not speak to commingling of riders, this might be an option, though the objective of the strategy is to save costs for the transit agency, since the cost structure of human service agencies typically is less than that for transit agencies.
- The strategy of "ride sharing" is discussed, where the transit provider would initiate coordinated dispatching communitywide, so that all the vehicles in use would be coordinated and riders from different agencies and funded by different programs would be transported together. The report specifically includes the mixing of ADA paratransit riders with other types of riders in the "ride sharing" strategy as one that has the potential to improve productivity and provide cost savings for the public transit provider, with lower per trip costs for the ADA paratransit service.

Medical Care and Community Transportation: Perfect Together, *Transportation Magazine*, Summer 2006. Published by Community Transportation Association of America (CTAA), Washington, DC.

- **Summary:** This magazine issue focused on the role of community transportation providers in serving transportation needs for non-emergency medical trips (NEMT). Several articles describe the role that community and rural transit systems provide in serving the growing need for NEMT. The issue included a discussion of the LYNX ADA paratransit program in Orlando, Florida, which also provides NEMT service. The general theory expressed throughout the issue is that community transportation is a cost effective way to keep patients healthy and independent.
- **Relevance to Commingling:** Given the large role that Medicaid plays as a funder of specialized transportation, it is important to assess coordination opportunities that exist with this federal/state program. Particularly in rural and small community areas, transit programs have historically worked with Medicaid, often mixing riders of various programs on their transit services. While this material did not address commingling ADA and non-ADA riders specifically, it did focus on the role that community transportation providers have in coordinating services for their riders.

Hosen, Kenneth. I., and Fetting, Elisabeth. *TCRP Synthesis of Transit Practice 65: Transit Agency Participation in Medicaid Transportation Programs*. Transportation Research Board of the National Academies, Washington, DC, 2006.

Summary: This report summarized tasks necessary for a public transit and non-emergency medical transportation (NEMT) partnership to be successful. Medicaid is a very large funding source for transportation across the country. Transportation coordination efforts should examine Medicaid as a potential partner. The report identified and reviewed barriers and

actions that can facilitate or hinder coordination with Medicaid at the local level, with a focus on how transit agencies can coordinate their services with Medicaid.

Relevance to Commingling: There are a number of examples of ADA paratransit systems that also serve Medicaid transportation. Based on case studies, the synthesis reported a number of findings regarding the coordination of NEMT and ADA paratransit:

- Different levels of service are required for NEMT than for ADA paratransit and these levels of service are different in different areas, because some transit agencies provide more than the minimum required ADA paratransit service.
- Trying to fit both NEMT and ADA onto one system can be difficult.
- Broward County, Florida, and Portland, Oregon, operate ADA and Medicaid transportation in their region, but each service is a separately managed and operated program within the transit organization. Some of the trips are commingled, but not routinely. Broward County recently ended its involvement with NEMT.
- There is an issue of who pays for the trip of an ADA paratransit eligible Medicaid participant to travel for a medical need. Is this the responsibility of the state Medicaid agency or the local transit agency? If the Medicaid agency pays, does it pay the regular paratransit fare, the local share of the full cost of the trip, or the full cost?
- One transit agency reports that provision of NEMT can cause disruptions with ADA paratransit service for several reasons: in-take process, billing system, customer service, staffing, no-shows, cancellations, and database maintenance.
- One state has a 30-minute will-call/return pickup requirement for NEMT requiring that the driver wait with the Medicaid customer, which would be very expensive for an ADA paratransit program to provide.
- Findings from case studies suggest that "cost transferring" Medicaid trips onto paratransit, including ADA paratransit, is problematic. This may make transit agencies less likely to want to coordinate with NEMT, including commingling the riders.
- Commingling ADA paratransit customers and Medicaid participants can be problematic if the Medicaid participants require transportation to locations outside the paratransit program's service area.

Illinois Interagency Coordination Committee on Transportation (ICCT). *Coordination Primer: A Guide to Help Your Community Navigate Transportation Coordination*. ICCT Clearinghouse, Macomb, IL, 2006.

Summary: The primer was designed to assist in the development of a community transit system and in preparing to secure funding. It was produced for the Illinois Interagency Coordinating Committee on Transportation (ICCT), which was created in 2003 to "address ways to broaden coverage and reduce duplication of transportation services to help disadvantaged citizens of Illinois get to work, work-related services, and other life sustaining activities for health and well-being."

The primer provided the federal definition of public transportation systems, outlined the steps necessary to implement a transportation system, and gave abbreviated summaries of the types of federal and state funding programs available to transit systems, including federal reimbursement for administrative, operating, and capital costs, and the local or state matching requirements for operating and capital costs. There is also a description of an outline of requirements for the Downstate Operating Assistance Program (DOAP), a funding program for local governments (in Illinois) to support administrative and operating costs of a public transportation system.

The ICCT divided the process of coordinating transportation into four specific phases (Phase 1—Transportation Planning Group; Phase 2—Needs and Resources; Phase 3—Action

Plan; Phase 4—Funding) and provided a list of action items and parties involved for each phase. The primer also provided pre-designed scorecards for each phase to be used to document progress toward each subsequent phase.

Phase 1 brings together representatives from many types of service providers to form the Transportation Planning Group, including representatives from human service agencies, medical and healthcare providers, employment and job training agencies, government agencies, senior public officials, employers, community leaders, and others.

During Phase 2, the Transportation Planning Group conducts an assessment of needs and inventory of services to determine what services are currently provided, to whom, and on what basis.

Using the Framework for Action, a Community Action Plan is developed during Phase 3. The plan includes a clear set of steps; a list of who is responsible for carrying out each step; a timeline for tasks; and a strategy for communication within the group.

Phase 4 focuses on the application for and procurement of appropriate funding.

Relevance to Commingling: Though the primer did not specifically address the issue of commingling passengers, the steps for each phase highlighted the need for coordination. Several of the barriers to coordination that were cited are also applicable to commingling of riders:

- Reluctance to change transportation routes and/or schedules
- Regulatory or legislative restrictions on use of funds
- Perceived incompatibility among diverse passengers
- Organization and staffing problems
- Perceived or actual regulatory barriers on vehicle use and operation

Sundeen, M., Reed, J., and Savage, M. *Coordinated Human Services Transportation: State Legislative Approaches*. National Conference of State Legislatures, Washington, DC, January 2005.

Summary: This report, produced for the National Consortium on the Coordination of Human Services Transportation, focused on state-level coordination of human transportation services, with an emphasis on state legislation. The report is intended to serve as a resource to help states and their legislators assess different coordination approaches and determine an appropriate course of action for their own jurisdiction.

The report cited considerable activity among states regarding transportation coordination, and found some success through a variety of approaches. Among the various approaches employed, 34 states have statutes with coordination requirements or authorization for coordination. Of those, 21 states require coordination of human service transportation, approached in varying ways. Two states require consolidation through legislative action, while other states have encouraged coordination through local efforts, either requiring or supporting coordination.

The report also found that coordination can happen in the absence of any state effort. Wyoming, for example, has no state statute or executive order regarding coordination, but the local transit authority in Sweetwater County operates a single, coordinated demand response program that serves a wide range of riders, using technology to help manage services.

Relevance to Commingling Issue: The report does not specifically deal with the issue of commingling, except to the extent that it is implied in some states' approach to coordination. The report also finds that the effectiveness of state legislatively mandated coordination is unclear.

TranSystems. *Barriers and Obstacles to Coordination of Public and Human Services Transportation: Final Report and White Paper*. National Consortium on the Coordination of Human Services Transportation, January 2005.

Summary: The National Consortium on the Coordination of Human Services Transportation is a group of non-profit organizations representing public and private transportation providers, human services agencies, units of government, and advocacy organizations. To fulfill its mission of promoting coordination efforts between organizations that are concerned with ensuring mobility for transportation disadvantaged individuals, the Consortium conducts research, disseminates information, and provides educational opportunities and technical assistance on the topic of coordinating human services transportation.

As one of its activities, the Consortium designed a research project to explore barriers to coordination in detail. In addition to a review of the literature regarding coordination obstacles, project tasks included outreach to Consortium members and others and identification of case study examples that illustrate effective strategies for addressing coordination barriers. The project's final products included a report and white paper, which document the research and outreach that was conducted and reflect the findings and conclusions that resulted.

After summarizing the coordination barriers identified through research and consultation with transportation and human service organizations, the report and white paper suggested actions or policy changes for federal agencies, Congress, and other governmental entities that will reduce or eliminate common obstacles. Recognizing the fact that a federal action may not be the only or most effective response to some coordination barriers, the report and white paper also identified approaches and strategies that have been successfully employed at the state, regional, or local levels to address specific barriers.

Relevance to Commingling: Several of the barriers to coordination that were identified throughout the course of this project relate to commingling passengers. Each barrier is described below.

- Shared use of resources (categorized as a Communication Barrier)

  Much of the doubt that human services and transportation organizations may have about coordinating transportation services centers on the combined use of vehicles and other resources. There is ongoing uncertainty about the use of federally funded vehicles, facilities, and other resources to provide transportation to riders other than those in the customer group that the vehicles were acquired to serve, and about mixing the resources and participants associated with different programs.

  Proposed solutions to this barrier included the following:
  - Communicating federal or state policies to entities at the state or local levels
  - Coordination among technical assistance teams

- Coordination partners are unsure about how to allocate the costs of a coordinated service or system among the participating organizations and/or funding programs (categorized as a Funding Barrier)

  Federal legislation and regulations are often vague about how vehicles and other resources may be used to serve more than the customer group or type of trip for which they were originally obtained, and how costs for shared use are to be divided among programs or agencies. State/local organizations, therefore, are often unaware of the options they have. For example, typical questions a recipient of federal funds may have include the following: Who decides, and how, if the shared use interferes with the program or service that was originally funded? Is the sharing

of resources allowable only among programs administered by the same federal agency, or also among multiple federal agencies or multiple grantees? If one organization makes transportation services available to another, what elements should the rates it sets for its services include? Is it able to make a profit on its services?

It appears that the real barrier regarding cost allocation is that organizations do not have enough information about what is allowable at the federal level, or about the mechanics of cost allocation.

- Cost allocation among federal agencies or programs requires data that can be burdensome to collect (categorized as an Information/Data Barrier)

  The allocation of the costs of a coordinated service or system among participants and their funding sources requires human services agencies and transportation providers to track information about riders, trips (date, time, origin/destination, mileage, purpose), and expenses. Collecting and compiling such information can become onerous or prohibitively difficult, especially if
  - The basis for reimbursement varies among the agencies purchasing service from the provider (per trip, per vehicle mile or per vehicle hour, for example).
  - Participants of different programs are transported together in the same vehicle.
  - Participants are eligible for the transportation services of more than one agency or program.

  Proposed solutions to these two barriers included the following actions:
  - Promote Intelligent Transportation Systems (ITS) capabilities as a way to track clients and associated transportation costs through conferences, brochures, and other public media
  - Clarify federal interagency guidance on cost-sharing
  - Coordination among technical assistance teams

TranSystems et al. *TCRP Report 105: Strategies to Increase Coordination of Transportation Services for the Transportation Disadvantaged*. Transportation Research Board of the National Academies, Washington, DC, December 2004.

Summary: *TCRP Report 105* documented the work undertaken for TCRP Project H-30. The objectives of the project were to identify strategies for improving coordination among services provided for transportation disadvantaged individuals (defined as older adults, persons with disabilities, low income individuals, and others with little or no access to private auto transportation), and to put together current, practical guidance for state and local organizations that are considering, planning, or engaged in some type of coordination initiative.

Background research was conducted in three basic areas that related to transportation services for the transportation disadvantaged: service options, funding sources, and decision-making processes. Innovative approaches were examined in more detail through case studies. Coordination trends, themes, and challenges were identified from the findings of the research and case studies and presented in *TCRP Report 105*.

Relevance to Commingling: Several of the case studies contained in *TCRP Report 105* featured transportation systems and providers that group passengers from different agencies and programs on the same vehicles. Two of those case study sites are summarized briefly below. This document will be particularly useful for case study background that could be updated for mini case studies for this project.

- **State of New Mexico—Client Referral, Ridership, and Financial Tracking System (CRRAFT).** The CRRAFT system is a statewide technology deployment that originally grew out of an investigation of the transportation barriers affecting individuals transitioning from welfare to work. Subsequent study helped to demonstrate that coordination between different agencies could be beneficial to both the transportation disadvantaged individuals and the

agencies themselves. Several significant barriers to coordination were identified, including the following:

– Human service agencies feared their funds would be used to pay for transportation of other agencies' customers
– Varying reporting requirements among different funding agencies created administrative problems for transportation providers
– Funding agencies were unsure how to most efficiently standardize their customer referral, ridership, and financial information

The web-based CRRAFT system enables 27 rural transportation providers that utilize Section 5311 and JARC funding to certify human service agency participants, schedule trips, track riders, prepare invoices, and generate reports in a standardized way. As a further enhancement of the system, integration of a multi-purpose electronic fare card system and in-vehicle card readers for processing information from passengers' Electronic Benefits Transfer (EBT) cards was scheduled to be completed in 2005.

The CRRAFT system demonstrates how technology can be used to facilitate the collection of client, trip, and financial data that is needed when passengers are commingled on vehicles.

- **St. Louis Transportation Management Association (TMA)**

  The St. Louis TMA serves the City and County of St. Louis and adjoining St. Charles County, Missouri. Led by the East-West Gateway Coordinating Council and Bi-State Development Agency (now known as Metro), the TMA originally included three transportation providers: OATS, Medical Transportation Management (MTM), and Care Cab Transportation Service. The focus of the TMA's coordination effort was a linked trip reservations and scheduling system.

  The call centers and radio dispatch centers of the original paratransit providers were linked by means of a communications network of T1 lines. This network, together with paratransit reservation and scheduling software, enables the agencies to book trips for their customers on vehicles operated by the other providers. Mobile Data Terminals (MDTs) installed in all the providers' vehicles are used to communicate with drivers and to capture operational data. Because of the linked dispatch centers, dispatchers are able to assign trips to the most appropriate vehicle, even if it is operated by another provider. As a result, empty seats are filled, trips are shared, and riders from different agencies and programs are mixed on the same vehicles. Resources, particularly vehicles and drivers, are used more effectively and client agencies receive the benefit of more revenue when they are given riders from other programs.

  Some service to the general public in rural areas can be accommodated by mixing these trips with agency trips. Otherwise, these general public trips could not be served because of program eligibility restrictions.

TranSystems, RLS & Associates, Nelson\Nygaard Consulting Associates. *Transportation Services for People with Disabilities in Rural and Small Urban Communities*. Easter Seals Project ACTION, Washington, DC, 2006.

Summary: Easter Seals Project ACTION sponsored this study to obtain better information on how to develop, implement, and operate cost-effective transportation services in rural and small urban areas to meet the needs of persons with disabilities. The study involved surveys of rural and small urban transportation providers and of human service agencies and disability organizations to identify issues, concerns, and challenges in the provision of accessible transportation services to people with disabilities and the identification of model practices drawn from actual experience across the country in meeting these needs.

Relevance to Commingling: Regarding the commingling of ADA and other non-ADA riders, the report includes the following:

- It has been a challenge in some areas to integrate newer ADA paratransit services with already existing paratransit services that have operated in a community along with fixed route service prior to the ADA. Sometimes, the new ADA service has been integrated and, in other communities, a separate ADA paratransit service has been implemented.
- In some communities with both ADA and non-ADA paratransit services, the policies of the older paratransit service have been extended to the ADA paratransit service. But as ADA paratransit service has grown, separate policies for the ADA service, which are more limited, have been created. Where riders may be eligible for both services, this creates a situation where different policies and procedures apply to the same riders, one set when traveling in the ADA service area and a second set of policies when traveling outside the ADA service area. This can be confusing for riders and for the provider, and may be difficult to market.
- Managing different eligibility determination processes in communities with both ADA and non-ADA paratransit services can also create difficulties as the different criteria may not be clearly explained to riders.
- Combining the two types of service may be difficult for the provider to operationalize.
- An example of coordinated ADA and non-ADA paratransit service can be seen at Lane Transit District (LTD). The District's paratransit program, known as RideSource, serves persons with disabilities, seniors, and other transit dependents, as well as ADA eligible paratransit persons. The program is operated by a non-profit transportation provider, and the provider and transit district reportedly have a close working partnership. LTD also provides a "shopper service," which mixes riders of different types, including lower income persons, on a space available basis. ADA eligible riders are given first priority on the service.

Government Documents

Federal Interagency Coordinating Council on Access and Mobility (CCAM). *Final Policy Statement: Coordinated Human Service Transportation Planning*. Washington, DC, October 1, 2006.

Summary: On October 1, 2006, CCAM issued the following policy statement:

> "Member agencies of the Federal Coordinating Council on Access and Mobility resolve that federally-assisted grantees that have significant involvement in providing resources and engage in transportation delivery should participate in a local coordinated human services transportation planning process and develop plans to achieve the objectives to reduce duplication, increase service efficiency and expand access for the transportation-disadvantaged populations as stated in Executive Order 13330."

The CCAM recommended that agencies providing transportation plan collaboratively to more comprehensively address the needs of populations served by various federal programs, by increasing efficiency and expanding access for older individuals, persons with disabilities, persons with low incomes, children, and other disadvantaged populations.

Relevance to Commingling: Commingling ADA and non-ADA paratransit customers is a potential strategy in achieving CCAM's stated goal under the policy statement.

Federal Interagency Coordinating Council on Access and Mobility. *Final Policy Statement: Vehicle Resource Sharing*. Washington, DC, October 1, 2006.

Summary: As part of the United We Ride initiative and its efforts to implement Executive Order 13330 on Human Service Transportation Coordination, the Federal Interagency Coordinating Council on Access and Mobility (CCAM) issued policy guidance to

clarify the sharing of vehicles and other transportation resources among federally assisted programs in October 2006.

State and local level agencies may believe that, because federal funding programs that support transportation services typically define eligible user groups and/or trip purposes, funds from those programs (and the vehicles and other resources which they are used to acquire) may be used to serve **only** those users or trips. This misconception can lead to the operation of separate transportation services or programs that serve similar populations and types of trips in an inefficient, fragmented, or duplicative manner.

In fact, as the CCAM's policy guidance explains, federal cost principles allow grantees to share the use of vehicles and other resources with other recipients of federal funds that may be used for the provision of transportation. Those federal cost principles are set forth in several circulars issued by the Office of Management and Budget (OMB) for state, local, and Indian tribal governments (Circular A-87); nonprofit organizations (Circular A-122); and Educational institutions (Circular A-21). The cost principles also require the costs of a program or service that utilizes federal funding to be reasonable, necessary, and allocable. If vehicles and other resources are shared among multiple programs, each program must pay a portion of the costs of the shared transportation service. Costs must be allocated among programs in a fair and equitable manner.

The CCAM not only explained in this guidance that the federal government allows transportation costs and resources to be shared among programs, but encouraged that practice among grantees, and provided examples of how such coordination might work. The CCAM's policy statement reads as follows:

"Member agencies of the Federal Coordinating Council on Access and Mobility resolve that Federally-assisted grantees that have significant involvement in providing resources and engage in transportation should coordinate their resources in order to maximize accessibility and availability of transportation services."

Relevance to Commingling: At the state and local levels, perceived restrictions against sharing vehicles and other resources among programs and services that are funded with federal grants may be viewed as a barrier to the coordination of transportation services. As a result, separate transportation services and programs may be provided for different user groups or types of trips. For example, in one area, separate transportation services may be provided by a local Council on Aging that receives funding under Title III (b) of the Older Americans Act for the transportation of older adults, a transit agency that uses Section 5307 or 5311 funds for the provision of transportation services for ADA eligible individuals, and a state department of human services that uses Medicaid funding to support contracts with transportation providers for non-emergency medical transportation. In this situation, no commingling occurs—vehicles carry only the individuals that each grantee received federal funding to serve.

This policy guidance from the CCAM makes it clear that the sharing of vehicles and other federally funded resources among programs that provide transportation services for different user groups or types of trips is not only allowed, but encouraged. Commingling passengers is one way that vehicles and resources may be shared among programs.

Federal Interagency Coordinating Council on Access and Mobility. *Framework for Action: Building the Fully Coordinated Transportation System: Self-Assessment Tools for Communities*. Washington, DC, 2006.

Summary: The Toolkit was designed as a self-assessment tool for communities to determine where they are in terms of developing a successful, coordinated transportation program that provides adequate service to all customers.

The Toolkit is divided into five sections, which are each further broken down into sub-sections for a total of 26 sections. At the end of each section and sub section, there is a self-assessment tool designed to help evaluate a community's progress toward its overall goals. The self-assessment tool allows for four grading levels, based on the community's current state of affairs with relation to transportation: Needs to Begin, Needs Significant Action, Needs Action, and Done Well, and each grade is illustrated with a shaded cog to signify the amount of progress made.

Section 1: Making Things Happen highlights the needs for individual and organizational desire to jump start a successfully coordinated transportation system. Assessment sub sections focus on governing framework; relationships between neighboring communities and state agencies; and sustained support among elected officials, agency administrators, and other community leaders.

Section 2: Taking Stock of Community Needs and Moving Forward is used to assess the capacity of human service agencies to coordinate transportation services through an inventory of assets, expenditures, services provided, duplication of services, specific mobility needs of the various target populations, and opportunities for improvement. Sub sections focus on identification of existing data sources and needs documentation, assessment of use of technology, budgets, stakeholder participation, and strategic planning.

Section 3: Putting Customers First focuses on the need to ensure that customers have a convenient and accessible means of accessing information about transportation services, and that they be regularly engaged in the evaluation of services and identification of needs. Sub sections highlight the importance of access to information sources; travel training and consumer education; payment systems that promote consumer choice of cost-effective service; the gathering of customer satisfaction data; and effective marketing and communications strategies.

Section 4: Adapting Funding for Greater Mobility is designed to instruct communities on innovative accounting procedures used to support transportation services by combining federal, state, and local funds. The strategy creates customer friendly payment systems, while maintaining an agency's ability to apply consistent reporting and accounting procedures across programs. Sub sections ask whether such an accounting system and relevant technology is in place and operating effectively.

Section 5: Moving People Efficiently focuses on multimodal and multi-provider transportation coordination, benefiting customer and provider. Sub sections inquire on coordination agreements, costs, and centralized systems.

Relevance to Commingling: Section 4 is especially relevant to commingling, as it is designed to assist communities in developing an accounting system that can support operations funded by multiple programs, while still maintaining accounting integrity and program tracking.

Golden, Marilyn, and Weiner, Richard. *The Current State of Transportation for People with Disabilities in the United States*. National Council on Disability, Washington, DC, June 13, 2005.

Summary: This report was written to develop a better understanding of access to transportation and mobility for people with disabilities. It covered a range of transportation modes as well as the pedestrian environment. The report assessed existing transportation systems, recognizing that these systems are inadequate due to a chronic lack of funding. Given the emphasis in the United States on automobile travel, all other modes are neglected in comparison. The Americans with Disabilities Act (ADA) has brought great improvements

to transportation systems, but compliance gaps exist that pose significant problems for transportation for persons with disabilities.

Relevance to Commingling: Regarding commingling of non-ADA eligible riders on ADA paratransit:

- With passage of ADA, some social service agencies "transferred" their program participants to the ADA paratransit program; the result of this "integration" has been both positive and negative. Positive results include generally higher quality of service in terms of driver training and vehicle condition. Negative results are generally increased costs borne by transit agencies, as typically they have had to absorb some of the costs formerly the responsibility of the social service agencies.
- The report included some examples of coordination:
  - New emphasis on coordination with FTA's United We Ride Initiative
  - In Montana, a handbook has been developed to assist with coordination
  - Eau Claire County, Wisconsin, worked with the City of Eau Claire and its transit program to coordinate service for ADA paratransit riders and program participants of the county's human services department

U.S. Government Accountability Office (GAO). *Transportation-Disadvantaged Seniors, Efforts to Enhance Senior Mobility Could Benefit from Additional Guidance and Information* (GAO-04-971). Washington, DC, August 2004.

Summary: This study was undertaken by the GAO in recognition of the aging of the American population, with access to transportation being a critical link in keeping seniors independent. For seniors who are transportation disadvantaged, issues of mobility are even more critical. The extent of transportation needs for seniors was difficult to document, given that local agencies on aging, responsible for senior services, used different methodologies for determining needs. The report found that local transportation providers have implemented a variety of practices to enhance mobility for seniors. The study concluded that federally sponsored programs are not meeting certain transportation needs of seniors, though the extent of the problem was difficult to quantify and that there are obstacles to addressing the needs of transportation disadvantaged seniors. The report then documented the obstacles and strategies to address these needs center around three themes:

- Planning for alternatives as seniors age
- Accommodating seniors' varied mobility needs
- Addressing federal and other governmental funding constraints

The last issue suggests that improved coordination may enhance transportation services for seniors.

Relevance to Commingling: There is no specific discussion of commingling, but the report does document that about 21% of seniors age 65 and older, or about 6.8 million people, do not drive. These individuals could be a good market group for commingling with ADA paratransit riders, particularly given that the majority of ADA paratransit eligible riders are seniors.

U.S. Government Accountability Office (GAO). *Transportation-Disadvantaged Populations: Federal Agencies Are Taking Steps to Assist States and Local Agencies in Coordinating Transportation Services* (GAO-04-420R). Washington, DC, February 2004.

Summary: This report was prepared by the GAO to determine whether the four federal agencies which provide the bulk of funds for transportation disadvantaged populations, Transportation, Health and Human Services, Labor, and Education, and the federal Coordinating

Council have taken steps to address the GAO recommendations from the agency's June 2003 report (see below) on transportation. The GAO found that progress has been made and that this progress should result in better coordination of federal programs at the state and local level. Yet, according to the GAO, the departments have made limited progress to include coordination in their strategic and annual performance plans. The report also documents efforts made by the four departments in launching the United We Ride initiative, which is designed to help states and local communities deal with obstacles to coordination. The Framework for Action, part of the United We Ride initiative, is also discussed, which provides a tool to local communities as well as states to chart progress towards coordination.

Relevance to Commingling: This GAO report does not specially address commingling of ADA paratransit and other riders. However, the various efforts documented in the report and particularly the finding that general progress has been made provides an encouraging setting for further coordination, and potentially commingling, in the near term future.

U.S. General Accounting Office (GAO). *Transportation-Disadvantaged Populations: Some Coordination Efforts Among Programs Providing Transportation Services, but Obstacles Persist* (GAO-03-697). Washington, DC, June 2003.

Summary: This GAO document is an often-cited report, finding that 62 different federal programs provide some level of funding for transportation disadvantaged persons. While the total amount of funding through the programs is not known, it was estimated based on information available for 29 of the 62 programs, to be at least $2.4 billion in 2001.

Efforts to improve coordination, with objectives of improving services and saving costs, have been made, but results vary. The report documented specific efforts made by the Coordinating Council on Access and Mobility, formed by the Departments of Transportation and Health and Human Services and notes that two other departments which provide significant funds for transportation, Education and Labor, are not involved with the Council. The report further provided information on the obstacles that impede coordination including the following:

- Officials may be reluctant to share vehicles and provide funding for coordination
- Differing program requirements can impede coordination
- Program officials may not know how to effectively coordinate

Recommendations are provided focusing on "harmonizing" standards and requirements among the different federal programs, expanding interagency communications with additional information on coordination, and providing financial incentives or coordination mandates. More specific actions under these areas are also recommended.

Progress in meeting recommendations made by the GAO in its 1999 report (see below) are also documented, concluding that efforts have produced mixed results.

Relevance to Commingling: Commingling is not specifically addressed in this report, though such mixing of riders on the same vehicle is implied in discussions about the benefits of coordination.

U.S. General Accounting Office (GAO). *Transportation Coordination: Benefits and Barriers Exist, and Planning Efforts Progress Slowly* (GAO/RCED-00-1). Washington, DC, October 1999.

Summary: This GAO report addressed the issue of transportation coordination with a focus on the role that the federal Departments of Transportation and Health and Human

Services, as well as the Coordinating Council that the two agencies formed in 1986, have taken to foster coordination at the state and local levels. The report documented the history of efforts made since the 1980s and noted that progress has been slow and sporadic. The report also provided specific recommendations that should be taken by the two departments and the Coordinating Council to move coordination forward.

Relevance to Commingling: The report documented a number of examples of coordinated or consolidated transportation programs that are considered successful on such measures as cost per passenger trip, cost per vehicle hour, and average trips per month. The report did not provide the specifics as to how coordination or consolidation was achieved, so it is not known the extent to which commingling was a strategy. However, an important theme of the report was that transportation coordination is beneficial in reducing federal transportation program costs by clustering riders (e.g., commingling), using fewer trips, and sharing resources such as equipment and staff.

Technology Solutions Documents

Carter, M., et al. M*obility Services for All Americans Phase 2 Foundation Research*. U.S. Department of Transportation, Washington, DC, 2005.

Summary: This report is part of an ongoing effort by the U.S. DOT Joint Program Office (JPO) to explore and implement new capabilities and opportunities that are being created in both the transportation and health and human services communities through the use of emerging technologies and innovative services. Pioneering public transportation agencies are using Intelligent Transportation Systems (ITS) to provide centralized coordination of community transportation providers, one stop shopping, and service brokering through integrated automatic vehicle location systems, advanced communications, and universal benefit cards. Others are providing on-vehicle audio annunciation, accessible traveler information, and flexible routing to assist passengers with disabilities in using conventional transit services.

The foundation of this Mobility Services for All Americans (MSAA) initiative is built around the notions of service coordination and technology integration, a key relationship that the FTA and the FHWA hope to expand on as they work toward the ultimate goal of the Mobility Services for All Americans initiative, which is

> "To develop the architecture/design of a replicable, scalable traveler management coordination center, which will enhance service accessibility and operations efficiency and provide one-stop customer-based travel information and trip planning services."

The report pointed out that there are many technologies that can improve the availability and accessibility of the transportation services for all persons, but especially those who are transportation disadvantaged. These solutions include ITS, which generally contribute to fleet management and operations, traveler information, electronic fare payment (Smart cards), and assistive technologies (AT), which generally contribute to the physical accessibility of transportation systems (e.g., intelligent wayside technologies, audible signs, and personal location monitoring). In addition to ITS and AT, there are some solutions, while not necessarily technology, which can be implemented to meet the needs of transportation disadvantaged individuals, such as boarding assistance and signage and/or information (e.g., tactile and Braille displays and telephone/Internet/cell phone-based information services). Once implemented, many available technologies can help meet the needs, overcome the barriers, and close the gaps of all travelers.

These challenges, if not overcome prior to and during implementation, can affect how useful the technology will be. Largely, these concerns can be either institutional or technical. Those which are institutional usually relate to the following:

- Financing for technology procurement and deployment
- Coordinating with other providers and agencies to jointly procure systems and/or exchange data and information
- Lacking ITS technical experience—this can relate to either human or computer resources
- Procuring technology from vendors who are unfamiliar or inexperienced with human service agency operations and transportation services

U.S. Department of Transportation. *ITS Applications for Coordinating and Improving Human Services Transportation* (U.S. DOT, FHWA-JPO-05-056). Washington, DC, August 2006.

Summary: The report, completed by Oak Ridge Laboratories, highlighted technologies that improve accessibility for transportation disadvantaged persons, with an emphasis on technologies that improve coordination. There were six sites highlighted that have successfully deployed ITS technologies, including Cape Cod Regional Transit Authority (CCRTA). CCRTA was able to move most of its Medicaid trips from single ride taxi trips to less expensive shared-ride paratransit services after using its technology to analyze origins and destinations of the Medicaid trips.

Relevance to Commingling Issue: Similar to other literature summarized here, this document does not address the specific issue of commingling ADA paratransit and others on the same vehicles, yet it does address the important role that technology can play in advancing coordinated services.

Abbreviations and acronyms used without definitions in TRB publications:

AAAE	American Association of Airport Executives
AASHO	American Association of State Highway Officials
AASHTO	American Association of State Highway and Transportation Officials
ACI–NA	Airports Council International–North America
ACRP	Airport Cooperative Research Program
ADA	Americans with Disabilities Act
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	Air Transport Association
ATA	American Trucking Associations
CTAA	Community Transportation Association of America
CTBSSP	Commercial Truck and Bus Safety Synthesis Program
DHS	Department of Homeland Security
DOE	Department of Energy
EPA	Environmental Protection Agency
FAA	Federal Aviation Administration
FHWA	Federal Highway Administration
FMCSA	Federal Motor Carrier Safety Administration
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
HMCRP	Hazardous Materials Cooperative Research Program
IEEE	Institute of Electrical and Electronics Engineers
ISTEA	Intermodal Surface Transportation Efficiency Act of 1991
ITE	Institute of Transportation Engineers
NASA	National Aeronautics and Space Administration
NASAO	National Association of State Aviation Officials
NCFRP	National Cooperative Freight Research Program
NCHRP	National Cooperative Highway Research Program
NHTSA	National Highway Traffic Safety Administration
NTSB	National Transportation Safety Board
PHMSA	Pipeline and Hazardous Materials Safety Administration
RITA	Research and Innovative Technology Administration
SAE	Society of Automotive Engineers
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (2005)
TCRP	Transit Cooperative Research Program
TEA-21	Transportation Equity Act for the 21st Century (1998)
TRB	Transportation Research Board
TSA	Transportation Security Administration
U.S.DOT	United States Department of Transportation