FTA RESEARCH

FEDERAL TRANSIT ADMINISTRATION

Accessible Transit Services for All

DECEMBER 2014

FTA Report No. 0081
Federal Transit Administration

PREPARED BY

Disability Rights Education & Defense Fund (DREDF)
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In collaboration with:
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LENGTH				
in	inches	25.4	millimeters	mm
ft	feet	0.305	meters	m
yd	yards	0.914	meters	m
mi	miles	1.61	kilometers	km
VOLUME				
fl oz	fluid ounces	29.57	milliliters	mL
gal	gallons	3.785	liter	L
ft^3	cubic feet	0.028	cubic meters	m^3
yd^3	cubic yards	0.765	cubic meters	m^3
NOTE: volumes greater than 1000 L shall be shown in m^3				
MASS				
oz	ounces	28.35	grams	g
lb	pounds	0.454	kilograms	kg
T	short tons (2000 lb)	0.907	megagrams (or "metric ton")	Mg (or "t")
TEMPERATURE (exact degrees)				
°F	Fahrenheit	5 (F-32)/9 or (F-32)/1.8	Celsius	°C

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Ensuring the provision of accessible transit services for all requires that both accessible fixed-route transit services and ADA complementary paratransit services be provided. Significant progress has been made on both since the passage of the ADA in 1990. Some challenges remain, including the provision of high-quality, cost-effective, and sustainable ADA paratransit. Between 1999 and 2012, demand for ADA paratransit increased from 68 million trips per year to 106 million trips per year, and the average nationwide cost per trip increased from $13.76 to $32.74. This report presents successful strategies for providing high-quality, cost-effective, and sustainable ADA paratransit service and describes examples of inclusive service designs that can be used to effectively meet the transit needs of all riders. A nationwide survey of transit agencies was conducted to identify strategies and service designs. Twelve in-depth case studies were conducted to gather information about implementation and effectiveness. The disability community was involved to identify and select service strategies, designs, and case studies.

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- Santa Clara Valley Transportation Authority (VTA) and Outreach and Escort Service, Inc. (OUTREACH), San Jose, CA
- Port Authority of Allegheny County (PAT) and ACCESS Transportation Systems, Inc. (ACCESS), Pittsburgh, PA
- San Mateo County Transit District, San Carlos, CA
- STAR, Arlington County, VA
- Dallas Area Rapid Transit (DART), Dallas, TX
- Pelivan Transit, Big Cabin, OK
- Capital Metropolitan Transportation Authority (CapMetro), Austin, TX
- Southeastern Pennsylvania Transportation Authority (SEPTA), Philadelphia, PA
- Northern Arizona Intergovernmental Public Transportation Authority (NAIPTA), Flagstaff, AZ
- Broward County Transit (BCT), Broward County, FL
- Utah Transit Authority (UTA), Salt Lake City, UT
- Metro Transit, Seattle, WA

ABSTRACT

Ensuring the provision of accessible transit services for all requires that both accessible fixed-route transit services and ADA complementary paratransit services be provided. Significant progress has been made on both since the passage of the ADA in 1990. Some challenges remain, including the provision of high-quality, cost-effective, and sustainable ADA paratransit. Between 1999 and 2012, demand for ADA paratransit increased from 68 million trips per year to 106 million trips per year, and the average nationwide cost per trip increased from $13.76 to $32.74. This report presents successful strategies for providing high-quality, cost-effective, and sustainable ADA paratransit service and describes examples of inclusive service designs that can be used to effectively meet the transit needs of all riders. A nationwide survey of transit agencies was conducted to identify strategies and service designs. Twelve in-depth case studies were conducted to gather information about implementation and effectiveness. The disability community was involved to identify and select service strategies, designs, and case studies.

EXECUTIVE SUMMARY

Background

Ensuring the provision of accessible transit services for all requires that both accessible fixed-route transit services and ADA complementary paratransit services be provided. Prior to the passage of the American with Disabilities Act of 1990 (ADA), most transit agencies provided one or the other, but not both. Recognizing the need for both types of service to meet the needs of all riders, the ADA established standards for accessible fixed-route transit services and also required public entities to offer complementary paratransit service (ADA paratransit) where fixed-route service was provided.

The ADA requirements to provide accessible transportation for all riders have resulted in significant changes nationwide. Close to 100% of fixed-route buses operated by public transit agencies are now accessible.[1] Programs are also in place to maintain accessibility equipment in operating condition, train employees in serving all riders, properly accommodate mobility devices, announce stops, provide route identification to waiting riders, and accommodate service animals.

There has also been tremendous growth in ADA paratransit service. Prior to the passage of the ADA, it was estimated that about 15 million unlinked passenger trips were provided on paratransit services by transit agencies nationwide.[2] By 1999, this had increased to more than 68 million trips.[3] By 2012, more than 106 million trips were reported on demand-responsive services (largely ADA paratransit) in the National Transit Database (NTD).[4] The cost of paratransit has increased accordingly. Total operating cost for demand-responsive services, including taxis, reported in the NTD in 2012 was $3.5 billion.[5]

The unit cost of ADA paratransit service has increased at a greater rate than other modes. From 1999 to 2012, the cost per trip for demand-responsive/ADA paratransit service increased 138%, from $13.76 to $32.74.[6] Cost for fixed-route bus service for the same period increased by 82%.[7] The unit cost increases for ADA paratransit are due, in part, to improvements in the quality of service in many localities.

Although the benefits provided by ADA paratransit and more accessible fixed-route transit are undeniable, the increases in cost pose a challenge. To ensure long-term sustainability, it is vital that ADA paratransit be operated as cost-effectively and efficiently as possible while still providing comparable, quality service.

Alternatives to traditional fixed-route and ADA paratransit services that can also ensure accessible transportation for all are also being explored by transit agencies. This includes flex-route services, general public demand-responsive services (including accessible taxis), local community bus programs, and coordinated paratransit services. Each of these types of services includes features that can meet the needs of a broader range of riders in an inclusive design.

Objectives

The primary purpose of this study was to research the provision of ADA paratransit and identify successful strategies that can be used by transit agencies to improve the effectiveness and cost-efficiency of these services. A second purpose was to identify successful examples of alternative, inclusive service designs that can be implemented by transit agencies to ensure more accessible transportation for all riders.

Related Research – TCRP Report 163

Although this study focuses on the provision of cost-efficient, high-quality ADA paratransit service and on alternative, inclusive service designs, it is recognized that effective fixed-route transit service also is needed to ensure accessible transportation for all. Research on improving the effectiveness and use of fixed-route transit is examined in a companion study and document, TCRP Report 163, "Strategy Guide to Enable and Promote the Use of Fixed-Route Transit by People with Disabilities." The two studies and reports are intended to complement one another, and together they address the full range of issues related to traditional fixed-route transit, ADA paratransit, and innovative alternative service designs.

Methodology

Findings and recommendations were developed from several information sources, including:

- A review of the relevant literature
- A national survey of transit agencies providing ADA paratransit services
- A second national survey of transit agencies to identify use of alternative, inclusive service designs
- A Roundtable Meeting of selected transit agency managers and private ADA paratransit contractors
- Case studies of transit agencies identified as having implemented measures to improve ADA paratransit cost-effectiveness and/or alternative, inclusive services
- Input from the disability community, including ADA paratransit riders, in each case study area

Disability Community Involvement

To ensure that this study focused on model transit agencies, the case study component included a robust series of communications with people in the disability community and disability community organizations across the U.S. This information was obtained by means of extensive telephone networking with disability organizations and individuals. More information on this aspect of the study can be found in the Introduction and Appendix D.

Findings

Detailed information about the current operation of ADA paratransit services was obtained. A number of approaches for improving ADA paratransit cost-efficiency also were identified. Successful examples of alternative, inclusive service designs were also documented.

Survey Findings[8]

The national survey of ADA paratransit services found that:

- 75% of ADA paratransit services are operated by single entities. Two-thirds of these (50%) are operated in-house by transit agency employees. The remainder (25%) is provided by private turnkey contractors. Only 21% use a broker or call/control center and multiple service providers. Having multiple service providers can create competition and lower service costs. Service also can be moved from under-performing to performing providers, which can help ensure high quality.
- 42% of transit agencies that contract out for the provision of ADA paratransit service use non-dedicated service providers such as taxicab companies to deliver some service. Non-dedicated service providers can help to "smooth the peaks" in service by handling overflow trips. They can also be cost-effective options for delivering evening, weekend, and other low-demand time trips.
- 43% of transit agencies "comingle" ADA and other riders. Most of these (83%) also transport older adults on the same vehicles; 51% provide ADA paratransit service as part of a general public paratransit service; 51% also transport Medicaid-eligible riders; and 42% comingle ADA riders with other human service agency riders. Comingling trips can increase overall service productivity, lower unit costs, and is less segregated and more inclusive.
- 50% of transit agencies indicated that they are reviewing their ADA paratransit service designs and are considering changes to increase service efficiency, quality, or both.

In terms of strategies for managing ADA paratransit service costs:

- 79% of transit agencies use capital funding to purchase vehicles, rather than asking contractors to build the cost of vehicles into operating contracts.
- 79% of agencies use software to assist with scheduling, dispatching and system management; 58% use Automatic Vehicle Location (AVL) technology; and 54% use Mobile Data Terminals/Computers (MDTs/MDCs). Agencies that use these technologies reported that they are effective in enhancing service productivity and quality.

- 54% of agencies use on-board cameras for safety and monitoring. On-board cameras can be used to monitor safe driving habits and can lower insurance costs. They are also useful in investigating complaints and incidents.
- 15% of agencies use Interactive Voice Response (IVR) technology for automated communications with riders (trip bookings, confirmations and cancellations), and 12% have web-based applications for trip bookings, confirmations, and cancellations. Automated trip bookings can reduce trip reservation costs. Automated trip confirmations and cancellations can reduce no-shows and increase productivity.
- 9% of agencies use IVR technology combined with AVL and MDT technologies to do automated "call-outs." Automated call-outs alert riders that vehicles are about to arrive or have arrived and can reduce vehicle dwell times and no-shows.
- 8% of agencies use proximity or "swipe" cards for fare collection, which can reduce the cost of securing and collecting fares.
- 72% of agencies have contract goals regarding service productivity (trips per revenue-hour). These are balanced by goals related to services quality, such as on-time performance, ride times, telephone hold times, complaint rates, accident rates, and vehicle breakdown rates.
- Far fewer systems have monetary incentives and disincentives in contracts to encourage achievement of these goals. Only 10% of transit agencies have contract incentives, and only 14% have disincentives for productivity. Between 3% and 13% have incentives related to service quality goals, and between 8% and 19% have disincentives related to service quality.

Transit agencies that responded to the survey noted numerous operating practices that have been successfully implemented to improve service efficiency and quality. These include trip reservation, scheduling, and dispatching practices.

A number of transit agencies noted that implementing a no-show policy and working with riders who have a pattern and practice of missing scheduled trips is also very important for reducing dwell times at pickups, improving service productivity, and reducing unit costs.

Attracting and maintaining a quality and experienced driver workforce also was cited as very important for service costs and quality.

Somewhat limited competition for ADA paratransit service contracts was documented by the survey. In total, 24% of agencies that use turnkey contractors reported receiving only one bid in their most recent procurement. Another 62% received only two or three bids. Procurement of contractors under brokerage designs and designs that separate call center and service provider functions are more competitive. With a separation of operational functions, there is an

opportunity for more companies and non-profit contractors to be involved in the overall provision of service.

To make it easier for new companies to bid, and to reduce the complexity of transitions between contractors, 49% of transit agencies reported that they own or lease the facilities for ADA paratransit operations.

A total of 163 transit agencies indicated that they have implemented one or more innovative service designs to supplement ADA paratransit and serve riders with disabilities in an inclusive and cost-effective way.

- 65 transit agencies (40% of those who responded) operate flex-route services that go off-route to serve riders who may not be able to get to or from established stops.
- 59 agencies (36%) operate demand-responsive services for the general public or support local communities that provide these services. These general public demand-responsive services serve all riders in areas where there is no fixed-route or ADA paratransit service, or they operate at times when fixed-route and ADA paratransit are not provided.
- 57 agencies (35%) provide local community bus services or support local communities that operate the services. These community bus services typically are more neighborhood-oriented and can minimize walking distances to and from transit stops.

Roundtable Discussion[9]

A Roundtable discussion involving selected managers of ADA paratransit services identified several keys to cost-effective operation of quality ADA paratransit services. Participants agreed that there is no "right" service design for all areas, but that the design needs to reflect local conditions and capabilities. If contracted out, the design needs to be matched with contract requirements and methods of payment to promote quality and cost-efficiency.

Bid bond requirements need to be carefully considered. High bonding requirements can limit completion and increase unit costs. A reasonable mix of contract incentives and disincentives also needs to be developed. Procurements and contracts that rely primarily on monetary disincentives can decrease competition. Unit costs also can increase, as bidders tend to build the expected cost of monetary disincentives into their prices.

Whereas a reasonable mix of performance goals, incentives, and disincentives is important, there was consensus that the most effective way to manage service cost as well as quality is to develop a good working relationship with contractors. Using multiple service providers and developing the ability to move business from underperforming contractors to performing contractors also was suggested as an effective way to ensure the best cost and service quality.

Roundtable participants also felt that quality procurement processes are important. Requests for proposals need to contain complete and accurate data so bidders can fine-tune costs and minimize contingencies. Arranging for a pass-through of fuel costs also can eliminate the need for bidders to include contingencies. Cost forms should be detailed to allow transit agencies to identify and scrutinize bid costs. Paratransit managers should be an integral part of the procurement process to allow proposals to be thoroughly reviewed.

Case Study Findings[10]

Case studies documented many successful practices for operating cost-efficient and quality ADA paratransit services:

- The Santa Clara Valley Transportation Authority (VTA), in partnership with OUTREACH, has developed a full-service brokerage model to provide coordinated transportation, including ADA paratransit. From FY2004 to FY2012, VTA and OUTREACH lowered the operating cost of their ADA paratransit service from $30.40 to $26.46. Strategies include using more fuel-efficient vehicles, improved routing and scheduling, using non-dedicated service providers, developing competition for dedicated services, centralized maintenance, in-kind parking and operating facilities, and bulk fuel purchases.
- The Port Authority of Allegheny County (PAT), in partnership with ACCESS Transportation Services, Inc., operates an administrative brokerage to coordinate transportation services, including ADA paratransit. In total, 83% of paratransit trips provided are funded by local and state human service agencies; only 17% are ADA paratransit trips funded by PAT. PAT and ACCESS have worked to develop local and national contractors and aggressively negotiate service contracts. The average cost of a paratransit trip was $20.76 in FY2011.
- The San Mateo County Transit District operates general public demand-responsive service in a portion of its service area that has lower population density to better serve all riders. In FY2012, more than 4,000 trips for general public riders were integrated with 25,000 ADA paratransit trips.
- STAR in Arlington County, Virginia, has developed a mix of dedicated and non-dedicated service providers using local taxicabs. Average operating cost per trip was $32.81 in FY2012.
- Pelivan Transit manages a call center and four subregional scheduling and dispatching offices to take and coordinate 44 different types of demand-responsive services throughout a very large seven-county area in northeastern Oklahoma. Pelivan Transit makes extensive use of state-of-the art technologies, including automated scheduling and dispatching and computer tablets to improve service efficiency. The average trip cost is $16.50.

- Capital Metropolitan Transportation Authority (CapMetro) in Austin, Texas, has an in-house call and control center and a mix of dedicated and non-dedicated contracted service providers. Contracted service provider costs average $23 per trip. CapMetro also operates two community routes (known locally as service routes) that are designed to meet local travel needs; both offer off-route deviations. The routes have productivities of 11.2 and 13.7 trips per revenue-hour.
- The Southeastern Pennsylvania Transportation Authority (SEPTA) uses an in-house call and control center with contracted service providers to deliver ADA paratransit service. SEPTA makes extensive use of advanced technologies, including automated scheduling, MDTs, AVL, IVR, and web-based access to reservations and trip information, to deliver service. It also has developed detailed contract requirements and monitoring efforts to ensure service efficiency and quality. In 2012, SEPTA reported a cost per unlinked demand-responsive trip of $28.08, which is very cost-competitive for a large urban paratransit service.
- The Northern Arizona Intergovernmental Public Transportation Authority (NAIPTA) in Flagstaff, Arizona, offers supplemental taxi voucher service to individuals who qualify for ADA paratransit. Taxi trips in the city cost $9.92 in FY2012, and $21.87 for longer county trips outside the city. Both are cost-effective compared to ADA paratransit and also provide same-day trip flexibility.
- Broward County Transit (BCT) in Florida operates an extensive network of 20 community bus services. The services are operated by local communities with capital and limited operating support from BCT. Along with improved local service, the routes connect to regional buses to facilitate cross-county travel. In 2012, almost 2.4 million rides were provided on these 20 services at an average productivity of 14.8 trips per revenue-hour and a cost to BCT of only $2.95 per trip.
- The Utah Transit Authority (UTA) in Salt Lake City operates 15 FLEX routes. The FLEX routes have been used to provide service outside areas with traditional fixed-route and ADA paratransit services. They also have been used to replace traditional fixed-routes and to test new markets for transit services. About 20% of all pickups are via off-route deviations. In 2012, almost 300,000 trips were provided at an average cost of $11.38.
- Metro Transit in Seattle provides vehicles and limited operating support to local agencies that transport older adults and persons with disabilities. In 2011, more than 300,000 trips were provided by 24 participating agencies. A total of 49% of riders of these services were individuals who were ADA paratransit-eligible and had previously used the ADA paratransit service for their trips. Metro Transit's contribution per trip was $4.51.

Recommendations – Suggested Strategies

The study identified a number of short-term and longer-term strategies that can be used by transit agencies to improve the cost-efficiency of providing quality ADA paratransit service, as well as innovative services that can be implemented to provide cost-effective transportation for all riders.

Short-Term Strategies

In the short-term, improved operating practices can be used to make services more cost-efficient. Practices found to have the greatest opportunity include:

- Improved run-cutting (matching runs and shifts to demand).
- Use of non-dedicated service providers to supplement dedicated runs.
- Training reservationists to make good initial scheduling choices.
- Periodic batch scheduling before the day of service.
- Ongoing reviews of subscription trip templates.
- Limiting the trip scheduling options initially provided to riders to those that are the most efficient, while taking care to meet the ADA-required parameters for the negotiation window and engaging in a true negotiation of trip times.
- Periodically fine-tuning travel speed settings and other scheduling software parameters.
- Implementing no-show policies and working with riders who have a pattern and practice of missing scheduled trips.
- Improved recruitment and screening of drivers to ensure better-quality new hires.
- Improved driver training, particularly orientation to the area and schedule management.
- Improving the job environment to increase job satisfaction and morale to maintain experienced drivers.[11]

Greater use can also be made of advanced technologies to increase operating efficiencies and monitor service performance. Proven technologies that are now used in only 54–79% of ADA paratransit operations include:

- Automated scheduling and routing software
- MDCs and MDTs
- AVL technology
- On-board cameras[12]

Other technologies that have promise but whose uses are only beginning to be exploited (used by only 8–15% of systems) include:

- IVR systems for trip bookings, confirmations and pickup alerts
- Web-based applications for trip bookings, confirmations, and updates
- Proximity and "swipe" card technologies for cost-effective fare collection[13]

Procurement and contracting also can be improved to promote greater competition and lower costs. In particular, transit agencies should consider:

- Setting bonding requirements to reflect actual exposure and risk, if performance bonds are required.
- Including all data needed by potential bidders to accurately estimate service costs.
- Developing mechanisms to pass-through highly variable costs, such as fuel, to minimize contingencies added to bid prices.
- Requesting detailed cost information in proposals to allow costs to be thoroughly evaluated and compared.
- Aggressively negotiating costs before contracts are signed.
- Renegotiating costs if contractors provide less staff or services than originally proposed.
- Developing reasonable performance goals, incentives and disincentives that are effective but not overly punitive.
- Involving ADA paratransit managers and experts in the procurement process to improve the quality of RFPs and proposal evaluation.[14]

Longer-Term Strategies

In the longer-term, transit agencies should consider reviewing and revising the underlying service designs used to deliver ADA paratransit service. Strategies found to be particularly effective include:

- Service designs that promote competition.
- Multiple provider designs that allow service to be moved from under-performing to performing contractors, with less reliance on punitive (and potentially costly) monetary disincentives.
- Use of non-dedicated service providers to smooth peaks in demand and more efficiently serve trips in low demand periods.
- Matching the service design selected to contract performance requirements and methods of payment.

Transit agencies should also consider implementing innovative transit services that can provide cost-effective transportation for all riders. These include:

- Community bus services
- Coordinated paratransit programs

- General public dial-a-ride services
- Flex-route services

Conclusions

Significant improvement has been made since the passage of the ADA in the provision of transportation services for all riders. The provision of ADA paratransit services has been an integral part of this success.

As the amount and quality of ADA paratransit have increased, so have the costs, although these may be plateauing and sometimes even have been reduced in some transit agencies in the last few years.[15] Nevertheless, strategies for delivering service in more cost-effective ways are needed.

Although ADA paratransit has been provided for more than 20 years, it is still a relatively new mode within the industry. Transit agencies are still experimenting with service delivery models and methods of operation. Technologies to support cost-effective operation are still being developed and refined.

Alternative transportation service designs, beyond traditional fixed-route and ADA paratransit, also have been developed. Some of these new designs are more inclusive and responsive to the needs of all riders. Some designs also can be provided more cost-effectively than separate fixed-route and ADA paratransit services.

This study identified numerous strategies that can be used to provide more cost-efficient ADA paratransit service without reducing service quality. It also identified several examples of new, inclusive service designs that have been successfully implemented. Transit agencies should consider these strategies as a way to continue to provide cost-effective and quality transportation for all.

SECTION

1

Introduction

Since the passage of the Americans with Disabilities Act (ADA) in 1990, tremendous strides have been made in providing public transit services that meet the needs of all riders, including people with disabilities. Nationwide, almost all fixed-route buses now in operation are accessible, with lifts or ramps and other features to serve riders with disabilities. All new rail stations and other transit facilities are designed and built to be usable by all. Older "key" rail stations have been proactively modified, and accessibility is being incorporated as other older stations are upgraded and modernized. ADA paratransit also is provided to serve riders whose disabilities prevent them from using fixed-route bus or rail transit.

In recent years, the provision of accessible transportation for all riders has focused on three particular challenges and opportunities:

- Providing quality ADA paratransit services as cost-efficiently as possible.
- Enabling and promoting increased use of accessible fixed-route transit services by riders with disabilities.
- Developing innovative transit service designs that can be used to better meet the transportation needs of all riders.

As part of its ongoing efforts to assist grantees, the Federal Transit Administration (FTA) sponsored research to address these challenges and opportunities. This study focused primarily on identifying practices and approaches for providing ADA complementary paratransit service that is cost-effective, improves efficiency, and increases mobility of people with disabilities. It also examined innovative and inclusive service designs such as flex-routes, general public demand-response service, community bus routes, and accessible taxi services that serve the same goals of efficiency and increasing the mobility of people with disabilities.

A companion study, conducted through the Transit Cooperative Research Program (TCRP), focused on increased use of fixed-route transit services. Results of this companion research are presented in TCRP Report 163, "Strategy Guide for Enabling and Promoting Increased Use of Fixed-Route Transit Services by People with Disabilities."

Trends in ADA Paratransit Service Operation and Design

Before the ADA became law, 60% of paratransit services in the country were operated directly by transit organizations [1]. This began to change in the 1990s; by 1996, 61% of transit agencies contracted for some or all of their ADA paratransit

service [2]. Research at that time suggested that transit agencies were reassessing their service models because of increasing costs [3]. Whereas the smaller and rural systems that contracted for service tended to use local non-profit providers, larger systems were moving to private contracting and multiple provider models.

By the 1990s, a number of cities were using the brokerage model for ADA paratransit, with trip reservations and initial scheduling centralized, and final schedules and dispatching decentralized among multiple service providers, which were often non-dedicated providers paid by the trip.

By the early 2000s, to gain more control over service and service quality, many transit agencies that contracted for service moved towards dedicated service, with contractors paid by the hour rather than by the trip. Some agencies also centralized dispatching, as well as reservations and scheduling, and contracted separately with multiple service providers to operate the schedules created. Centralizing the call and control functions was done, in many cases, to better manage service quality. Using several service providers was done to increase competition.

Current concerns about the rising costs for providing ADA paratransit have renewed interest in non-dedicated service. A TCRP report suggests that some mix of dedicated and non-dedicated service is often a more effective service design for transit agencies [4]. Perhaps in recognition of the role played by non-dedicated providers, which are typically taxis, the FTA has revised its National Transit Database (NTD) program to require separate reporting of taxi service as a subset of the demand-response/paratransit mode.

In the last few years, ADA paratransit and other specialized services have been a focus of mobility management, with transit agencies and communities implementing strategies that aim to coordinate their various transportation services for greater efficiency. The brokerage model is again being considered as a service model that can operationalize mobility management.

The provision of ADA paratransit service has evolved over the years, with varying models in different communities, and sometimes with varying models in the same community. There is not one standard model. Moreover, transit agencies may revise their service model over time, starting with a particular service design and changing it based on their experience with ADA paratransit, response by the rider community and, in some cases, available options for service providers.

With a majority of transit agencies contracting for some or all of their ADA paratransit service, the role of private contracting is significant for ADA paratransit. National data show that 55% of transit agencies that provide paratransit service contract for some or all of their service [5]. For the larger transit agencies, the proportion is higher. Of the country's 40 largest transit agencies (measured by total ridership) that provided ADA paratransit service, 34 (85%) contracted for all or part of their paratransit service [6].

Given the prominent role of private contracting as one option for ADA paratransit service provision, particularly in larger cities, this research study has specifically included an assessment of procurement and contracting practices, their potential impacts on the cost-effectiveness of the service, and methods for conducting procurement and contracting that improve cost efficiency while preserving service quality.

Cost Issues

Concerns about the cost of paratransit service are not new. Given the nature of ADA paratransit, with relatively low productivities and corresponding high per-trip costs compared to fixed-route service, concerns have been voiced about the mode for many years. In some cases, cost increases arose because transit agencies have invested greater resources to achieve services in full compliance with the ADA and/or to provide a higher level of service quality.

National data show that costs for ADA paratransit have risen. The data show that from 1996 to 2012, the cost per trip for demand-response/ADA paratransit increased by 138%, from $13.76 to $32.74 [7]. This is a greater increase than experienced for fixed-route bus service, which saw an 82% increase over the same time period. Rising costs are impacted by rising demand for service and also can be impacted by increasing operating costs (cost per vehicle hour) and decreasing productivity (see Table 1-1).

Table 1-1

U.S. Paratransit Productivity, 1999–2012

Year	Passenger Trips/ Vehicle Hour
1999	2.42
2000	2.38
2001	2.26
2002	2.20
2003	2.19
2004	2.13
2005	2.16
2006	2.12
2007	2.00
2008	2.01
2009	1.99
2010	1.99
2011	1.98
2012	2.03

Source: FTA National Transit Database

A 2012 study by the Government Accountability Office (GAO) assessed costs and demand for ADA paratransit services [8]. Based on the study's survey, the GAO found that the average cost of an ADA paratransit trip was 3.5 times more

costly that the average cost of a fixed-route trip, with reported per-trip costs for ADA paratransit ranging up to $69.25. The study also found that the surveyed transit agencies spent, on average, 14–18% of their 2010 budgets providing ADA paratransit. Major contributors to the cost increases, as reported by the GAO, include rising operating costs (such as for fuel), changes in the costs of labor and benefits for drivers and administrative staff, increasing numbers of ADA paratransit riders, and "ride shedding," with community organizations discontinuing their own transportation services for people with disabilities and relying instead on ADA paratransit,

A report prepared for the Metropolitan Transit Authority of Harris County, Texas (Houston Metro) in 2013 reviewed ADA paratransit service at transit agencies around the country to assess the state of practice and to identify effective practices in providing transportation services for people with disabilities [9]. Based on the review, the report finds that the costs for paratransit are significant, with large subsidies required, and that efforts to control costs, where successful, are more apt "to bend rather than reduce the cost curve."

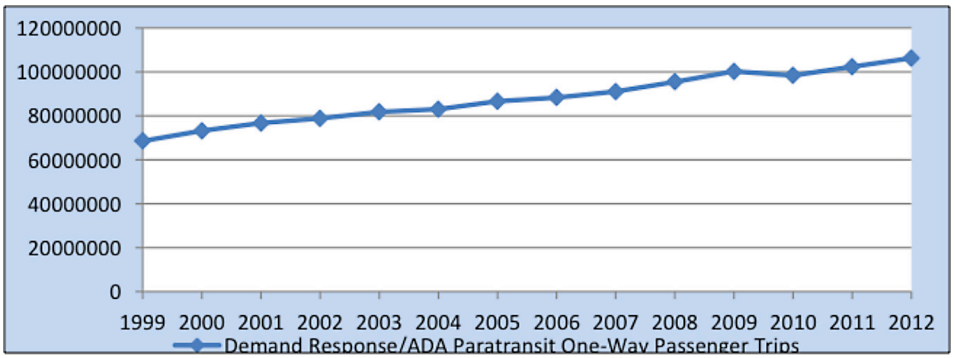
Some research is beginning to find that costs and demand for ADA paratransit have flattened or moderated in the last few years, at least for some transit agencies. In the San Francisco Bay area, for example, costs for ADA paratransit grew in the early 2000s, but since then have not grown as rapidly. The four largest paratransit programs in the Bay area saw their ADA paratransit operating costs grow by 65% between FY 2000 and FY2010, but by only 10% between FY 2005 and FY2010. ADA paratransit ridership actually decreased by 7% between FY 2005 and FY2010 [10].

National research conducted by TCRP also found that ADA paratransit ridership flattened, or slightly decreased, at six of seven transit agencies analyzed in detail, as measured by ridership data from 2009 to 2011 [11].

National ridership data also suggest that the growth in ridership demand may be beginning to slow (see Figure 1-1).

Figure 1-1

U.S. paratransit ridership, 1999–2012



Source: FTA National Transit Database

Goals of this Research Report

The goals of this research report are:

- To present approaches for operating effective and cost-efficient ADA paratransit services.
- To provide an analysis of service design options that serve the interests of both riders and transit agencies, and assist transit agencies to make effective service design choices.
- To identify procurement and contracting strategies for more cost-effective ADA paratransit services that do not compromise service quality.
- To present alternative, inclusive service designs, such as flex-routes, general public demand-response service, community bus routes, and accessible taxi services.

Information Sources

The information in this study was developed in a number of ways, as indicated below.

Literature Review

An extensive literature review was conducted regarding inclusive service designs, operating models, ADA paratransit cost structure, and operating practices and procurement and contracting practices that are cost-effective and provide quality service.

Surveys

An extensive survey of U.S. public transit providers was conducted to identify current and best practices in providing cost-efficient and effective ADA paratransit service. The survey was sent to all 674 public transit agencies listed in the 2010 NTD as providing fixed-route transit and ADA paratransit services, as well as to the Access Advisory Committee of the American Public Transportation Association (APTA). A total of 198 responses were received, representing a 29% response rate. A copy of the survey, list of respondents, and a summary of responses are provided in Appendix A.

Questions on inclusive service designs were also incorporated into a national survey conducted for the TCRP companion study. That survey was sent to the same 674 public transit agencies. Responses were received from 163 agencies, a 24% response rate. The questions included in that survey, a list of respondents, and a summary of responses are provided in Appendix B.

Interviews

The team conducted interviews with private contractors of ADA paratransit service to provide input on contracting and procurement practices from the contractors' perspectives. These included smaller contractors, taxi companies, large national firms, and non-profit contractors.

Roundtable and White Paper

A Roundtable meeting was held to obtain feedback from transit agencies and private ADA paratransit providers on service design and on contracting and procurement practices, and how these issues impact the cost of ADA paratransit. The Roundtable included balanced participation between transit agencies and contractors, the latter including large national firms as well as smaller firms and non-profit contractors. A summary of the Roundtable discussions is provided in Appendix C.

Case Studies

The research team conducted 12 case studies, focusing on the following management and operational practices:

- ADA paratransit service design
- Contract goals and standards
- Contracting and procurement
- Operating practices
- Use of advanced technology
- Use of taxis and other non-dedicated service providers
- Community bus service
- Coordinated service
- General public demand-responsive service
- Flex routes

Case studies of the following transit agencies were conducted:

- Santa Clara Valley Transportation Authority and OUTREACH, Inc., San Jose, CA
- Port Authority of Allegheny County and ACCESS Transportation Systems, Inc., Pittsburgh, PA
- San Mateo County Transit District, San Carlos, CA
- STAR, Arlington County, VA
- Dallas Area Rapid Transit District, Dallas, TX
- Pelivan Transit, Big Cabin, OK

- Capital Metropolitan Transportation Authority, Austin, TX
- Southeastern Pennsylvania Transportation Authority, Philadelphia, PA
- Northern Arizona Intergovernmental Public Transportation Authority, Flagstaff, AZ
- Broward County Transit, Broward County, FL
- Utah Transit Authority, Salt Lake City, UT
- Metro Transit, Seattle, WA

Case study write-ups are provided in Appendix D.

Disability Community Involvement

Input also was obtained from the disability community, including ADA paratransit riders, for each system selected as a case study. Rider opinions about their experiences with the ADA paratransit service in each transit agency selected for study directly impacted the final choice of case studies and gave this study's researchers additional information to consider about each studied system.

The information was obtained by means of extensive telephone networking with disability organizations and individuals. The goal of the initial phase of calls was to find appropriate interview subjects. Telephone calls targeted disability-related organizations such as centers for independent living, Lighthouses and Commissions for the Blind, and City offices on disability issues. From there, the study team was directed to many other organizations and to individuals recommended for interviews.

Because the study team assumed that even the best ADA paratransit service might have some unhappy riders, a few complaints were never the basis for ruling out a case study site. But if the disability community feedback was overwhelmingly negative, the site could be ruled out.

In many cases, particularly in less densely-populated communities, extensive outreach efforts were necessary to find appropriate interview subjects. Once appropriate potential interview subjects were recommended, it was sometimes impossible to reach them. Or, once reached, they sometimes could not provide useful information for a variety of reasons, such as being on travel, in the hospital, in bereavement, or no longer making use of the ADA paratransit service. As a result, finding appropriate interview subjects sometimes required contacting far more people than the number of people actually interviewed.

More information about disability community involvement in the ATSA study, including the questions asked and a summary of the interview responses, can be found in Appendix D.

Summary of Sections

Following is a summary of the remaining sections of the report.

Section 2, ADA Paratransit Service Design

Section 2 begins with the main elements of service design. It then describes several of the most common service designs used to deliver ADA paratransit service. Trends in the development of different designs are then noted. Subsequently, this section presents the advantages and challenges of each service design and discusses matching key contract provisions and monitoring efforts to various types of designs to ensure both high service quality and cost-effective service delivery.

Section 3, Procurement and Contracting

Section 3 discusses the process of procuring and contracting for ADA paratransit service, identifying the major cost elements of contracted ADA paratransit service, reviewing elements of the procurement and contracting process, and providing strategies and approaches that balance the objectives for efficient, effective and quality ADA paratransit service.

Section 4, Operations and Technology

Section 4 sets forth a range of operating practices used by ADA paratransit systems to ensure proper service for their riders while also helping to make the service more cost-efficient. This section also discusses effective use of technology to improve paratransit service.

Section 5, Inclusive Service Designs

Section 5 discusses inclusive service designs such as flex-routes, general public demand-response service, community bus routes, and accessible taxi services. The section identifies how each of these service designs can provide increased mobility for all riders and summarizes findings from case studies.

SECTION

2

Service Design

As noted in Section 1, a majority of transit agencies in the U.S. contract for some or all of their ADA paratransit operations. However, the structure of the contracting arrangements is by no means uniform. Transit agencies have taken many different approaches and have developed a range of service designs for the delivery of ADA paratransit service. These approaches and service designs often develop as a result of local circumstances and conditions. Sometimes, they also evolve to address service issues that develop over time.

While there is no "best" way to design and deliver ADA paratransit service, it is important that the selected service design consider local conditions and circumstances unique to the area. Selecting a service design that matches local conditions and circumstances is an important first step in ensuring cost-effective and high-quality service.

This section discusses the main elements of service design and describes several of the most common service designs used to deliver ADA paratransit service:

- In-house
- Single turn-key contractor
- Multiple turn-key contractors
- In-house call/control center with contracted service providers
- Contracted call/control center with contracted service providers
- Administrative and full-service brokerages

Trends in the development of different designs are noted, and the current use of different designs is indicated. The advantages and challenges of each service design are presented, and matching key contract provisions and monitoring efforts to various types of designs to ensure both high service quality and cost-effective service delivery are discussed.

Service Design Decisions

Table 2-1 summarizes the key decisions regarding service design. It presents the primary design decisions—issues that are unique to the design and that do not vary—as well as secondary decisions—issues that can vary and be applied in different ways to each type of service design.

Table 2-1

Major Service Design Decisions

Issue	Options
Primary Service Design Decisions	
Who operates the service?	In-house operation, contracted operation, combination
Structure of service area	Single area, service area zones
Transfers	Required, not required
Secondary Service Design Decisions	
Types of providers	Dedicated, non-dedicated, mix of both
Number of service providers	Single provider, multiple providers
Assignment of key operating functions (reservations, scheduling, dispatch, service delivery)	Turn-key operation(s), centralized reservations, scheduling and dispatch, brokerage
Trip sharing	Exclusive ride, shared-ride
Methods of payment	Per hour, per trip, per mile, fixed and variable
Contract requirements	Performance standards, performance incentives and disincentives

A first decision is whether to operate the service in-house or to involve contractors in the operation. The entire service, including reservations, scheduling, dispatching, and vehicle operations, can be in-house or contracted, or certain portions of the operation can be kept in-house or contracted out.

Another primary design decision is whether a single service area is used or if the service area is divided into regions or zones.

If a decision is made to create service area zones, another important decision is whether to require that riders transfer when traveling between zones. This is a particularly important decision if there are different service providers in each zone. Providers can provide through service between zones, or transfer points can be set up and riders are asked to transfer between providers at these points. If through service is provided, a decision also is needed about whether return trips are handled by the same provider or the provider serving the second zone.

Finally, if regions and zones are defined, a decision needs to be made about transfers between these subareas being required or not.

In addition to these primary service design decisions, there are a number of secondary design decisions and options, as discussed below.

Types of Providers

The main option here is to use either providers that operate dedicated vehicles or providers that operate non-dedicated vehicles. In a dedicated operation, providers have a fleet of vehicles that is used solely for the ADA paratransit service. In a non-dedicated operation, providers make vehicles available for ADA paratransit

that also are used in other types of services. Taxicab companies are a common type of non-dedicated service provider. Non-dedicated service providers also can include non-profit agencies that operate coordinated services.

Number of Providers

Another primary decision is how many entities to involve in the delivery of service. One option is to have a "turn-key" operation, either run entirely in-house or with one turn-key contractor that performs all aspects of paratransit operations. Other options involve two or more entities performing various parts of the operation. This could include an in-house or contracted call and control center with one or more service providers. It also could include two or more stand-alone service providers operating in designated regions or zones. Other options also exist for involving multiple entities in the operation.

Assignment of Key Operating Functions

If two or more entities are involved, a decision might need to be made about the assignment of responsibilities for the various aspects of operations, including assigning responsibility for trip reservations, scheduling, dispatching, and vehicle operations. If a single turn-key design is selected, all functions would reside with the entity that was given full responsibility for the service. Similarly, if multiple turn-key operations are used in various regions or zones, all operating functions would reside wholly with each standalone provider.

Another option for assigning responsibilities would be to centralize the reservations, scheduling, and dispatching. Under this option, one entity (in-house or contractor) might be responsible for accepting and scheduling trips and dispatching runs, and one or more other entities might be responsible for operating and maintaining vehicles. In a fully-centralized system, reservations, scheduling and dispatch are together. In a "brokerage," reservations and scheduling are centralized, but dispatch is often the responsibility of the service provider(s).

Trip Sharing

If non-dedicated service providers are used, another secondary design decision is whether to share and group trips. If taxicabs are used, there could be a requirement that trips be grouped and shared, or taxicabs can be used to provide exclusive, non-shared rides. Similarly, if a non-profit coordinated transportation provider is used, a decision could be made to allow ADA paratransit trips to be commingled with riders being served under other programs, or the service could be designed to only group and share ADA paratransit trips and not to commingle riders from other services.

Methods of Payment

If one or more contractors are used in the service design, another decision involves how to pay for these services. Several different methods of payment are

possible, including paying per hour, per trip, or per mile. Fixed costs also might be separated from variable costs and paid based on an agreed monthly amount. As discussed later in this section, as well as in Section 3, it is important to select methods of payment that match well with other aspects of service design. Appropriately matching methods of payment to the service design is important for ensuring both service quality and cost-effective operation.

Contract Requirements

Finally, there are a number of decisions about contract requirements that need to be made to complete the basic service design, including performance standards, incentives and disincentives related to actual performance, reporting requirements, and methods of service monitoring. As discussed later in this section, as well as in Section 3, it is important to match these contract requirements to the other aspects of the service design. The type of basic service design can affect provider motivations and actions. Contract requirements need to be designed to properly manage and monitor the operation under these different conditions. For example, in turn-key operations in which reservations, scheduling, and dispatch are handled by the service provider, if payment is made per trip, there can be a strong motivation for a provider to schedule very tightly and serve as many trips with as little capacity as possible. This can affect service quality, particularly on-time performance and on-board travel time. In these designs, it is important to monitor service quality closely and to have strong performance standards related to on-time performance and travel times. Conversely, if turn-key providers are paid per hour, there can be an incentive to operate more vehicle hours than are actually needed. In these cases, it is important to closely monitor the run structure and to have strong contract provisions and performance standards related to productivity.

These secondary service design issues and decisions can be combined in various ways with the primary service design options. For example, non-dedicated providers (e.g., taxicab companies) can be used to supplement many different types of service designs, including in-house operations, single turn-key contracted operations, or multiple turn-key operations. Similarly, different methods of payment can be used across several different basic service designs.

Common Service Designs

Depending on the choices made regarding each of the above issues, a wide variety of service designs are possible. There are, however, some common designs that have been adopted across the country. These more common service designs are discussed below, along with the types of settings and circumstances in which they are often used.

In-House Operations

Some transit agencies provide required ADA paratransit services in-house. As shown in Figure 2-1, transit agency staff perform all aspects of service administration and operation. This includes administrative functions such as setting service policies, handling customer comments, marketing and public relations, and service monitoring. It also includes all aspects of operations, such as trip reservations, trip scheduling, run dispatching, and vehicle operations. Eligibility determinations are often the responsibility of the transit agency, although some systems contract with outside agencies for assistance.

Figure 2-1

In-house operation

Responses to the survey of transit agencies conducted as part of this study (see Appendix A) indicated that cities and counties that operate their own public transit services often use in-house operation. Transit departments within the city/county often operate both fixed-route and ADA paratransit service. Some transit agencies also operate services in-house. This is more common among smaller systems than larger systems. A few larger systems operate all transit services, including ADA paratransit, in-house.

Single Turn-key Contractor Design

Another common service design is a single turn-key contractor operation (see Figure 2-2). Under this design, the transit agency is responsible for administrative functions such as setting service policies, marketing and public relations, and service monitoring. The single contractor is responsible for all aspects of ADA paratransit operations, including overall management of the operation, trip reservations, scheduling, dispatching, road supervision, and vehicle operations. The turn-key contractor is typically also responsible for trip reconciliation and for providing service reports to the transit agency.

Figure 2-2
Single turn-key contractor design

It is a good practice under this design for transit agencies to maintain responsibility for customer service (handling of rider comments and complaints) to ensure that customer input is properly recorded and any problems are investigated. Having the contractor take complaints is a conflict since the complaints are directed against them. It is also a good practice under this design for transit systems to retain responsibility for eligibility determinations or to have another contractor conduct eligibility determinations since there is an inherent conflict, as the service provider would benefit from increased registrations and increased trips. As with in-house operations, transit agencies may contract separately for assistance with eligibility determinations.

Note that under a single contracted turn-key design, the contractor also may be authorized to develop a subcontract with a non-dedicated service provider (e.g., a taxicab company) for back-up service or to handle overflow trips.

Survey results (see Appendix A) indicated that the single contracted turn-key design often is used by cities and counties as well as small to medium-size transit agencies that do not have a history of providing transit services in-house. Smaller and mid-size systems tend to select this design for economies of scale, since there may not be enough service volume to justify splitting the operation among two or more providers. Some larger systems also use a single turn-key contractor to provide ADA paratransit services.

Multiple Turn-key Contractor Design

A third type of design is a multiple turn-key operation with two or more contractors (see Figure 2-3). This design typically is used when a decision is made to divide the ADA paratransit service area into zones. Typically, one contractor is then selected to provide service in each zone. Each contractor performs all operating functions.

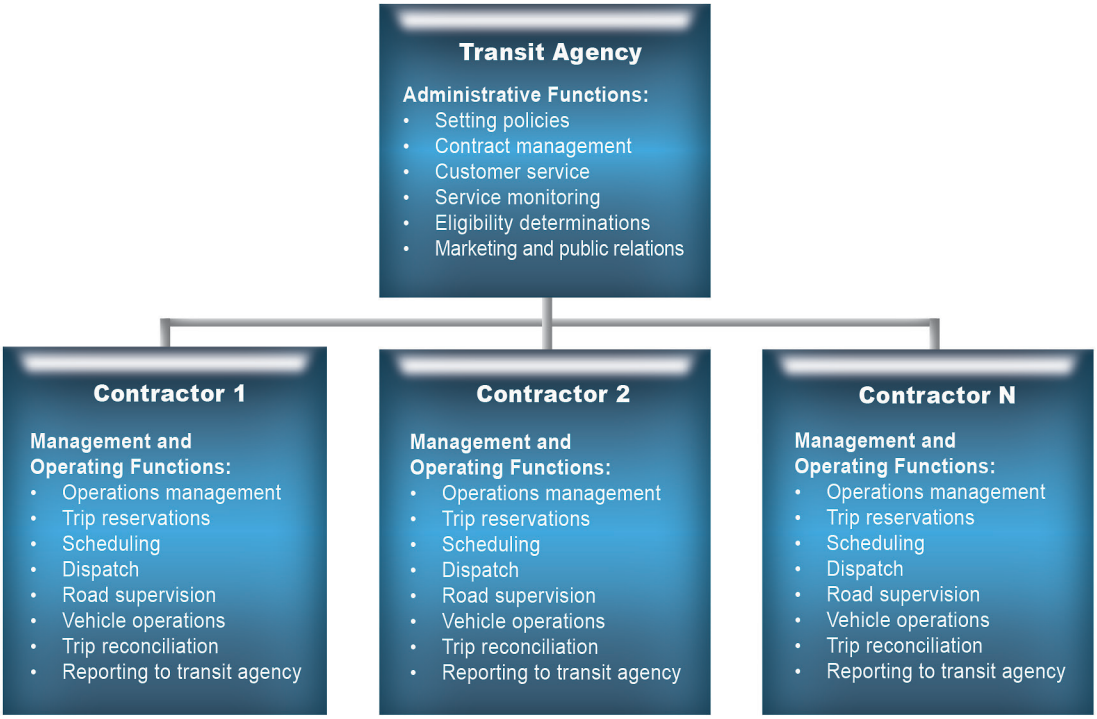


Figure 2-3

Multiple (two or more) turn-key contractor design

As in the single turn-key design, the transit agency maintains responsibility for administrative functions, including setting policies, managing service provider contracts, and monitoring service performance. As with a single turn-key design, it is good practice for transit agencies to directly handle customer comments and complaints and to maintain responsibility for making eligibility determinations.

Under this design, transfers can be required between service zones, or each turn-key contractor can be required to complete trips into other zones for riders who reside in their assigned zone.

As with single turn-key designs, this design can also use dedicated service providers, non-dedicated providers, or both. In some service zones, the selected provider may be either a dedicated or a non-dedicated provider. Dedicated providers also can be permitted to have subcontracted non-dedicated providers for back-up and overflow trips.

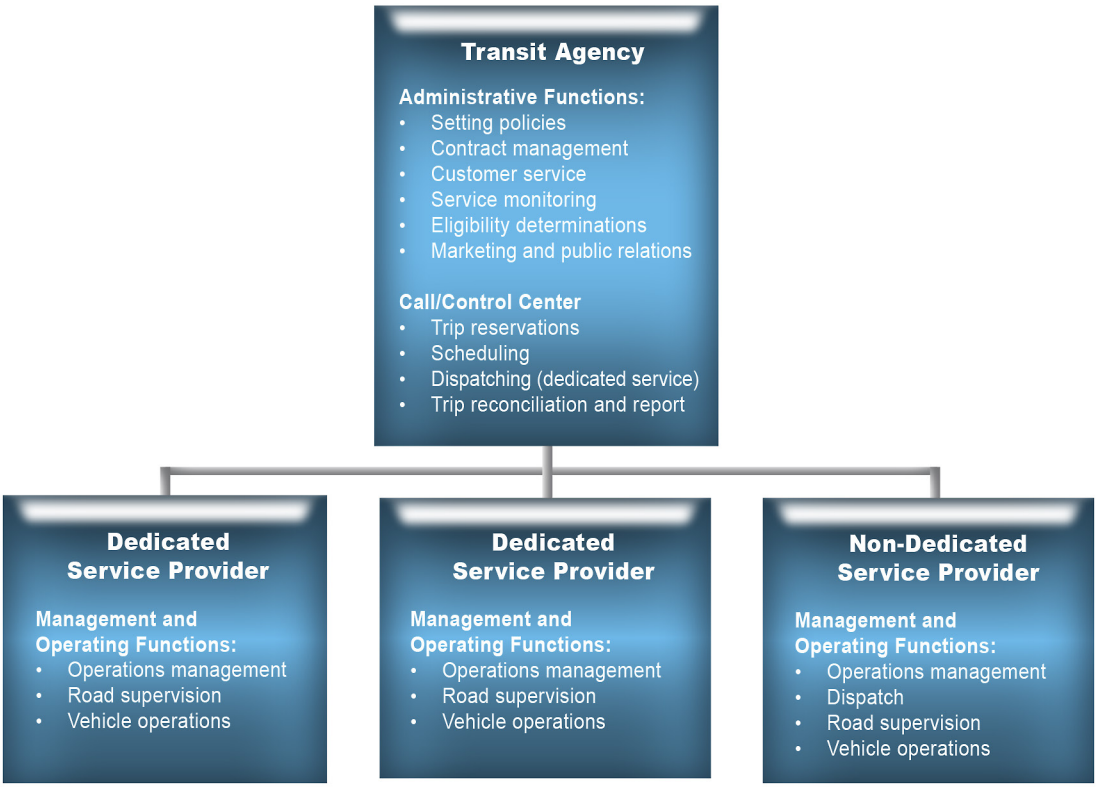
As indicated by the survey results (Appendix A), this design tends to be used by transit agencies with very large service areas. Typically, where service areas are zoned and transfers are required, "buffer areas" also are used. These are areas that typically extend 2–5 miles into bordering zones, and direct service is provided to/from adjoining service zones to avoid very short transfers.

In-House Call/Control Center with Contracted Service Providers

Another common service design in larger cities with larger service areas is a centralized call and control center with contracted service providers. The call and control center can be operated in-house or can be managed by a contractor. Figure 2-4 shows an in-house call center. Here, the transit agency handles all administrative functions and also operates a call/control center. Typically, several service providers are then contracted to perform the runs developed by the call center.

Figure 2-4

In-house call/control center with contracted service providers



Transit agency employees handle trip requests and create schedules. These schedules are then transmitted to service providers. A mix of dedicated and non-dedicated service providers can be used. Where dedicated service providers

are used, this design often employs central dispatching as well. Dispatchers at the control center oversee and manage runs performed by contractor drivers. Where non-dedicated providers are used (e.g., taxicab companies), lists of trips are transmitted by the call center, and the non-dedicated provider dispatches these trips.

Service providers sometimes are located in different parts of the service area and perform most trips in those areas, but because the dedicated portion of the fleet is centrally dispatched, vehicles can be scheduled throughout the service area.

The survey of transit agencies (Appendix A) indicated that this model is used in a several large cities as well as some medium-size systems. The large number of trips in these cities allows several service providers to have enough volume for economies of scale and cost-effective operation. A call/control center allows all dedicated vehicles to be centrally scheduled, dispatched and used throughout the service areas, which eliminates inefficiencies often associated with transfers.

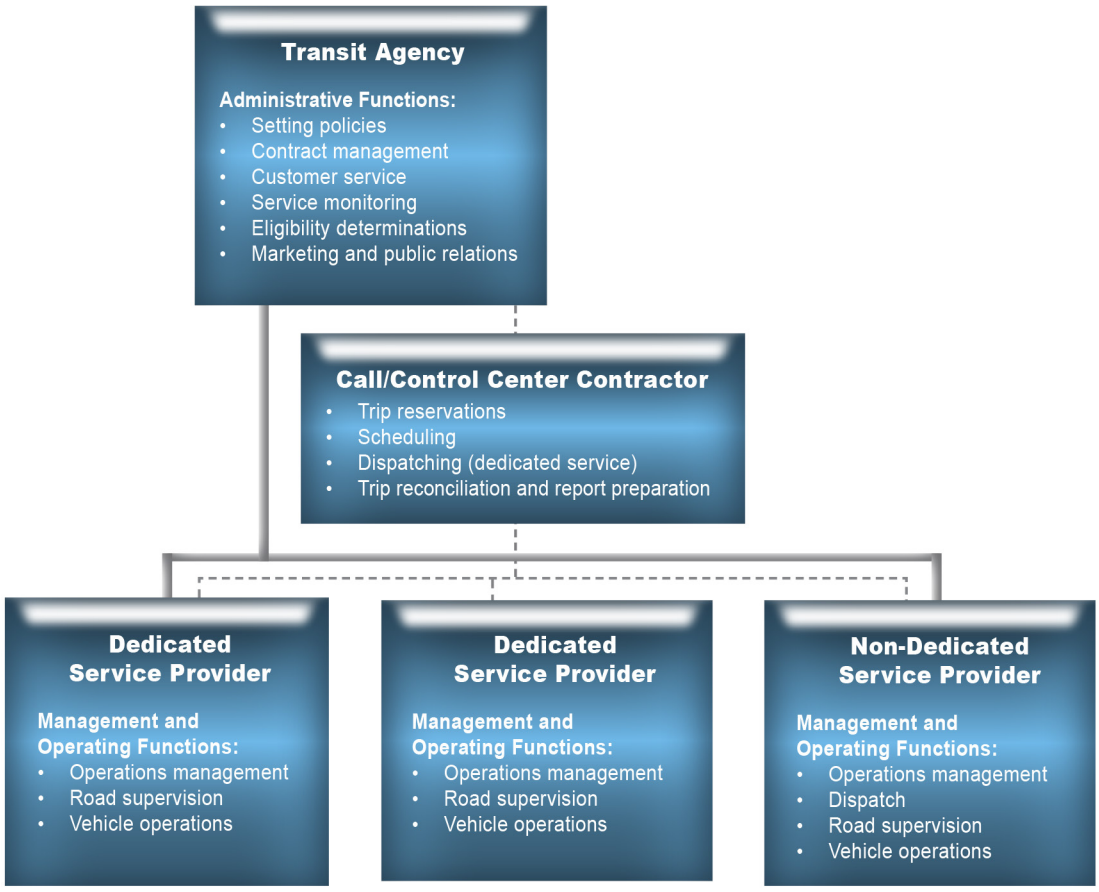
Contracted Call/Control Center with Contracted Service Providers

In some systems, transit agency drivers perform some of the runs created by the call/control center. This arrangement has been negotiated with the drivers' unions. In return for agreeing to allow ADA paratransit to be contracted out, an agreed upon amount of the service delivery is kept in-house. In these cases, the transit agency basically acts as one of the service providers.

A variation on the above design used by a number of other large cities is a contracted call/control center with separate service providers (see Figure 2-5). In this design, the transit agency handles all administrative functions but contracts with a company to manage a call/control center. The transit agency separately contracts with service providers (typically two or more) for the operation of service. The call center contractor takes trip requests, creates schedules, and transmits these schedules to the service providers. Again, the service providers can be dedicated or non-dedicated. Dedicated vehicles are centrally dispatched by the control center; non-dedicated providers (e.g., taxicabs) are given lists of trips to perform and handle the dispatching of these trips to their vehicles.

Figure 2-5

Contracted call/control center with contracted service providers



The call/control center contractor and the service providers have contracts directly with the transit agency. The call/control center contractor works with the service providers, but this is not a formal contractual relationship (as indicated by the dashed lines). A constructive working relationship and good communications must be maintained between the call/control center contractor and the service providers. The transit agency must also be the arbiter in any disputes about performance and responsibilities.

The survey of transit agencies (Appendix A) indicated that this model is used in a number of large cities.

Administrative and Full-Service Brokerages

Brokerages are also used by some transit agencies. This includes administrative brokerages and full-service brokerages. In an administrative brokerage (see Figure 2-6), administrative functions are split between the transit agency and the broker. The transit agency sets policies and oversees the broker contract and operation.

The broker then assumes many of the other administrative functions performed by transit agencies under other models. This includes procuring and contracting with service providers, monitoring and managing service providers, and handling customer service functions (comments and complaints). Typically, the administrative broker also assumes responsibility for eligibility determinations and marketing and public relations. And often, the administrative broker also serves as a mobility manager for the region and assists in developing a coordinated transportation system.

Figure 2-6

Administrative brokerage

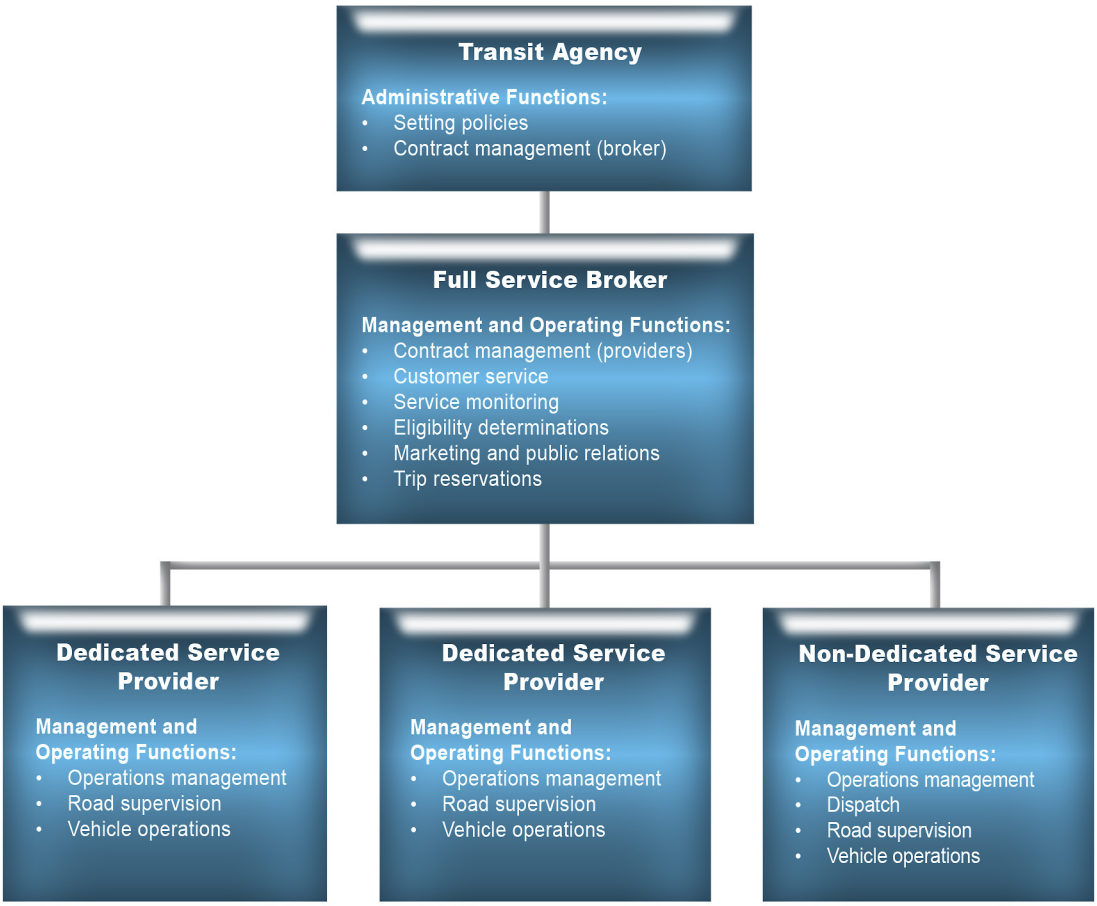
Dedicated and non-dedicated service providers typically are included in this design. Service providers perform all operating functions, including reservations, scheduling, dispatch, and vehicle operations. They also reconcile trip records and prepare reports for the broker. The broker then consolidates individual provider reports into consolidated reports for the transit agency.

Essentially, this design is similar to a multiple turn-key design except that the administrative broker procures and manages the service providers and performs several administrative functions for the transit agency. Like the multiple turn-key design, the administrative broker model works well in large urban areas with large service areas. The service area typically is zoned, with one or more service providers assigned to each zone. ACCESS Transportation Systems, Inc., a longstanding and well-known administrative broker in Pittsburgh, is described in a case study in Appendix D.

In full-service brokerages (see Figure 2-7), the broker not only performs administrative functions for the transit agency, but also operates a central call/control unit. Trip requests are handled centrally, and the broker for the service providers creates schedules. The broker's dispatchers centrally control all dedicated vehicles. The non-dedicated service providers dispatch non-dedicated vehicles. Because the broker has centralized scheduling and dispatching records, it typically also assumes responsibility for trip reconciliation.

Figure 2-7

Full-service brokerage



The full-service brokerage design is similar to the central call/control designs except that the broker manages the call center as well as the service providers. Like administrative brokers, full-service brokers also can serve as mobility managers and can develop coordinated transportation systems for the region. OUTREACH, Inc., a well-known example of a full-service broker in San Jose, California, is described in a case study in Appendix D.

Some transit agencies perform brokerage functions in-house. In addition to brokering ADA paratransit service, they coordinate services with other local agencies and broker these trips as well. They also may perform mobility management functions. If a full-service brokerage is provided, trip requests are taken and scheduled by transit agency staff. Runs and/or trips are then assigned to dedicated and non-dedicated service providers.

Historical Trends in Service Designs

With the passage of the ADA, significant changes have occurred in the provision of paratransit services by transit agencies. Changes also have occurred in the approaches taken to delivering ADA paratransit service and the service designs used. Figure 2-8 shows a timeline with key time points related to ADA paratransit service requirements and development. Each period on the timeline is discussed below.

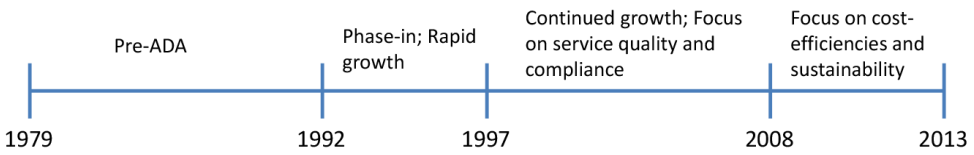


Figure 2-8
complementary paratransit service timeline

Pre-ADA (1979–1992)

Prior to 1991, transit agencies were not required to provide ADA paratransit service. The U.S. Department of Transportation (US DOT) Section 504 requirements, which applied prior to the ADA, allowed transit agencies to provide either accessible fixed-route service or paratransit service. If they chose to provide paratransit service, they were not required to spend more than 3% of their operating budget on these services.

A survey of the industry in 1988 indicated that prior to the passage of the ADA, most paratransit services (60%) were operated in-house [1]. A number of transit agencies also worked with local non-profit agencies and built on their existing transportation services to meet their Section 504 requirements.

Phase-in and Rapid Growth (1992–1997)

US DOT ADA regulations issued in September 1991 required that transit agencies develop plans for ADA paratransit service and begin implementing the services in 1992. The regulations provided a five-year phase-in period. Full compliance with ADA paratransit service requirements, including the elimination of trip denials and capacity constraints, was required by January 1997. During this period, many transit agencies that had opted under Section 504 to provide only accessible fixed-route services started providing paratransit for the first time. Others that had limited paratransit programs under Section 504 increased the scope and capacity of these services. The result was rapid growth in the amount of ADA paratransit service provided by transit agencies.

Studies during this period found a trend toward contracting out for services. The shift to contracted ADA paratransit operations is discussed in two papers from 2001 and 2002 [12, 13]. Both suggest that contracting out was done mainly to avoid higher in-house labor costs. One paper also notes that contracting was used as a way to separate the services from the politics and public controls of in-house operations [12].

A survey of the industry in 1993 found that direct operation was still popular, but privatization was increasing. The survey found that 39% of ADA paratransit services were operated in-house, 34% were contracted, and 27% had a mix of direct and contracted operation [14].

A 1994 survey suggested that systems were reassessing service delivery models due to increasing costs [3]. Large systems were moving to contracts with private paratransit management companies and also were exploring multiple service provider service designs. The survey included a large number of rural transit systems and found that in these areas, the majority contracted with local non-profit organizations.

A 1995 survey found that 31% of ADA paratransit services were operated in-house, 50% were contracted out, and 19% had combined models [15]. About a third of the systems that contracted out (34%) used multiple providers; 20 percent of those who contracted out used national private paratransit operators.

Finally, a 1997 survey found that 16% of ADA paratransit services were operated in-house, 52% were contracted out (of which 54% used a single provider and 46% used multiple providers), and 32% used a combination of direct and contracted operation [14].

Continued Growth; Focus on Service Quality and Compliance (1997–2008)

Rapid growth in ADA paratransit services continued past the full implementation date of 1997 and into the early 2000s. This rapid growth resulted in service quality issues. Several FTA compliance reviews from the early 2000s indicate that

budgets and service capacity were not increasing fast enough to keep up with growing demand. With much of the focus on eliminating trip denials, more trips were being added to schedules than could be performed in a timely way.

Compliance reviews also identified service quality issues related to service designs and the increased use of private contractors. Service quality issues were identified, in particular, in systems that gave responsibility for final scheduling and dispatching to private contractors and where these contractors were paid per trip. This type of contract created a strong incentive for contractors to provide as many trips as possible using as little service capacity as possible. The result was unrealistic schedules and poor on-time performance. The compliance reviews also indicated problems with inappropriate "no-showing" of trips. When services were running behind schedule, contractors sometimes indicated that riders did not show up for their trips and created new trips with later scheduled times, masking late trips and true on-time performance.

A second common issue identified during this period was driver turnover and workforce shortages. Significantly higher turnover and more severe workforce shortages were noted in contracted systems. TCRP Report 142 [16] found that the average annual turnover for contracted operations was 30% vs. 14% for in-house operations. Several FTA compliance reviews during this period identified annual turnover between 70–100% in contracted operations. As a result, private contracted services operated with a higher percentage of inexperienced drivers. Workforce shortages also resulted in some scheduled runs being cancelled with trips assigned to other, already tight, runs.

Reasons cited for high turnover and workforce shortages included low wages and compensation, and daily pressures caused by overly tight schedules, late pickups, and unhappy riders. A strong economy during much of this period also made it difficult to recruit drivers at near-minimum wage for a very difficult job. TCRP Report 142 [16] found that starting wages were lower for contracted operations ($7.00–$14.06 per hour) than for in-house operations ($9.50–$15.77). Fringe benefits also were less generous in contracted operations, particularly the employer contribution to health care coverage. The study also found that training was not always as extensive in contracted operations, allowing contractors to get new drivers on the road more quickly; whereas in-house operations provided an average of 182 hours of driver training, contracted operations provided an average of 97 hours of training.

In response to these identified issues, a number of systems centralized the reservations, scheduling, and dispatching functions. This was done mainly to obtain better control of service delivery and to better monitor service and reported performance. A number of systems also switched from paying per trip to per vehicle hour.

Systems also began to explore in-house operations to improve driver compensation, both wages and benefits. In systems in which fixed-route service already was provided in-house, integration of the workforces was explored as a way to have better cross-coverage of services and to improve paratransit driver wages, longevity, experience, and performance.

During this time period, transit agencies also began to increase their contractor monitoring efforts and to more closely examine performance requirements in contracts. Stronger incentives and disincentives related to inadequate performance were built into contracts for poor on-time performance, uncovered runs, and other service issues. Transit agencies also gave increased attention in the procurement of ADA paratransit services to adequate driver compensation and the ability of proposers to provide an adequate, experienced driver workforce. More Requests for Proposals (RFPs) began to include livable wage requirements or requested more detailed information about employee wages and fringe benefits.

Focus on Cost Efficiencies and Sustainability (2008–2013)

Increased focus on service monitoring and performance, as well as on driver compensation and retention, has resulted in improved service quality in recent years. It also has had an impact on cost. National NTD data show that from 1996 to 2011, the average cost per trip for demand-responsive service (which includes ADA paratransit service) increased by 134 percent, from $13.76 to $32.16 [7]. This was a greater increase than was experienced for fixed-route service, which grew by 82% over the same period.

The Great Recession of 2008 exacerbated the financial pressures on transit agencies. Reduced local tax revenues created significant pressures on many systems. In many cases, transit agencies had to reduce overall budgets while meeting the still-increasing demand for ADA paratransit service. Focus in the industry shifted to making services as cost-efficient as possible and adopting policies to ensure that ADA paratransit service could be sustained in the long term. Two recent trends include:

- Increased use of non-dedicated service providers (e.g., taxicab companies)
- Coordination of services and "commingling" of riders

Increased Use of Non-dedicated Service Providers

In recent years, there has been increased interest in the use of taxicabs and other non-dedicated service providers. TCRP Report 121 [4] concluded that use of non-dedicated providers can be effective in meeting peak-hour needs (smoothing the peak), serving low-demand trips that are inefficient to serve with dedicated vehicles, and meeting times of unexpectedly high demand (overflow demand). The report includes a spreadsheet model that can be used to calculate an optimal

use of non-dedicated service providers. The model examines opportunities for 1) leveling the peak, 2) diverting evening trips, and 3) diverting trips with certain trip lengths that may be more cost-effectively provided by non-dedicated service providers.

The trend toward greater use of taxicabs is still evolving. Impacts on costs and service quality have yet to be fully documented. TCRP Report 121 [4] indicates that non-dedicated providers report 7–19% higher productivities, but also notes that this could be due to the fact that non-dedicated providers tend to exclude deadheading in their vehicle hour reporting. It also states that per-trip costs for non-dedicated providers range from $14–$16 per trip, whereas dedicated providers range from $23–$24 per trip, but notes that this difference could be due to the fact that shorter trips and trips not requiring accessible vehicles typically are given to taxi companies. The study also notes some issues with the use of non-dedicated service providers, including more difficult oversight of service quality, a lack of accessible vehicles (especially among available taxi providers), potential issues with drug and alcohol testing, and insurance issues (again, mainly a taxi issue).

Advances in technology may assist with service quality issues that sometimes develop in non-dedicated provider operations. Vehicles can be equipped with mobile data computer (MDC) and automated vehicle location (AVL) technologies and the status of trips monitored in real-time by dispatchers. The effectiveness of this technology is still being tested, though, in several systems that have moved to greater non-dedicated vehicle use in recent years.

Commingling of Riders

Transit agencies also are exploring increased coordination of ADA paratransit services as a way to reduce costs, broaden sources of funding, and ensure long-term sustainability. A survey of the industry in 2009 identified 121 systems that commingled ADA paratransit trips [17]. The types of other riders transported with ADA paratransit eligible riders and the percentages of the identified systems that also transported these other riders were:

- Seniors (60%)
- Human service clients (57%)
- Non-ADA persons with disabilities (57%)
- General public (54%)
- Medicaid clients (46%)
- Low-income riders (33%)
- Head Start participants (10%)

The report notes that commingled riders can broaden the types of funding to support all types of paratransit, including ADA paratransit. Only limited evidence

of cost savings are documented, however. In one case study, an average cost per trip of commingled trips is noted as $18.31, while ADA paratransit-only service cost $26 per trip.

Coordination and commingling of trips are also being promoted as part of renewed interest in mobility management. Recent federal funding support for this concept has resulted in the establishment of an increasing number of mobility managers. These services may be helpful in identifying cost-effective service options for ADA paratransit riders and trips.

Current State of the Practice

The survey conducted in 2012 as part of this study gathered information about the service designs being used to provide ADA paratransit service. Following are a summary of findings for:

- Overall service design
- Methods of payment
- Use of dedicated and non-dedicated service providers
- Service area design
- Commingling of trips

Detailed survey results are provided in Appendix A.

Overall Service Design

Survey responses indicated that the most common design was in-house operation, with 50% of all respondents indicating this design. The second most common design is a single turn-key operation, with the public entity contracting with one provider. In total, 25% reported a single turn-key design, 11% reported having call centers with separate service providers, 6% indicated this design with an in-house call center, and 5% indicated a contracted call center. A total of 9% of systems reported a "brokerage" design, 6% contract with a private broker, and 3% take and broker trips in-house. Only 3% of respondents indicated multiple turn-key contractors, with each operating in specific regions. Other service designs were reported by 2% of systems. These included contracted management with service provided by public employees, service in part of the overall area provided in-house with service in other regions contracted out to turn-key providers, and in-house call center with some service provision done in-house and some contracted out.

Methods of Payment

A total of 31% of systems indicated breaking out fixed costs from variable costs and paying these fixed costs on a monthly or other regular basis. For the variable portion of costs, the most common type of reimbursement, used by 27% of

respondents, was payment per hour. Per-trip reimbursement was used by 20% of systems, and per-mile reimbursement by 7% of systems.

In total, 15% of transit agencies reported "other" payment methods. Most of these were slight variations of the main methods of payment. For example, one system noted that the amount of reimbursement of variable costs per hour changed based on the number of hours of service provided. Another indicated a "tiered" per-mile rate with different rates for different length trips, and another noted that the monthly fixed cost payment is adjusted if annual estimates of the amount of service provided vary significantly.

There were a few responses, however, that indicated atypical payment methods. One system reported that a fixed monthly payment is made for contracted management services and that all other costs were a straight pass-through to the public agency. Another reported a form of "capitated rate" payment, saying "City pays a flat fee regardless of the number of trips conducted."

Dedicated vs. Non-Dedicated Service Providers

A total of 78 systems indicated that contractors provided some or all of the ADA paratransit trips; 33 of these indicated that some of the contracted trips were provided on non-dedicated vehicles.

Of the 33 systems that used non-dedicated service providers, 9 operated brokerage-type services where some, if not all, trips are provided by non-dedicated providers (8 of these 9 systems reported 100% non-dedicated and one indicated 94% non-dedicated). The other 24 systems used non-dedicated service providers together with dedicated providers. In 10 of these 24 systems, 1–10% of all trips were provided on non-dedicated vehicles. Five systems provided 11–20% of trips on non-dedicated vehicles, 4 provided 21–30% of trips, 2 provided 31–40 percent, 2 provided 41–50 percent, and 1 provided 61–70% of trips on non-dedicated vehicles.

Outside of the few systems that operate with a "brokerage" design, most ADA paratransit trips are provided on dedicated vehicles. Most systems that use non-dedicated service providers appear to use them for less than 10–20% of all trips. Non-dedicated service providers appear to be used for specific trips (overflow/back-up service, less productive trips, or trips during low-demand times).

Service Area Design

The survey asked whether a single or zoned service area is used, and whether transfers are required. The large majority of systems (86%) indicated using a single service area with no transfers. Two percent said they had a single service area, but transfers were possible for certain trips, such as trips more than 10–20 miles in length. Another 2% also indicated a single area with no transfers, but focuses certain vehicles or contractors in "non-advertised operating zones."

Nine percent of systems said they had created two or more advertised zones. Of these, 6% did sometimes transfer riders between zones. The remaining 3% of systems said that there were no rider transfers and the "home" zone provider was responsible for providing through trips into the other zone(s). Two systems (1% of responses) said ADA paratransit service was provided through route deviations and that the "area" was defined as a maximum deviation distance off of the routes. In these cases, transfers might be required on the "fixed-route" portion of trips.

Commingling of Trips

The survey asked transit agencies if they commingled people who were determined ADA paratransit-eligible with other riders on their paratransit services. In total, 43% of respondents indicated that they have commingled ADA paratransit trips with trips for other riders; 53% have not, and 4% indicated that they were "Not Sure."

Respondents that indicated that they have commingled trips were then asked to identify the types of riders and trips that have been commingled with ADA paratransit. A list of systems that commingle trips which identifies the types of riders or other trips that are commingled is provided in Appendix A.

There were 81 systems that indicated that they commingled trips. Of these, 63 (78%) commingled ADA paratransit trips with trips for older adults. A total of 41 systems (51%) commingled ADA paratransit and Medicaid trips. A similar percentage (51%) commingled ADA paratransit trips with general public riders. A total of 34 systems (42%) indicated commingling ADA trips with riders who are clients of other human service agencies (HSAs); 21 systems indicated commingling with "Other" riders. The types of "Other" riders indicated were:

- Persons with disabilities who were not ADA paratransit eligible or whose trips were not eligible (e.g., trips outside the ADA paratransit area): 8 systems
- Persons who were considered transportation disadvantaged (Florida program): 3 systems
- Low-income persons: 3 systems
- Riders from neighboring transit systems: 1 system
- JARC riders: 1 system
- Riders with disabilities who experience problems using fixed-route (back-up to fixed-route): 1 system
- "Anyone who can't use fixed-route": 1 system

The majority of systems that commingle trips also indicated commingling more than one type of riders or trips with ADA paratransit riders. In total, 55 of the 81 systems (68%) commingle several types of riders/trips with ADA paratransit riders.

Factors that Impact the Applicability of Common Service Designs

As noted at the beginning of this section, there is no "best" design. Service designs often evolve over time and reflect the circumstances, past experiences and issues, and resources in each community. There are, however, some general factors that should be considered when deciding which service designs might best apply, including:

- Transit agency past involvement in direct transit operations – whether or not the agency has been involved in directly-operating transit services can be an important consideration in selecting a service design.
- Size of the service (ridership) – the number of trips provided per month and per year may determine the likely cost-effectiveness of various service designs and whether multiple providers should be included.
- Size of the service area – this size of the ADA paratransit service area may also drive decisions regarding the number of service providers and whether zones should be used.
- Ongoing involvement – the degree to which the transit agency plans to be engaged in service administration and monitoring, and the capabilities that exist to play a strong role are also important factors.
- Other local considerations – this includes, for example, local resources and relationships, including the availability of qualified taxi companies and past experiences with providing ADA paratransit service.

Table 2-2 summarizes how these factors affect the applicability of common service designs for ADA paratransit service. Where there is a link, either supporting or not supporting a particular service design, it is noted. If the circumstance does not have any particular bearing on the design, "Neutral" is indicated.

Table 2-2

Factors Affecting Common Service Designs

Common Service Designs	Past Involvement in Direct Transit Operations	Size of Service (Ridership)	Size of Service Area	Transit Agency Involvement & Capabilities	Other Circumstances
In-House Operation	More common where transit agency has operated transit service	More common in small or mid-size systems	Neutral	Transit agency involved in all aspects of administration and operations	Desire to integrate fixed-route and ADA paratransit
Single Turn-key Contractor	Neutral	Used in all sizes of systems, but more common in small and mid-size systems	Neutral	Transit agency manages contract, but involvement in operation minimized	Preference for giving one contractor full responsibility for service performance
Multiple Turn-key Contractors	Neutral	More common in larger systems	More common where there is a large service area that is zoned	Transit agency manages multiple contractors, but involvement in operations still minimal	Past history of zonal service or existing providers in parts of the service area
In-House Call/Control Center with Contracted Service Providers	Might be a factor if agency operates some service (as one of the service providers)	More common in mid-size and larger systems	More common in mid-size and larger service areas	Very high degree of involvement in operating call center plus managing multiple contractors	Past issues with service quality and desire to gain control of operation
Contracted Call/Control Center with Contracted Service Providers	Might be a factor if agency operates some service (as one of the service providers)	More common in mid-size and larger systems	More common in mid-size and larger service areas	Very high degree of involvement with multiple contractors and mediating issues between contractors	Past issues with service quality and desire to gain control of operation
Administrative Brokerage	Neutral	Used in all sizes of systems, but more common in larger systems	Used in all sizes of systems, but more common in larger systems	Transit agency manages broker, but little involvement in operation	Existing agency that has coordinated service, State requirements for coordination
Full-Service Brokerage	Neutral	Used in all sizes of systems, but more common in smaller, coordinated systems	Used in all sizes of systems, but more common in smaller, coordinated systems	Transit agency manages broker, but little involvement in operation	Existing agency that has coordinated service, State requirements for coordination

In-House Operations

In-house operation of ADA paratransit service is more common in transit agencies that currently operate fixed-route services or have directly-operated transit services in the past. Some transit agencies are created to administer transit services but not to operate services directly. In these cases, one of the other models with contracted operation is applicable.

Although past or current operating experience often affects a decision to operate services in-house, it is not as relevant a factor for contracted service designs. Many transit systems have direct operating experience with fixed-route service but still elect to contract out ADA paratransit service. However, service designs with call/control centers and multiple service providers sometimes are used by transit agencies that operate fixed-route services directly and that want to operate some of the ADA paratransit service in-house. In these cases, the transit agency basically acts as one of the service providers and performs some of the runs created by the call/control center.

In-house service designs are also more common in smaller and mid-size ADA paratransit operations. This includes many counties and small to mid-size cities that have transit departments that operate both fixed-route and paratransit services.

Since the transit agency is involved in all aspects of operation under an in-house service design, this model is applicable where the transit agency desires this level of involvement and has the capability to operate services successfully.

In-house operation also is sometimes the preferred option in systems that are looking to integrate fixed-route and ADA paratransit services. Some systems have had success developing a single integrated workforce and using drivers interchangeably in both services. Integrated fixed-route and ADA paratransit services also support programs and services that encourage and facilitate use of both modes by riders with disabilities.

Single Turn-key Contractor

Single turn-key contractor designs are used by transit agencies that directly operate fixed-route services as well as by transit agencies that do not. This design also is used by agencies that have small, medium and large ADA paratransit operations, although it tends to be more prevalent in smaller and mid-size systems.

Transit agencies that select this design must closely and carefully monitor the turn-key contractor. Involvement of the transit agency in day-to-day operations is not required, however, as the contractor assumes responsibility for all operating functions. Single turn-key contractors also tend to be used by transit agencies that prefer to give one entity full responsibility for service performance.

This simplifies contract management and allows for relatively straightforward monitoring of performance.

Multiple Turn-key Contractors

Multiple turn-key contractor designs are used mainly in larger ADA paratransit programs and where there is a relatively large service area. The service area can be divided into zones with reasonably good-size operations in each zone. In very large service areas, reducing deadhead offsets the cost of having multiple turn-key contractors with separate garages and operations centers.

Some areas have always had a history of zonal services. Cities and counties within the service area also may have a history of providing paratransit. In these cases, zonal systems with multiple contractors are used to allow these operations to continue.

Managing multiple turn-key contractors is more complex than managing a single provider. Still, however, the transit agency is not involved in day-to-day operations since each turn-key contractor manages all operating functions.

In-House Call/Control Center with Contracted Service Providers

This service design is more common in mid-size and larger ADA paratransit programs. There needs to be enough ridership to justify not only multiple service providers, but also the centralization of reservations, scheduling and dispatching. This design is also more common in programs with relatively large service areas.

Transit agencies that select this design have a desire to get more involved in daily operations. In many cases, a decision to take responsibility for reservations, scheduling and dispatch was made to gain control of the operation, often following issues with poor service quality under a different model.

The operation of a call/control center, particularly for a relatively large ADA paratransit program, is a considerable commitment. Transit agencies that select this model sometimes have past experience with direct operations and know they have the in-house capability to perform successfully. Some transit agencies also select this design as a way to be involved in some service delivery. In Baltimore and Tacoma, part of the union negotiation related to the contracting of paratransit service was an agreement to provide some of the service with transit agency drivers.

Contracted Call/Control Center with Contracted Service Providers

This service design is also more commonly used in mid-size and larger ADA paratransit programs and where there are relatively large service areas. This

design is also commonly adopted by transit agencies that desire to gain more centralized control of the operation. Although the call/control center is contracted, transit agencies sometimes co-locate staff at the call/control center to help facilitate service monitoring.

Some transit agencies also explore or employ call/control centers as a way to better group trips provided by multiple contractors. For example, call/control centers have been considered by Pace Suburban Bus, the agency that administers ADA paratransit services in Greater Chicago, as a way to possibly improve the efficiency of the multiple turn-key contractor design that has been used in that area.

This model requires a relatively high degree of administrative involvement by transit agencies. Contracts with the call/control center, as well as with multiple service providers, must be managed. Responsibility for performance also is shared between the call/control center contractor and the service providers. Transit agencies must facilitate communications and a close and positive working relationship between contractors. If performance issues develop, the transit agency also must mediate between the call/control center and service provider(s) and must have the capability to evaluate the issues.

Administrative Brokerage

Administrative brokerages can be used to provide ADA paratransit in all sizes of programs as well as all sizes of service areas. There are rural and small city administrative brokerages, as well as examples in very large cities (Los Angeles and Pittsburgh). However, if a brokerage design is used, an administrative broker tends to be used in larger ADA paratransit programs and larger service areas. This is the case because the service providers used by the broker operate as turn-key providers. A larger program can more readily justify and support several turn-key operators.

An administrative brokerage requires minimal transit agency involvement. The administrative broker procures and manages service providers and also typically performs several administrative functions for the transit agency, such as customer service and eligibility determinations.

Administrative brokerages often are established in situations in which an existing non-profit or public service agency has a long history of managing paratransit service in the region. Transit agencies take advantage of and build on this existing expertise. Administrative brokerages also are common in states that have coordination requirements, such as California and Florida. Brokerages have been established in these states to coordinate human service agency transportation and public paratransit services. Providing ADA paratransit service through an existing program may be appropriate and advantageous.

Because administrative brokers take on many administrative functions, a high level of trust must exist between the transit agencies and the brokers. As noted, brokers are often non-profit or public service agencies that work hand-in-hand with transit agencies. Contracts with the brokers often are longer-term and are crafted to recognize and support this close relationship.

Full-Service Brokerage

Many of the factors that determine the applicability of administrative brokerages also apply to full-service brokerages. The difference between the designs is that a full-service broker operates a call/control center, whereas an administrative broker does not. Full-service brokers, therefore, can be more applicable in smaller coordinated systems in which service providers may not have the capability to separately manage reservations, scheduling, and dispatch. The broker can provide these functions and use smaller service providers.

Again, full-service brokers often develop in places that have a history of coordination of services or state coordination requirements. The broker also typically is a non-profit or public service agency. Again, because the broker is assuming administrative as well as operations responsibilities, a close working relationship and high level of trust must exist between the transit agency and the broker.

Advantages and Challenges of Common Service Designs

There are particular advantages and challenges associated with different designs. It is important to note that these apply generally, and the actual advantages and challenges may vary based on local factors. Yet, there are commonly reported issues that are important to consider. These include:

- Fostering competition – the degree to which the design promotes competition between potential contractors or even develops contractors
- Economies of scale: cost-efficiencies – inherent efficiencies in the design
- Control of service quality – aspects of the service design that tend to promote service quality
- Ability to be flexible and dynamic – ability of the design to respond to changes in levels of ridership, adjust capacity, and introduce new technologies and operating approaches
- Transition risks – aspects of the design that can minimize risks associated with service transitions

Table 2-3 summarizes these general advantages and challenges. The advantages and challenges of common service designs are discussed below.

Table 2-3

Advantages and Challenges of Common Service Designs

Common Service Designs	Fostering Competition	Economies of Scale; Cost Efficiencies	Control of Service Quality	Ability to be Flexible and Dynamic	Transition Risks
In-House Operation	Neutral	*Advantage*: Integrate with fixed-route. *Challenge*: Higher labor costs	*Advantage:* Full control by transit agency. Challenge: Limited options	*Challenges*: Difficult to add staff/drivers; changes sometimes require approvals	Neutral
Single Turn-key Contractor	*Challenges:* One contractor; can limit to larger firms; change requires transition	*Advantage*: No duplication	*Advantage:* Full responsibility with contractor. Challenges: Determining causes of issues; limited options	*Advantages*: Can adjust within contract limits; benefit from contractor expertise	*Challenges*: Can be significant as entire operation transitions
Multiple Turn-key Contractors	*Advantages:* Allows for several contractors; can be smaller and local firms	*Challenges:* Multiple call/control centers; inefficiencies and deadhead with inter-region trips	*Advantages*: Each provider has full responsibility; can cover if issues. *Challenges*: Determining causes of issues	*Advantages*: Can adjust within contract limits; benefit from contractor expertise	*Advantage*: Can stagger contracts. *Challenge*: Still requires change in full operation
In-House Call/Control Center with Contracted Service Providers	*Advantage*: Can use a number of smaller service providers	*Advantages*: Consolidated call/control functions; more efficient area-wide service	*Advantages*: Central control of schedules and service decisions; can move service to performing providers. *Challenge:* Limited options for call center performance	*Advantage:* Service delivery capacity can be adjusted Challenge: Adding staff or technology at call center	*Advantages*: Provider coverage if issues; can stagger provider contracts
Contracted Call/Control Center with Contracted Service Providers	*Advantage*: Can use a number of smaller service providers. Challenge: Contractors' interest in call center role	*Advantages*: Consolidated call/control functions; more efficient area-wide service. Challenge: Multiple management layers	*Advantage*: Central control of schedules and service decisions; can move service to performing providers. *Challenge:* Split responsibility for performance; mediation between providers for performance issues	*Advantages*: Can adjust within contract limits; benefit from contractor expertise	*Advantages:* Can easily change parts of operation; provider coverage; can stagger provider contracts
Administrative Brokerage	*Advantage*: Can use and even "grow" smaller service providers	*Challenges:* Multiple call/control centers; inefficiencies and deadhead with inter-region trips	*Advantage*: Full responsibility with broker; can move service to performing providers. *Challenge:* Determining causes of issues	*Advantages*: Can adjust within contract limits; benefit from contractor expertise	*Advantage*: Provider coverage. *Challenge*: Difficult if broker change required.
Full-Service Brokerage	*Advantage*: Can use and even "grow" smaller service providers	*Advantages*: Consolidated call/control; more efficient area-wide service Challenge: Multiple management layers	*Advantage:* Full responsibility with broker; can move service to performing providers. *Challenge:* Determining causes of issues with separation of the operating functions.	*Advantages:* Can adjust within contract limits; benefit from contractor expertise	*Advantage*: Provider coverage. *Challenge:* Difficult if broker change required.

In-House Operations

An in-house operation does not rely on competition between contractors, so there is no advantage or challenge related to this factor.

In terms of cost-efficiencies, there can be economies of scale by integrating fixed-route and ADA paratransit operations. Workforces can be integrated, "extraboard" (spare drivers) pools can be shared, and road supervisors and window dispatch can be combined. Maintenance also can be performed by one shop.

Labor costs typically are higher when services are operated in-house, but some systems have reported more stable, experienced and efficient workforces that increase service productivity.

Transit agencies have full control over service quality in this design. If performance does become an issue, however, there is little recourse other than to solve the problems internally.

The main challenge with in-house operations is a lack of flexibility to adjust to changing conditions. As demand increases, more staff is needed and it can be difficult to get approval to hire additional staff. Introducing new technologies or making other changes can also require grant applications and multiple internal approvals. Transit agencies that operate in-house also must rely heavily on existing expertise. They do not benefit from the broader experience of contractors.

Single Turn-key Contractor

Competition under this design is limited to times when the service is bid. With only one contractor, there is no ongoing competition between bids. If the service is large and complex, local transportation providers might not have the expertise to bid and competition may be limited to national transportation management firms.

One of the main advantages of this design is that there can be significant economies of scale. With all service functions performed by one contractor, there is also no duplication of effort.

With all functions performed by one entity, assignment of responsibility for performance and service quality is straightforward. At the same time, since the contractor has full control of the service, it can sometimes be a challenge to uncover and identify operating issues and causes of poor service quality.

Turn-key operations have the advantage that the contractors can implement needed change within the terms of the contract. Staff can be added as needed, and new procedures and technologies can be introduced within the limits of

the contract. Transit agencies also benefit from the broader expertise of the contractor.

A main challenge of a single turn-key design is transition risk. If it becomes necessary to make a change, the entire operation must be changed. The impact can be lessened if the transit agency owns the facility, fleet, and technology (software, phone system), but the entire operation still is affected. There also is no short-term back up if service issues develop.

Multiple Turn-key Contractors

By definition, a multiple turn-key contractor design encourages competition. With several smaller operations, there is opportunity for many companies, including smaller local contractors, to be involved. Competition is also ongoing, with provider performance compared throughout the term of the contract.

A significant challenge, however, is duplication of effort. Each contractor must perform reservations, scheduling, and dispatch, which can be complex and costly for ADA paratransit. There are also inefficiencies when inter-regional trips are provided. Providers either deadhead to or from their primary zone, or riders must transfer. Transfers, even if managed well, can be inefficient and costly.

Each provider performs all operating functions, so—as with single turn-keys—it is a relatively easy matter to assign responsibility for performance. The transit agency must closely monitor multiple operations, though, and without day-to-day involvement in trip scheduling or dispatch changes, it can sometimes be a challenge to diagnose service problems and undesirable operating practices.

As with a single turn-key, contracted operations provide for some degree of flexibility and dynamic change. Private contractors are able to adjust capacity as needed, and introduce new procedures and technologies relatively quickly. These changes are limited only by the terms of the contract.

With multiple service providers, some back-up capability is available. If there are issues with one contractor, others can be asked to step in. Contract start and end dates can also be staggered so that transition risks are lessened. Still, if a service provider must be changed, all aspects of the operation must be transitioned, which can create service disruptions.

In-House Call/Control Center with Contracted Service Providers

A main advantage of service designs with centralized reservations, scheduling, and dispatch is that significant competition can be developed for service delivery. Several dedicated as well as non-dedicated service providers can work under the direction of the consolidated call/control center. This can include smaller local transportation companies, which can be assigned manageable pieces of work.

In larger services with multiple providers, duplication of effort can be eliminated. Providers can be scheduled to perform trips anywhere in the service area. This eliminates the inefficiencies and service quality impacts of transfers; it also minimizes deadheading by providers.

With central control of trip scheduling and dispatching, service quality can be closely tracked. Performing contractors can be rewarded with additional business, and trips/runs moved away from under-performing service providers. Transit agencies that have adopted this design indicate that this can be the most effective way to ensure service quality and contract compliance.

Service providers can adjust capacity as needed. Changes in the service delivery part of the operation are limited only by the terms of the contract.

If the call/control center is operated in-house, making adjustments in this part of the operation can be a challenge. As with full in-house operations, it may be an involved process to get approvals to add positions for the call center. Obtaining and introducing new technologies or introducing new operating procedures also can require internal approvals. There are few easy options, short of fixing the problem internally, if the call center underperforms.

The risks of transition are minimized in the service delivery part of the operation. Service provider contracts can be staggered so that only a portion of the total service is changed at any point in time. Having multiple service providers also makes it possible to back up underperforming contractors. The most significant transition risk in this design is if the transit agency cannot adequately perform the call/control center function and this key part of the operation has to be changed.

Contracted Call/Control Center with Contracted Service Providers

This design has many of the same advantages and challenges of an in-house call/control center with contracted service providers. Advantages include the ability to generate competition among service providers and move business to performing contractors. The added advantages of contracting out for call/control center operation are 1) this aspect of the operation can also be competed and changed as needed, 2) a private contractor can more easily adjust call/control center staffing or introduce technologies as needed, and 3) transit agencies benefit from the expertise of contractors who have operated call centers in other places.

As with in-house call center designs, many transit agencies have centralized the trip reservations and scheduling functions to gain better control of service and address past issues with service quality. This was the case with New York City Transit (NYCT), detailed in a 2001 study [18]. Until 1995, NYCT operated ADA paratransit service using a contracted, decentralized zonal system and multiple turn-key contractors. Service quality issues developed, and NYCT found it difficult to monitor the performance of the decentralized turn-key operators.

NYCT established a single call center (initially with centralized reservations and scheduling and decentralized dispatch) to ensure zero trip denials and better monitor service quality.

One challenges of contracting out the call/control function is that it may be difficult to generate interest in the call/control center contract. This is particularly true in smaller operations. Because opportunities for profit are greater in the service delivery portion of the operation, most transportation management companies are more interested being service providers. Since this design calls for the functions to be separated (the call center contractor cannot also be a service provider), it may be difficult to obtain multiple bids for this part of the operation, except in the very largest systems.

A second challenge is that responsibility for performance is split between the call/control center contractor and service providers. Transit systems need to foster good working relationships among all contractors and need to be prepared to mediate when there are disagreements.

Using this design can minimize transition risks, particularly if transit agencies own the infrastructure and software and maintain rights to the service data. The call/control center work can be bid separately from service provider work, and service provider contracts can be staggered. If changes are made, they are limited to smaller parts of the overall operation. Even if the call/control function is changed, it is likely that there will only be a shift in top management if the software, data and infrastructure are owned by the transit agency.

Administrative Brokerage

Administrative brokerage can have significant benefits. Because service delivery is contracted out to multiple providers, there is opportunity to create competition. Good brokers not only foster competition, they work to "grow" service delivery capacity in the region. This can include working with local providers to create cost-effective service delivery options. An added advantage of a private broker is that it can have greater flexibility in negotiating the best rates with service providers. These private-private relationships are less restrictive than the relationships between public transit agencies and private contractors.

Reservations, scheduling and dispatch are decentralized under this approach, so there is duplication of this function among service providers. Without centralizing the trip scheduling function, there can also be duplication in service delivery, with two or more providers operating in the same area.

Administrative brokers typically are fully responsible for service quality and performance. Even though there may be multiple service providers, ultimate responsibility rests with the broker. If the broker is acting in the public interest (a function of the type of entity selected to be the broker, as well as the contract and payment provisions), service quality can be ensured more easily. Service monitoring

can be a challenge, though, since an administrative broker does not control trip scheduling or dispatch and typically there are several different service providers.

Transitions of subcontractors within the brokerage pose relatively few transition risks. The main transition risk is if the broker needs to be replaced. This design relies heavily on a close, trusting, and long-term relationship between the broker and transit agency.

Full-Service Brokerage

Many of the advantages of an administrative brokerage also exist under a full-service brokerage design. A full-service broker can foster completion among service providers and "grow" local provider capacity. The broker also has the flexibility to negotiate for the best price on an ongoing basis. With multiple providers, performing providers can be rewarded with more work, and trips and runs can be shifted away from underperforming subcontractors.

Additional benefits of a full-service broker are:

- Reservations and scheduling are centralized, and dispatch is centralized for dedicated service providers. This reduces duplication of this function at each service provider.
- With centralized reservations, scheduling, and dispatch, service providers can be used throughout the area, which makes area-wide service more efficient.
- Centralized reservations, scheduling, and dispatch also provides better control of service quality and performance.

One challenge of a full-service brokerage is the multiple layers of management created at the brokerage and at each service provider. Another is the separation of operating functions (reservations, scheduling, and dispatch from vehicle operations), which can make it more difficult to determine responsibility for performance issues. Although the broker is ultimately responsible for performance, determining which entity is responsible for certain operational issues can be difficult.

A main challenge is transition risk if the broker needs to be replaced. As with administrative brokerages, the stability of this design relies on the development and maintenance of a close, trusting and often long term relationship between broker and transit agency.

Centralized vs. Decentralized Reservations, Scheduling, and Dispatch

For system designs that use multiple service providers, a key decision is whether or not to centralize the reservations, scheduling, and dispatch (R/S/D) functions.

R/S/D is decentralized in multiple turn-key contractor designs and administrative brokerage designs and is centralized in in-house and contracted call center designs as well as in full-service brokerages.

Several recent studies have focused on the potential cost savings of centralized R/S/D. A study of system design options for ADA paratransit service in Houston looked at the cost and service implications of a centralized call and control center design vs. separate zonal "turn-key" operations with call and control functions at each turn-key provider [19]. The study found that a single call/control center can deliver service more efficiently (7.1% increase in productivity), but that on-board travel times for riders will increase by 26.9% as more trips are grouped.

Another study of service design options in Houston compared a four-zone decentralized operation (turn-key operators in each zone) with a model that used a single call/control center and no zones [20]. For the decentralized option, it analyzed a policy of required transfers (transfers between providers at the border) vs. a policy of having providers complete trips into other zones without transfers. The analysis suggested that the single call center with no zones would operate at 2.30 trips per revenue-hour, and average passenger ride time would be 42.1 minutes. The decentralized system with transfers would operate at 2.47 trips per revenue-hour and passenger ride time would be 44.9 minutes. The decentralized system without transfers would operate at 1.91 trips per revenue-hour with an average on-board ride time of 41.6 minutes.

A study of ADA paratransit service design options for the Metropolitan Transportation Commission in the San Francisco Bay Area provides estimates of productivity improvements and cost savings that might result from establishment of a single call/control center [26] The report suggests that having a separate call center duplicates staffing to some degree, but since the call center typically represents only 10–15% of total ADA paratransit cost, the added cost of separate call center operation is about 2% of total cost. The report suggests that there are several benefits to separate call centers, including the ability to more closely monitor total vehicle hours used. It also cites a 15% increase in productivity in Seattle from moving to a central call center.

A study of the costs and benefits of implementing a single call and control center was also performed for Pace Suburban Bus in 2012 [27] Major findings were that 1) centralizing reservations, scheduling, and dispatch in the Chicago area could save 12.5% in operating costs due to more efficient handling of transfers (0.2%), reduced deadheading (5.8%), and better scheduling (6.4%); and 2) centralization will likely increase passenger ride times with increased trip grouping.

Selecting the Right Combination of Service Design, Method of Payment, and Contract Requirements

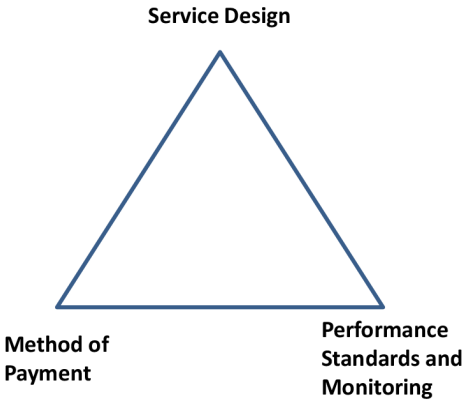
Each service design has both advantages and challenges. Once a service design is selected that best fits local conditions and circumstances, it is then important to recognize the challenges, manage them appropriately, and, for services that include contracted components, address them with an appropriate mix of contractual requirements. Three of the most important management and contractual elements that must be correctly matched with service designs are:

- Method of payment to contractors and subcontractors – the way that contractors and subcontractors are paid can affect their motivations and actions; the method of payment can be used to manage challenges associated with different service designs.
- Performance requirements – if challenges are expected with certain aspects of performance, requirements can be included in contracts to manage outcomes.
- Monitoring efforts – if challenges are expected, monitoring efforts can also focus on those parts of the operation.

Figure 2-9 illustrates this balance between the selected service design, method of payment, and performance requirements and monitoring efforts.

Figure 2-9

Balancing service design, payment method, and standards and monitoring



Many different methods of payment have been developed for ADA paratransit service. A wide variety of performance standards and monitoring approaches have also been developed. These can be combined in a number of ways to achieve an appropriate balance with the selected service design. While there is no single or "right" way to achieve this balance, there are some general principles that should be considered. These are noted below for each common service design.

In-House Operations

With all aspects of operation performed in-house, method of payment and contractual requirements do not apply. It is still important, however, to set detailed and thorough performance standards and to monitor performance on an ongoing basis.

Performance standards should be developed for both cost-efficiency and service quality. Common standards address productivity (trips per revenue-hour), on-time performance, on-board ride times, missed trips, no-shows, telephone hold times, frequency of complaints, frequency of accidents, and frequency of breakdowns. Cost-efficiency outcomes should also be tracked, including cost per revenue-hour, cost per trip, and cost per mile. Since performance depends on the job done in-house by each employee, standards related to specific jobs should also be developed.

Actual performance should be monitored and compared to goals and standards. Triggers should be established to indicate when action is needed. For example, if telephone hold times exceed the desired standard, consideration should be given to increasing the number of reservation agents, or if on-time performance falls below the desired standard, managers should focus on operating procedures that impact service timeliness (e.g., scheduling and dispatching practices, dwell times at pickup locations, run coverage and on-time pullouts) and may also need to consider adding vehicles, drivers and service capacity.

Single Turn-key Contractor

Typically, single turn-key contractors are paid for fixed plus variable costs. Fixed costs typically are paid monthly based on a negotiated annual amount. Variable costs are then paid either per vehicle-revenue-hour or per trip.

Industry experience suggests that if contractors have control of reservations, scheduling and dispatch and variable costs are paid per vehicle-revenue-hour, particular focus will be needed on run structure, scheduling, and service productivity. If payment is per trip, particular focus will be needed on service quality issues such as on-time performance, on-board ride times, no-shows, and missed trips.

Single turn-key contractors have full control of all aspects of operation. It is, therefore, important to consider the incentives and motivations created by the alternative methods for paying variable costs. Industry experience suggests that if variable costs are paid per revenue-hour, there can be a tendency to schedule more revenue-hours than needed. There can also be a tendency to spread trips over runs to minimize downtime and maximize revenue-hours. On the other hand, if variable costs are paid per trip, there can be a tendency to schedule very tightly and to minimize capacity.

A full range of performance standards and monitoring efforts are needed when using single turn-key contractors. All aspects of operation, both cost-efficiency and service quality, need to be measured and monitored. Particular focus also should be given to balance the method of payment selected. The development of the run structure, scheduling activities, and productivity will need to be closely monitored if a per-vehicle-revenue-hour method of payment is selected. Service quality, including on-time performance, travel time, no-shows and missed trips will need particular attention if a per-trip method of payment is selected.

Multiple Turn-key Contractors

Similar considerations are appropriate in a multiple turn-key contractor operation as with a single turn-key contractor. This design is basically a collection of turn-key operations. Again, full control of operations rests with each contractor, so a full and thorough set of performance standards is needed. All aspects of each contractor's operation then need to be monitored on an ongoing basis.

Method of payment considerations also are similar. If variable costs are reimbursed per vehicle-revenue-hour, particular focus should be given to the run structure, scheduling, and productivity. If payment is per trip, special focus should be on service quality issues.

In-House Call/Control Center with Contracted Service Providers

A thorough set of standards and monitoring procedures should be developed for the in-house portion of the operation, which includes trip reservations, scheduling, and dispatch. Performance of transit agency staff in handling and scheduling trips, and managing scheduled runs should be monitored.

The method of payment of contractors depends on whether they are providing dedicated service or non-dedicated service. Typically, dedicated service providers are paid a combination of fixed costs plus variable costs, with variable costs paid per vehicle-revenue-hour. This is appropriate since the service providers do not control scheduling. They simply are operating runs as assigned. Non-dedicated service providers typically are paid per mile or per trip for all costs (fixed and variable).

Performance requirements and monitoring of contractors should then focus on the aspects of the operation that they control. For dedicated service providers, this includes maintaining an adequate and experienced workforce as well as pulling out all assigned runs in a timely way. It also includes operating according to established policies and procedures. Certain performance requirements and standards might then focus on driver retention and turnover

and on run coverage and timely pullouts. Other requirements might then focus on adherence to policies and procedures, with appropriate incentives and disincentives for compliant and non-compliant performance.

For non-dedicated providers, requirements should address established operating policies and procedures (e.g., no-show procedures, driver qualifications and training requirements). Particular focus might also be given to service quality issues, including on-time performance, on-board ride times, and no-shows and missed trips.

Contracted Call/Control Center with Contracted Service Providers

Under this design, transit agencies contract separately for call/control center services and service provision. Each contract needs to be tailored to the functions being performed. Each also needs to consider balancing the method of payment with performance standards.

Call/control center contractors typically are paid a combination of fixed and variable costs. Fixed costs are paid monthly based on a negotiated annual cost. Variable costs commonly are paid per trip since call volume and the number of trips provided affects all scheduling and dispatching capacity. Performance standards and monitoring should then focus on the functions performed. This includes telephone hold times since the contractor has direct responsibility for managing calls. It also includes a full range of service productivity and quality measures since the contractor is responsible for scheduling and dispatch. Standards and monitoring efforts should address service productivity, on-time performance, and on-board ride times.

Payment to service providers is the same as under the in-house call/control center design. Dedicated providers typically paid fixed costs plus cost per vehicle-revenue-hour. Non-dedicated providers typically are paid per trip or per mile.

Service provider contracts should then focus on aspects of the operation that are under their control. For dedicated providers, this should include maintaining a full and experienced workforce (driver retention and turnover), run coverage, and on-time pullouts. For non-dedicated service providers, focus should be given to service quality issues (on-time performance, on-board ride times, no-shows and missed trips) since payment is per trip or per mile.

For all types of contractors, performance and monitoring also should address adherence to established policies and procedures.

Administrative Brokerage

Under this design, brokers perform specific administrative functions for sponsoring agencies. This includes the procurement of services and the monitoring of selected subcontractors. It also typically includes functions such as customer service and eligibility determination.

Case studies in Appendix D suggest that it is best to pay administrative or full-service brokers on a "cost-plus" basis for their administrative services and then "pass through" subcontractor (service provider) costs. This method of payment is important to allow the broker to remain objective and "public-service-focused" in the management of services.

Case studies conducted as part of this study (see Appendix D) of two of the most successful brokerage systems in the country—ACCESS in Pittsburgh and OUTREACH in San Jose—suggest that it is best to pay administrative brokers for administrative services based on a negotiated annual budget. Annual costs associated with performing these functions are detailed and a monthly payment is made. If there are several sponsoring agencies in a coordinated system that funds the brokerage, broker costs can be pro-rated and allocated based on the costs associated with the services delivered to each sponsoring agency. To maintain transparency and trust, broker costs typically are audited and available for review by any sponsoring agency.

Costs associated with service delivery typically are then paid as a "pass-through." The broker obtains the best costs—often a combination of per-hour, per-trip, and per-mile costs based on the types of providers obtained—and is reimbursed for these costs. Sometimes, for administrative ease, an average cost per trip is developed that combines all expected service provider costs, and this average is used for payment purposes.

A "cost-plus" method of payment for administrative costs and a separate pass-through of service provider costs are important to allow the broker to remain objective and "public-service-focused" in the management of services. Industry experience suggests that procuring and paying brokers for all costs on a per-trip basis can create conflicts and biases in the procurement and management of subcontractor performance. That is, if a broker must win its contract by submitting the lowest cost per trip and is then paid based on this rate, it has an overriding incentive to procure the least-expensive subcontractors. If the broker is a for-profit company, profit is made by subcontracting with service providers that have per-trip rates below the average rate that was bid. Sometimes this need to obtain low-cost subcontractors can outweigh considerations of quality and capability. Bias also can develop in the monitoring of subcontractors. If the lowest-cost subcontractor is under-performing, it is difficult for the broker to cancel that contract or reassign work since doing so will raise the average cost

per trip in the system and will result in a loss of profit or an inability to meet costs for the rate bid.

Since administrative brokers assume full responsibility for all aspects of service performance, the contracts they have with sponsoring agencies should contain a full range of performance standards. This includes standards for cost-efficiencies and service quality. Sponsoring agencies then should conduct monitoring to independently verify reported performance.

The broker should then create appropriate balances in the methods of payment and performance standards included in subcontractor contracts. Under this model, subcontractors essentially act as turn-key providers with full control of reservations, scheduling and dispatching, so a complete and thorough set of standards and monitoring procedures should be included. If subcontractors are paid per trip or per mile, which they often are under this design, particular focus should be given to monitoring service quality.

Full-Service Brokerage

In a full-service brokerage, the suggested balance of methods of payment, performance standards, and monitoring is similar under a full-service brokerage to the administrative brokerage model. It is recommended that the broker be paid for its administrative services on a "cost-plus" basis. Subcontractor (service provider) costs should be paid as a "pass through."

The main difference in this design is that, unlike an administrative broker, reservations and scheduling are centralized and performed by the broker, and dispatch is centralized for dedicated service providers. The performance standards and requirements established by the broker in subcontracts with service providers would then be similar to those suggested for the Contracted Call/Control Center with Contracted Service Providers model. Dedicated providers typically would be paid fixed costs plus cost per vehicle-revenue-hour. Non-dedicated providers would typically be paid per trip or per mile.

Service provider performance standards and monitoring then would focus on aspects of the operation that are under their control. For dedicated providers, this should include maintaining a full and experienced workforce, run coverage, and on-time pullouts. For non-dedicated service providers, it should focus on service quality issues (on-time performance, on-board ride times, no-shows, missed trips). In addition, the broker should implement a full set of requirements and monitoring procedures to ensure compliance with established policies and procedures.

SECTION

3

Procurement and Contracting

Introduction

For transit agencies that choose a service design involving private contractors, procurement and contracting practices become important and require attention, as they impact the costs of ADA paratransit operations. Effective procurement and contracting can help to manage the increases in ADA paratransit costs that are noted in Section 1. This section discusses the procurement process, identifies the major cost elements of contracted paratransit service, reviews elements of the contracting process, and provides strategies and approaches for cost-effective ADA paratransit services through procurement and contracting. It also summarizes the study research on contracting and procurement.

As noted in Section 1, research included a literature search as well as a nationwide survey of transit agencies (see Appendix A). It also includes interviews with private contractors and a structured roundtable discussion with private contractors and public transit agency representatives (see Appendix C), and several case studies (Appendix D). Lessons learned from this collective research are included.

Procurement of Contracted ADA Paratransit Service

A primary benefit of contracting for transportation services, including ADA paratransit, is generally considered to be cost savings, which come mainly from reduced labor expenses compared to direct, public agency operation. Other benefits cited in the transportation literature include flexibility to start new services and incorporate changes into a new program, contractors' assumption of supervisory and administrative burdens, flexibility to buy or lease additional vehicles quickly, and the collective experience and knowledge obtained by a larger contractor from multiple contracts that can be brought to a public agency [14, 22, 23].

Contracting for service is particularly prevalent for ADA paratransit services. More than half of the country's transit agencies contract out all or part of their demand-response service, the large majority of which is ADA paratransit service, according to national data [5]. For the largest transit agencies, the proportion is considerably larger, with 85% using contractors [6].

The 203 transit agencies responding to the study's survey (see Appendix A) reflect national trends, with 50% reporting the use of private contractors to operate part or all of their ADA paratransit service. Half of those (25% of the total) have a turn-key model, with the contractor performing all functions of service, which include trip reservations, scheduling, and dispatch as well as vehicle operations and maintenance.

With selection of a service design that includes private contracting, additional issues should be considered, including, among others, whether there will be competition for the contract, the ability to coordinate with the agency's procurement department to prepare an RFP with adequate information and specificity for bidders to develop their responses, the agency's staff resources and capabilities for effective contractor monitoring, and a willingness to work with the contractor to provide the service.

The procurement process is a key first step and is discussed below.

Procurement Process

The procurement process involves preparing an RFP, responding to questions that potential bidders may have, assessing bids received, and awarding a contract. Aspects of this process have a direct impact on resulting costs for contracted ADA paratransit services.

According to the study's survey, transit agencies' satisfaction with their current procurement process for ADA paratransit service is somewhat mixed. Fewer than one-third (31%) of transit agencies reported being very satisfied, and 42% said they were satisfied. The remaining agencies reported being only somewhat satisfied or not satisfied, suggesting that improvements would be beneficial.

Preparing an RFP – Importance of Procurement Document

Crafting an RFP requires considerable effort to ensure that the transit agency's objectives for its ADA paratransit service are included and all parameters for operating the service are adequately described in a detailed scope of services. This will not only give prospective bidders the information they need to prepare effective proposals, it will also increase the likelihood that the transit agency will be satisfied with the actual service [24].

When an RFP is unclear or fails to provide information important for private providers to cost out their response, providers tend to add in

An RFP that is unclear or without sufficient information for contractors to price their response results in uncertainty and "unknowns," creating risk that contractors address by adding costs. This, in turn, increases costs to the transit agency.

costs to account for the uncertainty. Such uncertainty and "unknowns" create risk for private contractors, which they address by adding to their costs. This, in turn, increases costs for the transit agency.

When public transit is part of city or county government, it is also important for transit staff to be directly involved in RFP preparation. Procuring ADA paratransit service is different and more complicated than purchasing, for example, computers or snow removal equipment or other such items and, as such, must consider more than proposed costs. Transit staff need to ensure that the RFP includes adequate information and data on current ADA paratransit services and that it requires bidders to provide the detailed information needed to make an informed decision on the contract award and to carry out effective contract monitoring after the contract award. Additionally, the evaluation process needs to consider the proposers' technical qualifications to provide the service.

Key elements of an RFP are discussed below, including the scope of services and cost proposal. Bonds are also discussed, as these may impact competition as well as bidders' prices.

Scope of Services

The RFP should have a scope of services that includes:

- Objectives of the ADA paratransit service.
- Service span and amount – Describe the days and hours of service, allowing bidders to structure staffing requirements for call/control center functions. Describe how much service is needed in terms of service hours, service miles or trips to be provided. This information is essential for bidders to determine their cost proposals. Since the amount of service may fluctuate or may change over time, consideration should be given to provisions for adjustments to the amount of service.
- Fare structure and collection method – Include the fare structure and method for its collection and deposit. The transit agency may want the fares deposited directly to a transit agency account, or alternatively the fares can be deducted from the contractor's invoice.
- Service evaluation – Describe how the transit agency will monitor and evaluate service performance. This may include performance standards as well as incentives for specified performance achievement and disincentives for performance below specified levels.

The RFP should set minimum training requirements for the contractor's drivers, which typically include both classroom and behind-the-wheel training. The length of such required training will be a factor that bidders will use when calculating their training costs. The case study of Southeastern Pennsylvania Transportation Authority (SEPTA) in Philadelphia, provided in Appendix D, provides an example of the types of training requirements to include.

The RFP should also include operating and performance information about the transit agency's ADA paratransit service that will assist bidders when they prepare their responses and particularly their cost proposals. This includes:

- Operating data including passenger trips provided, revenue hours, revenue miles for the prior year or several years
- Available performance data such as on-time performance, no-show rate
- Information on the current labor force, including vehicle operator wages, as this will allow bidders to more realistically estimate costs for labor
- Expectations for the provider's staffing, including requirements for management staff, reservations/scheduling/dispatch staff, maintenance staffing, and drivers. For example, must all management staff positions be full-time positions dedicated to the contract, or can the positions be shared with other of the provider's contracts? Are there key management staff that should not be replaced by the contractor without the approval of the transit agency? Are drivers required to have a Commercial Driver's License? What are the requirements for vehicle servicing and washing, as this will impact maintenance staffing and costs?

Cost Proposal

The transit agency should consider asking for cost details in the proposals. This will allow a more nuanced review of the different bidders' cost factors and provides data that can be useful once a contract is awarded.

For demand-responsive transportation services including ADA paratransit, many transit agencies ask for costs to be categorized as "fixed" and "variable." Fixed costs are those that do not necessarily change when the level of service is changed and include the cost of the facility (if the contractor provides the facility), management costs, and administrative support, among others. Variable costs will depend on services to be provided and include driver wages and benefits, costs for maintenance, and vehicle liability insurance, among others. Bidders can be required to itemize their proposed costs for line items for both fixed and variable costs and for each year of the contract term.

In addition to requiring that costs be detailed and itemized, it is recommended that agencies require bidders to state the key assumptions used in developing costs. What productivity was assumed? What ratio of drivers to runs was used to be an adequate workforce? It is important to ensure that bidders have made reasonable assumptions to arrive at costs and that they have not significantly underestimated or overestimated the costs.

It is recommended that agencies require bidders to state the key assumptions used in developing costs. What productivity was assumed? What ratio of drivers to runs was used?

This cost detail gives the transit agency several advantages, including providing finer-grained cost data to evaluate differences among proposals. Transit agencies should compare assumptions and costs for all bidders and identify any significant differences. If there are significant differences within cost line items, it is good to inquire about these differences to ensure appropriate assumptions have been made when developing costs. Such an analysis protects the transit agency from unrealistic "low ball" bids. It also protects against excessive bids.

Requiring cost detail and analyzing it also protects bidders. It helps ensure that they did not misinterpret information or data provided in the RFP and that they considered the important cost elements when developing their bids. It also provides data to use for contract monitoring once an award is made and service is operating.

Related to the cost proposal, it is useful to ask bidders for a staffing plan or chart to allow comparisons among the bidders regarding their plans for staff. Does each bid propose an adequate number of staff in each area of operations? Are there significant differences in the number of staff proposed? If there are differences, are the assumptions that were made about the number of staff that are needed appropriate and realistic? A staffing plan or chart will let the transit agency monitor the contractor's fulfillment of that staffing arrangement once a contract is awarded and service is underway. If a certain number of reservationists, schedulers, dispatchers, drivers, and road supervisors were proposed and are included in the costs, are they actually provided?

Examples of detailed cost proposal forms, based on forms used by the Massachusetts Bay Transportation Authority (MBTA) in Boston, are provided in Appendix E.

Bid Bonds and Performance Bonds

Among other components of the RFP such as standard compliance clauses and indemnification clauses, state or local policy may require bid and performance bonds. A bid bond is provided by a licensed surety that guarantees to the public agency that if the contract is awarded, the bidder will sign the contract and carry out the work. Bid bonds are not particularly costly and not always easy to obtain. Transit agencies should allow submittal of a cashier's check rather than a bid bond [24].

A performance bond is a guarantee from a licensed surety that the contractor will perform the scope of services for the transit agency. It can be considered a type of insurance, and the contractor must purchase the bond, the cost for which is then passed on to the transit agency. If the contractor fails to provide the service, the surety is required to pay the amount of the bond to the public agency as damages.

Private providers consider bonding requirements in decisions about whether to bid projects, among other factors, and one study highlights these as a "potential problem area" for contractors [25].

Requirements for large performance bonds may be difficult for smaller private contractors; such requirements may also narrow the field of prospective bidders, limiting competition.

Requirements for large performance bonds can be difficult except for large national contractors; smaller firms with more limited financial resources have less capacity for bonding. According to the study's interviews and the roundtable discussion, if performance bonds are required, those in the range of 10–25% of the annual value of the contract are considered reasonable. Larger requirements may not be possible to obtain, particularly for smaller providers, and may preclude the company from bidding or force the company to be very selective in the projects they can bid.

Performance bonds typically are used in public construction projects for building bridges or roads, for example. For a transit service operating contract, it is difficult to identify failure to perform without a complete stop in operations. Experience in the transit industry has identified no cases in which a performance bond has actually been called; its use for a transit service project is not considered particularly effective [24], and it may function to narrow the field of prospective bidders, which limits competition and, in turn, can negatively affect costs.

Bidders' Questions and Proposal Preparation Time

Once the RFP is released, the procurement process should include an opportunity for bidders to ask questions—for example, via a bidders' conference—and should allow adequate time between the response to questions and the due date for the proposals.

Evaluation

Evaluating proposals for contracted ADA paratransit service typically involves consideration of proposers' technical qualifications, which include, among others, relevant experience, management plan, and qualifications of the proposed staff, as well as proposed costs. It also includes analyzing costs and the assumptions that are behind cost estimates to ensure that they are reasonable and realistic. FTA's Best Practices Procurement Manual [26] addresses evaluation of proposals procured through a competitive RFP process where FTA funds are used. Listed requirements include:

- RFP should identify all evaluation factors along with their relative importance.
- Agency should have a method to conduct technical evaluations and for selecting awardees.
- Contract award should go to "the responsible firm whose proposal is most advantageous" to the agency with "price and other factors considered."

The manual further explains that, if allowed by state law, the transit agency "may award the contract based on an analysis of a tradeoff of qualitative technical factors and price/cost to derive which proposal represents the 'best value.'" This is different from the process in which the lowest-price technically-acceptable proposal is selected. With this latter method, the lowest-price proposal that meets the minimum RFP requirements is awarded the contract. However, this may not always give the transit agency the more qualified contractor. The "best value" method provides the opportunity to balance and trade-off the price and non-price factors to select "the best overall value" to the agency [26].

> *Selecting a contractor through the "best value"" method provides the opportunity to balance and trade-off the price and non-price factors to select "the best overall value" to the agency.*
>
> *—FTA Best Practices Procurement Manual*

Through the evaluation process, the review and assessment of proposals received may identify specific questions for bidders, and the bidders should be asked to provide responses to those questions.

The review may also involve a best and final offer (BAFO) after proposal evaluations and interviews, if the latter are conducted. BAFOs give the proposers an opportunity to "sharpen their pencils" and offer their final cost figures and provide an opportunity for the transit agency to ask for clarification for cost items where there are questions.

As one method to help assess bidders' proposed costs, some transit agencies have conducted an internal cost analysis for providing the service in-house, which is then used as a comparison to the private providers' costs.

Survey Comments on Effective Procurement Practices

Several agencies reported procurement practices and requirements that have been particularly effective in helping obtain cost-effective and quality ADA paratransit service. Selected comments from transit agency respondents include:

- "RFP process requires submission of detailed price proposals for better comparison of costs."
- "Negotiated procurement allowed the agency to get the best price possible."

- "We have been through a total revamping of our procurement process.... The effort included enlisting input from some of the national providers via a focus group. The current process is a result of this effort and we are very satisfied with our [new] process."
- "BAFO and negotiations."

Major Cost Elements of Contracted Paratransit Service

For transit agencies that contract for their ADA paratransit service, it is useful to understand the typical major cost components of contracting for the service. A better understanding of the major cost components may facilitate a more thorough assessment of bidders' cost proposals and will allow more informed monitoring of service over the contract term.

Labor

The largest cost element for contracted ADA paratransit services is labor. All types of transit service are labor-intensive, with wages and benefits generally accounting for up to 65–75% of operating costs. ADA paratransit is no exception.

Depending on how the ADA paratransit service is structured, bidders will need to include costs for wages and benefits for:

- Management and administrative staff
- Call/control center staff (to handle reservations, scheduling and dispatch)
- Drivers
- Maintenance staff

A turn-key contract, in which the private provider supplies all that are necessary to operate the ADA paratransit service, including vehicles, drivers, maintenance, and call/control center functions, will require staff labor in all categories. In a different model, for example, if the transit agency has its own staff taking trip reservations or if the vehicles are maintained by the public agency, less contractor staff labor is needed.

With labor the largest cost element and the cost for driver labor the large majority of that cost, it is useful to consider the role that driver compensation plays in the provision of ADA paratransit service. Experience in the industry and research show that compensation, both wages and benefits, is a significant factor impacting driver turnover, with high turnover affecting the quality and effectiveness of ADA paratransit service. With high turnover, a significant portion of the driver workforce will be inexperienced. TCRP research indicates that more tenured drivers—those with at least six months of experience—are 8–24% more productive than those with less experience, and that service by

less experienced drivers shows lowered on-time performance compared to more tenured drivers, by 3–13 percentage points [16]. Low driver wages, while contributing to a more attractive total cost for a contracted service, may have a price when service on the street is underway.

Capital Needs: Vehicles, Facility, Scheduling/Dispatch Software

The major capital items needed for ADA paratransit include service vehicles, a parking and maintenance facility, and scheduling/dispatch software. These can be supplied by the contractor, the transit agency, or by a combination of the two.

According to the study's survey, a large majority (73%) of transit agencies that contract for some or all of their ADA paratransit service use capital grant funds to purchase vehicles for their ADA service.

Use of capital grant funds for an operating facility is less prevalent, according to the survey: of those transit agencies that contract for service, just less than half (49%) directly own or lease the facility used by their ADA paratransit contractor, with the others (51%) reporting that their contractor provides the facility, so that costs for the facility are included in the contract rates.

Contractor-Provided Capital Items

If the contractor provides any of the major capital items through the contract, the transit agency pays for the actual cost for those items as well as a mark-up by the contractor that accounts for the use of the contractor's funds. Private companies look at their return on investment (ROI), and if they are investing their funds to purchase vehicles or scheduling software or some large-cost item that must be purchased for the contract, they evaluate the return their money could get elsewhere. The contractor's mark-up accounts for this valuation.

If the contractor provides any of the major capital items through the contract, the transit agency pays for the actual cost for those items as well as a mark-up by the contractor.

When the transit agency requires the contractor to provide capital equipment, the contract term becomes an important variable, as the contractor must amortize costs for the equipment over the life of the contract, and the contract length may become one of several "problem areas" in a decision to bid [25]. A requirement to purchase small buses with a five-year expected life for a contract with a five-year term provides a match for amortization. However, when there is a conflict, the contractor has to either hope to win option years (a risk and unlikely to be selected) or bid a higher price to protect the company, which increases the costs that are passed on to the public agency. Another approach is the inclusion of buy-out provisions at the end of the contract term.

Providing an independent facility to operate the contracted service is a large cost element. A contractor's ability to secure a facility depends to some extent on location. Particularly for a large project in a major urban area, securement of a suitable facility can be difficult. Other facility-related costs may include necessary improvements to the facility, such as provisions for vehicle maintenance, parking, etc. The costs to improve the facility are amortized over the contract term, and all these facility costs are included in the contractor's cost to the transit agency.

Transit Agency-Provided Capital Items

If the transit agency has capital grant funds, it is more cost-effective to use those funds to acquire needed capital items than to have the contractor provide them.

Transit agency provision of the major capital needs may also increase competition by reducing contractors' capital risk and allowing the agency to retake and rebid service if the winning contractor is inadequate. According to one study, many contracts (both bus and paratransit) continue to change hands even after having been rebid several times, suggesting that incumbent contractors are frequently subject to competition.

If a transit agency has capital funds, use of those funds to purchase vehicles and other large capital items is more cost-effective than having the contractor purchase them. This also may increase competition for the contract by reducing contractors' capital risk.

Smaller private providers particularly benefit when the transit agency provides vehicles, improving their ability to compete for contracts. In recent years, with the U.S. recession, access to capital has been difficult for smaller companies, affecting their ability to purchase vehicles.

Transit agencies that can provide a facility for their contractor's use avoid the costs associated with a contractor-provided facility and also increase competition. Where the contractor must provide its own facility, the incumbent contractor has an advantage over other contractors interested in bidding. The provision of a facility for contractor use is particularly helpful for smaller non-local contractors, as they have more limited resources for searching for a suitable location and planning and funding site improvements.

Another approach is to pay for the contractor-provided facility on a pass-through basis, without a mark-up, if the transit agency does not have the facility to provide for contractor use.

Insurance

Vehicle liability insurance is another large cost element, covering the operation of the transit vehicles and the operation of related vehicles such as maintenance vehicles. The large private providers typically are self-insured up to a defined

dollar level—$1 million or more—and they purchase insurance coverage for catastrophic losses over this level.

Smaller companies purchase insurance on the open market, or other companies, depending on their financial strength, may use a self-insured retention (SIR). With this latter approach, the provider is directly responsible for losses up to a set amount, such as $25,000 per occurrence, and with a "stop-loss" aggregate SIR limit of a defined amount, for example, $250,000. With an SIR, the provider is directly involved in claims management and settlement, since it is their money spent on damages and settlement [24].

The study's interviews revealed that the smaller contractors noted increases in insurance requirements as well as requirements for very specific types of insurance (e.g., for sexual harassment), resulting in additional costs that are then passed on to the transit agency. Additionally, smaller contractors that are involved with ADA paratransit projects in large urban areas reported their exposure to greater claims when injured parties perceive that the insured is a "big transit agency" and those injured parties expect large payouts, which, in turn, increases insurance costs for these smaller companies.

Fuel

Fuel for daily operations is a large cost element and one that is difficult to budget over the typical contract term of 3–5 years, given fluctuations in fuel prices. As discussed earlier, when there are unknowns, private contractors add to their costs to minimize risk.

The study survey found that 75% of transit agencies contracting for ADA paratransit service address the risk of changing fuel prices: 56% purchase fuel for their contractors and 19% provide a cost adjustment or escalator clause in the contract.

A cost-effective practice has transit agencies provide fuel on a pass-through basis or include escalation/de-escalation contract clauses, with the cost for fuel tied to a published fuel cost calculator. Such practices increasingly are being adopted in the industry: the study's survey shows that of those transit agencies that contract, somewhat more than one-half (56%) reported that they purchase fuel used by their contractor, and another 19% provide a cost adjustment or escalator clause in their contracts to reduce risk to the contractor from large changes in fuel prices.

As an example, one transit agency survey respondent commented, "We use a surcharge, identified in the contract, with multiple thresholds for the indexed regular gasoline price, to determine the amount of the surcharge. [This is based on] the AAA price index for our area, and for the [fuel] surcharge to take effect,

the threshold must be passed for 14 continuous days. The surcharge de-escalates using the same time-frame."

Such approaches protect the contractor and avoid costly contractor mark-ups to cover unknown future fuel costs. Based on research for this study, when the transit agency provides alternatives for contractor-purchased fuel, contractors that provide dedicated service prefer pass-through arrangements, whereas non-dedicated providers prefer escalator/de-escalator clauses since their vehicles may operate service for more than one client agency so that a pass-through arrangement would not work.

Other Cost Elements: Performance Incentives and Liquidated Damages

Increasingly, transit agencies establish incentives and liquated damages related to defined performance standards for their ADA paratransit services. Depending on how these are structured and used, there may be unintended cost impacts for the transit agency, particularly with liquidated damages.

The setting of performance standards is useful for a transit agency, as the standards spell out the agency's expectations for the contracted service, and the inclusion of incentives and disincentives emphasize those performance standards. It is important, however, that the contractors be held to service elements over which they have control and that the performance standards be reasonable. In particular, standards for the three measures of productivity, on-time performance, and passenger ride times should be balanced. For ADA paratransit, experience and research show that maintaining high levels of on-time performance affects productivity, lowering the number of passenger trips provided per hour of service [27].

It is also important that incentives and disincentives be balanced. In some cases, transit agencies may rely too heavily on liquidated damages, which, over time, become a negative approach to contract management. Moreover, when a performance standard has only a financial penalty and no incentive, the contractor may be incentivized to strive just to the level that avoids the penalty, but not necessarily to go beyond to a higher performance level. One study found that the use of financial penalties has a detrimental impact on ADA paratransit operating costs, suggesting that contractors are bidding base rates to cover expected losses or avoiding conditions that result in the activation of the penalties [28]. Therefore, a balance of incentives and disincentives is necessary. The transit agency should work cooperatively with the contractor to resolve performance issues whenever possible. But strong contract provisions, including disincentives, also are needed for the transit agency to rely on when necessary, to ensure performance if the incentives and cooperative approach are insufficient.

The use of incident-based penalties should ensure that they do not conflict with a related standard, which may have its own incentives and disincentives. For example, an on-time performance standard is often set, typically in the 90–95% range, but this standard may be accompanied by a penalty for every late trip; if the standard is that 94% of trips are to be picked up within a 30-minute window, and the accompanied penalty is that every late trip beyond the defined window is assessed a $50 penalty, in effect, this means that the standard is 100 percent, not 94 percent. On the other hand, a transit agency may have a general on-time performance standard, but also may want to protect against excessively late trips (e.g., trips more than 60 minutes late). In this case, it would not be a conflict to both have a 90–95 percent on-time performance standard and assess a penalty for every late trip that is more than 60 minutes late.

A transit agency's use of performance standards, incentives, and, particularly, liquidated damages in its RFP is considered by private providers when bidding. If the standards seem unreasonable and if the incumbent has been assessed significant liquidated damages, bidders likely assume that they, too, will be subject to those financial penalties and budget accordingly in their proposals. This will increase costs for the transit agency.

According to the study's survey, the use of performance standards is common, with the most frequent standards relating to on-time pickups and accidents/incidents. Standards also typically are set for on-time drop-offs, service productivity, on-board ride times, telephone hold times, complaints, and vehicle maintenance. Most of the agencies also have incentives and disincentives that correspond to their performance standards, although disincentives outnumber incentives, according to the survey. Table 3-1 summarizes the survey responses.

Table 3-1

Goals, Incentives, and Disincentives Used by Transit Agencies that Contract

Performance Standard Set	Set Goal	Have Incentive	Have Disincentive
On-time pickups	76	19	29
Accident, incident, or other reporting	62	14	28
On-time drop-offs	56	4	11
Service productivity (trips/hr)	54	16	20
On-board ride time	54	3	13
Telephone hold time	53	10	14
Number/percentage of complaints	51	18	24
Vehicle maintenance/breakdown rate	49	4	15
Other	11	7	7
Total Respondents: 101			

A number of survey respondents provided comments related to their performance standards and incentives/disincentives; several are noted as follows:

- The contractor is expected to train its employees in the same manner as our [in-house] employees are trained.

- Our vehicle maintenance requirements for our contractors have been particularly effective at maintaining equipment and reducing road calls.
- Having incentives and disincentives related to productivity definitely helps. To get the bonus, the contractor must schedule efficiently [which] promotes ridesharing, therefore saving money. Having incentives and disincentives on items that are within the control of the [contracted] operation like abandoned calls and mechanical breakdowns make the contractor proactive and yields better service.
- Strong contract requirements, policies, and incentives, including a productivity incentive.
- On-time performance and passengers per hour goals and standards really assist us in managing the service. [The contractor and the contractor's staff] need to know what is expected of them.

Contracting

Once the transit agency has selected a contractor through the procurement process, the focus turns to contract monitoring. This includes not only close oversight and review to ensure that the service is delivered effectively and in accordance with the scope of services, but also working in partnership with the contractor.

Contracting for service also means that over time there will be transitions between contractors, which must be managed carefully to avoid possible difficulties, particularly with the turn-key service design with only one contractor.

Monitoring the Contract

Monitoring the performance of the ADA paratransit service is a key contract management function.

Contract monitoring is an important function for a transit agency to ensure effective and efficient ADA paratransit service. Monitoring should include close review of required contractor reports of services provided and performed, independent verification of the reported performance data, participation in periodic contractor staff safety meetings, regular meetings with the contractor's management staff, unannounced visits to the contractor's call/control center, and other opportunities to observe day-to-day operations.

Monitoring also should involve review of rider comments, both positive and negative, and response to those comments as needed. Feedback from riders might also involve some type of "mystery rider" program, with designated ADA riders reporting back to the transit agency on identified aspects of trips taken, based on a specific agreement between the rider and the transit agency.

Transit agency staff can also conduct "ride-alongs" to monitor service quality. SEPTA, for example, schedules such on-board checks as follow-up to incidents or complaints, predominately as covert trips, so that drivers are not aware of the monitoring.

Beyond regular meetings with the contractor, some transit agency managers of contracted service have found it beneficial for their office to be located in the same building as the contractor's administrative or scheduling/dispatch offices, which is possible when the transit agency provides the facility for the contractor's use. The close proximity lends itself to ongoing and informal interaction and exposure to day-to-day service and performance, providing the transit agency managers with a better understanding of their ADA paratransit service and what is involved in daily operations.

In addition, although ridership demand or other changes over the contract term may require adjustments in the contractor's service and staffing (and the contract should include provisions for modifications as necessary), the transit agency should monitor the extent to which services being provided match what the contractor included in its scope of services. Suggestions for assessment include the following:

- Staffing – Ensure that staffing for the trip reservations, scheduling, and dispatch positions meets contract requirements. Some turnover in staff is expected, and there will be occasions with unfilled positions as recruitment and training take place. However, staffing for the control center functions should meet requirements overall, ensuring effective service to eligible riders. Sufficient staffing for these functions also can be monitored by assessing a notable increase in call waiting times or an increase in rider complaints about long hold times. Such performance indicators may suggest a staff shortage for the reservations function, for example.
- Staffing for street supervision – Even for small paratransit services, a good practice is to have some level of supervisor time out on the street observing operations. This provides opportunities to watch how service operates day-to-day, ensuring that drivers are following company and transit agency policies and procedures safely and effectively. If the RFP has required street supervision, the transit agency should monitor the extent to which this takes place.
- Extraboard – Transit systems, including ADA paratransit, typically schedule extra drivers as "backups" in case scheduled drivers do not show up for work. These backup drivers then fill in for unscheduled operator absences, so that service is deployed as scheduled. If an extraboard is required and included in the scope of services, the transit agency should monitor this element. Definitions of "late pullouts" and "closed runs" should be developed. For example, a late pullout might be defined as a run that pulls out from 1–60

minutes after the scheduled time. A closed run might be defined as a run that is not performed at all or that pulls out more than 60 minutes late. Late pullouts and closed runs should then be tracked daily. Given the importance of having assigned runs performed and all scheduled drivers pull out at their scheduled times, it is good practice to establish performance standards with related incentives and disincentives for late pullouts and closed runs. For example, it should be the goal to have all runs covered and all runs pull out on time. Given that closing a run can have significant consequences on service quality, since all trips on that run must then be reassigned to other vehicles, a significant disincentive should be associated with any closed runs. Disincentives for late pullouts might be lower and might vary based on the degree of lateness. Transit agencies should also work cooperatively with contractors to ensure that there is an adequate workforce, with an adequate extraboard, to perform all runs as scheduled.

- Road calls – Road calls should be monitored to ensure that they are infrequent. Road calls caused by vehicle maintenance issues should be reviewed with the contractor, assuming the contractor is responsible for vehicle maintenance, with questions on causes. Shortages of maintenance staff or of more qualified mechanics may impact vehicle maintenance, which, in turn, could impact the incidence of road calls. Some transit agencies require access to their contractor's maintenance software, allowing real-time monitoring of the contractor's adherence to scheduled maintenance requirements.
- Accidents – Safety is a critical concern for any transit agency, and monitoring should involve scrutiny of any accidents and safety-related incidents. Review of causes may need to go beyond the immediate reason and assess possible underlying issues. For example, are drivers receiving the full training program as required, including on-the-road practice, before entering revenue service? Is there significant driver turnover, such that there is continually a large number of novice drivers who may be more at risk for accidents and incidents?
- Performance – Monitoring the performance of the ADA paratransit service is a key contract management function. Measures such as on-time performance, ride times, and call hold times should be monitored regularly. If performance does not meet expectations, questions should be specifically directed to understand possible underlying causes. If timeliness is an issue, does the contractor have adequate dispatch staff to provide support to drivers out on the street? Are computer-generated schedules reviewed by scheduling staff to assess their reasonableness before becoming driver manifests?
- Depending upon what the assessment finds, possible shortcomings or problem areas should be discussed with the

Transit agencies should not pay for proposed staff that are not provided.

contractor to identify issues and, as appropriate or needed, their resolution. If staffing shortages persist, transit agencies should consider asking for rate modifications since the rate assumed that there would be full staffing. Transit agencies should not pay for proposed staff that are not provided.

It is a good practice to develop and use a Contract Management Plan for contract monitoring. The case study of Capital Metropolitan Transportation Authority (CapMetro) in Austin, Texas (see Appendix D) provides an example of how to organize contract monitoring with a formal contract management plan.

Working with the Contractor

Contracting with a private provider to operate the transit agency's ADA paratransit service frees the agency from hiring and managing its own paratransit operating staff and from supervising and operating the service day-to-day, but it does not free the transit agency from its responsibility for the service day-to-day. The transit agency should work with the contractor to ensure that the service each day is effective and meets the requirements of the ADA, the transit agency's objectives and requirements, and the transportation needs of the ADA eligible ridership. The contractor is essentially functioning as the transit agency's staff in providing the ADA paratransit service. A transit manager who uses private contractors stated at the study's roundtable meeting, "You should consider the contractor as your own staff and treat the contractor that way."

A transit agency's use of a private contractor to manage and operate its ADA paratransit service frees the agency from day-to-day supervision and operation of the service, but the agency remains responsible for the service and must ensure that day-to-day service meets ADA and agency requirements.

A positive and working relationship between a transit agency and its contractor can be effective in ensuring efficient and high-quality ADA paratransit service. When there are performance issues, it is better to work with the contractor to understand the causes and, as appropriate, move towards solutions. A reliance on liquidated damages to address performance problems establishes an adversarial relationship with the contractor, which harms the ability to work together to solve issues.

A transit agency manager at the study's roundtable summarized his agency's approach to working with the agency's ADA paratransit contractor this way:

> A performance problem can be seen as "the system failing the customer," which means that the transit agency and the contractor, as partners providing "the system," need to work together to solve the problem. Addressing a particular performance problem should first involve assessing the situation with the contractor to

understand the problem. Ask "What happened?" Depending on that assessment, the second step may be charging the contractor with an associated penalty, but importantly, the assessment should come first.

With a cooperative relationship, the contractor should be able to present its solutions to the transit agency in response to a performance problem. Another transit agency manager at the study's roundtable remarked that she wished that the contractor had presented solutions to a particular performance issue rather than just accepting the penalty.

Working with a contractor also means that the contract should have some flexibility, recognizing that circumstances may change over the contract term. For example, with rapid changes in technology, flexibility to test and adopt new technology is needed. It is not possible to anticipate every single situation or issue when an RFP is written and a contract signed.

While it should be the objective of transit agencies to work cooperatively with contractors to resolve issues, it is also important to have contract provisions that can be used if contractors do not respond to this collaborative approach. Strong performance requirements with incentives and disincentives should also be included to ensure performance, in any case.

Transitions between Contractors

The transition from an incumbent contractor to a new contractor can cause service issues and disruptions, particularly with a turn-key service model when the transit agency uses only one contractor. Strategies to avoid or mitigate such issues focus on the capital items needed for service, adequate time, and contract requirements addressing transitions:

- Transit agency ownership of the major components of its ADA paratransit service, including vehicles and facility, will ease transitions, as the key infrastructure is controlled by the agency.
- Transit agency ownership of the "intellectual property" of the ADA service also will ease transitions. This includes the scheduling/dispatch software and the rider database. A new contractor must have access to such information and have enough time to plan for its service start-up, which is facilitated with transit agency ownership and control of that information.
- Adequate lead time is very important for a transition, and this is particularly true for larger projects and when the vehicles are provided by the contractor.
- The RFP and contract document should include specific expectations regarding the transition for both the incumbent and new contractors, with language that spells out what the transit agency expects and the need for cooperation. Both the transition in and the transition out must be addressed.

Study interviews and discussions with contractor representatives and transit agency mangers that use contractors also suggest that transitions are less stressful if they do not include major service changes at the same time. If significant changes are planned, it is preferable to phase in such changes rather than implement them all at once during a transition. The importance of informing transit agency board members and other decision-makers of a pending transition was also noted.

Strategies and Approaches for Cost-Effective Contracted Services

Given the prominent role that private contractors play in the provision of ADA paratransit service, coupled with growing demand for the service being experienced by many transit agencies, strategies and approaches that strive for more cost-effective contracted service are increasingly important.

Building on the study's research efforts—the nationwide survey, interviews with a range of private contractors, the roundtable discussion with contractors and transit agency managers, and the case studies—strategies and approaches to help achieve cost-effective contracted ADA paratransit service are summarized below.

Promote Competition

Promoting competition is among the more important strategies to obtain cost-effective contracted service. Ensuring a competitive environment for an ADA paratransit contract will encourage potential contractors to scrutinize their costs when developing their proposals and to provide prices that they hope are better than their competitors.

Competition can be encouraged in several ways, including, for example, through the service design, support of local contractors to increase their capabilities, and other approaches, as discussed below.

Service Design

The design of an ADA paratransit service has a role in promoting contractor competition, as discussed in Section 2. For example, with a large ADA paratransit service, particularly a large service area, there may be benefits from having more than one service contractor, with the ability to move service from one contractor to another, facilitating competition that, in turn, can affect rates charged by the contractors. The case study of ACCESS in Pittsburgh (see Appendix D) describes the benefits of multiple contractors,

When the transit agency has more than one service contractor and can reward better-performing providers by moving trips from under-performing providers, the competition among the contractors benefits service provision and also may effect rates charged by the contractors.

including the ability to reward providers with the best performance additional work and create "healthy competition."

Contracting for taxi service to provide non-dedicated overflow service during peak periods of high demand is another aspect of service design that can help achieve cost-effectiveness. Sending excess trips to the taxi provider, which is paid only for trips provided, during peak periods when the dedicated fleet cannot handle additional trips helps "smooth" the peaks. Without the ability to send such trips to a non-dedicated provider, the dedicated contractor must maintain a fleet and driver staffing capable of meeting demand that occurs for just 1-2 hours in the morning and 1-2 hours in the afternoon, a significantly more costly proposition. The case study in Appendix D of SamTrans in San Mateo County, California, describes the use of non-dedicated taxis to help meet peak period demand.

Contracting with taxis for low demand time periods such as very late night can also be a cost-effective practice, eliminating the need for dedicated service when trip demand is sparse. Several of the large private contractors interviewed during the research study specifically noted the value of using of taxis during low demand late night and overnight hours.

Contracts with taxi companies can be particularly effective when the local municipality or county strictly regulates the taxi industry [22]. This regulation helps to ensure service quality.

Grow Smaller Local and Minority Providers

Competition can also be facilitated by "growing" smaller local and minority firms. This is beneficial particularly when the service design uses several service contractors and for contracts requiring significant participation of Disadvantaged Business Enterprises (DBEs).

With a service design that relies on several service contractors such as a brokerage, the transit agency can facilitate greater competition by helping the local smaller firms develop into strong and competent service providers. The transit agency can work with local providers to help them become stronger. This ultimately benefits the agency with a larger provider network that, in turn, fosters competition for service delivery. With competent local service providers, the broker is developing a robust, competitive service delivery market, which in turn benefits the prices paid for ADA paratransit service.

The case studies in Appendix D of ACCESS in Pittsburgh and the Santa Clara Valley Transportation Authority (VTA) and its broker, OUTREACH, in the San Francisco Bay area describe successful examples of using a brokerage service design to build local service delivery capacity.

For contracts requiring significant DBE participation, the transit agency can facilitate this participation for larger prime contractors by growing local minority firms and helping them through the administrative steps to become certified as DBEs, a process that is often involved and time-consuming. This not only helps the local firms but may increase competition among the larger contractors by facilitating what can be a time-consuming process for the larger firms to find certified DBEs for a proposal. The case study in Appendix D of Houston METRO provides an example of innovative outreach to community-based minority firms to provide assistance with the certification process and then connection with potential prime bidders through a "meet and greet" event.

Performance Bonds

If the transit agency requires contractors to purchase performance bonds, the bonds should correspond to the actual exposure of the transit agency. Experience in the industry finds that required bonds are often far above the transit agency's actual financial exposure.

Requirements for large bonds can limit competition, because large national contractors may be the only potential bidders that can provide such bonds. According to the study's roundtable discussion, industry experience suggests that bonds seem to be used as surrogates for ensuring that bidders are financially viable. When transit agencies award bids based on low bid, requiring a performance bond ensures that those submitting bids have financial resources. There are other ways, however, to demonstrate financial viability. Bidders could be required to provide audited financial statements, for example.

There are other approaches as well. Arlington County, Virginia, for instance, does not require a performance bond for its ADA paratransit service, known as STAR. The County does not believe that such bonds are necessary and that they only add to contractor costs. According to the County, having two transportation service contractors, which is the County's ADA service design, is itself insurance: one contractor could take on more service if the other had problems for some reason.

Capital Items for Contractor Use

The provision of vehicles, a facility, and scheduling/dispatch software for the contractor's use is a cost-effective approach when the transit agency can use grant funds for the acquisition of these capital items. Costs are usually higher when the contractor provides such items, as the contractor charges the transit agency not only for the items but also for the use of its funds, with the cost included in the contracted operating cost.

A study in the San Francisco Bay region estimated that removing the cost of vehicles from the contracted operating cost for paratransit service could save from $4-$8 per vehicle hour, depending on the type of vehicle and its expected life [10].

If required to provide capital items, the contractor also has to assess whether the contract term allows for amortization of the contractor-provided capital items. If the contract term is shorter than the amortization period, the contractor will add costs to account for this.

Costs are usually higher when the contractor provides capital items, as the contractor charges the transit agency not only for the items but also for the use of its funds, with the cost included in the contracted operating cost. A study in the San Francisco Bay region estimated that removing the cost of vehicles from the contracted operating cost for paratransit service could save from $4–$8 per vehicle hour, depending on the type of vehicle and its expected life.

As noted earlier, the provision of capital items, particularly vehicles and a facility, can also improve competition. This is particularly true for smaller contractors, which have more limited access to capital. Providing a facility will also foster competition for large ADA paratransit projects in large urban areas, as finding a suitable facility within or close by the service area can be difficult, given land use complexities in large cities.

The case study of VTA and OUTREACH in Appendix D describe how available capital funding, including Federal Section 5310 program funding, was used to reduce the dedicated contractor's operating costs. The provision of vehicles saved several dollars per vehicle revenue hour. Provision of an operating facility and parking facilities saved $500,000 per year.

Shared Maintenance

Public transit agencies can also coordinate maintenance to lower ADA paratransit costs. If maintenance services and facilities already exist for other operations, it may be possible to coordinate maintenance for ADA paratransit services and lower costs through economies of scale. The case study of VTA and OUTREACH in Appendix D describes how maintenance of ADA paratransit vehicles was coordinated with a large county vehicle maintenance facility to lower paratransit maintenance costs by $12.5% (or about $1.05 per trip).

Prepare a Clear and Comprehensive RFP

A well-prepared and comprehensive RFP that gives potential bidders the information they need to develop a proposal is another important strategy for cost-effective ADA paratransit service. When the RFP provides complete information on the service to be provided and a clear explanation of the transit agency's requirements, private contractors can develop more realistic and accurate budgets to perform the service. Without data and adequate information, there is uncertainty and "unknowns," which contractors translate as risk and address by adding costs to their bids.

An RFP that relies on boilerplate language or conveys a piecemeal approach without a clear and holistic plan for service does not give potential contractors a complete or understandable explanation of what the transit agency is seeking.

Although it is important for RFPs to spell out transit agency expectations, transit agencies may also find it useful to include the opportunity for contractors to propose new ideas or "out of the box" options to meet a certain requirement. Adding such flexibility to an RFP may generate ideas for cost-savings.

Providing a bidder conference also is helpful, allowing potential bidders to obtain additional information needed to develop realistic proposals. This can help address the unknowns that create risk and increase bid prices. Transit agencies should avoid the practice of merely redirecting bidders to the RFP document for answers. It is more effective to find answers to questions that could affect bid prices.

The case study of VTA and OUTREACH describes the importance of a thorough and complete RFP document. OUTREACH, as the longstanding broker of services, has an exact understanding of what it wants from its service contractor. The RFPs it develops are detailed as to service staffing needs, service productivities, and other key information. This has reduced guesswork on the part of bidders and minimized contingencies that proposers build into their costs to cover unknowns. With proposals that respond to a detailed RFP, OUTREACH also has a clear understanding of the prices being proposed, giving it the information it needs to assess prices among proposals and to help determine if those prices are reasonable.

A clear understanding of service provider costs also becomes useful if prices need to be re-negotiated for contract changes, such as was needed when VTA was able to supply a facility and parking for the contractor's use mid-way through a contract term.

Another case study describes how San Mateo County Transit District (SamTrans) includes very specific operator training requirements of six weeks, including three weeks of on-the-road training, in its RFP document. The transit agency has determined that this level of training helps ensure that drivers can perform efficiently when they begin running routes independently. This level of detail allows contractors to realistically budget training costs, and it may allow new operators to be more productive than otherwise, running tighter manifests, which may yield cost savings for the agency's revenue-hour based contract.

Consider Pass-Through Strategies for Selected Service Components

As discussed earlier, fuel is increasingly being provided to contractors on a pass-through basis. This is particularly important given the volatility of fuel prices, which makes it very difficult to budget fuel costs in the later years of a contract.

Providing fuel as a pass-through protects the contractor from having to guess what future prices might be and also protects the transit agency from inflated fuel prices that contractors may bid to guard against fuel costs that escalate beyond their proposal estimates.

Another item that can be provided as a pass-through is vehicle liability insurance. The case study Arlington County, Virginia, for instance, describes how the agency has structured the provider contracts for its ADA paratransit service with insurance reimbursed as a pass-through cost.

Productive Use of BAFOs

Transit agencies should use the opportunity for best and final offers (BAFOs) to clarify bidders' proposals and costs. The BAFO process allows the agency to drill down into proposals with specific questions, allowing a better understanding of bidders' cost proposals.

Depending on the agency's RFP requirements and information in the proposals received, the transit agency can ask questions that probe for more details. For example, the agency might ask how the vehicle liability insurance costs were developed. This may be based on expected service miles, a company-wide average per vehicle, or some other method. If costs are structured with a payment per passenger trip, the transit agency should ask what assumption was used to calculate expected passenger trips per hour (productivity). A productivity assumption significantly less than what the transit agency experiences means the costs may more than they should be. The converse is also true; if too high a level of productivity is assumed, the contractor's cost estimates are likely too low.

Use Performance Standards, Incentives, and Disincentives Effectively

Transit agencies can improve the cost-effectiveness of their ADA paratransit service with judicious use of performance standards and associated incentives and disincentives. Standards that are set for specific performance criteria should be reasonable. If on-time performance has historically hovered around 90 percent, setting a higher standard of 98 percent in a new RFP with penalties for service below that level does not alone guarantee achievement. In fact, it may cause potential bidders to add to their costs to cover probable penalties for failure to reach the 98 percent standard.

If incentives and disincentives are included, they, too, should be reasonable and, importantly, balanced. Relying only on penalties to achieve a performance standard creates an adversarial relationship with the contractor and encourages future bidders to add to their costs to cover expected penalties.

Several case studies in Appendix D describe innovative, alternative approaches to managing performance that do not simply reply on incentive and disincentive

payments. ACCESS in Pittsburgh first tries to work with the contractor in question to correct the performance problem. If such shared effort does not remedy the situation, ACCESS simply re-assigns trips from the poor performing contractor to the broker's better performing contractors. This is possible with ACCESS's brokerage service design and its eight-provider network, and is a strategy that is actively pursued, motivating the contractors to meet the performance goals.

Arlington County, Virginia, also focuses first on solving performance issues rather than simply assessing incentives and disincentives. The first step is consultation with the contractor to assess causes for the below-standard performance and to create a plan to improve performance. Agency staff indicated that disincentives are being considered but will not be assessed until after the third month of efforts to resolve problems.

VTA and OUTREACH have included performance standards and associated incentives and liquidated damages (LDs) in its contracts, though the contract terms limit service contractor liability to a maximum of $2,000 monthly in LDs. The broker's staff rely more on identifying core issues behind any performance problems and working with the service contractors to remedy identified problems. The broker believes this approach to managing service quality minimizes the inclusion of contingencies in service provider contractors to cover possible LDs. Similar to ACCESS, the broker has the option to move business from under-performing contractors to better performing contractors.

According to the study's interviews with private contractors, several stated that a reasonable number of liquidated damages (LDs) coupled with realistic performance standards and balanced with incentives are expected and may, in fact, protect the industry from low-ball and unqualified contractors. Others stated that, in some cases, there is too much reliance on LDs to manage contracts. A balance is needed between working cooperatively with contractors where possible, but having adequate contractual provisions and consequences to ensure service quality and efficiency.

Negotiate Costs

Where possible and appropriate, a transit agency may negotiate costs for ADA paratransit services. This, for example, is the strategy used by VTA to establish the price structure for its arrangement with the broker, OUTREACH. Each year, VTA and OUTREACH negotiate an annual budget, which is then incorporated into the transit agency's two-year budget process. The different components of the arrangement are examined, including the broker's administrative and call center costs and the costs for the contracted service providers, and then a cost per trip is established. Reportedly, this trip rate can later be adjusted if needed, such as a change in the number of trips expected or if productivity varies from original estimates.

Cost negotiation also may be needed if there are unexpected changes that impact service and the original agreed-to price structure. If policy or procedural changes to the transit agency's ADA program affect the contractor's costs, such as a new procedure whereby the contractor fuels service vehicles at the agency's facility, eliminating contractor costs for fuel, the price should be adjusted accordingly to the benefit of the transit agency.

Price adjustments may also be needed for the contractor. For example, in the mid and late 1980s, the transit industry experienced very large increases in insurance costs, and contractors were faced with significant cost increases mid-way through contract terms, with insurance premiums that rose 500% or more [29]. Contractors sought relief with contract adjustments, negotiated with their client transit agencies.

Price adjustments also may be appropriate if contractors do not provide what was initially proposed. For example, if a contractor proposed that three road supervisors would be hired to monitor service on the street, but they are not employed or are used as extraboard drivers, the transit agency should ask for either a price adjustment or that the promised staff be provided. Transit agencies should not pay for services included in the contract that they do not actually receive.

Price adjustments also may be appropriate if contractors do not end up providing what was initially proposed. For example, if a contractor proposed that three road supervisors would be hired and would monitor service on the street, but road supervisors are either not employed or end up being used as extraboard drivers, the transit agency should ask for either a price adjustment or that the promised staff be provided. Transit agencies should not pay for services included in the contract that they do not actually receive.

Manage the Contract in Partnership with the Contractor

Management of the contract benefits when the agency and contractor develop a meaningful partnership, which includes, among other practices, that the transit agency meet with the contractor frequently and regularly, that transit agency staff ride the service to understand day-to-day issues, and that the transit agency be willing to modify the original contract if this becomes advisable to meet the objectives of the service [24, 25, 30].

A positive, working relationship with the contractor also can help achieve cost-effective ADA paratransit service. If the transit agency and contractor work together as partners, they can be more effective in addressing any performance issues, and they are more likely able to address costs in a fair manner. The transit agency must ensure responsible use of its public dollars, and the contractor must cover its costs and, for those that are for-profit, earn a reasonable profit. Both parties to the contract should benefit.

Several examples of partnerships are described in the case studies. VTA specifically noted its positive relationship with its contracted broker, which has grown over their long-term association and facilitates their ability to develop and improve the ADA paratransit service. Positive relationships have also developed between the broker and service contractors, where mutual trust, aided in great part with open communication, sustains the relationship when challenges arise.

SamTrans has established a Services Planning Committee, which specifically includes staff of both the transit agency and the contractor. This committee, which meets at least quarterly and sometimes monthly, formalizes the working relationship between the transit agency and the contractor. The meetings facilitate shared efforts for reviewing service performance and developing opportunities for improvement.

Summary: No Quick-Fix Approach

There is no one strategy or single "quick fix" approach for achieving cost-effective contracted ADA paratransit service. Transit agencies can work towards that objective in various ways, from preparing a thorough and explanatory RFP, to judicious and balanced use of performance-related incentives and disincentives, to providing vehicles for the contractor's use, among other options.

Perhaps the one approach that underlies many of the strategies for cost-effective contracted service is developing a positive and working relationship with the contractor. Such a relationship strengthens efforts to provide the paratransit service and will be particularly valuable when there are challenges, which can and inevitably will arise with any transit service.

Such working relationships, however, require that both parties to the contract act in good faith and, particularly when there are service or performance issues, that the contractor meets its contractual obligations and requirements, ensuring timely response to problems. In some cases and depending on the transit agency and local circumstances, performance incentives and disincentives reinforce the relationship and are important for ensuring the contractor's attention.

Transit agencies and private contractors have different organizational missions—the transit agency is a public entity created to provide a public service, and the contractor is a private business and, for those that are for-profit, must earn profits to remain viable—but they share a responsibility through the contract for effective ADA paratransit service within a reasonable cost structure.

SECTION

4

Operating Practices and Technology

Good operating practices and effective use of technologies are important for operating quality, cost-effective paratransit service. This section describes a range of operating practices used by ADA paratransit systems to ensure proper service for their riders while also helping to make the service more cost efficient. These include:

- Reservations practices
- Scheduling practices
- Dispatch practices
- No-show policies and practices
- Fleet mix

This section also discusses effective use of technology to improve ADA paratransit service, including the use of:

- Scheduling and dispatching software
- Mobile data terminals
- Automatic vehicle location
- Interactive voice response
- Web-based applications

Information presented is based on a review of the literature, a nationwide survey of transit agencies, and several case studies. Detailed results of the survey, including responses from 167 transit agencies to questions about operating practices and use of technologies, are provided in Appendix A. Case studies are provided in Appendix D. Several highlight effective operating practices and use of advanced technologies. Many of the operating practices noted are described in a report on innovative paratransit operations developed by Easter Seals Project ACTION [31].

Reservations Practices

A number of good practices have been developed in the way that trip requests are handled, trips are scheduled, and service is dispatched. Examples in each of these areas of operations are described below.

Communicate the Pickup Window

Shared-ride paratransit services use windows of time within which pickups are made. The window typically is 15–30 minutes in length and is created around a pickup time. For example, in some systems, pickups are made from 15 minutes before to 15 minutes after the pickup time negotiated with riders. In other systems, the window is from the negotiated pickup time to 30 minutes after the negotiated time. Systems ask riders to be ready to board vehicles anytime within these windows of time.

Although some riders may have a good understanding of the pickup window, others may not. Some riders may record and focus only on the exact time negotiated for pickups. It is important to effectively communicate the concept of a pickup window to riders. If riders are not expecting vehicles to arrive anytime within the window, it can increase dwell times at pickup locations. It can also cause no-shows (and returns to make the pickup, in some cases, to keep from stranding riders).

In addition to explaining the pickup window in public information, including the Riders Guide, it is also a good practice to regularly reinforce and remind riders of the window. In some systems, reservationists remind riders of the pickup window each time they book rides. To stress that there is a window of time, not a specific time, some systems only give the window—for example, "Your pickup is scheduled for tomorrow between 8:45 AM and 9:15 AM" rather than "Your pickup is scheduled for 9:00 AM."

Collect and Verify Key Trip Information

It is also a good practice for reservationists to verify and repeat information back to riders when trips are being requested and booked. It is also helpful to verify rider information on file and collect other information that may be helpful for dispatchers and drivers. Some important things to collect and verify include:

- Day and Date: If riders state only a date, make sure it is the day they intend. If they state only a day, make sure it is the date they intend.
- Pickup Address: Verify the pickup address. Do not assume that riders will begin their journey from their homes.
- Home Address and Phone Number: If riders will be starting their trips from home, confirm that the address on file is still correct. Also confirm the home phone number so that if dispatchers need to call they will have a correct number.
- Destination Information: In addition to a destination address, it is a good practice to record any special pickup instructions. This might include the name of the building or business, or instructions for where the rider will be waiting (e.g., side door). This information is often recorded in a comment field for use by drivers and dispatchers.

- Request a Destination Phone Number: Some systems ask riders for a phone number that can be used to reach them at the destination. Again, this can be helpful if dispatchers need to contact them about return trip pickups.
- Mobility Devices: Confirm what mobility aids or devices riders will be using during travel. Do not assume that the device indicated in the rider file is correct. Some riders use several mobility devices and may change from trip to trip. This information may not always be captured completely in the eligibility determination process. Some riders also may change the types of mobility devices they use after going through the eligibility determination process.
- Attendants and Companions: Confirm if riders will be traveling with attendants and/or companions. This is important for reserving enough space on vehicles.
- Final Trip Verification: Once the trip booking process is completed, it is a good practice for reservationists to repeat back to riders the key trip information. This is a good double-check to make sure there have not been any misunderstandings or errors.

To ensure that reservationists are thorough in collecting and verifying information, it is a good practice to create a detailed reservations script and train reservationists in its use. Calls should then be periodically monitored to ensure that the script is being followed.

Request and Use Appointment Times in the Booking Process

It is important to not only pick up riders on time, but to get them to appointments on time. To be able to do this, it is important to record and use appointment times in the trip booking process. For "going" trips that have appointment times or desired arrival times, it is a good practice to encourage riders to book based on the appointment time. Reservationists should request an appointment time, record the appointment time, and generate an appropriate pickup time. This is more effective than making riders responsible for stating a pickup time that will allow them to get to their destination on time. Many riders do not understand the amount of travel time that must be allowed in a shared-ride service and are likely to request pickup times that get them to destinations late.

While encouraging riders to book based on appointment times, transit agencies should be aware that riders may sometimes have other time limitations and may want to book going trips using a requested pickup time. For example, they may not be able to depart before a certain time. It is, therefore, a good practice to encourage use of appointment times but to be open to the use of pickup times.

Riders should be allowed to state only an appointment time or a pickup time, not both. Allowing both to be stated could restrict the scheduling of trips too much,

eliminate options for grouping trips, and result in inefficient service. For return trips, a pickup time is typically given, but this can vary if, for example, a rider on a shopping trip must be home by a certain time, or if a rider is traveling to a second appointment.

Schedulers and dispatchers then should consider both pickup and appointment times as runs are created and delivered. Schedulers should ensure that schedules allow for both on-time pickups and on-time drop-offs. Dispatchers should then manage runs to ensure that riders are not only picked up on time, but get to appointments on time.

System parameters also should be created around both pickup times and drop-off times. For example, parameters should be created for on-time drop-offs as well as on-time pickups. A reasonable window parameter for defining on-time drop-offs is to get riders to appointments no more than 30 minutes before stated appointment times, and no later than the appointment times.

Make Good Initial Trip Scheduling Selections

If reservationists do the initial scheduling and place trips directly onto runs, it is important that they be trained to do this in the best and most efficient way. Often, scheduling systems used to assist with the trip booking process generate multiple possible scheduling options. Some can be efficient. Other might be very inefficient.

Reservationists should be trained to be able to evaluate which scheduling options are reasonable and acceptable. This might include checking to ensure that vehicles in the area are used whenever possible, rather than selecting a scheduling option that requires a vehicle to travel a long distance to get to the pickup location. It may also include calling up and examining the actual run schedule to make sure the new trip fits with trips already on the run. Advanced scheduling software allows reservationists to call up a map showing the route with the new trip included. This way, it is easy for reservationists to see if the trip is a logical fit and does not create excessive deadheading or circuitous routing.

Scheduling Practices

Refine the Scheduling System Parameters

If an automated scheduling system is used, it is important that the scheduling parameters are appropriate and correct. Each operating area is different, and scheduling systems need to be properly customized to create good schedules for the area in which they are used. Some systems are also very complex and require a lot of testing and refinement to arrive at parameter settings that work. Some parameter settings that are important for workable and efficient schedules are:

- Window Settings: Make sure pickup and drop-off windows are set correctly. Regarding pickup and drop-off time allowances, make sure that settings defining how long pickups and drop-offs take are reasonable. Some systems allow times to be set differently for riders who are ambulatory versus those who use wheelchairs.
- Travel Speeds: Some sophisticated systems allow times to be set for particular street segments, or different speeds to be set for different times of the day. One good practice is to use actual travel times recorded by MDCs to then create appropriate travel speed settings.
- Maximum Travel Times: Establish maximum travel time parameters that are appropriate for trips of different length. A "global" setting of 60 or 90 minutes might not be appropriate for many shorter trips and may result in excessive on-board ride times. Determine if the scheduling system being used allows variable maximum times for trips of different lengths. Use this capability if it exists.

Keeping the Underlying Service Area Map Accurate

It is also important to keep the underlying map used in an automated scheduling system as accurate as possible. A map that does not accurately show one-way streets and other unique local conditions can result in inefficient and unrealistic schedules.

The map that is installed initially should be checked to make sure it is accurate. Feedback from dispatchers and drivers should also be used identify and correct problems that were not identified at implementation. Consideration should also be given to purchasing more accurate, updated versions as they become available.

Review and Refine the Run Structure

Match the number of vehicles scheduled to be in service by hour of the day to the demand for service by day and hour. A transit agency should know its average vehicle productivity (passenger trips per vehicle hour) and have sufficient vehicles and drivers available to meet the expected demand for service. If service is divided into geographic zones, there should be sufficient vehicles for the expected demand in each zone.

Typically, ADA paratransit service has peak demand periods in the morning and afternoon (similar but not necessarily identical to the peak periods for fixed-route service). Meeting the peak demand without creating excess capacity during off-peak periods may necessitate the use of part time shifts or split shifts.

When creating an efficient run structure, balance efficiency with workforce considerations. Be sure that part-time and split shifts can be adequately covered and do not increase driver turnover.

Develop a Vehicle Assignment Plan

In larger service areas, a transit agency may consider a vehicle assignment plan that reduces deadheading. Some agencies allow vehicles to be assigned to specified areas and to use these vehicles first for trips in those areas. This helps to ensure that the scheduling system does not simply assign trips based on available time, which can create excessive deadheading (i.e., vehicles inefficiently crisscrossing the service area to pick up riders). Even if a transit agency does not designate service zones to the public, it can define these zones internally for use by its schedulers and/or ADA paratransit software.

Protect Negotiated Pickup Times

Once a rider and call-taker agree on a pickup time for a requested trip, the transit agency must honor this negotiated time. It cannot be changed without an explicit agreement from the rider. A transit agency should note that this does not prevent the adjustment of a vehicle's expected arrival time (ETA) within the pickup window. For example, if a call-taker and rider negotiate a 9:00 AM pickup, and the pickup window is (0/+30), then the vehicle may arrive at any time from 9:00–9:30 AM. The transit agency may initially calculate an ETA of 9:05 AM. It may adjust the ETA to 9:25 AM or any time within the original pickup window, based on 9:00 AM. But it cannot change the negotiated time, say to 9:15 AM—which would create a new pickup window of 9:15 to 9:45 AM—unless it contacts the rider and the rider approves the change.

The negotiated pickup time should be included as a distinct piece of data in the scheduling database. Furthermore, schedulers, dispatchers, and drivers should all know the negotiated pickup time.

Manage Subscription Trips

Subscription service is an optional feature of ADA paratransit operations. Subscription trips follow a set pattern, i.e., same origin and destination, same pickup or drop-off time, for at least one time per week. Once a rider makes the request for the set of subscription trips, the rider does not need to request trips again until there is a change to desired service.

The USDOT ADA regulations do not require a transit agency to offer subscription service. The regulations place a single limit on subscription trips: if there is a capacity constraint during a particular period of the day, subscription trips may take up no more than 50% of the available capacity during that period. Otherwise, a transit agency should offer subscription service in whatever way makes it more efficient for its operations and more convenient for the rider receiving subscription service.

The 50% provision often is misunderstood as capping subscription service at 50% of ADA paratransit capacity, regardless of the circumstances. The cap

applies only when there is no non-subscription capacity; that is, when there are capacity constraints. Transit agencies with no trip denials may provide as much subscription service as they wish.

Typically, a transit agency assigns subscription trips to vehicle runs before assigning demand (non-subscription) trips. This creates a base set of runs each day (the subscription "template") that begins to define the flow of vehicles throughout the day). Then, the schedulers can add demand trips to these runs so that these trips fill in the times and, as best as possible, fit in geographically. A good subscription template that creates a logical flow of vehicles can allow demand trips to be scheduled efficiently. A haphazard subscription template that has no logical flow can be a significant hindrance to efficiency.

Not all trips are more efficient if done on a subscription basis, even if they have the characteristics of subscription trips. Sometimes, for trips that are going counter to the prevailing direction of travel at that time, it is best to schedule these trips each day.

A transit agency should keep subscription trips up-to-date and revise them when a rider's travel plans change. For example, if a rider will be away for a week, it should adjust the schedules to reflect this. A common error that creates significant inefficiency is to leave subscription trips unchanged even though a rider has cancelled them or requested changes.

Review and Refine Schedules as They Are Created

It is a good practice for schedulers to review and adjust run schedules as they are being built over time. For example, if riders can request trips up to seven days in advance, the schedulers might examine the schedules four or five days out when a significant number of trips have already been booked. Experienced schedulers have found that this technique is more effective than waiting until the day before service (e.g., Thursday for Friday trips) for all the trip requests, then making a single review and adjustments on the night before. Making runs as efficient as possible several days in advance can improve the scheduling options that the system generates for all trips scheduled after this time.

Final Review of Schedules

In addition to periodic reviews over time, it is important to do a final review and "cleanup" of all run schedules. Scheduling programs have become more refined, particularly with the parameters set properly (e.g., road speed, boarding and alighting times). However, a transit agency should not rely on an automated system to generate the final schedules. Schedulers should check for any late pickups or drop-offs, excessive trip lengths, inefficient vehicle tours, trips assigned to inappropriate vehicles (e.g., riders using a wheelchair to an inaccessible vehicle), or any other explicitly wrong assignments.

Adequate Scheduling Capacity

A transit agency should have enough trained schedulers to perform all the activities discussed in this section. Industry experience suggests that a scheduler should be responsible for no more than 50 runs. Be sure that a transit agency has the staff to create the schedules for seven days a week, and account for the vacation and other leave time.

Dispatch Practices

Proactive Dispatching

The daily operations rarely run as planned on all drivers' manifests. There are bound to be late riders, bad traffic, bad weather, vehicle breakdowns, or unexpected events that cause drivers to fall behind on their schedules. It is the responsibility of dispatchers to anticipate problems and to be ready to go to "Plan B."

Dispatchers should be proactive, rather than reactive. They should always be looking ahead one to two hours to identify potential problems. A dispatcher should not wait for a driver's call—or a rider's call—telling Dispatch that the driver is late. Based on the revised estimated times of arrival (ETAs) (if using MDCs) or the driver's calls of pickups and drop-offs, a dispatcher should be aware of late trips. Of course, a dispatcher is not able to prevent every late pickup and drop-off. But a dispatcher should have alternatives in mind. This might include moving subsequent trips from the late vehicle, re-ordering the sequence of pickups and drop-offs, or using a "floater" run to serve trips.

If a transit agency uses MDCs, it should ensure that drivers enter both arrival and departure times at each pickup and drop-off so that the software can update ETAs for subsequent trips. If the MDCs are not working, dispatchers should contact the drivers, get times, and add them to the system.

If the transit agency is not using technologies such as MDCs and GPS, dispatchers should still keep in regular contact with the drivers. Drivers can radio in each pickup and drop-off, or the dispatchers can poll all drivers regularly (e.g., every 30 minutes) to get recent pickup and drop-off times.

No-Show Policies and Practices

No-shows are problematic for both the rider and the transit agency. For the transit agency, a no-show, whether or not the agency is at fault, is a waste of resources (driver time, vehicle miles, fuel) that could have been used for another trip. Furthermore, as many transit agencies have "no strand" policies for getting riders back to their home, a no-show may require assigning a vehicle to again perform the same trip. As a result, it is to everyone's benefit to minimize no-shows.

Developing Appropriate No-Show Policies

The Disability Rights Education & Defense Fund (DREDF) developed the Topic Guides on ADA Transportation, funded by FTA [32]. Topic Guide 7 addresses no-shows in ADA paratransit. This guide provides a comprehensive discussion of the USDOT regulations concerning no-shows, along with good policies and practices that benefit both transit agencies and riders. When developing its policies for no-shows and potential service suspension, a transit agency should consider the following issues.

Do not count no-shows beyond riders' control. The ADA does not allow transit agencies to base a suspension of service on any trips missed by a rider for reasons beyond his or her control, including trips missed due to transit agency error or lateness. Those trips may not be a basis for determining that a pattern or practice of missing scheduled trips exists. Circumstances that may be beyond the rider's control include but are not limited to:

- Family emergency
- Illness that precluded the rider from calling to cancel
- Personal attendant or another party did not arrive on time to assist the rider
- Rider was inside calling to check the ride status and was on hold for extended time
- Rider's appointment ran long and did not provide opportunity to cancel in a timely way
- Another party cancelled rider's appointment
- Rider's mobility aid failed
- Sudden turn for the worse in someone with a variable condition
- Adverse weather impacted rider's travel plans, precluding the rider from cancelling in a timely way

Transit agency error, which may not be counted as a rider no-show, includes but is not limited to:

- Vehicle arrived late, after the pickup window
- Vehicle arrived early, before the pickup window, and rider was not ready to go
- Vehicle never arrived
- Vehicle went to the wrong location
- Driver did not follow correct procedures to locate the rider
- Rider cancelled in a timely way but the cancellation was not recorded correctly or was not transmitted to the driver in time

Consider the proportion of trips missed rather than absolute number. One way of doing this is to initially set a minimum number of no-shows that

must be exceeded and then to check that, even if this number is exceeded, the no-shows represent a certain percent of all trips taken.

When determining what frequency of no-shows constitutes a pattern or practice of abuse, transit systems also should consider the overall no-show rate for all riders and adjust upward so as not to penalize riders with average no-show records. If the overall no-show rate is 5%, for example, a rider who no-shows only five% of his or her scheduled trips should not be considered an abuser of the service, because this is the average.

Account for no-shows by riders versus missed trips due to transit agency error. The ADA distinguishes between trips that are missed by the rider (no-shows) and missed trips (trips not served) that are the responsibility of the transit agency. If a rider is not present when a vehicle arrives because the vehicle is late, some transit agencies still record this as a no-show. However, when the vehicle arrives outside the pickup window, if the passenger does not make the trip, the transit agency should not consider this a no-show, but rather, a missed trip by the transit agency itself.

Don't cancel the return trip. If a rider misses a scheduled outbound trip, transit agencies may not automatically cancel his or her return trip. Each leg of a trip must be treated separately. Without an indication from the rider that the return trip is not needed, it should remain on the schedule.

No-Show Suspension Process

A transit agency must properly administer any suspension process for excessive no-shows, including having due process. It is a good practice for transit agencies to alert riders about no-shows on their record as the no-shows occur.

Before any suspension of service due to no-shows, the transit agency must notify the individual rider in writing, citing specifically the full reason for the proposed suspension and its length, including the exact no-show dates, times, pickup locations, and destinations on which the proposed suspension is based, using accessible formats when necessary.

Suspensions should be limited to the reasonable period of time envisioned in the DOT ADA regulation. The sanction should not be too long or overly punitive. For example, if a rider was suspended for one year or eligibility was revoked, this would not be appropriate. FTA has explained that it is looking for suspensions of days, maybe weeks, not suspensions, typically, of months and especially of years.

Some transit agencies allow riders to pay a fine or other financial penalty instead of imposing a no-show service suspension. However, a financial penalty is permitted by the ADA only as an option instead of a suspension. A fine or financial penalty may not be mandatory and may not be charged in addition to a

suspension, and a fine or financial penalty may not be charged for an individual no-show.

The ADA guarantees that a rider may file a local appeal of a transit agency decision to suspend the provision of paratransit service due to a pattern of missing scheduled trips. If a rider appeals the proposed suspension, the transit agency must continue to provide paratransit service to the rider until the appeal is heard and decided.

The local appeal process must include an opportunity to be heard and to present information and arguments. Moreover, according to Appendix D of the USDOT ADA Regulations, "If there is a hearing, and the individual needs paratransit service to attend the hearing, the [transit agency] must provide it."

The decision on an appeal must be made by a person or panel of people uninvolved with the initial decision to suspend service. The USDOT ADA regulation requires a separation of authority between those making the initial determination to suspend service and those making the decision on an appeal. For example, neither a subordinate of the person who made the initial decision, nor his or her supervisor, should hear appeals. The transit agency must provide written notification of the appeal decision, with detailed, specific reasons stated. This information must be available in accessible formats.

Practices to Reduce No-Shows

The Topic Guide cites the following operational practices to reduce no-shows (with explanation for each) [32]:

- **Capture and record special pickup instructions (for example, side door, back door) and make sure they get to the driver**. Let riders know that it is important to provide these special pickup instructions when the pickup location may not be obvious. Include this in the rider's guide as well as in the script used by reservation agents to ask riders each time a trip is booked. Train reservationists to accurately record special instructions in the appropriate places during the trip booking process. Do periodic checks of trip records to make sure that special instructions are being recorded and are showing up in the right places for drivers. Ensure that drivers know where those special instructions are recorded.
- **Capture telephone numbers in the reservations process**. In addition to special pickup instructions, make sure that all telephone numbers are obtained from riders during the trip booking process. This includes telephone numbers at the origin of both ends of the trip—the origin and the destination. Include this in the script used by reservation agents and be sure that it is included in agent training. Having phone numbers will then make it possible for radio dispatchers to attempt to contact riders if drivers report possible no-shows.

- **Attempt to locate the rider rather than just waiting five minutes and pulling away**. When appropriate, drivers might first go to the door to alert riders before they contact dispatch about a possible no-show.
- **Designate pickup locations at large facilities that can be used as meeting points.** Work with large facilities to designate locations where riders can wait for vehicles and to post signs to identify the locations as ADA paratransit pickup and drop-off points. Whenever possible, provide amenities at the locations, such as a bench and shelter. When riders call to book rides to these large facilities, ask if meeting at the designated pickup and drop-off points is workable for them. If so, indicate it as special instructions on the trip record. Be aware that these designated meeting locations are not always workable for riders. The facilities may be so large that some riders may need to be picked up and dropped off at other locations within the facility grounds. If this is the case, be sure to indicate it in the special instructions. While they are not always workable for everyone, designated pickup locations can be helpful for many trips.
- **Manage no-shows through the dispatching process**. Make sure that drivers contact dispatch and receive authorization before marking riders as no-shows. Before giving authorization, dispatchers should compare the vehicle arrival time to the scheduled pickup time and the pickup window, to ensure that the vehicle arrived and waited the appropriate amount of time. If Automatic Vehicle Locator (AVL) technology is used, dispatchers should also check the vehicle location to make sure it is at the scheduled location. If AVL is not used, dispatchers should ask drivers to describe the location to be sure it is correct, and should include the description in trip notes, in case a no-show is later questioned. If it is part of the approved procedure, dispatchers should attempt to contact the rider, using any telephone number(s) in the trip record.
- **Track changes made on the day of service and adjust subsequent trips as needed.** Occasionally, due to reservations or other errors, riders may be dropped off at different locations, or at different entrances, than what is noted on the schedule. When this happens, vehicle operators should inform dispatch, and dispatchers should make necessary adjustments to any subsequent trips, so that the next driver, performing the second half of the trip, does not end up at the wrong location.
- **Educate riders about the pickup window, the vehicle wait time policy, the importance of being ready and looking for the vehicle, and the need to cancel rides as soon as possible when their plans change**. In addition to including this in the Rider's Guide, consider sending "Helpful Hints" flyers to riders, including this information on the recorded message that riders hear when they call to book trips, and including it in the rider newsletter.

- **Consider implementing rider call-outs.** Advanced technologies such as AVL, with or without Interactive Voice Response (IVR), can provide for automated call-outs when a vehicle is within five minutes of a scheduled pickup location, to alert riders that the vehicle will arrive soon. Call-outs can be extended to all riders, or targeted for riders who have difficulty knowing that vehicles have arrived, either due to their disabilities or their locations.
- **Work with riders to address the causes of no-shows**. It is a good practice to contact riders and discuss no-shows. Try to identify why the no-shows are occurring. Work with each rider to develop approaches for them to use the service without no-shows.

Tips for Drivers and Dispatchers

When a driver arrives at a pickup address and the rider is not visible, the transit agency should have procedures for the driver and dispatcher to follow, depending on whether the driver arrives— before the beginning of the pickup window, during the pickup window, or after the end of the pickup window. These procedures include:

- Who tries to contact the rider and when
- Whether the driver tries to locate the rider (at a facility)
- How long the driver waits at the pickup location
- Whether the driver leaves a message indicating that the driver was there
- When the driver is authorized to leave the pickup location without making the pickup

If the transit agency declares a no-show, the dispatcher and driver should record both the vehicle's arrival and departure time. If the rider subsequently calls to reschedule the trip, the transit agency should be prepared to let the rider know that the original trip was a no-show. The transit agency can then follow its policies for making a second attempt to pick up the rider.

Tips for Riders

The DREDF Topic Guide also summarizes the steps that riders can take to reduce no-shows. These include:

- Confirm the beginning and end of the pickup window and the amount of time the vehicle will wait for you when you call to book your trip.
- Call to cancel as soon as possible if you will not be taking a trip.
- Be ready and watching for vehicles during the full on-time pickup window.
- Provide detailed pickup instructions (side or rear door, etc.) for large facilities, for any pickup locations that may be difficult for drivers to find, and for any locations where your needed pickup is not at the main entrance.

- Provide all telephone numbers, including at each destination, and confirm they have been correctly recorded by the reservation agent.
- If you are a subscription rider, call to inform the transit agency of any changes in your plans, such as a vacation or other absence. Telling a driver is not sufficient.

Fleet Mix

Building a fleet of vehicles that includes adequate accessibility, has enough capacity to meet expected loads, but is cost-efficient to operate is also an important factor in operating cost-effective paratransit services. Little research exists on the best fleet mix or the cost-effectiveness of using different types of vehicles. Opinions in the paratransit industry also vary. Managers at some systems feel that a uniform fleet of accessible body-on-chassis minibuses provides maximum flexibility in scheduling and dispatching and the advantages of this scheduling flexibility offsets higher operating costs. Other managers feel that including some smaller vehicles in the fleet, either inaccessible sedans or ramp-equipped minivans, can lower operating costs without affecting scheduling flexibility and productivity.

The national survey of transit agencies providing ADA paratransit service (see Appendix A) indicated that body-on-chassis minibuses are the most popular style of vehicle, making up 50% of the collective agency fleets. Sedans are the second most popular type of vehicle, making up 23% of the fleets. Minivans make up 12 percent, raised-roof vans 9 percent, and purpose-built buses 4 percent. A total of 2 percent of all vehicles were reported to not fall in any of these standard categories.

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Figure 4-1
OUTREACH sedans

The case study of VTA and OUTREACH documents the successful use of a fleet mix that includes cost-effective hybrid sedan. In 2007, VTA and OUTREACH introduced 20 hybrid gas-electric sedans into the paratransit fleet as a test. This pilot project proved to be successful as the sedans proved to be reliable, could be integrated into the scheduling process without losing productivity, and provided savings due to lower fuel costs. There are now 110 Prius sedans in the overall paratransit fleet. Prior to the introduction of sedans, the OUTREACH fleet averaged about 14 miles per gallon (mpg). With sedans, OUTREACH reported that the fleet average mileage was 19.5 mpg in 2012, saving the agency an estimated $600,000 per year. VTA and OUTREACH plan to introduce plug-in electric sedans and charging systems to gain further increases on fuel efficiency and emission reduction.

One of the challenges presented by using smaller vehicles, particularly sedans, is using them fully. It is sometimes difficult to construct an entire run serving only riders who do not need accessible vehicles. The VTA and OUTREACH case study in Appendix D details operating procedures that have been developed to effectively use sedans. OUTREACH employs "zonal routing" (assigning vehicles to operating zones) to ensure that an appropriate mix of sedans, accessible minivans and vans are available throughout the service area. Scheduling software is also programmed to give preference to scheduling trips by ambulatory riders on the sedans, which keeps the accessible minivans and vans available for riders who use wheelchairs. Finally, OUTREACH schedulers sequence the batching of trips to runs in the following way: (1) riders who use mobility devices, (2) longer trips, and (3) ambulatory riders making shorter trips. This sequencing ensures that the final trips that need to be scheduled are shorter trips by riders who are able to use any of the vehicles in the fleet. Taxi providers can then be used to serve these riders if the dedicated vehicles are fully booked. This innovative scheduling practice has enabled OUTREACH to efficiently use a large number of hybrid sedans in their fleet.

Paratransit Technology

Paratransit service is very data intensive. For a single one-way trip, a transit agency collects and maintains a vast array of information: data on the rider and any PCA and companion; data on the trip request, including requested and negotiated times and data on the call itself; data on the assignment of the trip to a vehicle schedule; data on the actual performance of the trip, including times, mileages, and potential customer comments; and data on the driver, vehicle, and other operational characteristics of the trip. The paratransit industry has often been ahead of fixed-route in making use of technology, because of the need to collect, use, analyze, and maintain this range of data.

Transit agencies make use of this technology in part to become more efficient. They can provide more trips with the same number of staff or the same number

of vehicles. They also use this technology so that they can better monitor the service of contractors, who operate most of the service on behalf of public transit agencies. Also, the technology provides better service to riders— more flexibility, more (and timelier) information, and better performance in terms of on-time trips and shorter on-board times.

This section describes examples of technology that are in common use by transit agencies for their paratransit service:

- Scheduling and dispatching software
- Mobile data terminals
- Automatic vehicle location
- Interactive Voice Response
- Other Web-based Functions

Several of the case studies in Appendix D detail the use of these technologies and their benefits. This includes the case studies of DART in Dallas, VTA and OUTREACH in San Jose, Pelivan Transit in Big Cabin, Oklahoma, SEPTA in Philadelphia, SamTrans in San Carlos, and STAR in Arlington. Additional information on paratransit technologies is also available in the literature [33, 34, 35, 36].

Scheduling and Dispatching Software

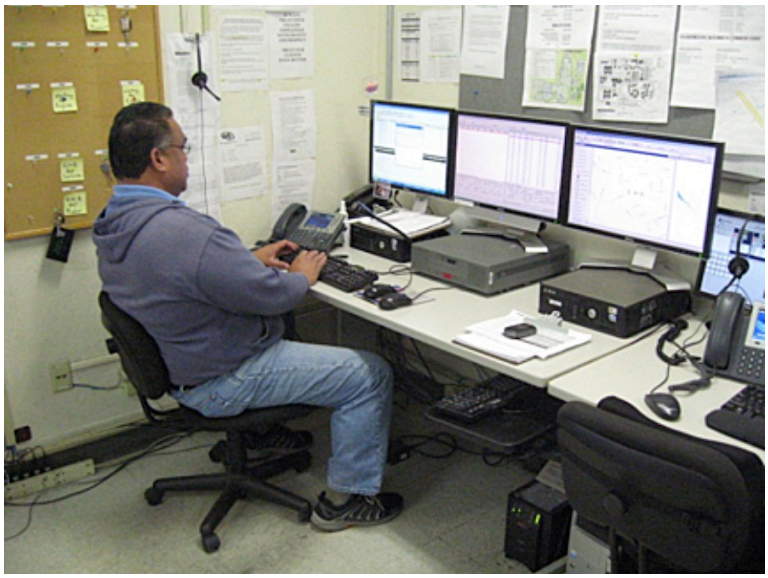
Paratransit scheduling software includes a range of functionality, including:

- Verify rider's eligibility for service (whether ADA complementary paratransit or other paratransit services)
- Verify validity of trip request: day, time, origin and destination addresses
- Compute fare and as appropriate, determine funding source
- Determine if particular vehicle type is needed
- Integrate trip request onto particular vehicle run
- Optimize assignment of all requested trips to vehicle runs (e.g., minimize vehicle hours, minimize mileage)
- Ensure that each trip does not violate service policies (for both riders and drivers)
- Collect and maintain data for all scheduled trips and actual trip disposition
- Create analytic tools to measure service efficiency and service performance

To accomplish all of these tasks, the software makes use of a range of databases: rider information, geographic data (primarily but not exclusively on the service area's street network), operations data (e.g., road speeds, boarding and alighting times), vehicle fleet data, fares, funding sources, and service policy information.

Figure 4-2

SamTrans dispatcher using scheduling and dispatching software to efficiently manage runs



Dispatching software provides support tools to dispatchers and supervisors to monitor vehicle location and schedule adherence (both actual and forecast) in real-time. The software, combined with corresponding hardware (such as terminals, displays, speakers, microphones, and cameras), allows the dispatchers and supervisors to identify problems in the field and manage vehicle operations, i.e., re-route vehicles, transfer trips between vehicles, add vehicles, send supervisors and/or mechanics to trouble spots.

Current paratransit software offered by the major software vendors is complex and requires an initial loading of data, tailoring to the specific paratransit operation, and training to reservationists, schedulers, dispatchers, and supervisors. Apart from the capability to assign trips to vehicle runs and create schedules that account for operational information and service policies, most paratransit software has large databases of all service elements: rider information, service area data (road network, addresses, destination information), vehicle fleet information, fixed-route service information (bus and rail routes, stops, stations, service days and hours), paratransit service policies and standards, vehicle runs, and fares. Other databases that may also be part of the paratransit software include rider complaint modules and eligibility certification modules.

The construction of vehicle runs incorporates all of this data, with the transit agency providing measures to optimize (e.g., fewest vehicle hours, fewest vehicle miles) while meeting service policies (e.g., pickups in the window, maximum on board time for riders) and not exceeding available resources (e.g., vehicles, accessible spaces, driver hours). The software may not be able to automatically assign all trip requests to the available vehicle runs. The role of schedulers and dispatchers is to complete that task.

Some key benefits that paratransit software offers include the following:

- Allows schedulers to handle a much greater number of trip requests
- Stores and provides rider information to call-takers, schedulers, and dispatchers
- By making initial assignment of majority of trip requests, allows schedulers to concentrate on trips that do not easily fit into vehicle runs,
- Allows schedulers and other operations staff to build in and adjust operations data when creating schedules
- Allows ongoing adjustments and building of each vehicle run, with ongoing updates of projected pickup and drop-off times
- Provides real-time adjustments to schedule when no-shows and late cancellations occur
- Allows automated collection of operations data, facilitating analysis of performance, service quality, and costs
- Allows transit agency to provide precise pickup times to riders at time of call

Dispatching software makes use of data from several sources: automatic vehicle location systems, which provide the location and movement of each vehicle; continually updated scheduling data, which provides the riders currently on board each vehicle, their scheduled times, and the times and locations of future riders; and for some dispatching systems, real-time traffic and road condition data. The software processes all of this data to provide a dispatcher with the current status of all vehicles, and the projected performance for future pickups and drop-offs. If a dispatcher transfers a trip or wants to see the potential effects of a transfer, the software makes use of the data to project the new pickup and drop-off times for that trip and all others on the affected vehicles.

Dispatching software allows paratransit dispatchers to view and manage a large number of vehicles; it is reasonable for a dispatcher to oversee up to 40 paratransit vehicles in service when the drivers are also entering their pickups and drop-offs onto their mobile data terminals, reducing the staffing requirements. Dispatching software also provides the following benefits:

- Ability for dispatcher to respond more quickly and effectively to accidents, emergencies, and other incidents on the road
- Ability for dispatcher to see "what if" scenarios for transferring trips between vehicles
- Ability for dispatcher to look ahead to anticipate late pickups and drop-offs
- Ability to estimate revised pickup and drop-off times
- Call-takers have real-time information to respond to riders' "where's my ride?" calls

A total of 158 of the 167 transit agencies that responded to the study survey indicated use of scheduling and dispatching software, and 51% indicated it was effective in helping to manage service quality and efficiency.

Mobile Data Terminals

Mobile data terminals (MDTs), also called mobile data computers, are portable computers that drivers can use to enter and receive a variety of data. In the context of paratransit operations, MDTs typically include the capability for automatic vehicle location, as well as providing schedule information, mapping data, and communications (voice, text, and data) with dispatch and other vehicles in the fleet.

Figure 4-3

Pelivan driver using tablet MDT

MDTs are usually part of a more comprehensive information system for paratransit. The particular capabilities of a MDT vary depending on the device and overall system. Common capabilities include:

- Text display for vehicle manifest information and messages to and from dispatch
- Graphics display for maps
- Input of times for pickups, drop-offs, and no-shows
- Other quick message inputs
- Audio communication
- AVL for tracking by dispatchers

Many MDTs are devices dedicated for use in vehicles. In addition, some transit agencies have begun to use tablets as MDTs. The use of tablet computers as the in-vehicle terminals and communication devices provides flexibility and cost

savings over using dedicated MDTs. The tablets are easy to program, easy to use by the drivers, and easy to replace if there is a problem or need to upgrade software. In addition, tablets are easy to remove from the vehicle at the end of service, which makes them more secure if vehicles are parked outside.

The benefits of MDTs compared to manual recording of data and use of separate radios include:

- Electronic recording of pickup and drop-off times are generally more reliable and consistent than manual recording; also easier to analyze and compare
- Electronic data entered by driver eliminates need for entering data at the paratransit office
- Reduced need for radio communication between drivers and dispatcher leads to less noisy dispatch area and allows dispatcher to concentrate on problems rather than routine activities
- Drivers and dispatchers can communicate with text rather than radio, which has less capacity
- Transfer of trips between manifests is simpler and less prone to mistakes; MDTs can calculate and display new trips and adjusted times for subsequent trips
- Map displays can help drivers less familiar with local roads

In total, 111 of the 167 transit agencies that responded to the study survey noted that they use MDTs, with 40% saying this technology was highly effective in managing services.

Automatic Vehicle Location

AVL systems are a combination of hardware and software, with appropriate elements located at dispatch centers and vehicles that allow dispatchers to receive real-time location information about the vehicles. The main components include MDTs on vehicles with global positioning system (GPS) receivers and the capability to communicate with the dispatch computer.

AVL systems transmit location data on a periodic basis from vehicles to dispatch. A system may interpolate between signals to estimate intermediate locations. In contrast to fixed-route buses, whose path is usually prescribed and predictable, vehicle location data is very important for dispatchers in their oversight of paratransit operations. As presented in the discussion on dispatching software, real-time (or nearly real-time) location data enables a dispatcher to make better decisions about transferring trips, actions related to incidents on the road, and estimates about late trips.

The availability of AVL data can help a dispatcher to guide a driver who is unfamiliar with certain local roads, or to direct drivers away from temporary problem areas.

AVL data are also useful for monitoring no-shows and missed trips. In real-time, a dispatcher can confirm that a driver is at the correct location for a pickup or drop-off. Later on, a transit agency can use the AVL data, combined with time data, to confirm the proper characterization of trips coded as no-shows.

In fixed-route operations, a number of transit agencies have provided access to vehicle location data gathered through AVL to riders as well. Transit agencies and independent vendors have developed phone-based or computer based "apps" to enable riders to track buses and rail vehicles. To date, no transit agency has opened up its AVL data for paratransit service. But the technology is similar and available, and transit agencies may consider providing this tool to paratransit riders.

As discussed above, AVL systems provide the geographic data that paratransit software uses to match with the time data to confirm proper pickups and drop-offs.

A total of 116 of the 167 transit agencies responding to the study survey use IVR technology, with 36% indicating it is effective in helping to manage operations.

Interactive Voice Response

IVR is a telephone technology that can read a combination of touch tone and voice input. It gives users the ability to access a database of information via telephone. A typical IVR system has several menus of pre-recorded options that the caller can choose from. Although many choices are as basic as choosing a number, some options may require the caller to speak detailed information such as his name or account number. The IVR system reads this input and uses it to access the appropriate information in the database.

IVR offers many of the features and capabilities of web-based interfaces for paratransit riders (see below) without the need for a computer or computer skills; this is important for paratransit riders who may not have ready access to a computer, or may not be comfortable using a computer.

IVR is generally lower cost than web-based functions, while potentially offering enough capabilities to meet the current needs of riders and transit agency.

For paratransit service, common uses of IVR include:

- Requesting service information
- Confirming trip information
- Canceling trips previously requested
- Requesting new trips

Using a combination of pressing telephone keys and speaking in response to prompts, a rider can log in to his/her account and confirm trips or cancel trips.

Requesting new trips is a more sophisticated task. When a transit agency offers this feature using IVR, it usually does not provide the full capability compared to making a trip reservation with a call-taker (or via the web). A common limitation is that the rider can choose origins and destinations from among a set of "common addresses" specific to the rider. Prior to using the trip request feature, a rider provides the system a list of addresses (in addition to the home address), perhaps as many as a dozen. When the rider subsequently requests a trip using IVR, he/she chooses the origin and destination from that list. Furthermore, while the trip request will not be denied, the IVR may not provide a negotiated pickup time at the time of the call; the rider may have to call again (either the confirmation line or to a call-taker) to get the trip times.

The benefits to riders for IVR include:

- 24-hour access to information and certain tasks, e.g., trip reservations, cancelations, and confirmations not limited to hours when transit agency accepts telephone calls
- Transit agencies may provide incentives for a rider to make trip reservations via the web; for example, DART (Dallas, TX) takes trip reservations up to three days in advance over the telephone, but allows trip reservations up to four days in advance if requested via the web

For a transit agency, benefits include:

- Reduced need for reservationists and other staff to answer telephone
- Reduced capacity need for telephone system (lines and workstations), as a portion of calls shift to hours beyond the periods when call-takers are working
- Direct entry data by riders for trip reservations and cancelations
- If a rider is calling during hours when call-takers are working, IVR systems often have an option for the rider to speak to a call-taker.

A total of 107 of the survey respondents indicated that IVR technology is used in their operations; 22% cited it as effective in enhancing service efficiency and quality.

Other Web-based Functions

Other tasks that transit agencies and riders can conduct via the web include:

- Trip reservations – riders can request trips over the Internet in addition to via telephone calls.
- Trip cancellations – riders can cancel trips over the Internet that they previously requested.

- Trip confirmations – riders can check on trips over the Internet that they previously requested: pickup time, origin and destination, fare, accompanying PCA and/or companions.

The exact procedures vary among transit agencies. In general for all three tasks, a rider sets up an account to log in to gain access to his or her trip information. The rider then chooses which task to complete, and then follows the steps for the particular task. The transit agency displays screens (that may include drop-down menus and "Help" buttons) for the rider to make choices and enter information.

For trip reservations:

- Provide trip date
- Request pickup time or appointment time (one but not both)
- Provide origin and destination addresses
- Identify use of a mobility device
- Specify if accompanied by PCA and/or companions

Depending on the software's capabilities, a rider may be limited to selecting an origin and destination from subset of addresses: either common addresses specific to the rider, and/or a list of common addresses (locations) developed by the transit agency.

A transit agency may not necessarily provide the precise pickup (including window) and drop-off times at the time of the web request; that information is subject to determination during the scheduling process.

For trip cancelations:

- Select trip(s)
- Verify cancelation
- For trip confirmations:
- Select trip(s)
- View information for trip: times, origin and destination, fare, accompanying PCA and/or companions

There are potential benefits for both the rider and the transit agency for the ability for a rider to conduct any of these three tasks on the web that are similar to the benefits of IVR technology. For a rider:

- 24-hour access to make trip reservations, cancelations, and confirmations, i.e., not limited to hours when transit agency accepts telephone calls
- No concern about telephone hold times
- Rider can print trip information appearing on screen

Transit agencies may provide incentives for a rider to make trip reservations via the web

Transit agencies do not intend to restrict access to these tasks for riders who prefer to speak to staff. These capabilities simply expand the options for riders who choose to make use of them.

For a transit agency, benefits include:

- Reduced need for reservationists and other staff to answer telephone
- Reduced capacity need for telephone system (lines and workstations)
- Direct entry of trip reservation and cancelation data by riders

Web-based applications have only recently been introduced to ADA paratransit operations. Only 23% of the transit agencies that responded to the study survey indicated that web-based applications are used, with 22% saying they were effective. Many paratransit riders prefer to interact directly with operations staff. Over time, though, as these systems are refined and riders become more comfortable with electronic interactions, web-based technologies can help lower operations costs and provide riders with more immediate access to service information.

SECTION

5

Inclusive Service Design

This section discusses services beyond ADA paratransit that transit agencies across the country have developed to serve people with disabilities. These include:

- General public dial-a-ride services
- Community bus services
- Flex-route services
- Accessible taxi services
- Coordination programs

A common feature of each of these services is that transportation is provided to a broader base of riders than just persons who are ADA paratransit eligible, making them more inclusive and integrated. Providing service to the general public or to a broader base of eligible riders can also increase productivity and cost-efficiencies.

Each type of service is described through case studies conducted as part of the research. Full case study write-ups, including more detail on program implementation, cost-effectiveness, implementation issues, and lessons learned are provided in Appendix D.

General Public Dial-A-Ride Programs

A service design that can meet the needs of all riders is general public dial-a-ride (DAR). Rather than operating demand-responsive or paratransit services only for some riders, a number of transit agencies operate demand-responsive (DR) services that are open to the general public.

About a third of the 167 transit agencies that responded to the study survey indicated that they provide general public DAR. Of these, 34 indicated they operate general public DAR in areas not covered by fixed-route transit and ADA paratransit, 11 said they use general public DAR to provide services at times that ADA paratransit is not operating, and 14 said they provide support to local communities for general public DAR programs. Several systems indicated that they use general public DAR in more than one way.

Many survey respondents also indicated that general public DAR was effective in meeting the needs of riders with disabilities. In total, 43% of systems said these programs are "very effective" (rated as "5" on a scale from 1–5), and 25 percent rated these programs as effective ("4").

Case Study: SamTrans San Carlos, California www.samtrans.com

SamTrans provides ADA paratransit service using two different demand-responsive programs. On the eastern side (Bayside) of the county, where most of the population is concentrated, SamTrans operates a traditional ADA paratransit service called Redi-Wheels. This service is provided only to persons who have been determined ADA paratransit eligible. On the western side (Coastside) of the County, which has a lower population density and only two fixed-routes, SamTrans operates a general public demand-responsive service called RediCoast. This service provides origin-to-destination service for ADA paratransit eligible individuals as well as general public riders.

RediCoast Service

To supplement limited fixed-route service in the Coastside area, SamTrans operates RediCoast, a general public DAR service. RediCoast serves two purposes:

- To provide ADA paratransit in the northern portions of the Coastside, where fixed-route service is operated.
- To provide some additional transportation to the general public beyond the limited fixed-routes that operate in the area.

The RediCoast service is partly funded with Federal Section 5311 rural transportation assistance. Section 5311 funding pays half of the operating costs of services in the rural portions of the service area.

Figure 5-1

RediCoast vehicle and passenger

Although RediCoast service is available to anyone who calls, residents can apply for ADA paratransit eligibility. ADA paratransit eligibility is displayed during the trip reservations process so operations staff can ensure that all requests by those who are ADA paratransit eligible are scheduled within an hour of the requested time.

RediCoast operates throughout the entire Coastline area. Service is available to anyone for any trip purpose. Hours of operation are Monday through Friday from 6:30 AM to 8 PM and weekends and holidays from 8:00 AM to 5:00 PM.

Other operating policies are similar to the Redi-Wheels ADA paratransit service:

- Fares are $3.75 per trip.
- A reduced fare of $1.75 is available to low-income riders.
- Trips are available on a next-day basis (riders can call up to 5:00 PM on the day before service to request a ride).
- Trips can be requested up to 7 days in advance.
- Door-to-door service is provided up to 50 feet from the vehicle (as long as the vehicle remains in sight of the driver).

A total of 12 vehicles are used to provide the RediCoast service. All are lift-equipped, body-on-chassis minibuses. Table 5-1 shows RediCoast service and cost data for FY 2010 through FY 2012. Figure 5-2 shows RediCoast ridership for the same period. Ridership totaled almost 30,000 trips in FY2012. Demand was relatively stable from FY 2010 to FY 2011, decreasing by 2.4 percent. Ridership increased by 11.6% from FY 2011 to FY 2012. As would be expected in a rural area, trip lengths are relatively long. The service operates almost 12 miles for each trip provided. Productivity, which ranged from 1.37 to 1.46 trips per revenue-hour from FY 2010 through FY 2012, is reasonable for a many-to-many rural demand-responsive service. Cost per trip was $52.62 in FY 2012.

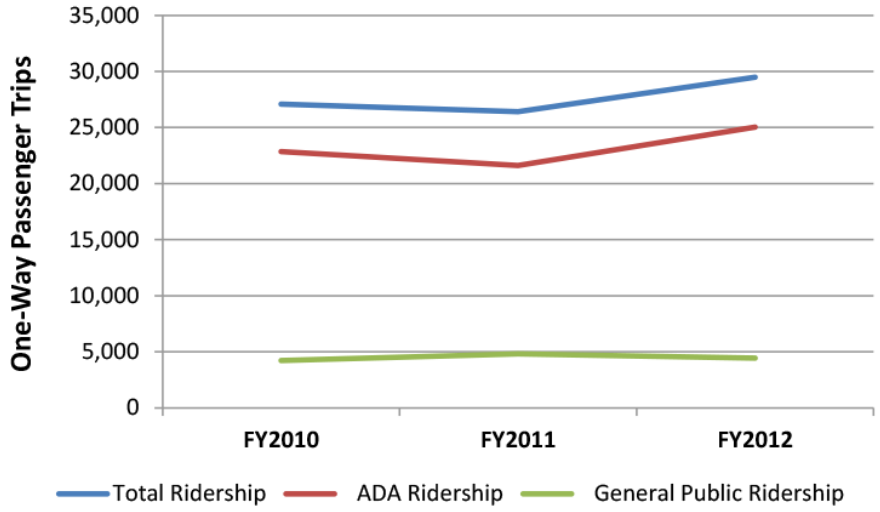
Table 5-1

RediCoast Service and Cost Data, FY 2010–FY 2012

	FY 2010	FY 2011	FY 2012
Total ridership	27,089	26,426	29,487
ADA ridership	22,862	21,605	25,044
General public ridership	4,227	4,821	4,443
Total revenue hours	18,902	18,055	21,523
Productivity	1.43	1.46	1.37
Total vehicle miles	316,612	315,799	347,550
Miles per trip	11.7	12.0	11.4
Cost per trip	$48.46	$50.19	$52.62

Figure 5-2

RediCoast ridership, FY 2010–FY 2012



The vast majority of trips are provided to riders who are ADA paratransit eligible; 85% of trips were by ADA paratransit eligible riders and 15% were by other (general public) riders. The fact that RediCoast serves primarily ADA paratransit eligible riders is not because priority is given in reservations and scheduling. SamTrans reports indicate that no trips, ADA or general public, were denied on the RediCoast service in FY 2012. Enough service capacity existed to meet all expressed demand. The service simply appears to be used more often by riders with disabilities.

Service quality is reported to be excellent. In addition to having no trip denials in FY 2012, 99.5% of trips in FY 2012 were provided on time. In the eight-month period from July 2012 through February 2013, no valid complaints were recorded.

SamTrans and contractor staff also noted that the RediCoast service is very customer-friendly. Reservationists and drivers know most riders and have developed a close relationship over the years. This allows staff to know the individual needs and preferences of riders, which results in very personal service. Contractor managers also noted that there is very little turnover of operations staff and drivers, which also has allowed for long-term relationships to be built with riders.

Community Bus Programs

Community bus programs can provide fixed-route transit that is more accessible to all riders. By traveling through neighborhoods and communities, rather than operating only on main streets, community bus services can

minimize the walking distance to and from stops. To facilitate both local and regional travel, some systems link community bus services to regional bus routes.

Thirty-one of the 167 transit agencies that responded to the study survey indicated that they operate community bus services. Twelve indicated that they support local communities by providing vehicles and/or limited operating support and that these communities operated the services.

Survey respondents also indicated that community bus services are effective in meeting the transportation needs of persons with disabilities who might not otherwise be able to use other fixed-route services. A total of 25% of systems rated these programs as very effective, and 39% rated them a "4" on a scale from 1–5.

Case Study: Broward County Transit Broward County, Florida www.broward.org/bct

Broward County Transit (BCT), a division of county government, provides public transit services in Broward County, Florida. BCT provides fixed-route bus, ADA paratransit, and other demand-responsive transportation services. BCT has also developed one of the most extensive community bus programs of any transit agency in the country.

BCT's Community Bus Program

Community bus services were developed by BCT in the 1990s as part of a project called the Transit Options Project (TOPS), which was funded in part by Easter Seals Project ACTION. The TOPS project was focused on developing multiple travel options, including fixed-route options, for older adults and persons with disabilities. Providing community bus services was an important part of the project to make fixed-route service more available to and usable by individuals who were not able to travel long distances to get to and from bus stops.

BCT also used community buses to help redesign and streamline its overall fixed-route service in the county. Prior to the introduction of community bus services as part of the TOPS project, BCT's fixed-routes were designed to meet both local and regional travel needs. The routes diverted off of main arterial streets to try to meet local travel needs as well. However, limited excursions into local neighborhoods were not sufficient to meet local travel needs. And travel times for cross-county trips became unreasonable. The result met neither local nor regional travel needs.

BCT made a decision to establish two types of service—regional bus service and local community bus service—and to integrate the two. Community bus

services were created to meet local needs and to feed into the main regional routes. Regional routes were then redesigned to provide faster and more efficient cross-county trips. Local transit centers also were created as transfer points between regional routes and to provide connection points for feeding local community bus trips into the regional network. The result has been better local service, particularly for older adults and persons with disabilities, as well as improved, streamlined, and faster regional service.

Figure 5-3 shows the community bus network that has been developed by BCT and how it is integrated with the overall fixed-route service. The community bus network is quite extensive, twenty different local services. Table 5-2 lists the community bus services that were in place at the time of the case study. The number of routes operated in each service is also shown, along with recent annual ridership.

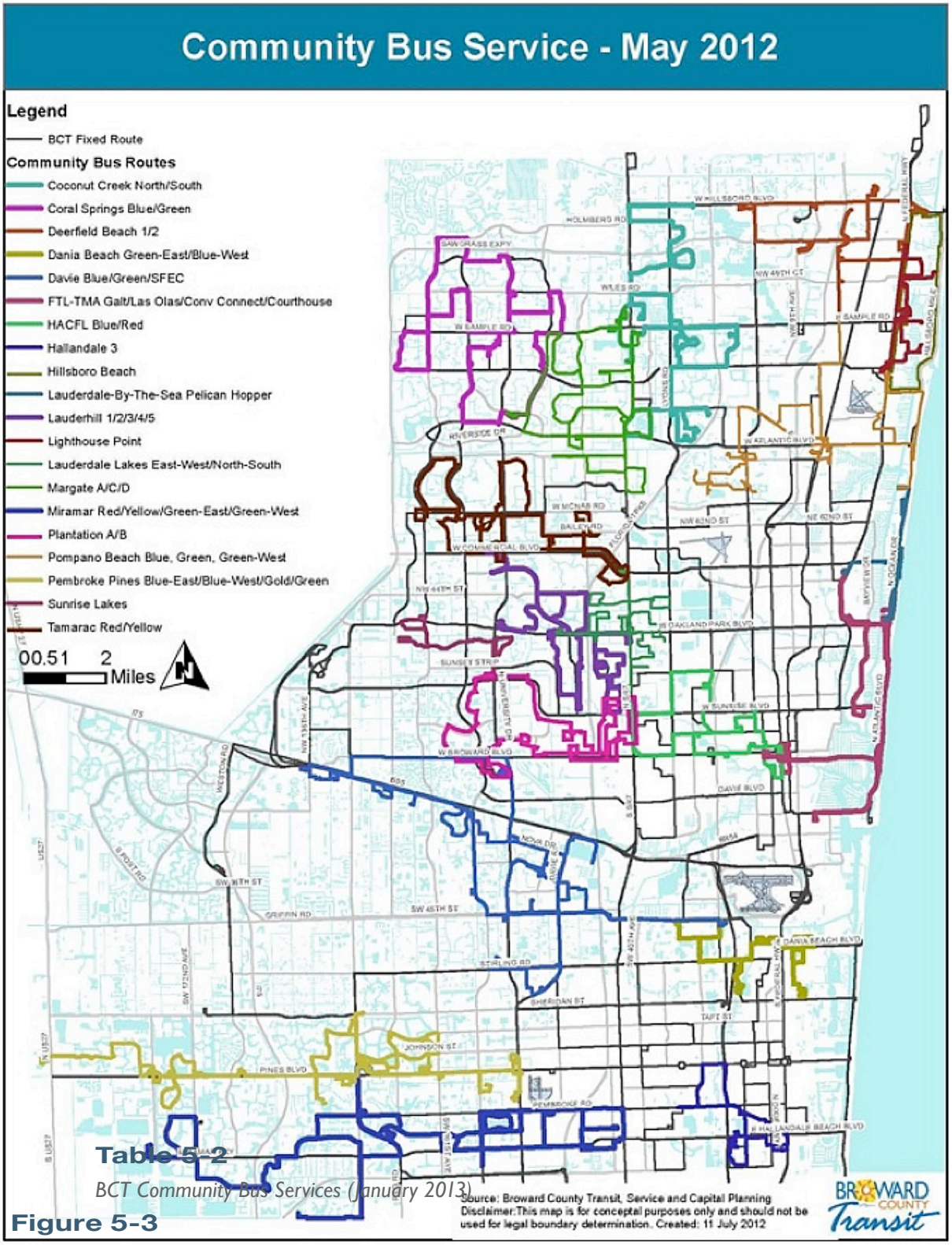


Table 5-2

BCT Community Bus Services (January 2013)

Figure 5-3

Map of community bus routes in Broward County

Table 5-2

BCT Community Bus Services (January 2013)

Community Bus Services	# of Routes	Annual Ridership (June 2011 May 2012)
Services Operated by Local Communities Under Interlocal Agreements		
Coconut Creek Community Bus	2	167,544
Coral Springs Community Bus	2	96,919
Dania Beach Community Bus	2	74,895
Davie Community Bus	3	241,967
Deerfield Beach Community Bus	2	49,418
Hallandale Community Bus Service	1	64,605
Hillsboro Beach Community Bus	1	16,609
Lauderdale-by-the-Sea "Pelican Hopper"	1	30,450
Lauderdale Lakes Community Bus	2	179,172
Lauderhill Community Bus	5	167,988
Lighthouse Point Community Bus	1	10,737
Margate Community Bus	3	79,056
Miramar Community Bus	4	199,816
Pembroke Pines Community Bus	4	217,991
Plantation Community Bus	2	178,904
Pompano Beach Community Bus	3	114,501
Sunrise Lakes Community Bus	1	118,809
Tamarac Community Bus	2	49,977
Services Operated Directly by BCT		
FTL–TMA Galt/Las Olas/Convention Center/Courthouse Routes	3	233,977
Housing Authority (HACFL) Routes	2	78,321
TOTALS	***46***	***2,371,656***

Eighteen of the 20 community bus services are operated by local communities under Interlocal Agreements (described below). Two are operated directly by BCT as part of a joint effort with two local government organizations—the Housing Authority of Central Florida (HACFL) and the Ft. Lauderdale TMA (FTL-TMA).

The extent and complexity of the services vary based on the size and needs of each community. Some communities have developed one-route systems. Several have 2–3 interconnected routes, and a few have more highly developed 4–5 route systems.

Each service, regardless of its exact style, is designed to get off of the main arterials and into neighborhoods. Each is also designed to connect major trip generators and attractors in each community, including senior centers, shopping malls, medical facilities, and other important services. And each also connects to

the regional bus network, some at several transfer locations, to facilitate regional travel.

Hours of operation also vary by community. Most services run generally on weekdays from 6:00–7:00 AM to 6:00–7:00 PM, but some routes start as early as 4:40 AM, and one operates until 12:35 AM. About half also provide Saturday service, typically at more limited hours.

Figure 5-4

Plantation community bus connecting with regional BCT service

Local communities set the fare, and many have elected to provide free fare services. Where fares are charged, the typical full adult fare is $1.75, with discounted fares of $0.85 for older adults (including Medicare recipients), persons with disabilities, and youth. All-Day passes ($4.00), 7-Day passes ($16), 10-Ride passes ($16), and 31-Day passes ($58) also are available. Discounted pass prices are available for older adults (including Medicare recipients), youth, persons with disabilities, and college students.

Most vehicles are body-on-chassis small buses (see Figure 5-4). All vehicles are lift-equipped and are also equipped with bike racks.

Program Policies and Guidelines

As noted above, most of the community bus services are operated under Interlocal Agreements with local communities. As part of these agreements, BCT provides the vehicles or covers capital costs. If communities opt to have vehicles provided by BCT, the vehicles are leased by BCT to the communities for $10 per year per vehicle. If communities opt to have services provided by contractors and to have the contractors provide vehicles, BCT provides a $13,295 capital cost allowance per year per vehicle. In addition to capital, BCT provides some operating assistance. Typically, there is a $15 stipend per vehicle-revenue-hour

included in the Interlocal Agreements. Participating communities are responsible for funding the remaining operating costs.

To reduce the need for spare vehicles and overall capital costs, BCT maintains spare replacement vehicles that can be used by any community on an as-needed basis.

The Agreements call for BCT and the local communities to collaborate on the planning and design of the services. Communities typically are responsible for the local planning process and for creating the basic service design (hours of operation, major origins and destinations to be served, etc.). BCT planning staff then work with City planners to create the detailed routes and schedules.

Each participating community reports service statistics to BCT each month. BCT staff then compile the data and handle federal and State reporting requirements.

While local communities have flexibility in designing the services, BCT maintains overall control of the service. Communities must obtain BCT approval for changes to routes, fares, or other policies. BCT also has set some system-wide requirements for the program, such as the requirement that all local community bus routes connect with regional routes. Also, BCT establishes performance goals and standards for the services and will work with communities to fine-tune or revise services if these standards are not met.

Service Statistics and Costs

Table 5-3 provides the most recent annual service and performance statistics for the program (NTD reporting year 2012).

Table 5-3

BCT Community Bus Program Key Service and Performance Statistics, NTD Reporting Year 2012

Performance Measure	Number
Total unlinked passenger trips	2,370,943
Total vehicle-revenue-hours	159,826
Total vehicle-revenue-miles	2,198,107
Productivity (trips/rev-hour)	14.8
Operating cost	$6,287,752
Capital cost	$697,690
Total cost	$6,985,442
Operating cost per trip	$2.65
Operating cost per rev-hour	$39.34
Operating cost per rev-mile	$2.86
Total cost per trip	$2.95
Total cost per rev-hour	$43.71
Total cost per rev-mile	$3.18

In 2012, a total of 2,370,943 unlinked passenger trips were provided on community bus services. Vehicles operated a total of 159,826 revenue-hours and 2,198,107 revenue-miles for the year. This translates to an average productivity of 14.8 trips per vehicle-revenue-hour. This is a very respectable productivity for local community fixed-route bus service.

Total operating cost in 2012 for all 20 services was $6,287,752, capital cost was $697,690, and total cost was then $6,985,442. Operating cost per trip, revenue-hour, and revenue-mile was $2.65, $39.34, and $2.86, respectively, and total cost per trip, revenue-hour, and revenue-mile was $2.95, $43.71, and $3.10, respectively. As these cost measures indicate, BCT and the communities operate the services at a relatively low cost. This is partly due to the fact that some communities cover some expenses within their general budgets and/or do not charge for overhead, administration, and other costs.

Figure 5-5

Riders on Margate community bus

Flex-Route Services

Flex-route systems represent another type of inclusive service design. These systems typically will go "off route" to pick up and drop off riders who are not able to get to fixed stop locations. Riders typically are asked to call in advance to request off-route pickups. For example, riders might be asked to call one or two hours before their desired pickup time.

In some systems, any rider can request deviations. In other systems, deviations are accepted only from certain riders, such as persons with disabilities. Systems that accept deviations from all riders are considered to be "demand-responsive" services by FTA, and ADA paratransit is not required as a complement to these services [37]. If deviations are accepted only from certain riders, such as

riders with disabilities, FTA considers the service to be "fixed-route" and ADA paratransit is required.

Some important implementation considerations include:

- To be effective, riders need to know that deviations are possible. Information about the availability of deviations and how to request them should be included in route schedules and other public information.
- Riders who are boarding at designated stops also need to be informed that vehicles may go off-route and that arrival times at designated stops might vary. This can help to manage rider expectations and avoid misunderstandings if vehicles run slightly off schedule.
- Managing the number of deviations per run may become necessary. Some deviation requests may need to be negotiated to subsequent runs if the impact on the schedule is too great.
- It is helpful if staff designated to handle and schedule deviation requests have some experience with demand-response-type operations. For this reason, some transit agencies use paratransit operations staff rather than fixed-route transit dispatchers to take and schedule deviation requests.

A total of 44 of the 167 transit agencies that responded to the study survey indicated that they operate flex-route services, and 21 systems said they supported the operation of flex-route services by local communities.

Respondents also indicated that flex-route services are effective in meeting the needs of riders with disabilities. In total, 30% of systems said these programs were "very effective," and 32% rated these programs as a "4" on a scale from 1–5.

Case Study: Capital Metropolitan Transportation Authority Austin, Texas www.capmetro.org

Capital Metro in Austin operates two flex routes (also called service routes); Route #151 has been operating since the 1990s, and Route #161 began in 2006 (see Figure 5-6). Both of these work on the same basic level as local fixed bus routes. In addition, riders are offered the option of requesting a drop-off close to the designated route, with the rider making the request when boarding the vehicle. The rule of thumb is that the deviation may be up to two minutes away; in some cases, it may be further. The feasibility of a requested deviation is based on the judgment of the driver and dispatcher. The rider and driver arrange the pickup time for the return trip. Capital Metro does not offer a deviation for the pickup location of the "going" trip. A Capital Metro manager noted that this is not a problem for the riders, as the routes are designed to pass residential areas, including larger apartment buildings.

Figure 5-6

Capital Metro flex routes

Capital Metro uses 15-seat vans equipped with a lift for these routes. The fare for these routes (with or without deviation) is $1.00, the same as other bus routes.

There are several other features of these routes that make them attractive to persons with disabilities, whether or not eligible for ADA paratransit. The drivers may offer assistance to riders between the vehicle and a door (up to one step if the rider is using a wheelchair) and also may help riders carry packages on and off the vehicle (up to four bags with a total combined weight of 20 pounds).

These routes each operate three days per week from approximately 9:00 AM to 4:00 PM, with headways of one hour. Route #151 runs on Tuesday, Thursday, and Saturday; Route #161 runs on Monday, Wednesday, and Friday. They travel through communities outside of downtown Austin close to apartment buildings, medical facilities, and shopping centers and also overlap with many other Capital Metro bus routes. Data collected indicates that these routes average 3–4 deviations per week. Lifts are used 40–50 times per week on these routes.

Table 5-4 presents cost and ridership data from FY 2013. The yield is a much lower cost per trip when compared to MetroAccess, the ADA paratransit service; its average cost per trip in early FY 2013 (contractor component) was $23.

Table 5-4

Cost and Ridership for Capital Metro Flex Routes

Route #	Daily Vehicle Hours	Total Cost ($41/hour)	Average Daily Rides	Cost per Rider
151	13.7	$561.70	37	$15.18
161	11.2	$459.20	56	$ 8.20

Case Study: Utah Transit Authority
Salt Lake City
www.rideuta.com

The Utah Transit Authority (UTA) provides public transit services in a large part of Utah and operates a full range of public transit services, including:

- FrontRunner, a 44-mile-long commuter rail service that runs north to Ogden
- TRAX, a light rail system with 3 lines and 41 stations
- Fixed-route bus service, with a fleet of almost 500 buses
- 16 FLEX routes
- MAX, a BRT service
- ADA paratransit service, with a fleet of 173 vehicles
- 400+ vanpools and a carpool matching service

All UTA fixed-route vehicles are accessible. UTA also operates a 100% accessible ADA paratransit fleet.

UTA's FLEX Route Program

UTA introduced FLEX route services for several different reasons. These include:

- To provide service outside of the ADA paratransit service area
- To replace traditional fixed-routes
- To test the market for transit services

As of January 2013 when the case study was conducted, 16 FLEX routes were in operation.

Service Outside the ADA Paratransit Service Area

UTA began introducing FLEX route services in 2010 when it changed its ADA paratransit service area. Prior to 2010, UTA's ADA paratransit service covered several parts of Salt Lake County that were more than ¾-mile from non-commuter fixed-routes. In May 2010, UTA changed the ADA paratransit service area to include only origins and destinations that were within ¾-mile of non-commuter fixed-routes. To allow some service to be continued in these areas, UTA introduced FLEX routes. FLEX routes were designed to continue to meet the needs of individuals who had used the ADA paratransit service in these areas, as well as to introduce some scheduled service in these communities.

Nine of the 16 FLEX Routes were implemented for this purpose. Most of these are located on the fringes of the service area in Salt Lake County. Figure 5-7 shows the network of fixed-route services in Salt Lake County. The FLEX routes are identified with dotted routes. FLEX routes introduced for this purpose can be seen in the far west, southwest and southeast parts of the area.

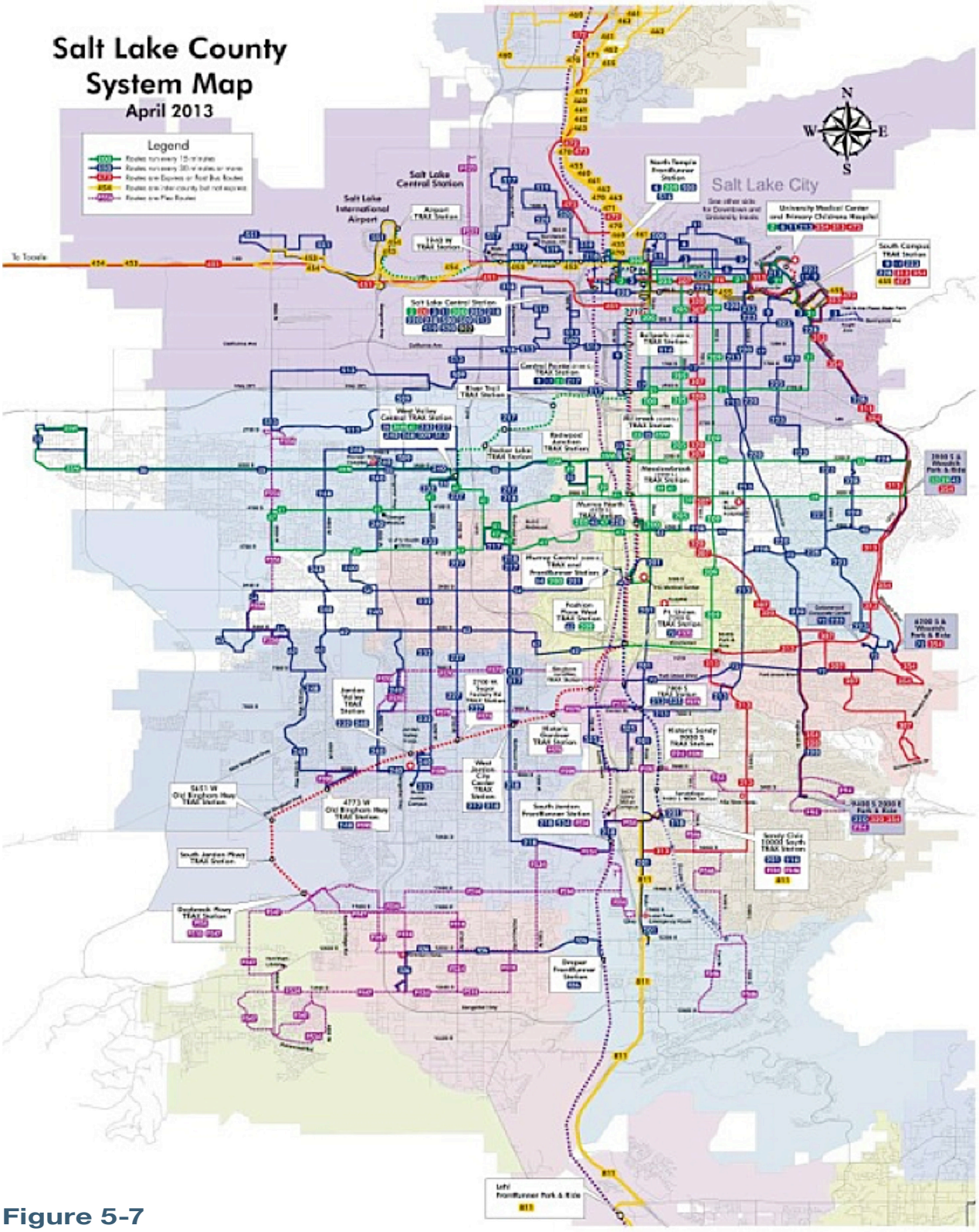


Figure 5-7

Salt Lake County system map showing location of FLEX routes

Replacement of Traditional Fixed Routes

Five of the 16 FLEX Routes were introduced by UTA to replace traditional fixed-route services. The traditional fixed-routes were either underperforming, or duplicated the newly introduced light rail service and were no longer needed. However, rather than eliminate the routes completely, UTA opted to introduce FLEX Routes to maintain some level of service to both general public riders and ADA paratransit eligible persons in these areas. These routes are generally located in the more central part of the Salt Lake County service area.

Testing New Markets

UTA introduced two FLEX routes to test the market for transit services in two areas in which no fixed-route service existed previously. The FLEX routes were intended to see if there was enough demand for transit to consider adding traditional fixed-route with ADA paratransit.

Marketing of Flex Routes

UTA encourages deviation requests and advertises this option extensively. All FLEX routes are identified by an "F" before the route number (e.g., F94). UTA's marketing materials stress this designation so that the public can easily recognize the routes that can make off-route deviations. In addition, each published route and schedule includes the word Flex in the name of the route—e.g., "9400 S Flex F94." Information about deviations is also highlighted throughout the route and schedule brochures. Deviation policies are explained and riders are alerted to the fact that time points are approximate.

Extensive marketing is beneficial for two reasons. First, it lets persons with disabilities know that this off-route service option is available. Second, it informs all riders of the flexible nature of the routes and the fact that the routes may not be as precise as other fixed-routes that do not deviate. This is important for managing general public expectations regarding the service.

FLEX Route Service Policies

FLEX routes operate on fixed-routes and have a set schedule. Vehicles can deviate up to ¾-mile off of the route, and this area is shown as a shaded area on each route map. To enable the routes to operate reasonably close to the advertised schedule, UTA limits the number of deviations to two per run. If two deviations have already been requested for a run, riders are given the option to schedule their off-route pickups on earlier or later runs. During peak hours, many of the FLEX routes operate on 30–45 minute headways, which means that 3–4 off-route pickups per hour can be accommodated by each vehicle. A significant number of off-route pickups per day also are possible on each route. For example, the F94 has 25 runs per day in the westbound direction and 26 per day in the eastbound direction. Theoretically, up to 102 off-route pickups could then be accommodated on this route per day.

Deviations can be requested by the general public, not just older adults and persons with disabilities. Riders can call from seven days up to two hours in advance of the time of travel to request deviations. For deviations early in the morning (before 11:00 AM), riders must call the day before.

The fares for FLEX Route service is $2.35, and there is a $1.00 surcharge for deviations. The $1.00 surcharge is good for one complete ride. For example, if a rider requests a deviation at both the pickup and drop-off on the same route, only $1.00 extra is charged. A discounted base fare of $1.15 also is available for older adults and persons with disabilities. With either one or two deviations, trips by older adults or persons with disabilities cost $2.15.

FLEX Route Vehicles and Operation

UTA uses body-on-chassis small buses to provide FLEX Route service (see Figure 5-8). This is the same style of vehicle that UTA uses to provide ADA paratransit service. All vehicles used for FLEX route service are lift-equipped. All are also equipped with bike racks.

Figure 5-8
UTA FLEX route vehicle

UTA uses in-house staff to take reservations for deviations and to dispatch all of the FLEX routes. In total, 11 of the 16 routes are also operated in-house; 5 routes are operated by private contractors.

Integration with ADA Paratransit

FLEX route operation is integrated with UTA's ADA paratransit service operation. Calls for deviations are taken by staff, who also take reservations for the ADA paratransit service. FLEX routes also are dispatched by the same dispatchers that manage ADA paratransit runs. UTA's ADA paratransit call center

also is managed in-house by UTA employees, so the agency has direct control over both types of services.

UTA staff indicated that integration with the ADA paratransit call and control center is an important part of the success of the program. The ADA paratransit call and control center has experience in scheduling and dispatching individual trip requests. This experience does not exist in the fixed-route portion of the agency.

Service Statistics and Costs

Table 5-5 provides service and cost data for 15 of UTA's 16 FLEX routes for calendar year 2012. Total ridership in 2012 for the 15 FLEX routes was 298,656. A total of 64,000 revenue-hours of service was operated for all 15 routes; average productivity was 4.7 trips per revenue-hour. Three routes—F401, F628, and F638—had relatively low productivities, below 3.0 trips per revenue-hour. Most routes operated in a range of 3.5–5.4 trips per revenue-hour. Two routes, F94 and F618, were quite heavily used, with productivities of 8.3–8.4 trips per revenue-hour.

Table 5-5

UTA FLEX Route Service and Cost Data, Calendar Year 2012

Route	Operation	Operating Hours/Day	2012 Ridership	2012 Revenue Hours	2012 Operating Cost	Productivity	Operating Cost per Revenue Hour	Operating Cost per Trip
F94	DO	22.1	45,852	5,525	$271,700	8.3	$49.18	$5.93
F400	PT	13.5	14,556	3,375	$160,514	4.3	$47.56	$11.03
F401	PT	14.2	5,700	3,550	$178,803	1.6	$50.37	$31.37
F514	DO	22.5	30,036	5,625	$326,476	5.3	$58.04	$10.87
F518	DO	21.1	25,824	5,275	$314,522	4.9	$59.63	$12.18
F546	DO	21.3	28,704	5,325	$288,585	5.4	$54.19	$10.05
F547	DO	22.2	19,260	5,550	$319,461	3.5	$57.56	$16.59
F556	DO	18.7	22,620	4,675	$254,704	4.8	$54.48	$11.26
F570	DO	21.8	23,184	5,450	$274,130	4.3	$50.30	$11.82
F578	DO	22.1	26,124	5,525	$278,557	4.7	$50.42	$10.66
F590	DO	22.3	25,356	5,575	$279,679	4.5	$50.17	$11.03
F618	PT	5.2	10,908	1,300	$58,019	8.4	$44.63	$5.32
F628	PT	8.4	3,264	2,100	$111,218	1.6	$52.96	$34.07
F638	PT	8.7	5,556	2,175	$85,510	2.6	$39.31	$15.39
F868	DO	11.9	11,712	2,975	$196,769	3.9	$66.14	$16.80
Totals			**298,656**	**64,000**	**$3,398,647**	**4.7**	**$53.10**	**$11.38**

DO = Directly Operated by UTA

PT = Contractor Operated (Purchased Transportation)

Total operating cost for the 15 routes in 2012 was $3,398,647. The average operating cost per revenue-hour was $53.10, with a range of $39.31–$66.14. Operating cost for most routes was in the range of $44–$57 per revenue-

hour. Average operating cost per trip was $11.38. On the two routes with productivities of more than 8 trips per revenue-hour, the cost per trip was under $6. Most routes had per trip costs ranging from $10.66–$16.59; a few routes with low productivities had relatively high per trip costs, $30+.

UTA does not track the number of trips served off-route versus at established bus stops. Staff estimated, though, that about 80% of all trips have pickups and drop-offs at established bus stops. About 20% of trips involve a deviation at one or both ends. This qualitative estimate suggests that about 59,000 deviation requests were scheduled and provided in 2012.

Accessible Taxis

Accessible Taxis for Community Use

Increasingly, accessible taxis are available in larger communities around the country, providing traditional, on-demand taxi service to individuals who use a wheelchair and cannot transfer to a taxi sedan. These communities use regulatory mandates, incentives, or some combination of the two to ensure that their local taxi industry includes accessible vehicles.

The availability of accessible taxis benefits not only individuals who need an accessible ride but also increases the value of taxi service to the community and various community organizations that use (or could use) taxis for their transportation purposes. In many communities, the transit agencies have agreements with taxi companies to provide ADA paratransit service, either as a primary provider or as a supplemental or overflow provider. Communities across the country also use taxis to provide local transportation through "user-side subsidy" programs, where eligible individuals, typically older adults and people with disabilities, are given vouchers, tickets, or smartcards to use taxis at subsidized rates, with the level of subsidy varying by program policy. Hospitals and other medical facilities use taxis for patient transportation, and school districts use taxis for specialized transportation. In all these cases, the availability of accessible taxi vehicles allows the sponsoring organization to serve passengers who require an accessible vehicle.

ADA Requirements for Taxis

The ADA does not require that taxi companies include accessible vehicles in their fleets. While they are subject to the requirements of private entities primarily engaged in the business of transportation with demand-responsive service, taxi providers do not have to operate accessible vehicles as long as their vehicles are sedan-type automobiles.

However, in the case where a public entity uses local taxicabs for a user-side subsidy program, the public entity is required to ensure that equivalent service is provided to persons with disabilities, including those who use wheelchairs. Taxi

companies that participate in the program do not "stand-in-the-shoes" of the city because they accept vouchers. However, the public entity must ensure that its user-side subsidy program does not discriminate against persons with disabilities. The public entity could either require taxi companies to have accessible vehicles in order to participate, or engage the services of another party to provide accessible service on an equivalent basis.

So, for example, if a city starts a taxi voucher program for persons ages 65 and older that uses local taxicabs, it must ensure that its taxi voucher program does not discriminate against persons ages 65 and older who have disabilities. The city could either require taxi companies to have accessible vehicles to participate or engage the services of another company to provide accessible service on an equivalent basis.

If a taxi company purchases or leases a new vehicle other than a sedan-type automobile, such as a van with a seating capacity of fewer than eight persons (including the driver), the acquired vehicle must be accessible unless the company is already providing "equivalent service," as defined by the ADA, which includes such factors as response time, fares, and service area.

Regardless of type of vehicle, taxi companies must follow other ADA requirements. Specifically, they may not discriminate against people with disabilities—for example, they may not charge higher fares for passengers with disabilities, they may not refuse to serve a passenger with a disability who can use a taxi sedan (and this includes people who use wheelchairs), they may not refuse to stow a wheelchair or other mobility device in the sedan's trunk or impose a special charge for doing so, and they must accept passengers traveling with service animals.

Trends toward Increasing Numbers of Accessible Taxi Vehicles

Existing data on the taxi industry in the U.S. suggests that there are from 171,000 [38] to 190,000 [39] taxis in the U.S. Of these, available data suggest 1,700 are accessible cabs [40]. Several cities each have more than 100 accessible taxis, including San Francisco, Chicago, New York, and Houston; accessible taxis in these four cities comprise 43% of the total estimated 1,700 accessible cabs [40].

Regulatory Measures

There are various examples of regulatory measures that require taxi companies to provide accessible taxis. As one example, the City of Portland requires that every company operate at least 20% of their fleet with accessible taxis. A company can, however, operate 10% if they belong to the Portland Accessible Cab Association, an inter-company agreement whereby the members coordinate to provide accessible service. All of Portland's taxi companies belong to this association [38].

Montgomery County, Maryland, part of the greater Washington DC metropolitan region, was one of the very early jurisdictions to require accessible taxis. The original requirement stipulated that 20% of new licenses awarded would go to accessible taxis [41]. This was later revised, giving the County more flexibility regarding the number of accessible cabs, as experience showed that the original code language was too rigid in relation to changing needs in the community. Currently, Montgomery County requires that the "the overall number of accessible taxicab licenses must not be less than 5% of the total of available County taxicab licenses." [42].

To work towards implementing accessible taxis, communities can use their regulatory control over license issuance, so that, for example, when new licenses are made available to the local taxi industry, those new licenses are made available only for accessible taxis. A company that wants to expand its fleet could do so only by adding accessible vehicles. This was an approach taken by Montgomery County in its earlier years of requiring accessible taxis. The community can also issue licenses for an accessible taxi at a lower cost than a license for a sedan vehicle.

Incentives

Communities may offer incentives for taxi companies to operate accessible taxis. In Long Beach, California, for example, the transit agency has contracted with a local taxi company since 1998 to provide ADA paratransit service using accessible taxis as well as non-accessible taxi sedans. The accessible taxis (ramp-equipped minivans) have been purchased and are owned by the transit agency and leased to the cab company. The cab company can use those minivans for general public service when not needed for ADA paratransit trips, and the cab company reimburses the transit agency proportionally for the agency's capital cost for each vehicle based on the non-contract miles operated. There are 175 taxis authorized in Long Beach, and 9% are wheelchair accessible [41].

A number of communities have used FTA New Freedom funds (now merged with FTA's Section 5310 program through MAP-21 legislation) to acquire accessible taxis, which they then provide to local taxi companies for their use. Data from the Taxi, Limousine, and Paratransit Association (TLPA) estimate that about 11% of the accessible taxis nationwide have been purchased with funding assistance through the New Freedom grant program.

In Washington DC, New Freedom funds were used to acquire 20 accessible minivans, with funding contributions from the two taxi companies selected to operate the vehicles and from the City. Grant funding also has been used to help subsidize maintenance of the minivans and to provide driver training on use of the accessible equipment. Implemented as a pilot service through efforts of the Washington Metropolitan Council of Governments, accessible taxis have been available since early 2010 and now carry more than 400–500 passenger trips

each month for riders needing an accessible vehicle. These are community-based trips, not trips provided by a subsidized program such as ADA paratransit, and, interestingly, about one-third are trips by visitors to the city. The accessible trips average about 7–9% of total trips provided by the accessible taxis.

Taxi companies also provide incentives for accessible service. A number of companies discount the weekly lease cost for drivers who choose an accessible cab. These tend to be the large, full-service taxi companies (companies that provide the full range of service, including 24-hour dispatch, maintenance facility, office, and marketing activities). In some cases, there may be stipulations, such as in San Antonio, Texas, where the taxi company offers a lease discount (a free lease day) once the driver has provided a set number of accessible trips [41].

Case Study: Arlington County, Virginia www.arlingtontransit.com

Arlington County has more than 700 taxis, more than 30 of which are accessible. The County's dominant taxi company voluntarily introduced accessible taxis in 1996 with special permits authorized by the County. An impetus for the accessible taxis was a County initiative in the mid-1990s to provide county-based paratransit service as an alternative to the regional provider's ADA paratransit service, with accessible vehicles as needed. The County has contracted with the taxi company and another local provider to operate the paratransit service, known as STAR.

The taxi company operates both dedicated service, which is paid on an hourly basis, and non-dedicated service, which is paid on a per-trip basis according to the meter rate, for the STAR program. For each trip for a rider using a wheelchair or scooter, the County pays an additional $5.00. For non-accessible trips, the County provides an additional $2.00. These extra charges are given to the taxi drivers as additional payment and have helped attract and retain drivers of the accessible taxis. These drivers also pay a reduced weekly lease fee for the accessible taxi vehicle.

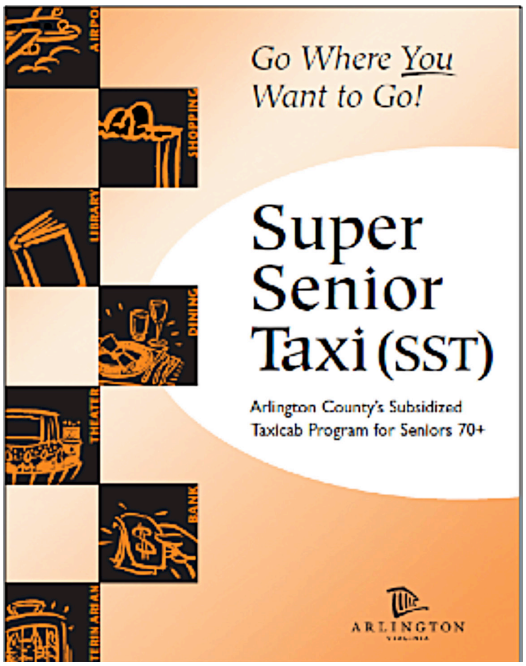
The taxi company's experience with accessible taxis has led to its role as a non-dedicated provider for the region's ADA paratransit service, where it serves overflow trips from the dedicated fleet. This adds to the level of business for the accessible taxi drivers.

Supplemental Taxi Service

In addition to the various specialized services targeted to residents with disabilities, the County also has Super Senior Taxi, a taxi user-side subsidy program for Arlington residents ages 70 and above. Any older adult meeting the age threshold can purchase a $20 coupon book for $10 and up to 20 coupons books each year; there are no income restrictions. The service is sponsored and funded by the County's Agency on Aging. Eligibility is established via a one-page

application form, and older adults can purchase the coupon books in various ways, including by mail.

Figure 5-9
Super Senior Taxi brochure



The County has designed the program to take advantage of the coupon books sold directly by its dominant taxi company, which is also one of the STAR transportation providers. The company sells books of coupons worth $20 for $18 to individuals who are ages 65 and over and those with disabilities of any age. This discount has been in place for well over 30 years. Through an arrangement with the cab company, the County purchases the coupon books for $8 each and sells them to eligible older adults for $10. Taxi drivers who provide trips that are paid with coupons cash out the coupons at face value. The coupons can be used for tips and can be combined with cash if needed.

Since the inception of the program in 2003, AAA has budgeted $88,000 annually for Super Senior Taxi but generally spends less, about $70,000. Approximately 2,644 older adults have applied for the service since it began. Data on trips provided or cost per trip are not available. A typical taxi trip in the county is about 5 miles at a cost of about $15.00, according to data from the County's taxi regulatory office, so it is likely that the subsidized trips are at least somewhat similar.

Case Study: NAIPTA Taxi Voucher Program
Flagstaff, Arizona
www.naipta.az.gov

The Northern Arizona Intergovernmental Public Transportation Authority (NAIPTA) operates a range of public transportation services in several municipalities in northern Arizona, including Coconino County, Yavapai County, and the city of Flagstaff (which is a part of Coconino County), as well as Northern Arizona University. Fixed-route service includes the Mountain Line, eight bus routes that operate seven days per week in Flagstaff; the RoadRunner circulator, a one-trolley service in Sedona; and Verde Lynx commuter bus service between Sedona and Cottonwood. Paratransit service includes Mountain Link ADA complementary paratransit in Flagstaff and taxi voucher programs for Flagstaff and the remainder of Coconino County.

NAIPTA began its taxi voucher program in Flagstaff in FY 2007, and the program for Coconino County began in FY 2011. The basic rules for the Flagstaff program are the following:

- Eligible participants include individuals certified for Mountain Lift (ADA paratransit) service who live in Flagstaff.
- Riders may obtain up to 20 vouchers per month, each with a maximum value of $10, or 15 vouchers per month, each with a maximum value of $15. An exception is that a rider who is traveling for dialysis treatment may request up to 26 vouchers per month each with maximum value of $10, or 20 vouchers per month, each with a maximum value of $15.
- The vouchers expire after 30 days.
- To arrange a taxi trip, riders call the taxi company directly (currently, 5 participating companies). The only restriction on a trip is that the origin or destination must be within Flagstaff city limits. A trip can take place at any time of day and go beyond the paratransit service area.
- The taxi companies charge the same fares as those of general public riders. A rider using a NAIPTA voucher pays the first $2 of the fare; the next $10 of the fare (or $15, depending on the type of voucher) is covered by the voucher. If the fare exceeds $12 (or $17, if using a $15 voucher), the rider pays the balance. The rider can use only one voucher per one-way trip.
- If a rider lives in Flagstaff but beyond the ¾-mile paratransit service area, NAIPTA considers the rider as "non-ADA." These riders must pay the first $5 of the fare ($2 if the trip origin and destination are both in the paratransit service area).
- When a rider requests vouchers from NAIPTA, he/she must specify the both origin and destination for all but four of the vouchers; these addresses are pre-printed by NAIPTA on the vouchers. For the remaining four vouchers, the rider can leave either the origin or destination unspecified.

The rules for the County taxi voucher program are similar:

- Eligible participants include individuals certified for Mountain Lift (ADA paratransit) service who live in Coconino County but outside of Flagstaff.
- Riders may obtain up to 12 vouchers per month, each with a maximum value of $25.
- The vouchers expire after 30 days.
- To arrange a taxi trip, the rider calls the taxi company directly (currently, there are 5 participating companies, as for the City program). The only restriction on a trip is that the origin or destination must be within Coconino County. A trip can take place at any time of day.
- The taxi companies charge the same fares as those for general public riders. The voucher pays for the first $25 of the fare. If the fare exceeds $25, the rider pays the balance. The rider can use only one voucher per one-way trip.
- When a rider requests vouchers from NAIPTA, he/she does not have to specify either the origin or destination for the vouchers.

For each trip provided, NAIPTA reimburses the taxi company the value of the voucher used for the trip. If the total fare is less than the initial rider payment plus the value of the voucher used, then NAIPTA reimburses only the amount of the voucher needed to pay the fare (for example, if the fare is $10, the rider pays $2 and NAIPTA reimburses the taxi company $8, rather than the full voucher amount). NAIPTA also pays the taxi company a 15% tip for the first $12 of the fare. At the time of the trip, the rider may also pay a tip, but cannot use the voucher to pay the tip.

There are several benefits for riders who participate in the taxi voucher program.

- The rider may travel at any time and to any destination.
- The rider does not have to reserve a trip a day in advance.
- The travel time may be shorter than a Mountain Lift trip since it will be an exclusive, not shared, ride.
- The Mountain Lift fare is $2.25. This means that for taxi trips with a total fare under $12.25 ($17.25 if using a $15 voucher), the cost to the rider is actually less than the paratransit fare.

NAIPTA also benefits from providing this option to its ADA riders. For trips that would otherwise be ADA paratransit trips (during regular service hours and within the ¾-mile service area), NAIPTA does not need to provide the capacity to serve these trips. As well, the cost to NAIPTA for the taxi trips is significantly less when compared to its Mountain Lift service. Table 5-6 lists the average costs per trip for the taxi voucher programs.

Table 5-6
NAIPTA Taxi Voucher Program Costs

Fiscal Year	Cost per Trip	
	Flagstaff	Coconino County
2011	$9.53	$21.28
2012	$7.79	$21.55
2013 (projected)	$9.92	$21.87

These costs include the voucher reimbursement and tip but do not account for other NAIPTA cost allocation. Nevertheless, even with a fully-allocated cost, these trips are much less expensive than Mountain Lift trips, the fully-allocated average cost of which has ranged from $34–$36 per trip during the past three fiscal years.

NAIPTA covers a portion of the programs' costs with dedicated funding. For the Flagstaff trips, NAIPTA has 50% funding via Arizona DOT (Section 5317 New Freedom funds); the other 50% is from City sales tax revenue directed to the overall Mountain Lift budget. For the Coconino County trips, NAIPTA has 50% funding via Arizona DOT (Section 5317 New Freedom funds) and 50% from the County.

Coordination

Coordination of transportation services for people who are transportation disadvantaged has been an ongoing activity and goal since the 1970s. More recently, at the federal level, 2004 Presidential Executive Order 13330 created an interdepartmental Federal Council on Access and Mobility to undertake collective and individual departmental actions to reduce duplication among federally-funded human service transportation services, increase the efficient delivery of such services and expand transportation access for older individuals, persons with disabilities, persons with low incomes, children, and other disadvantaged populations within their own communities.

In 2005, the Safe, Affordable, Flexible, Efficient, Transportation Equity Act–A Legacy for Users (SAFETEA-LU) created a requirement that a locally-developed, coordinated public transit/human service planning process and an initial plan be developed by 2007 as a condition of receiving funding for certain programs directed at meeting the needs of older individuals, persons with disabilities, and low-income persons.

The current public face of coordination at the federal level is the United We Ride program (www.unitedweride.gov). It is intended to gather all the information and technical assistance at one location. It also provides links to all of the State action plans for coordination.

Over these decades, a number of states have mandated some level of coordination. According to a TCRP report, at least 12 states fund local public

transportation for older adults and persons with disabilities: Florida, Indiana, Kansas, Michigan, Missouri, North Carolina, Ohio, Oregon, Pennsylvania, Rhode Island, Washington, and Wisconsin [43].

More coordination at the local and regional level is taking place, a requirement of receiving transportation funding from the nine federal departments, which, along with the Social Security Administration and the National Council on Disabilities, comprise the Federal Interagency Coordinating Council on Access and Mobility (CCAM).

Case Study: King County Metro Transit Seattle, Washington http://metro.kingcounty.gov

King County Metro Transit (Metro) provides bus, trolley, streetcar, dial-a-ride, paratransit, and vanpool services. Metro's fixed-route fleet totals 1,450 vehicles, including standard and articulated coaches, electric trolleys, dual-powered buses, and streetcars. All Metro buses have wheelchair lifts and are equipped with bicycle racks.

Community Transportation Program

In addition to a fully-accessible fixed-route system, Metro provides or supports several other programs to meet the transportation needs of persons with disabilities, older adults, and low-income residents. These services are known collectively as the Community Transportation Program. The goal of the program is to provide not only required ADA paratransit service, but other transportation options for persons with disabilities, older adults, and low-income residents. Individuals can then choose the service that best meets their travel needs. Services within the Community Transportation Program are described below.

Community Access Transportation Program

Metro Transit assists local community organizations that provide transportation for older adults and persons with disabilities. Through the Community Access Transportation Program (CAT), Metro Transit provides:

- Accessible vehicles
- Maintenance
- Driver training

The participating agencies operate the vehicles and provide:

- Reservations and scheduling services
- Drivers
- Comprehensive and liability insurance

To be eligible to participate in the CAT program, agencies must demonstrate that they can provide at least 150 one-way passenger trips each month to individuals who are registered for the Access paratransit service. Four different types of CAT services have developed since the program was implemented in 1997. These are described below.

Hyde Community Shuttles

Metro Transit partners with Senior Services of King County to operate a network of community shuttles that operate as many-to-many demand-responsive services, providing door-to-door transportation to older adults and people with disabilities of all ages. The shuttles are free (donations are accepted) and focus on providing transportation to medical appointments, senior centers, grocery stores, and other local destinations. Service is provided Monday through Friday on a first-come, first served basis. The shuttles are known as Hyde Shuttles in honor of a resident who bequeathed $500,000 to help expand services. As of October 2012, Hyde Shuttles were operated in 13 communities in and around Seattle.

Figure 5-10
Federal Way–SeaTac–Tukwila–Hyde Shuttle

Senior Program Support Vehicles

Metro also provides vehicles and operating support to Senior Services to operate several vehicles to support program activities. These vehicles provide transportation to and from local senior centers and nutrition programs. Vehicles operated in support of 11 different centers and programs in 2012.

Table 5-7 provides service statistics from 1999 through 2011 for the community shuttle and program van services operated by Senior Services. The program has grown significantly over this 12-year period. In 1999, when only two local shuttles were in operation, 279 individual riders were served and 5,221 one-way trips were provided. In 2011, 2,815 individual riders were served and 88,730 one-way trips were provided.

Table 5-7

Service Statistics, Hyde Community Shuttles and Program Support Vehicles

Year	Riders	One Way Trips	Vehicle Miles
1999	279	5,221	NA
2000	365	8,673	NA
2001	519	12,072	72,033
2002	1,171	27,982	128,137
2003	1,288	37,989	176,058
2004	1,574	49,028	235,741
2005	1,720	54,452	238,610
2006	1,760	56,992	234,768
2007	1,263	53,031	208,377
2008	1,396	57,326	237,640
2009	1,738	64,214	274,465
2010	2,536	74,936	349,778
2011	2,815	88,730	400,656

Advantage Vans

Advantage Vans assist agencies and local communities that operate more general transportation services for both older adults and persons with disabilities. Metro provides vehicles and funding for maintenance, and participating agencies cover other operating costs. Metro also provides driver training. Agencies agree to provide a minimum number of rides to ADA paratransit-eligible individuals each month. Additional operating assistance is provided if agencies can demonstrate that the services they operate provide more than 150 trips per month to individuals who are ADA paratransit eligible. Rides are requested through and scheduled by the participating agencies.

Vanworks

The Vanworks program assists agencies that transport older adults and persons with disabilities to work or work training. Metro pays the monthly cost of a standard vanpool agreement for the local agencies, which covers the vehicle, fuel, comprehensive/collision insurance, and maintenance. Local agencies provide drivers, administrative support, and liability insurance. Local agencies also commit to providing at least 50 trips per month to individuals who are ADA paratransit-eligible and who would otherwise use the Access paratransit service. As of October 2011, Metro worked with 24 local agencies, organizations, and communities to operate Advantage Vans and Vanworks vehicles.

Service data from 2006 through 2011 and cost per trip in Metro subsidies for the Advantage Vans and Vanworks programs are provided in Table 5-8. This cost is compared to the cost per trip on the Access paratransit service. The percentage of Advantage Van and Vanworks trips that would otherwise have been made by Access is also included. Using this data, annual savings to Metro for supporting these programs and having ADA paratransit riders served by these programs rather than Access paratransit is calculated.

Table 5-8

Advantage Van and Vanworks Program Service Data and Costs, 2006–2011

Data	2006	2007	2008	2009	2010	2011
Participating agencies	20	20	23	25	25	24
Vehicles in service	47	53	60	76	86	93
Boardings	129,460	141,368	155,456	211,417	250,369	303,506
% boardings by ADA paratransit eligible riders	41%	41%	38%	45%	47%	49%
% boardings by others (not ADA paratransit eligible)*	59%	59%	62%	55%	53%	51%
Average Metro subsidy per boarding on Advantage Vans and Vanworks	$4.50	$5.00	$4.80	$4.16	$4.59	$4.51
Cost per trip on access paratransit	$34.24	$36.15	$39.17	$38.48	$38.64	$42.11
Estimated annual savings to Metro**	$1.2	$1.2	$1.6	$2.8	$3.4	$4.9

* Other riders indicated as "Not ADA Paratransit Eligible" means that they have not registered for the Access paratransit service and been found ADA paratransit eligible. Many "other" riders are seniors, including older adults with disabilities. Some may actually be ADA paratransit eligible but have elected not to apply to Metro for eligibility.

** Estimated annual savings ($millions) calculated as ((Boardings) (% Boardings by ADA Paratransit Eligible Riders) (Cost per Trip on Access Paratransit) – (Boardings) (Average Metro Subsidy per Boarding on Advantage Vans and Vanworks))

In 2011, 24 agencies participated in the Advantage Vans and Vanworks programs. A total of 93 vehicles were operated by the agencies, and more than 303,000 boardings were recorded in 2011. A total of 49% of the boardings (148,718) were riders who were ADA paratransit-eligible and whose trips would otherwise have been made on Access paratransit. Given an average cost per trip of $42.11 for Access service in 2011, providing these trips on Access would have cost Metro $6,262,515. Metro's total support for the Advantage Vans and Vanworks programs in 2011 was $1,368,815, or about $4.51 per boarding in 2011. The annual savings to Metro for supporting the Advantage Vans and Vanworks programs in 2011 was therefore $4,893,700. In addition to these savings to Metro, support of the Advantage Vans and Vanworks programs also allowed the participating agencies to provide work and work training transportation to persons with disabilities.

Case Study: Pelivan
Big Cabin, Oklahoma
www.pelivantransit.org

Pelivan Transit is a specialized transit service in northeastern Oklahoma provided by the Grand Gateway Economic Development Association (GGEDA) in seven counties (Craig, Delaware, Mayes, Nowata, Ottawa, Rogers, and portions of Washington), portions of Tulsa, and tribal jurisdiction areas for 10 tribes (Cherokee Nation, Eastern Shawnee, Miami, Modoc, Ottawa, Peoria, Quapaw, Seneca-Cayuga, Shawnee, and Wyandotte). The service area is primarily rural. Pelivan service has grown over the years in large part through the efforts of its transit director, who has built partnerships with the Native American tribes in the service area, towns, and counties.

Pelivan managers, operations staff, administrative staff, drivers, and mechanics all may work for any of the Pelivan transit services. The existing range of services includes:

- General public local demand-responsive (with lower fares for veterans and Native Americans)
- General public long distance demand-responsive
- General public intercity employment transportation
- Medicare transportation

Overall, Pelivan offers 44 categories of demand-responsive transit service throughout the 7 counties and Tulsa.

The office in Big Cabin hosts the customer service representatives for all transportation services. They take calls for any of the programs. The satellite offices in Miami, Claremore, Owasso, and Grove handle scheduling and dispatch for the respective local demand-responsive services.

Funding sources include:

- Cities of Claremore, Grove, Miami, Owasso, Pryor, and Vinita
- State of Oklahoma
- Contract work for private companies
- Temporary Assistance for Needy Families (TANF) contracts with Craig, Delaware, Mayes, and Rogers counties
- Private charities
- Advertising

These funding sources, along with fares, comprise 52% of Pelivan's projected FY 2014 budget. The transit director stated that GGEDA was planning to establish a not-for-profit subsidiary so that it could directly solicit donations from

foundations and large companies in Northeastern Oklahoma and adjoining Kansas and Arkansas (including Walmart).

Pelivan has also formed a partnership with Grand Lakes Mental Health Clinics, Inc. (GLMHC) to provide medical transportation services for persons with disabilities between home and mental health clinics in the Pelivan service area. Most of the riders live in group homes that GLMHC supervises. GLMHC leases its vehicles to Pelivan, which provides medical transportation service, oversees and maintains the fleet of 100 vehicles, and pays for gasoline. Pelivan supervises the drivers, who are primarily affiliated with GLMHC, some of whom are also clients. Since most of the riders are eligible for Medicaid, Pelivan is able to apply for reimbursements for all medical-related trips. Pelivan and GLMHC have worked together to apply for other state and federal grants on behalf of this transportation service. Pelivan also intends to equip the GLMHC with the tablets and connect it to its paratransit software system to provide better oversight and control of the fleet.

Pelivan's projected FY 2014 budget is $3.607 million. With a projected ridership of close to 220,000, the average cost per trip is $16.50. Passenger fares are projected to be $326,030, making the net cost $15 per trip. Through coordination of its multiple services, Pelivan is able to spread its fixed costs over all trips and programs.

ENDNOTES

[1]Hershey, Cheryl, et al., "Accessible Public Transportation in the United States: Twenty Years After Passage of the ADA," 12th International Conference on Mobility and Transport of Elderly and Disabled Persons (TRANSED), 2010.

[2]*Ibid.*

[3]Federal Transit Administration (FTA), National Transit Database (NTD), Transit Profiles, All Reporting Agencies RY1999.

[4]FTA, NTD, Transit Profiles, All Reporting Agencies, FY2012.

[5]*Ibid.*

[6]FTA, NTD, Transit Profiles, All Reporting Agencies, 1999–2012 and 2012.

[7]*Ibid.*

[8]See Appendix A, ADA Paratransit Complementary Paratransit Services Survey and Responses.

[9]See Appendix C for a summary of roundtable attendees and discussions.

[10]Case studies are presented in Appendix D.

[11]See Section 4, and Appendix A, Service Operations section, responses to questions 27–29.

[12]See Section 4 and Appendix A, Vehicles and Other Equipment and Technologies section, questions 19–20.

[13]See Section 4 and Appendix A, Vehicles and Other Equipment and Technologies section, questions 19–20.

[14]See Section 2 and Appendix A, Service Procurement section, responses to questions 38–46, and Appendix C, Roundtable Discussion.

[15]NTD Transit Profiles: All Transit Agencies, Report Years 1999–2012, Federal Transit Administration, Department of Transportation; Nelson\Nygaard Consulting Associates with KFH Group, "Transit Sustainability Project, Draft Paratransit Final Report," prepared for the Metropolitan Transportation Commission, 2011.

APPENDIX

A

ADA Complementary Paratransit Service Survey and Responses

APPENDIX A:
ADA Complementary Paratransit Service Survey and Responses

A nationwide survey of transit agencies that provide fixed-route transit and ADA complementary paratransit services was conducted as part of the research. This appendix contains:

- A copy of the ADA complementary paratransit survey
- A list of transit agencies that responded to the ADA complementary paratransit survey
- A summary of the responses to the ADA complementary paratransit survey

ADA Complementary Paratransit Service Survey

This questionnaire is part of a study being conducted by the Federal Transit Administration titled Accessible Transit Services for All. The study's purpose is to identify practices and approaches for providing ADA complementary paratransit services in an efficient and cost-effective way, while providing high-quality service that complies with the ADA. Information gathered will be included in a Strategy Guide that will be available assist transit agencies with improved operations of ADA complementary paratransit services.

This questionnaire requests information about the ADA complementary paratransit services provided by your agency. To help you prepare for the survey before you begin, you may want to gather the following types of information:

- The general design of your ADA paratransit service (responsibility for reservations, scheduling, dispatch, service provision, etc.)
- Recent changes in service design
- Coordination of ADA paratransit services with other demand responsive services
- ADA paratransit service statistics for the most recent calendar or fiscal year (number of eligible riders, trips by eligible ridership, companions, PCAs, no-shows, vehicle-revenue-hours, vehicle-revenue-miles)
- ADA paratransit fleet information (number of vehicles, type and size, number owned vs. contractor provided)
- ADA paratransit service costs for the same calendar or fiscal year (all operating costs including costs of any contractors, as well as operating costs incurred directly by your agency)
- Information and statistics related to any use of taxi or other non-dedicated providers
- Information about any advanced technologies you use (e.g.: Interactive Voice Response (IVR); online trip bookings, confirmation, and cancellations; automated call-outs, etc.)
- Information about the last procurement of ADA paratransit services, if contracted out (type of procurement, number of proposers, performance bond requirements)
- Information about your contracts for ADA paratransit service, if contracted out (performance standards, incentives, liquidated damages)
- Information about service design decisions, policy decisions, or procurement and contracting decisions that you feel have enabled you to provide cost-effective as well as quality ADA paratransit services
- Any issues with service cost or service quality that you would like to see this FTA study help you to address.

Service statistics and basic vehicle design information will be tabulated by agency, but responses to questions that request opinions or ratings will be treated confidentially. Opinion and rating responses will be reported in the aggregate, not by agency.

Note: If you do not complete the questionnaire in one session, you can exit and log in later to complete it using the same computer. Because the questionnaire identifies your transit agency response using your computer's IP Address, it is important that you log back in using the same computer.

System and Contact Information

Please provide contact information

Name of Transit Agency:

Address:

City:

State, Zip code:

Contact Person:

Title:

Phone:

E-mail Address:

ADA Paratransit Service Design

1. For each of the ADA paratransit service functions listed below, please indicate if the function is performed in-house by transit agency staff, contracted out, or a combination of both.

	In-House	Contractor	Both
Program/Contract Administration			
Customer Service/ Complaint Management			
Eligibility Determination			
Data/Administrative Support			
Reservations			
Scheduling			
Radio Dispatching			
Window Dispatch/Pull-Out Supervisors			
Road			
Supervisors			
Drivers			
Mechanics			
Other (please describe below):			

2. How would you characterize your current ADA paratransit service design?

Completely in-house operation (skip to Question 5)

Contracted "turnkey" operation with single contractor performing all functions

Decentralized zonal system with one or more "turnkey" service providers in each zone

In-house call and control center with contracted service providers

Contracted call and control center with separate contracted service providers

In-house "brokerage" with transit employees taking trip requests and assigning them to contracted service providers

Contracted "brokerage" with broker taking trip requests and assigning them to contracted service providers

Other (please describe):

ADA Paratransit Service Design

3. What methods of payment are used to reimburse contractors? If different methods are used for different contractors (e.g., fixed costs for call center or broker, per hour for dedicated service providers, per mile for non-dedicated service providers), check all that apply.

Monthly (or other regular) payments for fixed costs

Payments per trip

Payments per hour

Payments per mile

Other (please describe below):

4. If you contract for the provision of some or all of your ADA paratransit service, how many of these trips are provided on "dedicated" vehicles (vehicles used only for your contracted service), versus "non-dedicated" vehicles (you buy trips that are provided on vehicles that can be used for your service or other services)?

a. **Total number** of ADA paratransit trips provided in most recent full year

b. **Number** of ADA paratransit trips provided by contractors

c. **Number** of contracted trips on "dedicated" vehicles

d. **Number** of contracted trips on "non-dedicated" vehicles

Note: c + d = b

5. Which of the following statements best describes how you have designed the ADA paratransit service area?

A single area with no transfers and vehicles scheduled to make pickups and drop-offs in any part of the service area

A single advertised service area with no transfers, but non-advertised operating zones within which certain vehicles/contractor fleets mainly operate

Two or more zones with vehicles/contractor fleets operating in each zone and possible rider transfers between zones

Two or more zones with vehicles/contractor fleets operating in each zone, but no rider transfers between zones ("home" contractor responsible for direct trips)

Other (please describe below):

6. Do you or does another organization(s) in your community offer a subsidized taxi service (e.g., same-day taxi program or a voucher program for seniors/persons with disabilities) that is used by riders with disabilities including riders who are or may be ADA paratransit eligible?

Yes, our transit agency provides a subsidized taxi program for riders with disabilities including riders who are or may be ADA paratransit eligible.

Yes, another organization(s) in the community provides a subsidized taxi program for riders with disabilities who are or may be ADA paratransit eligible.

No (Skip to Question 10)

Not Sure (Skip to Question 10)

7. How many taxi trips are provided?

Number of trips on your agency's subsidized taxi program:

Number of trips on the other organization's subsidized taxi program (if information is available):

8. Have you worked with local taxi companies or local taxi regulators to make accessible taxi service available as part of the program?

Yes

No

Not Sure

9. Have you performed an analysis of your agency's subsidized taxi service to determine if it has been cost-effective (e.g., lowered your ADA paratransit costs more than the cost of the taxi program)?

Yes, I will email a copy of the report/analysis to paratransitservicesurvey@gmail.com

Yes, please contact me to get a copy

No

I'm not sure if an analysis of this type has been performed

10. Are other types of trips coordinated with and provided together with your ADA Paratransit trips?

Yes

No (Skip to Question 12)

Not Sure (Skip to Question 12)

11. Please indicate below the types of other riders that are served in a coordinated way on your ADA paratransit service.

Seniors

Medicaid-eligible persons

General public riders

Other human service agency clients (Please describe below)

Other (Please describe below)

Comment:

12. On a scale of 1 to 5, with 1 being Not Satisfied and 5 being Very Satisfied, how satisfied are you with your current ADA paratransit service design and its ability to deliver both quality and cost-effective paratransit service?

1	2	3	4	5
Not Satisfied				Very Satisfied

Please explain:

13. Is your transit agency currently reviewing the current service design and considering changes?

Yes (please describe the changes being considered in the comment box, below)

No

Not Sure

Comment:

Vehicles and Other Equipment and Technology

14. Who procures and owns vehicles that are dedicated to your ADA paratransit service (vehicles used full time for your ADA paratransit service)?

Transit Agency

Contractor(s)

Both the Transit Agency and Contractors

Other (please explain):

15. Please indicate below the types of vehicles used in your ADA paratransit operation and the number of each type of vehicle that is accessible (ramp or lift equipped).

Sedans (total)

 # Accessible *# Not Accessible*

Minivans (total)

 # Accessible *# Not Accessible*

Raised-Roof Vans (total)

 # Accessible *# Not Accessible*

Body-on-Chassis Minibuses (< 22 ')(total)

 # Accessible *# Not Accessible*

Purpose-Built Buses (> 22') (total)

 # Accessible *# Not Accessible*

Other (total)

 # Accessible *# Not Accessible*

16. Do you use capital grant funding to purchase some or all of the vehicles used to provide ADA paratransit service?

Yes

No (Skip to Question 18)

Not sure (Skip to Question 18)

17. What percent of the current fleet shown in Question 15 was purchased using capital funding available to your agency, rather than paid for with operating funds?

Enter whole number without percent sign:

Vehicles and Other Equipment and Technology

18. Do you feel you have the most cost effective mix of accessible and non-accessible vehicles and vehicles that are an appropriate size for the service?

Yes

No (please explain)

Not Sure (please explain)

Comment:

19. Do you or your contractor(s) utilize any of the following technology in the provision of ADA paratransit service? (Check all that apply)

Paratransit reservations/scheduling/dispatching software

Automatic Vehicle Location System (AVL)

Mobile Data Terminals/Computers (MDTs/MDCs)

On-board vehicle cameras

Interactive Voice Response (IVR) for automated interactions with riders (e.g., trip bookings, confirmations, cancels)

Interactive Voice Response (IVR) for automated call-outs alerting riders of vehicle arrivals

Web-based trip reservations, cancellations, or trip status

ID or fare swipe card system

Other (Please describe below)

We do not currently utilize any of the above technologies.

Comment:

20. Have any of the above technologies been particularly effective in helping you provide more cost-effective service and/or higher quality service? If yes, please indicate which technologies and the improvements realized.

Yes (Please describe below)

No

Not sure

Comment:

21. If you use any of the above technology, have you performed an analysis of the costs, benefits and impacts that you can share with us (e.g.: insurance savings for using on- board cameras; call taking cost savings due to use of IVR or web-based options by riders)?

Yes, I will email a copy of the report/analysis to **paratransitservicesurvey@gmail.com**

Yes, please contact me to get a copy

No

I'm not sure if an analysis of this type has been performed

Service Performance Standards

22. What is your "ready window" for pick-ups (the window of time riders are asked to be waiting for vehicles to arrive)?

15 minutes before to 15 minutes after the negotiated pick-up time (-15/+15)

0 minutes before to 30 minutes after the negotiated pick-up time (0/+30)

Other (please describe):

23. For each of the performance issues noted below, please indicate in the first column if you have established performance goals and/or contract requirements. Then, in the second and third columns, please indicate if you also have established financial incentives and/or financial disincentives (liquidated damages).

	Goal/Standard and/or Contract Requirement	Financial Incentive	Financial Disincentive
Service Productivity (trips/hr)			
On-time Pickups			
On-time Drop-offs			
On-board Ride Time			
Telephone Hold Time			
Number/Percentage of Complaints			
Vehicle Maintenance/Breakdown Rate			
Accident, Incident, or Other Reporting			
Other (please describe below):			

24. On a scale of 1 to 5, with 1 being Not Satisfied and 5 being Very Satisfied, how satisfied are you with your current mix of performance goals and/or contract requirements in terms of their usefulness in helping you achieve the desired levels of service efficiency and service quality?

1	2	3	4	5
Not Satisfied				Very Satisfied

Please explain:

25. Are there goals/standards and/or contract requirements that you feel have been particularly effective in helping you provide more cost- effective service and/or higher quality service? If yes, please indicate which ones and why.

Yes (Please describe below)

No

Not sure

Comment:

26. Is your transit agency currently reviewing the current service performance goals and/or contract requirements and considering changes?

Yes (Please describe below the changes being considered)

No

Not Sure

Comment:

Service Operations

27. Please indicate if you and/or your ADA paratransit service contractor(s) have used any of the following reservations/scheduling/dispatch approaches to improve service efficiency and, if so, how effective the efforts have been.

	Yes, But Not Effective	Yes, Somewhat Effective	Yes, Very Effective	Approach Not Used
Improved paratransit "run-cutting" (matching runs and shifts to demand)				
Use of non-dedicated service providers to reduce peak demand or provide evening/weekend service				
Ongoing review and management of subscription trips to maximize subscription efficiency				
Limiting the number of trip placement options generated by the automated scheduling system to only the most efficient options				
Training of reservationists in identifying and selecting the most efficient trip placement options				
Ongoing fine-tuning of travel speeds and other scheduling system parameters				
Periodic "batching" of trips as requests are received (e.g., 5 days out, 3 days out), as well as once all trip requests are received				
Other (please describe below):				

28. Please indicate if you and/or your ADA paratransit service contractor(s) have used any of the following approaches to minimize the number of cancellations and no-shows and, if so, how effective the efforts have been.

	Yes, But Not Effective	Yes, Somewhat Effective	Yes, Very Effective	Approach Not Used
Implemented procedures to ensure that changes in subscription rider plans are updated in the subscription template				
Identified and worked with riders who no-showed to improve their understanding and use of the service				
Implemented an incentive program to recognize and reward riders with low no-shows				
Implemented a no-show suspension policy				
Reduced the advance reservation period				
Other (please describe below):				

29. Please indicate if you and/or your ADA paratransit service contractor(s) have used any of the following approaches to improve the efficiency and performance of your ADA paratransit vehicle operator workforce and, if so, how effective the efforts have been.

	Yes, But Not Effective	Yes, Somewhat Effective	Yes, Very Effective	Approach Not Used
Improved recruitment and screening to ensure better qualified new hires				
Improved driver training (e.g., map reading skills, orientation to the area, schedule management)				
Improved compensation to obtain more qualified applicants				
Implemented incentive programs to award performance and efficiency				
Improved the working environment to increase job satisfaction and morale				
Other (please describe below)				

30. Please describe any other efforts you and/or your ADA paratransit service contractor (s) have made that you feel have been particularly successful in improving service efficiency, productivity, and cost-effectiveness.

Please provide as many of the following service statistics as you are able. **All information should be for services provided to ADA paratransit eligible riders, their personal attendants and companions. This should include ADA eligible trips as well as "premium service" trips that you may provide to ADA eligible riders. Do not include other services you may provide to persons not ADA paratransit eligible (for example, as part of a coordinated transportation service).** Actual trip and vehicle statistics for the most recent fiscal or calendar year are preferred, but annual estimates based on monthly data or other samples of data are also helpful if actuals are not available.

31. Please indicate the annual period for the statistics provided

From (month/year):

To (month/year):

32. ADA paratransit eligible rider information

Total number of registered ADA paratransit eligible riders:

Number of "active" riders (making at least one trip in the reporting year):

33. ADA Paratransit Trip Statistics

a. Total one-way **eligible rider** trips scheduled

b. Advance Cancellations

c. Late cancellations

d. No-Shows

e. Missed trips

f. Total one-way **eligible rider** trips completed[a-(b+c+d+e)]

g. Companion trips

h. Personal attendant trips

i. Total one-way trips completed [f+g+h]

j. **Percent** of total trips that are subscription trips (indicate whole number without percent sign)

34. ADA Paratransit Vehicle Statistics

Note: If you operate a coordinated system, you may need to estimate the miles and hours for just ADA paratransit service.

Dedicated Vehicles/Contractors:

a. Total vehicle-miles (pull-out to pull-in)

b. Total revenue-miles (first pick to last drop minus lunch and driver breaks)

c. Total vehicle-hours (pull-out to pull-in)

d. Total revenue-hours (first pick to last drop minus lunch and driver breaks)

Non-Dedicated Vehicles/Contractors:

e. Total vehicle-miles (pull-out to pull-in)

f. Total revenue-miles (first pick to last drop minus lunch and driver breaks)

g. Total vehicle-hours (pull-out to pull-in)

h. Total revenue-hours (first pick to last drop minus lunch and driver breaks)

Total – All Vehicles/Contractors:

i. Total vehicle-miles (pull-out to pull-in) [a+e]

j. Total revenue-miles (first pick to last drop - lunch and driver breaks) [b+f]

k. Total vehicle-hours (pull-out to pull-in) [c+g]

l. Total revenue-hours (first pick to last drop - lunch and driver breaks) [d+h]

ADA Paratransit Service Costs

Please indicate the total annual cost of providing ADA complementary paratransit service for the same year used for the service statistics above. Costs reported in this section should be consistent with and for the trips reported in the prior section since this information will be used to calculate a cost per trip, cost per hour, and cost per mile. Information should be for services provided to ADA paratransit eligible riders, their personal attendants and companions. This should include ADA eligible trips as well as "premium service" trips that you may provide to ADA eligible riders. Do not include other services you may provide to persons not ADA paratransit eligible (for example, as part of a coordinated transportation service) If you operate a coordinated systems and don't separate out certain costs (such as management or broker expenses), you may need to estimate the ADA paratransit share of these costs. Please include all costs incurred, including costs incurred directly by the transit agency, costs incurred by contractors, and costs incurred by the transit agency not included in contractor costs (e.g., fuel, vehicles, facilities, technology and equipment, etc.).

35. Transit Agency Direct Costs:

Management/Administration Costs $

In-house ADA Paratransit Eligibility Determination Cost $

Direct Service Operations (non-capital) $

Vehicle Costs (lease costs, average vehicle cost per year, and/or annual depreciation) $

Facility Costs (lease costs, annual depreciation, and/or allocated cost of paratransit facility) $

Costs Incurred Directly by Your Agency for Contracted Operations (if applicable):

Fuel $

Vehicle Costs (lease costs, average vehicle cost per year, and/or annual depreciation) $

Facility Costs (lease costs and/or annual depreciation) $

Other (please describe below): $

Subtotal Transit Agency Direct Costs $

36. Purchased Services Costs:

Management, Call Center and/or Broker Expenses (if applicable and separate) $

Contracted Eligibility Determination Expenses $

Contracted Vehicle Operations Costs:

Operating Costs $

Capital Costs $

TOTAL (Transit Agency Direct Costs plus Purchased Services Costs) $

Service Procurement

37. Do you contract out for the provision of some or all of your ADA paratransit service?

Yes

No

Service Procurement (Contracted)

38. For each type of service procured, please indicate the base contract period/term and any optional periods.

	Base Term of Contract (Years)	Number of Options (Years)
Single "turnkey" manager/provider		
Single "broker"		
Call/control center service only		
Service provider only (veh. ops/maint)		
Other (please describe):		

39. In your most recent procurement of ADA paratransit services, how many proposals/ bids were received and how many contracts were awarded in each of the following areas?

	Number of Proposals/Bids Received	Number of Contracts Awarded
Single "turnkey" manager/provider		
Single "broker"		
Call/control center service only		
Service provider only (veh. ops/maint)		
Other (please describe):		

40. For each type of service procured, please indicate whether your most recent procurement of ADA paratransit services required performance bonds.

	Performance Bond Required
Single "turnkey" manager/provider	
Single "broker"	
Call/control center service only	
Service provider only (veh. ops/maint)	
Other (please describe):	

41. For each type of service procured, please indicate whether the facility used by the contractor was owned/leased by the contractor, or owned/leased by the transit agency.

	Facility Owned By Contractor(s)	Facility Owned/Leased By Transit Agency	Not Applicable
Single "turnkey" manager/provider			
Single "broker"			
Call/control center service only			
Service provider only (veh. ops/maint)			
Other (please describe):			

42. How was the purchase of fuel handled in your most recent procurement of ADA paratransit services?

Contractor(s) were responsible for purchasing fuel, and there was no cost adjustment/escalator clause in the contract

Contractor(s) were responsible for purchasing fuel, but there was a cost adjustment/escalator clause in the contract

Transit agency purchases fuel used by our contractors

Other (please describe below):

Not sure

Comment:

43. On a scale of 1 to 5, with 1 being Not Satisfied and 5 being Very Satisfied, how satisfied were you with your most recent procurement of ADA paratransit services in terms of obtaining cost-efficient and quality service?

5	4	3	2	1
Very Satisfied				Not Satisfied

Please explain:

44. Please indicate if a "transition" to new contractor(s) was required as a result of your most recent procurement of ADA paratransit services and, if so, how smoothly the transition was made.

No transition was required

Yes, a transition was required and it went very well

Yes, a transition was required and it went relatively well

Yes, a transition was required and there were some problems

Yes, a transition was required and there were significant problems

Not sure

Comment:

45. Are there procurement procedures or requirements that you feel were particularly effective in helping you obtain more cost-effective and quality service and/or make a smooth transition? If yes, please indicate which ones and why.

Yes (Please describe below)

No

Not sure

Comment:

46. Is your transit agency currently reviewing the procurement process used to obtain ADA paratransit service and considering changes?

Yes (Please describe below the changes being considered)

No

Not Sure

Comment:

In-House Operation of ADA Paratransit Service

38. Which of the following statements best describes the fixed route and ADA paratransit vehicle operator workforces at your transit agency?

Fixed route and ADA paratransit vehicle operators are represented by different unions and have different compensation agreements

Fixed route and ADA paratransit vehicle operators are represented by the same union, but have different compensation agreements

Fixed route and ADA paratransit vehicle operators are represented by the same union and have the same compensation agreements

Fixed route and ADA paratransit vehicle operators are represented by different unions and have different compensation agreements

Other (please describe below):

Not Sure

Comment:

39. Please indicate if your transit agency has used any of the following approaches to manage ADA paratransit insurance costs.

We are self-insured

We are part of a special insurance pool with other transit agencies

Other (Please describe below)

Not Sure

Comment:

40. Please indicate if your transit agency has used any of the following approaches to manage fuel and/or maintenance costs of your ADA paratransit service.

We buy fuel as part of a larger consortium for greater bulk purchase benefits

We contract out for maintenance of ADA paratransit vehicles

Other (Please describe below)

Not Sure

Comment:

41. Have you had particularly good success with any cost saving measures in the operation of your ADA paratransit service? If so, please describe.

Yes (Please describe below)

No

Not sure

Thank you for completing this survey.

Transit Agencies that Responded to the ADA Complementary Paratransit Service Survey

Transit Agency/System	City	State
ABQ Ride	Albuquerque	NM
Allegany County Transit	Cumberland	MD
Allen County RTA	Lima	OH
Anaheim Transportation Nework	Anaheim	CA
Battle Creek Transit	Battle Creek	MI
Bay Metropolitan Transportation Authority	Bay City	MI
Beloit Transit System	Beloit	WI
Ben Franklin Transit	Richland	WA
Bi State Development Agency dba Metro	St. Louis,	MO
Bis-Man Transit Board	Bismarck	ND
Bloomington Public Transportation Corporation	Bloomington	IN
Bristol Tennessee Transit	Bristol	TN
Broward County Transit	Plantation	FL
C TRAN	Elmira	NY
Cabarrus County Transportation	Concord	NC
Cache Valley Transit District	Logan	UT
Capital Area Transportation Authority	Lansing	MI
Capital District Transportation Authority	Albany	NY
Capital Metropolitan Transportation Authority	Austin	TX
Casco Bay Island Transit District	Portland	ME
Central Arkansas Transit Authority	North Little Rock	AR
Central Maryland Regional Transit	Laurel	MD
Central Midlands Regional Transit Authority	Columbia	SC
Central Ohio Transit Authority	Columbus	OH
Champaign-Urbana Mass Transit District	Urbana	IL
Charleston Area Regional Transportation Authority (CARTA)	Charleston	SC
Charlotte Area Transit System - Special Transportation Service	Charlotte	NC
Cities Area Transit	Grand Forks	ND
City of Glendale	Glendale	AZ
City of Kokomo, Indiana	Kokomo	IN
City of La Mirada - La Mirada Transit	La Mirada	CA
City of Los Angeles	Los Angeles	CA
City of Paso Robles	El Paso de Robles	CA
City of Phoenix - Public Transit Department	Phoenix	AZ
City of Scottsdale	Scottsdale	AZ
City of Tucson/Sun Van	Tucson	AZ
City of Turlock	Turlock	CA
City of Tyler Transit	Tyler	TX
City of Vacaville	Vacaville	CA
Clarkstown Mini Trans	Nanuet	NY
Coast Transit Authority	Gulfport	MS
Collin County Area Regional Transit	McKinney	TX
Community Action of Southern Kentucky	Bowling Green	KY
Corpus Christi Regional Transportation Authority	Corpus Christi	TX
County of Lebanon Transit Authority	Lebanon	PA
County of Lorain dba Lorain County Transit	Elyria	OH
Dallas Area Rapid Transit	Dallas	TX

Transit Agency/System	City	State
Danville Transit System	Danville	VA
Denver Regional Transportation District	Denver	CO
Duluth Transit Authority	Duluth	MN
Durham Area Transit Authority	Durham	NC
East Chicago Transit	East Chicago	IN
Eastern Contra Costa Transit Authority	Antioch	CA
Eastern Panhandle Transit	Martinsburg	WV
Everett Transit	Everett	WA
Fairfield and Suisun Transit	Fairfield	CA
Fayette Area Coordinated Transportation	Lemont Furnace	PA
Foothill Transit	El Monte	CA
Fort Smith Transit	Fort Smith	AR
Fort Worth Transportation Authority	Fort Worth	TX
Franklin Transit Authority	Franklin	TN
FREDericksburg Regional Transit	Fredericksburg	VA
Fresno Area Express	Fresno	CA
Gainesville Regional Transit System	Gainesville	FL
Gastonia Transit	Gastonia	NC
Gold Coast Transit	Oxnard	CA
Golden Empire Transit District	Bakersfield	CA
Golden Gate Brdige Highway & Transportation District	San Francisco	CA
Greater Attleboro Taunton Regional Transit Authority	Taunton	MA
Greater Bridgeport Transit	Bridgeport	CT
Greater Dayton Regional Transit Authority	Dayton	OH
Greater Glens Falls Transit	Queensbury	NY
Greater Lynchburg Transit Company	Lyncburg	VA
Greater New Haven Transit District	Hamden	CT
Greeley Evans Transit	Greeley	CO
Greensboro Transit Authority	Greensboro	NC
Harbor Transit	Grand Haven	MI
Harford Transit LINK	Abingdon	MD
Henderson Area Rapid Transit	Henderson	KY
Henry County Transit	McDonough	GA
Hernando County Transit	Brooksville	FL
Hill Country Transit District	San Saba	TX
Housatonic Area Regional Transit District	Danbury	CT
Indianapolis Public Transportation Corporation	Indianapolis	IN
Intercity Transit	Olympia	WA
JAC (Jump Around Carson)	Carson City	NV
Jackson Transit Authority	Jackson	TN
Jacksonville Transit	Jacksonville	NC
JAUNT	Charlottesville	VA
Jefferson City Transit (JeffTran)	Jefferson City	MO
Johnson City Transit	Johnson City	TN
Johnson County SEATS	Iowa City	IA
Jonesboro Economical Transportation System	Jonesboro	AR
Kalamazoo Metro Transit	Kalamazoo	MI
Kanawha Valley Regional Transportation Authority	Charleston	WV
Kansas City Ares Transportation Authority	Kansas city	MO
Kenosha Area Transit	Kenosha	WI
King County Metro Transit	Seattle	WA
Knoxville Area Transit	Knoxville	TN

Transit Agency/System	City	State
Laguna Beach Transit	Laguna Beach	CA
Lake Charles Transit	Lake Charles	LA
Lake County Board of County Commissioners	Tavares	FL
LAMTPO	Morristown	TN
Lane Transit District	Springfield	OR
Lawrence Transit System	Lawrence	KS
Lee-Russell Council of Governments	Opelika	AL
Lewiston Transit	Lewiston	ID
Lewiston-Auburn Transit Committee	Auburn	ME
Lift Line, Inc.	Rochester	NY
Livermore Amador Valley Transit Authority	Livermore	CA
Manchester Transit Authority	Manchester	NH
Mass Transportation Authority	Flint	MI
Metra	Chicago	IL
Metro Transit	Oklahoma City	OK
Metropolitan Atlanta Rapid Transit Authority	Atlanta	GA
Metropolitan Council - Metro Mobility	St. Paul	MN
Metropolitan Transit Authority of Harris County	Houston	TX
Metropolitan Transit System	San Diego	CA
Miami-Dade Transit	Miami	FL
Milwaukee Transport Services, Inc.	Milwaukee	WI
Monterey - Salinas Transit District	Monterey	CA
Mountain Mobility/Asheville Transit System	Asheville	NC
MTA New York City	Brooklyn	NY
Muncie Indiana Transit System	Muncie	IN
Municipality of Hatillo	Hatillo	PR
Municipality of Toa Baja	Toa Baja	PR
Municipio de Cataño	Cataño	PR
NAIPTA	Flagstaff	AZ
Nashville Metropolitan Transit Authority	Nashville	TN
Niagara Frontier Transportation Authority	Buffalo	NY
NJ TRANSIT	Newark	NJ
North County Transit District	Oceanside	CA
Okaloosa County Transit	Fort Walton Beach	FL
Omnitrans	San Bernardino	CA
Operation Lift Inc	Brantford	Ontario
Oshkosh Transit System	Oshkosh	WI
Ozark Regional Transit	Springdale	AR
Pace Suburban Bus	Arlington Heights	IL
Palm Tran	West Palm Beach	FL
Pasco County Public Transportation	Port Richey	FL
PCACS	Valparaiso	IN
Petersburg Area Transit	Petersburg	VA
Pierce Transit	Lakewood	WA
Polk County Transit Services	Bartow	FL
Portage Area Regional Transportation Authority	Kent	OH
Razorback Transit	Fayetteville	AR
Regional Transportation Commission of Washoe County	Reno	NV
River Valley Metro Mass Transit District	Bourbonnais	IL
RoadRUNNER Transit	Las Cruces	NM
Rock Island County Metropolitan Mass Transit District/Metro	Moline	IL
Rogue Valley Transportation District	Medford	OR

Transit Agency/System	City	State
Salem Keizer Transit	Salem	OR
San Francisco Municipal Transportation Agency	San Francisco	CA
San Luis Obispo Regional Transit Authority	San Luis Obispo	CA
San Mateo County Transit District	San Carlos	CA
Santa Clara Valley Transportation Authority	San Jose	CA
Servicio de Transportación Paratransito Puerta a Puerta	Humacao	PR
SF Paratransit	San Francisco	CA
Shoreline Metro	Sheboygan	WI
Southeastern Pennsylvania Transportation Authority	Philadelphia	PA
Spokane Transit Authority	Spokane	WA
Spring Valley Jitney	Spring Valley	NY
SRHS Transportatioin	Spartanburg	SC
St Cloud Metro Bus	St Cloud	MN
STAR: Specialized Transit for Arlington Residents	Arlington	VA
StarMetro	Tallhassee	FL
Steel Valley Regional Transit Authority	Steubenville	OH
Suburban Mobility Authority for Regional Transportation	Detroit	MI
Suffolk County Transit	Yaphank	NY
SunLine Transit Agency	Thousand Palms	CA
SunTran	Ocala	FL
Surprise Dial-A-Ride	Surprise	AZ
The Community Action Program Corp. of Washington-Morgan Counties, Ohio	Marietta	OH
The Jule	Dubuque	IA
Toledo Area Regional Transit Authority	Toledo	OH
Torrance Transit System	Torrance	CA
Town of Cary NC- Cary Transit (C-Tran)	Cary	NC
Town of Oro Valley	Oro Valley	AZ
Transit Authority of Lexington, KY	Lexington	KY
Transit Authority of Northern Kentucky	Ft. Wright	KY
Transit Services of Frederick County	Frederick	MD
Transportation Resources Intra-County for Physically Handicapped and Senior Citizens	Pomona	NY
Tri-County Metropolitan Transportation District of Oregon	Portland	OR
University of Oklahoma / Cleveland Area Rapid Transit	Norman	OK
Utah Transit Authority	Salt Lake City	UT
Valley Metro Regional Public Transportation Authority	Mesa	AZ
Valley Regional Transit	Meridian	ID
Victor Valley Transit Authority	Hesperia	CA
Votran-Volusia Transit Management	South Daytona	FL
Washington County Transit	Hagerstown	MD
Washington Metropolitan Area Transit Authority	Washington	DC
Waukesha Metro Transit	Waukesha	WI
Western Reserve Transit Authority	Youngstown	OH
Whatcom Transportation Authority	Bellingham	WA
Wichita Falls Transit System	Wichita Falls	TX
Winchester Transit	Winchester	VA
Windham Regional Transit District	Willimantic	CT
York Adams Transportation Authority	York	PA

Summary of Responses to the ADA Complementary Paratransit Survey

The survey was sent on May 30, 2012 to 674 public transit agencies listed in the 2010 National Transit Database as providing fixed route transit and ADA paratransit services. The survey was also sent by APTA to members of its Access Advisory Committee.

The survey was closed on July 23, 2012. A total of 198 responses were received. This represents a 29% response rate.

The survey asked about the following aspects of ADA paratransit services provided by public transit systems:

- System design
- Vehicles and other equipment and technology
- Service performance standards
- Service operations
- Service statistics
- Service costs
- Service procurement

Following is a summary of the responses received.

Service Design

Overall Service Design

Respondents were first asked "**How would you characterize your current ADA paratransit service design?**" Several common designs were indicated as possible answers. Respondents could also indicate "Other" and describe the design. A total of 189 respondents answered this question. Most respondents used one of the common service designs to describe their service. Twenty nine (29) selected "Other" and used the comment field to describe their design. These comments were reviewed and each additional type of service design was identified. In one case, the comment provided was that the agency did not provide ADA paratransit service. So, the total number of appropriate responses was decreased by one to 188.

Table 1 provides a summary of all of the different designs indicated. The most common design was in-house operation, with half of all respondents indicating this design. The second most common design is a turnkey operation, with the public entity contracting with one provider. Twenty-five percent (25%) reported a turnkey design. Eleven percent (11%) of systems reported having call centers with separate service providers. Six percent (6%) indicated this design with an in-house call center, and 5% indicated a contracted call center. Nine percent (9%) of systems reported a "brokerage" design. Six percent (6%) contract with a private broker, while 3% take and broker trips in-house. Three percent (3%) of respondents indicated several contracted turnkey providers, with each operating in specific regions. Other service designs included: contracted management with service provided by public employees (1%); service in part of the overall area provided in-house with service in other regions contracted out to turnkey providers (1%); and in-house call center with some service provision done in-house and some contracted out (1%).

Table A-1. ADA Paratransit Service Designs

How would you characterize your current ADA paratransit service design?	Number	Percent
In-house operation (some with supplemental contracts for overflow or agency-specific services)	94	50%
In-house call center with some service provided in-house, some contracted	1	1%
Some service in-house, some contracted (by area)	2	1%
Contracted "brokerage" with broker taking trip requests and assigning them to contracted service providers	11	6%
Contracted "turnkey" operation with single contractor performing all functions (with transit agency oversight)	47	25%
Contracted call and control center with separate contracted service providers	10	5%
Decentralized zonal system with one or more "turnkey" service providers in each zone	6	3%
In-house "brokerage" with transit employees taking trip requests and assigning them to contracted service providers	5	3%
In-house call and control center with contracted service providers	11	6%
Contract for management with services provided by public employees	1	1%
Total	188	100%

Methods of Payment

Respondents were also asked **"What methods of payment are used to reimburse contractors? If different methods are used for different contractors (e.g., fixed costs for call center or broker, per hour for dedicated service providers, per mile for non-dedicated service providers), check all that apply.**" Ninety five respondents answered this question. This included several systems that reported in-house operation, but had some contracts for overflow operation or for other services. Responses are shown in Table 2.

Thirty-one percent (31%) of systems indicated breaking out fixed costs from variable costs and paying these fixed costs on a monthly or other regular basis. For the variable portion of costs, the most common type of reimbursement, used by 27% of respondents, was payment per hour. Per trip reimbursement was used by 20% of systems, and per mile reimbursement by 7% of systems.

Most of the systems reporting "Other" described methods of reimbursement that were basically one of listed methods but with some twist or variation. For example, one system noted that the amount of reimbursement of variable costs per hour changed based on the number of hours of service provided. Another indicated a "tiered" per mile rate with different rates for different length trips. And another noted that the monthly fixed cost payment is adjusted if annual estimates of the amount of service provided vary significantly.

There were a few responses, though, that indicated atypical payment methods. One system reported that a fixed monthly payment is made for contracted management services and that all other costs were a straight pass-through to the public agency. Another reported a form a "capitated rate" payment, saying "City pays a flat fee regardless of the number of trips conducted."

Table A-2. Methods of Reimbursement of Contractors

What methods of payment are used to reimburse contractors?	Number	Percent
Monthly (or other regular) payments for fixed costs	46	31%
Payments per trip	30	20%
Payments per hour	41	27%
Payments per mile	11	7%
Other	22	15%
Total responses	95	

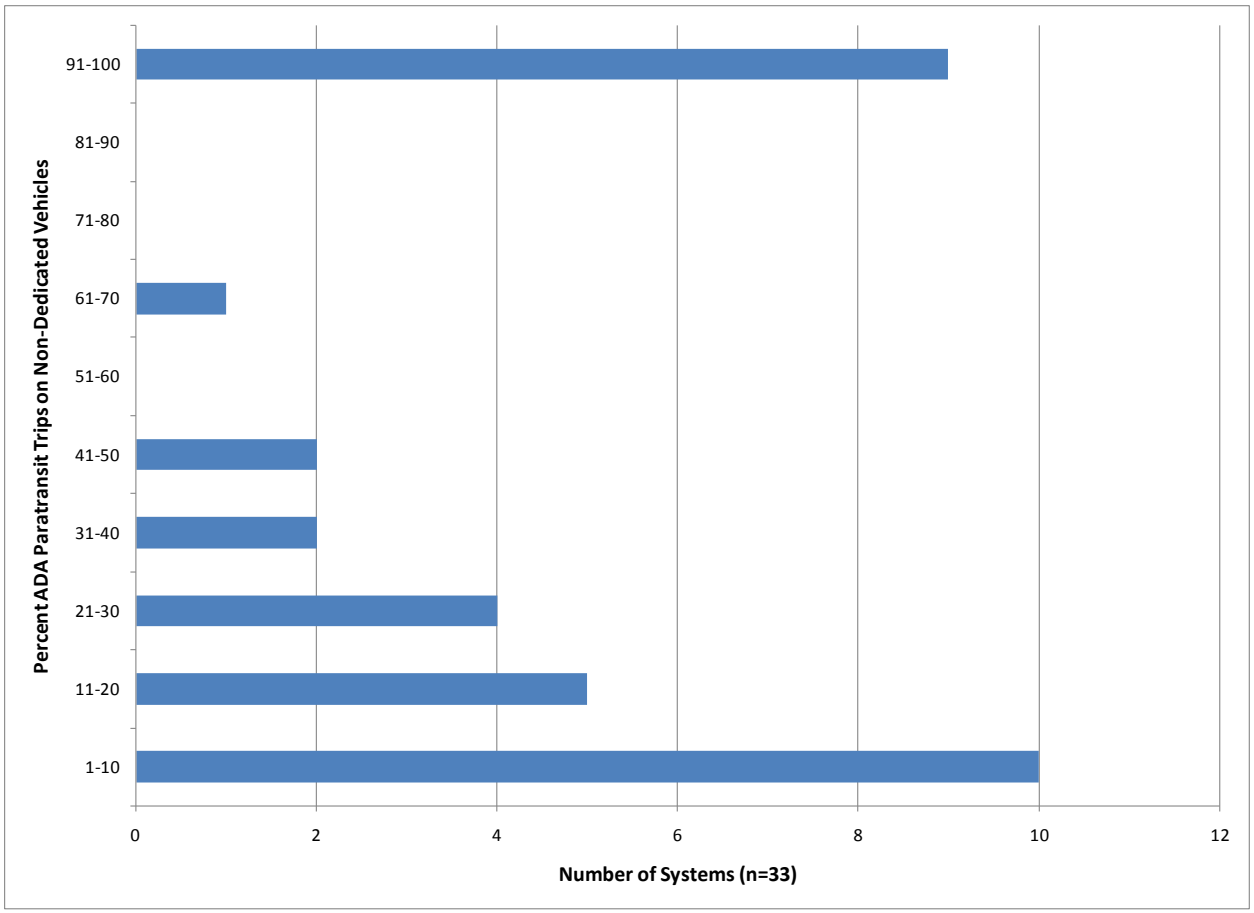
Dedicated Versus Non-Dedicated Service Providers

Respondents were asked "**If you contract for the provision of some or all of your ADA paratransit service, how many of these trips are provided on "dedicated" vehicles (vehicles used only for your contracted service), versus "non-dedicated" vehicles (you buy trips that are provided on vehicles that can be used for your service or other services)?**"

Seventy-eight (78) systems indicated that contractors provided some or all of the ADA paratransit trips. Thirty-three (33) of these 78 systems indicated that some of the contracted trips were provided on non-dedicated vehicles. Figure 1 shows the percentage of trips made on non-dedicated vehicles in these 33 systems. Of the 33 systems that used non-dedicated service providers, nine operated brokerage-type services where most if not all trips are provided by non-dedicated providers (eight of these nine systems reported 100% non-dedicated and one indicated 94% non-dedicated). The other 24 systems used non-dedicated service providers together with dedicated providers. In 10 of these 24 systems, 1-10% of all trips were provided on non-dedicated vehicles. Five systems provided 11-20% of trips on non-dedicated vehicles; four provided 21–30% of trips on non-dedicated vehicles; two provided 31–40% on non-dedicated vehicles; two provided 41–50% on non-dedicated vehicles; and one provided 61–70% of trips on non-dedicated vehicles.

Outside of the few systems that operate with a "brokerage" design, most ADA paratransit trips are provided on dedicated vehicles. Most systems that use non-dedicated service providers appear to use them for less than 10-20% of all trips. Non-dedicated service providers appear to be used for specific trips (overflow/back-up service, less productive trips, or trips during low-demand times).

Figure A-1. Percent of Trips Provided on Non-Dedicated Vehicles



Service Area Design

Next, respondents were asked "**Which of the following statements best describes how you have designed the ADA paratransit service area?**" Four common service area designs were given as options, and an "Other" choice was provided with respondents asked to describe the design. The main purpose of the question was to determine if systems used a single area without transfers, or had created zones within the overall service area that necessitate transfers.

A total of 180 systems provided responses to this question. Of these, 156 selected one of the four standard design choices provided. Twenty-four systems indicated "Other" and described their designs. These 24 "Other" responses were analyzed. In 17 cases, the designs were essentially one of the standard choices, but some additional clarification was provided (e.g., "We operate within ¾ mile of all fixed routes"). In a few cases, truly different designs were identified. A summary of responses is provided in Table 3.

The large majority of systems (86%) indicated using a single service area with no transfers. Two percent (2%) said they had a single service area, but transfers were possible for certain trips, such as trips over 10-20 miles in length. Another 2% also indicated a single area with no transfers, but did focus certain vehicles or contractors in "non-advertised operating zones." Nine percent (9%) of systems said they

had created two or more advertised zones. Of these, 6% did sometimes transfer riders between zones. The remaining 3% of systems said that there were no rider transfers and the "hone" zone provider was responsible for providing through trips into the other zone(s). And two systems (1% of responses) said ADA paratransit service was provided through route deviations and that the "area" was defined as a maximum deviation distance off of the routes. In these cases, transfers might be required on the "fixed route" portion of trips.

Table A-3. Service Area Designs

	Number	% of Total
A single area with no transfers and vehicles scheduled to make pickups and dropoffs in any part of the service area	155	86%
A single area, but transfers possible (e.g., for trips over 10 miles, 20 miles, etc.)	3	2%
A single advertised service area with no transfers, but non-advertised operating zones within which certain vehicles/contractor fleets mainly operate	3	2%
Two or more zones with vehicles/contractor fleets operating in each zone and possible rider transfers between zones	11	6%
Two or more zones with vehicles/contractor fleets operating in each zone, but no rider transfers between zones ("home" contractor responsible for direct trips)	6	3%
Route deviation (area for deviations defined, transfers if required on fixed route portion)	2	1%
Total	180	100%

Supplemental Taxi Service

Respondents were asked several questions about supplemental subsidized taxi services. First they were asked "**Do you or does another organization(s) in your community offer a subsidized taxi service (e.g., same-day taxi program or a voucher program for seniors/persons with disabilities) that is used by riders with disabilities including riders who are or may be ADA paratransit eligible?**" Responses are shown in Table 4 and Figure 2. Sixty percent (60%) of respondents said that subsidized taxi service was not provided in their areas, and another 12% said they were not sure if subsidized taxi service was provided (indicating that it likely was not provided by their agencies, but they were not sure if other agencies in the area did so). Thirteen percent (13%) of systems do offer a supplemental, subsidized taxi service, 11% said other organizations in the area offer subsidized taxi service, and 4% said that both they and other organizations offer such services.

For systems that indicated that subsidized taxi service was available in their area, additional questions were asked. The number of trips provided by taxis was requested. Respondents were also asked if they had worked with local providers and regulators to make accessible taxi service available.

Table A-4. Subsidized Taxi Programs

Subsidized Taxi Service	# of Agencies	% of Agencies
Yes, our transit agency provides	25	13%
Yes, another organization provides	20	11%
Yes, both transit agency and another organization provide	8	4%
No	112	60%
Not sure	22	12%
Total	187	100%

Figure A-2. Subsidized Taxi Programs

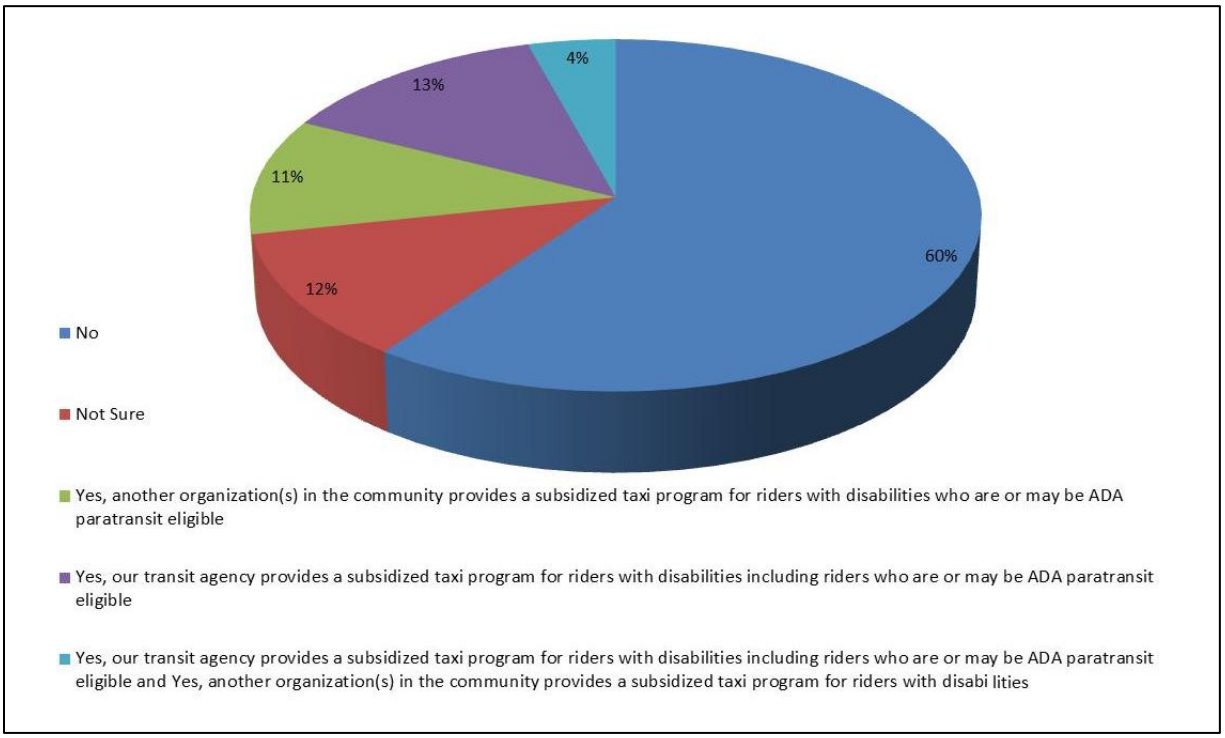


Table A-5 summarizes this additional information. It shows the number of trips provided—separated by programs administered by transit agencies and programs administered by other organizations. It also compares the number of taxi trips to total ADA paratransit trips provided to give a sense of the proportion of travel needs met by these taxi programs. It also shows which programs include accessible taxis.

As shown, the relative size of taxi programs varied greatly, from 1% or less of the trips provided on ADA paratransit services to 251% of the size of the ADA paratransit services.

Table A-5 .Relative Size and Accessibility of Subsidized Taxi Services

Transit Agency	Number of Taxi		Total Taxi Trips	Total ADA One-way Trips	Ratio Taxi to ADA Paratransit Trips	Accessible Taxis Available?
	Transit Agency Service	Other Organizs.				
Bay Metropolitan Transportation Authority	26,000		26,000	40,000	0.65	Yes
Ben Franklin Transit (Richland, WA)	3,300		3,300	315,988	0.01	Yes
Bi State Development Agency dba Metro (St.Louis, MO)		2	2	556,598	0.00	Yes
Capital Metropolitan Transp. Authority (Austin, TX)	12,121		12,121	642,393	0.02	Yes
Central Ohio Transit Authority	2,000		2,000	NA	Unknown	Yes
Champaign-Urbana Mass Transit District	18,181		18,181	NA	Unknown	Not Sure
City of Kokomo, Indiana	92,000		92,000	NA	Unknown	Yes
City of Phoenix - Public Transit Department	2,200		2,200	NA	Unknown	Yes
City of Scottsdale	52,000		52,000	NA	Unknown	Yes
Denver Regional Transportation District	139,540		139,540	694,664	0.20	Yes
Durham Area Transit Authority	350		350	120,513	0.00	Yes
Fairfield and Suisun Transit	29,801		29,801	20,339	1.47	Yes
Golden Gate Brdige Highway & Transportation District		1	1	NA	Unknown	No
Greater New Haven Transit District	50		50	138,527	0.00	Yes
Indianapolis Public Transportation Corporation	6,567	0	6,567	257,365	0.03	Yes
Livermore Amador Valley Transit Authority	1,200		1,200	56,670	0.02	Yes
Metro Transit (Oklahoma City, OK)	12,122		12,122	41,539	0.29	Not Sure
Metropolitan Council - Metro Mobility (St. Paul, MN)	14,515	0	14,515	NA	Unknown	Yes
Metropolitan Transit Authority of Harris County	112,760		112,760	1,653,906	0.07	Yes
Milwaukee Transport Services, Inc.	90,000	1	90,001	NA	Unknown	No
Monterey - Salinas Transit District	360		360	106,150	0.00	Yes
Mountain Mobility/Asheville Transit System	8		8		Unknown	Yes
MTA New York City	188,770	0	188,770	8,947,191	0.02	Yes
NAIPTA (Flagstaff, AZ)	4,785		4,785	26,978	0.18	Yes
Pace Suburban Bus (Arlington Heights, IL)	124,322	19,775	144,097	3,396,324	0.04	Yes
Palm Tran (West Palm Beach, FL)		50	50	838,928	0.00	Yes
San Francisco Municipal Transportation Agency	383,545		383,545	255,211	1.50	Yes
Santa Clara Valley Transportation Authority		50,000	50,000	824,813	0.06	No
SF Paratransit	383,545	0	383,545	904,598	0.42	Yes
STAR: Specialized Transit for Arlington Residents		36,530	36,530	81,434	0.45	Yes
SunLine Transit Agency (Thousand Palms, CA)	6,653		6,653	114,690	0.06	Yes
Torrance Transit System	144	0	144	NA	Unknown	Yes
Valley Metro Regional Public Transp. Auth. (Mesa, AZ)	42,069	11,801	53,870	183,694	0.29	Yes
Washington County Transit	22,000		22,000	8,781	2.51	Yes

Most programs, though, were relatively small compared to the ADA paratransit services. Fourteen (14) of the 24 systems that provided data indicated that subsidized taxis provided 10% or less of the trips that were provided by their ADA paratransit services. Six said the taxis provided from 11–50% of the trips provided by ADA paratransit; one said 51–100%; and three indicated that the taxi programs provided more trips than the ADA paratransit service (a ratio of 1.0 or greater). Most of the more

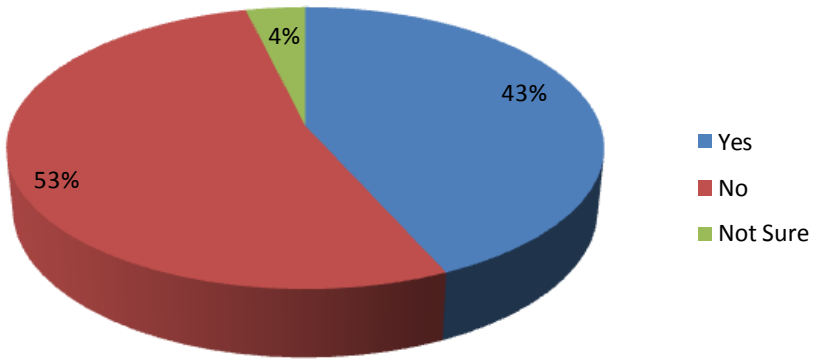
extensive taxi programs (relative to the level of ADA paratransit services) were in smaller communities. The one exception was subsidized taxi service in San Francisco that was reported to provide 1.5 times the number of trips that are provided by ADA paratransit services. Also notable was that Oklahoma City's subsidized taxi program provides almost a third as many trips (29%) as the ADA paratransit service.

Also of interest is the fact that the great majority of taxi services include accessible taxis. Of the 34 systems reporting subsidized taxi programs in their areas, 29 indicated that they had worked with taxi providers and regulators to include accessible taxis in the programs. Only three systems said accessible taxis were not included. And two were not sure.

Comingling of Trips

Another possible way to make services more efficient and cost-effective is through coordination and the comingling of ADA paratransit trips with trips by other riders. Respondents were asked "**Are other types of trips coordinated with and provided together with your ADA Paratransit trips?**" As shown in Figure 3, 43% of respondents indicated that they have comingled ADA paratransit trips with trips for other riders. Fifty-three percent (53%) have not, and 4% indicated that they were "Not Sure."

Figure A-3. Percent of Systems That Have Comingled ADA Paratransit and Other Trips



Respondents who indicated that they have comingled trips were then asked to identify the types of riders and trips that have been comingled with ADA paratransit. Table 6 on the following pages lists systems that indicated they comingle trips. It also identifies the types of riders or other trips that are comingled with ADA paratransit trips.

As shown in Table 6, 81 systems indicated comingling trips. Of these, 63 (78%) comingled ADA paratransit trips with trips for seniors. Forty-one systems, or 51%, comingled ADA paratransit and Medicaid trips. A similar percentage (51%) comingle ADA paratransit trips with general public riders. Thirty-four systems, or 42%, indicated comingling ADA trips with riders who are clients of other human service agencies (HSAs). And 21 systems indicated comingling with "Other" riders.

Table A-6. Systems that Comingled ADA Paratransit and Other Trips

Transit Agency	Types of Other Rides Coordinated				
	Seniors	Medicaid-eligible persons	General public riders	Other HSA clients	Other
Battle Creek Transit	X		X		X
Bay Metropolitan Transportation Authority	X				X
Beloit Transit System	X	X	X	X	
Ben Franklin Transit (Richland, WA)	X	X	X		
Bi State Development Agency dba Metro (St.Louis, MO)	X	X	X	X	
Broward County Transit					X
Cabarrus County Transportation	X	X	X	X	
Central Maryland Regional Transit	X				X
Central Ohio Transit Authority	X				
Cities Area Transit (Grand Forks, ND)	X	X			
City of Glendale	X	X	X		
City of Kokomo, Indiana	X		X		
City of Phoenix - Public Transit Department	X				
Coast Transit Authority (Gulfport, MS)	X				
Collin County Area Regional Transit	X	X	X		
County of Lebanon Transit Authority	X	X	X	X	
Danville Transit System	X		X		
Denver Regional Transportation District			X		
Durham Area Transit Authority	X	X	X		
Eastern Contra Costa Transit Authority	X				
Everett Transit	X				
Fayette Area Coordinated Transportation	X	X	X	X	
Fort Smith Transit	X		X		X
Fort Worth Transportation Authority	X	X		X	
FREDericksburg Regional Transit			X		
Fresno Area Express					X
Gainesville Regional Transit System	X	X	X		
Gold Coast Transit	X				

Table A-6 (cont.)

Transit Agency	Types of Other Rides Coordinated				
	Seniors	Medicaid-eligible persons	General public riders	Other HSA clients	Other
Greater Attleboro Taunton Regional Transit Authority	X	X			
Greater Bridgeport Transit	X				
Greater New Haven Transit District	X				
Harford Transit LINK	X	X			
Henderson Area Rapid Transit					X
Henry County Transit	X	X	X	X	
Hill Country Transit District (San Saba, TX)	X	X		X	
Housatonic Area Regional Transit District	X				X
Jacksonville Transit	X	X	X		
JAUNT (Charlottesville, VA)		X		X	X
Johnson City Transit	X		X		X
Johnson County SEATS		X	X	X	X
Jonesboro Economical Transportation System	X			X	
Kalamazoo Metro Transit	X		X	X	
Kansas City Ares Transportation Authority		X			
Lake County Board of County Commissioners	X	X	X	X	
Lane Transit District	X	X		X	
Lee-Russell Council of Governments (Opelika, AL)	X				
Lewiston Transit	X	X	X		
Lewiston-Auburn Transit Committee	X	X	X	X	X
Metropolitan Council - Metro Mobility (St. Paul, MN)			X		
NAIPTA (Flagstaff, AZ)	X		X	X	
Nashville Metropolitan Transit Authority	X	X		X	X
Oshkosh Transit System	X	X	X		
Pace Suburban Bus (Arlington Heights, IL)	X	X	X	X	X
Palm Tran (West Palm Beach, FL)	X				X
Pasco County Public Transportation					X

Table A-6 (cont.)

Transit Agency	Types of Other Rides Coordinated				
	Seniors	Medicaid-eligible persons	General public riders	Other HSA clients	Other
Pierce Transit	X	X	X	X	X
Polk County Transit Services	X	X		X	
Portage Area Regional Transportation Authority	X	X	X	X	
Rogue Valley Transportation District				X	
Salem Keizer Transit		X			
San Francisco Municipal Transportation Agency	X			X	
San Mateo County Transit District			X		
Santa Clara Valley Transportation Authority	X	X	X	X	X
Shoreline Metro (Sheboygan, WI)	X			X	X
Southeastern Pennsylvania Transportation Authority	X	X	X	X	
SRHS Transportatioin (Spartanburg, SC)	X	X	X	X	
St Cloud Metro Bus			X		
STAR: Specialized Transit for Arlington Residents	X			X	
Suburban Mobility Authority for Regional Transportation	X	X	X	X	
SunTran (Ocala, FL)	X	X		X	
Surprise Dial-A-Ride	X		X	X	
The Community Action Program Corp. of Washington-Morgan Counties, Ohio		X			
The Jule (Dubuque, IA)	X				
Torrance Transit System	X	X	X		
Town of Oro Valley	X		X		
Tri-County Metropolitan Transportation District of Oregon (TriMet)		X		X	
Utah Transit Authority				X	
Valley Metro Regional Public Transportation Authority (Mesa, AZ)	X	X			X
Votran-Volusia Transit Management	X				X
Whatcom Transportation Authority			X		
York Adams Transportation Authority	X	X	X	X	

The types of "Other" riders indicated were:

- Persons with disabilities who were not ADA paratransit eligible or whose trips were not eligible (e.g., trips outside the ADA paratransit area) – 8 systems
- Persons who were Transportation Disadvantaged (Florida Program) – 3 systems
- Low-income persons – 3 systems
- Riders from neighboring transit systems – 1 system
- JARC riders – 1 system
- Riders with disabilities who experience problems using fixed route (back-up to fixed route) – 1 system
- "Anyone who can't use fixed route" – 1 system

The majority of systems that comingle trips also indicated comingling more than one type of riders or trips with ADA paratransit riders. Fifty-five of the 81 systems, or 68%, comingle several types of riders/trips with ADA paratransit riders.

Overall Satisfaction with Service Design

Respondents were asked "**On a scale of 1 to 5, with 1 being Not Satisfied and 5 being Very Satisfied, how satisfied are you with your current ADA paratransit service design and its ability to deliver both quality and cost-effective paratransit service?**" Respondents were also able to provide comments after indicating their level of satisfaction.

As shown in Figure 4, 28% of respondents indicated they were Very satisfied with their current service design. Another 44% indicated that they were largely satisfied (a "4" rating). Twenty-one percent (21%) indicated somewhat satisfied ("3"); 5% said they were somewhat dissatisfied; and 2% said they were not satisfied at all.

Figure A-4. Level of Satisfaction with Current Service Design

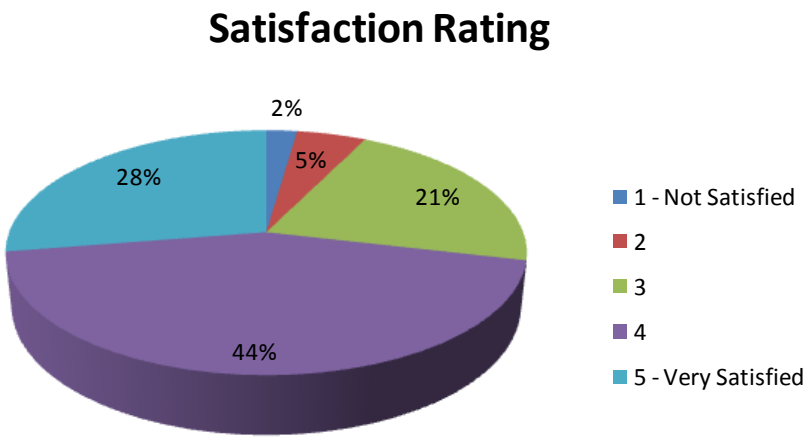


Figure A-5 shows level of satisfaction by type of service design (stacked bar chart). Seventy-eight systems that provided a rating of their satisfaction with their service design also provided additional comments. The comments received are shown in Table A-7 on the following pages.

Finally, respondents were asked "Is your transit agency reviewing the current service design and considering changes?" As shown in Figure 6, 50% of the systems responding indicated that changes were being considered. Forty-three percent (43%) said changes were not being considered, and 7% said they were "Not Sure."

Figure A-5. Reported Satisfaction with Service Design by Type of Design

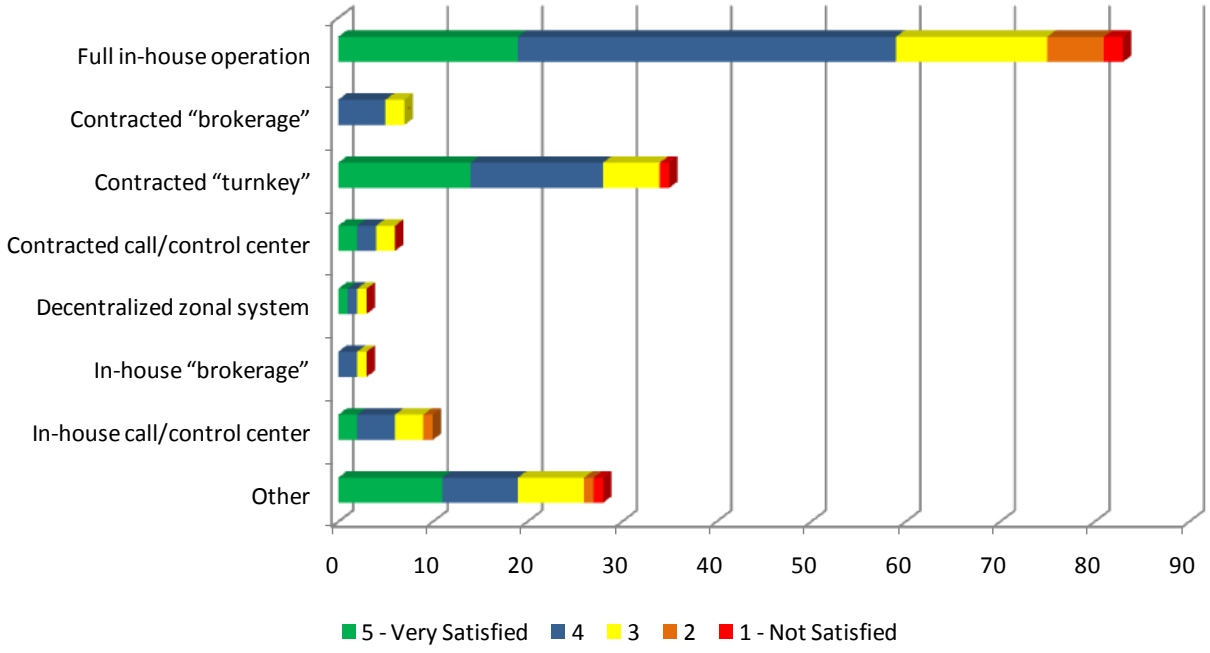
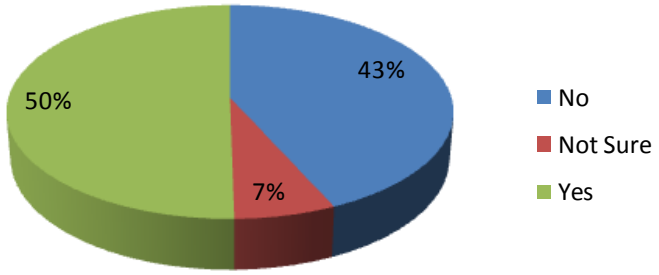


Figure A-6. Responses to "Is your Transit Agency Reviewing the Current Service Design and Considering Changes?"



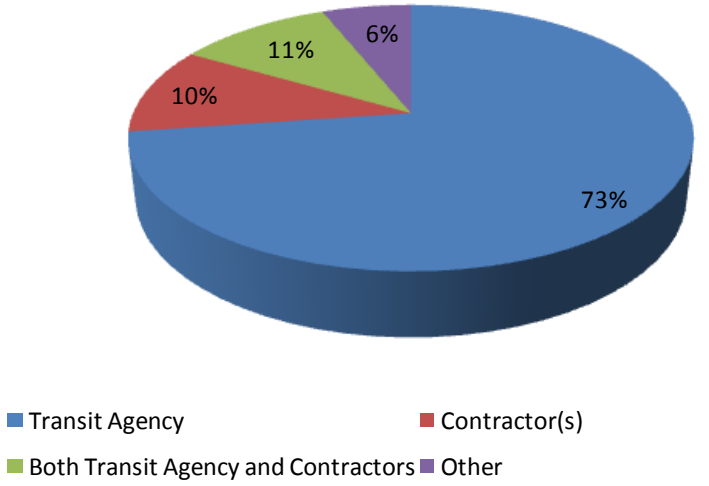
Vehicles and Other Equipment and Technology

Vehicle Procurement and Ownership

Respondents were asked "**Who procures and owns vehicles that are dedicated to your ADA paratransit service (vehicles used full time for your ADA paratransit service)?**" As shown in Figure 7, 73% of systems responding indicated that the transit agency procures and owns vehicles. Ten percent (10%) of systems said that contractors procure and own the vehicles, 11% said that some vehicles are procured and owned by each party, and 6% said "Other." Almost all of the explanations provided by systems that said "Other" indicated that the transit agency or another public agency procured and owned the vehicles. Several systems noted that procured vehicles go through a state,

county, or other public procurement process. So the 6% "Other" response essentially could be considered as "Transit Agency" owned, raising that arrangement to be 79% of respondents.

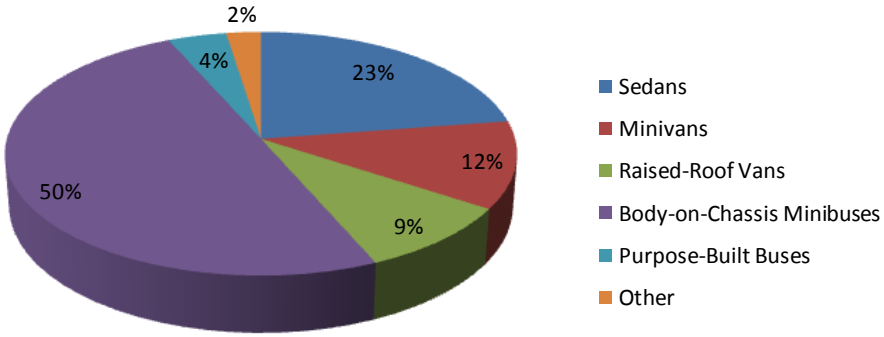
Figure A-7. Procurement and Ownership of Vehicles Used in ADA Paratransit Services



Types of Vehicles Used in ADA Paratransit Service

To get a sense of the type and size of vehicles used in ADA paratransit service, respondents were asked "**Please indicate below the types of vehicles used in your ADA paratransit operation and the number of each type of vehicle that is accessible (ramp or lift equipped).**" The types of vehicles used are summarized in Figure A-8. Body-on-chassis minibuses are the most popular style of vehicle, making up 50% of the collective fleet. Sedans are the second most popular type of vehicle, making up 23% of the fleet. Minivans make up 12% of the fleet; raised-roof vans are 9% of the fleet, purpose-built buses are 4% of the fleet, and 2% of all vehicles were reported to not fall in any of these standard categories.

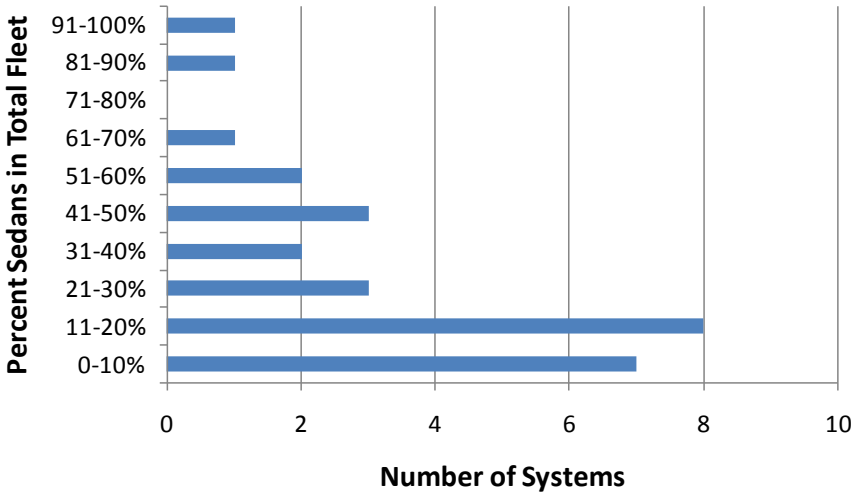
Figure A-8. Types of Vehicles Used in ADA Paratransit Services



Use of Sedans

Twenty-eight of the 200 systems responding indicated that they have sedans in their fleets. Figure A-9 shows what portion of the total fleet is sedans in these 28 systems. As shown, sedans comprise less than 20% of the total fleet in 15 of the 28 systems. Sedans make up 21-50% of the fleet in another eight systems. Sedans are more than 50% of the fleet in five of the 28 systems. It is likely that the systems with a high percentage of sedans are "brokerages" that use taxis to provide many of their ADA paratransit trips.

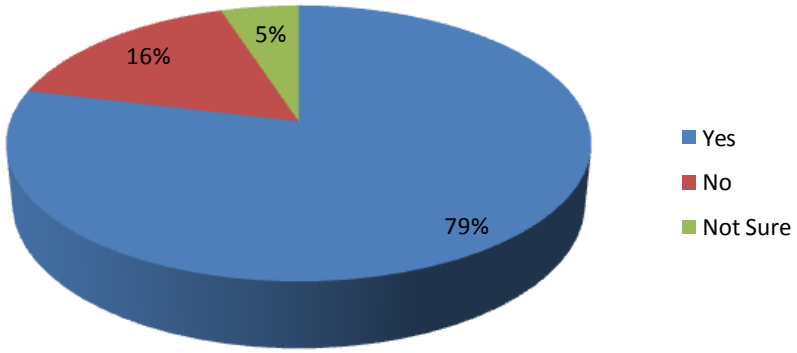
Figure A-9. Percentage of Sedans in the Fleets of 28 Systems That Use Sedans



Use of Capital Funding

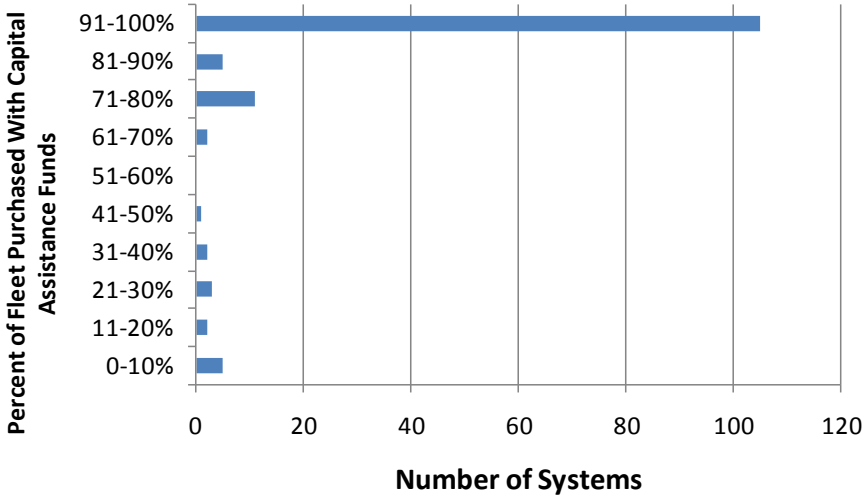
One way to make ADA paratransit services more cost-efficient, in terms of operating costs, is to use available capital funding to procure vehicles. To determine to what extent systems were taking advantage of this option, respondents were asked "**Do you use capital grant funding to purchase some or all of the vehicles used to provide ADA paratransit service?**" As shown in Figure A-10, 79% of systems responding indicated that they do use capital funding to some degree. Only 16% do not, and 5% were "Not Sure."

Figure A-10. Use Capital Funding to Purchase Some or All Vehicles?



Respondents who indicated using capital funding were then asked "**What percent of the current fleet…was purchased using capital funding available to your agency, rather than paid for with operating funds?**" Responses are shown in Figure A-11.

Figure A-11. Percent of Fleets Purchased with Capital Funding

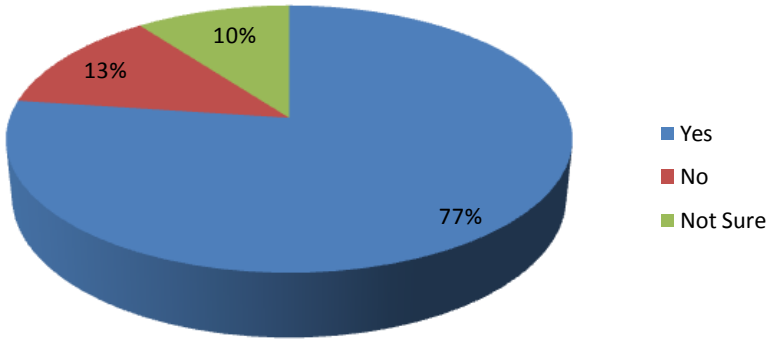


The overwhelming majority of systems that report using capital assistance use it to purchase all vehicles used for ADA paratransit service. Of the 105 systems shown in Figure A-11 as buying 90-100% of the fleet with capital money, 102 said that 100% of vehicles are purchased this way.

Satisfaction with Fleet Make-Up

Finally, respondents were asked "**Do you feel you have the most cost effective mix of accessible and non-accessible vehicles and vehicles that are an appropriate size for the service?**" As shown in Figure A-12, 77% of systems indicated that they were satisfied with the make-up of their fleets. Only 13% said they were not satisfied with the fleet make-up, and 10% said "Not Sure."

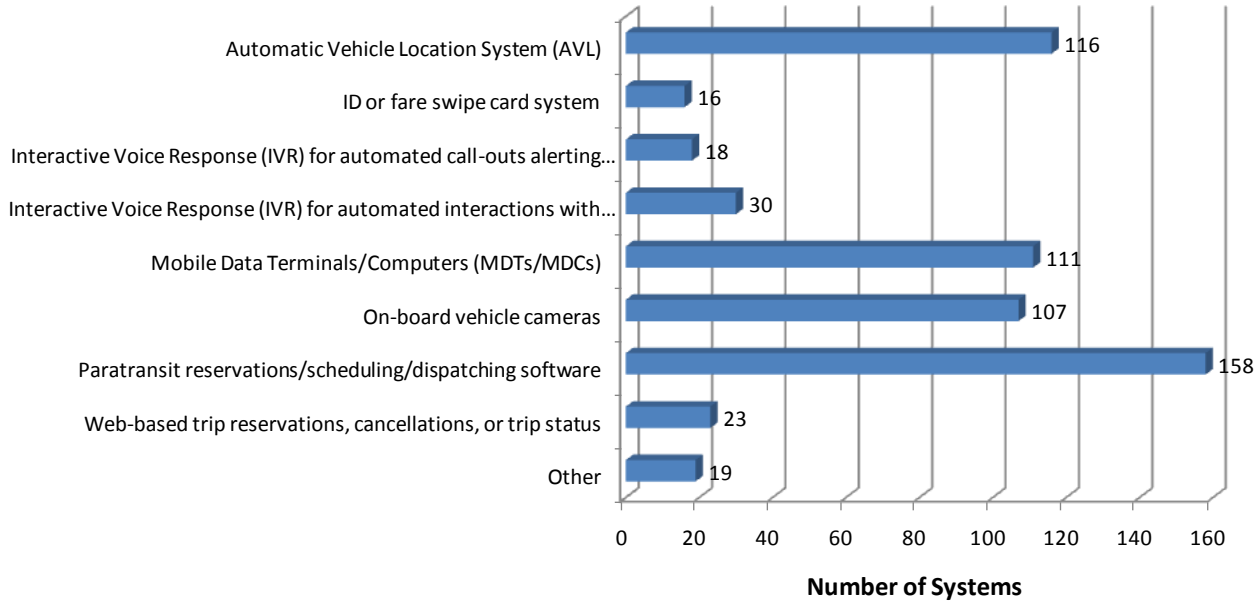
Figure A-12. Satisfied with Fleet Make-up?



Use of Other Technologies

Respondents were given a list of technologies commonly used to improve ADA paratransit service efficiency and/or quality and were asked "**Do you or your contractor(s) utilize any of the following technology in the provision of ADA paratransit service? (Check all that apply)**" A total of 200 systems responded to this question. Figure A-13 shows the responses received.

Figure A-13. Use of Advanced Technologies



One hundred fifty-eight of the systems (79%) reported using paratransit reservations/scheduling/ dispatching software. One hundred and sixteen systems (58%) use Automatic Vehicle Location (AVL) systems, and 111 (56%) use Mobile Data Terminals/Computers (MDTs/MDCs). One hundred and seven systems (54%) indicated that they have cameras on-board vehicles.

Interactive voice response (IVR), advanced fare collection, and web-based applications were reported to be used by a much smaller percentage of systems. IVR was reported to be used for automatic "call-outs" in only 18 systems (9%), and for automated interactions with riders (trip bookings, confirmations, or cancellations) by only 30 systems (15%). ID or fare "swipe card" systems were used by only 16 systems (8%). And web-based applications for trip reservations, cancellations or trip status were used by only 23 systems (12%).

Effectiveness of Technologies

Respondents were asked "**Have any of the above technologies been particularly effective in helping you provide more cost-effective service and/or higher quality service? If yes, please indicate which technologies and the improvements realized.**" A total of 139 systems provided a response to this question. In general, most systems indicated that each of the technologies mentioned was important to operating quality and efficient ADA paratransit services. Scheduling software was cited as important for creating efficient groupings of trips. Several systems noted that it was important to effectively use the software. The importance of MDTs/MDCs in efficiently transmitting and recording service information was noted by many systems. AVL was specifically mentioned as a way to track the

status of runs and to maintain control of the service. Several systems cited the implementation of AVL technology as important for getting a handle on no-shows. On-board cameras were mentioned for following up on claims against the service, for lowering insurance costs, and for efficiently investigating complaints. IVR and call-outs were mentioned several times as a way to help reduce no-shows and cancels-at-the-door. IVR was also noted for having reduced the number of reservationists needed and also decreasing hold times. And a few systems mentioned web-based applications as a way to also reduce demand on reservations staff and lower hold times.

The number of comments that cited each type of technology was noted. The number of specific mentions of each technology was then compared to the number of systems reporting the use of each technology. The results are shown in Table A-7.

Table A-7. Comments on "Effectiveness" of Specific Technologies

Technology	# of Systems Reported Using	# of Times Mentioned for "Effectiveness"	% Times Mentioned for "Effectiveness"
Res/Sched/Dispatch Software	158	80	51%
MDTs/MDCs	111	44	40%
AVL	116	42	36%
On-Board Cameras	30	15	50%
IVR	107	24	22%
Web-Based Apps.	23	5	22%
Auto Fare Collection	16	2	12%

Reservations/scheduling/dispatch software, along with MDCs and AVL, have become staples in the industry and the comments reflected the importance of these technologies to a quality and efficient operation. Beyond these "basics," the effectiveness of on-board cameras was specifically mentioned by a high percentage of systems that used them. IVR and web-based applications were specifically called out with less frequency. A couple of systems that use these technologies indicated that while they are effective, the impact is limited because they are used by a relatively small number of riders.

Service Performance Standards

On-Time Pickup Window ("Ready Window")

Respondents were asked to indicate the time window used to define on-time pickups. The question posed was "**What is your "ready window" for pick-ups (the window of time riders are asked to be waiting for vehicles to arrive)?**" The most common windows—0 minutes before to 30 minutes after, and 15 before to 15 after—were listed as possible responses. Systems defining the window in a different way were asked to describe it.

Table A-8 provides a summary of the responses. By far the most common on-time pickup window is a -15/+15 window, used by 52% of the systems that responded. Second most common is a 0/+30 window, used by 16% of systems. Third most common is a -60/0 window, used by 6% of systems.

Eighteen other variations were reported, each used by between one and five systems. This variation in the definition of pickup windows indicates the differences in local settings and services. Several of the windows that were used by only a few systems were in small communities with relatively small service areas.

Table A-8. On-Time Pickup Windows

ADA On-Time Pickup Window	Number	% of Total
15 minutes before to 15 minutes after the negotiated pick-up time (-15/+15)	91	52%
0 minutes before to 30 minutes after the negotiated pick-up time (0/+30)	28	16%
60 minutes before to 0 minutes after	10	6%
0 minutes before to 20 minutes after	5	3%
60 minutes before to 60 minutes after *	4	2%
20 minutes before to 20 minutes after	4	2%
10 minutes before to 20 minutes after	4	2%
10 minutes before to 10 minutes after	4	2%
5 minutes before to 5 minutes after	4	2%
0 minutes before to 15 minutes after	3	2%
0 minutes before to 10 minutes after	2	1%
0 minutes before to 5 minutes after	2	1%
30 minutes before to 30 minutes after	2	1%
5 minutes before to 25 minutes after	2	1%
5 minutes before to 15 minutes after	2	1%
5 minutes before to 0 minutes after	2	1%
10 minutes before to 30 minutes after	1	1%
10 minutes before to 15 minutes after	1	1%
15 minutes before to 10 minutes after	1	1%
5 minutes before to 10 minutes after	1	1%
0 minutes before to 25 minutes after	1	1%
Total:	174	
* Likely misinterpreted and indicated the "Scheduling Window"		

Performance Goals, Incentives, and Disincentives

To get a better idea of the use of performance goals, incentives and disincentives, respondents were given a list of common performance measures and were asked "**For each of the performance issues noted below, please indicate in the first column if you have established performance goals and/or contract requirements. Then, in the second and third columns, please indicate if you also have established financial incentives and/or financial disincentives (liquidated damages).**" A total of 155 systems responded to this question. Their responses are summarized in Table A-9.

Table A-9. Use of Performance Goals, Incentives and Disincentives

Performance Issue	Set Goal	Have Incentive	Have Disincentive
Service Productivity (trips/hr)	112	16	21
On-time Pickups	145	20	30
On-time Drop-offs	119	4	13
On-board Ride Time	110	4	14
Telephone Hold Time	97	10	14
Number/Percentage of Complaints	93	19	25
Vehicle Maintenance/Breakdown Rate	97	5	15
Accident, Incident, or Other Reporting	119	16	28
Other	16	8	7
155 Agencies Responding			

Most systems—145 of 155 responding, or 94%--indicated that they have a goal for on-time pickups. A high percentage of systems also have goals for on-time drop-offs (119 of 155, or 77%), accidents, incidents or other reports (119 of 155, or 77%), service productivity (112 of 155, or 72%), telephone hold time (97 of 155, or 63%), vehicle maintenance or breakdown rates (97 of 155, or 63%), and number/percentage of complaints (93 of 155, or 60%). These were the main performance goals. Only sixteen systems reported having other service goals.

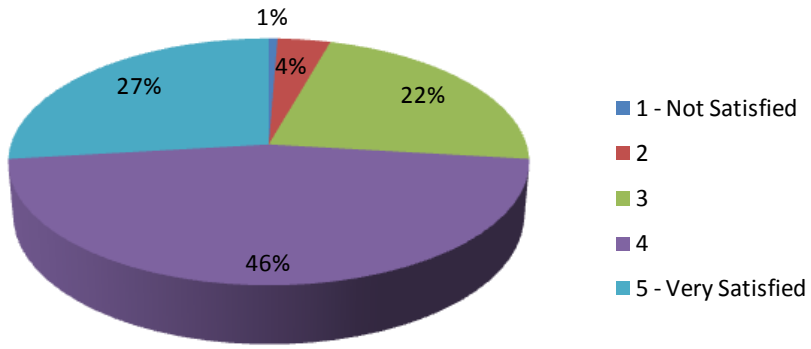
Far fewer systems reported having financial incentives or disincentives associated with these performance measures. The most common incentives were for on-time pickups (13%), number/percentage of complaints (12%), service productivity (10%), accidents, incidents or other reporting (10%), and telephone hold times (6%). Only a few systems had incentives for vehicle maintenance/breakdowns (3%), on-time drop-offs (3%), and on-board ride times (3%).

Disincentives were slightly more common than incentives, but still only applied in less than half of the systems. On-time pickup disincentives were used by 19% of systems, accident, incident, or other reporting disincentives by 18% of systems, number/percentage of complaints by 16%, service productivity by 14%, vehicle maintenance/breakdowns by 10%, on-board ride time by 9%, telephone hold time by 9%, and on-time drop-offs by 8%.

It should be noted that half of all systems indicated in-house operations, in which case it might be expected that they would set a goal, but would not use financial incentives and disincentives. Assuming that the other half of systems contract out some or all of their service, the incentive and disincentive percentages noted above should be doubled to indicate use by systems that contract out. Still, though, even doubling the reported use would suggest that incentives are used by only 6-26% of systems that contract, and disincentives are used by only 16-38% of systems that contract out.

To get a sense of how satisfied systems are with their performance goals and incentives/disincentives, respondents were asked "**On a scale of 1 to 5, with 1 being Not Satisfied and 5 being Very Satisfied, how satisfied are you with your current mix of performance goals and/or contract requirements in terms of their usefulness in helping you achieve the desired levels of service efficiency and service quality?**" Responses are shown in Figure A-14.

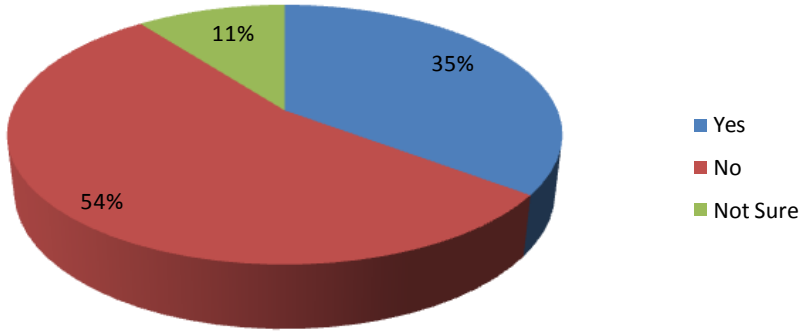
Figure A-14. Reported Satisfaction with Service Goals, Incentives, and Disincentives



Twenty-seven percent (27%) of systems reported being very satisfied with their performance measures (rated a "5"). Forty-six indicated that they were largely satisfied (rating of "4"). Twenty-two indicated being somewhat satisfied ("3"). Only 4% said they were somewhat dissatisfied ("2"), and only 1% said they were not satisfied ("1").

Finally, respondents were asked "**Is your transit agency currently reviewing the current service performance goals and/or contract requirements and considering changes?**" As shown in Figure A-15, 54% of systems indicated that they are not reviewing their goals or considering changes. Thirty-five percent (35%) of systems are reviewing and considering changes, and 11% indicated "Not Sure."

Figure A-15. Are You Reviewing and Considering Changes to Your Performance Goals or Contract Requirements?



Forty-eight systems provided additional comments on the changes being considered.
Thirty-four of the comments were general in nature—e.g., that the agency is in the process of reviewing goals and standards. Fourteen systems provided the following more specific comments:

- Looking to improve goal/requirements related to on-time performance – 5 systems
- Looking to improve goal/requirements related to productivity – 3 systems
- Looking to improve goal/requirements related to denials or missed trips – 2 systems
- Looking to improve goal/requirements related to complaints – 1 system
- Looking to improve goal/requirements related to on-board ride times – 1 system
- Looking to improve goal/requirements related to breakdown rate – 1 system
- Looking to improve goal/requirements related to wait times at transfer locations – 1 system

One system indicated it was looking at bringing service in-house to "save additional funds for contracting." One indicated that it was looking the other way—to privatize the service. And one indicated that it was considering utilizing non-dedicated service providers for some trips.

Two systems indicated that they were looking at varying the way that incentives and disincentives are assessed. These comments were:

- We'll review assessing penalties for consecutive months of failure to meet standards. First month's failure will result in consultation with the contractor, assessment of causes, and creation of a plan to resolve the problems. Penalties may not be assessed until the third month - the focus needs to be on solutions. Incentives will be small. General philosophy regarding financial penalties and incentives: The importance lies in the assessment, not the amounts.
- Some performance standards in the next paratransit model will have multiple tiers depending on level of success/failure. Some goal levels will be set higher as it has become apparent that current goal levels are achievable.

Service Operations

Several questions were asked about the use of operating practices that can improve service efficiency, cost-effectiveness and quality.

Reservations, Scheduling, and Dispatching Practices

Respondents were first asked about reservations, scheduling and dispatching practices. Several "best practices" were listed and respondents were asked "**Please indicate if you and/or your ADA paratransit service contractor(s) have used any of the following reservations/scheduling/dispatch approaches to improve service efficiency and, if so, how effective the efforts have been.**" A total of 167 systems provided responses to this question. Responses are shown in Table A-10.

Use of the identified "best practices" varied. Ongoing reviews of subscription trips and training of reservationists to make good initial scheduling decisions are practices being used by about 72% of systems responding. Fine-tuning of travel speeds and other parameter settings is being used by 68% of systems, and improved run-cutting is being used by 61% of systems responding. And 57% of systems are doing periodic "batch scheduling" to the efficiency of runs.

Table A-10. Use and Effectiveness of Reservations, Scheduling, and Dispatching "Best Practices"

Reservations, Scheduling, Dispatch Practices	Yes, but not effective	Yes, somewhat effective	Yes, very effective	Approach not used
Improved paratransit "run-cutting" (matching runs and shifts to demand)	0	49	53	57
Use of non-dedicated service providers to reduce peak demand or provide evening/weekend service	1	16	18	126
Ongoing review and management of subscription trips to maximize subscription efficiency	4	66	50	40
Limiting number of trip placement options generated by automated scheduling system to only most efficient operations	8	40	28	81
Training of reservationists in identifying and selecting most efficient trip placement options	4	59	57	40
Ongoing fine-tuning of travel speeds and other scheduling system parameters	3	75	36	47
Periodic "batching" of trips as requests are received (e.g., 5 days out, 3 days out), as well as once all trip requests are received	8	44	44	60
Other	2	2	2	2
Total agencies responding – 167				

Fewer systems are limiting trip placement options to only the most efficient choices (46%), or using non-dedicated service providers to reduce peak demand or provide evening/weekend service.

Relatively few systems that were using these "best practices" indicated that they were not effective. The large majority found that they were either somewhat effective or very effective.

Practices with the highest percentage of "very effective" ratings were: improved run-cutting (52%); use of non-dedicated service providers (51%); training reservationists to make good initial scheduling decisions (48%); and periodic "batch scheduling" (46%). Slightly lower, but still quite effective were: ongoing reviews of subscription trips (42%); limiting trip placement options to the most efficient (37%); and ongoing fine-tuning of travel speeds and other systems parameters.

These responses indicate that each of these practices can be effective in making services more efficient and cost-effective. And there is room for more systems to adopt and use these approaches. With only 50–70% of systems using each of these approaches, there is room for the remaining 30–50% to realize efficiencies by adopting these approaches.

Approaches for Minimizing Cancellations and No-Shows

Excessive and avoidable cancellations and no-shows can have a negative impact on service efficiency and cost-effectiveness. To learn what systems were doing to address this operational issue, respondents were presented with five "best practices" and asked "**Please indicate if you and/or your ADA paratransit service contractor(s) have used any of the following approaches to minimize the number of cancellations and no-shows and, if so, how effective the efforts have been.**" A total of 169 systems provided responses which are summarized in Table A-11.

A high percentage of systems (87%) indicated that they are identifying and working with riders who no-show to improve their understanding and use of the service. A high percentage of systems (83%) also noted that they have implemented no-show suspension policies. The systems that have taken these approaches indicated they are very effective, with 89-92% saying "somewhat" or "very effective," and 43-46% saying "very effective."

Fewer, but still most systems (66%) indicated that they have implemented procedures to ensure that changes to subscription trips are updated so that no-shows are avoided. A very high percentage (98%) of the systems that have used this approach indicated it was "somewhat" or "very effective." And 50% found it "Very effective."

Table A-11. Use and Effectiveness of Approaches for Minimizing Cancellations and No-Shows

Approach	Yes, but not effective	Yes, somewhat effective	Yes, very effective	Approach not used
Implemented procedures to ensure that changes in subscription rider plans are updated in subscription template	2	54	55	46
Identified and worked with riders who no-showed to improve their understanding and use of service	11	73	63	19
Implemented an incentive program to recognize and reward riders with low no-shows	2	2	4	152
Implemented a no-show suspension policy	15	61	64	25
Reduced advance reservation period	2	26	22	113
Other	2	3	3	16
Total agencies responding – 169				

Only 30% of systems indicated that they have reduced the advance reservation period. But for the systems that did this, they reported it to be very effective—with 96% saying "somewhat" or "very effective," and 44% saying it was "very effective."

Only 5% of respondents indicated that they use positive incentives to recognize and reward riders with low no-shows. The few that did, though, indicated this approach is effective. Six of the 8 systems (75%) said it was "somewhat" or "very effective," and half said it was "very effective."

Again, these responses suggest that there is room for more systems to implement such policies and realize improved efficiencies.

Operator Workforce Efficiency and Performance

Research has indicated that a stable and well-trained operator workforce is also a key component of service efficiency. To determine the state-of-the-practice in this area, respondents were given a list of "best practices in vehicle operator recruitment and retention and asked "**Please indicate if you and/or your ADA paratransit service contractor(s) have used any of the following approaches to improve the efficiency and performance of your ADA paratransit vehicle operator workforce and, if so, how effective the efforts have been.**" A total of 162 systems responded to this question. Table A-12 presents the results.

Two of the "best practices" listed were used by a high percentage of systems: improved driver training was reported by 83% of systems; and improved recruitment and screening of new hires is used by 79% of systems. Both were reported to be highly effective, with 98% of systems that used these efforts saying they were "somewhat" or "very effective," and 45–51% saying they were "very effective."

Table A-12 Use and Effectiveness of Vehicle Operator Recruitment and Retention "Best Practices"

Approach	Yes, but not effective	Yes, somewhat effective	Yes, very effective	Approach not used
Improved recruitment and screening to ensure better qualified new hires	3	67	58	32
Improved driver training (e.g., map reading skills, orientation to area, schedule management)	3	62	69	24
Improved compensation to obtain more qualified	2	28	20	107
Implemented incentive programs to award performance and efficiency	0	45	21	91
Improved working environment to increase job satisfaction and morale	2	67	40	51
Other	1	4	3	15
Total agencies responding – 162				

Improving the work environment to increase job satisfaction and morale was reported by 67% of systems. Again, this approach was reported to be quite effective, with 98% of systems saying it was "somewhat" or "very effective," and 37% saying "very effective."

Incentive programs were reported by only 41% of systems. All 66% that used this approach (100%) said it was "somewhat" or "very effective," and 32% said "very effective."

And only 31% of systems indicated they had improved operator compensation to obtain more qualified operators. Ninety-six percent (96%) reported this to be "somewhat" or "very effective," and 40% said it was "very effective."

Once again, there appears to be room for more systems to adopt these "best practices" to realize efficiencies and improvements in cost-effectiveness. Approaches that appear to not be as widely used, but very effective are improvements in the work environment, incentive programs, and improved compensation.

Twenty-three systems provided additional comments on this part of paratransit operations—some presenting extensive comments. A few systems indicated that this was the realm of their contract

operators—suggesting that it may be important to stress that even if public agencies do not manage the operator workforce, they need to work with contractors to ensure that the workforce provided is qualified and efficient. This is particularly true if contractors are paid per hour, since a less qualified and efficient workforce will result in public agencies getting less for each hour of service purchased.

ADA Paratransit Service Statistics

ADA paratransit service statistics were requested for the most recent year for which data was available. Respondents were asked to include only the cost for ADA paratransit service. It was noted that this should include ADA eligible trips as well as "premium service" trips that you may provide to ADA eligible riders. Respondents were asked not to include other non-ADA paratransit services (for example, trips provided as part of a coordinated transportation service).

Cancellation, No-Show, and Missed Trip Rates

As noted above, cancellations and no-shows are often cited as having a negative impact on service efficiency and cost-effectiveness. Respondents were asked to indicate the number of trips scheduled, those cancelled in advance, late cancels, no-shows, and missed trips. The percent of cancellations, no-shows and missed trips were then calculated.

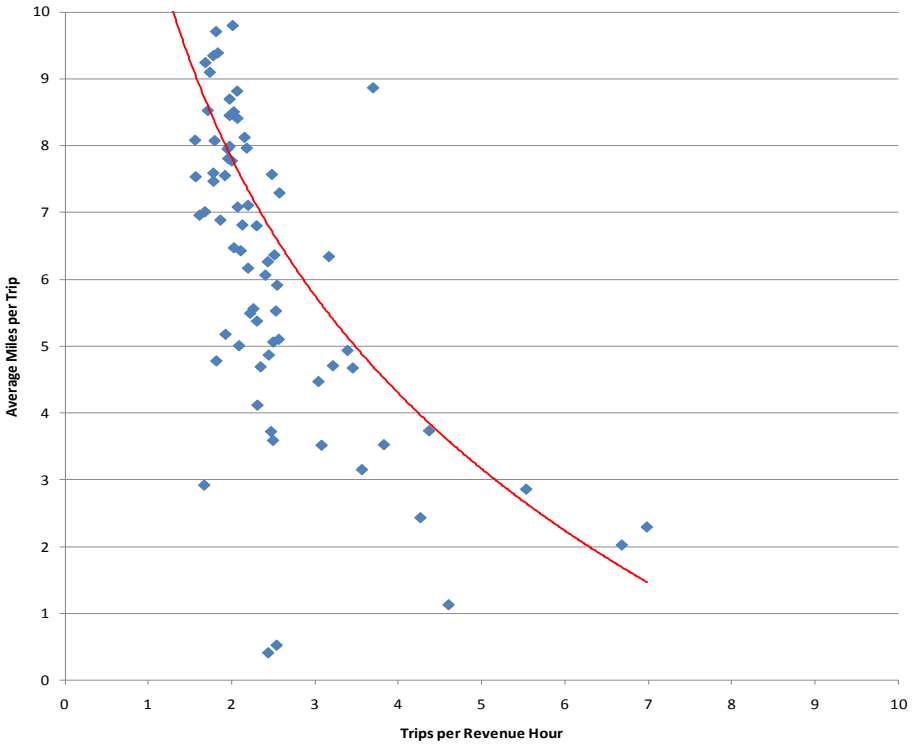
Advance cancellations were calculated as a percent of the total number of trips scheduled. The average rate of advance cancellations was reported to be 11.72%. Late cancellations were similarly calculated as a percent of total trips scheduled. The average rate for late cancellations was 4.63%. Given that some systems did not distinguish between advance and late cancels, the total rate of cancellations, as a percentage of trips scheduled, likely represents a more consistent number. The average rate of total reported trip cancellations was 16.35%.

No-show rate was calculated as a percentage of the sum of trips provided, no-showed, and missed. The average no-show rate for all systems reporting this data was 2.55%. The rate of missed trips was similarly calculated as the percent of the trips provided, plus no-showed, plus missed. The average reported missed trip rate for all systems providing this data was 0.62%.

Productivity

Average productivity reported was 2.33 trips per vehicle-revenue-hour. Productivity ranged from 1.1 trips per hour to 6.98 trips per hour. Size of service area and average trip length are major factors in the productivities that can be achieved. Average trip length (total revenue-miles/total trips provided) was charted against productivity to illustrate this relationship. As shown in Figure A-16, there is a fairly strong correlation between productivity and trip length. Figure A-16 also shows that many systems that responded reported productivities between 1.6 and 2.8.

Figure A-16. Productivity by Average Miles per Trip



ADA Paratransit Service Costs

Respondents were asked to provide detailed cost information for just their ADA paratransit services. Costs associated just with the provision of the trips reported in the "Service Statistics" were requested—not to include the costs of other non-ADA services. Separate information was requested for costs incurred directly by the transit agency (either for direct operation or in support of contracted service providers), and for contracted service costs. Separate fixed costs (facilities and vehicles) and variable costs were also requested in an effort to make sure that the cost information was comparable.

Total Cost per Revenue-Hour

Reasonable total cost information was obtained from 68 systems. Based on this data, the average total cost per vehicle-revenue-hour of operation was $66.33. Reported costs varied from $34.54 to $166.85.

The distribution of total costs per revenue-hour is shown in Table 13. As shown, the majority of systems report total costs that fall between $40 per revenue-hour and $80 per revenue-hour.

Table A-13. Distribution of Total Costs per Veh-Rev-Hr

Total Cost Range	Number of Systems
$30–$40	6
$41–$50	11
$51–$60	14
$61–$70	14
$71–$80	8
$81–$90	5
$91–$100	3
$101+	6

Total Cost per Revenue-Hour by Service Design

Total cost per vehicle-revenue-hour was cross-tabulated with types of service designs. The results are shown in Table A-14. Complete in-house operation had the highest total cost per revenue-hour, at $72.69. In-house brokerages reported the next highest cost, at $68.45 per revenue-hour. In-house call centers with contracted service providers had an average cost of $57.06.

Table A-14. Average Total Cost per Revenue-Hour by Service Design

Service Design	Avg. Costs per Revenue Hour	Number of Responses
Completely in-house operation	$72.69	35
Contracted call and control center with separate service providers	$52.95	6
In-house call and control center with contracted service providers	$57.06	4
In-house "brokerage" with transit employees taking trip requests and assigning them to contracted service providers	$68.45	4
Contracted "brokerage" with broker taking trip requests and assigning them to contracted service providers	$56.10	3
Contracted "turnkey" operation with single contractor performing all functions	$58.02	14
Contracted "turnkey" operation with multiple providers operating in separate regions	$51.54	1

Contracted operations reported lower costs, ranging from $52.95 per revenue-hour to $61.54 per revenue-hour. The most cost-effective type of contracted operation was reported to be contracted call centers with separate contracted service providers ($52.95). Contracted brokerages reported an average cost of $56.10. Contracted turnkey operations had an average cost per revenue-hour of $58.02. The one multiple turnkey operations with service providers in separate zones reported a cost of $61.54 per revenue-hour.

Procurement of Contracted Services

Respondents who indicated that they contract out for some portion of their ADA service were asked several questions about approaches for cost-savings.

Length of Contracts

The length of a contract can have an impact on cost. If contractors are asked to spread fixed costs over a shorter term, costs might be higher than if a longer term is specified.

To get a better understanding of the length of contracts related to ADA paratransit services, respondents were asked to indicate the base years and optional years for contracts. This information was requested for each type of service that might be procured (e.g., turnkey operation, broker services, call center services, service providers, etc.). Combining all responses, an average number of base years, optional years, and total contract years was calculated. The range of each was also noted.

Table A-15 provides information about the typical length of various types of ADA paratransit service contracts. As shown, the base period for contracts averages between three and five years, with a range of one to 10 years. Option years typically were for 2-3 years, with a range of zero to 5 years. Total term, with options was 5-7 years, with a range of one to 10 years.

Table A-15. Length of Contracts For Various Operating Functions

	Base		Option		Total	
	Avg. Yrs.	**Range**	**Avg. Yrs.**	**Range**	**Avg. Yrs.**	**Range**
Single "turnkey" manager/provider	3.9	1–10	2.2	0–5	5.9	1–10
Single "broker"	4.6	2–10	3.1	0–5	7.0	2–10
Call/control center service only	3.5	1–5	2.3	0–7	5.1	2–8
Service provider only (veh. ops/maint)	4.2	1–10	1.8	0–7	5.7	2–10
Other	3.8	1–5	3.0	0–5	6.8	5–10

Single "broker" contracts tended to be slightly longer, averaging 7 years total, and call center contracts tended to be shorter, averaging 5.1 years total.

Degree of Competition for Contracts

A very important aspect of achieving cost-effectiveness is ensuring that there is good competition for contracts. To gauge the level of competition in ADA paratransit services, respondents were asked "**In your most recent procurement of ADA paratransit services, how many proposals/bids were received and how many contracts were awarded in each of the following areas?**" The number of bids received for each type of operating function (e.g., call centers, service providers, brokers, etc.) was requested. Results are provided in Table A-16 and illustrated graphically in Figure A-17.

On average, systems reported receiving 2–4 bids per contract award made. The average number of bids received per award is highest for contracted brokerage operations (4.25). An average of 2.88 bids per award are received for call center contracts, and 2.65 bids per award are received for turnkey contracts. The ratio of bids to awards was lowest for service provider contracts, only 1.72 bids per award. This could reflect the fact that in many systems make multiple service provider awards.

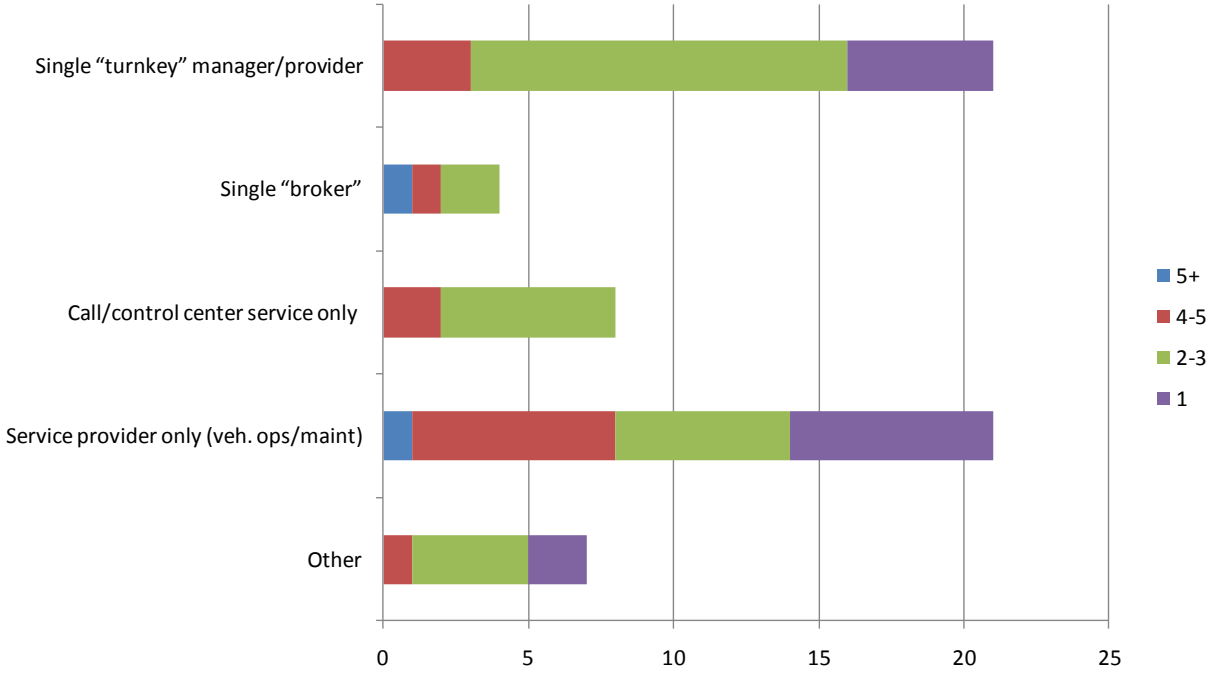
Table A-16. Bids per Award for Various Contracted Paratransit Functions

Contract Type	Avg. ratio of bid/awards for all responses
Single "turnkey" manager/provider	2.65
Single "broker"	4.25
Call/control center service only	2.88
Service provider only (veh. ops/maint)	1.72
Other	2.0

Figure A-17 provides additional detail on the number of bids per award. Turnkey contracts appear to be either very competitive or not very competitive. Five of the 21 systems with turnkey operations reported receiving only one bid, and another 13 received 2-3 bids. Only 3 of the 21 systems received more than 3 bids.

A relatively high proportion of systems (7 of 21) also only had one bid per award for service provider contracts. Again, this might be due to the fact that multiple service provider contracts are awarded, but it still indicates a possible lack of competition.

Figure A-17. Distribution of Bids/Award for Various Contracted Paratransit Functions



Broker contracts appear to be the most competitive, although the sample of only four systems reporting this information is quite small. And call center contracts are somewhat competitive, with 6 of the 8 systems indicating that they received 2–3 bids per award and the other two indicating that 4–5 bids per award were received.

Performance Bond Requirements

One possible factor in the level of competition is requirements for performance bonds. On larger contracts in particular, some companies may not be able to obtain bonds, or the cost of the bonds may affect their involvement in the procurement. To get a better idea of current bonding requirements, respondents were asked "**For each type of service procured, please indicate whether your most recent procurement of ADA paratransit services required performance bonds.**" Responses are shown in Table A-17.

Table A-17. Percent of Systems Requiring Performance Bonds (by Operations Function)

Contract Type	Yes	No
Single "turnkey" manager/provider	58%	42%
Single "broker"	43%	57%
Call/control center service only	30%	70%
Service provider only (veh. ops/maint)	33%	67%
Other	38%	63%

As shown, 58% of systems indicated that they require performance bonds for turnkey operations. Somewhat fewer (43%) require bonds for broker contracts. And performance bonds are only required 30-33% of the time for call center or service provider contracts. The higher rate of bonding for turnkey

operations, and to some extent broker operations, could be related to the fact that in these designs the contractors have a higher degree of responsibility for the overall success of the operation.

Facilities

One common way for transit agencies to reduce cost, and also increase competition when procuring ADA paratransit service, is to provide the facility. To determine how common this cost-saving measure was used, respondents were asked "**For each type of service procured, please indicate whether the facility used by the contractor was owned/leased by the contractor, or owned/leased by the transit agency.**" Responses are provided in Table A-18. In turnkey operations, ownership of the facility was split 50/50 with half of the systems indicating that the transit agency provided the facility and half saying the contractor provided the facility. Three out of four of the contracted broker operations that answered this question indicated that the transit agency owned the facility and only one said the contractor provided the facility.

Table A-18. Ownership of Facilities by Operating Function

Contract Type	Facility Owned/Leased by Transit Agency	Facility Owned by Contractor(s)
Single "turnkey" manager/provider	13	13
Single "broker"	3	1
Call/control center service only	8	5
Service provider only (veh. ops/maint)	12	18
Other	3	4

Where contracted call centers were used, the majority operated in transit agency facilities (8 out of 13). Most service providers performing only vehicle operations and maintenance provided their own facilities (18 out of 30).

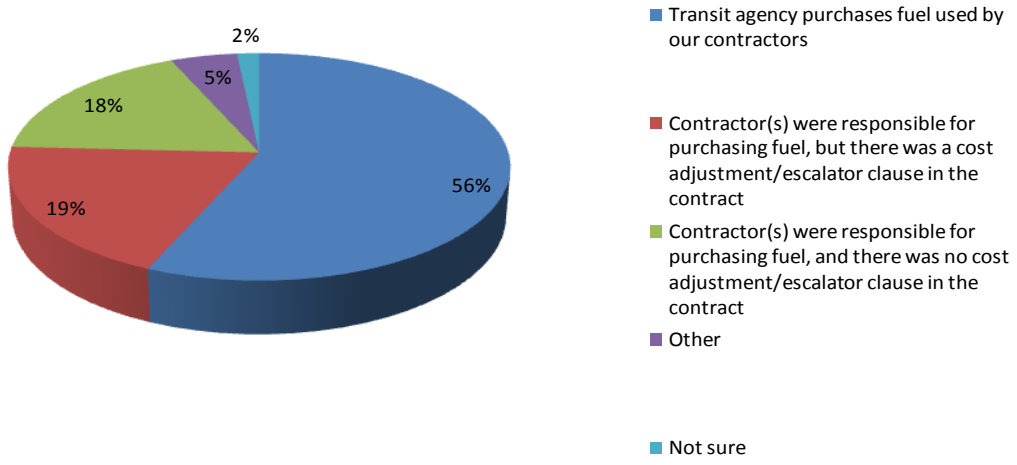
Purchasing Fuel

Another way to lower cost in contracted operations is to have the public agency purchase fuel. Savings can be achieved from bulk purchasing as well as from lowered taxes. Having the transit agency purchase the fuel also eliminates one of the most volatile cost components in contracted operations.

If the transit agency does not purchase the fuel, special "adjustment" or "escalator" clauses can be added to the RFP and contract to minimize the need for contractors to build in conservative estimates and contingencies.

To get a sense of how many systems were using one of these approaches, respondents were asked "**How was the purchase of fuel handled in your most recent procurement of ADA paratransit services?**" Results are shown in Figure A-18. In 56% of all systems that contract out for service, fuel is purchased by the transit agency. In another 19% of systems, escalator/adjustment clauses were included in the contract to allow bidders to more accurately estimate costs. Eighteen percent (18%) of systems indicated that contractors are responsible for the purchase of fuel and that no adjustment/escalator clauses are used. Five percent (5%) of systems said they handled fuel costs in a different way, and 2% said they were "Not sure."

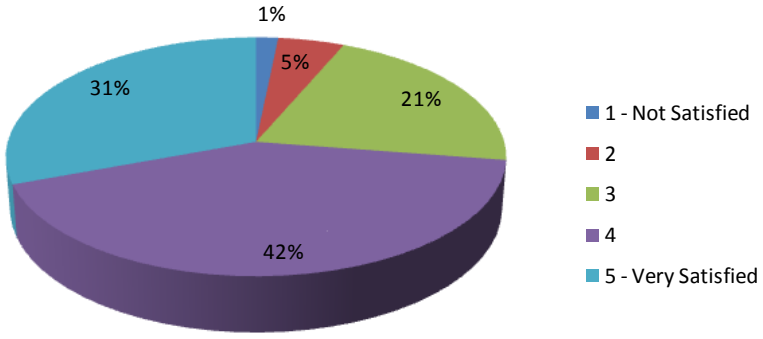
Figure A-18. Approaches to Purchasing Fuel in Contracted Operations



Level of Satisfaction with Procurement of Services

To get an overall sense of the level of satisfaction with the procurement of ADA paratransit services, respondents were asked "**On a scale of 1 to 5, with 1 being Not Satisfied and 5 being Very Satisfied, how satisfied were you with your most recent procurement of ADA paratransit services in terms of obtaining cost-efficient and quality service?**" Responses are shown in Figure A-19. Thirty-one percent (31%) of systems indicated they were very satisfied with their procurement processes. Another 42% said they were largely satisfied (a "4" rating). Twenty-one percent (21%) said they were somewhat satisfied (a "3" rating). Only 5% indicated that they were somewhat dissatisfied, and only 1% said they were not satisfied.

Figure A-19. Transit Agency Satisfaction with ADA Paratransit Procurement Processes



62 Responses Received

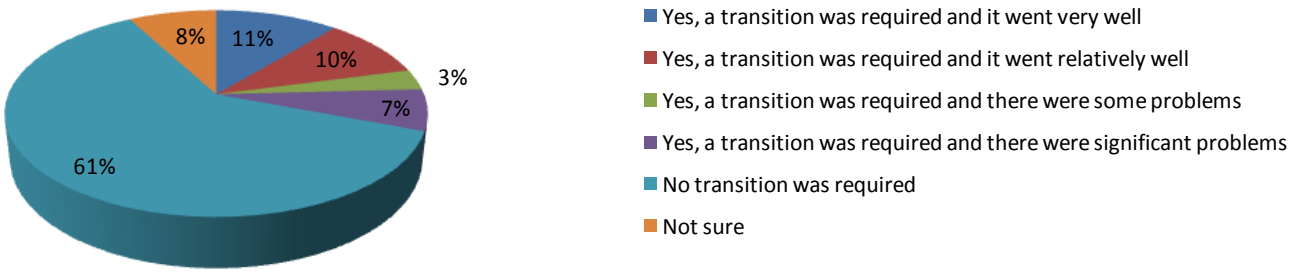
Transition Issues

Changing contractors can result in service disruptions. Difficult transitions have been reported across the country over the last several years. To determine the latest experiences with transitions, respondents were asked "**Please indicate if a "transition" to new contractor(s) was required**

as a result of your most recent procurement of ADA paratransit services and, if so, how smoothly the transition was made." Responses are shown in Figure A-20.

Sixty-one percent (61%) of systems indicated that a transition to a new contractor was not required in their most recent procurement. This suggests that transitions are experienced about 39% of the time when services are rebid. Eleven percent of systems said a transition was required and it went very well. This represented 28% of all required transitions (0.11/0.39). Ten percent of systems said that a transition was required and that it went relatively well—26% of all transitions. Three percent (3%) said that there were some problems with the transition—7% of all required transitions. Seven percent (7%) indicated significant transition issues—18% of all transitions. And 8% of respondents indicated "Not sure."

Figure A-20. Recent Contract Transition Experiences

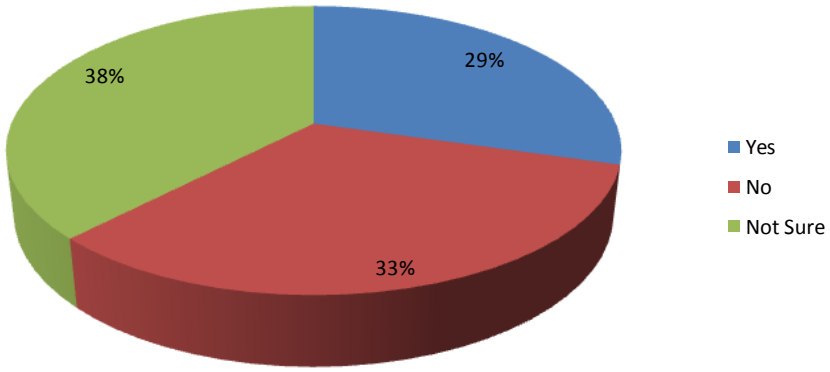


62 Responses Received

Effective Procurement Procedures

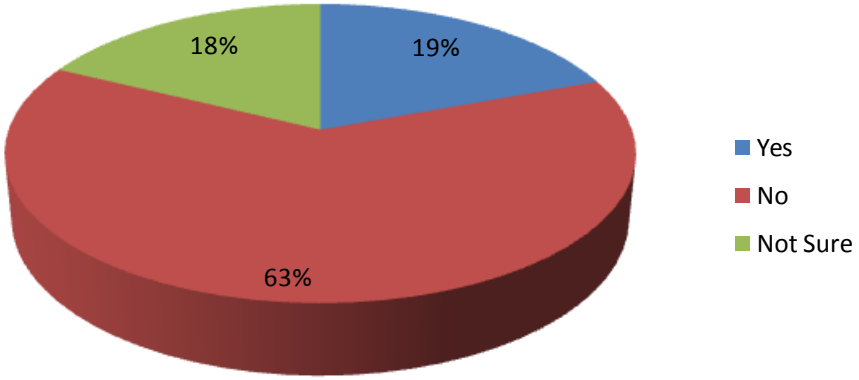
Respondents were asked "**Are there procurement procedures or requirements that you feel were particularly effective in helping you obtain more cost-effective and quality service and/or make a smooth transition? If yes, please indicate which ones and why.**" Twenty-nine percent (29%) of respondents said "Yes" (see Figure A-21) and 18 provided explanations.

Figure A-21. Specific Procurement Procedures Found To Be Effective?



Finally, respondents were asked "**Is your transit agency currently reviewing the procurement process used to obtain ADA paratransit service and considering changes?**" Nineteen percent (19%) of systems said "Yes," the agency was reviewing the process and considering changes (see Figure A-22).

Figure A-22. Considering Changes to the Procurement Process?



In-House Operation of Service

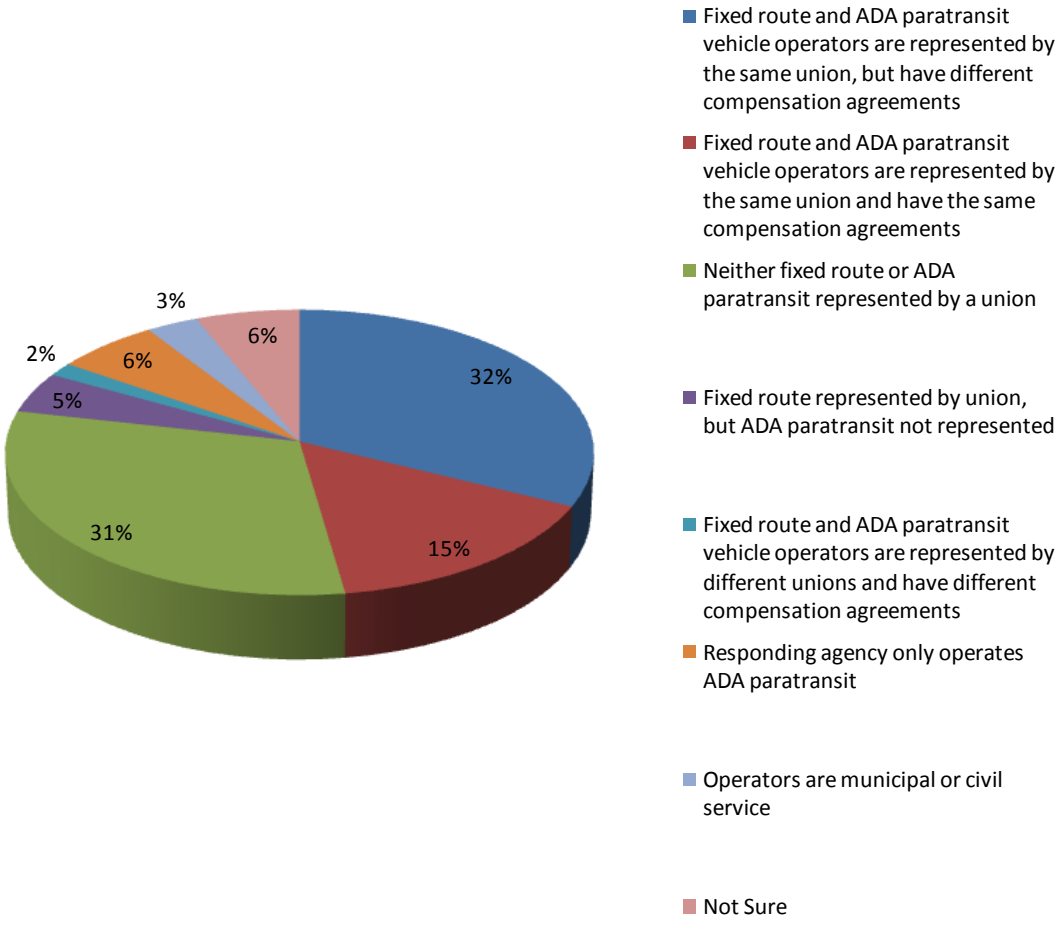
Respondents that indicated that they have completely in-house service were asked a different set of questions about approaches to possible cost savings under this design.

Workforce Issues

These respondents were first asked about workforce representation and compensation agreements under current representation. The question was "**Which of the following statements best describes the fixed route and ADA paratransit vehicle operator workforces at your transit agency?**" Responses are shown in Figure A-23.

Thirty-one percent (31%) of systems with full in-house operation indicated that neither fixed route or ADA paratransit operators are represented by unions. Thirty-two percent (32%) of systems indicated that fixed route and ADA paratransit operators are represented by the same union, but that there were different compensation agreements for each workforce. Fifteen percent (15%) indicated that fixed route and ADA paratransit operators were represented by the same union and had similar compensation agreements. Only 2% indicated that fixed route and ADA paratransit operators were represented by different unions with different compensation agreements. Five percent (5%) indicated that fixed route operators were represented, but that ADA paratransit operators were not. Three percent (3%) indicated that operators were municipal or civil service employees (presumably represented). Six percent (6%) said they only provide ADA paratransit service and did not indicate whether paratransit operators were represented, and 6% said "Not sure."

Figure A-23. In-House Service Workforce Arrangements

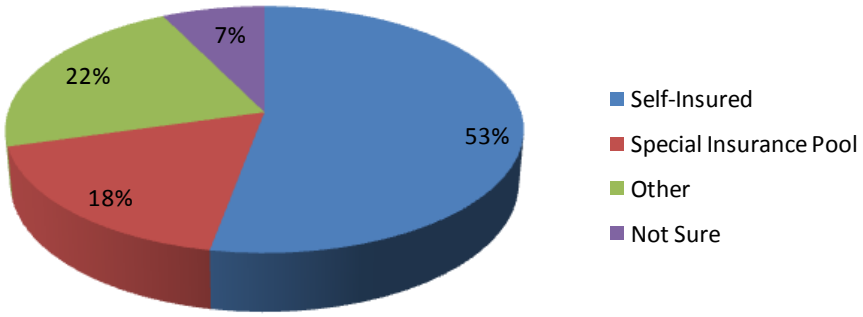


Insurance Costs

Insurance is also a significant cost in paratransit services. Respondents were presented with common ways for lowering insurance costs and were asked "**Please indicate if your transit agency has used any of the following approaches to manage ADA paratransit insurance costs.**" Results are shown in Figure A-24.

Fifty-three percent (53%) of systems with in-house operations indicated that they are self-insured. Another 18% said they had joined or formed an insurance pool to lower premiums. Twenty-two percent (22%) said other actions had been taken, and 7% were "Not sure."

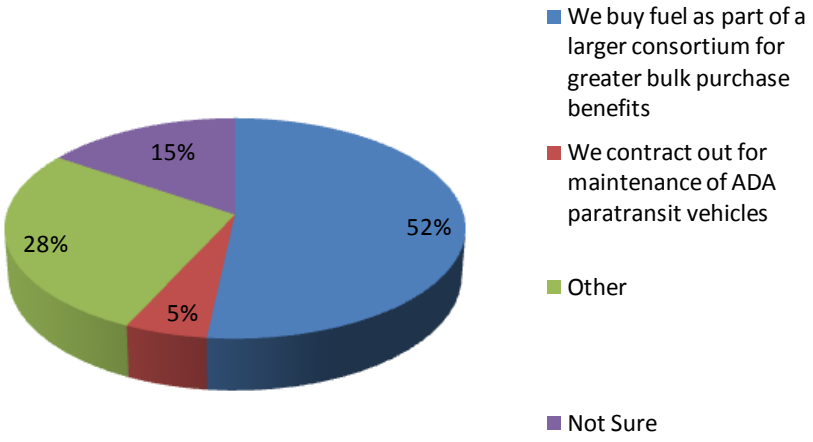
Figure A-24. Efforts to Lower Insurance Costs in In-House Operations



Fuel and Maintenance

Respondents were also presented with other approaches sometimes taken to save on fuel and maintenance and were asked "**Please indicate if your transit agency has used any of the following approaches to manage fuel and/or maintenance costs of your ADA paratransit service.**" Responses are presented in Figure A-25.

Figure A-25. Approaches to Fuel Purchases and Vehicle Maintenance



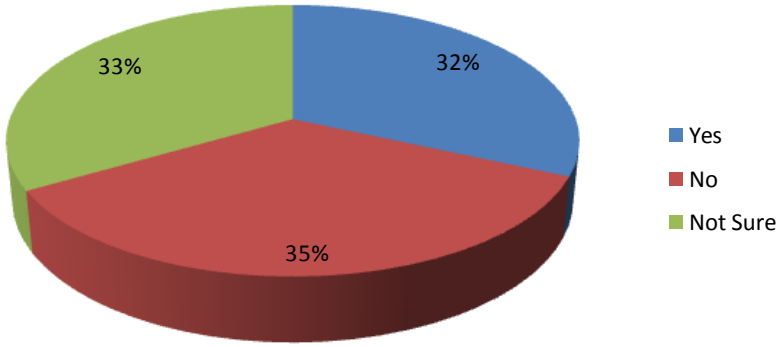
Fifty-two percent (52%) of systems indicated that they buy fuel through a consortium to take advantage of bulk purchase pricing. Only 5% of systems indicated that they contract out for maintenance. Twenty-eight percent (28%) indicated "Other" efforts related to fuel or maintenance, and 15% indicated "Not sure."

Several additional comments were provided. Of particular interest are comments that: (1) suggest adding extended warrantees to vehicle purchases to allow capital funding to be used for major repairs; and (2) switching to CNG and buying fuel directly from a utility. Given the likely future supply of natural gas and expected lower prices, this latter effort may be worth the added cost of CNG vehicles.

Other Effective Efforts

Finally, systems with in-house operations were asked "**Have you had particularly good success with any cost saving measures in the operation of your ADA paratransit service? If so, please describe.**" As shown in Figure A-26, 32% of systems indicated other effective efforts, 35% said "No," and 33% said "Not sure."

Figure A-26. Other Effective Efforts by In-House Operations to Lower Costs?



Respondents who indicated that other efforts had been made and were effective were asked to provide an explanation. Eighteen systems provided explanations, which are shown in Table A-20.

Two of the systems made comments that suggest that in-house maintenance (presumably if good) can help save costs. This runs contrary to the common belief that contracting out for maintenance is more cost-effective. One system also pointed out the importance of replacing vehicles in a timely manner (to avoid excessive repair costs and service disruptions is implied).

Table A-19. Other Effective Cost Saving Efforts by Systems with In-House Operations

Transit Agency	Comment
Bi State Development Agency dba Metro (St. Louis, MO)	Outstanding maintenance process, and scheduling dispatch has reduced costs.
Cache Valley Transit District	We do not contract for our services, which has given us the opportunity to manage things in house. This has allowed us to make changes and decisions at the local level that provide us with increased efficiency and cost savings.
Charleston Area Regional Transportation Authority (CARTA)	$0.50 disabled fare on fixed routes, work with DisAbility Resource Center and Association for Blind and Visually Impaired to educate on fixed services.
Everett Transit	As a result of entering into an agreement with a local county service, we have reduced customer transfers. This has saved us time that was previously spent waiting for the other system to show up. We are also looking at a drop and go for transferring customers who can be left alone while waiting for a transfer.
Fort Smith Transit	We do in-house repairs on our ADA paratransit vehicles.
Golden Empire Transit District	In-house eligibility assessments.
Greater Lynchburg Transit Co.	Replacing vehicles as soon as their life cycles have passed has cut maintenance costs significantly, also moving to gasoline engines from diesel.
Greely Evans Transit	Bulk purchase of fuel.
Hill Country Transit District (San Saba, TX)	We maintain vehicles in-house with a full maintenance program – only major work or warranty work generally goes outside.
Housatonic Area Regional Transit District	Creative runcutting of ADA paratransit runs with basic dial-a-ride services to minimize deadhead.
Knoxville Area Transit	Limited service area to 3/4 –mile rule, improved fixed routes, charge full 2x fixed route cost.
Lewiston Transit	Maintenance cost lower in-house than previously contracted.
Lift Line, Inc. (Rochester, NY)	CAD/AVL has provided more insight on improving our operations and will assist us with cost saving measures in the future.
Metropolitan Atlanta Rapid Transit Authority (MARTA)	Allowing paratransit-eligible customers to ride fixed route free has defrayed cost and allowed capacity on paratransit.
Servicio de Transportacion Paratransito Puerta a Puerta (PR)	By having its own workshop to consumption of fuel has maintained control over it. Under administration of Municipality of Humacao.
Shoreline Metro (Sheboygan, WI)	Yes, bringing the service back in house in 2007 has decreased our per-ride cost dramatically over the years, even though we continue to see a slight increase in costs each year.
SunLine Transit Agency (Thousand Palms, CA)	Our own fuel manufacturing saves buying from outside vendors.
Toledo Area Regional Transit Authority	Increased productivity by grouping riders who have a common destination.

APPENDIX

B

Inclusive Services Survey and Responses

APPENDIX B:
Inclusive Services Survey and Responses

In addition to the survey of ADA complementary paratransit services contained in Appendix A, a second nationwide survey was conducted. This survey requested information about public transit service designs that were more inclusive—better served all riders.

This second survey was administered in cooperation with a parallel study conducted for the Transit Cooperative Research Program (TCRP) Project B-40. Several questions related to the use of inclusive service designs were developed and included in the Project B-40 survey.

This appendix includes:

- A copy of the questions on inclusive service designs from the TCRP Project B-40 survey
- A list of transit agencies that responded to the TCRP Project B-40 survey
- A summary of the responses to the questions on inclusive service designs

Inclusive Services Survey

(The following questions were included in the survey conducted as part of TCRP Project B-40.)

34. Does your transit agency provide ADA paratransit "feeder" service to fixed route bus stops/rail stations (rather than direct service to the destination) for some trips?

☐ Yes, we provide ADA paratransit rides to fixed route bus stops/rail stations rather than the final destination, **but only if the riders request it**
☐ Yes, we determine if ADA paratransit eligible riders can complete trips if we get them to nearby fixed route bus stops/rail stations, and **we make the decision** to offer this "feeder" service rather than direct service to the destination
☐ No, we currently do not provide paratransit-to-fixed-route feeder service *(skip to question 36)*
☐ Not sure *(skip to question 36)*

35. On a scale of 1-5, with 1 being "not effective" and 5 being "very effective," how effective has paratransit-to-fixed-route feeder service been in encouraging and facilitating use of the fixed route transit system?

☐ 5- Very Effective
☐ 4
☐ 3
☐ 2
☐ 1- Not Effective
☐ Not sure
☐ Not applicable (We do not provide feeder service)

36. Does your transit agency currently provide/support local community bus programs that are designed to better service neighborhoods and reduce walking distances to bus stops/rail stations?

☐ Yes, we operate local community bus routes as part of our fixed route transit system
☐ Yes, we provide support (e.g., vehicles, operating support) to local communities, which operate the local bus routes
☐ No, we currently do not operate or support the operation of local community bus services *(skip to question 40)*
☐ Not sure *(skip to question 40)*

37. How many local community bus routes do you operate as part of your fixed route transit system? _____

38. If you provide support (e.g., vehicles, operating support) to local communities which operate local bus routes, please indicate the number of communities that you support. _____

39. On a scale of 1-5, with 1 being "not effective" and 5 being "very effective," how effective have these local community bus services been in service riders with disabilities who might not otherwise be able to use other fixed route transit services?

Fixed Route Bus Programs

- ☐ 5- Very Effective
- ☐ 4
- ☐ 3
- ☐ 2
- ☐ 1- Not Effective
- ☐ Not sure
- ☐ Not applicable (We do not operate or support local community bus services)

40. Does your transit agency currently provide/support general public dial-a-ride programs (beyond ADA paratransit)?

General Public Dial-A-Ride Programs

- ☐ Yes, we operate general public dial-a-ride program(s) in areas not served by fixed route transit and ADA paratransit
- ☐ Yes, we operate general public dial-a-ride program(s) after hours or at times when ADA paratransit service is not provided
- ☐ Yes, we provide support (e.g., vehicles, operating support) to local communities, which operate local general public dial-a-ride services
- ☐ No, we currently do not operate or support the operation of general public dial-a-ride services (beyond ADA paratransit) *(skip to question 43)*
- ☐ Not sure *(skip to question 43)*

41. How many general public dial-a-ride programs are operated by your agency or by local communities which you support? _____

42. On a scale of 1-5, with 1 being "not effective" and 5 being "very effective," how effective have these general public dial-a-ride services been in helping to meet the travel needs of persons with disabilities in your area?

General Public Dial-A-Ride Programs

- ☐ 5- Very Effective
- ☐ 4
- ☐ 3
- ☐ 2
- ☐ 1- Not Effective
- ☐ Not sure
- ☐ Not applicable (We do not operate or support general public dial-a-ride services)

43. Does your transit agency currently operate or support the operation of any flex-route (e.g., route deviation) services?

Flex-Route Services

- ☐ Yes, some of the routes our transit agency operates incorporate flex-route features

☐ Yes, we provide support to local communities, which operate routes that incorporate flex-route features
☐ No, we currently do not operate or support the operation of any routes that incorporate flex-route features *(skip to question 47)*
☐ Not sure *(skip to question 47)*

44. If you previously indicated that your fixed routes incorporate flex-route features, please indicate the number below.

Number of routes that incorporate flex-route features: _____
Number of standard (non-flex) fixed routes: _____

45. If you previously indicated that your agency provides support to local communities, which operate routes that incorporate flex-route features, please indicate that number below.

Number of communities: _____

46. On a scale of 1-5, with 1 being "not effective" and 5 being "very effective," how effective have these flex-route services been in helping to meet the travel needs of persons with disabilities?

Flex-Route Services
☐ 5- Very Effective
☐ 4
☐ 3
☐ 2
☐ 1- Not Effective
☐ Not sure
☐ Not applicable (We do not operate or support flex-route services)

47. Does your transit agency use or support any other efforts that are designed to encourage or facilitate increased use of fixed route transit services by persons with disabilities? If so, please describe.

If you have program descriptions, brochures, or other material that you feel would be helpful to us in understanding successful efforts made by your transit agency to promote or encourage fixed route use by persons with disabilities, please send it to: ***FRusesurvey@gmail.com***

Table B-1. Transit Agencies that Responded to the Inclusive Services Survey

Transit Agency/System	City	State
Agency for Community Transit	Granite City	IL
Anaheim Resort Transportation	Anaheim	CA
Ann Arbor Transportation Authority	Ann Arbor	MI
Antelope Valley Transit Agency	Lancsater	CA
Arlington Transit (ART)	Arlington	VA
Ashland Bus System	Ashland	KY
ATRANs	Alexandria	LA
Augusta Public Transit	Augusta	GA
Bristol Tennessee Transit System	Bristol	TN
Broward County Transit	Fort Lauderdale	FL
C TRAN	Elmira	NY
Camarillo Area Transit	Camarillo	CA
Cape Cod Regional Transit Authority	Hyannis	MA
Capital Metropolitan Transportation Authority	Austin	TX
Casper Area Transportation Coalition, Inc	Casper	WY
CDTA	Albany	NY
Central Maryland Regional Transit	Laurel	MD
Central Oklahoma Transportation and Parking Authority	Oklahoma City	OK
Charlotte Area Transit System	Charlotte	NC
Charlottesville Area Transit	Charlottesville	VA
Chicago Transit Authority	Chicago	IL
Chicago Transit Authority	Chicago	IL
Chula Vista Transit	Chula Vista	CA
Cities Area Transit	Grand Forks	ND
City of Annapolis Department of Transportation	Annapolis	MD
City of Arlington Handitran	Arlington	TX
City of Commerce	Commerce	CA
City of El Paso-Mass Transit Department-Sun Metro	El Paso	TX
City of Excelsior Springs	Excelsior Springs	MO
City of Fairfax CUE Bus	Fairfax	VA
City of Glendale AZ Transit	Glendale	AZ
City of Harrisonburg Department of Public Transportation	Harrisonburg	VA
City of Houston	Houston	MO
City of Lamar T.A.T.S.	Lamar	MO
City of Las Cruces/RoadRUNNER Transit	Las Cruces	NM
City of Lompoc	Lompoc	CA
City of Los Angeles Department of Transportation	Los Angeles	CA
City of Mesquite	Mesquite	TX
City of Niles Dial-A-Ride	Niles	MI
City of Paso Robles (Paso Express)	Paso Robles	CA
City of San Luis Obispo Transit/SLO Transit	San Luis Obispo	CA
City of Tracy	Tracy	CA
City of Visalia/Visalia Transit	Visalia	CA
Cleveland Area Rapid Transit (CART)	Norman	OK
Clinton Municipal Transit Administration	Clinton	IA
CNY Centro, Inc.	Syracuse	NY
Collier Area Transit	Naples	FL
Columbia Transit	Columbia	MO
Community Action of Southern Kentucky dba GO bg transit	Bowling Green	KY

Transit Agency/System	City	State
Community Transit	Everett	WA
Corpus Christi Regional Transportation Authority	Corpus Christi	TX
Corvallis Transit System	Corvallis	OR
Dallas Area Rapid Transit	Dallas	TX
Danville Transit System	Danville	VA
Davenport Citibus	Davenport	IA
Duluth Transit Authority	Duluth	MN
Dunklin County Transit Service, Inc.	Malden	MO
East Alabama Regional Planning and Development Commission	Anniston	AL
Eau Claire Transit	Eau Claire	WI
Fayette Area Coordinated Transportation	Lemont Furnace	PA
Fort Worth Transportation Authority	Fort Worth	TX
Fresno Area Express	Fresno	CA
Gary Public Transportation Corporation	Gary	IN
Gold Coast Transit	Oxnard	CA
Golden Empire Transit	Bakersfield	CA
Greater Glens Falls Transit	Queensbury	NY
Harbor Transit Multi-Modal Transportation System	Grand Haven	MI
HART	Tampa	FL
Hernando County Board of County Commissioners	Brooksville	FL
Housatonic Area Regional Transit	Danbury	CT
IndyGo	Indianapolis	IN
Interciity Transit	Olympia	WA
Jacksonville Transit	Jacksonville	NC
Jacksonville Transportation Authority	Jacksonville	FL
Jonesboro Economical Transit System	Jonesboro	AR
King County Metro Transit	Seattle	WA
Lafayette, LA Transit System	Lafayette	LA
Laketran	Painesville	OH
Lane Transit District	Eugene	OR
Lextran	Lexington	KY
Livermore Amador Valley Transit Authority	Livermore	CA
Long Beach Transit	Long Beach	CA
Longview Transit	Longview	TX
Macatawa Area Express Transportation Authority	Holland	MI
Macon-Bibb County Transit Authority	Macon	GA
Manchester Transit Authority	Manchester	NH
Marshalltown Municipal Transit	Marshalltown	IA
Maryland Transist Administration	Baltimore	MD
METRO RTA	Akron	OH
Metro Transit	Omaha	NE
Metropolitan Council	St. Paul	MN
Metropolitan Transit Authority of Harris County	Houston	TX
Metropolitan Transit System	San Diego	CA
Metropolitan Tulsa Transit Authority	Tulsa	OK
Miami-Dade Transit	Miami	FL
Montachusett Regional Transit Authority	Fitchburg	MA
Municipality of Cataño	Cataño	PR
Municipality of Hatillo	Hatillo	PR
Municipality of Hormigueros	Hormigueros	PR
Nashua Transit System	Nashua	NH
Nashville Metropolitan Transit Authority	Nashville	TN

Transit Agency/System	City	State
Niagara Frontier Transportation Authority	Buffalo	NY
North Township Trustee - Dial-A-Ride	Hammond	IN
Northwest Indiana Regional Bus Authority	Portage	IN
Okaloosa County BCC	Ft Walton Beach	FL
Omnitrans	San Bernardino	CA
Ozark Regional Transit	Springdale	AR
PARTA - Portage Area Regional Transportation Authority	Kent	OH
Perry County Transit	New Lexington	OH
Petaluma Transit	Petaluma	CA
Pierce Transit	Lakewood	WA
Port Arthur Transit	Port Arthur	TX
Port Authority Trans-Hudson Corporation (PATH)	Jersey City	NJ
Razorback Transit at The University of Arkansas	Fayetteville	AR
Region 2 Transit System	Mason City	IA
Regional Transportation Program	Portland	ME
Richland County Transit Board	Mansfield	OH
Rio Metro Regional Transit District	Albuquerque	NM
RTC of Southern Nevada	Las Vegas	NV
RTS	Gainesville	FL
Sacramento Regional Transit District	Sacramento	CA
Salem Keizer Transit	Salem	OR
San Francisco Municipal Transportation Agency	San Francisco	CA
San Joaquin Transit District (RTD)	Stockton	CA
San Mateo County Transit District	San Carlos	CA
Shoreline Metro	Sheboygan	WI
SORTA	Cincinnati	OH
South Portland Bus Service	South Portland	ME
Space Coast Area Transit	Cocoa	FL
Spartanburg Area Regional Transit Agency	Spartanburg	SC
Spartanburg County Transportation Services Bureau	Spartanburg	SC
St. Cloud Metro Bus	St. Cloud	MN
Sun Tran	Tucson	AZ
SunLine Transit Agency	Thousand Palms	CA
Tar River Transit	Rocky Mount	NC
TARC	Louisville	KY
The Belle Urban System /DART	Racine	WI
The City of Grand Prairie / The Grand Connection	Grand Prairie	TX
The Jule	Dubuque	IA
Toledo Area Regional Transit Authority	Toledo	OH
Tompkins Consolidated Area Transit, Inc. (TCAT, Inc.)	Ithaca	NY
Town of Cary	Cary	NC
Town of Oro Valley - Transit Services Division	Oro Valley	AZ
Transit Authority of Northern Kentucky	Ft. Wright	KY
Transit Authority of River City	Louisville	KY
TransPorte, City of La Porte	La Porte	IN
Triangle Transit on behalf of Durham Area Transit Authority	Durham	NC
TriMet	Portland	OR
Tuscaloosa Transit Authority	Tuscaloosa	AL
Ulster County Area Transit	Kingston	NY
Utah Transit Authority	SLC	UT
Valley Regional Transit	Meridian	ID
VOTRAN	South Daytona	FL

Transit Agency/System	City	State
Washington Metropolitan Area Transit Authority	Washington	DC
Westchester County Bee-Line System	Mount Vernon	NY
Whatcom Transportation Authority	Bellingham	WA
Wichita Transit	Wichita	KS
Winchester Transit	Winchester	VA

Summary of Responses to the Inclusive Services Survey

A survey of public transportation agencies was conducted, in cooperation with the Transit Cooperative Research Program (TCRP), to identify uses of inclusive service designs. As part of a broader survey on promoting the use of fixed route transit services, several questions were included that asked agencies about their uses of:

- Paratransit-to-fixed-route feeder service
- Community fixed route bus programs
- General public dial-a-ride services
- Flex-route services

The goal of the survey was to identify transit agencies using these inclusive service designs for consideration as case studies.

The survey was distributed in March 2012 to 674 public transit agencies listed in the 2010 National Transit Database (NTD), as well as to Section 5311 Program Administrators in each US State and Territory. Section 5311 Program Administrators were asked to forward the survey to rural transit agencies in their states. Responses were received from 163 public transit agencies. Following is a summary of the responses to questions about inclusive service designs.

Paratransit-to-Fixed-Route Feeder Services

Paratransit-to-fixed-route feeder services can facilitate greater use of mainline public transit services. Riders who are not able to get to fixed route transit stops or stations can be given rides to nearby stops to enable them to then complete trips on fixed route.

Survey respondents were asked "Does your transit agency provide ADA paratransit "feeder" service to fixed route bus stops/rail stations (rather than direct service to the destination) for some trips?" The question also asked respondents to indicate whether feeder service was provided only at a rider's request, or if the transit agency made the decision whether to offer feeder service rather than paratransit service direct to the destination.

Table B-2 shows responses to this question. A total of 129 systems responded and 47 indicated that they provide some form of feeder service. Twenty-seven (27) systems indicated that they provide feeder service at the rider's request. Twenty (20) indicated that they make the decision whether to provide feeder service or direct paratransit service.

Respondents who indicated that they provide feeder service were then asked, "On a scale of 1-5, with 1 being "not effective" and 5 being "very effective," how effective has paratransit-to-fixed-route feeder service been in encouraging and facilitating use of the fixed route transit system?" As shown in Figure 1, respondents rated feeder services as only moderately effective.

Table B-2. Reported Provision of Paratransit-to-Fixed-Route Feeder Service

Does your transit agency provide ADA paratransit "feeder" service to fixed route bus stops/rail stations for some trips?	Total	% of Responses
Yes, we determine if ADA paratransit eligible riders can complete trips if we get them to nearby fixed route bus stops/rail stations, and **we make the decision** to offer this "feeder" service rather than direct service to the destination.	20	16%
Yes, we provide ADA paratransit rides to fixed route bus stops/rail stations rather than final destination, **but only if the riders request it**.	27	21%
No, we currently do not provide paratransit-to-fixed route feeder service.	77	60%
Not sure	4	5%
Total	129	

Figure B-1. Respondent Ratings of the Effectiveness of Feeder Services

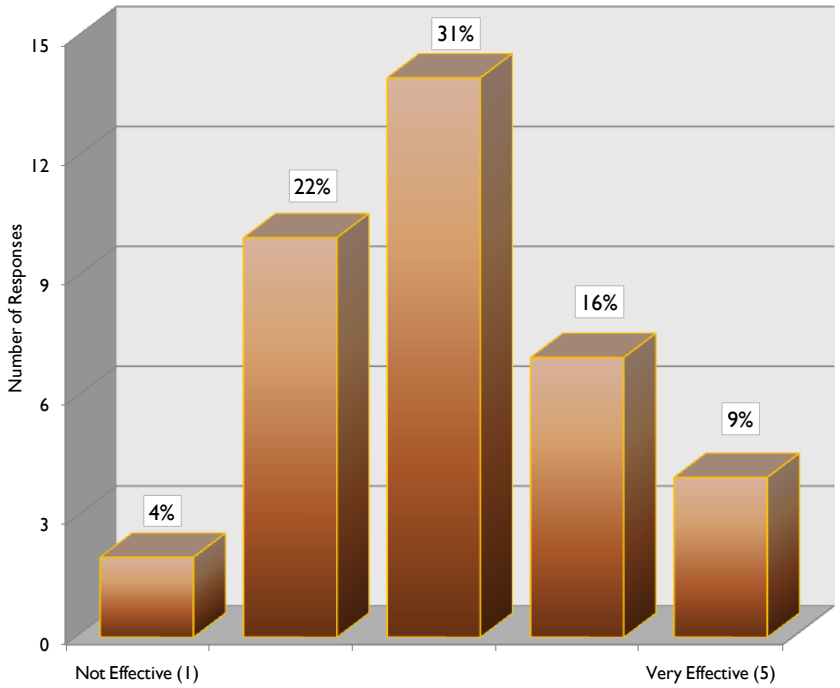


Table B-3 provides a detailed listing of all 47 transit agencies that indicated they provided feeder service. It is interesting to note that agencies reported similar effectiveness for programs that allowed riders to choose feeder service and programs where the transit agency makes the decision. Five systems that allow riders to request feeder service reported the service as a "4" or "5" in terms of effectiveness. Six systems that make the decision for the rider reported effectiveness of "4" or "5."

Table B-3. Listing of Transit Systems Providing Feeder Service

Agency	Feeder Service Provided		Effectiveness Rating (1-5) 1 - Not Effective 5 - Very Effective
	Agency Decision	Rider Request	
Agency for Community Transit	x		4
Antelope Valley Transit Agency		x	1- Not Effective
Arlington Transit (ART)		x	1- Not Effective
Bristol Tennessee Transit System		x	2
Capital District Transportation Authority	x		4
Capital Metropolitan Transportation Authority		x	Not sure
Charlotte Area Transit System	x		2
Charlottesville Area Transit		x	2
City of Lompoc		x	5- Very Effective
Cleveland Area Rapid Transit (CART)		x	3
CNY Centro, Inc.	x		2
Community Transit	x		4
County of Volusia VOTRAN		x	
Dallas Area Rapid Transit	x		3
Duluth Transit Authority	x		2
Golden Empire Transit		x	Not sure
Hernando County Board of County Commissioners		x	2
Intercity Transit	x		3
Jacksonville Transit		x	3
Lane Transit District	x		3
Macatawa Area Express Transportation Authority		x	3
Manchester Transit Authority	x		4
METRO Regional Transit Authority		x	4
Metropolitan Transit Authority of Harris County		x	
Miami-Dade Transit		x	Not sure
Municipality of Hormigueros	x		2
Nashua Transit System		x	3
Ozark Regional Transit	x		3
PARTA - Portage Area Regional Transportation Authority	x		3
Pierce Transit	x		5- Very Effective
Port Authority Trans-Hudson Corporation (PATH)		x	3
Razorback Transit at The University of Arkansas	x		3
Richland County Transit Board		x	3
Sacramento Regional Transit District		x	Not sure
San Diego Metropolitan Transit System		x	Not sure
San Francisco Municipal Transportation Agency		x	Not sure
South Portland Bus Service	x		Not sure
Space Coast Area Transit		x	5- Very Effective
St. Cloud Metro Bus	x		2
Sun Tran		x	4
SunLine Transit Agency		x	4
Tar River Transit		x	3
The Belle Urban System /DART		x	Not sure
Tompkins Consolidated Area Transit, Inc. (TCAT, Inc.)	x		3
TriMet		x	2
Utah Transit Authority	x		5- Very Effective
Westchester County Bee-Line System	x		2

Programs reported to be very effective include:

- City of Lompoc, CA (riders make decision)
- Space Coast Area Transit, Daytona, FL (riders make decision)
- Pierce Transit, Tacoma, WA (agency makes decision)
- Utah Transit Authority, Salt Lake City, UT (agency makes decision)

Community Bus Programs

Community bus programs can provide fixed route transit that is more accessible to all riders. By traveling through neighborhoods and communities, rather than operating only on main streets, community bus services can minimize the walking distance to and from stops. To facilitate both local and regional travel, some systems link community bus services to regional bus routes.

Survey respondents were asked "Does your transit agency currently provide/support local community bus programs that are designed to better service neighborhoods and reduce walking distances to bus stops/rail stations?"

A total of 122 transit agencies responded to this question. As Table 3 shows, about one-third of all systems responding indicated providing some kind of community bus program. Thirty-five (35) systems operate community bus services directly, and 22 indicated that they provide support to local communities that operate the services. Nineteen systems indicated both operating and providing support to local communities.

Table B-4. Transit Agency Use of Community Bus Programs

Does your transit agency currently provide/support local community bus programs that are designed to better service neighborhoods and reduce walking distances to bus stops/rail station?	Total
Yes, we operate local community bus routes as part of our fixed route transit system	35
Yes, we provide support (e.g., vehicles, operating support) to local communities, which operate the local bus routes.	22
No, we currently do not operate or support the operation of local community bus services.	71
Not sure.	18
Total*	127

**19 agencies both operate and support community bus programs.*

Respondents that indicated that they provide community bus services in some way were then asked, "On a scale of 1–5, with 1 being "not effective" and 5 being "very effective," how effective have these local community bus services been in serving riders with disabilities who might not otherwise be able to use other fixed route services?" As shown in Figure B-2, respondents rated community bus services as quite effective. Twenty-five percent (25%) of systems rated these programs as very effective, and another 39% rated them a "4" on a scale from 1–5. No systems rated these programs as "not effective," and only 3% rated the effectiveness as a "1."

Figure B-2. Respondent Ratings of the Effectiveness of Community Bus Services

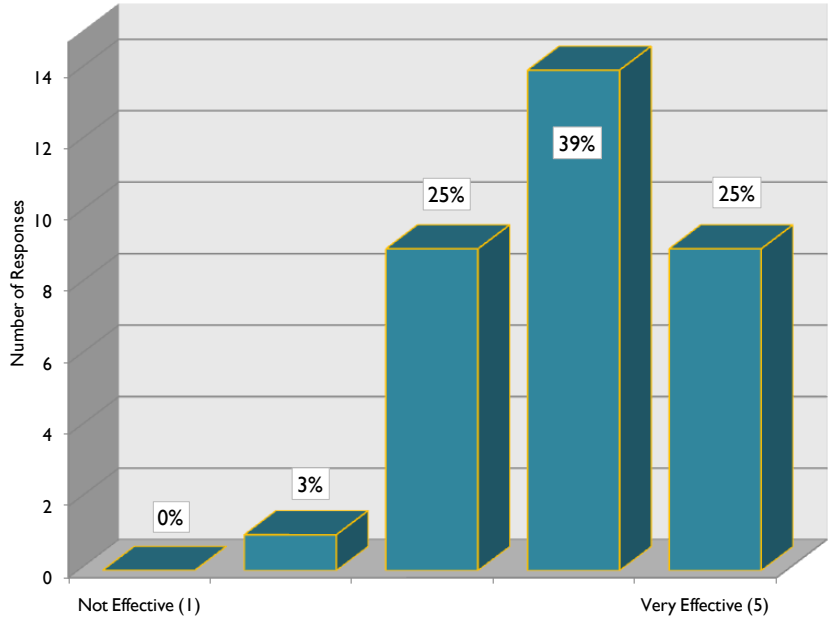


Table B-5 provides additional detail about community bus programs for the 38 systems that indicated using this service design. The table shows the number of services operated directly and the number operated by local communities with transit agency support. It also includes the effectiveness rating provided by each transit agency.

Note that some transit agencies indicated operating a large number of community bus routes. In some smaller and medium-sized systems, it appears that most if not all of the fixed routes are designed as community routes rather than as regional routes. For example, Intercity Transit in Olympia, WA indicated operating 21 community bus routes; Whatcom Transportation Authority in Bellingham, WA indicated 28 community bus routes; Long Beach Transit in Long Beach, CA indicated 48 community bus routes (36 directly operated and 12 supported through local communities). These systems appear to have designed their entire fixed route programs as community bus services rather than regional services.

Several larger transit agencies also appear to have developed significant community bus programs to supplement their regional services. For example, Dallas Area Rapid Transit operates 10 community bus routes and supports 10 others. Miami-Dade Transit

Table B-5. List of Transit Systems with Community Bus Programs

Agency	No. of community bus programs operated	No. of community bus programs supported	Effectiveness Rating (1-5) 1 - Not Effective 5 - Very Effective
Agency for Community Transit	19	20	3
Ann Arbor Transportation Authority	1	2	4
Arlington Transit (ART)	4		2
Charlotte Area Transit System	5		5- Very Effective
Charlottesville Area Transit	1	1	5- Very Effective
City of Commerce Municipal Busline	5		5- Very Effective
City of El Paso-Mass Transit Department-Sun Metro	2	2	5- Very Effective
City of Glendale AZ Transit	3		4
City of Lompoc	5	2	4
Clinton Municipal Transit Administration	7	1	4
Dallas Area Rapid Transit	10	10	3
Davenport Citibus	14	1	4
Duluth Transit Authority	8	2	4
Fayette Area Coordinated Transportation	9		3
HART	5		5- Very Effective
Intercity Transit	21		5- Very Effective
Jacksonville Transportation Authority	14	3	4
Livermore Amador Valley Transit Authority	3	3	4
Long Beach Transit	36	12	5- Very Effective
Manchester Transit Authority	12		3
Metro Transit	3	2	4
Metropolitan Transit System	16		3
Miami-Dade Transit	7	31	Not sure
Omnitrans	3		Not sure
PARTA - Portage Area Regional Transportation Authority	11	12	4
Port Arthur Transit	11	1	5- Very Effective
RTC of Southern Nevada	6		3
Sacramento Regional Transit District	3		3
Salem Keizer Transit		2	3
San Francisco Municipal Transportation Agency	9		
San Mateo County Transit District		2	4
South Portland Bus Service	3	1	3
Sun Tran		5	4
Town of Cary (NC)	7	2	4
Transit Authority of Northern Kentucky	24		Not sure
VOTRAN	2		4
Whatcom Transportation Authority	28		
Wichita Transit	6	3	5- Very Effective

operates 7 community bus routes and supports the operation of another 31. Sacramento (CA), San Francisco (MUNI), Charlotte (NC), Tampa (HART), Las Vegas (RTC), and Jacksonville (FL) all operate or support several local community bus programs.

General Public Dial-A-Ride (DAR) Programs

Another service design that meets the needs of all riders is general public dial-a-ride service. Rather than operating demand responsive or paratransit services only for some riders, a number of transit agencies operate demand-responsive (dial-a-ride) services that are open to the general public.

Survey respondents were asked "Does your transit agency currently provide/support general public dial-a-ride programs (beyond ADA paratransit)?" A total of 129 transit agencies responded to this question. As Table 5 shows, 34 systems said they operate general public DAR services in areas not covered by fixed route transit and ADA paratransit. Eleven (11) systems said they use general public DAR to provide services at times that ADA paratransit is not operating. Fourteen systems said they provide support to local communities for general public DAR programs. Note that many systems indicated doing more than one of these things and that there were a total of 44 systems that indicated using general public DAR in one way or another. Given that there were 85 systems that did not operated general public DAR and three that were not sure, this suggests that about one-third of all respondents indicated using some form of general public DAR.

Table B-6. Transit Agency Use of General Public Dial-A-Ride Services

Does your transit agency currently provide/support general public dial-a-ride programs (beyond ADA paratransit)?	Total
Yes, we operate general public dial-a-ride program(s) in areas not served by fixed route transit and ADA paratransit.	34
Yes, we operate general public dial-a-ride program(s) after hours or at times when ADA paratransit service is not provided.	11
Yes, we provide support (e.g., vehicles, operating support) to local communities, which oerate local general public dial-a-ride services.	14
No, we currently do not operate or support the operation of public dial-a-ride services (beyond ADA paratransit).	82
Not sure.	3
Total	133

**Some agencies answered yes to multiple choices.*

Respondents that indicated using general public DAR in some way were then asked to rate the effectiveness of the services in "helping to meet the travel needs of persons with disabilities." Figure B-3 shows that respondents rated general public DAR services as highly effective in meeting the needs of riders with disabilities. Forty-three percent (43%) of systems said these programs were "very effective." Another 25% of systems rated these programs as a "4" on a scale from 1-5.

Figure B-3. Respondent Ratings of the Effectiveness of General Public Dial-A-Ride Services

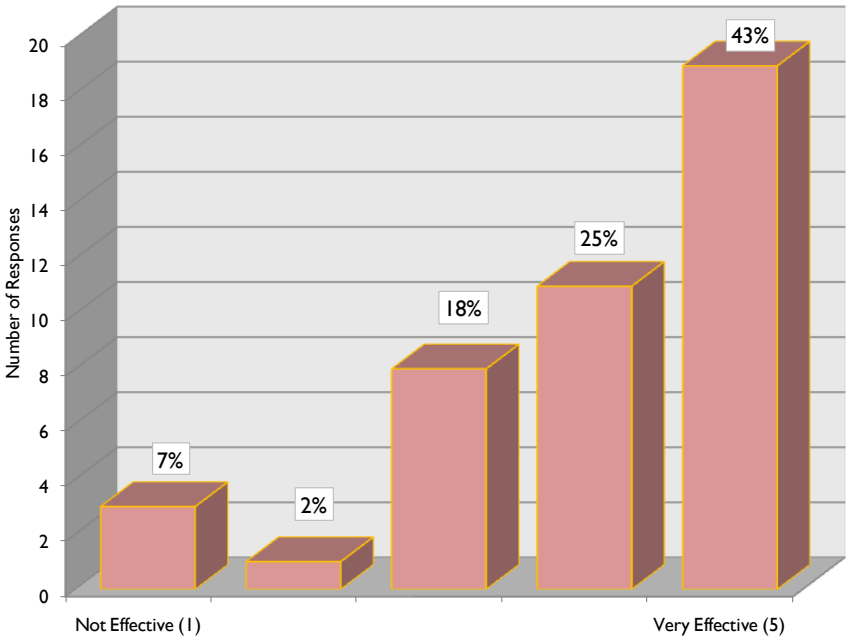


Table B-7 provides a listing of all 44 transit agencies that indicated using general public DAR services in one way or another. Note that half of the respondents (22) indicated operating only one general public DAR service. The other half had more than one general public DAR service, and several systems reported having a large number of programs. For example, the Agency for Community Transit in Granite City, IL operates four separate DAR services; Dallas Area Rapid Transit indicated eight separate DAR service; Long Beach Transit reported 12 separate services; the Metropolitan Council in St. Paul, MN has five DAR services; Ozark Regional Transit in Springdale, AR has seven DAR services; the Region 2 Transit System in Mason City, IA indicated 14 separate services; The RTC in Las Vegas, NV reported four DAR services, and the Toledo Area RTA in Toledo, OH indicated 5 separate services.

Table B-7. List of Transit Systems with General Public DAR Programs

Agency	No. of dial-a-ride programs operated or supported	Effectiveness Rating (1-5) 1 - Not Effective 5 - Very Effective
Agency for Community Transit	4	5- Very Effective
Ann Arbor Transportation Authority	1	3
Antelope Valley Transit Agency	1	1- Not Effective
Camarillo Area Transit	1	5- Very Effective
Casper Area Transportation Coalition, Inc	1	1- Not Effective
City of El Paso-Mass Transit Department-Sun Metro	1	5- Very Effective
City of Glendale AZ Transit	1	5- Very Effective
City of Paso Robles (Paso Express)	1	4
City of Tracy	1	Not sure
City of Commerce Municipal Buslines	1	5- Very Effective
Columbia Transit	1	5- Very Effective
Corpus Christi Regional Transportation Authority		1- Not Effective
Dallas Area Rapid Transit	8	4
Danville Transit System	1	5- Very Effective
Davenport Citibus	2	5- Very Effective
Eau Claire Transit	1	5- Very Effective
Jacksonville Transit	1	3
Laketran	1	4
Lane Transit District	2	5- Very Effective
City of Los Angeles Department of Transportation	2	5- Very Effective
Livermore Amador Valley Transit Authority	1	4
Long Beach Transit	12	5- Very Effective
Marshalltown Municipal Transit	1	4
Metropolitan Council	5	4
Miami-Dade Transit	1	Not sure
Montachusett Regional Transit Authority	2	5- Very Effective
Municipality of Hormigueros	2	4
Nashua Transit System	2	3
Omnitrans	2	5- Very Effective
Ozark Regional Transit	7	5- Very Effective
PARTA - Portage Area Regional Transportation Authority	2	5- Very Effective
Petaluma Transit	1	3
Town of Cary (NC)	2	5- Very Effective
Region 2 Transit System	14	4
RTC of Southern Nevada	4	3
RTS	3	4
San Mateo County Transit District	1	5- Very Effective
Space Coast Area Transit	1	5- Very Effective
St. Cloud Metro Bus	1	4
Sun Tran	2	4
Toledo Area Regional Transit Authority	5	3
Valley Regional Transit	2	2
Wayne Simpson	2	3
Whatcom Transportation Authority	1	3

Flex-Route Services

Finally, flex-route systems represent another type of inclusive service design. These systems typically will go "off route" to pickup and drop-off riders who are not able to get the fixed stop locations.

Survey respondents were asked "Does your transit agency currently operate or support the operation of any flex-route (e.g., route deviation) services?" A total of 146 transit agencies responded to this question. As Table B-8 shows, 44 systems said that some of the routes that they operate incorporate flex-route features. Another 21 systems said they supported the operation of flex-route services by local communities. Seventy-nine systems said they did not operate or support the operation of flex-route services, and two systems indicated "Not Sure."

Table B-8. Transit Agency Use of Flex-Route Services

Does your transit agency currently operate or support the operation of any flex-route (e.g., route deviation) services?	Total
Yes, some of the routes our transit agency operates incorporate flex-route features.	44
Yes, we provide support to local communities, which operate routes that incorporate flex-route features.	21
No, we currently do not operate or support the operation of any routes that incorporate flex-route features.	79
Not sure.	2
Total	146

Respondents that indicated having routes that incorporated flex-route features were then asked to rate the effectiveness of the services in "helping to meet the travel needs of persons with disabilities." Figure B-4 shows that respondents rated flex-route services as very effective in meeting the needs of riders with disabilities. Thirty percent (30%) of systems said these programs were "very effective." Another 32% of systems rated these programs as a "4" on a scale from 1–5. And another 21% rated the programs as a "3."

Figure B-4. Respondent Ratings of the Effectiveness of Flex-Route Services

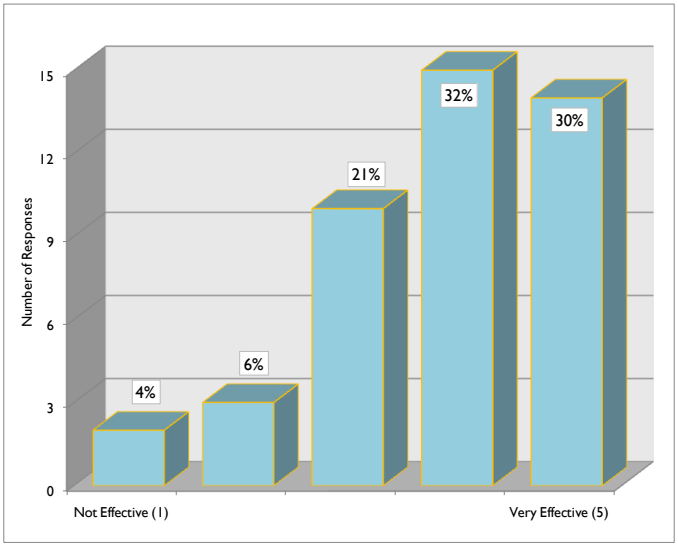


Table B-9 provides a listing of the transit agencies that indicated having flex-route services. The number of routes that incorporate flex-route features are indicated. To provide a sense of how extensive the flex-routes are in the total systems, the number of standard (non-flex) routes is also indicated. The number of routes operated by local communities with transit agency support is also shown.

Table B-9. List of Transit Systems with Flex-Route Services

Agency	No. of routes that incorporate flex-route features	No. of standard (non-flex) routes operated by agency	Number of local community programs supported	Effectiveness Rating (1-5) 1 - Not Effective 5 - Very Effective
Agency for Community Transit	1	22	1	4
Bristol Tennessee Transit System	3			2
Capital District Transportation Authority	4	50		3
Capital Metropolitan Transportation Authority	3	50		5- Very Effective
Casper Area Transportation Coalition, Inc	6		3	3
Central Oklahoma Transportation and Parking Authority	4	22	1	3
Charlotte Area Transit System	4		4	4
Cities Area Transit	1	7		1- Not Effective
City of Commerce Municipal Buslines	2	5	4	5- Very Effective
City of Harrisonburg Department of Public Transportation	4	27		Not sure
City of Houston	1		1	4
City of Los Angeles Department of Transportation	2		2	5- Very Effective
Cleveland Area Rapid Transit (CART)	1	11	1	5- Very Effective
Clinton Municipal Transit Administration	2	5	1	4
Corpus Christi Regional Transportation Authority	1	33	1	1- Not Effective
County of Volusia VOTRAN	2	46		4
Dallas Area Rapid Transit	6	122	6	3
Fort Worth Transportation Authority	1	32	1	5- Very Effective
Golden Empire Transit	1			3
Greater Glens Falls Transit	3	13		4
Hillsborough Area Regional Transit Authority (HART)	5	32	5	5- Very Effective
Housatonic Area Regional Transit	8	7		3
Jacksonville Transportation Authority	14	31	3	3
Jonesboro Economical Transit System	2	1		Not sure
Lane Transit District			1	5- Very Effective
Longview Transit	2	2		4
Macatawa Area Express Transportation Authority	1	7		5- Very Effective
Marshalltown Municipal Transit	5		1	5- Very Effective
Metropolitan Transit System	4	87		5- Very Effective
Metropolitan Tulsa Transit Authority	7	18		4
Municipality of Cataño	2	1		4
Nashua Transit System			4	4
Ozark Regional Transit	4	5		5- Very Effective
PARTA - Portage Area Regional Transportation Authority	2	4	12	4
Richland County Transit Board	8	6		4
Salem Keizer Transit			3	4
San Mateo County Transit District	1			4
Shoreline Metro	1	12	1	5- Very Effective
Sun Tran			2	3
Tar River Transit	2			4
The Jule	3	4		3
Tompkins Consolidated Area Transit, Inc. (TCAT, Inc.)	1	34		2
Transit Authority of River City	1	46		Not sure
Tuscaloosa Transit Authority	6			3
Utah Transit Authority	12	118		5- Very Effective
Whatcom Transportation Authority	3	27		2
Wichita Transit		18		5- Very Effective

APPENDIX

C

Summary of Roundtable Meeting

APPENDIX C:
Summary of Roundtable Meeting

Roundtable Meeting Attendees

An invited group of transit agency managers and private contractor representatives met with the research team for the project's Roundtable meeting on October 4, 2012, in Seattle at the conclusion of the annual American Public Transportation Association (APTA) meeting. The selection of transit agency participants was made to include large, medium and small systems as well as systems from different parts of the country. Transit agency participants were also chosen to represent a variety of service designs and because they had a reputation in the industry of operating quality, cost-effective ADA paratransit services.

Private contractor participants were selected to include national paratransit management companies as well as regional and local companies.

Table C-1 lists the Roundtable participants, along with their system and company affiliations.

Table C-1. Roundtable Participants

Participant Name	Affiliation
Transit Agency Participants	
Bruce Abel	Denver RTD, CO
Rich Burns	VIA, CO
Richard DeRock	Link Transit, WA
Randy Hendrickson	Pierce Transit, WA
Art Jackson	Houston Metro, TX
Erin Rogers	OCTA, CA
Bob Sahm	King County Metro, WA
Patty Talbott	Spokane Transit Authority, WA
Private Contractor Participants	
Dick Alexander	Veolia Transportation
Chuck Barnes	First Transit
Ken Fischer	McDonald Transit Associates
Alaina Macia	Ride Right
Mack McElhose	TransCare
Dave Smith	MV Transportation
Research Team Members	
David Chia	the Collaborative
Buffy Ellis	KFH Group
Marilyn Golden	DREDF, Inc.
Beth Hamby	KFH Group
Russell Thatcher	TranSystems Corp.

Discussion Questions and Summary of Discussion

The purpose of Roundtable meeting was to facilitate an open and constructive discussion about service design options and procurement and contracting practices that may be impacting the costs of ADA paratransit.

The research team formulated a set of questions, first included in the initial draft of this White Paper and then posed at the Roundtable meeting, to facilitate the discussion. These questions along with a summary of the Roundtable discussion and comments made by participants at the October 4th meeting are provided below. The discussion questions are numbered and indicated in bold, and a summary of the comments follows each question.

Service Design Questions

1. What are the best service designs for achieving cost-effective operation and ADA compliant service quality? Is there a trade-off in some designs between cost-efficiency and service quality?

The best service design for a community depends on various factors, importantly, local conditions in that community. There is no *silver bullet*, no one best service design. Factors that affect the choice of a service design, based on participant comments, include:

- Local conditions and operating environment, including:
  - Travel patterns, density, size of service area, e.g., if most trips are local, then zones may work; if most trips are regional, then zones may be less appropriate.
  - Types of operators and their capabilities to operate service, if service is contracted out.

- Characteristics of the transit agency:
  - What are the capabilities of the transit agency to manage and monitor the service design? With dedicated transit staff that is able to stay current on transit and technology and can work with the operating staff particularly if contractors are used, a more complex service design is feasible; for a community with limited staff and with limited time to devote to transit, a less complex service design is appropriate.
  - What is the culture of the transit agency? This can influence the service design.

- Technology:
  - Control room technology facilitates a service design with centralized dispatch.
  - More sophisticated technology enables more complex service designs.
  - Emerging technology, such as tablet computers with finger-print access, facilitates more control over a brokerage design, using a range of service providers that are linked with the new technology.

- The amount of "control" that a transit agency desires or needs.
  - Some agencies find that certain aspects of ADA paratransit are better kept in-house, with other functions contracted out. For example, an agency may want to keep scheduling/dispatch in-house to ensure its control over that part of the service; or it may determine to keep eligibility/certification in-house, again, for increased control.

- Use of supplemental/overflow providers will depend on whether there are such providers in the community and their capabilities.

  - If limited choices, the transit agency can help local providers "grow," with technical assistance that strengthens their ability to become viable local providers.

- Other comments on cost-effectiveness of service models:
  - One comment suggested a model to serve long paratransit trips on fixed route, with convenient feeder service to the fixed route.
  - Another comment suggested assessing trips of high frequency riders to determine if there are improvements that might be made to encourage more cost-effective service for those riders.

Improving cost-effectiveness should look at factors beyond service design:

- Focus and facilitate use of accessible fixed-route by riders with disabilities. How does the service model get people to ride fixed route? Comments made by participants include:
  - Improve accessibility of the pedestrian infrastructure.
  - Ensure effective fixed route driver training so that drivers understand needs of riders with disabilities and the importance of serving them, both for the riders and for the transit agency's bottom line. This is an internal agency culture issue.
  - Address attitudinal issues of riders, which gets at the agency's external culture:
    - The attitudes of non-disabled fixed route riders are an issue; they need to understand why it is important that the transit agency serve all riders.
    - Riders with disabilities may have safety concerns and fears when riding fixed route. Fixed route driver training needs to address this.

- Treat ADA paratransit as an integral part of the transit agency's family of services, not as a completely separate part of the agency and services provided.
  - One transit agency participant with in-house service has integrated the driver workforce, so that drivers work for both fixed route and partransit. The drivers have good skills and understand how to assist riders with disabilities on both modes.

2. Transit agencies have less control over non-dedicated service than dedicated service, yet non-dedicated service can be cost-effective. Are there strategies that transit agencies can use to ensure ADA compliance and service quality standards with non-dedicated service?

There is growing interest in the use of non-dedicated service as a cost-effective strategy for ADA paratransit. A main issue for non-dedicated providers is accountability, which is tied to control. Contractors should be held accountable for aspects of service that they control.

Several ideas for ensuring quality service were noted and include:

- Work with and nurture the local providers to build up their capabilities. This requires a commitment of effort and time.
- Work with and support the non-dedicated providers over the contract term and monitor their service quality.
- Provide driver performance incentives, e.g., a financial bonus for meeting specific service quality standards.
- Use technology tools to monitor and "control" non-dedicated service, e.g., in-vehicle cameras, Mobile Data Terminals (MDTs), Automatic Vehicle Locators (AVL), hand-held computers.

An important consideration for a brokerage design is how the broker is paid. If the broker is paid by the trip, there is an incentive to find the lowest cost providers (which may not be the highest quality providers.

- An alternative payment scheme: pay the broker on a cost plus profit basis with payment for the service providers on a pass-through basis.

Other comments:

- In one sense, a broker has almost more control over an independent contractor-driver than an employee-driver, as the broker can terminate the independent-contractor driver very quickly, which is not the case for an employee-driver.

3. For in-house services, the literature suggests labor costs are higher, that there is less flexibility (e.g., to hire new staff, to change staff, etc.) and that the transit agency does not have the benefit of experience gained from operating a range of transit services. What might be done to address these issues?

Comments from participants:

- Where labor agreements are being renegotiated (e.g., changes to retirement plans, health care, pensions, and other benefits) because of the country's difficult financial times, transit agencies may find their in-house costs are dropping so that there is less cost difference between in-house and contracted service.
- Cross training of in-house staff to handle functions of both paratransit and fixed route can be cost-effective. For example, one agency cross-utilizes call center staff for paratransit scheduling and bus/rail information, which facilitates coverage during times of peak demand while keeping costs down.

Procurement and Contracting Questions

4. Are there procurement and/or contract provisions that are driving up the costs of providing ADA paratransit unnecessarily (e.g., not needed to ensure ADA compliance and service quality)?

From the perspective of service contractors, RFPs for ADA paratransit contracts are often very prescriptive. Comments on RFPs include:

- Very prescriptive RFPs may limit consideration of practices and strategies that may be more cost-effective.
- RFPs may be based on historical services.
- They may be limited to what assets are available from the transit agency, e.g., a facility, vehicles, etc.
- There is typically no flexibility for "out of the box" proposals or options.
  - If a bidder wants to propose something "out of the box," it essentially requires starting the procurement process over.
  - It may be more effective to ask proposers to indicate how they would approach a particular service or service element rather than the transit agency setting expectations, especially for new services or features.
- There was a comment that more recently there are some RFPs that are asking proposers to propose ideas and possible changes.
- RFPs for paratransit contracts often appear to be pieces of service that are being procured, rather than seeking a whole strategy. If a transit agency truly wants to improve services, at some point it may need to step back and re-engineer. A long-term vision is needed. Agency-wide goals should translate into contract goals for operations.

If a transit agency is considering changes to its service design or to major service elements, several approaches are possible:

- Try new things incrementally rather than a major service change all at once.
- Use a pilot to try something new; procure a pilot on a time and materials basis to see how it goes.
- If changes are being considered, it may be useful to issue an RFI – Request for Information – allowing contractors to provide input and information for the transit agency's consideration.

Performance bonds can drive up the cost of contracting.

- Bonds seem to be used as surrogates for ensuring that bidders are experienced and financially viable. When transit agencies award based on low-bid, requiring a performance bond ensures that those submitting bids have financial resources; moreover, the bond functions as an objective and quantifiable factor in the selection process.
- Requirements for performance bonds can limit competition: firms may have trouble obtaining bonds, or bonding requirements can force a contractor to be more selective in which RFPs to pursue, as the purchase of the bonds is related to the contractor's credit capacity.
- If performance bonds are required, they should correspond to the actual exposure of the transit agency. Required bonds are often far above the agency's actual financial exposure.
- Roundtable participants were not aware of any case in the transit industry where a performance bond has been called. The bonds function more to narrow the field of prospective bidders, which harms competition and in turn can affect costs.

Disadvantaged Business Enterprise (DBE) requirements can cause difficulties for bidders, according to a participant. Additional comments by participants included:

- Transit agencies may set DBE goals on an agency-wide basis without considering realistic DBE opportunities in each area of contracting, such as ADA paratransit, where it may be difficult to achieve a high agency-wide goal.
  - It may be preferable to analyze business practices in each area of contracting and set goals that match business practices, rather than having to change business practices to meet agency-wide goals. Changes to business practices may force revisions to the service design.
- DBE goals may not support an objective of ensuring service quality: prime bidders may have to broaden their search to meet such goals and include subcontractors that may not have the ability to provide desired service quality.
- The process to become DBE-certified is onerous, according to a participant; local minority firms may not be willing to get certified just to be included on a proposal with no guarantee of getting the work.
- The level of effort necessary to track down potential DBE subcontractors for proposals is very time-consuming and costly, particularly for the larger firms that may submit 50 or more proposals each year. This level of effort may discourage bidders, which then can limit competition and in turn affect costs.
- The time and effort to find local potential DBEs and secure their participation before a contract award can thwart use of local minority firms: because of the time and cost required to get local minority firms certified and involved in a proposal, the national contractors may look to established relationships they have with DBEs with a national presence (e.g., selling vehicle parts) to satisfy the transit agency's DBE goals.

Suggestions to improve meeting the goal of using local DBE firms:

- Require the detailed paperwork for DBE certification after an award is made and before the contract is finalized. At that stage, local minority firms might be more willing to give the time and effort to become certified since they have conditionally been awarded work.
- The transit agency can work with local potential DBE firms to help them become certified so that they are ready and available to participate in proposals. One transit agency specifically helps its community-based minority firms get officially certified and then connects them with potential prime

bidders, for example, through a "meet and greet" event so that the prime firms can meet and talk to possible DBE subcontractors.

Reducing or removing risk and unknowns in an RFP is a cost-effective approach.

- Requirements for a facility can be problematic, particularly when the procurement process is long and drawn out. Bidders must "hold" the selected facility for a long time period, which can increase bidders' costs that are then be passed on to the transit agency.
- One approach for a facility is for the transit agency to pay for the facility as a pass-through.
- Requiring bidders to estimate and propose costs over a long contract term will mean that firms will add costs to cover the unknowns. For example, it is very difficult to estimate costs for employee healthcare benefits over the next five years. Fuel cost is another cost element that is very difficult to estimate over the long run.
  - Medicaid contracts require bidders to provide costs for the first two years, with out-year costs determined on a negotiated basis. Estimating costs over a two-year horizon is not as risky as estimating costs over a five-year or longer horizon, which means less need for the contractor to add costs to cover the unknowns.
- Providing complete information in an RFP will help bidders to understand the transit agency's requirements and to budget their costs more accurately.
  - Where there are unknowns, contractors will build in costs to account for that, which increases costs for the transit agency.

Suggestions for working with contractors:

- Contracts should have some flexibility, recognizing that circumstances may change over the contract term. For example, with rapid changes in technology, flexibility to test and adopt new technology is needed.
- It is important to develop a positive working relationship with the contractor.
- A transit agency should consider the contractor as its own staff; treat the contractor as such.

Other comments:

- Transit service contracting with a transit agency is different than contracting with a city or county, where, with the latter, transit might be just one of various responsibilities and not one that is favored.

5. What are the most effective ways for transit agencies to ensure contractors provide ADA compliant service quality? What is the role and balance of incentives/disincentives? Are there certain incentives/disincentives that are more effective? Less effective? Can certain service designs help achieve service quality with fewer incentives/disincentives? Are there other approaches?

Contractors understand and accept that transit agencies may set standards for ADA paratransit with accompanying incentives and disincentives and that the agencies will hold contractors to those standards. However, their view is that standards should be realistic and the incentives/disincentives reasonable, with contractors held to service elements over which they have control. There were numerous comments on standards, incentives and disincentives, including:

- Standards
  - A performance standard should be realistic: for example, if an agency has never exceeded an 86% on-time performance, it would not be realistic or reasonable to expect a new contractor to achieve 95%.
  - Standards may need to evolve over time, as the paratransit service changes and evolves.
  -

- Incentives
  - Incentives should match what the transit agency is trying to achieve.
  - Examples:
    - One agency provides incentives for employee longevity with its contractors - $100 every six months for employees staying on with contractors.
    - Another agency provides $10,000/month if contractors reach established productivity goals.
- Disincentives/liquidated damages (LDs):
  - LDs need to be tied to things that contractors control.
  - LDs should be linked to overall performance, not specific incidents, e.g., a standard of 95% on-time performance may be set, but this should not be accompanied by a financial penalty for every late trip.
  - If LDs are tied to standards that are not obtainable or if there is a history of a transit agency charging LDs, contractors will budget for them in their proposals, which increases the cost of service.
  - Some transit agencies use LDs as an easy way to manage a contractor. It is more effective to work with the contractor to identify and fix performance issues.

A positive relationship between a transit agency and its contractor can be more effective in ensuring effective and quality ADA paratransit service than immediately turning to LDs when there are performance issues.

- A performance problem can be seen as "the system failing the customer," which means that the transit agency and the contractor, as partners providing "the system," need to work together to solve the problem.
  - Addressing a particular performance problem should first involve assessing the situation with the contractor to understand the problem – ask "what happened?"
  - Depending on that assessment, the second step *may be* charging the contractor with the associated LD. But importantly, the assessment should come first.

- The contractor should be seen as the transit agency's partner.
- With a cooperative relationship, the contractor should be able to present its solutions to the transit agency in response to a performance problem. One agency remarked that it wished that its contractor had presented solutions to the performance issue, rather than just accepting the LD.

6. Some in the industry believe that RFPs and contract documents are increasingly more complex and that this makes it more difficult for smaller and local firms to bid. Is there merit to this concern, and, if so, what can be done so that smaller and local firms can more effectively compete on ADA paratransit services?

One participant felt that the amount of federal requirements and associated "paperwork" required for proposals has increased, which makes RFPs and contract documents more complicated and difficult to address. Cost to prepare proposals then increases; for example, obtaining legal review of requirements can be costly. The complexity and amount of requirements may hinder some firms from bidding, which impacts competition.

Another participant noted that the procurement process seems to have "gone downhill."

- RFPs may be developed in a piecemeal fashion and without a complete and understandable explanation of what the agency is currently seeking:

  - RFP development may use the "whack-a-mole" method, with very specific requirements inserted to remedy a particular issue, which are then retained in future RFPs even though those requirements no longer have any relevance.
  - RFPs may use boilerplate language, which does not adequately explain the agency's expectations.
- Procurement staff seems to view bidders and contractors as "the enemy."

Improvements to the procurement process can be considered:

- Transit agency staff should work with their procurement staff to ensure the RFP document provides bidders with complete and adequate information. Procuring ADA paratransit is not the same as procuring parts, and procurement staff may not understand what is needed for a good ADA paratransit RFP.
- ADA paratransit staff needs to be in charge of the procurement process for the service; procurement should be a support function, not in charge of procuring ADA paratransit service.
- When interested bidders have questions or request additional information about the RFP, adequate answers should be provided. Bidders are sometimes just told to "read the RFP," which is not a helpful response.

7. A number of ADA paratransit systems are designed so that one entity schedules and dispatches trips (either in-house or call center contractor) and private contractors (distinct from the call center contractor) provide the trips. An advantage of this model is the ability to fine-tune schedules and minimize slack time, improving productivity. However, schedule changes on a short notice basis may be difficult for the service contractors. What practices and procedures can be used that give the call center needed flexibility to manage schedules but that do not disadvantage the service contractors?

Accountability should be tied to control, according to comments.

- For example, a contractor that does not control the scheduling should not be held accountable for on-time performance. The entity that is accountable for a non-dedicated service should also be the entity that monitors this service.

Communication between all the entities is important and should be formalized.

- There should be meetings with staff from the transit agency and the various contractors on a regular basis.
- Agency staff should also meet with the top managers of the contractors, keeping those lines of communication open.

A management culture of working together is needed.

- With multiple contractors responsible for different aspects of the service (scheduling, dispatching, service on the street), conflict can seem to be built into the structure, so it is important to develop a culture where there is communication.
- To avoid "finger pointing" and conflict, constructive communication is needed.

Other comments:

- Have the call center contractor provide schedules to the service contractors with adequate time for the service contractor to arrange for drivers or make changes to drivers' schedules. One agency indicated that its call center sends schedules to service contractors by 6 pm the night before the service day.
- If providing incentives, provide them to all the contractors according to their FTE count.
- For LDs, one agency has specific staff that is assigned to determine and judge when LDs should be assigned, given that more than one contractor may have a role in a performance problem.

- One idea for this service model: on the day of service, allow service contractors to control their vehicles.

Questions on Other Issues

8. The transition from an incumbent contractor to a new contractor with a turnkey service model has at times been difficult, particularly in large urban environments. Transit agencies benefit from competition but may have concerns about a transition if they award the contract to a new contractor. What can the industry do to ensure competition yet avoid difficult transitions?

Suggestions that may help avoid transition problems, according to participants:

- Transit agency ownership of the major parts of the paratransit program, such as vehicles and facility, will facilitate transitions. If the transit agency controls the infrastructure, a transition to a new contractor will be easier. This will also facilitate terminating a contractor that is not performing.
- It can be particularly helpful if the transit agency owns the "intellectual property," which includes the scheduling software and rider database. A transit agency can then ensure that this key component is provided to the new contractor in a timely and accurate manner.
- The RFP/contract documents should include specific expectations regarding the transition for both the new and incumbent contractors, with language that spells out what the transit agency expects and the need for cooperative action. Both the transition *in* and the transition *out* must be addressed.
- Include language in the contract that allows for assignment of the lease for the facility from the contractor to the transit agency.
- Allow adequate time for a transition.
- Ensure that the transit agency board or other decision-makers are aware of a pending transition and changes that will be taking place.

A transition will be more difficult if the transit agency is changing too much of the ADA paratransit program at one time (e.g., the service design, vehicle ownership, contractors, scheduling/dispatch software, other technology, etc.). If significant changes are planned, it is better to phase in those changes, rather than implement everything at once.

One agency noted that it experienced a seamless transition between contractors by doing it over a 90-day period (with one-third of the service transitioning in each of 30 days). Additionally, at the onset, the transit agency brought in the contractors' staff to meet with the various transit agency departments and staff to go over expectations.

Concluding Discussion and Comments

- Methods of payment are important to consider and are related to service design options. What are the pros and cons of different payment schemes, e.g., hours, miles, trips? There are "upsides and downsides" to the payment methods. The rate structure should match what the transit operator is trying to achieve. These should be considered in the research project.
- There is no one best service design.
  - Service design selection should consider the capabilities of the transit agency, as some designs require more attention.
  - If an agency does not have the capability or staff to devote to transit, the selected design may create performance problems.

  - With the growing trend toward non-dedicated service, how can we best address accountability and service quality?

- Small and mid-sized transit agencies will benefit from the strategies/outcomes of this research project as much as the large agencies. Smaller agencies tend to have less internal capacity to proactively plan.

- The culture of the transit agency is very important. The fixed route side of the agency needs to understand and work towards accepting riders with disabilities. A culture change may be needed for this.

Suggestions for useful outcomes of the FTA project include:

- An assessment tool or "checklist" that helps transit agencies define what they are trying to achieve before deciding upon a service design and, if contracting, before finalizing an RFP or contract terms.
- The pros and cons of different payment schemes, e.g., revenue hour, miles, per trip, and their impacts on service and reasons/factors influencing the choice of a particular payment method.

APPENDIX

D

Case Studies

APPENDIX D:
Case Studies

Twelve case studies were conducted to document actual practices in operating cost-effective ADA complementary paratransit service and implementing inclusive service designs. The transit agencies studied and the specific topics covered are shown in the table below. Case studies are presented in the order listed.

Transit Agency/Provider	Topics Studied
Santa Clara Valley Transportation Authority (VTA) and Outreach and Escort Service, Inc. (OUTREACH), San Jose, CA	Service design – brokerage; Cost-effective procurement and contracting; Cost-effective operating practices
Port Authority of Allegheny County (PAT) and ACCESS Transportation Systems, Inc.(ACCESS), Pittsburgh, PA	Service design – brokerage Coordination
San Mateo County Transit District, San Carlos, CA	General public demand responsive service; Service design – contracted turnkey
STAR, Arlington County, VA	Service design – contracted call/control center with contracted service providers; Coordination; Cost-effective contracting and procurement; Cost-effective operating practices; Use of taxis; Use of technologies
Dallas Area Rapid Transit (DART), Dallas, TX	Service design – contracted turnkey with taxi component; Contract monitoring; Use of Technology
Pelivan Transit, Big Cabin, OK	Coordination; Use of Technologies
Capital Metropolitan Transportation Authority (CapMetro), Austin, TX	Service design – in-house call/control center with contracted service providers; Use of taxis; Flex-routes
Southeastern Pennsylvania Transportation Authority (SEPTA), Philadelphia, PA	Cost-effective contracting and procurement; Performance monitoring; Use of technologies
Northern Arizona Intergovernmental Public Transportation Authority (NAIPTA), Flagstaff, AZ	Use of Taxis
Broward County Transit (BCT), Broward County, FL	Community bus service
Utah Transit Authority (UTA), Salt Lake City, UT	FLEX Route services
Metro Transit, Seattle, WA	Coordination (Community Transportation Program); Use of taxis

Disability Community Input Regarding Case Study Sites

To ensure that the ATSA study focused on model transit agencies, the case study component included a robust series of communications with people in the disability community, as well as disability community organizations, across the U.S. Because the goal of the ATSA study was to examine practices that have reduced cost, improved efficiency, and increased mobility of people with disabilities, it was crucial that, to be included as a case study, a transit agency needed to have good ADA paratransit service, not only on paper, but also in the views of riders.

This information was obtained by means of extensive telephone networking with disability organizations and individuals. The goal of the initial phase of calls was to find appropriate interview subjects. Telephone calls targeted disability-related organizations such as centers for independent living, Lighthouses and Commissions for the Blind, and city offices on disability issues. From there, the study team was directed to many other organizations and to individuals recommended for interviews.

Then, telephone interviews were conducted with individuals familiar with the ADA paratransit service from the riders' point of view. Largely, these interview subjects were ADA paratransit riders themselves. Also interviewed were disability advocates familiar with riders' experiences of the ADA paratransit service. A third category of interview subjects was disability professionals familiar with their clients' ADA paratransit service, such as mobility instructors.

Because the study team assumed that even the best ADA paratransit service might have some unhappy riders, a few complaints were never the basis for ruling out a case study site. But if the disability community feedback was overwhelmingly negative, the site could be ruled out.

In many cases, particularly in less densely populated communities, extensive outreach efforts were necessary to find appropriate interview subjects. Once appropriate potential interview subjects were recommended, it was sometimes impossible to reach them. Or, once reached, they sometimes could not provide useful information for a variety of reasons, such as being on travel, in the hospital, in bereavement, or no longer making use of the service. As a result, finding appropriate interview subjects sometimes required contacting far more people than the number of people actually interviewed.

The questions used for the telephone interviews were based, in part, on questions asked in ADA Complementary Paratransit Service Review Rider Interviews. Interview questions included:

- Does it take a long time on the telephone to reach a trip reservationist?
- Do you get reservations on the first call, or are you ever wait-listed?
- Can you obtain a pickup time at about the time you want? Can you request a drop-off time?
- Does your vehicle arrive during the pickup window? If you request a drop-off time, do you get to your appointment on time?
- Are your trips sometimes excessively long (say, over 1 hour)?
- Does the driver know your destination address and how to get there?
- Are the drivers courteous, respectful, and helpful?
- Were any complaints you made to the proper authorities handled to your satisfaction?
- Do you wish to comment on any other aspects of the ADA paratransit service?

In addition, questions were asked about other characteristics of service that were part of the ATSA study in the individual's locality. For example, at sites proposed for studying Interactive Voice Response technology, interview subjects were asked about using that technology. At sites proposed for studying community bus routes, questions were asked about their use of such routes.

Summary of Interview Responses

Following is a summary of interview responses:

- Some individuals were happy with their ADA paratransit service, reporting good on-time performance and well-trained, helpful drivers.
- Some riders reported that their ADA paratransit service had improved over their term of use.
- Other interview subjects reported problems, usually about on-time performance:
  - One rider reported pickups an hour beyond the pickup window, or an hour or two early.
  - One rider reported that if the driver arrives early, he is required to board early, and if the driver arrives late, it can be 90 minutes after the pickup window.
  - Other riders reported ride times up to or exceeding 90 minutes.
  - One service provider reported her clients waiting for hours for their rides home.
- Too-early drop-off times were also reported.
- Other reported problems included:
  - Missed trips.
  - Difficulties related to transfers.
  - Difficulties riding with a guide dog.
  - Difficulties related to cancellations and no-shows. One rider reported that the latest a ride could be cancelled without a penalty was midnight before the day of the ride.
  - In two localities, riders complained that it was impossible, or virtually so, to obtain door-to-door service, even if it was necessary due to the individual's disability.
  - In one locality, riders complained that rides were denied if their wheelchair didn't have a sticker placed by the transit agency after an evaluation of the wheelchair's weight and dimensions.

Agency: Santa Clara Valley Transportation Authority (VTA) and Outreach and Escort Service, Inc. (OUTREACH), San Jose, CA

Topics: Paratransit Service Design – Full Service Brokerage
Cost-effective Procurement and Contracting
Cost-effective Operating Practices

Background

The Santa Clara Valley Transportation Authority (VTA) is an independent special district that is responsible for multi-modal transportation planning and public transit services in Santa Clara County, CA. VTA oversees the operation of fixed route transit—including light rail and fixed route bus services—as well as ADA paratransit services throughout the county. VTA also serves as the Congestion Management Agency (CMA) for Santa Clara County and the cities that are located in the county. As part of its role as the CMA, VTA conducts comprehensive countywide planning for highway as well as transit services. VTA also partners with the state and with neighboring counties to provide intercity rail services, commuter rail services, and regional bus services for the region.

VTA's service area includes all of Santa Clara County, which is at the southern tip of San Francisco Bay. There are 15 cities within the county, including the City of San Jose. Santa Clara County has a growing population and is home to many of the country's largest technology companies. The county covers 346 square-miles and had a population of 1,816,486 in 2013.

VTA operates a fleet of 99 light rail transit (LRT) cars over 42.2 miles of rail line that connect 62 stations. The LRT system is fully accessible to persons with disabilities. All grade-separated stations are equipped with elevators. The majority also have escalators. And all platforms at stations provide level boarding to the trains. LRT operates at 15 minute headways during peak hours, 15-30 minute headways during mid-day and weekend hours, and 15-60 minutes headways at night. In fiscal year 2012, the VTA's Light Rail provided over 10.3 million unlinked passenger trips and had an average weekday ridership of 32,716.

VTA also operates an extensive fixed route bus service. A fleet of 426 buses operate over a network of 71 routes with 1,236 route miles. Ninety of the buses are hybrid powered low emission. VTA's bus route system includes 53 local routes and 18 express and limited stop routes. The bus system can be reached by customers at 3,782 bus stops (2,220 with benches and/or shelters), 16 transit centers and 10 Park & Ride lots. All of VTA's buses are accessible, with a mix of ramps and lifts. In fiscal year 2012, the bus system provided over 32 million unlinked passenger trips and had an average weekday ridership of 104,583.

VTA encourages the use of its bus and light rail system by seniors and persons with disabilities by offering community oriented travel training outreach services. This involvement in travel training grew out of VTA's 2008 FTA New Freedom funded Mobility Options Program.

The Mobility Options Program was initiated to provide persons with disabilities the skills and confidence needed to independently travel on VTA's transit system. VTA's current travel training efforts, in partnership with its' ADA paratransit broker and other community social service agencies, focus on increasing the use of fixed route services through a Train the Trainer Academy, Daycation events,

educational campaigns, public outreach, and a mobility device Securement Marking and Tethering program.

VTA's ADA Paratransit Service

VTA provides ADA paratransit for persons with disabilities who are not able, because of their disability, to use the fixed route rail or bus services. VTA's ADA paratransit service is provided as part of a coordinated transportation brokerage. The brokerage is managed by Outreach and Escort Service, Inc. (OUTREACH), a regional non-profit public benefit agency.

The ADA paratransit service covers all origins and destinations that are within ¾-mile of non-commuter bus routes, or within a ¾ mile radius of rail stations. VTA also provides "premium" service to origins and destinations that are up to 1 mile outside these boundaries.

ADA paratransit is provided during the same days and hours as fixed route transit. Fares for ADA paratransit are $4 per trip, twice the non-discounted fixed route adult fare.

ADA paratransit is provided on a "next day" basis. Eligible riders can call up to the close of the reservations office to reserve a ride for any time the following day. Riders can also reserve trips up to 3 days in advance. The reservations office is open seven days a week, 365 days a year from 8 a.m. to 5 p.m. VTA also offers same day service on a space-available basis. Riders may use the IVR (Interactive Voice Response) system for trip confirmations, trip cancellations and to book trips.

In FY 2012, a total of 775,553 trips were provided by a fleet of 255 vehicles composed of hybrid gas-electric sedans, accessible minivans, raised-roof modified vans, and cutaway small buses. Average weekday ridership was 2,742 with 7,095 eligible ADA paratransit customers taking at least one trip during the fiscal year.

Riders can request trips based on either a desired arrival time (typically done for going trips with appointments), or a desired pickup time (typically done for return trips). For return trips, riders can either request a set pickup time, or can request an "Open Return" and call when they are ready. Open returns are provided on a space available basis, are not offered for trips after 8 p.m. or on a subscription basis, and riders can only request one Open Return trip per day. Policy allows open return pickups to be made up to 90 minutes after a call is received, but in practice riders wait 15 to 30 minutes on average. The fare for Open Return trips is also higher ($16) than the standard ADA paratransit fare.

Drivers provide assistance to and from the door. At larger facilities and apartment complexes, service is provided to the exterior door of the lobby. Door-to-door service is provided as long as drivers do not lose sight of their vehicles.

VTA also allows riders to make limited adjustments to return pickup locations. Return trip pickups can be changed to be at a different location at the same facility, or to nearby addresses (such as across the street from the original location). This flexibility was introduced to respond to changes in trips plans that are sometimes outside of the rider's control and to then prevent no-shows. Riders only need to call before the start of their 30-minute pickup window to request a different, nearby pickup location.

ADA Paratransit Service Design within the OUTREACH Brokerage and Mobility Management Center

VTA and OUTREACH have a longstanding contractual and working relationship, going back to 1993, for the operation and management of the brokerage. OUTREACH had been providing specialized transportation and individualized mobility options along with social services, information and assistance, and individualized case management since the 1970s. OUTREACH and VTA were early adapters to Intelligent Transportation Systems (ITS) and Information Technology (IT) for the paratransit program dating back to the early 1990s and have continuously updated systems to reflect advancements in technology. OUTREACH is somewhat atypical as a brokerage as it designs and implements many of its own ITS and IT systems—often with the involvement of local volunteer talent.

OUTREACH Coordination and Mobility Management Services

OUTREACH serves as the Consolidated Transportation Service Agency (CTSA) for the region with its first designation in 1982 and most recent re-designation in 2013. This is a designation bestowed by the San Francisco Bay Area Metropolitan Transportation Commission (MTC) in accordance with California's Social Service Transportation Improvement Act of 1979.

MTC is both the Regional Transportation Planning Agency (RTPA) and the (Metropolitan Planning Organization (MPO) for the nine-county San Francisco Bay Area, and in this capacity serves as a designated recipient of federal transportation funding. Under more recent federal requirements, MTC has developed a "blueprint" for implementing a range of strategies intended to promote and advance local efforts to improve transportation for persons with disabilities, older adults, and persons with low-incomes. The Coordinated Public Transit-Human Services Transportation Plan (Coordinated Plan) first developed in 2007 and revised in 2013 emphasizes the designation of CTSAs to avert duplication of efforts, to oversee a number of diverse funding sources, to facilitate sub-regional mobility management and transportation coordination and to help build continuity of services between public transit, paratransit and health and human service transportation.

CTSAs are recognized by the State Department of Transportation (Caltrans) and allowed to procure goods and services on the state contract. As the county's CTSA, OUTREACH endeavors to reduce service costs coordinating health and human services transportation and public paratransit services, enhance the efficient use of vehicles, purchase insurance and equipment at reduced costs, coordinate grant applications, and register its vehicles at discounted prices, among other coordination activities across a range of training, educational, and mobility options.

Through its one-stop eligibility and call center, the OUTREACH brokerage coordinates services to varied customers including but not limited to:

- Persons with Disabilities who are Certified ADA Eligible
- Regional Center persons with Developmental Disabilities
- Non/Limited English Speaking Riders
- Refugees/Immigrants
- Seniors
- Homeless Riders
- Children, Youth and Families
- Veterans
- Transportation Disadvantaged
- Residents of Institutional Settings

- Welfare-to-Work and Low Income
- Managed Care Riders
- Individuals Living in Communities of Concern
- Members of Faith Based Groups and Participants of Community Based Organizations/Non-profits

To serve this variety of riders, OUTREACH coordinates a number of funding sources, including but not limited to:

- FTA Job Access and Reverse Commute Small urban and Large urban Areas
- FTA New Freedom Small and Large urban Areas
- HUD Community Development Block Grant
- Local City General Funds
- County General Funds
- Older American Act Funds
- State Transit Assistance
- FTA Section 5310
- State Proposition 1B for capital
- Car and Cash Donations and Foundation and Corporate Grants
- Temporary Assistance for needy Families (TANF)/CalWORKs (California Work Opportunity and Responsibility to Kids)
- State Health and Human Services

Coordinated services include but are not limited to:

- ADA paratransit and Fare Subsidies
- Senior Transportation
- Employment and Low-Income Transportation
- Volunteer Transportation
- Managed Care Transportation
- Menu of Mobility Options such as Fixed Route Bus Passes, Gas Cards, Ride Sharing, Vehicle Sharing, Biking, Healthy Walking, Discount Taxi, Mileage Reimbursement, Older Driver Safety Courses, Individual and Group Travel Training Instruction, etc.

With funding from the California Department of Transportation (Caltrans), OUTREACH undertook a planning grant with the community to develop a mobility management center in 2009 to centralize many functions and activities into a one-call/one-click center. The following graphic illustrates the concept. The Mobility Management Center serves as a central repository for storing and sharing information about transportation services. It links to key organizations and public information systems, including the AAA (Area on Aging), ILC (Independent Living Center), 2-1-1 (Santa Clara County United Way with health and human services Information and Referral), transportation providers and funders, 511.org (for regional transit), VTA.org (for local transit), services for Veterans (VA), among others. Consumers, social service agencies, and transportation providers and funders can then access this information through the Center.

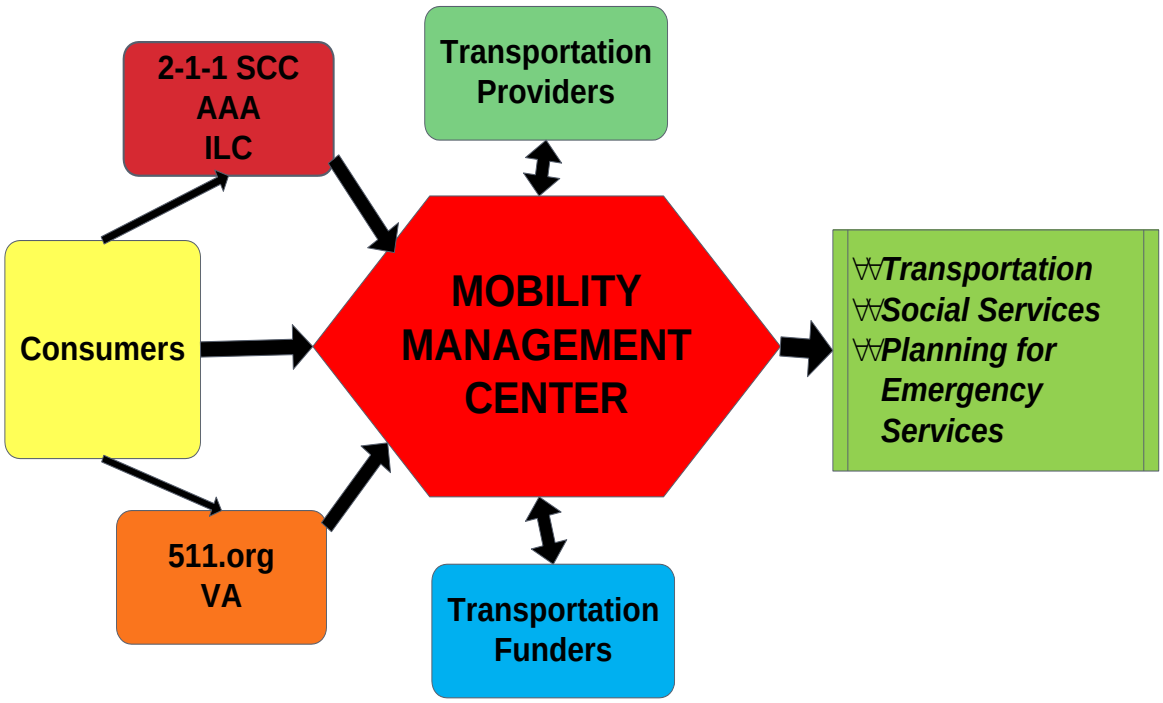


Figure D-1. OUTREACH Mobility Management Concept

In addition to providing live support and direct delivery of transportation services, OUTREACH has also created a web portal for virtual, "one-call/one-click" mobility management services. Nonprofits, community groups and other entities may set up accounts for their members or clients and use the cloud-hosted web portal at no charge. Typical users are faith-based groups, Veterans organizations, homeless shelters, senior/gerontology groups, and health care providers. Or nonprofits, community groups and other entities may call or have their clients call OUTREACH's multi-lingual mobility managers through the one-call center 800-number. These live agent and/or web portal call functions and activities include but are not limited to:

- Emergency planning for transportation and evacuation of vulnerable populations in the event of a disaster or security threat through:
  - Fleet and driver inventory resource management system linked to County office of Emergency Operations Center
  - Mapping of encrypted at-risk vulnerable populations to be accessed only when emergency is declared; encrypted file updated every 90 days.
  - Mapping of accessible shelters, staging areas and evacuation routes, etc.
- Volunteer driver modules
- Vehicle sharing modules across organizations
- Trip booking system for reservations
  - Single trips or standing sent by agency to vendor dashboard in real time
  - Agency may select one or more paid vendors (accessible vans, discount taxi, nonprofit, etc.) or volunteers to perform trips
  - Trip bookings with other organizations to share vehicles or seats
  - Google mapping for shortest distance,
  - Trip authorization functions based on customized business rules and policies
  - Reporting and invoicing
  - Fee or charge functions if needed

  - Fund accounting if managing more than one funding source
  - automated invoices and reports, and linked in real time to vendor service providers via dashboards
  - Trip booking for paid providers like accessible van companies or discounted taxi companies
  - Trip bookings with other organizations to share vehicles or seats
  - Trip bookings for volunteer drivers
- Mobility option or benefit management system for tracking gas cards, bus passes, ADA eligibility subsidies, mileage reimbursement, bikes, healthy walking programs, etc.

The screen print the following page captures many of the business and operational functions on the left and the simple reservations system on the right of the screen.

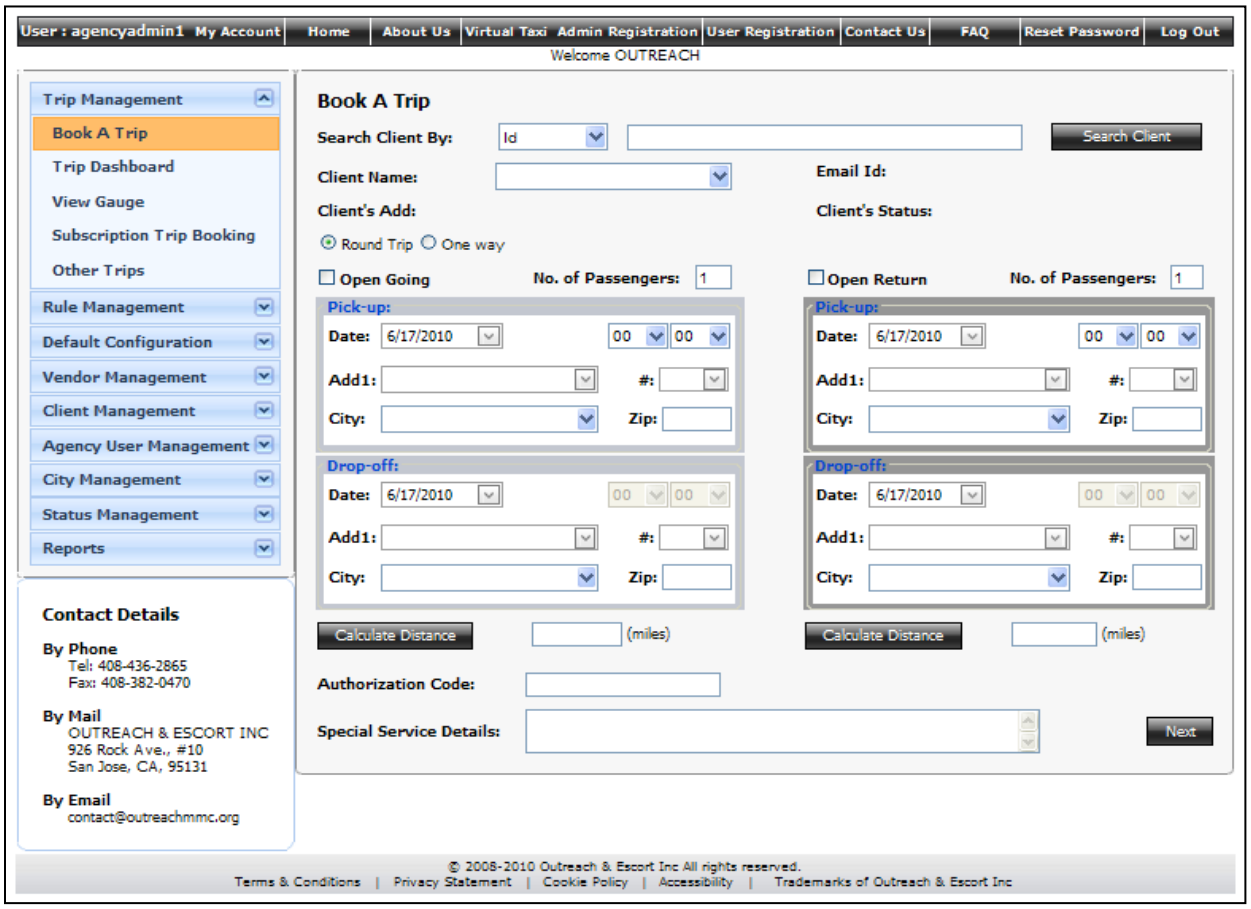


Figure D-2. OUTREACH Mobility Management Center TripNet Web Portal

Current and future ADA Certified Eligible persons have many options within the OUTREACH brokerage in addition to paratransit. Accurate and easy access to information about resources is a key factor to identifying, comparing, and selecting one or more options. OUTREACH provides a "Community Search System" to the public. This system is a searchable database of transportation and community resources that can be compared in terms of location, services, eligible criteria, accessibility, hours of operation, wheelchair accessibility, target populations, languages, fees, contact information and many other features. The user may select language of choice as well as size of font and can save, email or print off results. Searches can be general or targeted by rider type such as older adults, persons with

disabilities, Veterans, low-income individuals and so forth. A live chat support assists with any questions about resources. This tool is being expanded through partnerships with Salinas-Monterey Transit to the south and Marin Transit to the north of OUTREACH creating a regional system stretching over 250 miles among others as part of VTA and OUTREACH's VTCLI grant (Veterans Transportation and Community Living Imitative).

OUTREACH also partnered with the National Center for Senior Transportation to develop a person-centered, rider choice model providing over 800 persons with disabilities and older adults with a range of flexible mobility options for travelling to places to a range of community services. The goal of the program is to provide individuals with a wide range of transportation options and to allow them to choose the option that best meets their needs. Figure D-3 illustrates the wide range of mobility options that have been developed for accessing various community services.

The Administrative Brokerage Model

OUTREACH manages all of these programs as an "administrative broker." This means that OUTREACH does not directly operate vehicles, but contracts with transportation companies for the delivery of service. OUTREACH's broader roles and responsibilities as the administrative broker and CTSA are to:

- Develop partnerships with local and regional agencies
- Cooperatively plan and develop transportation services
- Contract with funding agencies to manage the delivery of transportation services
- Pursue additional funding to supplement monies provided through contracts, including the preparation of grant applications and local fundraising
- Cooperatively negotiate overall budgets for service and manage the proper allocation of costs to participating agencies
- Work cooperatively with funding agencies to develop public information and market the transportation services provided
- Conduct open, competitive procurement processes, in compliance with state and federal laws, for companies to delivery transportation services
- Monitor service provider contracts and performance
- Perform customer service and quality assurance duties
- Receive rider input and investigate and resolve rider complaints and concerns
- Review and process invoices from service providers and bill funding agencies
- Manage rider fares and accounts
- Prepare required service and financial reports for funding agencies

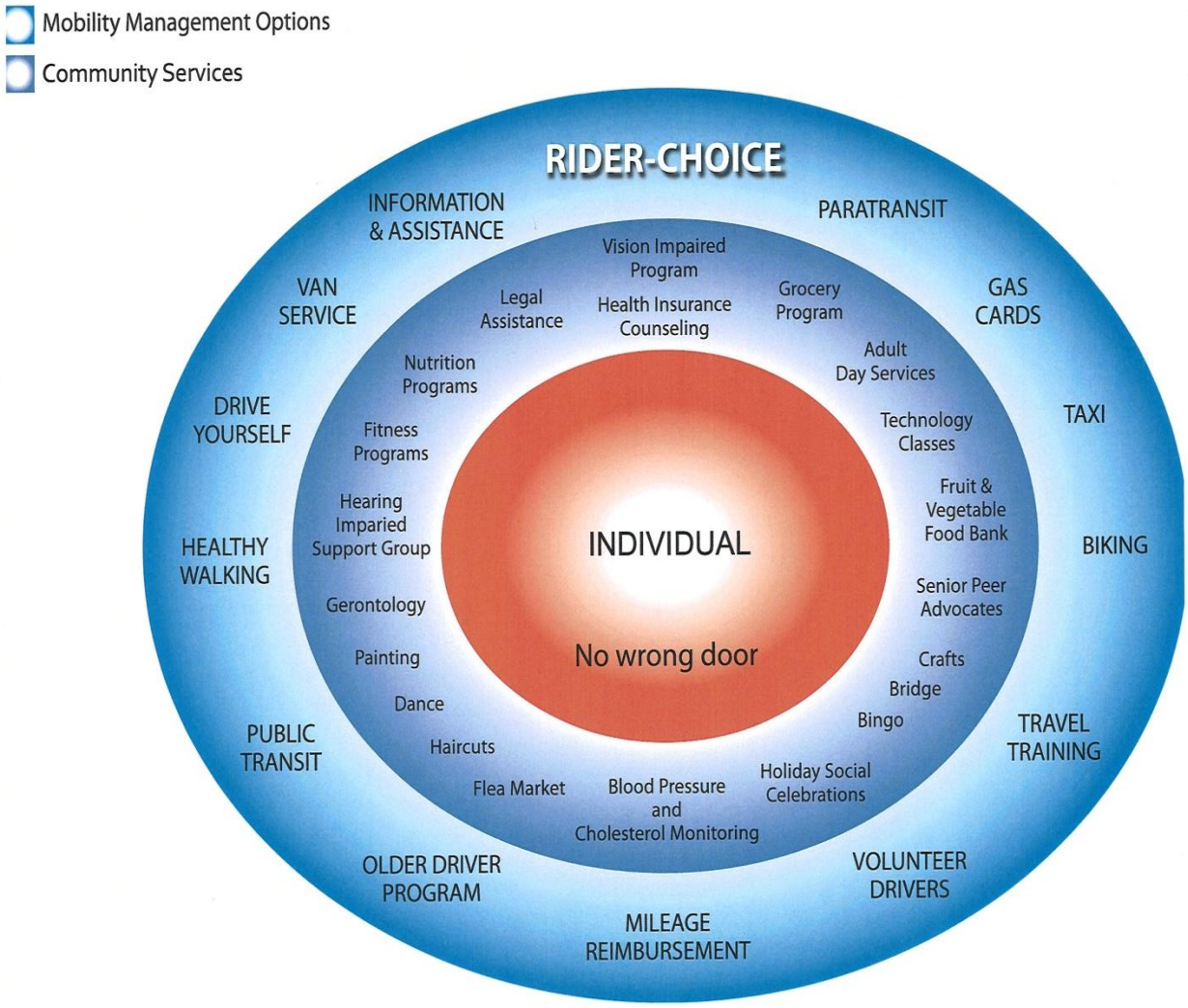


Figure D-3. OUTREACH Mobility Management Options

Depending on the needs of participating funding agencies and the transportation services being provided for them, OUTREACH also performs other more specific tasks. For example, for VTA and the ADA paratransit service, OUTREACH:

- Accepts applications from individuals and makes determinations of ADA paratransit eligibility
- Administers an appeal process for ADA paratransit eligibility
- Operates a call and control center to accept and schedule trip requests and to provide radio dispatch services
- Provides support to VTA, as needed, to meet regulatory requirements, including NTD reporting, safety and security planning, Title VI and LEP planning and compliance, and SBE and DBE plans and goals
- Oversees fuel and vehicle maintenance contracts with the County of Santa Clara
- Prepares and submits annual California State Excise Tax Rebate forms

VTA sets overall policies for the ADA paratransit service, including eligibility requirements, service area, days and hours of operation, fares, and other riders and service policies. VTA also negotiates and manages the contract with OUTREACH for brokerage services, develops funding for the ADA

paratransit service, reviews invoices for service provided, processes payment to OUTREACH, and monitors service quality.

At the time of the case study in April 2013, OUTREACH had contracts with several companies for the delivery of service. The largest contract was with a company for the operation of vehicles "dedicated" to the paratransit service. The vehicles and on-board equipment (MDTs, AVL) used in this part of the operation are leased to the dedicated provider as part of the company's contractual relationship with OUTREACH. The lease is $1.00 per equipped vehicle. OUTREACH is unique in that it designs the in-vehicle system and develops the software that links the dispatch center to the vehicles in real-time. VTA and OUTREACH both seek public grants for hardware and technology having been early adaptors to automated scheduling, vehicle routing and tracking, and digitized mapping since the early 1990s when FTA and Caltrans New Technology grants were implemented. OUTREACH is now on its 4th generation of Intelligent Transportation systems (ITS).

OUTREACH develops daily schedules and batch optimizes the trips that are transmitted to the service provider. The "dedicated" service provider is paid a monthly amount for fixed cost, plus a per trip rate for variable costs.

As one of several cost savings initiatives (described below), OUTREACH has negotiated a contract that allows paratransit vehicles operated by the dedicated service provider to be maintained at County garages by staff that also maintain other County vehicles. This arrangement was possible because of the positive working relationship that both VTA and OUTREACH together have with the County, as well as separately though other contractual arrangements. OUTREACH as a broker also has agreements with the County for other social service mobility options, transportation services and case management. Dedicated vehicles are fueled at County fueling stations to take advantage of bulk purchase savings. OUTREACH has also arranged for dedicated vehicles to be parked at VTA and County facilities to reduce service provider facility costs.

The dedicated service provider is mainly responsible for managing staff involved in the direct operation of service. This includes drivers, road supervisors, pullout ("window") dispatchers, managers, and administrative staff. The dedicated service provider is responsible for hiring, background checks, training, and supervision of these staff. Other responsibilities include:

- Providing vehicle and general liability insurance
- Contracting for the repair of body damage
- Operating vehicles in compliance with contract requirements
- Accident and incident reporting and claims management
- Providing OUTREACH with daily and monthly service reports

OUTREACH developed a somewhat unique approach for control and dispatch of paratransit service a decade ago. While OUTREACH has sole responsibility for trip reservations and scheduling, it shares responsibility for radio dispatch and management of vehicle runs with its dedicated service provider. Both parties have access to OUTREACH's software systems and vehicle locating and tracking systems in an area called the "Day of Service Department." At each dispatch "station," there is an OUTREACH representative as well as a dedicated service provider dispatcher. These two professionals work as a collaborative team.

This dispatching partnership allows OUTREACH to provide the client with individual assistance and to be directly involved in making any required changes to schedules and to ensure that service policies are followed. At the same time, it allows the dedicated service provider to maintain responsibility for supervising and managing its drivers, and to ensure that the drivers are supported in the field. In practice, this collaborative team atmosphere ensures the well-being of both OUTREACH's clients and the service provider's drivers in the field.

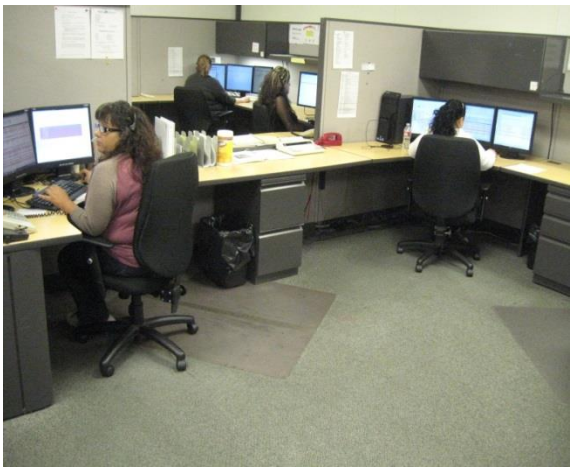


Figure D-4. Dispatch Teams at OUTREACH Call and Control Center

OUTREACH's dispatch approach has resulted in improved on-time schedules, less time to resolve service issues or challenges in real-time, more satisfied clients, and drivers that are able to get timely rest and meal breaks. Since the introduction of this collaborative dispatch method, the combined number of FTEs for broker and vendors personnel in the Day of Service/Dispatch Department has declined at the same rate as the overall staffing levels of the paratransit program as follows:

- Total OUTREACH paratransit personnel declined 35% from 73 to 48 FTEs from FY 02 to FY 13
- Total Dedicated Vendor paratransit personnel declined 29% from 301 to 215 FTEs from FY 02 to FY 13

In addition to its dedicated service provider contact, OUTREACH contracts with local taxi companies to provide "non-dedicated" service. A daily list of trips is developed by the call center and transmitted to each taxi company. Each company then dispatches and provides the trips as part of its overall taxicab operation. Taxi vendors are reimbursed for local trips based on the number of miles of service operated. The miles to be paid are generated by the OUTREACH scheduling system and are based on revenue vehicle miles. Deadhead is excluded and the same mileage rate is paid regardless of the number of riders on the vehicle. This arrangement allows OUTREACH to group taxi trips whenever possible for cost savings.

Long distance taxi trips are reimbursed on a flat rate based on distance. At the time of the case study, trips from 10 to 19.99 miles were $30; trips 20-29.99 miles were $42.50; and trips 30-40 miles were $55.

In addition to having the same general operating responsibilities of the dedicated service provider, taxi vendors are responsible for providing vehicles and on-board equipment, for purchasing fuel, and for maintaining vehicles. The taxi vendors also dispatch vehicles directly, although vehicle information from the taxi dispatch software is "patched" into the OUTREACH control center so that the delivery of service by taxis can be monitored in real time. In 2013, OUTREACH procured accessible vehicles with FTA New Freedom funds through MTC. These vehicles are being provided to taxi providers in order to allow them to better serve riders with mobility devices for both the paratransit program and the general public as these vehicles will not be restricted. VTA also enables taxi companies to increase their accessible vehicles by allowing the Broker to make available those vehicles that are being retired from the paratransit fleet during replacement cycles.

Figure D-5 illustrates the above described roles and responsibilities under the brokerage model that has been developed by VTA and OUTREACH.

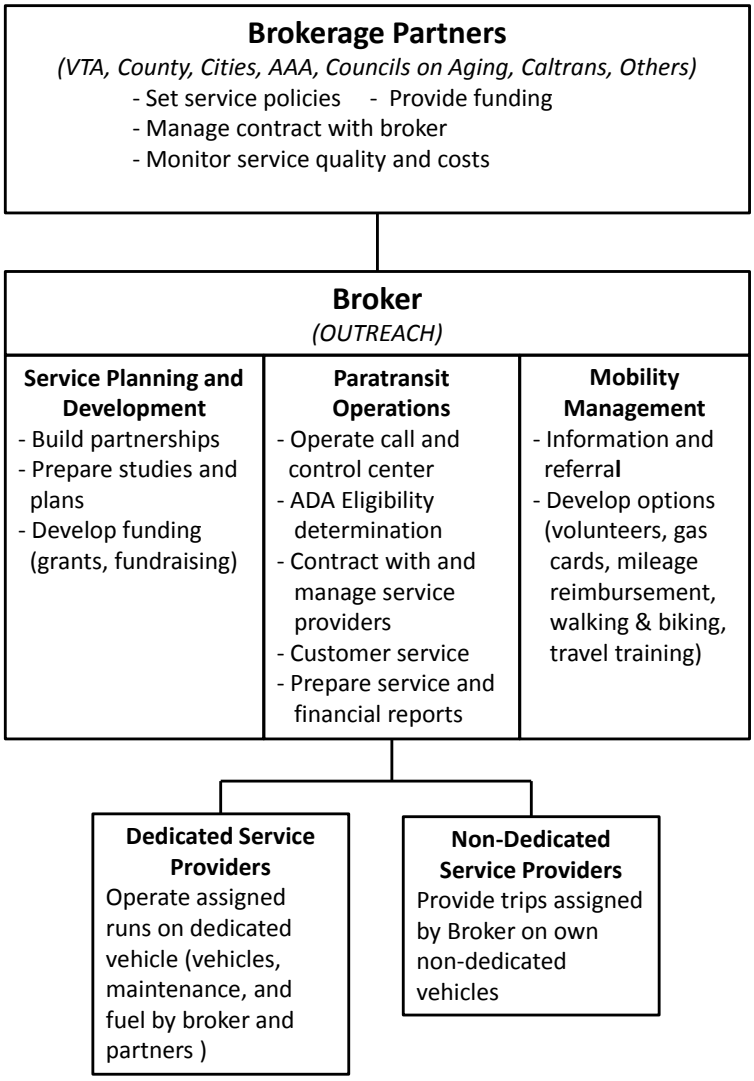


Figure D-5. VTA-OUTREACH Brokerage Model

VTA and OUTREACH Vehicles

VTA and OUTREACH work on multi-year vehicle purchasing plans based on fleet needs and the availability of capital funding from both federal and state sources. In FY 2013, the combined VTA and OUTREACH fleet for paratransit was 255 vehicles (187 VTA owned vehicles and 68 OUTREACH owned vehicles). Table D-1 shows the composition of this dedicated fleet.

Table D-1. Joint Fleet of 255 Vehicles Dedicated to VTA Paratransit

Vehicle Type	Owned By	
	VTA	OUTREACH
Hybrid Sedan	100	31
Mini Van	64	10
Modified Van	3	16
Cutaway Van	20	11
Total	**187**	**68**

VTA recently completed a replacement of 154 paratransit vehicles bringing the average fleet age to 2.5 years. Some of the retired vehicles went to OUTREACH to support other transportation programs. Some also went to other nonprofits to support transportation services operated directly by these agencies. Some went to local taxi companies to increase the accessibility of taxicab fleets.

OUTREACH also owns an additional 72 vehicles for its other non-VTA social service transportation programs. These vehicles can also be used for VTA paratransit services if needed. Table D-2 shows the composition of this additional OUTREACH fleet. As noted above, several of these additional vehicles were obtained from VTA during recent dedicated fleet replacements.

Table D-2. Additional OUTREACH Brokerage Vehicles Used for Non-VTA Services

Vehicle Type	Owned By OUTREACH
Hybrid Sedan	56
Mini Van	12
Modified Van	2
Cutaway Van	0
Total	**72**

The joint VTA and OUTREACH vehicle procurement program anticipates an additional 26 accessible vehicles from FTA 5310 Cycle 10 and Cycle 11 grant awards to OUTREACH. With Cycle 12 underway, an additional 13 accessible vehicles will be acquired.

VTA and OUTREACH are also the recipients of state funding for a back-up fleet wide emergency radio communication system as well as funding to procure 70 to 90 plug-in electric vehicles and charging system. Procurement of these vehicles will occur in 2013 and 2014 and the County of Santa Clara will partner in terms of charging infrastructure and locations.

History and Development of the OUTREACH Brokerage Program

Prior to the passage of the ADA in 1990, VTA met its Section 504 requirements by operating accessible fixed route services. Paratransit services in Santa Clara County were provided by non-profit organizations and local communities. OUTREACH was the largest provider of special needs transportation among the nonprofit providers with service dating back to the 1970s and the War on Poverty.

To respond to the ADA requirement to provide both accessible fixed route and paratransit service, VTA undertook a study in 1992 to examine alternative paratransit service delivery designs and approaches. Because a strong network of local services already existed, VTA chose to pursue the development of a brokerage model to build on these services, rather than to develop a separate ADA paratransit program.

In 1993, VTA issued a RFP for a paratransit broker. OUTREACH, which was the largest of the then five CTSAs in the area, responded and was selected to be the broker. OUTREACH worked with the other CTSAs, as well as with the 15 cities within the county, to coordinate existing transportation services into a single brokerage program throughout the entire VTA service area. Given that OUTREACH operated a number of different community transportation programs within the umbrella of the overall brokerage, OUTREACH developed an overall program budget and contracted with VTA as well as other participating organizations.

The initial contract between VTA and OUTREACH, which became effective in 1993, was for three years with two option years. In 1998, based on the success of the program, VTA opted to negotiate a five year extension rather than to re-bid. VTA has elected to do the same thing ever since, extending the OUTREACH contract each time it was scheduled to expire. This approach is not atypical in California where other transit agencies have long-standing relationships for decades with the same nonprofit CTSAs as in Los Angeles (LA Access Services) and in Sacramento (Paratransit Inc.) given the high degree of coordination that the relationship brings when the nonprofit CTSA is also engaged in paratransit management and service delivery. Nonprofit CTSAs can apply for grants and health and human funding sources that are not otherwise available to transit agencies.

VTA and OUTREACH staff noted that the long-term relationship that has developed between the agencies is a partnership rather that a short-term contractor/vendor relationship. VTA and OUTREACH work collaboratively—together with other partners and funding agencies—to develop and improve the service. As a non-profit public benefit agency, OUTREACH's costs are also regularly audited by VTA and other organizations, which provides for detailed cost accountability and control.

It is important to note that year-after-year, the direct service provider costs comprise 80% or greater of the program operating costs. Vendor services are competitively procured by OUTREACH on a regular frequency, following Federal Transit Administration Circular C4220 for guidance on best practices used in the industry for competitive third party contracting requirements. These competitive procurements also meet all state and VTA procurement requirements.

VTA noted that in 2003 FTA changed its requirement that all services be competitively procured at least every 7 years. FTA now allows transit agencies to maintain the kind of partnerships that VTA has with OUTREACH if this is a business decision determined to be in the best interest of the transit agency and the region.

Over time, VTA and OUTREACH have worked together to build and strengthen the brokerage model. Different combinations of dedicated and non-dedicated service providers have been used. Expanded collaborative arrangements with the County and other local and state agencies have also been developed to expand services and achieve cost-savings. The design of the call center has also been revised. Prior to 1999, OUTREACH only handled trip reservations and scheduling. Contracted service providers were responsible for radio dispatching and run management. Over the past decade, the dispatching of dedicated service was also centralized. OUTREACH and VTA have found that this has given them much better control over service efficiency and service quality.

Annual budgets for brokerage of ADA paratransit services are negotiated each year by VTA and OUTREACH. These annual budgets are then incorporated into VTA's two-year budget process. The OUTREACH budget has four components:

- Broker Services – This includes overall broker management and administrative functions, as well as call and control center costs for trip reservations, scheduling, dispatch, customer service, fleet management and IT functions.
- Vendor Services – This includes dedicated and non-dedicated service provider costs. It also includes operating costs outside of service provider contracts, such as fuel, vehicle maintenance, vehicle registrations, communications, and vehicle depreciation.
- Eligibility Certification – This includes costs incurred by OUTREACH for managing the ADA paratransit eligibility certification and appeals processes.
- Capital – This includes non-vehicle capital, such as computer system costs.

The VTA and OUTREACH Brokerage model has the following budgetary and control characteristics:

Allowable Costs and Total Compensation. OUTREACH abides by the "Cost Principles for Non-Profit Organizations" established by the federal Office of Management and Budget and published in Circular A-122, and VTA only compensates OUTREACH for costs allowable pursuant to the principles stated therein. OUTREACH is compensated for services performed based on actual allowable costs. This compensation does not exceed the amount authorized by VTA's Board of Directors.

Biennial Budget Projections. OUTREACH provides VTA with a proposed budget and annual trip estimates by a date requested by VTA (typically December 1) for the preparation of VTA's biennial budget. After review and consultation with OUTREACH, the proposed budget is incorporated into VTA's biennial budget document, which is subject to VTA Board approval. In determining the proposed budget, the parties consider the cost per trip, projected growth, program policies and services, and cost containment strategies. In the spirit of the partnership that has been developed, OUTREACH's financial records are open and a reasonable budget is negotiated to achieve the goals established each year.

Long Term Budget Estimates. Upon request of VTA, OUTREACH develops longer term (5-10 years) budget(s) and trip estimates to support VTA service and financial planning efforts.

Annual Budget Submittal. In the last quarter of each fiscal year, OUTREACH develops and submits an annual line-item budget for all expenses to provide paratransit services for the subsequent fiscal year. All line-items have corresponding back-up justification and explanation. The proposed budget shall be due by a date specified by VTA (typically June 1). After review, and modification as needed, the VTA Project Manager approves such annual budget in writing. The budget may be amended at mid-year or when needed, reasonable and justified, to reflect changes in vendor costs, broker costs, eligibility costs or capital needs brought on by unforeseeable circumstances or by changes in VTA-approved service policies, procedures, guidelines and service delivery practices. The budget includes costs for broker and vendor services, capital procurements and the ADA paratransit eligibility certification program. The budget submittal also includes an organizational chart, staffing plan, vehicle assignment list, a description with budget impact of any proposed programmatic change and other documents needed to support the requested budget.

Additional and/or Alternative Funding. If OUTREACH receives additional or alternative funding that is incorporated into the paratransit program budget, OUTREACH identifies these revenues, the type of funds, funding source, amount of funding and the potential impacts to the paratransit program as part of the budget process. Any agreement between OUTREACH and a third party to provide these funds is made available to VTA upon request. A typical example of this additional funding that has been recognized in the annual budget is the contribution of the County of Santa Clara, Aging an Adult Services, which will contribute to part of the cost of the paratransit trips for ADA-certified eligible riders to and from the network of 39 senior/community/nutrition centers in Santa Clara County. The County contribution goes beyond covering the rider fare and contributes to the actual cost per trip.

Fare Collection. OUTREACH collects over $2.4 million per year in client fare payments using a virtual paratransit pre-paid debit account payment system. This system is highly secure and eliminates any fraud at the time of the ride. Customers enjoy the convenience of the system in not having to carry cash, tokens, tickets, or smart cards. Fares collection is automated through this virtual debit system with each client having an individual account with OUTREACH eliminating the need for in-vehicle fare equipment and costly fare collection procedures. Customers have the convenience of setting-up standing or single payments. Clients can pay into their accounts using cash, checks, commuter checks, credit cards, and other options. The fare account system is designed to accept ride sponsors and subsidies. The Broker

submits fare reconciliation sheets to VTA monthly showing all transactions. Fare-box recovery is in the 12% to 15% range.

Invoices – Paratransit Brokerage Service. VTA pays OUTREACH in advance for broker services, based upon estimates for costs to be incurred for each billing period. Cost estimates are submitted to the VTA Project Manager who reviews and approves for processing of the invoice and payment by the 10th day after receipt of the invoice. OUTREACH submits a month end invoice by the 20th day of each month for services provided during the previous month, to include billings for actual costs incurred by OUTREACH. OUTREACH reconciles the difference between the prior period's advance payments and actual costs incurred for that invoice period. OUTREACH adjusts the subsequent advance payment requests for any underestimated costs and VTA is credited any over-estimate in costs for the brokerage services.

Invoices – Paratransit Vendor Services. VTA pays OUTREACH in advance for the Vendor fixed cost, which is a pre-determined amount, set in the contract(s) between OUTREACH and its Vendor(s) for each billing period. OUTREACH submits to VTA's Project Manager who reviews and approves for processing of the Invoice(s) and payment(s) by the 10th day after receipt of the Invoice. For services provided by vendors, OUTREACH submits a provisional claim to VTA's Project Manager by the 5th and 20th of each month for services performed. VTA arranges a wire transfer of funds no later than the 15th and 30th of each month. OUTREACH submits a month-end invoices by the 20th of each month for services provided during the previous month, to include billings for actual costs incurred by OUTREACH. OUTREACH reconciles the difference between the prior period's advance payments and actual costs incurred for that invoice period. OUTREACH adjusts the subsequent provisional claim request on the 20th of each month for any underestimated costs and VTA is credited any over-estimate in costs for the vendor services.

Invoices – Eligibility Services. OUTREACH submits invoices to the VTA's Project Manager by the 20th of each month for Eligibility Services provided during the previous month. The Eligibility Service invoices include billings for actual costs incurred by OUTREACH.

Invoices – Capital Expenses (Excluding fleet/vehicles jointly procured separately). OUTREACH submits an invoice to the VTA's Project Manager by the 20th of each month for capital purchases incurred during the previous month, as needed. OUTREACH is paid by VTA within 30 days upon receipt of such invoice.

Back-up Documentation. OUTREACH provides appropriate back up documentation supporting the amounts billed in the invoices, including, but not limited to, receipts, complete third party invoices including fuel invoices, work orders, ridership information and documents used to pay vendors. OUTREACH provides VTA with an invoice, detailing each item of expense. All third party invoices and other supporting documents are provided to substantiate all capital costs. OUTREACH provides additional reports and documents upon VTA request.

Year-End Invoice. OUTREACH submits the year-end "close-out" invoice to VTA for the June 30th close-out of the fiscal year by July 20th. In this invoice, OUTREACH reconciles actual costs for brokerage and vendor services incurred for the immediately preceding fiscal year with the annual budget of that year.

Annual State Fuel Tax Exemption Claim. OUTREACH submits an end of year state fuel tax exemption claim. OUTREACH submits the fuel tax exemption refund from the California Controller to VTA to offset paratransit expenses. OUTREACH provides a copy of the claim to VTA.

Reporting: VTA requires the Broker to submit extensive monthly and quarterly reporting of financial and operational data.

Auditing: OUTREACH submits an annual audit and indirect cost audit to VTA conducted by an independent third party CPA firm. VTA conducts extensive auditing the paratransit program as part of the VTA Internal Audit Work Plan. In 2012 VTA's Internal Auditor reported to the VTA Board that an extensive paratransit contract compliance audit had been conducted using the services of Deloitte & Touche LLP. The audit team conducted a 300 hour extensive review of the budgeting, invoicing, fare collection, reporting, procurement practices, control procedures, data management and verification, among other focus areas. The audit firm concluded that OUTREACH had strong and effective controls and was complaint with its contractual requirements.

As a non-profit public benefit agency, OUTREACH's costs are also regularly audited by other organizations given the diverse funding sources, which provides for detailed cost accountability and control.

Advantages of the OUTREACH Brokerage Model

The brokerage approach to delivering ADA paratransit service has several advantages for VTA as well as for the region.

- VTA is able to manage the ADA paratransit service with a relatively small staff since OUTREACH performs many administrative functions on its behalf.
- Brokerage services are shared by all funding partners. Once OUTREACH establishes its overall administrative budget, these costs are allocated to all funding partners.
- The services developed by OUTREACH through its mobility management center have provided ADA paratransit eligible individuals with multiple additional travel options. These additional options have reduced reliance solely on ADA paratransit services. Also, the options selected by riders through the mobility manager are often less costly to provide.
- VTA benefits from the relationships and contacts that OUTREACH has with other organizations in the community. These relationships are often important for developing alternative funding or service delivery options. OUTREACH's non-profit status also assists with obtaining grants and raising supplemental funds.
- OUTREACH, as the broker, has the flexibility to change or expand the pool of direct service providers. This can produce lower costs, as more cost-effective service providers or delivery options are developed. It can also help to ensure service quality, as non-performing providers can easily be replaced with performing providers.
- Change at the service delivery level is also possible with minimum disruptions or transitions. With vehicles owned by VTA and the Broker, and software and information centralized with the broker, it is a relatively straightforward matter to involve a new service provider or switch out an existing provider.
- As a non-profit public benefit agency, OUTREACH's sole priority is to deliver quality, cost-effective service.
- Because OUTREACH is strictly an administrative broker and does not operate any of the service, it can make decisions on assigning trips to providers without bias.

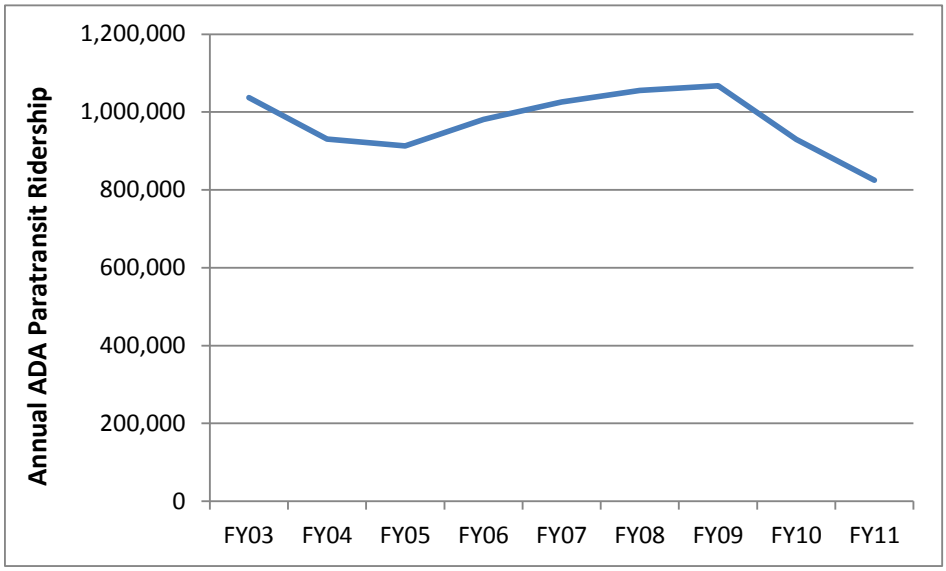
One small example of the added value of the model to VTA is the outside fund-raising that OUTREACH has done to make ADA paratransit service more affordable to low-income residents. At $4.00 per trip, paratransit is unquestionably a bargain, but an $8.00 round-trip to shop or get to an appointment can be unaffordable to some. Above and beyond the contract with VTA, OUTREACH has raised $275,000

from local communities and organizations to help pay fares for low-income riders. These types of efforts not only are beneficial to riders, but help build community support. The client accounting system with individual accounts enables a robust subsidy system that can target individuals and/or individual trips. For example, the City of Santa Clara uses CDBG funding and subsidies a flat amount for rides taken by all of its residents. This subsidy is automated and easy to track for accountability.

The broader community also benefits from the expertise that has been created at OUTREACH. Other human service agencies and communities can get assistance with expanding and improving transportation in the county. OUTREACH is also available to assist with new initiatives like the mobility management initiative, emergency preparedness planning, and other important programs.

Service Statistics and Costs

Figure D-6 shows annual ADA paratransit ridership in the VTA area from FY2003 through FY2011. Ridership dropped significantly from FY2003 through FY2005. VTA and OUTREACH staff noted that this was during the economic downturn and that the decline in the local economy was mainly responsible for this decrease in ridership. From FY2006 through FY2009, ridership increased back to FY2003 levels. In FY2010 and FY2011, ridership has decreased again—by 12.8% from FY2009 to FY2010, and by 11.3% from FY2010 to FY2011.

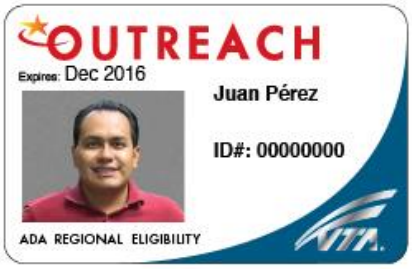


FY03	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11
1,036,768	930,540	912,668	981,098	1,025,937	1,055,426	1,067,115	930,156	824,813

Figure D-6. VTA Annual ADA Paratransit Ridership (Unlinked Passenger Trips)

VTA and OUTREACH staff noted that the most recent decreases in ADA paratransit ridership were due to a combination of factors, including:

- Increased use of other travel options made available through the Mobility Management program such as free or greatly discounted taxi rides, free gas cards, volunteer trips, among other flexible and affordable solutions
- Increased use of fixed route transit services, due in part to expanded travel training services and free access to fixed route via the VTA/OUTREACH picture ID. Use of the ID card (see sample ID card) accounts for 2% of VTA overall bus ridership.
- Some reductions in premium service trips provided with premium fare increases and VTA bus service reductions and paratransit policy changes



Analysis in FY2012 by VTA and OUTREACH showed the impact of increased use of fixed route transit and other travel options on ADA paratransit ridership. As shown in Figure D-7, ADA paratransit ridership was just under 800,000 trips in FY2012. ADA paratransit eligible individuals also took over 600,000 trips that year on the VTA fixed route bus system (note that the analysis did not count ridership on VTA rail services, rather only boardings on fixed route bus services are counted), and almost 400,000 trips that year using other travel options available through the Mobility Management program. In total, ADA paratransit eligible individuals made almost 1.8 million trips on all these modes and only about 40% the total trips were on the ADA paratransit service.

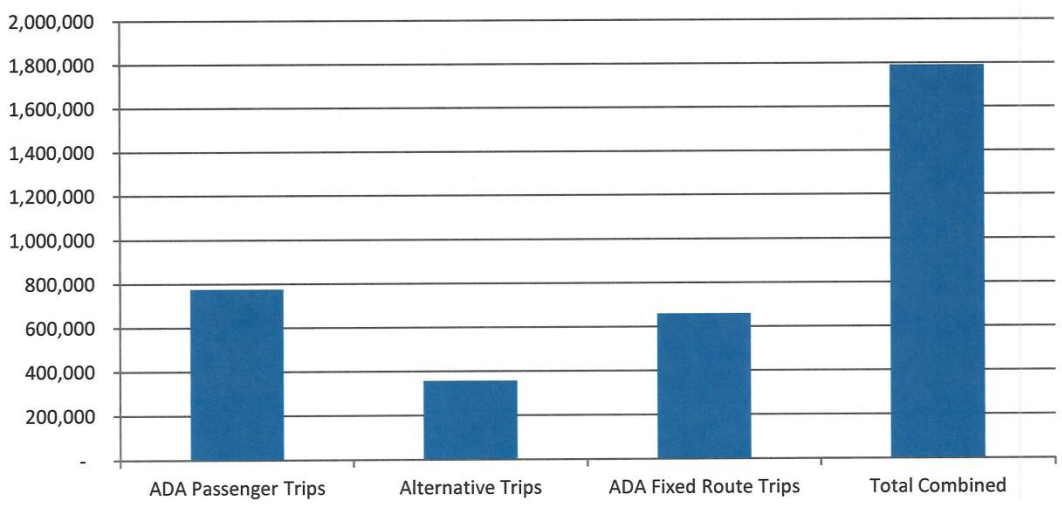


Figure D-7. Trip-Making by ADA Paratransit Eligible Riders (2012)

In FY 2013, paratransit customers took an average of 48,000 trips per month on VTA bus services using the OUTREACH Picture ID. This level of bus ridership exceeds the average monthly 45,000 paratransit trip taking by clients in FY 2013 by 7%. The combined ridership (bus and paratransit) is 93,000 per month across modes, where 52% is on VTA fixed route bus (light rail data not available). The expense to the paratransit program if all of the trips were performed as demand responsive would be an additional $1.1 million per month.

Approximately 48% of all certified ADA eligible riders have been certified as "conditional" with the expectation that they may take some or all of their trips on fixed route independently as their functional disabilities and the situation permits. OUTREACH has a strict eligibility program and for those deemed conditional, OUTREACH provides travel training and other support to encourage fixed route utilization. OUTREACH also tracks conditional ridership patterns to see what additional support the client may need to access fixed route.

It should be noted that the 93,000 trips per month does not include the trip count for all of the alternative trips with gas cards and other options that OUTREACH provides. The bottom-line is that there is increased mobility in Santa Clara County through the VTA and OUTREACH coordinated partnership. Over 1,600 car pool trips are being taken each month through the OUTREACH Mobility Management web portal (TripNet). OUTREACH's gas card programs are gaining community support among car pools and volunteer drivers due to these programs' flexibility.

OUTREACH provides software and training to manage rider options via TripNet to other nonprofits at no charge. In addition to coordination and procurement strategies as a CTSA, and the benefits of the Mobility Management Center's multiple strategies to build rider choice, OUTREACH continued business cost containment measures reduced budgeted expenses in FY 13 by $2.7 million.

Figure D-8 shows productivity (unlinked passenger trips per vehicle-revenue-hour) for the ADA paratransit service from FY2003 through FY2011. As shown, VTA and OUTREACH have been able to steadily increase the productivity of the service over time—from 2.11 trips per vehicle-revenue-hour in FY2003 to 2.58 trips per vehicle-revenue-hour in FY2011. This statistic is based on 100% of all trips system wide and not a sampling. Peak hour passenger per tends to run higher as OUTREACH provides group trip services, standing orders/subscription trips, and has shared vehicle arrangements where riders are coming and going from common locations. Operating practices that have been used to increase service productivity are described in the next section.

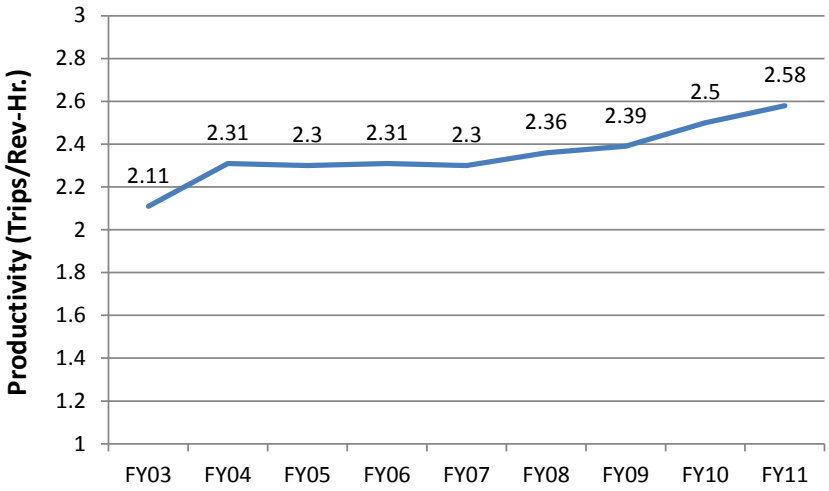


Figure D-8. ADA Paratransit Productivity (Unlinked Passenger Trips/Vehicle-Revenue-Hour)

Figure D-9 shows the total operating cost for ADA paratransit service from FY2003 through FY2012. Total operating costs, including OUTREACH brokerage costs and service provider costs (including fuel, maintenance and facility costs) are included. VTA administrative costs are not included. As shown, the

cost per trip increased slightly from FY2003 to FY2004 mainly as a result in the significant drop in ridership that year related to the economic downturn (see Figure D-8). Prior to FY 07, the service provider rate included capital for vehicles, fuel, maintenance, parking yards, and communications among other expenses. Starting in FY 06-07, VTA and OUTREACH have been able to steadily reduce the cost per trip by using more grant dollars for vehicles and equipment, by jointly procuring vehicles and leasing to vendors, by introducing more energy efficient vehicles into the fleet mix, by having the Broker control fuel and maintenance expenses directly through contract partnerships with the County of Santa Clara, and by using existing parking yards owned by VTA and the County. The cost per trip has been reduced from $30.40 in FY 04 to $ 26.46 in FY 12, which is well below the most recently published Top 50 NTD value. If the cost of living during this time period was factored in the decrease in unit cost would be even more significant (cumulative decrease of 26.8% or approximately $7 per ride).

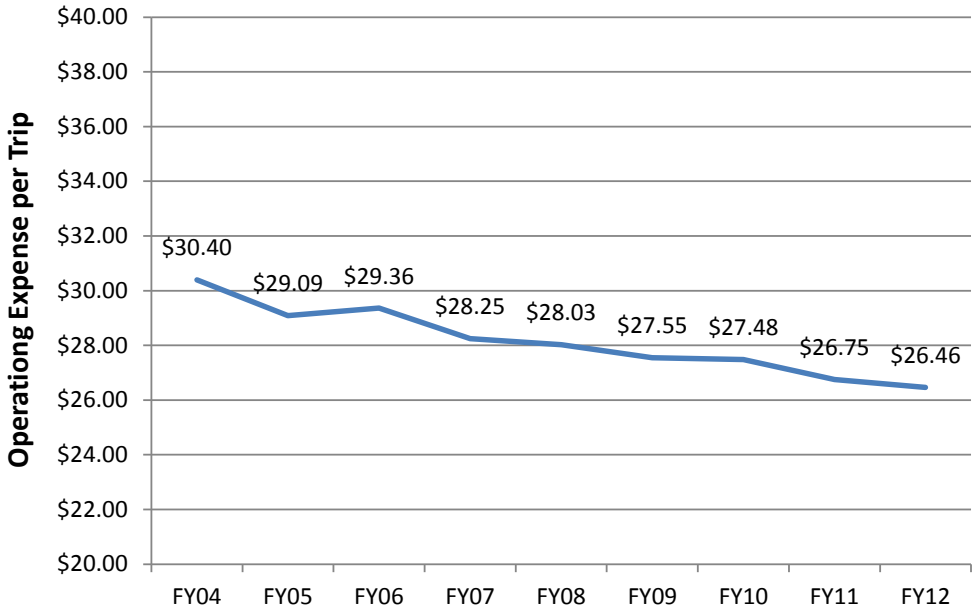


Figure D-9. ADA Paratransit Operating Cost per Trip

The farebox recovery increased from 8% in FY 03 to 15% in FY 13, also well above the most recently published Top 50 NTD value. The net operating cost has decreased dramatically by 55% from 2002 to 2012 ($31.9 million to $17.6, respectively).

VTA and OUTREACH staff noted that the increase in productivity was one major factor in reducing the cost per trip. In addition, though, they noted several cost-saving efforts that also have contributed to the reduction in the unit cost of the service. These efforts are described in the next section.

Efforts to Manage Service Quality and Costs

VTA and OUTREACH staff noted that they work together each year to improve service availability and service quality, as well as increase service efficiency and decrease costs. Following are some of the successful efforts and key changes that have been made in recent years to improve service quality and reduce costs.

Use of Capital Funding for Paratransit Fleet

Prior to FY07, the dedicated service provider purchased vehicles. Since that time VTA has used available federal capital funding to purchase vehicles for the ADA paratransit service. OUTREACH has also applied for and received vehicles under the Section 5310 program for use in the coordinated brokerage. All vehicles used in dedicated service are now purchased by VTA and OUTREACH and leased to the dedicated service provider for $1 per year. OUTREACH estimates that using capital funding to buy paratransit vehicles has reduced the operating cost by several dollars per vehicle-revenue-hour.

More Fuel Efficient Vehicles

VTA and OUTREACH utilize smaller, more fuel efficient vehicles than most other paratransit programs. The current fleet includes 95 ramp-equipped minivans, 110 sedans, 19 modified, raised-roof vans, and 31 body-on-chassis (cutaway) minibuses.

Figure D-10. OUTREACH Ramp-Equipped Minivans

In FY2007, VTA and OUTREACH introduced 20 Toyota Prius hybrid gas-electric sedans into the paratransit fleet as a test. This pilot project proved to be successful as the Prius' proved to be reliable, were able to be integrated into the scheduling process without losing productivity, and provided savings due to lower fuel costs. There are now 110 Priuses in the overall paratransit fleet.

In FY2006, prior to the introduction of Prius sedans, the paratransit fleet averaged about 14 miles per gallon. OUTREACH and VTA continued to add Prius sedans to the mix and now operate over 100 Prius sedans per day, averaging 47 mpg, reducing the fuel cost over $600,000 per year. In FY 12, the paratransit fleet averaged 19.5 miles per gallon. In FY 13, VTA and OUTREACH will be introducing plug-in electric sedans and charging systems to gain further increases on fuel efficiency and emission reduction.

Improved Routing and Scheduling

VTA and OUTREACH have placed a lot of emphasis on fully understanding and utilizing the capabilities of their automated paratransit scheduling system (Trapeze). Trip reservations and scheduling parameters in the system have been fine-tuned over the years to improve the quality of the schedules.

Schedulers at OUTREACH have also developed an innovative approach to creating schedules to allow a large number of sedans to be efficiently integrated into the fleet. First, they employ "zonal routing" (assigning vehicles to operating zones) to ensure that an appropriate mix of sedans and accessible minivans and vans are available throughout the service area. Second, they instruct the software to give preference to scheduling trips by ambulatory riders on the sedans, which keeps the accessible minivans and vans available for riders who use wheelchairs. Third, they sequence the batching of trips to runs in the following way: (1) riders who use mobility devices; (2) longer trips; and (3) ambulatory riders making shorter trips. This sequencing ensures that the final trips that need to be scheduled are shorter trips by

riders who are able to use any of the vehicles in the fleet. Taxi providers can then be used to serve these riders if the dedicated vehicles are fully booked.

Expertise in using the software has been important not only for service efficiency and costs, but for service quality. OUTREACH is able to set system parameters to provide for responsive scheduling and service delivery that meets service standards. For example, by creating distance-based travel time parameters, OUTREACH is able to efficiently schedule "going" trips that have appointment times based on the desired arrival time, rather than on an estimated pickup time. This helps ensure that riders get to appointments on-time while at the same time ensuring that travel times are not too long or drop-offs too early.

OUTREACH creates numerous additional applications available to all call agents, supervisors and managers via a web-based dashboard and with real-time access and alerts to mobile devices. For example, call agents may see the current account balance of the caller and if a payment has just been made as OUTREACH operates a pay as you go debit type fare system; phone queue information about how many are waiting in each queue and wait time (if wait is more than 60 seconds an email alert goes out to all supervisors and managers to ensure staffing is shifted as OUTREACH uses hybrid staff trained across many functional areas); tracking codes on each ride and call that are visible to all call agents and Customer Services in real time who can sort codes and follow up directly with clients or vendors to ensure any issue is resolved as needed; route management tools that will send alerts to supervisors and managers if any policy violations occur such as being on board longer than planned in order to determine the causes and trends; and hourly information by route on late and early trips with projections of which routes need pre-emptive actions to ensure on-time performance for the next 1 to 3 hours.

County Maintenance of Dedicated Vehicles

As noted earlier, VTA and OUTREACH negotiated with Santa Clara County to have all dedicated vehicles in the paratransit fleet maintained through the County's vehicle maintenance program. Santa Clara County has a large and high-quality program that maintains public works, emergency response, and county administrative service vehicles. The scale of this operation provides economies of scale in the maintenance of the paratransit fleet.

After negotiating with the County for maintenance services, OUTREACH negotiated with the dedicated service provider to identify maintenance costs. The maintenance costs were then removed from the provider's rate. Prior to the use of County maintenance services, OUTREACH estimates that vehicle maintenance averaged about $1.20 per trip. In FY 2012 and the first half of FY 2013, OUTREACH calculated that vehicle maintenance was averaging about $1.05 per trip (about a 12.5% savings in maintenance costs).

Figure D-11. County Maintenance Shop

VTA and OUTREACH staff noted that they were able to negotiate a sharing of maintenance services largely because Santa Clara County is well-run and takes an entrepreneurial approach to the provision of services. The County is open to these types of cost-sharing arrangements as a way to not only help other local organizations, but as a way to generate income and share its own overhead costs.

In-Kind Parking and Operating Facilities

Also as noted earlier, VTA and the County provide space for parking paratransit vehicles and for housing the dedicated service provider staff. Parts of two of VTA's operating divisions were not being used. These areas included parking and modular buildings. The areas were made available to the dedicated service provider. One county parking lot with unused space was also identified and made available for parking vehicles. The parking areas are fenced and secure (one is co-located with the County Sheriff's office).

As the use of these facilities was being arranged, OUTREACH negotiated with the dedicated service provider to identify and delete facility and parking costs included in the contractor's operating rate. This negotiation reduced about $500,000 per year in operating costs from the contractor's operating budget and rate.

Figure D-12. OUTREACH Minivan at County Fueling Station

Bulk Purchase of Fuel

To take advantage of bulk purchase pricing, VTA and OUTREACH have arranged to purchase fuel from the County of Santa Clara. Vehicles involved in dedicated service are fueled at one of the County fueling stations. Because taxi vehicles are not dedicated solely to the paratransit service, taxi contractors still are responsible for purchasing their own fuel.

VTA and OUTREACH estimate that fuel purchased through the County is about 20 cents less per gallon than fuel purchased on the open market. In FY2012, a total of 351,965 gallons of fuel were used in paratransit operations. This translates to savings of about $70,393 per year.

Federal and State Fuel Tax Rebates

The paratransit service also qualifies for Federal and State excise tax rebates. OUTREACH files for these rebates each year. In FY2012, the Federal excise tax rebate was 6 cents per gallon, or $18,551. The State excise tax rebate was 18 cents per gallon, or $63,354. In total, OUTREACH and VTA saved $81,905 in FY2012 by filing for these rebates.

Limited Reliance on Liquidated Damages for Contractor Performance

OUTREACH staff noted that they do not rely solely on liquidated damages in service provider contracts to ensure service quality and contract compliance. While the contracts do contain performance standards and associated incentives as well as liquidated damages, the terms of the contracts limit service provider liability to a maximum of $2,000 per month in liquidated damages. OUTREACH staff noted that they rely more on identifying the core issues and working with service providers to correct these issues. If providers are not responsive to addressing and correcting identified problems, OUTREACH has the option to move business to performing contractors.

While it was not possible to place a dollar amount on the savings from this approach to contract oversight, OUTREACH staff felt that it minimizes the inclusion of contingencies in service provider contracts to cover possible liquidated damages.

Coordinated Procurement of Paratransit Services

To achieve the best prices, OUTREACH bundles all paratransit services and competitively procures providers for all of the services through a coordinated procurement. RFPs request providers for the combined ADA paratransit service, senior transportation program, and CalWORKS program.

Use of "Standby" Runs

To help ensure service quality, OUTREACH has "standby" vehicles and drivers. These runs start the day without any scheduled trips and are therefore fully available to dispatchers to respond to same day service issues. This allows dispatchers to better manage schedules, do proactive dispatching, and move trips to standby runs from runs that are behind schedule. It also allows schedulers to be more aggressive in creating efficient schedules. If unpredicted delays (traffic, weather, rider issues, etc.) occur, OUTREACH can still stay on schedule even though the schedules are tighter. Depending on the day and time of day, the run structure includes between 5% and 8% standby runs.

Detailed and Specific Service Provider RFPs

Given OUTREACH's long-term experience with management of the paratransit services, it has a very exact understanding of the service provider requirements. It can estimate staffing needs, service productivities, and other factors very accurately.

OUTREACH uses this experience and knowledge to create very detailed service provider RFPs. This eliminates any "guesswork" on the part of proposers and minimizes the contingencies that proposers feel they have to build in to prices to cover "unknowns." It also allows OUTREACH to have a clear understanding of exactly what prices are being proposed. This then is useful in determining if prices are reasonable, appropriate, and realistic. A clear understanding of service provider costs also becomes very useful if prices need to be re-negotiated for desired contract changes (e.g., changes to permit County maintenance of vehicles, bulk fuel purchasing, in-kind donation of parking and facilities, etc.).

Dedicated Taxi Runs

While taxis can be effectively used to serve low-productivity trips cost-effectively, and provide overflow and back-up, ensuring taxi service quality can be a challenge. To address this issue, OUTREACH has worked with taxi companies to develop "dedicated" taxi runs. The taxi companies dedicate certain vehicles and drivers to OUTREACH paratransit service and OUTREACH is able to efficiently schedule to these runs. The OUTREACH RFP required taxi vendors to ensure that those who serve the contact are earning a livable wage, are covered by Worker's Compensation Insurance, and have benefits.

Findings and Conclusions

VTA and OUTREACH have succeeded in building one of the premier paratransit brokerages in the country. The OUTREACH brokerage provides high-quality and cost-effective paratransit services for VTA as well as other local and regional agencies and communities. The expertise that has been developed through the brokerage has also made it possible for the region to be on the cutting edge of innovative service planning and service delivery. This is evident in the innovative Mobility Management Program that has been successfully implemented, as well as in the many innovations employed for managing service quality and cost.

VTA and OUTREACH staff noted several important lessons that have been learned through the years in development and operation of the transportation brokerage program. They noted that these are important to the success of the program and would be key to replication of the model in other areas.

- A high level of trust must exist between the broker, VTA, and other participating agencies. It is vital that this trust be maintained over time, through good times as well as challenging times. Open communication is important for developing and maintaining this trust. The broker has a "can-do" attitude such that its social workers and mobility managers will make every effort to find a mobility solution for agencies and members of the public and often paratransit is only one of many options.
- Having a non-profit public benefit agency as the broker helps maintain trust. OUTREACH's primary obligations are to riders, funding agencies, and taxpayers.
- Accurate data from the broker is important for maintaining trust with partner agencies. The broker must have the tools to properly account for and allocate services and costs.
- Partners must be willing to "collaborate" on the development of a coordinated transportation program, rather than desire unilateral "control" of services. This collaboration is needed to ensure that various needs and requirements of the partners can be combined into a coordinated program.
- Clarifying and agreeing on the roles and responsibilities of the broker, and the roles and responsibilities of funding partners are important. Once all parties agree to this model, each must be willing to collaboratively participate within these defined roles.
- Partners must be willing to take leadership as well as supportive and enabling roles to help secure and implement grants for technology, energy efficient vehicles, to expand the system in place to address emerging needs such as Veterans transportation.
- Owning the infrastructure, information technology, and data provides the broker and participating agencies with a high degree of flexibility in managing service delivery. The mix of service providers and service delivery can be more easily adjusted to achieve both high quality and low-cost service.
- Having a stable broker over the long term allows for the development of important partnerships at the local and regional level. It also allows the broker to develop expertise and detailed knowledge of local needs that are important for the effective management of services.
- Building local service provider capabilities is important for developing a robust, competitive service delivery market. "Cooperative" contract management on the part of the broker can help build this network. Technical assistance from the broker can also help to strengthen local service providers.
- Detailed RFPs and familiarity with service provider cost structures is important for ensuring that costs are reasonable and appropriate.
- Very strong controls in place by the Broker makes VTA over-sight of contract, ADA and service policy compliance routine and measurable.

- Independent audits of both VTA and the Broker ensure that the best interest of the public, transit agency, and persons with disabilities is served by this arrangement.
- A one-stop, one-call/one-click center for coordinated eligibility, funding, paratransit and other health and human services transportation, travel training and access to fixed route, and other affordable and flexible mobility options reduces paratransit expense while creating an environment for enhancements, such as premium services, cost-sharing, vehicle sharing and mobility management strategies that will increase accessibility for all.
- A pre-paid client fare payment debit account system enhances client fare payments, negates cash collection, counting and custody costs, and allows fare payment sponsorship by third parties.

Agency: Port Authority of Allegheny County (PAT) and ACCESS Transportation Systems, Inc. (ACCESS), Pittsburgh

Topic: Service Design – Administrative Brokerage

Background

The Port Authority of Allegheny County (PAT) provides public transportation services in Allegheny County, PA, which includes the City of Pittsburgh. PAT's 2011 NTD report lists a service area of 775 square-miles and a service area population of 1,415,244.

PAT provides fixed route bus, light rail, ADA complementary paratransit, and other demand responsive transportation service. The Authority also operates two historic inclines (funiculars), the Monongahela Incline and the Duquesne Incline. Bus service is provided with a fleet of 700 vehicles. Bus service also includes three bus rapid transit (BRT) busways that range in length from 4.3 to 9.1 miles. The light rail service, known as The T, operates over 26.2 miles of track.

In 2011, PAT provided almost 64 million unlinked passenger trips. This included over 54 million on bus and BRT, almost 7 million on light rail, over 1.7 million ADA paratransit and demand responsive trips, and over 1.1 million trips on the historic inclines.

All of PAT's fixed route services, including the historic inclines, are accessible to riders with disabilities. PAT's fixed route bus fares range from $2.50 for a one zone ride to $3.75 for travel between two zones. A reduced, half fare is paid by riders with Half Fare ID Cards. Individuals with disabilities and a Half Fare Card can also bring a personal attendant at no charge.

Paratransit Brokerage – ACCESS Transportation Systems, Inc.

PAT sponsors and works closely with Access Transportation Systems, Inc. (ACCESS) to provide coordinated demand responsive transportation throughout Allegheny County. ACCESS, a private, for-profit company, was incorporated in 1979 as part of a national Service and Methods Demonstration project that was designed to test the concept of using a broker to provide demand responsive transportation in a large urban area. The company has since grown to become one of the largest and most highly regarded brokers of demand responsive service in the country. ACCESS was recognized with the United We Ride National Leadership Award in 2005 for its work in coordination of human services transportation.

ACCESS provides demand responsive transportation for the general public, but focuses on providing services for seniors, persons with disabilities, and low-income residents of Allegheny County. Any local, regional, or state agencies can purchase services from ACCESS based on a per trip fare structure for different types of demand responsive transportation services. As of January 2012, 140 different agencies and organizations contracted with ACCESS for transportation services. ACCESS provides ADA complementary paratransit service for PAT. Other large contractors include the state Department of Public Welfare (for Non-Emergency Medical Transportation), the state Office of Intellectual Disabilities (for work training and employment transportation), and the state Office of Long-Term Living (for adult day health care and other senior transportation services). Many smaller companies and agencies,

including individual assisted living programs, nursing homes, and local and regional senior and disability agencies also purchase transportation through ACCESS.

Pennsylvania is somewhat unique in that it dedicates a large portion of state lottery proceeds for the transportation of persons 65 years and older. State lottery funding is provided to ACCESS through the state Office of Public Transportation. This funding covers 85% of the cost of demand responsive transportation for seniors. Fares and/or local agency funding are used to cover the remaining 15% of the cost per trip.

ACCESS coordinates the provision of about 6,000 rides each weekday, or over 1.7 million one-way trips each year. Table D-3 and Figure D-13 show the number of one-way trips provided in FY 2012 (July 1, 2011 through June 2012) by type/funding source. ADA trips funded by PAT (ADA-PAT) accounted for 17% of all trips. Trips by riders who are ADA paratransit eligible, but whose transportation is funded by the Office of Intellectual Disabilities (ADA-OID) accounted for another 14%. Trips for seniors sponsored by the state Shared-Ride lottery program (65+ Shared-Ride) made up 19% of the total. Non-Emergency Medical Transportation (NEMT), paid for by the state Department of Public Welfare, were 10% of the total. Trips sponsored by other human service agencies (Other Agency) were the largest share, making up 32% of the total. And "unaffiliated" trips by general public riders or companions of eligible riders (GP and Companions) were 8% of the total. By coordinating so many types of demand responsive transportation, and utilizing so many sources of funding, PAT only has to fund a relatively small number of ADA paratransit trips with local funding.

Table D-3. ACCESS Trips By Type/Funding Source

	Trips	%
65+ Shared-Ride	330,716	19%
ADA-PAT	304,563	17%
ADA-OID	255,524	14%
NEMT	173,527	10%
Other Agency	561,225	32%
GP & Companions	143,988	8%
Total	1,769,543	100%

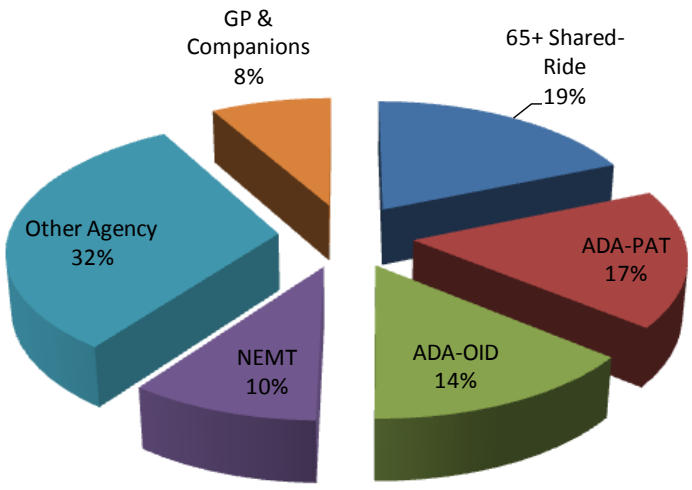


Figure D-13. ACCESS Trips By Type/Funding Source

PAT's ADA complementary paratransit service is provided in the required ¾ mile corridors around all fixed routes. The fare for ADA paratransit service is $3.15 per trip, compared to the fixed route base fare of $2.50. Until 2012, PAT was able to offer ADA paratransit throughout all of Allegheny County, including areas more than ¾ mile from fixed routes. Due to funding issues in 2012, the service area had to be reduced to regulatory minimums. PAT worked with ACCESS, though, to initiate two new services called Connections and ACCESS Works that continue to provide service beyond the ADA ¾-mile corridors. Connections is funded with New Freedom grant monies, and ACCESS Works is funded with JARC grant monies.

ACCESS is an "administrative transportation broker." This means that it does not operate vehicles, but instead contracts with transportation companies for the delivery of service. Because ACCESS does not operate its own vehicles, it can remain objective and unbiased in the way that it assigns trips to contracted service providers. This is a fundamental principal behind successful administrative brokerages. Experience and general wisdom suggests that if a broker also operates its own vehicles, it could keep and deliver the most lucrative trips itself, and contract with others for less profitable trips. Even if the broker does not operate in this way, there could be the perception that it is assigning trips unfairly.

Figure D-14 illustrates the administrative broker design concept. Funding agencies are responsible for setting program policies and requirements. They then define these in contracts with ACCESS. Agencies fund the services they request from ACCESS and are responsible for monitoring ACCESS' overall performance and contract compliance.

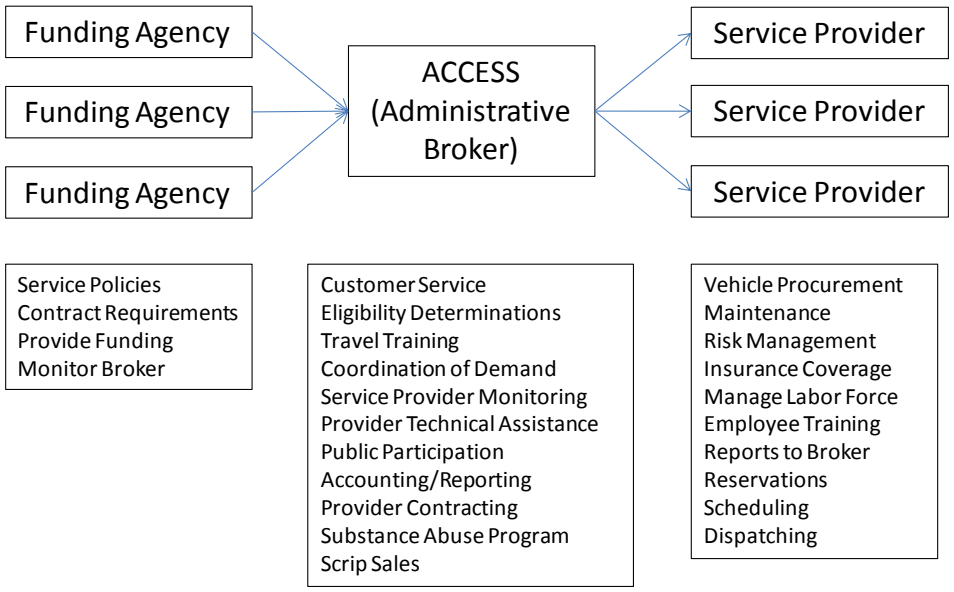


Figure D-14. Illustration of Administrative Broker

ACCESS, as the administrative broker, procures services through contracts with service providers. ACCESS monitors the performance of the service providers and provides financial and service reports required by each funding agency. ACCESS also handles customer service—rider comments and complaint investigation. It also determines eligibility for services as defined by each funding agency. To the maximum extent appropriate, ACCESS coordinates the transportation demand and develops opportunities for ride-sharing and trip grouping through its assignment of services to the contracted service providers. ACCESS also works with contracted service providers to improve service quality and efficiency as needed. To help make service delivery cost-effective, ACCESS develops collaborative

programs where appropriate—such as a combined substance abuse program that all service providers participate in. And as needed and requested by the funding agencies, ACCESS provides other services, such as travel training for riders, the management of scrip programs and sales, and public input and participation.

Service providers do reservations, scheduling and dispatching. For programs where riders call in to schedule trips (such as the ADA paratransit and 65+ Shared-Ride services), the area is divided into service zones and riders call the provider assigned to serve their trips (based on rider home address). The service provider for the zone where trips originate is responsible for handling both legs of the trip, and for trips to and from other zones. Service providers also are responsible for managing and training their workforce and maintaining an adequate workforce to meet the demand. In the ACCESS brokerage model, service providers are also responsible for purchasing and maintaining their own vehicles. Finally, service providers do trip reconciliation and generate reports required by ACCESS.

Service is provided on a shared-ride basis and riders' trips are coordinated and combined whenever appropriate to achieve the lowest possible cost. ACCESS contracts with eight service providers for the delivery of transportation. Six of the eight are locally-owned small businesses. Two are local taxicab companies. Altogether, the eight providers operate a combined fleet of 430 vehicles. The fleet includes a mix of body-on-chassis minibuses, vans and sedans.

ACCESS staff noted that a key to being able to successfully coordinate so many types of trips under so many funding sources is the unification of service policies and performance standards. Even if funding sources do not specifically require it, ACCESS applies the very highest standards, typically set by ADA paratransit requirements, to all its demand responsive services. To the extent possible, it also works with funding agencies to standardize key operating policies, such as on-time performance windows, vehicle wait times, and rider assistance policies. This way, service provider contracts can be simplified and all vehicles and drivers can operate in a similar way to maximize ride sharing and grouping.

ACCESS pays its providers by the vehicle-revenue-hour rather than by the trip, which is atypical for a brokerage with decentralized reservations, scheduling and dispatching. This tends to support high quality service since providers are less tempted to overload schedules to increase profits. To ensure that providers do not "pad" their vehicle hours to increase income, ACCESS sets productivity goals for each service provider based on the mix of trips assigned. The productivity standards are based on past operating experience and are designed to require efficiency while still allowing high quality standards to be met. Service providers agree to these productivity goals as part of their contracts and these goals are then used to calculate the number of vehicle-hours required for the number of trips assigned. At the end of each month, service providers are paid for the number of vehicle revenue-hours operated, but they are then assessed a productivity disincentive that is equal to the cost of the additional hours of service in excess of the number they would have provided if they met their productivity goals.

ACCESS staff noted that another key for keeping costs low is not relying on contract disincentives to ensure service quality. Instead of assessing disincentives for substandard on-time performance, or excessively long ride times, trips are simply reassigned from non-performing to performing providers. If a service provider is not meeting performance standards, trips are reassigned to other providers who are meeting or exceeding standards. This is not just a possibility, but is actively pursued by ACCESS. As a consequence, providers have a significant incentive to meet service performance standards.

Staff also noted that the administrative broker model requires a strong local service provider network. While ACCESS sets very high standards for service quality and efficiency, its goal is to work cooperatively with service providers to meet these goals. If a service provider is under-performing and

losing business as a result, ACCESS will work with the provider to evaluate service delivery issues and to implement solutions to any identified problems. The goal is to develop strong and competent service providers, rather than to cancel contracts or otherwise penalize and hurt these companies.

ACCESS itself is paid on a cost-plus basis. The agency negotiates an operating budget each year. This budget is reviewed with and approved by participating agencies. ACCESS than allocates its operating costs to participating agencies and is paid 1/12 of the agreed upon allocated cost each month.

ACCESS Service Statistics and Performance

Table D-4 and Figure D-15 show ACCESS ridership for the period from FY2002 through FY2012. Total systemwide ridership decreased slightly from 1,965,939 trips in FY2002 to 1,651,372 trips in FY2010. Total ridership has grown since FY2010 and reached 1,769,543 trips in FY2012.

Table D-4. ACCESS Ridership, FY2002–FY2012

Year	One-Way Eligible Rider Trips				
	ADA Paratransit	Shared-Ride 65+	Other Agency	General Public	Total
FY2002	539,992	612,006	755,311	58,630	1,965,939
FY2003	534,055	567,848	703,328	55,791	1,861,022
FY2004	541,483	540,512	696,462	55,636	1,834,093
FY2005	530,457	515,168	676,200	51,131	1,772,956
FY2006	536,041	497,102	675,409	52,011	1,760,563
FY2007	511,932	460,960	655,731	79,827	1,708,450
FY2008	519,038	428,427	664,307	81,876	1,693,648
FY2009	525,970	385,192	708,740	79,635	1,699,537
FY2010	516,207	342,690	715,796	76,679	1,651,372
FY2011	537,858	335,046	767,506	81,944	1,722,354
FY2012	558,332	330,716	792,206	88,289	1,769,543

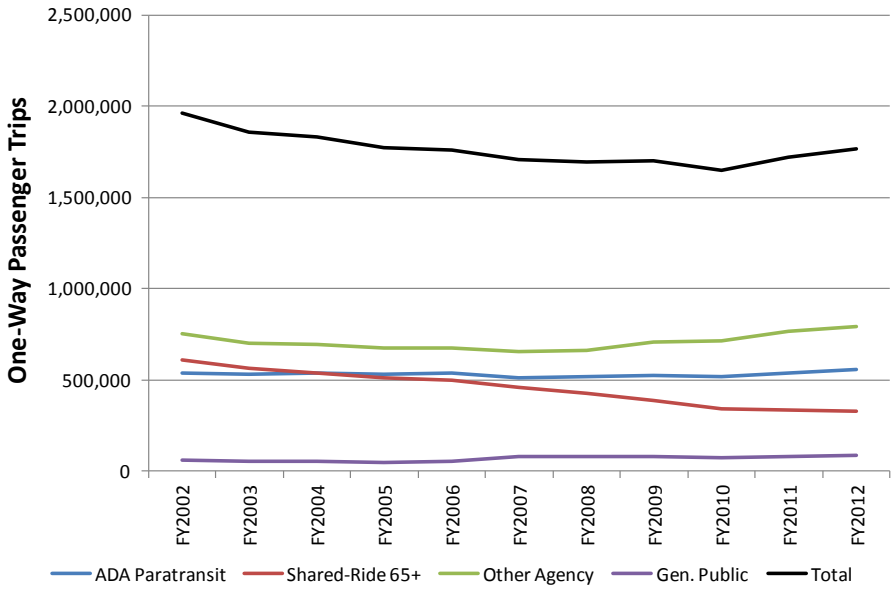


Figure D-15. ACCESS Ridership, FY2002–FY2012

ADA paratransit ridership over this eleven year period has remained relatively stable. It declined slightly from FY2002 through FY2010 and then increased slightly from FY2010 through FY2012. Throughout the eleven year period it has only varied from a low of 511,932 trips (in FY2007) to a high of 558,332 (in FY2012). Overall, it has increased by only 3.4% from FY2002 to FY2012. Stable ADA paratransit ridership is a result of: (1) the multitude of other transportation options available through the ACCESS brokerage, many with lower fares; and (2) the use of conditional and trip-by-trip eligibility by ACCESS, which promotes greater use of accessible fixed route services by many ADA paratransit eligible riders.

State lottery-funded senior transportation (Shared-Ride 65+) has steadily decreased from a high of 612,006 trips in FY2002 to 330,716 trips in FY2012—a reduction of almost 46%. Other agency trips also generally decreased from FY2002 (755,311 trips) through FY2007 (655,731 trips), but have been increasing since FY2007. In FY2012, other agency trips were about 2% higher than they were in FY2002. This general decline in agency-funded transportation is a result of decreased funding for agency services.

Trips provided to general public riders decreased slightly from FY2002 to FY2006, from 58,630 trips to 52,011 trips. General public ridership increased significantly in FY2007 (to 79,827 trips), and then steadily increased through FY2012 when it totaled 88,289 trips. This increase is largely due the expansion of service to persons with disabilities using FTA New Freedom and JARC funding.

The ACCESS brokerage is quite efficient and cost-effective, as shown in Table D-5. In FY2011, the overall service operated at a 2.46 productivity (trips per vehicle revenue-hour). Average operating cost per trip was only $20.76, and operating cost per vehicle-revenue-hours was $51.09. ACCESS administrative costs are only 5.5% of total operating costs.

Table D-5. ACCESS Service and Performance Statistics, 2011

Ridership (One-way Passenger Trips)	1,722,354
Vehicles Available for Maximum Service	398
Vehicles Operated in Maximum Service	325
Vehicle-Revenue Hours	699,723
Productivity (Trips/Veh-Rev-Hrs)	2.46
Total Operating Expenses	$35,751,184
Cost per Trip	$20.76
Cost per Veh-Rev-Hr	$51.09
Admin. Costs (%of Total Operating Cost)	5.5%

Source: 2011 NTD

Productivity for the first six months of 2012 was even higher—2.61 trips per vehicle-revenue-hour. And service quality is quite good. The on-time performance (counting both pickups and drop-offs) for January 2013 was 95.5%.

Findings and Conclusions

- ACCESS has been extremely successful in coordinating demand responsive transportation services in Allegheny County. It has coordinated all major demand responsive transportation, including ADA paratransit, senior transportation, and Non-Emergency Medical (Medicaid) transportation.
- Trips sponsored by all funding sources, as well as general public demand responsive trips, are co-mingled on the same fleet of vehicles. This provides an integrated service to the maximum extent appropriate.
- By coordinating human services transportation, ACCESS has been successful in avoiding a significant transfer of trips from agencies to ADA paratransit.

- The brokerage model has been successful in growing local demand responsive transportation service providers, who have demonstrated a commitment to providing high quality service in the communities in which they are based.
- Rather than penalizing service providers for substandard performance, ACCESS first tries to work cooperatively with them to correct problems. If this joint effort does not result in adequate performance, ACCESS moves trips from under-performing providers to performing providers. This is a significant incentive for providers to perform.
- Having eight service providers allows ACCESS to reward performing providers and move trips from under-performing providers. It also maintains healthy competition among service providers.
- ACCESS pays providers on a per hour basis, rather than per trip. This removes any incentive to maximize income and profit by accepting more trips that cannot be performed adequately. To maintain productivity, ACCESS sets absolute productivity standards, based on past history. Providers accept these productivity standards and ACCESS does not reimburse for hours above those required to meet the standard.
- ACCESS only brokers trips. It does not provide service directly. This allows ACCESS to remain objective in working with service providers.
- ACCESS is reimbursed on a cost-plus basis. This allows the company to focus on performing its mission to coordinate the provision of high-quality demand responsive transportation at the lowest possible cost to sponsoring agencies. PAT and other sponsoring agencies carefully scrutinize administrative costs each year, while allowing adequate resources for the agency to carry out its mission. In FY2012 ACCESS's administrative costs were only 5.5% of total operating costs.
- The brokerage model used by PAT and ACCESS has produced exemplary results. ACCESS coordinates transportation for over 140 different agencies, provides integrated and co-mingled service to maximize efficiency, and provides trips for an average cost of only $20.76. It also operates at a productivity of 2.61 trips per revenue-vehicle-hour while maintaining an on-time performance, counting both pickups and drop-offs, of 95.5%.

Agency: San Mateo County Transit District, San Carlos, CA

Topics: General Public Demand Responsive Service
Paratransit Service Design – Contracted Turnkey

Background

The San Mateo County Transit District the administrative body that operates and manages public transit and other transportation programs and services in San Mateo County, CA. San Mateo County is located just south of the City of San Francisco on the peninsula between San Francisco Bay and the Pacific Ocean. The county has a population of 737,100 (NTD 2011) and is 448 square miles in area (US Census).

The Transit District is the managing agency for the commuter rail agency Caltrain, and the San Mateo County Transportation Authority (TA). The main public transit services managed by The District include:

- SamTrans fixed-route bus service
- Redi-Wheels ADA paratransit serviceRediCoast general public demand responsive service
- Caltrain commuter rail service;
- Shuttle services connecting passengers to employees and to the community

SamTrans operates 65 bus routes throughout San Mateo County and into parts of San Francisco and Palo Alto. Several different types of fixed-route bus service are provided, including

- Inter-regional routes that connect to public transit services to the north (BART and San Francisco Muni) and in the south (Santa Clara County VTA) and to Caltrain commuter rail.
- Local routes
- Community and Senior Shuttles

A total of 296 fixed-route buses are operated in revenue service, including 237 standard 35-40 foot coaches, 55 articulated coaches, and four 29-foot coaches. In FY2012, SamTrans provided 12,647,929 unlinked passenger trips on the fixed route system.

SamTrans is very proactive in encouraging and facilitating use of fixed-route transit by seniors and persons with disabilities. All fixed-route vehicles are equipped with either lifts or ramps and all fixed-routes are 100% accessible. All fixed-route buses also are equipped with kneelers. SamTrans also has installed automated announcement technology on fixed-route buses that make amplified announcements of major transfer points, intersections and destinations.

Electronic message boards inside buses simultaneously display the same information. And external speakers announce the route number and destination of the bus at all bus stops.

Figure D-16. Ramp-Equipped Fixed Route Bus

The agency recruits and trains volunteers, called Mobility Ambassadors, to provide one-on-one training on how to use fixed route transit services to people with disabilities and seniors. This service is provided free of charge.

SamTrans offers fare incentives to encourage use of the fixed-route system. ADA paratransit eligible riders of the Redi-Wheels or RediCoast services can ride SamTrans fixed-route buses free of charge. SamTrans issues photo ID cards to Redi-Wheels/RediCoast members, who then show the cards when they board SamTrans buses. Personal attendants also can accompany ADA paratransit eligible riders on fixed route at no cost. In March of 2013, a total of 18,954 free fare fixed-route trips were made by ADA paratransit eligible riders.

The agency has developed excellent public information and marketing material to inform seniors and individuals with disabilities about public transit services, as well as other transportation options in the area. Materials include:

- *SamTrans for People with Disabilities: Tips to Make Bus Travel Easy* – This brochure describes the accessibility equipment onboard fixed-route buses, including lifts, ramps, securement systems and seat belts. It also notes that priority seating is available on all buses and that stop announcements are made. It offers tips on boarding, exiting, and getting to and from seats or securement locations. Policies for accommodating service animals and for back-up service should lifts or ramps fail are also noted. The travel training program also is described and information is provided for how to request assistance. Discounted fares for riders with disabilities are also noted.
- *Seniors on the Go* – This brochure describes "How to ride the bus in 5 easy steps." It provides tips on planning trips by fixed route, boarding, paying the fare, taking a seat (including noting that priority seating is provided), and getting off the bus. The Mobility Ambassador travel training program and discounted fares are also noted.
- *Getting Connected with a Volunteer Mobility Ambassador* – This brochure describes the Mobility Ambassador travel-training program. It also is designed to recruit volunteers to serve as Mobility Ambassadors.
- *Senior Mobility Guide: Staying Connected in San Mateo County* – This more extensive pamphlet provides information about all types of transportation services available in the County that can assist seniors. It includes descriptions of the fixed route service, local community shuttles, ADA paratransit service, senior center transportation programs, private transportation services, walking and fitness programs, and driver safety programs and resources.
- *Online Information* – Extensive information about fixed-route bus accessibility is available online at www.samtrans.com. This includes a "how-to-ride" video.

ADA Paratransit and General Public Demand Responsive Services

SamTrans provides ADA paratransit service using two different demand responsive programs. On the eastern side (Bayside) of the County, where most of the population is concentrated, SamTrans operates a traditional ADA paratransit service called Redi-Wheels. This service is provided only to persons who have been determined ADA paratransit eligible. On the western side (Coastside) of the County, which has a lower population density and only two fixed routes, SamTrans operates a general public demand responsive service called RediCoast. This service provides origin-to-destination service for ADA paratransit eligible individuals as well as general public riders. The Redi-Wheels and RediCoast service areas are separated by a mountainous spine that runs down the center of the County. This middle area is not readily accessible and has no public transit service. Figure D-17 shows the Redi-Wheels and RediCoast service areas. More detailed information about each service is provided below.

Redi-Wheels Service

As noted above, Redi-Wheels is the ADA paratransit service in the eastern half of the County where most of the population and fixed route service is concentrated. Redi-Wheels operates during all days and hours that fixed route service is provided, which is generally from 5:30 a.m. to midnight, seven days a week. Trip reservations are accepted from 7 days in advance to 5 p.m. on the afternoon before the day of service.

Origin-to-destination service is provided. SamTrans has opted to make door-to-door service its standard practice for all riders. Drivers offer assistance to and from the door up to 50 feet from the vehicle as long as they are able to keep the vehicle in sight.

The fare for a Redi-Wheels trip is $3.75. A discounted fare of $1.75 is provided to certain low-income riders who receive Supplemental Security Income, General Assistance, or Medi-Cal assistance. Low-income riders must complete and submit an application to qualify for this reduced fare. About 15% of all registered riders qualify for this reduced fare, and almost half of all Redi-Wheels trips are provided at the reduced fare.

Figure D-17. Redi-Wheels and RediCoast Service Areas

SamTrans has a "turnkey" contract with a private transportation company for the operation of the Redi-Wheels service. The service design is explained in more detail below.

A total of 80 vehicles are used to provide Redi-Wheels service. This includes 41 lift-equipped body-on-chassis minibuses, 24 ramp-equipped minivans, and 15 sedans. All minibuses and minivans are owned by SamTrans and leased at a nominal fee to the contractor. The contractor owns the 15 sedans and includes the cost of these vehicles in its operating rate.

Figure D-18. Passenger Exiting Redi-Wheels Bus

About 2,000 individuals use the Redi-Wheels service each. In FY2012 (July 2011 through June 2012), a total of 265,126 one-way passenger trips were taken on the Redi-Wheels service. A total of 147,402 revenue-hours of service were operated in FY 2012, which means that the Redi-Wheels program operated at a productivity of about 1.8 trips per revenue-hour.

Total operating and administrative cost (all cost except vehicles) for the Redi-Wheels service in FY2012 was $12,241,519. The cost per revenue-hour in FY2012 was therefore $83.05, and the cost per one-way passenger trip was $46.17.

Figure D-19. RediCoast Vehicle and Passenger

RediCoast Service

The western part of the service area, called the Coastside, is more sparsely populated. Access across the center of the peninsula to the cities on the east is limited. There are a few small communities along the coast, but much of the area is rural. The most populated areas of the coast are from Pacifica in the north to Half Moon Bay, which is about one-quarter the way down the coast. The area becomes less densely populated and more rural south of Half Moon Bay.

SamTrans provides limited fixed-route service in this area. Route 294 operates on weekday from the Peninsula to Half Moon Bay, then up to Pacifica. Route 17 runs from Montara, which is just south of Pacifica, to Pescadero, which is south of Half Moon Bay on weekdays. Route 17 provides only limited service between Half Moon Bay and Pescadero. South of Pescadero, all the way to the end of the Coastline area, there is no fixed-route service. On weekends, route 17 operates between Pacifica and the southern part of Half Moon Bay.

To supplement this limited fixed-route service, SamTrans operates RediCoast – a general public demand-responsive service. RediCoast serves two purposes:

- To provide ADA paratransit in the northern portions of the Coastside where fixed-route service is operated; and
- To provide some additional transportation to the general public beyond the limited fixed routes that are operated in the area.

The RediCoast service is partly funded with Federal Section 5311 rural transportation assistance. Section 5311 funding pays half of the operating costs of services in the rural portions of the service area.

While RediCoast service is available to anyone who calls, residents can apply for ADA paratransit eligibility. ADA paratransit eligibility is displayed during the trip reservations process so operations staff can ensure that all requests by those who are ADA paratransit eligible are scheduled within an hour of the requested time.

RediCoast operates throughout the entire Coastline area. Service is available to anyone for any trip purpose. Hours of operation are Monday through Friday from 6:30 a.m. to 8 p.m., and weekends and holidays from 8 a.m. to 5 p.m.

Other operating policies are similar to the Redi-Wheels service:

- Fares are $3.75 per trip.
- A reduced fare of $1.75 is available to low-income riders.
- Trips are available on a "next-day" basis (riders can call up to 5 p.m. on the day before service to request a ride).
- Trips can be requested up to 7 days in advance.

- Door-to-door service is provided up to 50 feet from the vehicle (as long as the vehicle remains in sight of the driver).

The same private contractor that operates the Redi-Wheels service also operates the RediCoast service—although under a separate contract. Like the Redi-Wheels contract, a "turnkey" service is provided. The contractor does reservations, scheduling, dispatch, vehicle operations and vehicle maintenance.

A total of 12 vehicles are used to provide the RediCoast service. All are lift-equipped, body-on-chassis minibuses. All vehicles used in RediCoast service are provided by the contractor.

Table D-6 shows RediCoast service and cost data for FY2010 through FY2012. Figure D-20 shows RediCoast ridership for the same period. Ridership totaled almost 30,000 trips in FY2012.

Table D-6. RediCoast Service and Cost Data, FY2010–FY2012

	FY2010	FY2011	FY2012
Total Ridership	27,089	26,426	29,487
ADA Ridership	22,862	21,605	25,044
General Public Ridership	4,227	4,821	4,443
Total Revenue-Hours	18,902	18,055	21,523
Productivity	1.43	1.46	1.37
Total Vehicle-Miles	316,612	315,799	337,550
Miles per Trip	11.7	12.0	11.4
Cost per Trip	$48.46	$50.19	$52.62

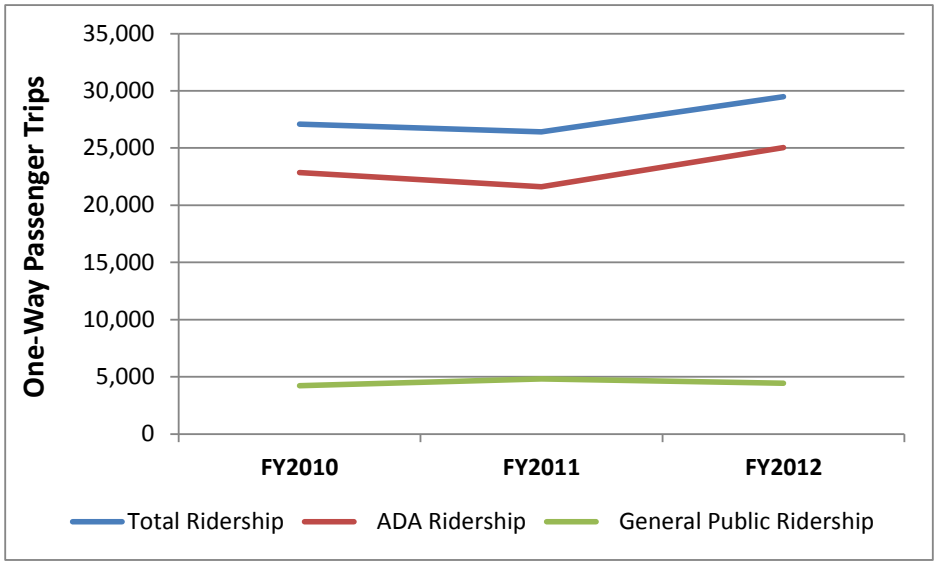


Figure D-20. RediCoast Ridership, FY2010–FY2012

Demand was relatively stable from FY2010 to FY2011, decreasing by 2.4%. Ridership increased by 11.6% from FY2011 to FY2012. As would be expected in a rural area, trip lengths are relatively long. The service operates almost 12 miles for each trip provided. Productivity, which ranged from 1.37 to 1.46 trips per revenue-hour from FY2010 through FY2012, is reasonable for a many-to-many rural demand responsive service. Cost per trip was $52.62 in FY2012.

The vast majority of trips are provided to riders who are ADA paratransit eligible. As illustrated in Figure D-21, 85% of trips were by ADA paratransit eligible riders and 15% were by other (general public) riders.

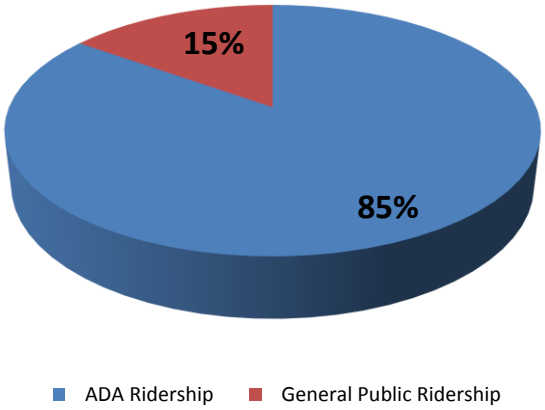


Figure D-21. RediCoast FY2012 Ridership by Type (ADA vs. General Public)

The fact that RediCoast serves mainly ADA paratransit eligible riders is not because priority is given in reservations and scheduling. SamTrans reports indicate that no trips, ADA or general public, were denied on the RediCoast service in FY2012. Enough service capacity existed to meet all expressed demand. The service simply appears to be used more often by riders with disabilities.

Service quality is reported to be excellent. In addition to having no trip denials in FY2012, 99.5% of trips in FY2012 were provided on-time. In the 8-month period from July 2012 through February 2013, no valid complaints were recorded.

SamTrans and contractor staff also noted that the RediCoast service is very customer-friendly. Reservationists and drivers know most riders and have developed a close relationship over the years. This allows staff to know the individual needs and preferences of riders, which results in very personal service. Contractor managers also noted that there is very little turnover of operations staff and drivers, which also has allowed for long-term relationships to be built with riders.

Paratransit Service Design and Operation

As noted above, SamTrans has "turnkey" contracts with a private transportation company for the operation of both the Redi-Wheels and RediCoast services. For both services, the contractor manages all aspects of the operation, including reservations, scheduling, dispatch, vehicle operations, and vehicle maintenance. SamTrans sets service policy, facilitates community involvement, funds the services, oversees the contracts, manages service quality, and handles customer service (complaints and rider comments). SamTrans also has a separate contract with another private company that assists with ADA paratransit eligibility determinations.

A contracted "turnkey" design was selected based on the size of the operation. There are about 65 Redi-Wheels runs per weekday and about 40 peak hour runs. The RediCoast service is much smaller, with only 10 weekday runs. Having one contractor perform all functions seemed appropriate. Having multiple contractors, or splitting functions between a call center contractor and service provider contracts did not seem to be economically viable given the size of the operations.

The same contractor is used for both the Redi-Wheels and RediCoast services. There are separate operations centers, though. The Redi-Wheels operation is based on the Bayside in Redwood City. The RediCoast operations center is in Half Moon Bay on the Coastside. To minimize deadheading, the Redi-Wheels service uses two garaging sites, one in the north part of the county and one in the south part of the county.

Contractors are reimbursed for fixed and variable costs. Fixed costs, which include certain administrative, capital and overhead costs are paid monthly based on a negotiated fixed cost per year. Variable costs are paid based on the number of vehicle-revenue-hours of service provided.

Cost-Efficiency Efforts

SamTrans staff noted that they continuously work with the contractor to improve service efficiency. A Service Planning Committee made up of SamTrans and contractor staff meets at least quarterly (and sometimes monthly) to review service issues and opportunities for improvement.

SamTrans also works with the County's Paratransit Coordinating Council (PCC), an advisory body comprised of community representatives and riders, to improve service delivery. In addition to reviewing service quality, the PCC has an Efficiency Review Committee that helps SamTrans develop ideas for cost savings.

Some of the efforts that have been implemented for improved cost-efficiency are described below.

Use of Non-Dedicated Taxis

As part of the Redi-Wheels service, the prime contractor has a subcontract for taxi service as needed. As many as three taxi companies have been used in the past. Currently, only one company is providing subcontracted service. The prime contractor assigns trips to the taxi company and then monitors service performance. The taxi company operates a mix of sedans and accessible minivans. It also is testing one of the new MV-1 purpose-built accessible cabs.

Subcontracted taxi costs are a paid as a "pass-through" and are in addition to the fixed and variable costs for services provided directly by the contractor. There is a flag drop charge and a mileage charge for each trip provided by taxi.

Taxis are used for back-up service (if drivers are behind schedule and trips cannot be moved to other contractor vehicles), as well as to provide more cost-effective service during low demand times (evenings from 7 p.m. to midnight, and weekends). Taxis are also used to help "smooth the peak." The contractor leaves about 10% of requested trips unscheduled. All trips left unscheduled are for riders who are ambulatory. On the day of service, if unscheduled trips cannot be placed on dedicated vehicle runs to fill in any slack time created by cancellations, they are forwarded to taxi subcontractors. The current contract for taxi service calls for trips to be forwarded at least one hour prior to the scheduled pickup time. Most trips assigned to taxis are sent over the evening before the day of service once the final schedules have been developed.

To help ensure that there are not too many unscheduled trips at certain times, an "Unscheduled Trips by Hour" chart is maintained throughout the operating day. This chart is kept current and is shared with reservationists. A maximum number of unscheduled trips that can be managed per hour is set. Reservationists will negotiate trip requests to the hourly periods before and after if the maximum is reached.

The taxi company gets a list of trips to perform from the contractor and then same-day dispatches these trips. Currently, trips are dispatched one at a time. SamTrans is working with the contractor to group trips and then negotiate with the taxi company for appropriate rates when trips are grouped.

Provision of Vehicles and Other Capital

SamTrans owns most of the vehicles used in the operations. This uses available federal capital assistance to lower operating costs. All 65 accessible minibuses and minivans used in the Redi-Wheels operation are owned by SamTrans. As noted above, the contractor provides 15 sedans to supplement the SamTrans Redi-Wheels fleet. Currently, the contractor provides all 12 vehicles used in RediCoast service.

SamTrans also owns most of the other infrastructure used in operations. This includes the Redi-Wheels operations facility as well as both Redi-Wheels garages. The operations facility for the smaller RediCoast service is rented by the contractor. SamTrans also owns the phone systems and software, the computer workstations and servers (with the exception of administrative computers which are purchased and owned by the contractor), two-way radio equipment, and GPS/MDC/AVL technology that is on-board all vehicles.

Bulk Fuel Purchasing

To help lower fuel costs, all SamTrans owned vehicles are fueled at County facilities. The 15 sedans provided by the contractor for Redi-Wheels service and the contractor vehicles used in RediCoast service are fueled separately at retail stations. SamTrans has offered to negotiate a fuel cost mitigation plan as part of the contracts, but to date the contractor has opted to bid and then manage fuel costs.

No-Show Management

To help reduce no-shows and the cost associated with them, SamTrans uses Interactive Voice Recognition (IVR) technology to make trip confirmation calls the evening before each day of service. The IVR system is linked to the scheduling software and phone system to make automated trip confirmation calls to all riders who have scheduled trips for the next day. The system is quite successful. A report for February 2013 indicated that 97% of calls were successful (answered by a person, answering machine, or voice mail).

Redi-Wheel dispatchers also make manual "call-outs." Riders who have difficulty knowing when vehicles arrive, either because of their disability or the sight lines at pickup locations, can request call-outs. These calls are made about 10 minutes prior to the expected arrivals of vehicles. It was estimated that about 50% of riders are on the list for call-outs. SamTrans is planning to use the IVR system to make call-outs automatically in the future. They are working to improve the accuracy of ETAs in the system before automated call-outs are introduced.

The combination of trip confirmations, manual call-outs, as well as a suspension policy for riders who no-show frequently, has resulted in a very low no-show rate. In CY 2012, only 1.6% of all scheduled trips were no-showed on the Redi-Wheels service.

Ongoing Schedule Review and Improvement – The contractor schedulers begin looking at the trips that have been placed on runs by reservationists starting five days out. This manual review helps to identify better groupings of trips and helps correct any inefficient assignments of trips by the automated

scheduling system. This manual review of the run schedules then continues up to the evening before the day of service. Manually reviewing and improving the run schedules throughout the seven day advance reservation time period helps the automated system to find better scheduling solutions. It also makes final clean-up of the schedules much easier.

Thorough Driver Training and Orientation

New Redi-Wheels and RediCoast drivers receive a minimum of 6 weeks of training. This includes at least three weeks on the road becoming oriented to the area and major origins and destinations. This extensive training and orientation helps ensure that drivers can perform efficiently when they begin running routes independently. This amount of training is specified by SamTrans in its paratransit RFPs and is included in contracts.

Ensuring Service Quality

SamTrans also works with the contractor and the PCC to maintain a high level of service quality. Certain checks and balances are built into the service design to help promote service quality. These checks and balances, as well as ongoing efforts made by SamTrans and the PCC, are described below.

Data Control and Verification

For effective contract and service quality monitoring, SamTrans maintains all service databases. This includes the client records as well as trip records. The contractor does reconciliation, but SamTrans checks and verifies the data. Official service reports are then generated by SamTrans staff.

Service Inspections

Beyond service data, SamTrans has inspectors that monitor the provision of service. Inspectors make in-service observations and perform desk audits to ensure compliance with vehicle maintenance, driver qualification and training, and other contract requirements.

Customer Comments

All customer comments are taken directly by SamTrans staff. Complaints are then referred to the contractor, as appropriate, for investigation. The contractor has 7 days to investigate and provide a report on complaints that are referred. SamTrans staff review contractor complaint investigation reports and ensure that appropriate follow-up actions are taken. Complaints are tabulated by type each quarter. The tabulations are then provided to the County's Paratransit Coordinating Council.

Comment cards are also kept on all vehicles. Any cards that are completed go directly to the County's PCC for review. They are then forwarded to SamTrans for appropriate action.

Secret Rider Program

The PCC also has developed a "secret rider" program (a/k/a the "consumer corp"). Secret rider reports go directly to the SamTrans Board for review.

Proactive Dispatching

The contractor dispatchers scan runs two hours in advance to identify possible late trips. If reassignments to other vehicles in the dedicated fleet are not possible, this allows them to forward trips to back-up taxis in a timely manner.

All Redi-Wheels vehicles are equipped with MDCs and AVL technology. Dispatchers have up-to-date information on the location of all vehicles and on the status of runs. This technology is vital for effective service control and dispatching.

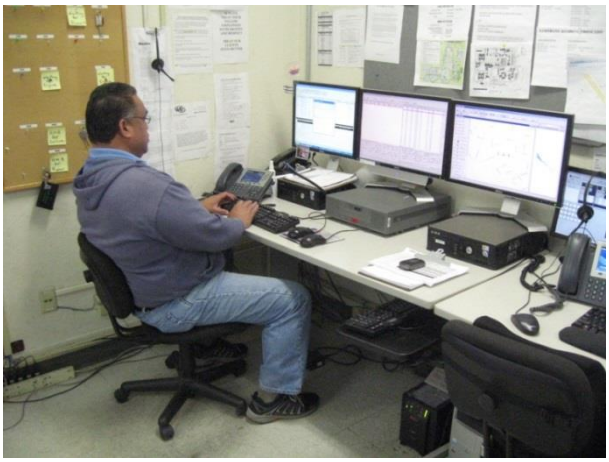


Figure D-22. Redi-Wheels Dispatcher Using Advanced Technology to Manage Runs

Performance Standards, Incentives and Assessments

To help ensure contract compliance and service quality, SamTrans has established performance standards and has attached incentives and "assessments" to each. Table D-7 summarizes the standards, incentives and assessments that have been established for the Redi-Wheels ADA paratransit service.

Revenue-Miles Between Preventable Accidents (per Month)

The standard is that there should be 70,000-75,000 vehicle-revenue-miles of service between each preventable accident each month. Performance is measured monthly to prevent averaging over a longer period that can mask periods with higher accident rates. "Preventability" is determined by SamTrans based on accident reports filed by the contractor and accident review reports prepared by SamTrans staff. Above the standard, incentive payments range from $2,000 to $8,000 per month. Below the standard, assessments range from $1,500 to $6,000 per month.

Monthly Productivity (Passengers per Vehicle-Revenue-Hour)

The standard is that between 1.50 and 1.59 passenger trips should be provided per vehicle-revenue-hour of service. Performance is measured monthly based on reports prepared by the contractor and validated by SamTrans. Above the standard, incentive payments range from $2,000 to $5,000 per month. Below the standard, assessments range from $1,000 to $4,000 per month.

SamTrans staff indicated that the contract incentives and assessments, together with ongoing work to improve efficiency, has helped to increase productivity. In CY2012, productivity averaged 1.79 trips per revenue-hour, well above the standard set at the outset of the contract.

Valid Complaints per 1,000 Trips Provided (per Month)

The standard is that there should be no more than 2.5 to 2.9 valid complaints for every 1,000 trips provided. All complaints are received directly by SamTrans on a dedicated toll-free number. The validity of complaints is decided by SamTrans staff after reviewing the results of any contractor investigation. Above the standard, incentive payments range from $1,000 to $5,000 per month. Below the standard, assessments range from $1,000 to $4,000 per month.

In CY 2012, there were only 0.70 valid complaints for every 1,000 trips provided.

Table D-7. Redi-Wheels Performance Standards, Incentives, and Assessments

Performance Measure	Incentive	Assessment
Revenue-Miles Between Preventable Accidents (per Month)		
110,000+	$8,000	
95,000 to 109,999	$6,000	
85,000 to 94,999	$4,000	
75,000 to 84,999	$2,000	
70,000 to 74,999	STANDARD	
60,000 to 69,999		$1,500
50,000 to 59,999		$3,000
40,000 to 49,999		$4,500
30,000 to 39,999		$6,000
Monthly Productivity (Passengers per Vehicle-Revenue-Hour)		
1.90+	$5,000	
1.80 to 1.89	$4,000	
1.70 to 1.79	$3,000	
1.60 to 1.69	$2,000	
1.50 to 1.59	STANDARD	
1.40 to 1.49		$1,000
1.30 to 1.39		$2,000
1.20 to 1.29		$3,000
< 1.20		$4,000
Valid Complaints per 1,000 Trips Provided (per Month)		
0 to 0.9	$5,000	
1.0 to 1.9	$2,000	
2.0 to 2.4	$1,000	
2.5 to 2.9	STANDARD	
3.0 to 3.9		$1,000
4.0 to 4.9		$2,000
5.0+		$5,000
Monthly Average Telephone Hold Time for Incoming Calls (min)		
0.00 to 0.50	$3,000	
0.51 to 0.75	$2,000	
0.76 to 1.00	$1,000	
1.01 to 1.50	STANDARD	
1.51 to 2.00		$1,000
2.01 to 3.00		$2,000
3.01+		$3,000
Monthly Pickup On-Time Performance (within or before the 0/+20 on-time window)		
99%+	$5,000	
97% to 98.9%	$4,000	
95% to 96.9%	$3,000	
93% to 94.9%	$2,000	
91% to 92.9%	$1,000	
89% to 90.9%	STANDARD	
87% to 88.9%		$1,000
85% to 86.9%		$2,000
83% to 84.9%		$3,000
81% to 82.9%		$4,000
< 81%		$5,000

Monthly Average Telephone Hold Time for Incoming Calls (minutes)

The standard is that average telephone hold times, measured monthly, should be from 1.01 to 1.50 minutes. Hold times are taken from the phone system performance reports. Above the standard, incentive payments range from $1,000 to $3,000 per month. Below the standard, assessments range from $1,000 to $3,000 per month.

In CY 2012, the average monthly hold time was 0.90 minutes.

Monthly Pickup On-Time Performance (within or before the 0/+20 on-time window)

The standard is that between 89% and 90.9% of pickups should be made before or within the 20-minute on-time window. SamTrans uses a window from the scheduled time to 20 minutes after the scheduled time (0/+20). Above the standard, incentive payments range from $1,000 to $5,000. Below the standard, assessments range from $1,000 to $5,000.

In CY 2012, on-time pickup performance averaged 88%. With additional focus on timeliness, performance has improved to 92% in January 2013 and 91.5% in February 2013. It should be noted that the 20 minute window used by SamTrans is tighter than at many systems.

Findings and Conclusions

- SamTrans operates a fully-accessible fixed route service. All fixed route buses are equipped with ramps or lifts, as well as kneelers. All buses have automated internal and external stop and route announcement systems. Announcements are also displayed on on-board screens.
- SamTrans aggressively promotes and facilitates use of fixed route services by persons with disabilities and seniors. Free fare on fixed route service is offered to persons who are ADA paratransit eligible. A travel training program is provided. Excellent public information materials have been developed to inform seniors and persons with disabilities of the accessibility of the fixed route service and the support programs that are available.
- Since the 1990s, SamTrans has operated a general public demand responsive service called RediCoast in the more rural Coastline area of the county. The RediCoast service is used to provide required ADA paratransit in portions of the Coastline where fixed route service is operated. ADA paratransit trips are integrated with general public trips on RediCoast.
- The RediCoast service is available to anyone for any trip purpose. About 30,000 passenger trips are provided each year.
- While the policy is to give priority to ADA paratransit eligible riders to meet regulatory requirements, the service meets all expressed need. There were no trip denials for any riders in FY 2012.
- About 85% of RediCoast trips are taken by riders who are ADA paratransit eligible. Fifteen percent (15%) are taken by other (general public) riders.
- RediCoast service operates at a productivity of about 1.4 trips per revenue-hour, which is reasonable for a rural many-to-many service with long trips (about 12 vehicle miles per trip).
- SamTrans uses a contracted "turnkey" service design for the provision of its paratransit services. This design is appropriate and economical given the size of the operations. RediCoast is a 12 vehicle operation, and the ADA paratransit service (Redi-Wheels) has a fleet of 80 vehicles with 40 in peak hour operation.
- SamTrans works closely with its contractor, as well as with a County advisory committee (the Paratransit Coordinating Council—or PCC), to develop ways to improve service quality and

efficiency. Efforts that have been taken to manage costs, which also have improved service quality, include:

  - Use of non-dedicated taxis for back-up service, to provide trips in low-demand times, and to "smooth the peak" and lower the size and cost of the required dedicated fleet.
  - Use of available federal capital assistance to purchase paratransit vehicles and lower operating costs.
  - Bulk fuel purchasing in coordination with the county.
  - Day ahead trip reminder calls and 10-minute ahead call-outs to help reduce no-shows.
  - Manual review of schedules as they are being developed—starting five days out and continuing up to the day of service.
  - Proactive dispatching that scans runs two hours ahead and reassigns trips that are expected to be late.
  - Extensive driver training and service area orientation to ensure efficient performance of schedules.

- SamTrans also employs several approaches to contract administration and service monitoring that have helped to ensure service quality and contractor performance. These include:
  - Control of all service databases and verification of data reconciliation by the contractor.
  - In-service observations and desk audits of contractor performance by SamTrans inspectors and manager.
  - Central control of the customer service function (rider comments and complaints) and use of rider input to identify and address service issues.
  - A "secret rider" program.
  - Establishment of service standards, incentive payments, and non-performance assessments for key measures of service performance and quality, including preventable accidents, productivity, valid complaints, telephone hold times, and on-time performance.

Agency: STAR, Arlington County, VA

Topics: Service Design – Contracted Call/Control Center with Contracted Service Providers
Coordination
Contracting and Procurement Practices
Cost-Effective Operating Practices
Use of Taxis
Use of Technologies

Background

STAR, an acronym for Specialized Transit for Arlington Residents, is a shared-ride paratransit service that provides transportation comparable to Arlington's fixed route service, ART, as well as to the Washington, DC region's fixed route service, Metrobus and Metrorail, provided by WMATA (Washington Metropolitan Area Transit Authority).

STAR was implemented in the late-1990's as Arlington County's alternative to WMATA's ADA paratransit service, MetroAccess. Arlington County, one of eight jurisdictions that comprise the WMATA system, believed it could provide a specialized service more cost-effectively than MetroAccess.

Over the next several years, as the cost for MetroAccess increased, Arlington County encouraged its ADA-eligible residents to use STAR, which had many ADA-compliant operating policies and practices, rather than MetroAccess. Costs for STAR were, and continue to be, significantly less than for MetroAccess. STAR is actively marketed as "Arlington's alternative to using MetroAccess."

However, STAR is not a fully compliant ADA paratransit service, and this is, in part, why it is more cost-effective. Its operating hours and service area do not fully mirror comparable fixed route hours and service in the region. It also does not have an ADA eligibility certification process. Eligibility for STAR is determined based on eligibility for MetroAccess. WMATA operates a comprehensive ADA eligibility certification center, where Arlington County residents (as well as other applicants in the region) obtain ADA eligibility. Once eligibility for MetroAccess is established for an Arlington County resident, eligibility for STAR is granted. There are currently about 1,200 individuals certified for STAR and about 700 of these are active riders.

Data for FY 2012 show that cost for a MetroAccess passenger trip is $50, versus $33 for a STAR passenger trip. Given that Arlington County is responsible for funding the majority of the cost for MetroAccess trips by its residents (the Commonwealth of Virginia contributes a small portion of the cost), the County benefits when its residents use STAR over MetroAccess.

Service Model

STAR's service model includes a contracted Call Center and two contract service providers. First Transit is the Call Center contractor, handling reservations, scheduling, and dispatch during operating hours of the Call Center. Diamond Transportation and Red Top Taxi are the service providers. They handle calls from riders during late evening and other hours when the Call Center is closed.

Both Diamond and Red Top provide dedicated service, with Diamond operating nine vehicles and Red Top four, for a total of 13 dedicated service vehicles. The vehicles are owned by the contractors. Red Top also provides non-dedicated service through its taxi fleet. Dedicated service is paid on a per hour basis. Non-dedicated service is paid on a per trip basis, calculated as the taxi meter rate plus $2 for an ambulatory trip or $5 for a wheelchair trip.

The functions of reservations and scheduling have always been separate from transportation service provision for STAR. This model evolved from the original model, when County staff handled control center functions in-house. When it was decided to outsource the functions, transportation service was handled primarily by the local taxi company, and it was preferred that a separate contractor handle call center functions rather than including those functions with the taxi contract.

The service model and the County's experience with specialized transportation have given the County a strong base onto which it has added a number of additional services for seniors and people with disabilities. Using purchase order agreements, these additional services have been added to the STAR contracts, providing a highly coordinated system of specialized transportation. As discussed later, the County is preparing to re-bid the STAR service and the additional services that have been layered on in past years will be included in the base contract.

County staff responsible for public transit and those responsible for senior services at the county's Area Agency on Aging (AAA) work closely together to coordinate the provision of the following services, which are funded by the AAA:

- Assisted STAR – This is a supplement to regular STAR service, with the driver providing escort service from the door of the rider's home to the office of a health care provider. Eligibility for the program is provided to individuals who are (1) age 60 or over, (2) Arlington residents, (3) STAR program participants, and (4) in need of a personal care attendant. This service is limited to health care appointments and visits to family members in a nursing home or assisted living residence. A short application and a home visit are required to determine eligibility. The fee for this service is based on income and is in addition to the STAR fee. The full cost for this service is $10 for a one-way trip.
- Temporary STAR – Another supplement to STAR, Temporary STAR is available to Arlington residents who are temporarily unable to drive or use public transit because of health issues. The service is provided for health care appointments such as chemotherapy and visits to doctors' offices following surgery. Temporary STAR is generally provided for three months, after which it is expected that the individual will recover and return to customary travel arrangements or be in a position to apply for permanent MetroAccess eligibility. This service is available regardless of age, and requires physician documentation indicating the reason for, and expected duration of, the debility. Normal STAR fares apply.
- Interim STAR – This is a third service that has been added to the STAR contracts, and provides STAR service to County residents for a short time period, while waiting for certification approval from MetroAccess (with the approval period up to 21 days, per ADA regulation) and who have medical appointments during that interim time period. Application for the service

requires a copy of the MetroAccess application. Interim eligibility is approved if County staff is certain that permanent MetroAccess eligibility will be granted. Interim STAR may only be used for health care appointments. Normal STAR fares apply.

- Senior Loops – This is a prescheduled service for residents of five retirement facilities as well as a few neighborhoods in the County, designed to provide transportation to and from local grocery stores. There are three different loop routes, each operating on a scheduled basis on different days of the week. Registration is required, and no fare is charged. Eligible riders call the STAR office to sign up for service on a next-day basis. Service is provided by the dedicated STAR contractor.

Operating Practices and Policies

Coordination

STAR benefits from coordination with the County's AAA. Of total trips provided in FY 2012, 18% were sponsored by the AAA, with that County department funding the transportation component of those trips (payment for transportation service, not the Call Center cost). The two county departments have worked together to provide a range of specialized services for Arlington's senior and disabled residents using STAR.

Use of Taxis

The use of non-dedicated taxi service provides cost efficiencies to the County. As shown in Table D-8, operating costs, including the Call Center and transportation service, totaled $2,566,228 in FY 2012. With 78,210 completed trips, the cost per trip was $32.81. Cost differences emerge when assessing the taxi trips versus trips on the dedicated service.

On a scheduled basis, the non-dedicated trips are $18.99 per trip; on a completed trip basis, the taxi trips are $19.82. Adding the average cost per trip for the Call Center functions, total costs for the non-dedicated taxi trips are $25.31 per scheduled trip and $26.33 per completed trip.

This can be compared to the costs for dedicated service: for the transportation service, dedicated trips are $33.45 on a scheduled trip basis and $33.85 on a completed trip basis. Adding the average cost per trip for the Call Center function, total costs for dedicated trips are $39.77 per scheduled trip and $40.43 per completed trip.

Photo credit Red Top Cab Co.

Table D-8. STAR Service Statistics and Costs – FY 2012

Service Provided	
Dedicated Service	
- Diamond	23,928
- Red Top	12,662
Non-Dedicated Taxi	
- Red Top Taxi	43,894
Total ADA Passenger Trips, Scheduled	80,484
PCAs & Companions	6,468
Total Passenger Trips, Scheduled	86,952
Total Passenger Trips, Completed	78,210
Operating Costs	
Dedicated Transportation	
- Diamond	$818,970
- Red Top	$385,587
Non-Dedicated Transportation	
- Red Top Taxi	$833,385
Pass-Thru Expense (insurance)	$19,413
Call Center	$508,873
Total	$2,566,228
Total Provider Cost/Scheduled ADA Trip	$25.56
Total Operating Cost/Total Completed Trip	$32.81

Trips on dedicated vehicles and non-dedicated taxies are fairly evenly split: based on completed trips, 46% are on dedicated service and 54% are on non-dedicated taxi. The Call Center attempts to schedule trips on the dedicated vehicles before sending trips to Red Top for taxi service. The Call Center also has to be mindful of jurisdictional taxi regulations which disallow certain taxi trips. For example, the Call Center cannot schedule a trip with both an origin and destination in D.C. for a Red Top taxi, since D.C. regulations do not allow non-D.C. cabs to provide such trips.

It is noted that the non-dedicated taxi service is popular with the riders, a number of whom like the exclusive-ride nature of the taxi trips as opposed to ride-sharing on the dedicated vehicles. Some riders learned the Call Center practices that typically scheduled a trip to taxi and used that knowledge to try and get booked for a taxi trip when scheduling a trip. As a result, the Call Center has had to adjust procedures so that riders are not able to "guarantee" that their trip will be on taxi.

Rider Policies

STAR's service policies are very user-oriented, more so than many ADA and other specialized transportation services. The **on-time window** is 10 minutes; most urban paratransit systems have a 30-minute on-time window. The **dwell time** is also 10 minutes; most urban paratransit systems have a 5-minute dwell time.

Photo credit Arlington County

Riders are allowed **quick side trips** on STAR. This means riders can schedule what is called a "quick stay," where, for example, the driver will stop for the rider to pick up a child from daycare. Most paratransit systems would require riders to book separate trips in those cases, with a stipulated length of time between each scheduled pick-up.

Riders are also allowed to **change a requested pick-up time on day of service** for a previously scheduled trip. If riders find that they will not be ready for a return trip, they can contact the Call Center and request an adjusted time. To the extent possible, STAR will accommodate such requests.

STAR provides **will-calls**, primarily for return trips from medical appointments but also for pick-ups at the Amtrak and Greyhound stations and local airports. Riders who are not sure of their pick-up time for such trips may schedule a will-call. Once the rider notifies that he or she is ready, the will-calls are often sent to the taxi company for taxi service. This may be, in part, why will-calls have been increasing, as many riders tend to prefer the taxi trips.

STAR also provides **subscription service**, however, its use is limited. Less than 15-20% of STAR trips are provided on a subscription basis. For many ADA paratransit and specialized transportation services, use of subscription service is significantly higher, often about half of all trips are provided as subscription. Often, riders tend to prefer subscription service for routine trips, as it eliminates the need to call for each trip, and usually the service is provided by the same driver so the service is consistent.

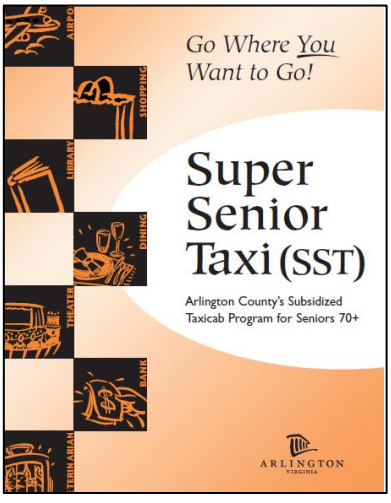
One theory for the low rate of subscription service on STAR is the high quality of service for all trips, including one-time demand trips. If riders can receive consistently good service with each trip and they don't mind calling for each trip, there is less incentive to set up subscription service. Additionally, with STAR's frequent use of non-dedicated taxis, riders may believe that their chances for getting a taxi trip are higher with one-time demand trips rather than pre-scheduled subscription trips.

While these various policies and practices are popular with the riders, they have an impact on productivity. Scheduled productivity on the dedicated service is 1.3. In particular, the very short on-time window gives the scheduling function less ability to schedule shared rides. Additionally, the use of will-calls and time changes on day of service also make ride-sharing more difficult.

Technology

In addition to Trapeze scheduling/dispatch software, STAR uses the following technology: IVR (Interactive Voice Response) for automated interaction with riders for trip booking, confirmation, cancels, etc.; web-based trip booking; automated call-outs upon vehicle arrival are provided by the taxi company; and MDTs for the taxi vehicles.

According to the County, the automated call-out function for the non-dedicated taxi service works very well and the riders like the feature. The County reports that very small numbers of riders use the IVR or web-booking features, and believes the IVR function has not been cost-effective.



Supplemental Taxi Service

In addition to the various specialized services targeted to residents with disabilities, the County also has Super Senior Taxi, a taxi user-side subsidy program for Arlington residents age 70 and above. Any senior meeting the age threshold can purchase a $20 coupon book for $10 and up to 20 coupons books each year; there are no income restrictions. The service is sponsored and funded by the County's Agency on Aging.

Eligibility is established through a one-page application form, and seniors can purchase the coupon books in various ways, including by mail.

The County has designed the program to take advantage of the coupon books sold directly by Red Top Cab, which is also one of the STAR transportation providers. The company sells books of coupons worth $20 for $18 to individuals who are age 65 and over and those with disabilities of any age. This discount has been in place for well over 30 years. Through an arrangement with Red Top Cab, the County purchases the coupon books for $8 each, then in turn sells the coupon books to eligible seniors for $10. Taxi drivers who provide trips that are paid with coupons cash out the coupons at face value. The coupons can be used for tips, and can be combined with cash if needed.

Since the inception of the program in 2003, the AAA has budgeted $88,000 annually for Super Senior Taxi but generally spends less, about $70,000.

Approximately 2,644 seniors have applied for the service since it began. Data on trips provided or cost per trip are not available. A typical taxi trip in the County is about five miles, for a cost of about $15.00, according to data from the County's taxi regulatory office, so it is likely that the subsidized trips are at least somewhat similar.

Interestingly, County staff does not believe that the subsidized taxi program is a significant diversion of trips from STAR.

Contracting and Procurement

The County is currently preparing a new Request for Proposals, as the current contracts are at the end of a five-year contract and five one-year options. As noted earlier, the new contract will include the various services that have been added onto STAR over past years.

The current contracts are structured with insurance as a pass-through, and that feature will be retained, though fuel is provided by the contractors.

The County does not require performance bonds for the STAR contracts, as it does not believe that such bonds are necessary for the specialized transportation service and that they only add to contractor costs. Having two transportation service contractors is itself insurance, as one contractor could take on more service if the other had problems for some reason.

The current STAR contracts are now almost ten years old. They do not include specific performance standards or incentives/disincentives, for example. Through its current STAR contracts as well as its contract for fixed route service, larger than the STAR contracts, the County reported that its experience with procurement and contracting will help as it prepares the new procurement document for STAR. This experience includes:

- Use of maintenance software – The County will require the contractor to use specific software, with County access to the software to monitor the contractor's maintenance performance.
- Computer equipment – The County will require that the Call Center contractor provide all computer hardware. It has been cumbersome in the current STAR contract where the County is responsible for supplying the hardware.
- Transition between contractors – Among other transition issues, the condition of the transit vehicles, when owned by the public agency, is important, as the vehicles transfer from the outgoing contractor to the new contractor. In a recent transition for the fixed route contract,

the County conducted a joint inspection of its vehicles – with participation of both the outgoing and incoming contractor – to determine which entity was responsible for what. This was an effective way to collectively identify maintenance needs and assign responsibility for any needed repairs.

- Performance standards and incentives/disincentives – The County's philosophy on standards and incentives/disincentives is that the focus needs to be on solutions to performance issues, not on the amounts of incentives/disincentives. For its new STAR contract, the County plans to consider penalties for poor performance as well as incentives for exceeding standards, but the first step will be consultation with the contractor, to assess causes for the performance and then creation of a plan to improve performance. Penalties, if needed, would not be assessed until after the third month of the performance situation.
- With its fixed route service, the County has focused on ensuring that service is improved when there are deficiencies, rather than focusing on penalties. When deficiencies are found, the County documents those in a letter to the contractor along with a timeline for expected improvement and indicates the potential for assessing liquidated damages. If the deficiencies are not remedied, the County then has the option to penalize the contractor.

Summary

Arlington County has developed a range of specialized transportation services for its older and disabled residents that go beyond ADA paratransit. STAR is the base program, functioning as a county-based paratransit service designed to serve many of its residents' ADA paratransit trips, though it is not an official ADA paratransit service and does not label itself as an ADA paratransit program. The fact that it provides about 80,000 trips for ADA eligible riders annually results, in part, from WMATA's funding structure which requires the jurisdictions in the WMATA compact to pay for their residents' ADA trips, and, in part, from the County's desire and ability to provide high quality service that meets its residents' needs.

Contributing to the effectiveness and quality of the county's services are factors of geography and circumstance:

- Arlington County is geographically compact: 26 square miles, with a population density of 8,000+ persons per square mile. Close to half of STAR trips are within the county borders.
- There is a robust taxi industry in Northern Virginia, and Red Top Cab is a large, sophisticated transportation company that has invested in technology and accessible taxis, giving the County a solid partner in providing specialized service, both dedicated and non-dedicated. Red Top has also developed pricing strategies, particularly its coupon books, which the County buys for its subsidized taxi program. This means the County does not have to develop or administer its own subsidy mechanism, an element of subsidized taxi programs that can be an administrative burden and may also be subject to fraudulent use.
- STAR does not have to be a full and complete ADA paratransit service, since that is provided by MetroAccess. This gives the County leeway to adjust its service area to be more efficient (STAR does not serve one of the Maryland suburbs on Sundays) and design its fare structure for demand management purposes (it is not limited to twice the fixed route fare).

But, importantly, with credit to the County, also contributing to the effectiveness and quality of the services are factors of system design and operation, management, coordination, and experience:

- The STAR service model works effectively, with a contractor for the Call Center handling the functions of reservations, scheduling and dispatch and two separate contractors responsible for

service provision. The separation between the Call Center functions and transportation service provision eliminates any potential conflict of interest, which could arise where a single turnkey contractor, paid on a revenue hour basis, has responsibility for reservations/scheduling/dispatch and service provision. In such cases, a turnkey contractor could potentially schedule less efficiently so that more revenue hours are scheduled.

- Effective use of non-dedicated taxi service contributes to STAR's cost-efficiency: total cost for a completed non-dedicated taxi trip at $26.33, compared to the total cost for a completed trip on the dedicated service at $40.43. Somewhat over half of STAR trips (54%) are provided by non-dedicated taxi. However, with increased reliance on non-dedicated taxi in recent years (due to increasing number of will-calls and other flexibility provided to riders by STAR), productivity on the dedicated vehicles has decreased with a corresponding increase in the cost per passenger trip for dedicated service.
- The County's project manager monitors the STAR service closely and takes an active role in working with the Call Center staff and the contract transportation service providers to address operational issues. He knows the scheduling/dispatch system and the other technology well, important for effective monitoring of contracted services.
- The County has established good working relationships with its three contractors; in particular, the two transportation providers are both local companies that have gained strong service reputations, in part from their work with the County. The contractors, and including the Call Center contractor (a national company), have responded effectively to the new services that the County has added to the original STAR contracts over the years.
- The County is willing and able to add services when it sees a need. This was the case, for example, with Assisted STAR, the need for which was articulated through discussions at the Transportation Committee of the Commission on Aging. These additional services, responsive to needs in the community, improve service quality for the riders.
- Experience gained over the years with specialized transportation provides the County with a solid, well-working base onto which it can layer new services. The County trusts its managers of transportation and senior services, allowing them to initiate and coordinate new services with STAR and to do so in a straightforward manner – with purchase orders, which has precluded the need for more complicated contract modification procedures.
- The resulting STAR service is popular among its riders. According to a rider survey conducted in 2011,[1] 91% of riders are very satisfied or satisfied with STAR. This can be contrasted with STAR riders' satisfaction with the regional ADA paratransit service: according to the same survey, just 47% of STAR riders who use or formerly used the regional service are very satisfied or satisfied with that service.

[1] Arlington County STAR Integrated Program Research Study, 9-21-11, conducted by LDA Consulting and Southeastern Institute of Research.

Agency: Dallas Area Rapid Transit

Topics: New Service Model
Contract Monitoring – Telephone Surveys
Use of Technology

Background

DART paratransit covers the service area served by DART's fixed route buses and light rail in Dallas and 12 surrounding municipalities. In FY 2011, DART provided 788,926 paratransit trips. It had a fleet of 186 body-on-chassis, lift-equipped vans.

In October 2012, DART began a new contract for its paratransit services with a new model for services. In its previous contract with Veolia (the contractor since 2001), DART had been reimbursing on a per-vehicle hour basis. The resulting cost per trip was approaching $40: $36.43, $39.12, and $39.16, respectively, from FY 2009 to FY 2011. DART was looking for a way to reduce costs and focus the activities of its own staff on service monitoring, with less direct responsibilities for daily operations. Table D-9 shows a comparison of the change from the previous DART paratransit service to the new program.

Table D-9. Changes in DART Paratransit

	Previous DART Paratransit	New Program (starting FY 2013)
Program Eligibility	All applicants go through an in-person assessment performed by DART staff	No change
Contractor(s)	One prime contractor operates and maintains vehicles	One prime contractor with subcontractors will operate and maintain vehicles
Reservations/ Scheduling	Riders call scheduling center staffed by DART for trip requests	Riders will call reservations/ scheduling center staffed by contractor for trip requests
Vehicle Dispatch	Performed by DART staff	Performed by contractor staff
Quality Assurance	Performed by DART staff	No change
Contract Compliance	Performed by DART staff	No change
Field Supervision	Performed by DART and Contractor staff	No change
Vehicle Type	Body on chassis, heavy duty, lift-equipped vans with DART branding	Mixed Fleet: small vans, accessible sedans (MV-1), and taxis
Complaint Process	Performed by DART staff	No change

In DART's procurement, it requested bids based on a per-trip basis, with additional fixed monthly costs for reservations, scheduling, and dispatching. DART provided the vehicles, the vehicle garage and maintenance facility, and some office space. The contractor provided drivers, call-takers, schedulers, dispatchers, mechanics, and supervisors. The DART procurement also raised certain service quality standards, as shown in Table D-10.

The contractor was expected to provide about 60% of the trips and use a taxi subcontractor for the balance of the trips. This would allow a lower base fleet size, with peak, evening, and weekend service also provided with taxis—accessible vehicles used as needed. MV Transportation became the new

contractor for DART paratransit. The contract had a base period of 2 years, with 5 one-year options. As of spring 2013, the dedicated fleet consisted of 96 MV-1 sedans and 47 small vans.

Table D-10. Comparison of Selected Service Standards in Old and New DART Contracts

Standard	Old Contract	New Contract
On-time pickups (20-min window)	87%	95%
Missed trips	1%	1%
Call center response: reservations	90% in 3 mins	95% in 3 mins
Call center response: dispatch	86% in 2 mins	99% in 5 mins (both)
Vehicle accidents per 100,000 miles	2.5	2.0
Complaints per 1,000 trips	5.0	3.0

As often occurs during the startup period for a new contractor with new responsibilities, service quality in the initial months was below the contract standards and also below the previous contract (compared with the same months of the previous fiscal year). On-time performance was 77.8% in October 2012 and 85.6% in November 2012, compared to 86.4% and 87.8%, respectively, in October and November 2011. Phone hold times under 3 minutes were only 63 for reservations and 65% for dispatch. In subsequent months (December 2012 to May 2013), on-time performance (87-92%) and call hold times (81–94% under 3 minutes) continued to be below the standards of the new contract, though improving.

The expectation of DART paratransit managers is that service would continue to improve, reaching the standards set in the contract. The estimated cost in the first year of the contract is under $30 per trip for contractor costs. Including DART in-house costs, the fully allocated cost for FY 2013 is projected to be $34 per trip. Over the potential 7 years of the contract, DART projects a savings of approximately $90 million, when compared to the potential costs of a contract that would have been structured in the same way as the previous contract.

The new DART contract combines a number of management and operational practices to yield a lower cost per trip, when compared to the previous contract.

- DART is focusing its efforts on monitoring service, which is important to ensure that the lower costs do not lead to lower service quality. In addition to the field supervisors, DART supervisors are located at the MV operations facility (dispatching and garage) to provide daily oversight and to help resolve issues. The regular and large number of telephone surveys of DART paratransit riders (done the day after the trip, so the experience is still fresh in the minds of the riders) is a promising practice. The findings are very valuable for both DART and its contractor to monitor and improve service.
- Use of a taxi subcontractor for a large portion of the trips yields lower costs. In the earlier months of the current contract, ratings from the phone surveys of riders for on-time performance and trip length for taxi trips were comparable to those of trips provided by MV, but ratings for the more qualitative service issues—"driver friendly and helpful," vehicle cleanliness, "did the vehicle have the proper safety restraints?"—were clearly lower. In the most recent month (May 2013) for which DART provided the results of its telephone surveys, ratings for taxi trips were comparable to the rating for trips provided by MV. This is important to the lower cost for trips provided by the taxi subcontractor do not result in poorer service for its riders.
- Use of sedans in the dedicated paratransit fleet also means lower costs for vehicle maintenance and gasoline. DART was having some difficulty in carrying more than one rider with a wheelchair in its accessible sedans, but these sedans still increased flexibility in its fleet to provide trips for riders who use wheelchairs and other mobility aids.

The new contract also sets higher performance standards for two key service issues: on-time pickups and telephone hold times. While DART had not been reaching its targets for these measures (as of May 2013), its performance had improved when compared to the previous year, and was generally exceeding the standard

Telephone Surveys of Paratransit Riders

DART has been conducting telephone surveys of its riders since August 2012: 2 months prior to the start of its new contract. Paratransit staff wanted to establish a baseline of service quality to compare the old and new contractors. The DART staff are called "Travel Ambassadors." A travel ambassador calls a rider on the day after a trip.

The survey instrument evolved since the surveys began. DART changed most of the questions to multiple choice (1–5 rating) to enable them to better analyze the responses and compare changes from month to month. Attachment A presents the most recent set of survey questions. Questions cover the following topics:

- Frequency of using DART paratransit
- Overall rating of DART paratransit service
- Quality of yesterday's trip:
    - Scheduling representative
    - Timeliness of pickup
    - Trip duration
    - Safety and accessibility of drop-off point
    - Driver friendliness and helpfulness
    - Vehicle cleanliness and comfort
- Other comments

In a 3-month period, March to May 2013, the travel ambassadors had completed 2,155 telephone survey calls to DART paratransit riders. The calls are distributed among riders who rode on vans, MV-1 (accessible) sedans, and taxis.

On average, a single survey takes 2-1/2 to 3 minutes to complete. The travel ambassadors and supervisor spend 30-45 hours per month to make the calls, compile the responses, and analyze the data. They can look at differences in perceived quality between MV Transportation and its subcontractor; changes in perceived quality from month to month; and perceived quality of riders who use the service with different frequencies (e.g., first-time riders, occasional riders, daily riders, weekly riders). DART managers review the findings monthly. As appropriate, they also forward comments and questions to the contractor MV Transportation.

A DART supervisor noted that the findings from the surveys are consistent with the comments that DART gathers through its customer service team. She said, "Most of these items are already being addressed because of that and the survey just reinforces the information."

Technology

DART was one of the earlier users of an automated telephone system for its paratransit riders to make trip reservations. Since 1997, DART has offered this option to its riders. The existing Express Booking (XPB) system has two ways for use.

The XPB system enables a rider to create a list of up to 10 trips (origin and destination) that he/she commonly takes. When the rider calls the reservations line, he/she selects one of these common trips and specifies the date, time (pickup or drop-off), use of a mobility device, and whether there will be others accompanying on the trip (personal care attendant and/or companions). XPB also allows a rider to book a new trip using the origin and destination of any trip that he/she had booked in the past 3 days.

After the rider provides this information, XPB confirms the trip request and provides the 20-minute pickup window and the estimated drop-off time.

XPB also allows a rider to cancel trips or confirm the pickup times for previously requested trips. The system is available 24 hours per day, 7 days per week. A rider can make a reservation during any time, up to 5 p.m. of the day before the requested trip. An advantage of XPB over live trip booking is that DART allows XPB users to make reservations up to 4 days in advance on all days, while requests made with a live reservationist on Monday through Wednesday can be made only 2 days in advance.

The XPB system is also used by riders who call on weekends and holidays until 5 p.m. (DART reservationists work on weekdays only) and is only for next-day trips. The rider can use any addresses. The XPB does not provide a confirmation or pickup window. The rider can call later in the evening to confirm the pickup time.

DART riders make 50-70 trip reservations per day using the automated XPB features. They cancel 150-200 trips per day using XPB. They also make 800 calls per day to XPB to confirm trips. DART riders make about 80-125 trip reservations per weekend using the "semi-automated" system.

DART had not analyzed the cost savings for using XPB. However, based on this volume, if we assume that a trip confirmation would take 30 seconds (half minute) for a DART agent; a trip cancellation would take 30 seconds; and each trip reservation would take one minute, then the estimated labor savings would be about 1.5 full-time equivalents.

DART has been working with its current contractor, MV Transportation, to develop two other automated features: on-line trip booking. As of spring 2013, DART was projecting that it would have the capability to allow its riders to book and confirm trips on the web by the end of 2013.

DART was also planning to add the feature of call-outs to riders for vehicles on their way to the pickup. DART was planning to have this in place by fall 2013. This feature would use GPS data to estimate when a DART vehicle was a certain number of minutes (typically, 5 minutes, but adjustable by DART) away from a pickup location. The system would place an automated telephone call to the rider (home number, cell number, or other telephone number designated by the rider) telling the rider that the vehicle was approaching. This would benefit the rider, as he/she could more precisely know when to leave the house or building, reducing the time he/she might have to wait outside. This technology would also help DART by reducing the time in many pickups that the vehicle waits for the rider. The technology may even reduce no-shows by reminding the rider of a scheduled trip.

DART Case Study Attachment A:
DART Customer Satisfaction Survey Script

Hi, this is _____ with the DART Travel Ambassador Program. I'm calling to do a Customer Satisfaction Survey. I need to speak with _____.

Do you have time to help me with this?

It's a really quick multiple choice survey. I will read the question and the answers and then you can tell me which one to choose.

1. The First Question is "How often do you use DART services?"

Daily, 4-5 times per week, 3 or fewer times per week, 1-2 times per month, first time, or other

2. Next, "How would you rate DART service?"

Consistent High Quality, Generally Good Quality, Quality Varies Daily, Poor Quality, or No Opinion

3. What DART service do you typically use?

Paratransit Van, Paratransit Taxi, Fixed Route Bus, Light Rail Train, On-Call Service, or Flex Service

For the remainder of the survey please answer based on how you felt about the trip you took yesterday.

4. "What was your Scheduled pickup time?"

5. "What was your Actual pickup time?"

6. What DART vehicle did you use yesterday?

Paratransit Van, Paratransit Taxi, Fixed-Route Bus, Light Rail Train, On-Call Service, or Flex Service

The rest of the survey will be answered on a scale of 1 to 5, 1 being "Strongly Disagree" or "The Worst" and 5 being "Strongly Agree" or "The Best", OK?

If you don't know the answer let me know so we can skip it, OK?

7. The First one is "Scheduling representative was very courteous."

1 to 5

8. "Scheduling representative handled my call quickly"

1 to 5

9. "Scheduling Representative was very knowledgeable and answered all of my questions."

1 to 5

10. "The wait time was 20 minutes or less from the scheduled pick up time"

1 to 5

11. "Did the vehicle arrive at the destination within 90 minutes from the time the vehicle was boarded?"

1 to 5

12. "Was the drop off point a safe and accessible location?"

1 to 5
13. "Was the driver friendly and helpful?"

1 to 5

14. "Was the vehicle clean and inviting?"

1 to 5

15. "Was the vehicle comfortable?"

1 to 5

16. "Did the vehicle have the proper safety restraints?"

1 to 5

17. "Was the vehicle easy to get in and out of?"

1 to 5

That's all the time I needed from you. Do you have any other comments or concerns you would like DART to address?

(If yes, add to notes section of call log)

Thank you for helping me with this survey.

Have a Great Day!

Agency: Pelivan Transit

Topics: Coordination
Use of Technologies

Background

Pelivan Transit is a specialized transit service provided by the Grand Gateway Economic Development Association (GGEDA) in seven counties (Craig, Delaware, Mayes, Nowata, Ottawa, Rogers, and portions of Washington), portions of Tulsa, and tribal jurisdiction areas for 10 tribes (Cherokee Nation, Eastern Shawnee, Miami, Modoc, Ottawa, Peoria, Quapaw, Seneca-Cayuga, Shawnee, and Wyandotte) in northeastern Oklahoma. The service area is primarily rural. Figure D-23 presents the Pelivan service area.

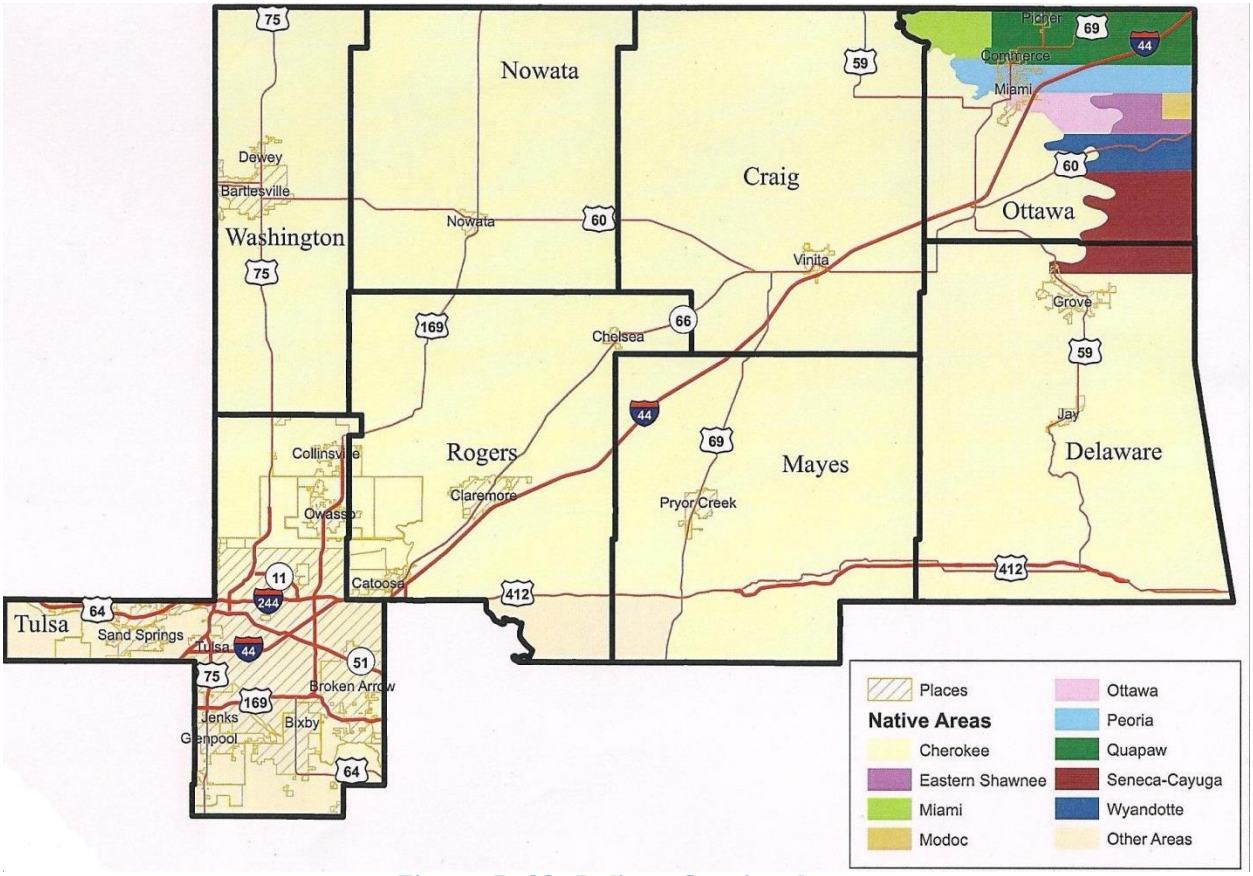


Figure D-23. Pelivan Service Area

Service is a combination of general public and contracted demand responsive that operates on weekdays (limited service in one town also on Saturday). Pelivan also provides contracted employment transportation; connections to intercity and inter-urban bus service; through-ticketing for intercity bus service; and airport transportation. Since there is no fixed route service, Pelivan does not operate complementary paratransit service. However, accessible service is available to riders by request.

Pelivan transit was established in 1985. By FY 2012, ridership had grown to 217,000 annual passenger trips, and is projected to grow significantly in FY 2013. Table D-11 presents Pelivan ridership for all services since FY 2009.

Table D-11. Pelivan Ridership

Fiscal Year	Total Ridership
2009	160,313
2010	175,317
2011	218,635
2012	217,061
2013 (9 months)	183,833

Pelivan's fleet (as of spring 2013) was comprised of 61 vehicles: a mix of minivans, small vans, body-on-chassis buses, and buses. There are several buses with larger seating capacity (15, 29, 39, and four with capacity of 19); the rest of the fleet seats between 4 and 14 passengers. Fifty of the 61 vehicles were 5 years or newer.

Pelivan's administrative office is housed GGEDA in Big Cabin, OK. Along with managers, the administrative office includes the centralized call center, data center (with a new software installation and startup in 2012), and a maintenance facility for compressed natural gas (CNG) vehicles scheduled for operation in late 2013. Pelivan also has dispatch offices in four towns (Miami, Claremore, Owasso, and Grove). Pelivan provides general public demand responsive service in each of these towns, partially funded by the respective towns. These dispatch offices are located in social service agency facilities (senior citizen centers, city hall, or tribal property) with adjacent overnight parking for available for the Pelivan vehicles. Pelivan's administrative and operations staff totals over 75.

Coordination

Pelivan service has grown over the years in large part through the efforts of its transit director. She has built partnerships with the Native American tribes in the service area, towns and counties,

Pelivan managers, operations staff, administrative staff, drivers, and mechanics all may work for any of the Pelivan transit services. The existing range of services includes:

- General public local demand responsive (with lower fares for veterans and Native Americans)
- General public long distance demand responsive
- General public intercity employment transportation
- Medicare transportation

Overall, Pelivan offers 44 categories of demand responsive transit service throughout the seven counties and Tulsa.

The office in Big Cabin hosts the customer service representatives for all transportation services. They take calls for any of the programs. The satellite offices in Miami, Claremore, Owasso, and Grove handle scheduling and dispatch for the respective local demand responsive services.

Funding sources include:

- Cities of Claremore, Grove, Miami, Owasso, Pryor, and Vinita
- State of Oklahoma
- Contract work for private companies

- Temporary Assistance for Needy Families (TANF) contracts with Craig, Delaware, Mayes, and Rogers Counties
- Private charities
- Advertising

These funding sources, along with fares, comprise 52% of Pelivan's projected FY 2014 budget. The transit director stated that GGEDA was planning to establish a not-for-profit subsidiary so that it could directly solicit donations from foundations and large companies in Northeastern Oklahoma (including WalMart).

Pelivan has also formed a partnership with Grand Lakes Mental Health Clinics, Inc. (GLMHC) to provide medical transportation services for persons with disabilities between home and mental health clinics in the Pelivan service area. Most of the riders live in group homes that GLMHC supervises. GLMHC leases its vehicles to Pelivan. Pelivan provides the medical transportation service, oversees the fleet of 100, maintains the fleet, and pays for gasoline. Pelivan supervises the drivers, who are primarily affiliated with GLMHC—some of whom are also clients. Since most of the riders are eligible for Medicaid, Pelivan is able to apply for reimbursements for all medical-related trips. Pelivan and GLMHC have worked together to apply for other state and federal grants on behalf of this transportation service.

Pelivan also intends to equip the GLMHC with the tablets and connect them to its RouteMatch paratransit software system to provide better oversight and control of the fleet.

Pelivan's projected FY 2014 budget is $3.607 million. With a projected ridership of close to 220,000, the average cost per trip is $16.50. Passenger fares are projected to be $326,030, making the net cost $15 per trip. Through coordination of its multiple services, Pelivan is able to spread its fixed costs over all trips and programs.

Technology

Pelivan Transit made a significant investment in paratransit technology in 2012 and 2013. It worked with RouteMatch, a paratransit software company, to:

- Install software: client database, billing, dispatching, recordkeeping, and scheduling
- Install a server and 20 workstations at five sites (headquarters and four field sites)
- Install tablet computers on 41 Pelivan vehicles
- Train staff in use of software
- Provide ongoing technical support

The most important feature of the software is the tracking of trips and costs for each rider, which is billed to one of Pelivan's multiple funding sources: federal, state, municipal, as well as tribal and private agencies. While Pelivan has not stopped using paper manifests as a backup source of operating data, it relies on the electronic data as the source for most of its operating data.

According to Pelivan's RouteMatch project manager, the time savings and reduction in errors (from manual data entry) are definite benefits of the system. The regular monthly reports and ad hoc reporting capability are important. She did note that it took RouteMatch much longer than either Pelivan or RouteMatch to create the custom monthly reports that Pelivan needs.

The RouteMatch project manager also noted that the Pelivan system included automated vehicle location (AVL) so that dispatchers have continuous information on each vehicle's location. Pelivan

maintain the location data so that it can investigate issues such as on-time performance, vehicle missed trips, and rider no-shows.

The use of tablet computers as the in-vehicle terminals and communication devices provides flexibility and cost savings over using dedicated mobile data terminals. The tablets are easy to program, easy to use by the drivers, and easy to replace if there is a problem or need to upgrade software. Most drivers bring the tablets home or back to the Pelivan office at the end of the operating day; this has the added benefit of being more secure, as many of the vehicles are parked outside overnight—some in public parking lots.

According to the RouteMatch project manager, the drivers were initially apprehensive in using the tablets. Most of them are now comfortable in using the tablets and appreciate their accuracy compared with manual recording of times, miles, and fares.

Figure D-24. Use of Tablet Computer in Pelivan Vehicle

Pelivan has not made use of the scheduling capabilities ("Optimizer Module") in RouteMatch. The RouteMatch project manager cited two reasons for this. First, the riders' origins and destinations are in rural areas and must be geocoded, which is a labor-intensive process. Pelivan is doing this gradually, but it is not a top priority. Second, each of the satellite offices is an independent operation, each which distinct operating parameters that must be entered and tested to make best use of the scheduling algorithm. The volume of trips at each office is small enough that manual scheduling is a reasonable task for the schedulers. As a result, Pelivan has not set a timetable for when it may use the scheduling capability in RouteMatch.

The software and servers have the capacity to handle additional workstations and tablets (Pelivan's initial purchase included 70 tablet computers). The cost of the installation, hardware, training, and other services was $295,000 (as of April 2013), as shown in Table D-12.

According to Pelivan's transit director, utilization of RouteMatch will improve route scheduling capabilities systemwide. It will allow managers to extract data for statistical reporting on the many services provided and will enhance grant writing efforts. An additional unexpected benefit of the new technology is that many Pelivan employees—drivers as well as office staff—gained computer skills that they would not otherwise have received without needing to learn how to use RouteMatch.

Table D-12. Costs for Pelivan Technology Upgrade

Technical Support	$5,788
Prof Standard Services	$14,960
Software Licenses	$64,598
Documentation	$990
Mobile Units:	
70 Tablets	$43,378
Licenses	$123,000
Mounts	$3,319
Computer Server	$18,000
Other hardware	$6,000
Implementation	$14,960
Total	$294,993

Agency: Capital Metropolitan Transportation Authority

Topics: Service Design – In-House Call/Control Center with Contracted Service Providers
Use of Taxis
Flex-Routes

Background

The Capital Metropolitan Transportation Authority (CapMetro) provides fixed route buses, commuter rail, van pools, and ADA complementary paratransit. CapMetro had been operating paratransit in house since 1985 (taking over the service from the City of Austin, which started it in 1976). In 2010, CapMetro management chose to explore contracting both its fixed route bus and paratransit services.

Service Design

Since August 2012 (final 6 weeks of its FY 2012), CapMetro has used a private contractor (MV transportation) for most of its paratransit service, in addition to a regional taxi operator. CapMetro continues to perform certain aspects of service, including reservations, scheduling, and "Where's my ride?" calls.

In FY 2012, CapMetro's ADA paratransit service, "MetroAccess," provided 598,769 passenger trips. From FY 2002-2012, MetroAccess ridership averaged over 634,000 (from 2002-2011, this ridership included non-ADA paratransit taxi trips taken by ADA riders). CapMetro also owns the 109 vehicles used by MV Transportation, which consists of 66 vans and 43 sedans. The taxi contractor, LeFleur, uses 42 dedicated vehicles (six vans, 36 minivans) for MetroAccess. The combined peak fleet of the two contractors is 121 vehicles.

CapMetro has also provided an "Access-a-Ride" taxi subsidy program available to individuals certified for ADA paratransit service. Since FY 2011, CapMetro has worked with a single local taxi company (Yellow Cab) to subsidize taxi trips. A rider may receive $15 in taxi fare credits for every $5 paid by the rider—up to $60 in subsidy each month; unused portions may be rolled over to the next month during a fiscal year. There are no restrictions on total fare, time of day, day of week, or destination for these Access-a-Ride trips.

In FY 2013, the CapMetro budget for paratransit services was $24.91 million, of which $20.42 million (82%) was for contracted services.

On the MetroAccess side, call-takers, schedulers, and customer service agents chose to remain CapMetro employees. Drivers and vehicle maintenance staff chose to become private employees. CapMetro and the unions for drivers and maintenance staff worked to keep the same wage scales, benefits, bargaining rights, and seniority for these employees under the future private contractor. Using a RFP process, CapMetro selected MV Transportation to be the primary paratransit provider. MV received a contract for 3 years plus 3 one-year options. LeFleur, a Texas-based taxi company, continued to provide 20-25% of the ADA paratransit trips with an existing contract. There was another taxi company that was available to provide "overflow" ADA paratransit trips.

The MetroAccess has an in-house staff of 47. The largest group works in the call center (18). The next largest group works in eligibility determination (12), including two travel trainers who also work for CapMetro's fixed route operations. [The actual functional assessments of applicants are performed by employees of a contractor, Concentra.] There are 10 dispatchers and schedulers; three contract monitor specialists; and four other managers, including the director of paratransit.

CapMetro accepts all requests for trips. Its schedulers assign the trips on the runs and specific type of vehicle for MV and LeFleur. It also assigns any overflow trips to the taxi contractor. There are no assigned geographic zones for the contractors, but runs are developed with a consideration to their respective garage locations to minimize deadhead mileage.

CapMetro expects to break even after 3 years of the contract (end of FY 2015), including the startup and transition costs. It then expects to continue to accumulate savings with the contracted services, as opposed to continuing to operate MetroAccess in house. The primary ongoing costs that will offset some of the cost savings include:

- Unfunded pension liability costs (former CapMetro employees turned private employees) and sick leave
- Increase in CapMetro insurance
- Increased contractor oversight

The director of paratransit recognized that the key role of his staff had changed from service operator to service monitor. To carry out their responsibilities as monitor, MetroAccess developed a "Contract Management Plan" that breaks down the contract with MV Transportation into 66 separate requirements. For each requirement, the management plan includes:

- Summary of the requirement
- Reference to contract or other document
- Method for verifying compliance, e.g., document review, field inspection, data analysis
- Frequency of review
- Most recent review
- Date of next review
- MetroAccess staff member responsible for monitoring

For example, one requirement states:

> *On Time Lot Leave: Each driver shall leave the parking lot no later than the beginning time of the run as printed on the manifest. At least 95% of all runs shall depart on time. Incentives and penalties are outlined in [contract paragraph].*

According to the Management Plan, the responsible MetroAccess staff for monitoring this requirement is the QA Team. The method of monitoring is reviewing the missed pullout report and missed service report. The monitoring takes place on a monthly basis.

Some of the 66 contract requirements were reviewed and approved one time by CapMetro at the start of the contract (e.g., Policy Statement developed to implement the drug and alcohol testing program). For a majority of the requirements, MetroAccess is reviewing MV performance on a monthly basis.

Table D-13 presents other sample requirements from the Contract Management Plan (emphasis added).

Table D-13. CapMetro Metro Access: Requirements in Contract Management Plan

Contract Requirement	Verification Method	Frequency
Adverse Weather/ Emergency Conditions: Regular service may be suspended in any area due to adverse weather or other emergency conditions. Capital Metro may also make other exceptions for events such as civil disruptions or natural disasters.	Review of emergency service plan	annual
Monthly Fare Reporting, from each vehicle, for each date is to be counted and subtotaled as to number of tickets, number of passes, number of non-payments or other fare media assigned by Capital Metro. This information shall be reported in a format specified by Capital Metro.	Pull in inspection	monthly
Vehicle Performance Standards. The Service Provider is expected to properly maintain their vehicles to **achieve a low number of unexpected road calls**. Incentives and penalties are calculated on a per 100,000 vehicle service hour rate.	Road call review	monthly
Contractor will **fill key staff vacated positions** with Capital Metro approved persons within 60 calendar days of its becoming vacant. Capital Metro shall be issued a rebate for each day the position is vacant equal to the salary and benefits cost of the position. Position(s) not filled within 60 days will be assessed a penalty pursuant of the contract.	Monthly Staff Report and observation	monthly
The Service Provider will be expected to develop, implement, and maintain a **formal training and retraining program** for all drivers and operations staff members including but not limited to supervisors, dispatchers, mechanics, administrative staff, and management.	Review plan and evidence of retraining	annual
Contractor shall be responsible for all **maintenance, and shall maintain records** for same. Maintenance will be performed to original equipment manufacturer (OEM) standards and/or Capital Metro's written instructions or specifications. OEM or better replacement parts will be used.	PMI audit	monthly
Driver Pre-trip Inspections. The Service Provider shall propose a protocol for its drivers to be able to determine from the pre-trip inspections any vehicles with serious defects, which would take the vehicle out of service. All safety and emergency equipment in each vehicle shall be maintained to meet applicable local, state, and federal standards. Ensure that all driver complaints or concerns are investigated and the disposition explained to the driver within 24 hours. All necessary repairs or replacements shall be completed in a timely manner.	Pull out inspection	monthly
Service Calls: the Service Provider shall maintain accurate records of all service calls whether the vehicle is changed-out or repaired upon return. Road calls are defined as any time that a vehicle cannot continue in service and/or a mechanic is sent to the vehicle or the vehicle is sent to a mechanic, regardless if revenue service was missed or not. A road call will be reported in an approved format as required to Capital Metro. Repair order will be made for every service call, whether a defect is found or not. It shall be the responsibility of the Service Provider to ensure that mechanics are sufficiently trained in all components of the vehicle.	Road call review	monthly

Flex Routes

CapMetro has been operating two flex routes (also called service routes), Routes #151 and #161. Route #151 has been operating since the 1990s, while Route #161 began in 2006. Maps and schedules for the two routes are provided in Attachment A.

Both routes operate on a basic level as local fixed bus routes. In addition, they offer riders the option of requesting a drop-off close to the designated route. The rider makes the request when boarding the vehicle. The rule of thumb is that the deviation may be up to 2 minutes away; the feasibility of each requested deviation is based on the judgment of the driver and dispatcher. The rider and driver arrange the pickup time for the return trip. CapMetro does not offer a deviation for pickup location of the "going" trip. A CapMetro manager noted that this is not a problem for the riders, as the routes are designed to travel close to residential areas, including larger apartment buildings.

CapMetro uses 15-seat vans equipped with a lift for these routes. The fare for these routes (with or without deviation) is $1.00, same as the fare for other local bus routes.

There are several other features of these routes that make them attractive to persons with disabilities—whether or not they are eligible for complementary paratransit. The drivers may offer assistance to riders between the vehicle and an entrance (up to one step if the rider is using a wheelchair). CapMetro drivers also may help riders to carry packages on and off the vehicle (up to four bags with a total combined weight of 20 pounds). According to program information, "all bags, luggage, large boxes, etc. must have handles for the operator to hold. The carrying of packages by the vehicle operator between the curb and the vehicle must be done in one trip. The vehicle operator is not to make multiple trips to or from the vehicle."

These routes each operate three days per week from approximately 9 a.m. to 4 p.m., with headways of one hour. Route #151 runs on Tuesday, Thursday, and Saturday; Route #161 runs on Monday, Wednesday, and Friday. They travel through communities outside of downtown Austin close to apartment buildings, medical facilities, and shopping centers. They also overlap with many other CapMetro bus routes. Data collected indicates that these routes average a total of three to four deviations per week. There are 40-50 uses of the lift use on these routes per week.

CapMetro contracts with Veolia to operate Route #151 and Route #161 at the rate of $41 per vehicle hour. Table D-14 presents cost and ridership data from FY 2013.

Table D-14. Cost and Ridership for CapMetro Flex Routes

Route #	Daily Vehicle Hours	Total Cost ($41/hour)	Average Daily Rides	Cost per Rider
151	13.7	$561.70	37	$15.18
161	11.2	$459.20	56	$ 8.20

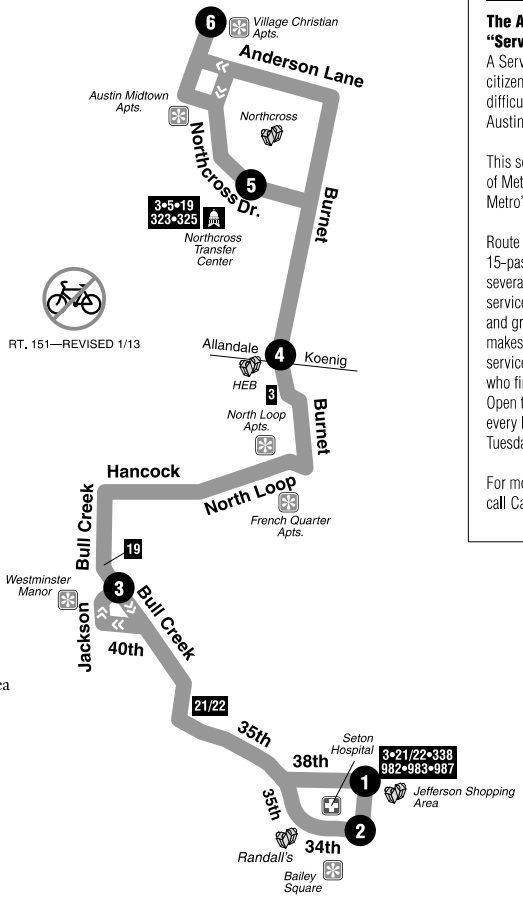
This yields a much lower cost per trip when compared to MetroAccess, the ADA complementary paratransit service. Its average cost per trip (contractor component) in early FY 2013 was $23.

According to a CapMetro manager, a key to making this service work is having drivers who understand how to work the flex routes. There is no formalized training for the drivers on these routes, but their supervisors confer with the drivers to set forth the expectations and special tasks for these routes.

Given the economics of these two routes, Capital Metro will continue to operate them and is also looking to add at least one more flex route. There currently is a local midday bus route that is used primarily to travel to a large supermarket. That route is a likely candidate for transformation into a third flex route.

Attachment A: CapMetro Maps and Schedules for Flex-Routes 151 and 161

151 Allandale



Legend/Notes:

1 **Scheduled Timepoints**

7•300 **Connecting Routes**

The Allandale neighborhood features a "Service Route."
A Service Route meeting the needs of older citizens and passengers with mobility difficulties is up and running in north central Austin's Allandale community.

This service combines the curb-to-curb service of MetroAccess with the scheduling of Capital Metro's fixed-route service.

Route 151 Allandale operates with 15-passenger lift-equipped vans that serve several of the area's major medical complexes, service facilities/agencies, shopping malls and grocery stores. Route 151 Allandale also makes connections with regular-route bus service, offering convenience to passengers who find distance to bus stops a problem. Open to the public, the Allandale Route runs every hour from 9:00 a.m. to 3:00 p.m., Tuesdays, Thursdays and Saturdays.

For more information on Route 151 Allandale, call Capital Metro at 512-474-1200.

DESTINATIONS
—Seton Hospital
—Jefferson Shopping Area
—Westminster Manor
—HEB at Allandale
—Northcross

151 TUESDAY, THURSDAY, SATURDAY/NORTHBOUND

1 Lamar at 38th	2 Lamar at 34th	3 Bull Creek at Jackson	4 Burnet at Allandale	5 Northcross Transfer Ctr.	6 7925 Rockwood	To Route/Garage
8:56	8:58	9:06	9:28	9:41	9:46	
9:56	9:58	10:06	10:28	10:41	10:46	
10:56	10:58	11:06	11:28	11:41	11:46	
11:56	11:58	12:06	12:28	12:41	12:46	
12:56	12:58	1:06	1:28	1:41	1:46	
1:56	1:58	2:06	2:28	2:41	2:46	
2:56	2:58	3:06	3:28	3:41	3:46	G

151 TUESDAY, THURSDAY, SATURDAY/SOUTHBOUND

6 7925 Rockwood	5 Northcross Transfer Ctr.	4 Burnet at Allandale	3 Bull Creek at Jackson	1 Lamar at 38th	To Route/Garage
9:10	9:15	9:27	9:44	9:55	
9:46	10:15	10:27	10:44	10:55	
10:46	11:15	11:27	11:44	11:55	
11:46	12:15	12:27	12:44	12:55	
12:46	1:15	1:27	1:44	1:55	
1:46	2:15	2:27	2:44	2:55	
2:46	3:05	3:17	3:34	3:45	G

161

Delwood

Legend/Notes:

1 Scheduled Timepoints

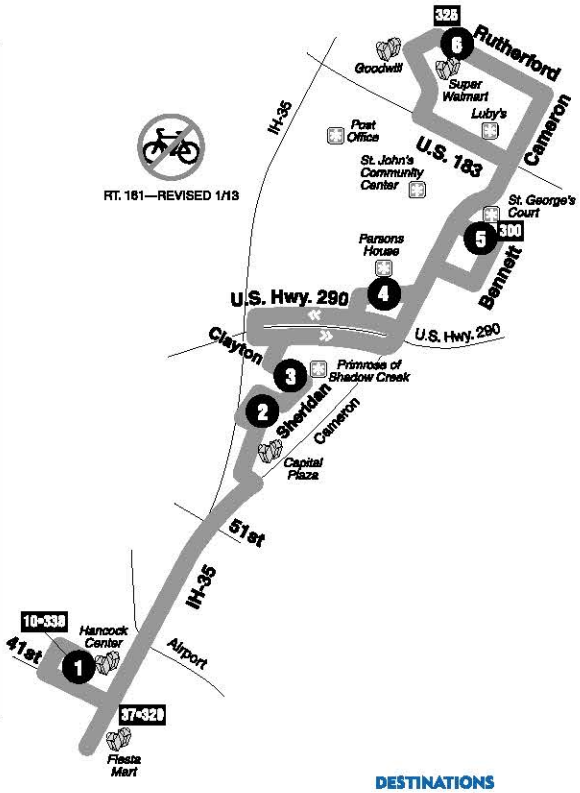
7-300 Connecting Routes

The Delwood neighborhood features a "Service Route."
A Service Route meeting the needs of older citizens and passengers with mobility difficulties is up and running in Austin's Delwood community.

This service combines the curb-to-curb service of MetroAccess with the scheduling of Capital Metro's fixed-route service.

Route 161 Delwood operates with 15-passenger lift-equipped vans that serve several of the area's major medical complexes, service facilities/agencies, shopping malls and grocery stores. Route 161 Delwood also makes connections with regular-route bus service, offering convenience to passengers who find distance to bus stops a problem. Open to the public, the Delwood Route runs every hour from 9:00 a.m. to 3:00 p.m., Mondays, Wednesdays and Fridays.

For more information on Route 161 Delwood, call Capital Metro at 512-474-1200.



DESTINATIONS
—Super Walmart
—Luby's
—Capital Plaza
—Hancock Center
—Fiesta Mart

161 MONDAY, WEDNESDAY AND FRIDAY/NORTHBOUND

Hancock Center 1	Capital Plaza 2	Primrose of Shadow Creek 3	Parsons House 4	St. George's Court 5	Walmart 6	To Route/Garage
—	—	9:00	9:10	9:18	9:28	
—	—	10:00	10:10	10:18	10:28	
10:40	10:55	11:00	11:10	11:18	11:28	
11:40	11:55	12:00	12:10	12:18	12:28	
12:40	12:55	1:00	1:10	1:18	1:28	
1:40	1:55	2:00	2:10	2:18	2:28	
2:40	2:55	3:00	3:10	3:18	3:28	
3:40	3:55	4:00	4:10	4:18	—	G

161 MONDAY, WEDNESDAY AND FRIDAY/SOUTHBOUND

Walmart 6	St. George's Court 5	Parsons House 4	Primrose of Shadow Creek 3	Capital Plaza 2	Hancock Center 1	To Route/Garage
9:47	9:53	9:57	10:07	10:12	10:21	
10:47	10:53	10:57	11:07	11:12	11:21	
11:47	11:53	11:57	12:07	12:12	12:21	
12:47	12:53	12:57	1:07	1:12	1:21	
1:47	1:53	1:57	2:07	2:12	2:21	
2:47	2:53	2:57	3:07	3:12	3:21	
3:47	3:53	3:57	4:07	—	—	G

Agency: Southeastern Pennsylvania Transportation Authority (SEPTA)

Topics: Contracting and Procurement
Performance Monitoring
Use of Technologies

Background

SEPTA's Customized Community Transportation (CCT) Connect paratransit service serves a five-county area including Philadelphia. CCT is a coordinated service that also provides transportation under Pennsylvania's Shared Ride Program for individuals over 65 years of age. The ADA complementary ridership in FY 2012 was 1.03 million; ridership in the Shared Ride program was approximately 775 thousand. RouteMatch software was used for trip reservations and scheduling. SEPTA owns the fleet of 430 vehicles and provides scheduling and dispatch with its own employees. Average cost per trip in 2012 for paratransit services was $28.08.

Contracted services are of two types. The service area is divided into four suburban counties—each with a separate carrier contract package—and the City of Philadelphia, which is divided into two carrier contract packages. As of 2013, each suburban package was held by a different contractor (First Transit, Community Transit, Krapf, and MV Transportation), and the city packages were held by two contractors (Edens and MV Transportation).

SEPTA also had a contract package for Reservations and Support Functions Services, which provided 59 full-time staff: 34 reservationists; 19 Special Projects staff, primarily CCT customer service representatives; three full-time supervisors; and three trainee slots.

Contracting and Procurement

This section is based on interviews with CCT personnel on March 25, 2013 and examination of the two SEPTA contract documents cited in the Background section and described in more detail below. SEPTA staff included: Cassandra West, CCT Regulatory Coordinator, Paratransit; Richard Krajewski, CCT Manager, Technical Analysis; and Michael Shamp, CCT Manager, Contract Compliance.

There were two contract documents in use: the carrier contract that was developed in the early 1990s and had been relatively unchanged since then, and the contract for reservations and support functions, which had been recently revised and was to apply to the contract with Edens Transportation, which started in May 2013.

Carrier Operations and Maintenance Contract

Each operations contractor was responsible for:

- Providing garage and related facilities
- Operating the vehicles in its service area, including fare collection
- Maintaining the vehicles
- Hiring and providing driver training (except ADA and quality of service training, which is performed by SEPTA)

SEPTA was responsible for:

- Overall supervision
- Reservations (through support contract), scheduling, and dispatch
- Operations monitoring and oversight
- Maintenance monitoring and oversight: spot checks, mean distance between failure analysis, fulfillment of preventative maintenance schedules
- Overall analysis performance: pickup on-time, drop-off on-time, trip length
- Fleet replacement

Contractor compensation was based on revenue hours provided, as defined in the contract.
The contract Request for Proposal contained 23 sections, including:

- Background information on SEPTA and the CCT complementary paratransit service and Pennsylvania Shared Ride service
- Sections describing the procurement and evaluation criteria used in the selection
- Standard certifications regarding lobbying, immigration control act compliance, etc.
- Documents describing SEPTA paratransit service, SEPTA Winter Weather Plan, etc.
- Fleet roster of the vehicles to be provided by SEPTA
- Form used by SEPTA for periodic contractor evaluations
- Sections containing requirements with which the selected contractors must comply

These requirements ranged from procedures for responding to customer complaints; detailed preventative maintenance checklists; vehicle condition report to be used by contractor employees; drug and alcohol program requirements; and detailed lists of crimes which disqualify a potential driver from employment under the contract.

Other contracting procedures, such as inclusion of requirements for a bid bond during the selection process, and a performance bond for the selected contractor, are typical of industry practices.

Subcontracting was allowed only with explicit approval of SEPTA. The only subcontractor was a vehicle cleaning service (a DBE) used by Edens and MV Transportation.

Priorities of Service

Priorities of Service for paratransit included the following items, which applied both to SEPTA and its contractors:

- Safety
- ADA Compliance
  - Providing adequate capacity
  - Providing on-time service
  - Ensuring full accessibility of our equipment and facilities
  - Providing appropriate and proper passenger assistance
- Quality service (courtesy, cleanliness, comfort)
- Economy, including high productivity (which is primarily SEPTA's responsibility through providing the schedules for paratransit pickups and drop-offs)
- Cooperative relationship between SEPTA and its contractors.

Performance Standards

The Priorities of Service were further articulated in the list of performance standards and the liquidated damages that are associated with failure to meet each standard. These performance standards were put in place in 1994 in response to unsatisfactory performance by some contractors in both service provision and maintenance of the SEPTA-owned fleet. The standards and liquidated damages had not been substantively changed since then. The 1994 performance standards were accompanied by more active oversight and monitoring by a SEPTA Contract Compliance Group, which has continued to perform these functions since then. SEPTA mentioned closer and more regular oversight of contractor vehicle maintenance as an example of the change in contracting that occurred at that time.

The Performance Section of the contract began with the statement that SEPTA would monitor contractor service through direct observation, on-site visits, and administrative audits. It also stated that SEPTA would conduct random/periodic inspections and field audits.

The subsection on Performance Standards had several parts, including:

- The Contractor shall maintain an on-time performance of 90% (except during weather emergencies); CCT used a 30-minute pickup window from 10 minutes before negotiated time to 20 minutes after this time.
- The Contractor must notify SEPTA immediately in the event of no driver available for a particular tour, delays in service outside the on-time window, breakdowns, accidents/incidents, driver removal from service, and random drug tests.
- SEPTA reserved the right to transfer a particular ride to another contractor if a run is in excess of 30 minutes late.
- Drivers shall not arrive at a pickup point more than 15 minutes prior to the time on the driver's manifest.

The section on Assessment of Liquidated Damages contained six lists of infractions each with a specified penalty ranging from $50 to $250 per incident, plus "extraordinary performance failures" assessed at $1,000 or $5,000 per occurrence.

The $50 per incident liquidated damages included vehicle defects such as: failure to repair body damage; non-operational heating or air conditioning, lack of proper signs and decals: failure of a wheelchair lift in service; and failure to properly store securements when not being used.

The $100 per incident liquidated damages included: insufficient personnel on duty; insufficient number of securements on the vehicle; and failure to notify SEPTA of an incident within 15 minutes. The same penalty applies to a failure to file administrative reports properly or on schedule after two previous warnings.

The $250 per incident liquidated damages included: failure to properly maintain a vehicle; failure to maintain an up-to-date maintenance history; failure to perform scheduled maintenance; failure to pick up a scheduled rider; insufficient vehicles to perform assigned tours; failure to properly secure a wheelchair; and vehicle breakdowns and incidents ate more than one per 10,000 miles.

The $1,000 per occurrence liquidated damages included: unauthorized use of SEPTA vehicle; failure to submit FTA National Transit Database reports; and vehicle out of service for more than 90 days.

The $5,000 per occurrence liquidated damages included: a vehicle where major defect are found in a SEPTA random inspection; pattern of failure to comply with required drug and alcohol testing; and significantly, "for any violation of the USDOT or USDOJ ADA regulations."

Training

A key feature mentioned by SEPTA was the training program for new drivers. Driver trainees receive four days of training by SEPTA trainers on-site at SEPTA, focusing on ADA policies and procedures, sensitivity to people with disabilities, quality of service, and customer relations. Testing (written and hands-on) was administered each day during the training period, and contractor trainees with unsatisfactory performance were discharged at SEPTA's discretion. The contractors provided the training on pull-out procedures (including reporting of vehicle defects), driving, fare collection, over-the-road skills, and for maintenance workers, training on maintenance procedures.

Driver turnover was an issue acknowledged by SEPTA in all the carrier contracts. Turnover was roughly estimated by SEPTA to be 70% per year. This was probably related to the pay scale for drivers, which was in the range of $10 per hour and determined by the contractor. Prior to issuance of the most recent RFP, SEPTA considered mandating a higher starting wage but after analysis concluded that it would unacceptably raise the cost of the contract. Instead, the contract provided that SEPTA provided free weekly transit passes worth $22 to contractor employees with good attendance records; this has reportedly improved staff retention somewhat.

Reservations and Support Services Contract

The Contractor was responsible for:

- Hiring of personnel that meet SEPTA's detailed staff requirements including duties, education, and qualifications.
- On-site supervision

SEPTA was responsible for:

- Oversight and monitoring
- Initial staff training in soft skills and customer service (including use of call center systems: currently RouteMatch)
- Remedial re-training as necessary
- Quarterly in-service training

The contract specified minimum hourly compensation for each job category, so competition for the contract essentially involved the bidder "sharpening the pencil" on its overhead and profit built into the bid. Because hourly rates were set relatively low to meet SEPTA budgetary constraints, staff turnover was relatively high: 54% per year, based on SEPTA's calculation. Transit passes were provided by SEPTA as an incentive for attendance and longevity in these positions.

The contract included a detailed section on performance standards and monitoring (discussed below). The existing contract, which became effective with the mobilization of the selected contractor as of May 2013, represented a substantial increase in performance standards from the previous contract, which included only one parameter (daily telephone queue time) and did not include liquidated damages for performance failures.

This contract's RFP was similar in overall structure to the Carriers Operations and Maintenance contract RFP, except that it centered on the provision of a stated template of reservations and support services staff.

Priorities of Service

The contract included a section Priorities of Service, which begins with ADA Compliance, specifically

- Providing adequate capacity
- Providing efficient call takings
- Providing appropriate and proper passenger information

This was followed by a section on Quality Service, which includes:

- Staff are professional … polite and courteous
- All is trouble free, quick and free of excessive waiting/hold times
- "…not only to meet, but even exceed, the customers' expectations"
- All calls will be handled within 4:30 on average.

Performance Standards

The contract provided that SEPTA would compile staff performance reports on a daily, weekly, and/or monthly basis. SEPTA maintained the right to remove any unsatisfactory contractor employee for failure to meet contract requirements.
Performance measures and associated liquidated damages were listed as follows:

- Abandoned call rate shall not exceed 1% of the total monthly calls received ($250 per occurrence)
- Daily average service level percentage of calls answered within the defined wait threshold must be 85% or better ($250 per occurrence)
- Average daily queue time must not exceed 4:59 ($100 per occurrence)
- Agent weekly averaged call handle time must not exceed 4:30 ($50 per occurrence).

Performance Monitoring

SEPTA had an extensive performance monitoring system to maintain its performance standards. This included the complaint documentation system; data analysis, random checks and audits by SEPTA CCT staff; and, as deemed necessary by SEPTA, application of liquidated damage provisions.

The system for complaint documentation and response applied to both the call center and carrier contracts. CCT had a separate customer service group from that of the SEPTA fixed route services. When it received a customer complaint, the complaint was documented using a module of RouteMatch (the overall reservations and scheduling software). Both the call center and operations contracts contained a section on customer comments; this section required the contractor to investigate and resolve each complaint and report back to SEPTA in five business days. The CCT Chief operating Officer reviewed a daily complaints report. Incidents and complaints were reviewed for each contractor driver. A novel feature of the on-board MDTs (described in the section on use of technology) was that if follow-through on incidents and complaints was not satisfactory, CCT could remotely prevent a problem driver from logging in on the vehicle.

CCT required contractors to maintain vehicle service histories and to promptly report incidents such as lift failures. CCT staff did daily analysis of vehicle "hold sheets" (records of vehicle not placed into service due to a mechanical problem), mechanical problems identified in daily vehicle condition reports,

and incident statistics. CCT performed monthly maintenance audits. CCT field staff observed contractor pullouts and lift cycling on an unannounced random basis, and field staff also noted issues that are covered in the performance standards, such as vehicle cleanliness and proper stowing of securements.

There was also continuous analysis of statistics on on-time performance and long trips, using the RouteMatch analysis module. Call center telephone statistics were also reviewed daily, weekly, and monthly; in the new call center staffing contract additional measures of call center performance were to be subject to CCT analysis.

CCT field supervisors were called "compliance officers." They made observations of contractor operations and maintenance departments, investigated incidents, and assisted with problems as is typical of field supervisors in the industry.

CCT staff regularly performed ride-alongs. Some of these were to observe contractor employees as follow-up to incidents or complaints, but most were covert random rides by CCT staff not known to the contractor employees.

As appropriate, contractors were required to apply progressive discipline for infractions that were identified through complaints or observations.

The point of liquidated damages was to provide SEPTA with the power to compel adherence to contract performance measures. CCT staff stated that the low cost liquidated damages were frequently invoked for issues such as dirty vehicles. The more serious liquidated damages served mostly as threats that CCT could use if contractor cooperation became an issue. However, the list of performance measures and associated liquidated damages also helped to focus the issues that contractors must be aware of, and the relatively size of the liquidated damage categories represented a prioritization of the performance measures. On the whole, CCT staff expressed satisfaction with the performance of contractors, which was a major reason that large liquidated damage penalties had not been invoked.

Use of Technology

Web-Based Reservations for Complementary Paratransit

In addition to a call center, CCT had instituted interactive voice recognition (IVR) service through which customers could quickly make reservations from a short list of their most frequent trips. An initiative was begun in 2012 to add web-based reservations as a third way to provide customer convenience and hopefully to reduce the load on the call center.

Outcome

The web-based reservations initiative was stopped by a limitation in the RouteMatch software. Although normal secure login procedures would link the user to his/her eligibility number, it proved to be impossible to access trip limitations information for customer with conditional eligibility, a significant portion of all eligible riders. For this reason, the initiative was cancelled.

Mobile Data Terminals and Automatic Vehicle Locators

SEPTA's CCT Connect paratransit service has 31 dispatchers for the 24-hour service and four supervisors. During peak hours, 12 dispatchers were on duty. There were approximately 30,000 dispatch calls per month.

Like most dispatchers in large systems, CCT dispatchers were extremely busy during peak periods. In addition to maintaining on-time performance, they handled no-show decisions, incidents on the road, and also took "Where's my ride?" calls.

SEPTA used RouteMatch software for trip reservations and scheduling; the software system was installed in 2009. A second software utility, "Reveal," was used in combination with RouteMatch to facilitate scheduling and dispatch functions. The transition was a difficult one, due apparently to aspects of RouteMatch that had proved difficult to adapt to the large CCT system. SEPTA managers stated that pickup performance fell 18 points, from around 90% (for a 30-minute pickup window) to the low 70s during the first months of transition from the previous software; performance had since improved but only to the low 82-83% range in early 2013, which SEPTA managers acknowledged to be unacceptably low.

CCT's reservations window is three days; it does not accept same-day reservations. No denials are permitted. When negotiating pickup times, it has a policy of negotiating within a window of 45 minutes before or after—smaller than the 60 minutes allowed by the ADA regulations.

SEPTA installed the OrbCAD system in 2009, in coordination with the switch to RouteMatch. It was part of the same $18 million design/build contract that included the RouteMatch system, OrbCAD software, and all radios and other hardware.

OrbCAD is a product of Xerox Transportation Management Solutions. It provides a communications interface between dispatch and vehicles on the road, with mobile data terminals in the vehicles and GPS automatic vehicle locators providing dispatch with vehicle locations. It is designed to facilitate communication through the vehicles' mobile data terminals (MDTs), replacing routine radio communication and permitting dynamic updating of each driver's schedule as trips are inserted or removed to improve response times.

Dispatchers gave OrbCAD high marks for a number of reasons:

- Communication through MDTs saved time compared to radio communication.
- MDTs gave the dispatchers more flexibility in shifting trips between tours (runs assigned to each vehicle) in response to road conditions or falling behind schedule. The AVL component allowed the dispatcher to ascertain the location of each vehicle, permitting the dispatcher to estimate its arrival time relative to the scheduled pickup time. Both aspects improved on-time performance.
- MDTs made it easy for drivers to record time of arrival at pickup, time leaving the pickup location, time of arrival at drop-off location, and time that passenger alighted from the vehicle. This improved the accuracy of data used by SEPTA to monitor performance.

Drivers, at least initially, did not like OrbCAD because it replaced paper manifests (which continue to be used as backup) and much of the oral communication with dispatch. It also told dispatchers where the vehicles were, making it impossible for drivers to paint a more optimistic picture of their progress toward a pickup, as was possible when their locations were not known to dispatch. Since OrbCAD was installed, most drivers had come to accept the new system.

As noted, one potentially drawback with systems like OrbCAD is that they depend on continuous radio connectivity with the vehicles. In the event of a failure in the communications system such as a power failure, schedule information becomes unavailable for the duration of the incident. For this reason, SEPTA had continued to provide drivers with paper manifests each morning. A power failure involving a

communications tower did in fact occur in 2012, and CCT was able to continue operations during the outage, owing to the paper backup manifests.

The rollout of OrbCAD was relatively smooth, according to SEPTA staff. It involved driver training and equipment testing, which went well. In contrast with the transition to RouteMatch, which was necessarily systemwide, the introduction of OrbCAD was done incrementally, starting with suburban Montgomery County, and ending with the two contract carriers serving the City of Philadelphia.

Another benefit of the system is that "Where's my ride?" calls have been shifted to the call center, where a data console permitted a customer service representative to check the likely vehicle arrival time without the assistance of a dispatcher.

Outcome

SEPTA staff, including dispatchers and dispatch supervisors, all expressed the opinion that the OrbCAD system increased reliability and on-time performance. However, it was not possible for them to quantify the benefits because the system was installed at the same time that the RouteMatch software was being implemented, which resulted in a major decrease in reliability and on-time performance. Nonetheless, the qualitative evaluation by the dispatch personnel was that the OrbCAD system was a major factor in preventing further reductions in performance and had been instrumental in the operational improvements that CCT had made from 2009-2013.

Agency: Northern Arizona Intergovernmental Public Transportation Authority (NAIPTA)

Topic: Taxi Vouchers

Background

The Northern Arizona Intergovernmental Public Transportation Authority (NAIPTA) operates a range of public transportation services in several municipalities in northern Arizona: Coconino County, Yavapai County, the City of Flagstaff (which is a part of Coconino County), as well as for Northern Arizona University.

Fixed route service includes: Mountain Line, which includes eight bus routes that operate 7 days per week in Flagstaff; and Verde Lynx commuter bus service between the City of Sedona and the City of Cottonwood. Up to FY 2011, Sedona had also contracted with NAIPTA for RoadRunner circulator, a one-trolley service.

All fixed route services are provided by NAIPTA staff.

Table D-15. NAIPTA Fixed-Route Ridership, FY 2009–FY 2013

Fiscal Year	Mountain Line	RoadRunner	Verde Lynx
2009	1,033,500	103,080	8,026
2010	1,115,254	80,779	16,561
2011	1,205,629	65,508	32,729
2012	1,748,357		54,167
2013 (11 months)	1,738,443		

Paratransit service includes: Mountain Link ADA complementary paratransit in Flagstaff; and taxi voucher programs for Flagstaff and for remainder of Coconino County.

Table D-16. NAIPTA Paratransit Ridership, FY 2009–FY 2013

Fiscal Year	Mountain Lift	Taxi: City	Taxi: County
2008	22,423		
2009	27,971		
2010	27,046		
2011	27,446	3,459	349
2012	25,046	4,765	832
2013 (11 months)	22,855	5,587	729

Current ridership on Mountain Lift is 80-100 trips per weekday. Typical weekday operations include four to six vehicles in service. One staff member has the tasks of primary dispatcher, scheduler, and reservationist. During the evening and on weekends, the fixed route dispatcher is the paratransit dispatcher.

With the exception of taxi voucher trips, all paratransit services are provided by NAIPTA staff. The drivers, supervisors, scheduler/ dispatcher/ reservationist, and trainers are all NAIPTA personnel. NAIPTA also owns and maintains the paratransit vehicles. All operations and administration take place at the NAIPTA facility in Flagstaff.

Taxi Voucher Program

NAIPTA began its taxi voucher program in Flagstaff in FY 2007. The County program began in FY 2011. The basic rules for the Flagstaff taxi voucher program are:

1. Eligible participants include individuals certified for Mountain Lift (ADA paratransit) service who live in Flagstaff.
2. Riders may obtain up to 20 vouchers per month, each with a maximum value of $10, or 15 vouchers per month, each with a maximum value of $15. The exception to this is that a rider who is traveling for dialysis treatment may request up to 26 vouchers per month each with maximum value of $10, or 20 vouchers per month, each with a maximum value of $15.
3. The vouchers expire after 30 days.
4. To arrange a taxi trip, the rider calls the taxi company directly (currently, there are five participating companies). The only restriction on a trip is that the origin or destination must be within Flagstaff city limits. A trip can take place at any time of day and go beyond the paratransit service area.
5. The taxi companies charge the same fares as those of general public riders. A rider using a NAIPTA voucher pays the first $2 of the fare. The next $10 (or $15, depending on the voucher) of the fare is covered by the voucher. If the fare exceeds $12 (or $17, if using a $15 voucher), the rider pays the balance. The rider can use only one voucher per one-way trip.
6. If a rider lives in Flagstaff but beyond the 3/4-mile paratransit service area, NAIPTA considers the rider as "non-ADA." These riders must pay the first $5 of the fare ($2 if the trip origin and destination are both in the paratransit service area).
7. When a rider requests a monthly set of vouchers from NAIPTA, he/she must specify the both origin and destination for all but four of the vouchers; these addresses are pre-printed by NAIPTA on the vouchers. For the remaining four vouchers, the rider can leave either the origin or destination unspecified until the vouchers are used.

The rules for the County taxi voucher program are similar:

1. Eligible participants include individuals certified for Mountain Lift (ADA paratransit) service who live in Coconino County but outside of Flagstaff.
2. Riders may obtain up to 12 vouchers per month, each with a maximum value of $25.
3. The vouchers expire after 30 days.
4. To arrange a taxi trip, the rider calls the taxi company directly (currently, there are five participating companies, same as for the City program). The only restriction on a trip is that the origin or destination must be within Coconino County. A trip can take place at any time of day.
5. The taxi companies charge the same fares as those of general public riders. The voucher pays for the first $25 of the fare. If the fare exceeds $25, the rider pays the balance. The rider can use only one voucher per one-way trip.
6. When a rider requests vouchers from NAIPTA, he/she does not have to specify either the origin or destination for the vouchers.

For each trip provided, NAIPTA reimburses the taxi company the value of the voucher used for the trip. If the total fare is less than the initial rider payment plus the value of the voucher used, then NAIPTA reimburses only the amount of the voucher needed to pay the fare (for example, if the fare is $10, the rider pays $2 and NAIPTA reimburses the taxi company $8, rather than the full voucher amount). NAIPTA also pays the taxi company a 15% tip for the first $12 of the fare. At the time of the trip, the rider may also pay a tip—but cannot use the voucher to pay the tip.

There are several benefits for riders who participate in the taxi voucher program.

- The rider may travel at any time and to any destination.
- The rider does not have to reserve a trip one day in advance.
- The travel time may be shorter than a Mountain Lift trip since it will be exclusive ride.
- The Mountain Lift fare is $2.25. This means that for taxi trips with a total fare less than $12.25 ($17.25 if using a $15 voucher), the cost to the rider is actually less than the paratransit fare.

NAIPTA also benefits from providing this option to its ADA riders. For trips that would otherwise by ADA paratransit trips (during regular service hours and within the 3/4-mile service area), NAIPTA does not need to provide the capacity to serve these trips. As well, the cost to NAIPTA for the taxi trips is significantly less when compared to its Mountain Lift service. The following table lists the average costs per trip for the taxi voucher programs.

Table D-17. NAIPTA Taxi Voucher Program Costs

Fiscal Year	Cost per Trip	
	Flagstaff	Coconino County
2011	$9.53	$21.28
2012	$7.79	$21.55
2013 (projected)	$9.92	$21.87

These costs include the voucher reimbursement and tip, but do not account for other NAIPTA cost allocation. Nevertheless, even with a fully allocated cost, these trips are much less expensive than Mountain Lift trips, whose fully allocated average costs has ranged from $34 to $36 per trip during the past three fiscal years.

NAIPTA covers a portion of the programs' costs with dedicated funding. For the Flagstaff trips, NAIPTA has 50% funding via Arizona DOT (Section 5317 New Freedom funds); the other 50% is from City sales tax revenue directed to the overall Mountain Lift budget. For the Coconino County trips, NAIPTA has 50% funding via Arizona DOT (Section 5317 New Freedom funds) and 50% from the County.

One limitation to the taxi voucher program is the limited availability of accessible service. NAIPTA managers believed that only one of the five taxi companies had a vehicle that could accommodate a rider who uses a wheelchair. According to the NAIPTA guidelines for both the City and the County taxi voucher programs, "This program is not intended to serve all people or all trips but is intended to give clients another option for trips. Wheelchair users and those needing special assistance may need to access a different program and can contact the NAIPTA office for more information."

At the time of the research team's visit to NAIPTA, ridership trends were very different for the City and County voucher programs. The ridership for the City program was fairly steady, averaging about 400-500 trips per month. In contrast, the ridership for the County program—which is much smaller—had been decreasing. In FY 2012, the average ridership was 70 trips per month. In FY 2013, ridership had decreased: average monthly ridership (11 months) was 65 trips, with as few as 35 trips in one month (February 2013). NAIPTA managers attributed this trend to certain individuals in the County program moving out of the County; they speculated that some of these individuals were moving into the City of Flagstaff for better services, including transportation.

One NAIPTA staff member had primary responsibility for overseeing the taxi vouchers. She took the requests for vouchers and mailed the vouchers to the riders. She also reviewed the reimbursement requests from the taxi companies. She checked that the vouchers submitted were valid (e.g., not expired, proper origin and destination information). She also matched the fares to the trips' origin-

destination. The voucher programs did not reimburse taxis for waiting time, i.e., riders are not allowed to make intermediate stops using a single voucher (e.g., "stopping at an ATM on the way home"). She also looked for high fares relative to known trip lengths.

NAIPTA managers noted that they do not monitor service provided by the taxi companies that participate in the voucher program. There are no standards for on-time performance, responsiveness to trip requests, or other aspects of service quality. According to the Program Guidelines, "participants have a right to expect prompt service from the cab provider and should request an estimated arrival time. If a taxi provider fails to pick up program participants, participants must work directly with the taxi provider to resolve the issue, or they may want to call a different provider. Furthermore, "participation of Mountain Lift clients and Cab Companies in the Mountain Lift Taxi Voucher program is voluntary. It is not the responsibility of NAIPTA to mediate between the Mountain Lift Taxi Voucher Program Passenger and the Cab Companies."

The NAIPTA managers believe that the market will control the service level of taxis. If riders find that a taxi company is providing poor service, the riders can simply choose to use another of the participating taxi companies. NAIPTA managers focus on ensuring that the cab companies are following the rules of the programs and are not abusing the use of the vouchers.

A manager for Friendly Cab, the company providing the greatest number of taxi voucher trips, had a similar opinion. The taxi voucher program was the company's largest contract and comprises the largest set of riders. As a result, she said that she and the taxi drivers (contractors who lease their vehicles from Friendly) had an incentive to provide good service to all riders, including users of taxi vouchers. The company had been part of the program since it started in FY 2007. As an incentive to drivers' accepting shorter trips (and not always receiving a tip from the rider), Friendly management guarantees a minimum of $5 per ride to the driver.

Findings and Conclusions

1. The Northern Arizona Intergovernmental Public Transportation Authority (NAIPTA) has taxi voucher programs for Flagstaff and surrounding Coconino County. Eligible participants include individuals certified for Mountain Lift (ADA paratransit) service. In the Flagstaff City program, riders may obtain up to 20 vouchers per month, each with a maximum value of $10, or 15 vouchers per month, each with a maximum value of $15. In the County program, riders may obtain up to 12 vouchers per month, each with a maximum value of $25. To arrange a taxi trip, the rider calls the taxi company directly. Currently, there are five participating companies.
2. There are several benefits for riders who participate in the taxi voucher program.
    - The rider may travel at any time and to any destination.
    - The rider does not have to reserve a trip one day in advance.
    - The travel time may be shorter than a Mountain Lift trip since it will be exclusive ride.
    - The Mountain Lift fare is $2.25. This means that for taxi trips with a total fare less than $12.25 ($17.25 if using a $15 voucher), the cost to the rider is actually less than the paratransit fare.
3. NAIPTA also benefited from providing this option to its ADA riders. Over the past three fiscal years, the cost per trip had ranged from $7.79 to $9.92 in Flagstaff and $21.28 to $21.87 in the County. While these costs did not included fully allocated NAIPTA costs, these trips were much less expensive than Mountain Lift trips, whose fully allocated average costs had ranged from $34 to $36 per trip during the past three fiscal years.

4. One limitation to the taxi voucher program was the limited availability of accessible service. NAIPTA managers believed that only one of the five taxi companies had a vehicle that could accommodate a rider who uses a wheelchair. The program guidelines state that "This program is not intended to serve all people or all trips but is intended to give clients another option for trips. Wheelchair users and those needing special assistance may need to access a different program…"
5. NAIPTA managers did not monitor service provided by the taxi companies that participate in the voucher program. There were no standards for on-time performance, responsiveness to trip requests, or other aspects of service quality. The NAIPTA managers believed that the market would control the service level of taxis. If riders found that a taxi company was providing poor service, the riders could simply choose to use another of the participating taxi companies.

Agency: Broward County Transit (BCT), Broward County, FL

Topic: Community Bus Services

Background

Broward County Transit (BCT), a division of county government, provides public transit services in Broward County, FL. Based on information from the 2010 NTD, the county covers an area of 410 square miles and has a population of 1,748,066. There are 28 cities and towns within the county.

BCT provides fixed route bus, ADA paratransit, and other demand responsive transportation services. At the time of the case study, BCT operated a fleet of 290 fixed route buses. This included 185 buses used for "standard" fixed route service, 29 for "express" service, and 76 for "community bus" service. A total of 42 standard and express routes are operated on weekdays. As detailed below, these routes are supplemented by 20 community bus services operated in 18 local communities.

In addition to providing fixed route service within the county, BCT buses also connect to transit services operated by PalmTran in Palm Beach County to the north, and Miami-Dade Transit in Dade County to the south. BCT also provides connecting services to Tri-Rail, the regional rail service in South Florida.

BCT also provides ADA paratransit service, along with service to other seniors, persons with disabilities, and low-income residents under the Florida "Transportation Disadvantaged" (TD) program. Paratransit service is operated by contractors who collectively have a fleet of 226 vehicles.

The latest NTD data (2010) shows that about 35.9 million unlinked passenger trips were provided that year on the various fixed route services, and 685,998 passenger trips were provided on the ADA paratransit and TD paratransit services.

BCT's total operating expenses in 2010 were about $116.8 million. Fare revenues cover about 27% of operating expenses. Local funds cover 61%. State funds are used to cover another 11%, and other miscellaneous funding sources cover about 1% of operating costs. BCT does not use federal funding to assist with operations, but instead uses its federal funding exclusively for capital expenses.

BCT's Community Bus Program

BCT has developed one of the most extensive community bus programs of any transit agency in the country. Community bus services were developed by BCT in the 1990s as part of a project called the "Transit Options Project" (TOPS), which was funded in part by Easter Seals Project ACTION. The TOPS project was focused on developing multiple travel options, including fixed route options, for seniors and persons with disabilities. Elements of the TOPS project were travel training, community bus services, and the development of an in-person ADA paratransit eligibility determination process. Providing community bus services was an important part of the project in order to make fixed route service more available to and usable by individuals who were not able to travel long distances to get to and from bus stops.

BCT also used community buses to help redesign and streamline its overall fixed route service in the county. Prior to the introduction of community bus services as part of the TOPS project, BCT's fixed

routes were designed to meet both local and regional travel needs. The routes diverted off of main arterial streets to try to meet local travel needs as well. However, limited excursions into local neighborhoods were not sufficient to meet local travel needs. And travel times for cross-county trips became unreasonable. The result was that neither local nor regional travel needs were being met well.

Instead, BCT made a decision to establish two types of service—regional bus service and local community bus service—and to integrate the two. Community bus services were created to meet local needs and to feed into the main regional routes. Regional routes were then redesigned to provide faster and more efficient cross-county trips. Local transit centers were also created as transfer points between regional routes and to provide connection points for feeding local community bus trips into the regional network. The result has been better local service, particularly for seniors and persons with disabilities, as well as improved, streamlined, and faster regional service.

Figure D-25 on the following page shows the community bus network that has been developed by BCT and how it is integrated with the overall fixed route service. As can be seen, the community bus network is quite extensive. Twenty different local services exist. Eighteen of these are operated by local communities. Two are operated to serve specific programs and points of interest—a route operated in conjunction with the Housing Authority of Central Florida (the HACFL route in Figure D-25), and a route that serves the Convention Center, Courthouse and other major trip generators (the FTL-TMA Galt/Las Olas/Convention Center/Courthouse route in Figure D-25).

The regional routes, shown as thick black lines in Figure D-25, then operate mainly on an east-west and north south grid, and connect at established transit centers. Community bus routes feed into these same transit centers.

Table D-18 provides a listing of the 20 community bus services that were in place at the time of the case study. The number of routes operated in each service is also shown, along with recent annual ridership.

As shown, 18 of the 20 community bus services are operated by local communities under "Interlocal Agreements" (described below). Two are operated directly by BCT as part of a joint effort with two local government organizations—the Housing Authority of Central Florida (HACFL), and the Ft. Lauderdale TMA (FTL-TMA).

The extent and complexity of the services vary based on the size and needs of each community. Some communities have developed one-route systems. Several have 2-3 interconnected routes. A few have more highly developed 4-5 route systems.

The services are also designed to the characteristics and needs of each community. Some are more linear in nature. For example, Attachment A shows the route structure of the "N" Route in the community of Coconut Creek. Other services have "loop" routes with vehicles operating in each direction (see Plantation Routes A/B in Attachment B). Others have multiple interconnected "loops," such as the Green and Blue Routes for the City of Coral Springs shown in Attachment C. A few of the more extensive services, such as those in Lauderhill, Miramar, and Pembroke Pines use several different types of route in an extensive 4-5 route local network.

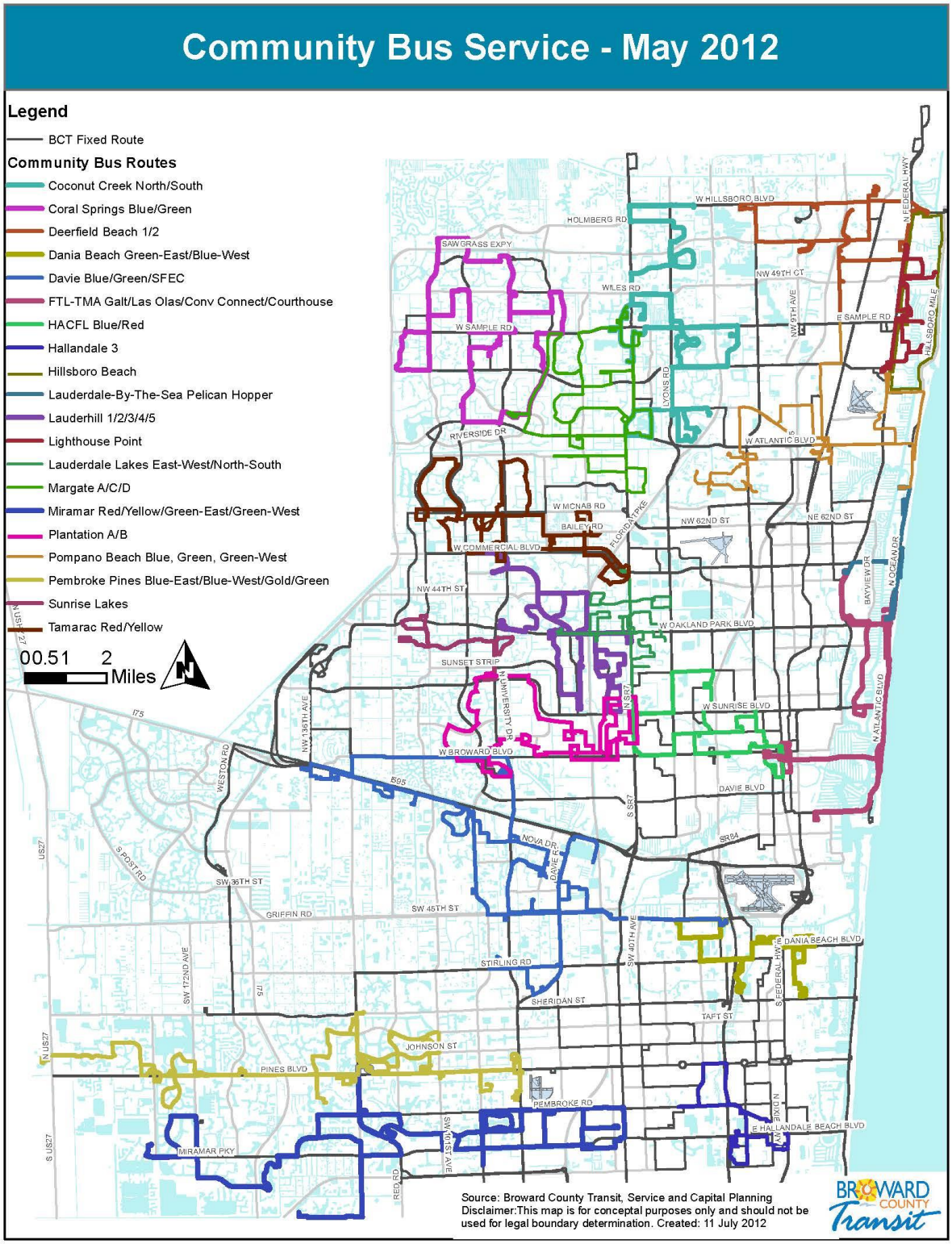


Figure D-25. Map of Community Bus Routes in Broward County

Table D-18. BCT Community Bus Services as of January 2013

Community Bus Services	# of Routes	Annual Ridership (June 2011 – May 2012)
Services Operated by Local Communities Under Interlocal Agreements		
Coconut Creek Community Bus	2	167,544
Coral Springs Community Bus	2	96,919
Dania Beach Community Bus	2	74,895
Davie Community Bus	3	241,967
Deerfield Beach Community Bus	2	49,418
Hallandale Community Bus Service	1	64,605
Hillsboro Beach Community Bus	1	16,609
Lauderdale-By-The-Sea "Pelican Hopper"	1	30,450
Lauderdale Lakes Community Bus	2	179,172
Lauderhill Community Bus	5	167,988
Lighthouse Point Community Bus	1	10,737
Margate Community Bus	3	79,056
Miramar Community Bus	4	199,816
Pembroke Pines Community Bus	4	217,991
Plantation Community Bus	2	178,904
Pompano Beach Community Bus	3	114,501
Sunrise Lakes Community Bus	1	118,809
Tamarac Community Bus	2	49,977
Services Operated Directly by BCT		
FTL-TMA Galt/Las Olas/Convention Center/Courthouse Routes	3	233,977
Housing Authority (HACFL) Routes	2	78,321
Totals	46	2,371,656

Each service, regardless of its exact style, is designed to get off of the main arterials and into neighborhoods. Each is also designed to connect major trip generators and attractors in each community, including senior centers, shopping malls, medical facilities, and other important services. And, as noted above, each also connects to the regional bus network, some at several transfer locations, to facilitate regional travel.

Hours of operation also vary by community. Most services run generally on weekdays from 6–7 a.m. to 6–7 p.m., but some routes start as early as 4:40 a.m., and one operates until 12:35 a.m. About half also provide Saturday service, typically at more limited hours.

Local communities set the fare, and many have elected to provide free fare services. Where fares are charged, the typical full adult fare is $1.75, with discounted fares of $0.85 for seniors (including Medicare recipients), persons with disabilities, and youth. All-Day passes ($4.00), 7-Day passes ($16), 10-Ride passes ($16), and 31-Day passes ($58) are also available. Discounted pass prices are available for seniors (including Medicare recipients), youth, persons with disabilities, and college students.

Figure D-26. Typical Community Bus Vehicle (Plantation Community Bus Connecting at BCT's West Regional Terminal)

Most vehicles are body-on-chassis small buses (see Figure D-26). All vehicles are lift-equipped and are also equipped with bike racks.

History and Development of Community Bus Services

Local community bus services have been operated in Broward County since the early 1980s. The first two services were operated in the communities of Sunrise and Hallandale, which have large senior populations—even by Florida standards. Both services were started by the local communities without assistance from BCT.

BCT became involved in supporting community bus services in the early 1990s. At that time, BCT was reconsidering the design of its entire fixed route network. Regional routes had become slow due to multiple deviations from the main roadways to accommodate local needs. BCT also was interested in developing fixed route alternatives that were more suitable for and usable by seniors and persons with disabilities. The success of the Sunrise and Hallandale services prompted BCT to consider using the community bus concept to achieve both goals.

From 1991 to 1995, BCT partnered with six other communities to establish community bus programs. Interlocal agreements were signed with each, as well as with the Cities of Sunrise and Hallandale, which had services already in place. By 1995, a total of eight community bus services were in place.

The expansion of community bus services and the redesign of the regional bus system was largely successful. All but one of the original eight community bus programs are still operating. Year-by-year, additional services were added.

BCT reports that it now has more demand for community bus services than it can support with available funding. Some of the communities with existing programs have expressed interest in adding additional routes. Other communities without services have expressed interest in introducing local bus service. BCT now manages a competitive application process for community bus service.

Program Policies and Guidelines

As noted above, most of the community bus services are operated under "Interlocal Agreements" with local communities. As part of these agreements, BCT provides the vehicles or covers capital costs. If communities opt to have vehicles provided by BCT, the vehicles are leased by BCT to the communities for $10 per year per vehicle. If communities opt to have services provided by contractors and to have the contractors provide vehicles, BCT provides a $13,295.20 capital cost allowance per year per vehicle. In addition to capital, BCT provides some operating assistance. Typically, there is a $15 stipend per vehicle-revenue-hour included in the Interlocal Agreements. Participating communities are responsible for funding the remaining operating costs.

To reduce the need for spare vehicles and overall capital costs, BCT maintains spare replacement vehicles that can be used by any community on an as needed basis.

The Agreements call for BCT and the local communities to collaborate on the planning and design of the services. Communities typically are responsible for the local planning process and for creating the basic service design (hours of operation, major origins and destinations to be served, etc.). BCT planning staff then work with City planners to create the detailed routes and schedules.

Each participating community reports service statistics to BCT each month. BCT staff then compile the data and handle federal and state reporting requirements.

While local communities have flexibility in designing the services, BCT maintains overall control of the service. Communities must obtain BCT approval for changes to routes, fares, or other policies. BCT also has set some systemwide requirements for the program, such as the requirement that all local community bus routes connect with regional routes. BCT establishes performance goals and standards for the services and will work with communities to fine-tune or revise services if these standards are not met.

Service Statistics and Costs

Table D-19 provides the most recent annual service and performance statistics for the program. Data are for calendar year 2012 and was developed for NTD.

In 2012, a total of 2,370,943 unlinked passenger trips were provided on community bus services. Vehicles operated a total of 159,826 revenue-hours and 2,198,107 revenue-miles for the year. This translates to an average productivity of 14.8 trips per vehicle-revenue-hour. This is a very respectable productivity for local community fixed-route bus service.

Total operating cost in 2012 for all 20 services was $6,287,752, capital cost was $697,690, and total cost was then $6,985,442. Operating cost per trip, revenue-hour and revenue-mile was therefore $2.65, $39.34, and $2.86. Total cost per trip, revenue-hour and revenue-mile was $2.95, $43.71, and $3.10. As these cost measures indicate, BCT and the communities operate the services at a relatively low cost. This is partly due to the fact that some communities cover some expenses within their general budgets and/or do not charge for overhead, administration, and other costs.

Table D-19. BCT Community Bus Program Key Service and Performance Statistics, NTD Reporting Year 2012

Total unlinked passenger trips	2,370,943
Total vehicle-revenue-hours	159,826
Total vehicle-revenue-miles	2,198,107
Productivity (trips/rev-hour)	14.8
Operating cost	$6,287,752
Capital cost	$697,690
Total cost	$6,985,442
Operating cost per trip	$2.65
Operating cost per rev-hour	$39.34
Operating cost per rev-mile	$2.86
Total cost per trip	$2.95
Total cost per rev-hour	$43.71
Total cost per rev-mile	$3.18

Impacts on ADA Paratransit Ridership

By providing seniors and persons with disabilities with a more usable local fixed route option, the community bus program provides an alternative to ADA paratransit service in Broward County. In the 1990s, after the original eight community bus services were established, BCT analyzed and compared ADA paratransit ridership in communities that had community bus services to the ADA paratransit

ridership in communities that did not have community bus services. Table D-20 presents the results of that analysis.

Table D-20. ADA Paratransit Ridership in Communities with and without Community Bus Services

	Communities with Community Bus Services	Communities without Community Bus Services
ADA Paratransit Rides per Month	14,519	41,524
Number of Persons Age 65+	71,687	163,669
ADA Paratransit Trips per Month per 1,000 Persons 65+	**202**	**254**

Source: Broward County Florida Transit Options project: Development of Local Community Bus Service, Easter Seals Project ACTION, September 1995.

In the eight communities where community bus services were operated, BCT found that it provided 14,519 paratransit trips per month. In all other communities that did not have community bus services, 41,524 paratransit trips were provided per month. The eight communities with community bus services collectively had 71,687 persons 65 years of age or older.[2] All other communities had 163,669 persons aged 65 or older.

Using this ridership and population information, BCT calculated that in communities with community bus services, about 202 paratransit trips were being provided per 1,000 persons aged 65 and older. In communities that did not have community bus services, about 254 paratransit trips per month were provided per 1,000 persons 65 and older. This analysis suggested that paratransit ridership was about 20% lower in communities that had implemented community bus services.

A similar analysis was considered for this case study. However, it was determined that with the expansion of the community bus program, most of the large communities have this service. There was not a large enough representative sample of communities without community bus service to do a fair comparison.

It is interesting to note, though, that BCT has seen relatively little growth in paratransit service since the above analysis was done 16 years ago. As noted in the "background" section above, a total of 685,998 trips were provided on countywide paratransit services (ADFA and TD) in NTD reporting year 2011. The ridership figures included in the analysis above suggest that in 1995 BCT was providing about 672,516 paratransit trips per year. This represents only a 2.0% increase over this 16 year period. In only half the time (from 2000 to 2008), ADA paratransit ridership nationally increased from 45 million rides to 67 million rides, a 49% increase. In all likelihood, the introduction of an extensive network of community bus services provided persons with disabilities in Broward County with an option to paratransit, and helped to minimize the increase in paratransit services over the years.

Conclusions and Lessons Learned

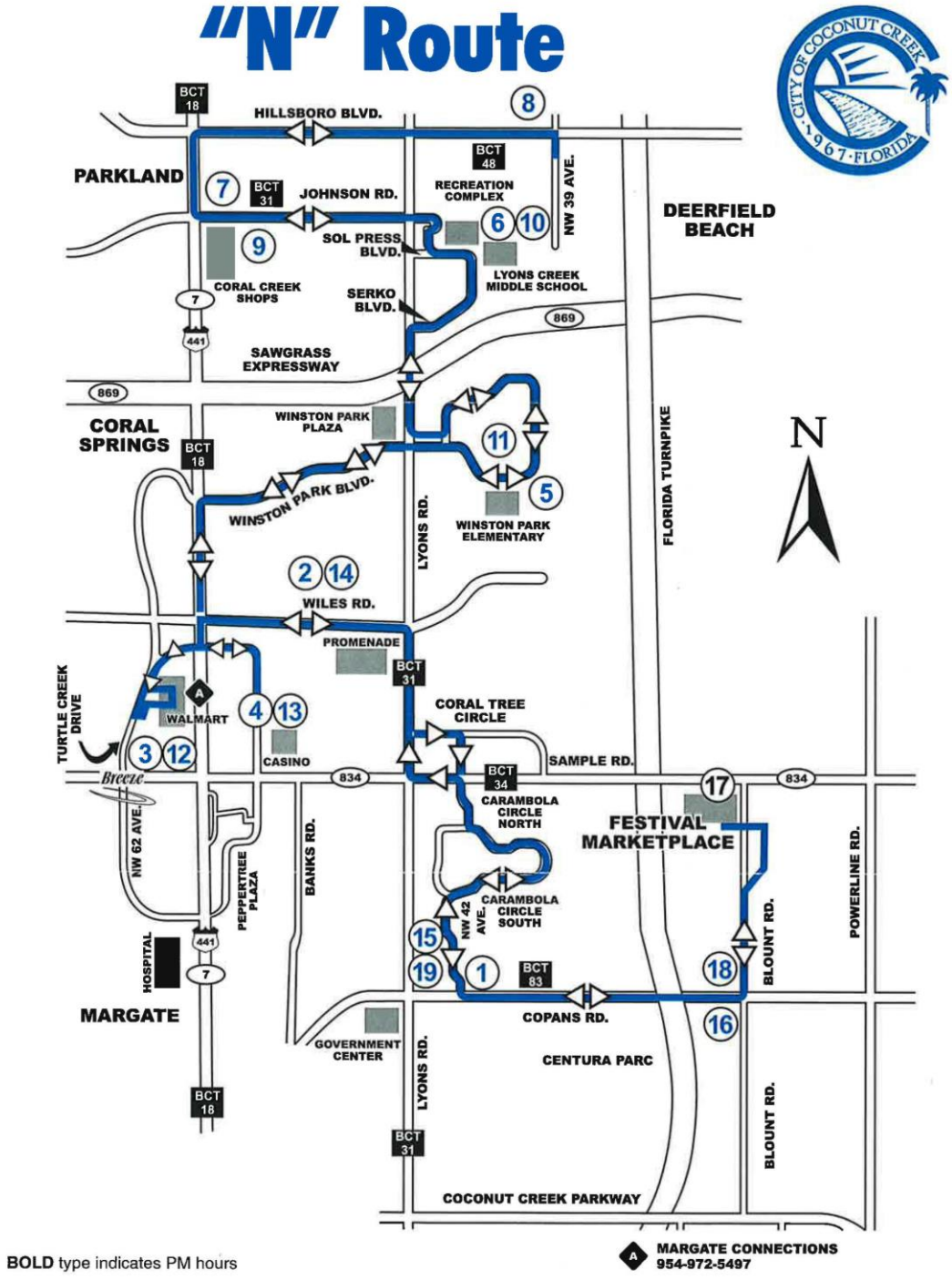
Following are a few conclusions and lessons learned based on the review of community bus services in Broward County:

- Working with local communities, BCT has developed an extensive network of community bus services. A total of 20 services are operated in 18 of the County's 28 communities.

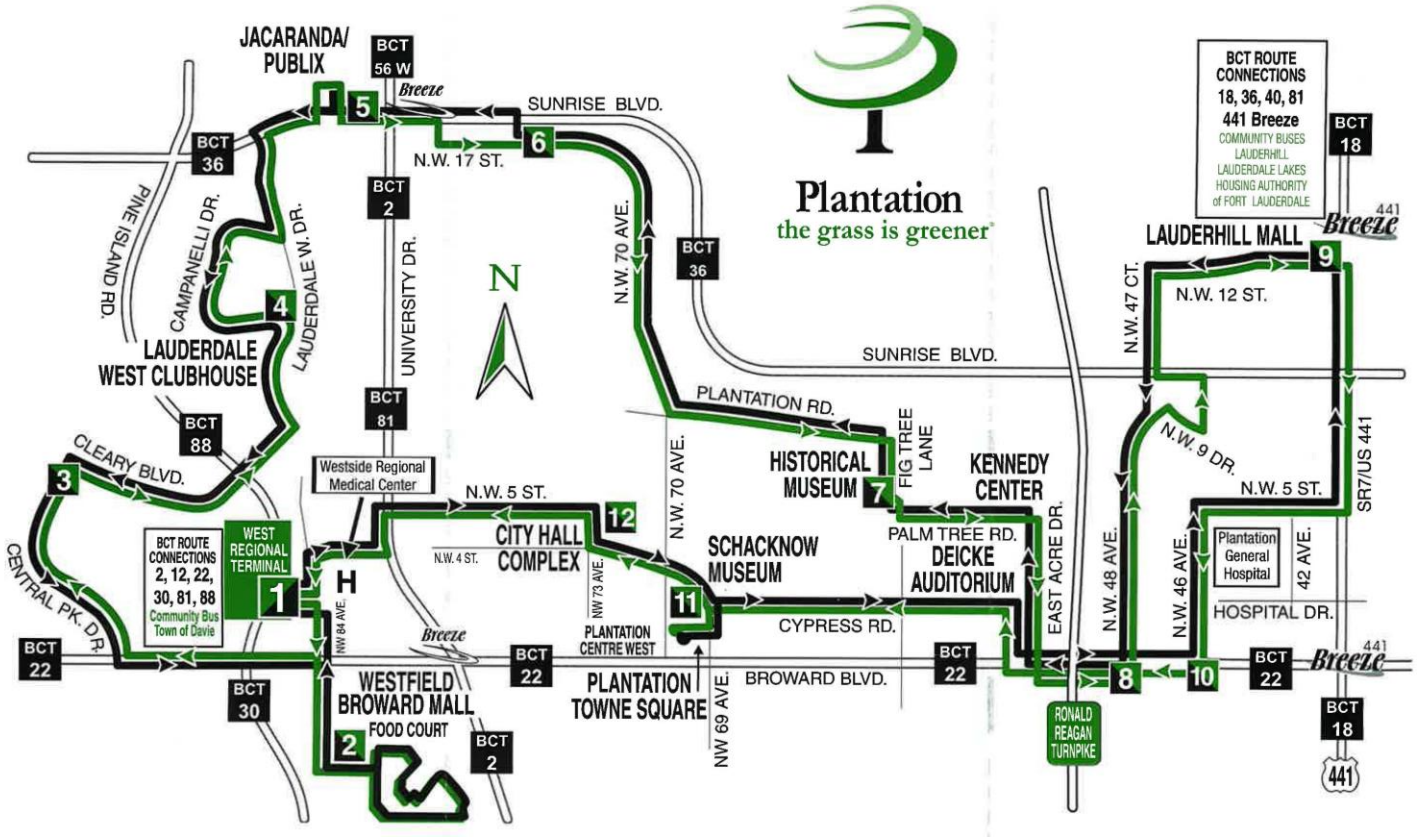
[2] Persons age 65 and older was used in the analysis by BCT as a surrogate for the population of persons with disabilities in each community.

- The development of community bus services has allowed BCT to better meet local community travel needs, particularly for seniors and persons with disabilities. Local routes minimize the walking distance to and from bus stops, making the services more usable that traditional regional fixed route.
- The introduction of community bus services has also been used by BCT to streamline the regional routes. Community buses feed riders into the regional routes at transit centers. Regional routes do not then have to be diverted into neighborhoods, which allows them to operate on main arterials and provide quicker cross-county service.
- In 2012, almost 2.4 million unlinked passenger trips were provided on the BCT community bus network.
- The service is quite popular with local communities. Because of demand for community bus services, BCT conducts a competitive grant process to select the best proposed local projects.
- BCT's community bus services are relatively productive and cost-effective. Collectively, they operate at a productivity of 14.8 trips per vehicle-revenue-hour. The total cost per trip is only $2.95.
- By offering a usable fixed route options for local travel, the community bus services appear to have become an effective alternative to paratransit. An analysis by BCT in the 1990s found that paratransit demand was about 20% less in communities with local community bus services.
- BCT's paratransit ridership has also remained relatively stable as the community bus system has been expanded. From 1995 to 2012, paratransit ridership in Broward County has only increased from 672,516 trips per year to 685,998 trips per year, a 2% increase.

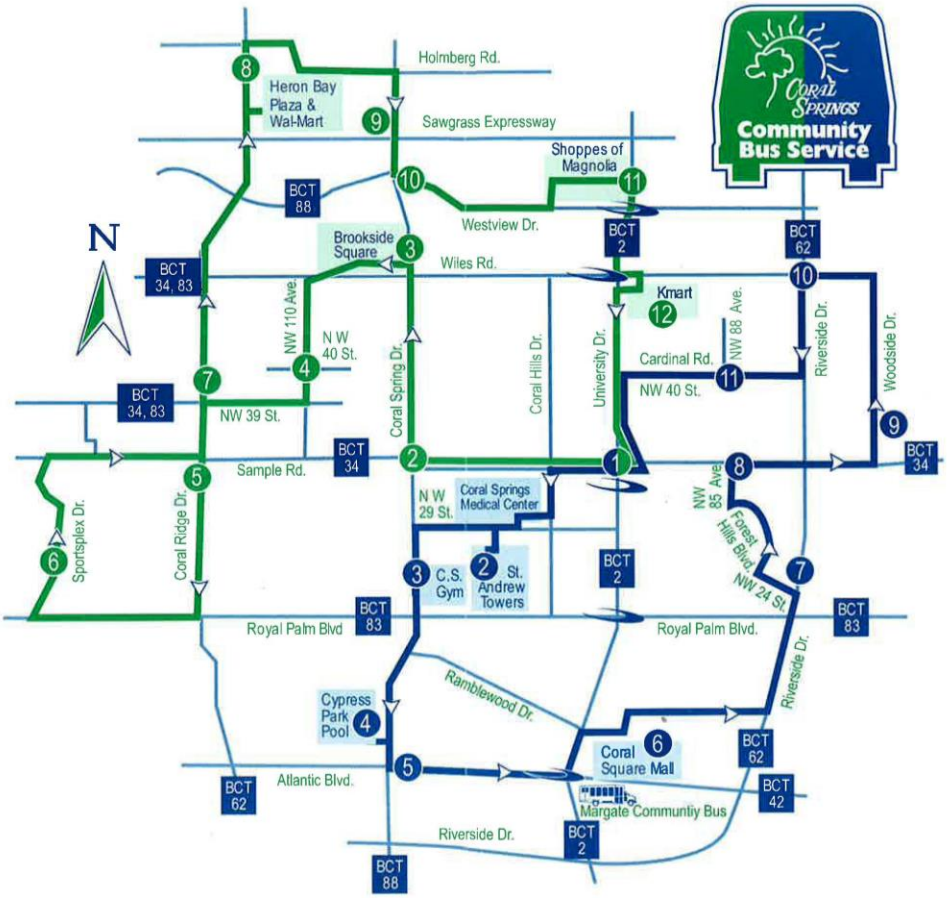
Attachment A: BCT Coconut Creek "N" Route



Attachment B: BCT Plantation Routes A/B



Attachment C: BCT Coral Springs Green and Blue Routes



Sunday Service Hours Green Route 12:00 pm-4:54pm	Sunday Service Hours Blue Route 12:00 pm-4:55pm

Agency: Utah Transit Authority (UTA), Salt Lake City, UT

Topic: FLEX Route Services

Background

Formed in 1970 to assume responsibility for operating bus services from a failing private bus company in Salt Lake City, the Utah Transit Authority (UTA) now provides public transit services in a large part of the State of Utah. The agency's services cover all of Salt Lake, Weber and Davis Counties, and selected cities in Utah, Box Elder, and Tooele counties. The combined counties and cities within the UTA encompass 9,042 square-miles, making UTA one of the largest public transit systems in the county in terms of area. The central core of the service area is Salt Lake City and surrounding communities in Salt Lake County. Service extends about 65 miles to the south and includes the cities of Orem and Provo. Service also extends about 60 miles to the north and includes the City of Ogden. Based on reported NTD data, the population of the UTA service area was 2,050,088 in 2011.

UTA operates a full range of public transit services. This includes:

- FrontRunner, a 44 mile long commuter rail service that runs north to Ogden.
- TRAX, a light rail system with three lines and 41 stations
- Fixed route bus service, with a fleet of almost 500 buses
- 16 FLEX Routes (discussed below)
- MAX, a bus rapid transit (BRT) service
- ADA paratransit service, with a fleet of 173 vehicles
- Over 400 vanpools, and a carpool matching service

All of the UTA fixed route vehicles are accessible. UTA also operates a 100% accessible ADA paratransit fleet.

NTD data for 2011 indicates that UTA provided over 38.5 million unlinked passenger trips that year on its commuter rail, light rail, and fixed route bus services. About 561,000 unlinked passenger trips were provided on the ADA paratransit service. Over 1.4 million vanpool rides were accommodated.

In 2011, UTA reported a total operating budget of $207,677,630. Federal funding covers about 13.1% of costs. Local sales tax covers 70.9% of costs. Fares (11.2%), advertising, investments, and other miscellaneous sources cover the remainder.

UTA's FLEX Route Program

UTA has introduced FLEX Route services for several different reasons. These include:

- To provide service outside of the ADA paratransit service area.
- To replace traditional fixed routes.
- To test the market for transit services

As of January 2012 when the case study was conducted, 16 FLEX Routes were in operation.

Service Outside the ADA Paratransit Service Area

UTA began introducing FLEX Route services in 2010 when it changed its ADA paratransit service area. Prior to 2010, UTA's ADA paratransit service covered several parts of Salt Lake County that were more than ¾ of a mile from non-commuter fixed routes. In May of 2010, UTA changed the ADA paratransit service area to only include origins and destinations that were within ¾ of a mile of non-commuter fixed routes. In several parts of Salt Lake County, particularly in communities on the fringe of the County, this left several areas that would have had no transit service—fixed route or ADA paratransit.

In order to allow some service to be continued in these areas, UTA introduced FLEX Routes. FLEX Routes were designed to continue to meet the needs of individuals who had used the ADA paratransit service in these areas, as well as to introduce some scheduled service in these communities.

Prior to changing the ADA paratransit service area policy, UTA conducted an analysis of trips with origins and/or destinations that were more than ¾ of a mile from fixed routes. FLEX Routes were then planned for those areas that had significant ADA paratransit ridership. The FLEX Routes were introduced at the same time that the ADA paratransit service area was reduced to provide an immediate option for prior paratransit riders.

Nine of the 16 FLEX Routes were implemented for this purpose. Most of these are located on the fringes of the service area in Salt Lake County. Figure D-27 shows the network of fixed route services in Salt Lake County. As indicated in the key, the FLEX Routes are identified with dotted routes. FLEX Routes introduced for this purpose can be seen in the far west, southwest and southeast parts of the area.

Replacements for Traditional Fixed Routes

Five of the 16 FLEX Routes were introduced by UTA to replace traditional fixed route services. The traditional fixed routes were either underperforming, or duplicated the newly introduced light rail service and were no longer needed. However, rather than eliminate the routes completely, UTA opted to introduce FLEX Routes to maintain some level of service to both general public riders and ADA paratransit eligible persons in these areas. These routes are generally located in the more central part of the Salt Lake County service area.

Testing New Markets

Finally, UTA introduced two FLEX Routes to test the market for transit services in two areas. No fixed route service existed previously in these areas. The FLEX Routes were intended to see if there was enough demand for transit to consider adding traditional fixed route with ADA paratransit.

Both of these routes (the F514 and F526) can be seen in Figure D-27 in the far south and southwest portions of the service area in Salt Lake County.

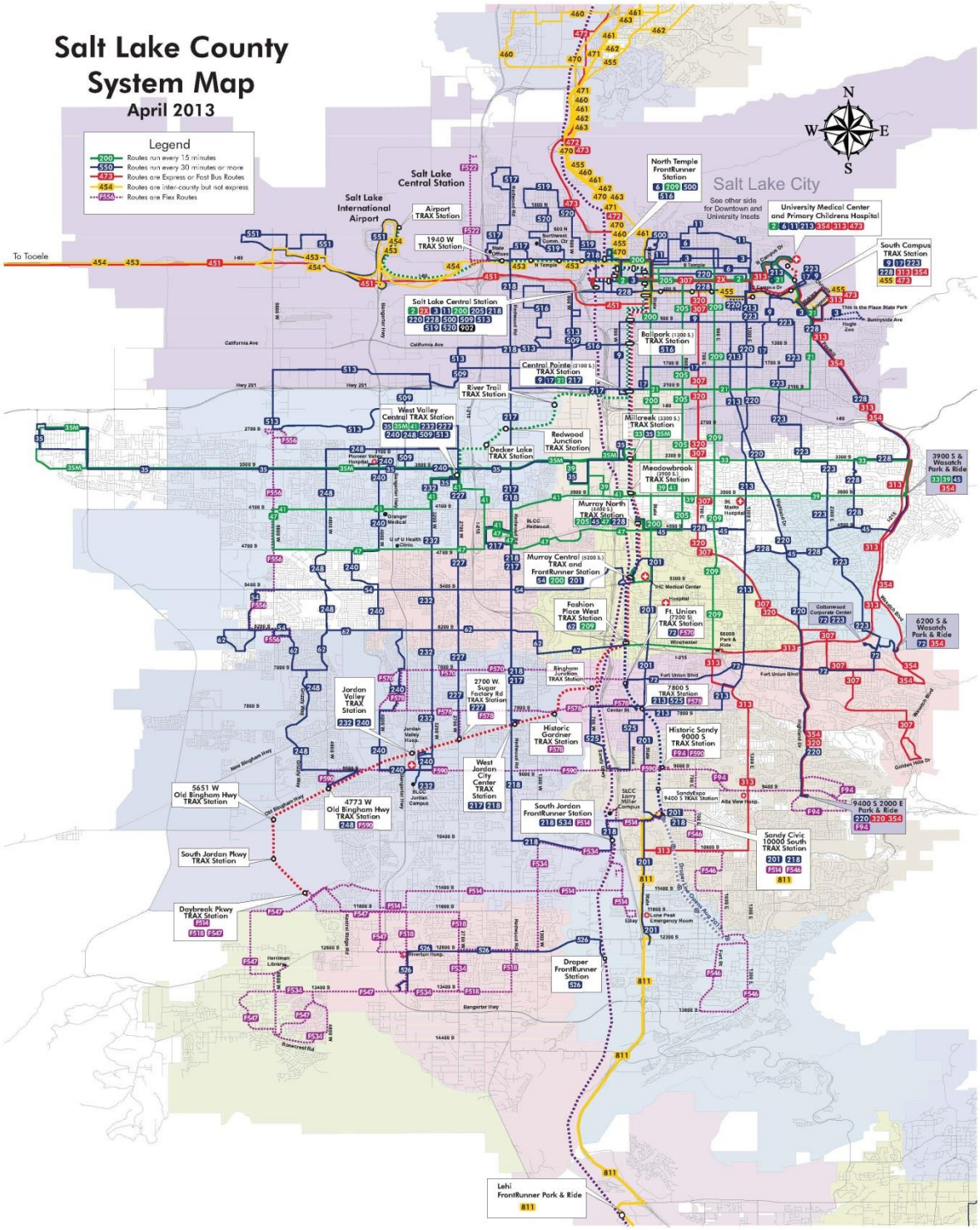


Figure D-27. Salt Lake County System Map Showing Location of FLEX Routes

Marketing of Flex Routes

Unlike some flex-route or route deviation programs, where the option to deviate is not well advertised and not well known by riders, UTA encourages deviation requests and advertises this option. All route and schedule information highlights deviation options. Deviation options are also explained online. As noted above, the main reason for the services was to continue to provide a transit option to riders who previously used the ADA paratransit service and whose trips were affected by the change in service area policy.

All FLEX Routes are identified by an "F" before the route number—e.g. F94. UTA's marketing materials stress this designation so that the public can easily recognize the routes that can make off-route deviations. In addition, each published route and schedule includes the word Flex in the name of the route—e.g., "9400 S Flex F94." Information about deviations is also highlighted throughout the route and schedule brochures. Deviation policies are explained and riders are alerted to the fact that timepoints are approximate. A sample route and schedule flyer for the F94 route is provided as Attachment A. On one side of the route and schedule flyer, it states "timepoints are approximate and may vary due to traffic conditions or deviation requests." On the other side it states "Because the F94 is on a fixed route schedule that can deviate off of route, the time points on this schedule are approximate. The bus can run 10-15 minutes after the listed time points throughout the day. The bus will never bypass a time point before it is scheduled to." The same information is provided on all FLEX Route schedules.

Marketing is beneficial for two reasons. First, it lets persons with disabilities know that this off-route service option is available. Second, it informs all riders of the flexible nature of the routes and the fact that the routes may not be as precise as other fixed routes that do not deviate. This is important for managing general public expectations regarding the service.

FLEX Route Service Policies

FLEX Routes operate on fixed routes and have a set schedule. Attachment A provides a sample schedule for the F94 route. Other routes and schedules can be downloaded from the UTA's website at www.rideuta.com. Following is the list of FLEX Routes in service at the time of the case study:

F-94	F-518	F-556	F-618
F-400	F-526	F-570	F-628
F-401	F-546	F-578	F-638
F-514	F-547	F-590	F-868

As shown on the F94 route map in Attachment A, vehicles can deviate up to ¾ of a mile off of the route. This is shown as a shaded area on each map.

To enable the routes to operate reasonably close to the advertised schedule, UTA limits the number of deviations to two per run. If two deviations have already been requested for a run, riders are given the option to schedule their off-route pickups on earlier or later runs. During peak hours, many of the FLEX Routes operate on 30–45 minute headways, which means that 3–4 off-route pickups per hour can be accommodated by each vehicle. A significant number of off-route pickups per day is also possible on each route. For example, the F94 has 25 runs per day in the westbound direction and 26 per day in the eastbound direction (see Attachment A). Theoretically, up to 102 off-route pickups could then be accommodated on this route per day.

Deviations can be requested by the general public, not just seniors or persons with disabilities. Riders can call from seven days in advance up to two hours before the time of travel to request deviations. For deviations early in the morning (before 11:00 a.m.), riders must call the day before.

To give some priority to persons with disabilities, UTA has informally developed longer deviation request hours for ADA paratransit eligible riders. The FLEX Route schedules formally advertise to the public that deviations can be requested only between the hours of 8:30 a.m. and 3:00 p.m. on the days the service is operating. Some routes only operate weekdays, so the general public would need to call Monday through Friday during these hours. UTA advertises separately to individuals who are ADA paratransit eligible that deviations can be requested seven days a week from 7:00 a.m. to 5:00 p.m. (the same as the ADA paratransit service reservation hours).

While deviations are allowed on the vast majority of runs, they are not permitted on a small number of peak hour runs that have high commuter ridership. Requests at these times are negotiated to earlier or later runs.

FLEX Routes operate strictly as curb-to-curb services. Schedules emphasize (in bold and underlined text) that, "The bus will not stop if the person requesting the deviation is not standing outside at the curb when the bus approaches the deviation request stop." Like fixed route, drivers provide assistance getting on and off the vehicle, but do not provide assistance beyond the curb to the first exterior door of the origin or destination. This represents a somewhat lesser level of service than ADA paratransit, which does provide assistance beyond the curb as needed.

The fares for FLEX Route service is $2.35. There is a $1.00 surcharge for deviations. The $1.00 surcharge is good for one complete ride. For example, if a rider requests a deviation at both the pickup and drop-off on the same route, only $1.00 extra is charged. A discounted base fare of $1.15 is also available for seniors and persons with disabilities. With either one or two deviations, trips by seniors or persons with disabilities therefore cost $2.15.

FLEX Route Vehicles and Operation

UTA uses body-on-chassis small buses to provide FLEX Route service (see Figure D-28). This is the same style vehicle that UTA uses to provide ADA paratransit service. All vehicles used for FLEX Route service are lift-equipped. All are also equipped with bike racks.

UTA uses in-house staff to take reservations for deviations and to dispatch all of the FLEX Routes. Eleven of the 16 routes are also operated in-house. Five routes are operated by private contractors.

Scheduling of Deviations for Frequent Riders

UTA schedulers develop trip templates for riders who regularly call to request deviations. Having templates and trip histories allows call-takers to quickly assess if there is room on routes, what routes trips should be placed on, what direction the bus is traveling, and where to schedule drivers to leave and return to routes without missing any regular bus stops. This greatly reduces servicing times and hold times for callers. It also makes it easier for less experienced staff to schedule deviation requests.

Figure D-28. FLEX Route Vehicle

Integration with ADA Paratransit

FLEX Route operation is integrated with UTA's ADA paratransit service operation. Calls for deviations are taken by staff that also take reservations for the ADA paratransit service. FLEX Routes are also dispatched by the same dispatchers that manage ADA paratransit runs. UTA's ADA paratransit call center is also managed in-house by UTA employees, so the agency has direct control over both types of services.

UTA staff indicated that integration with the ADA paratransit call and control center is an important part of the success of the program. The ADA paratransit call and control center has experience in scheduling and dispatching individual trip requests. This experience does not exist in the fixed route portion of the agency.

UTA has also integrated the FLEX Route operation with its efforts to provide ADA paratransit feeder service. For ADA paratransit riders who can use fixed route service, but who may not be able to get to and from bus stops, UTA provides feeder service. When appropriate, riders are transported on the ADA paratransit service to a nearby fixed route stop. They then complete the trip on fixed route.

The deviation option of the FLEX Routes fits well with this feeder service. If riders are not able to get to and from bus stops at either their origins or destinations, a combination of ADA paratransit and FLEX Route service is sometimes used. For example, an ADA paratransit vehicle may take the rider to a nearby FLEX Route stop. The FLEX Route then makes an off-route deviation to take the rider to their final destination. Because of the deviation option, "double-feeder" service does not have to be arranged. A second ADA paratransit vehicle does not need to meet the rider where they disembark to get them to their final destination. Because both services are scheduled and dispatched by the same staff, the feeder-to-FLEX Route combination can be more easily scheduled and managed.

Service Statistics and Costs

Table 1 provides service and cost data for 15 of the 16 FLEX Routes for calendar year 2012. One route, the F526, was started in January 2012. Annual ridership, operating hours per day, annual revenue-hours, and annual operating cost are provided for each route. Performance measures, including productivity (trips per revenue-hour), operating cost per hour, and operating cost per trip are also included. The type of operation—directly operated by UTA (DO), or purchased transportation through a contractor (PT)—is also shown.

Total ridership in 2012 for the 15 FLEX Routes was 298,656. A total of 64,000 revenue-hours of service was operated for all 15 routes. Average productivity was therefore 4.7 trips per revenue-hour. Three routes, the F401, F628, and F638 had relatively low productivities—below 3.0 trips per revenue-hour. Most routes operated in a range of 3.5 to 5.4 trips per revenue-hour. Two routes, the F94 and F618, were quite heavily used with productivities of 8.3-8.4 trips per revenue-hour.

Total operating cost for the 15 routes in 2012 was $3,398,647. The average operating cost per revenue-hour was $53.10, with a range of $39.31 to $66.14. Operating cost for most routes was in the range of $44 to $57 per revenue-hour.

Average operating cost per trip was $11.38. On the two routes with productivities over 8 trips per revenue-hour, the cost per trip was under $6. Most routes had per trip costs ranging from $10.66 to $16.59. A few routes with low productivities had relatively high per trip costs—over $30.

UTA does not track the number of trips served off-route versus at established bus stops. Staff estimated, though, that about 80% of all trips have pickups and drop-offs at established bus stops. About 20% of trips involve a deviation at one or both ends. This qualitative estimate suggests that about 59,000 deviation requests were scheduled and provided in 2012.

Impacts on ADA Paratransit Ridership

As noted above, UTA did not introduce FLEX Routes in an effort to attract ADA paratransit riders to fixed route services. Instead, FLEX Routes were implemented to provide some level of service in areas outside the ADA paratransit service area, to continue some level of transit services in areas where traditional fixed routes were not appropriate, or to test the market for transit services.

Lessons Learned

UTA staff indicated that, overall, they consider the introduction of FLEX Routes to be moderately successful. The performance of each route has varied, with some doing quite well and others not receiving much public use.

A challenging part of the design of any flexibly-routed service is allowing an appropriate amount of time for runs and between timepoints. UTA staff noted that they have used ongoing driver feedback to analyze running times and adjust and fine-tune the routes as needed.

Table D-21. FLEX Route Service and Cost Data, Calendar Year 2012

Route	Operation	Op. Hrs/ Day	2012 Ridership	2012 Rev-Hrs.	2012 Op. Cost	Productivity	Op. Cost/ Rev-Hr.	Op. Cost/ Trip
F94	DO	22.1	45,852	5,525	$271,700	8.3	$49.18	$5.93
F400	PT	13.5	14,556	3,375	$160,514	4.3	$47.56	$11.03
F401	PT	14.2	5,700	3,550	$178,803	1.6	$50.37	$31.37
F514	DO	22.5	30,036	5,625	$326,476	5.3	$58.04	$10.87
F518	DO	21.1	25,824	5,275	$314,522	4.9	$59.63	$12.18
F546	DO	21.3	28,704	5,325	$288,585	5.4	$54.19	$10.05
F547	DO	22.2	19,260	5,550	$319,461	3.5	$57.56	$16.59
F556	DO	18.7	22,620	4,675	$254,704	4.8	$54.48	$11.26
F570	DO	21.8	23,184	5,450	$274,130	4.3	$50.30	$11.82
F578	DO	22.1	26,124	5,525	$278,557	4.7	$50.42	$10.66
F590	DO	22.3	25,356	5,575	$279,679	4.5	$50.17	$11.03
F618	PT	5.2	10,908	1,300	$58,019	8.4	$44.63	$5.32
F628	PT	8.4	3,264	2,100	$111,218	1.6	$52.96	$34.07
F638	PT	8.7	5,556	2,175	$85,510	2.6	$39.31	$15.39
F868	DO	11.9	11,712	2,975	$196,769	3.9	$66.14	$16.80
Totals			**298,656**	**64,000**	**$3,398,647**	**4.7**	**$53.10**	**$11.38**

One issue noted by staff was that the FLEX Route service has not fully developed its own image. Part of this is due to the fact that the vehicles used are the same as those used for ADA paratransit service. Some residents see the vehicles but think of them as ADA paratransit vehicles and do not realize they can also use them. UTA is considering doing more to brand FLEX Routes as different from either ADA paratransit or traditional fixed route service. Part of this could be use of a different style vehicle. Low-floor small buses are being considered both to help with branding and to minimize boarding and alighting times.

Staff also noted that while the FLEX Routes seem to be fine for casual riders, they are sometimes not well accepted by riders with time-sensitive trips. If riders are using the vehicles to connect to the light rail system or to other fixed routes, they can get concerned if the vehicles deviate off-route to make pickups or drop-offs. Even though this possibility is highlighted in the route and schedule information, riders may not fully understand the impacts until using the service.

Staff indicated that there were no significant issues with the deviation portion of the service. Using experienced staff in the ADA paratransit call and control center has been a key to making this part of the operation run well.

Conclusions

UTA has successfully used FLEX Routes to provide transit services for several different purposes. This includes providing service in lower density and outlying parts of the service area where the combination of traditional fixed route and ADA paratransit service might not be cost-effective. While the level of service to both the general public and to ADA paratransit eligible riders is not as good as traditional

fixed route and ADA paratransit, the FLEX Routes have allowed some level of transit service to be continued in these areas.

Experience to date suggests that FLEX Routes are not as cost-effective as traditional fixed routes, but not as costly as ADA paratransit services. At 4.7 trips per revenue-hour and $11.38 per trip on average, the FLEX Routes are somewhere between these two services in terms of efficiency and cost.

Some of the keys to the success of the program are:

- Using the experience of the ADA paratransit call and control center to manage deviation requests and dispatch the FLEX Routes.
- Integrating the FLEX Route operation with the ADA paratransit service operation.
- Extensive advertising of the option to request off-route deviations.
- Providing clear public information about the flexible nature of the services and the potential for some variation from the advertised schedule.

In general, FLEX Routes appear to be a reasonable option for casual general public riders. They also provide some level of service in areas where ADA paratransit is not required. FLEX Routes appear to be less suitable for time sensitive riders.

Attachment A:
Route Map and Schedule for F94 FLEX Route

ROUTE F94
THE SANDY FLEX

Route F94, The Sandy Flex, is a bus route that provides local service and connects to other UTA services. The service is unique because residents can use the set course or they can call to schedule the bus to pick them up or drop them off up to 3/4 mile from the fixed route. These scheduled deviation requests are taken on a first-come, first- served basis and the bus may deviate up to two times each trip between the 9400 S 2000 E Park & Ride Lot and the TRAX station.

The fare for the standard service at designated bus stops is the same as any other local bus or TRAX service. Call Customer Service for current fares at 801-287-7433. The fare for a scheduled deviation is the standard applicable fare plus $1.00. The $1.00 deviation fare covers both a pick-up and a drop-off deviation for one ride.

What does Curb-to-Curb service mean?

It means that UTA will stop at the nearest curb to pick-up and drop-off customers. They will also assist customers as they board. UTA does not provide door-to-door service and will not go to the door, knock or assist customers through the door of their pick-up or drop-off location.

The bus will not stop if the person requesting the deviation is not standing outside at the curb when the bus approaches the deviated stop request.

Because the F94 is on a fixed route schedule that can deviate off of route, the time points on this schedule are approximated. The bus can run 10-15 minutes after the listed time points throughout the day. The bus will never bypass a time point before it is scheduled to.

How do I schedule my deviated pick-up or drop-off?

Customers can call between the hours of 8:30 a.m. and 3:00 p.m., Monday through Friday to schedule a trip at 801-287-7433.

If you need an early morning trip (before 11:00 a.m.) the deviated request will need to be made the day before. Deviation requests can be made from 2 hrs up to 7 days in advance before the needed trip.

F94 will not operate on weekends or holidays.

If you have any questions concerning this service or want to schedule a route deviation please call 801-287-7433.

For Special Services Customer Care call 801-287-5359

FAX 801-287-5377

SEE SOMETHING?

SAY SOMETHING!

To contact UTA police:

Call:
801-287-EYES
(801-287-3937)

Or Text UTATIP and your tip to 274637

UTA TRANSITWATCH

For Information Call
801-RIDE-UTA (801-743-3882)
outside Salt Lake County
888-RIDE-UTA (888-743-3882)
www.rideuta.com

How To Use This Schedule

Determine your timepoint based on when you want to leave or when you want to arrive. Read across for your destination and down for your time and direction of travel. A route map is provided to help you relate to the timepoints shown. Weekday, Saturday & Sunday schedules differ from one another.

UTA Service Directory

General Information, Schedules, Trip Planning and Customer Feedback call 801-RIDE-UTA (801-743-3882)
Outside Salt Lake County..888-RIDE-UTA (888-743-3882)
For 24 hour automated service for next bus available use option 4. Have stop number and 3 digit route number (use 0 or 00 if number not 3 digits).
Pass By Mail Information 801-262-5626
For Employment information please visit http://www.rideuta.com/careers/

Lost and Found

Weber/South Davis ..... 801-626-1207 option 3
Utah County 801-227-8923
Salt Lake County..... 801-287-4664

Fares

Exact Fare is required. Fares are subject to change.

Accessible Service

Wheelchair accessible buses are available on all routes. Alternate format schedules are available upon request.

Telephone communication for deaf/hearing impaired persons is available by dialing 711.

Transfers

Upon payment of a fare, a transfer is good for travel in any direction, including return trip, for two (2) hours *until the time cut*. The value of a transfer towards a fare on a more expensive service is the regular cash fare.

Bikes on Buses

The Bikes on Buses service is available on all buses, except Flextrans and Ski Service.

Holidays

UTA does not operate on the following holidays: New Year's Day, Thanksgiving Day, Christmas Day.

9400 S Flex F94

9400 S 2000 E Park & Ride
Alta View Hospital
Sandy Senior Center
9000 S TRAX Station

WEEKDAY

WK

ACCESSIBLE

Effective December 2012

UTAH TRANSIT AUTHORITY

F94 - WEEKDAYS

To 9000 S TRAX Station

9400 S & 2000 E (Park and Ride)	2140 E & 9400 S	9800 S & 2401 E	9400 S & 2000 E (Park and Ride)	9400 S & 1300 E	1000 E & 9091 S (Walmart)	9000 S TRAX Station
540a	----	----	----	547a	549a	555a
610	----	----	----	617	619	625
630	632a	637a	641a	646	649	655
700	702	707	711	716	719	725
740	----	----	----	747	749	755
755	----	----	----	802	804	810
825	----	----	----	832	834	840
855	----	----	----	902	904	910
910	----	----	----	917	919	925
940	----	----	----	947	949	955
1025	----	----	----	1032	1034	1040
1110	----	----	----	1117	1119	1125
1155	----	----	----	1202p	1204p	1210p
1245p	----	----	----	1250	1252	1255
145	----	----	----	152	154	200
235	----	----	----	242	244	250
335	----	----	----	342	344	350
350	----	----	----	357	359	405
425	----	----	----	432	434	440
450	----	----	----	457	459	505
515	517p	522p	526p	529	531	535
550	552	557	601	604	606	610
620	622	627	631	634	636	640
715	----	----	----	722	724	730
800	----	----	----	807	809	815

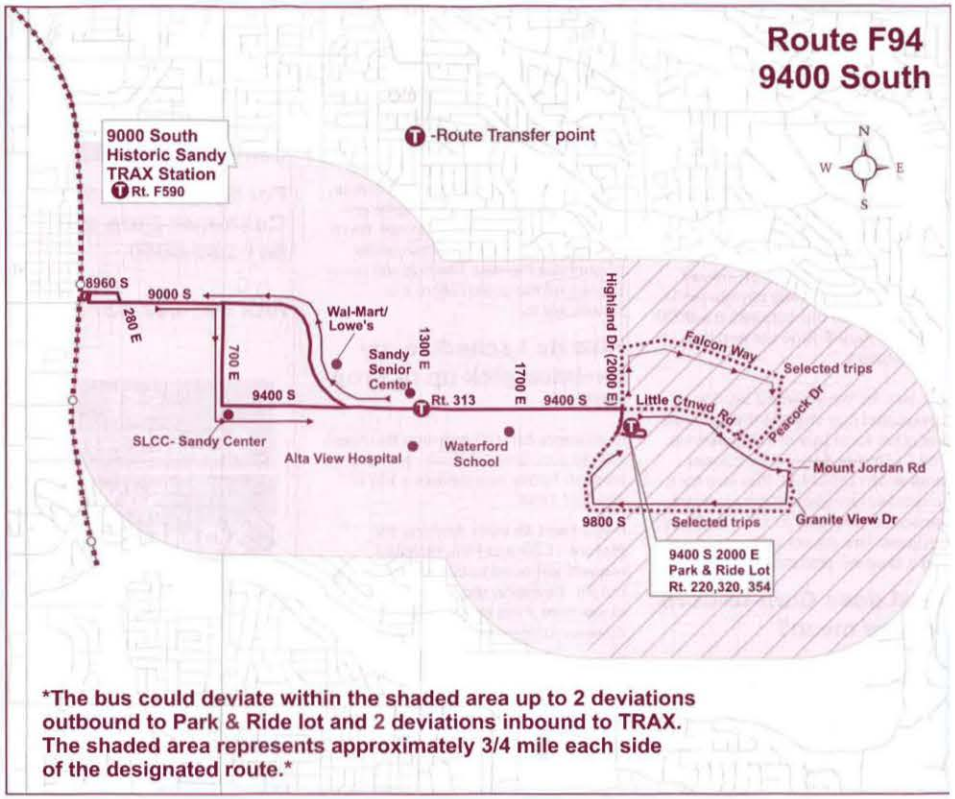
Timepoints
are approximate and may vary
due to road and traffic conditions
or deviation requests.

To 9400 S 2000 E

9000 S TRAX Station	9400 S & 700 E	9400 S & 1230 E	2300 E & Falcon Wy	9300 S & Peacock Dr	9500 S & Foxhunt Dr	9400 S & 2000 E (Park and Ride)
540a	544a	549a	----	----	----	555a
605	609	614	----	----	----	620
635	639	644	----	----	----	650
705	709	714	720a	723a	726a	730
735	739	744	----	----	----	750
805	809	814	----	----	----	820
820	824	829	835	838	841	845
850	854	859	----	----	----	905
920	924	929	----	----	----	935
1005	1009	1014	----	----	----	1020
1050	1054	1059	----	----	----	1105
1130	1134	1139	----	----	----	1145
1220p	1224p	1229p	----	----	----	1235p
120	124	129	----	----	----	135
205	209	214	----	----	----	220
305	309	314	----	----	----	320
320	324	329	----	----	----	335
405	409	414	----	----	----	420
420	424	429	----	----	----	435
450	454	459	----	----	----	505
520	524	529	535p	538p	541p	545
550	554	559	605	608	611	615
620	624	629	635	638	641	645
650	654	659	----	----	----	705
735	739	744	----	----	----	750
820	824	829	----	----	----	835

No Service Saturday
Sundays or Holidays

TRAX runs every 15 minutes.



Agency: Metro Transit, Seattle

Topic: Community Transportation Program

Background

Metro Transit is the 10th largest bus transit agency in the nation. It provides public transit services in Seattle and King County, Washington. Metro's service area is more than 2,000 square miles. The service area population is about 1.9 million.

Metro provides bus, trolley, streetcar, dial-a-ride, paratransit, and vanpool services. This includes the South Lake Union Streetcar service and a growing system of bus rapid transit services. Service is operated over a network of 220 routes. In 2011, a total of 112.8 million passenger trips were provided on bus and trolley services.

Metro's fixed route fleet totals 1,450 vehicles—including standard and articulated coaches, electric trolleys, dual-powered buses, and streetcars. All Metro buses have wheelchair lifts and are equipped with bicycle racks.

Metro's vanpool service is the largest publicly operated vanpool program in the country. Ridesharing efforts also include a regional ridematch system that carpools and vanpools across a seven county area in western Washington State.

Community Transportation Program

In addition to a fully-accessible fixed route system, Metro provides or supports several other programs to meet the transportation needs of persons with disabilities, seniors, and low-income residents. These services are known collectively as the Community Transportation Program.

The goal of the program is to not only provide required ADA paratransit service, but other transportation options for persons with disabilities, seniors, and low-income residents. Individuals can then choose the service that best meets their travel needs.

Services within the Community Transportation Program are described below.

Access Transportation

Access Transportation is Metro's ADA Paratransit service. Access Transportation provides curb-to-curb service to all origins and destinations within ¾ of a mile of all fixed route bus and light rail services. Door-to-door and hand-to-hand assistance are provided as needed. In 2006, voters passed a Transit Now Initiative that also provides funding for Access services in rural areas of Eastern King County which are outside the base ¾-mile service corridors. Washington State law requires that services for persons with disabilities be provided at the same cost as services to the general public, so Access fares are the same as full fixed route fares--$1.25 per trip. In 2012, about 1.1 million one-way passenger trips were provided on the Access Transportation service. Access Transportation coordinates transfers with Community Transit to the north and Pierce Transit to the south to facilitate paratransit travel throughout western Washington State.

Taxi Scrip Program

Metro Transit also provides taxi scrip to King County residents with disabilities, seniors (age 65 and over), and individuals between the ages of 18 and 64 who are low-income. Eligible individuals can purchase up to six books of taxi scrip each month. Each book has a value of $10 and can be purchased for $5.

The fleets operated by participating companies include 45 accessible taxis. The local taxi ordinance also calls for all new medallions to be issued for accessible vehicles. In 2011, about 76,600 trips were made using taxi scrip. Average operating cost per taxi scrip trip was $8.35.

Transit Instruction Program

Metro provides free training services to persons with disabilities and seniors who are interested in learning to ride fixed route transit. Several different types of training are provided, including:

- one-on-one training to learn how to make specific trips or learn specific routes;
- group training that provides general orientation to riding fixed route (e.g., planning trips, reading schedules, etc.) and sometimes includes field trips on the fixed route system; and
- instruction for persons who use wheelchairs and have never used fixed route on how to use lifts, ramps, and securement systems.

In 2011, 302 individuals were provided transit instruction. This included 60 group trainings and 98 field trips. One-on-one training for 33 individuals was also provided. Metro Transit staff estimates that transit instruction in 2011 facilitated about 48,847 trips on fixed route that would likely have been provided on the Access paratransit service.

In 2012, Metro staff studied the Travel Instruction program and developed a cost-benefit analysis. They looked at instruction provided from 2009 through 2011. Table D-22 summarizes the results of this analysis.

Table D-22. Travel Instruction Program Costs and Benefits, 2009–2011

	2009	2010	2011
Individuals Trained*	297	302	302
Annual Paratransit Trips Now Made By Fixed Route	42,921	51,658	48,847
Paratransit Net Cost/Trip	$38.48	$38.64	$42.11
Fixed Route Net Cost/Trip	$3.67	$3.90	$3.98
Avg. Per Trip Cost Savings	$34.81	$34.74	$38.13
Total Annual Cost Savings	$1,494,080	$1,794,599	$1,862,536
Travel Instruction Program Costs	$479,665	$550,100	$572,546
Annual Estimated Savings	$1,014,415	$1,244,499	$1,289,990

** Includes lift, system and retrainings, along with individual trainings.*

Between 297 and 302 individuals received travel instruction each year. The instruction allowed them to make between 42,921 and 51,658 one-way trips per year by fixed route rather than paratransit. The difference between the net cost of a paratransit trip and the net cost of a fixed route trip ranged from $34,74 to $38.13 over the three year period. Total cost savings from trips made by fixed route ranged from $1,014,415 in 2009 to $1,289,990 in 2011. Total annual program cost for providing travel instruction ranged from $479,665 in 2009 to $572,546 in 2011. The net annual savings from trips made by fixed route ranged from $1,014,415 in 2009 to $1,289,990 in 2011. It is worth noting that these estimated savings only count the savings for trips made in that year by individuals who receive travel

instruction. The savings do not include an estimate of how many of the trips continue to provide savings each year. If it is assumed that the training was for different trips each year and that trips by fixed route continued to be made throughout the three year period, the savings would be cumulative and significantly higher. The reality is probably somewhere in the middle.

Community Access Transportation Program

Metro Transit assists local community organizations which provide transportation for seniors and persons with disabilities. Through the Community Access Transportation Program (CAT), Metro Transit provides:

- Accessible vehicles;
- Maintenance; and
- Driver training.

The participating agencies operate the vehicles and provide:

- Reservations and scheduling services;
- Drivers;
- Comprehensive and liability insurance

To be eligible to participate in the CAT program, agencies must demonstrate that they can provide at least 150 one-way passenger trips each month to individuals who are registered for the Access ADA paratransit service.

Four different types of CAT services have developed since the program was implemented in 1997. These are described below.

Hyde Community Shuttles

Metro Transit partners with Senior Services of King County to operate a network of community shuttles. The shuttles operate as many-to-many demand responsive services. They provide door-to-door transportation to seniors and people with disabilities of all ages. The shuttles are free (donations are accepted) and focus on providing transportation to medical appointments, senior centers, grocery stores, and other local destinations. Service is provided Monday through Friday on a first-come, first served basis. The shuttles are known as "Hyde Shuttles," in honor of a resident who bequeathed $500,000 to help expand services.

Photo courtesy of Senior Services of King County

Figure D-29. Federal Way-SeaTac-Tukwila Hyde Shuttle

As of October 2012, Hyde Shuttles were operated in 13 communities in and around Seattle. The operating areas are listed below.

- Beacon Hill—Southeast Seattle
- Burien—Highline
- Central Seattle (First Hill, Capitol Hill, Central area, and International District)
- Des Moines—Normandy Park

- Federal Way
- Northeast Seattle
- Northwest Seattle
- Queen Anne—Magnolia—Interbay
- Renton
- SeaTac—Tukwila
- Shoreline—Lake Forest Park
- Snoqualmie Valley
- West Seattle

Senior Program Support Vehicles

Metro also provides vehicles and operating support to Senior Services to operate several vehicles to support program activities. These vehicles provide transportation to and from local senior centers and nutrition programs. Vehicles operated in support of 11 different centers and programs in 2012.

Reservations, scheduling and dispatching for all of the Hyde Shuttles and senior program support vehicles are done from a single call and control center. Senior Services employs five reservations, schedulers and dispatchers. One road supervisor also provides on-road support for all of the shuttles and program support vehicles.

Table 2 provides service statistics from 1999 through 2011 for the community shuttle and program van services operated by Senior Services. The program has grown significantly over this 12 year period. In 1999, when only two local shuttles were in operation, 279 individual riders were served and 5,221 one-way trips were provided. In 2011, 2,815 individual riders were served and 88,730 one-way trips were provided.

Advantage Vans

Advantage Vans assists agencies and local communities that operate more general transportation services for both seniors and persons with disabilities. Metro provides vehicles and funding for maintenance, and participating agencies cover other operating costs. Metro also provides driver training. Agencies agree to provide a minimum number of rides to ADA paratransit eligible individuals each month. Additional operating assistance is provided if agencies can demonstrate that the services they operate provide more than 150 trips per month to individuals who are ADA paratransit eligible. Rides are requested through and scheduled by the participating agencies.

Table D-23. Service Statistics for Hyde Community Shuttles and Program Support Vehicles Operated By Senior Services as Part of the CAT Program, 1999–2011

Year	Riders	One-Way Trips	Vehicle Miles
1999	279	5,221	NA
2000	365	8,673	NA
2001	519	12,072	72,033
2002	1,171	27,982	128,137
2003	1,288	37,989	176,058
2004	1,574	49,028	235,741
2005	1,720	54,452	238,610
2006	1,760	56,992	234,768
2007	1,263	53,031	208,377
2008	1,396	57,326	237,640
2009	1,738	64,214	274,465
2010	2,536	74,936	349,778
2011	2,815	88,730	400,656

Vanworks

The Vanworks program assists agencies that transport seniors and persons with disabilities to work or work training. Metro pays the monthly cost of a standard Vanpool agreement for the local agencies, which covers the vehicle, fuel, comprehensive/collision insurance, and maintenance. Local agencies provide drivers, administrative support, and liability insurance. Local agencies also commit to providing at least 50 trips per month to individuals who are ADA paratransit eligible and who would otherwise use the Access paratransit service.

As of October 2011, Metro worked with 24 local agencies, organizations, and communities to operate Advantage Vans and Vanworks vehicles. The participating agencies were:

- Ambitions of Washington
- Camelot Society
- Circle of Friends
- City of Pacific/Algona
- Cliffside Vocational
- Council House
- Friendship Adventures
- Group Health Cooperative
- Kline Galland
- LATCH
- Maple Valley Community Center
- Mt. Si Senior Center
- Northwest Child
- OUTDOORS FOR ALL
- Provail
- Providence ElderPlace
- Puget Sound Regional Services
- SKCAC Industries
- SL Start

- Summit on First Hill
- Tavon Center
- Town of Skykomish
- Vashon Community Care Center
- Wallingford Senior Center

Service data from 2006 through 2011 for the Advantage Vans and Vanworks programs is provided in Table D-24. The cost per trip in Metro subsidies is also shown. This cost is compared to the cost per trip on the Access paratransit service. The percentage of Advantage Van and Vanworks trips that would otherwise have been made by Access is also included. Using this data, annual savings to Metro for supporting these programs and having ADA paratransit riders served by these programs rather than Access paratransit is calculated.

In 2011, 24 agencies participated in the Advantage Vans and Vanworks programs. A total of 93 vehicles were operated by the agencies. Over 303,000 boardings were recorded in 2011. Forty-nine percent (49%) of the boardings (148,718) were riders who were ADA paratransit eligible and whose trips would otherwise have been made on Access paratransit. Given an average cost per trip of $42.11 for Access service in 2011, providing these trips on Access would have cost Metro $6,262,515. Metro's total support for the Advantage Vans and Vanworks programs in 2011 was $1,368,815, or about $4.51 per boarding in 2011. The annual savings to Metro for supporting the Advantage Vans and Vanworks programs in 2011 was therefore $4,893,700.

In addition to these savings to Metro, support of the Advantage Vans and Vanworks programs also allowed the participating agencies to provide work and work training transportation to persons with disabilities.

Table D-24. Advantage Van and Vanworks Program Service Data and Costs, 2006–2011

Data	2006	2007	2008	2009	2010	2011
Participating Agencies	20	20	23	25	25	24
Vehicles in Service	47	53	60	76	86	93
Boardings	129,460	141,368	155,456	211,417	250,369	303,506
% Boardings by ADA Paratransit Eligible Riders	41%	41%	38%	45%	47%	49%
% Boardings by Others (Not ADA Paratransit Eligible)*	59%	59%	62%	55%	53%	51%
Average Metro Subsidy per Boarding on Advantage Vans and Vanworks	$4.50	$5.00	$4.80	$4.16	$4.59	$4.51
Cost per Trip on Access Paratransit	$34.24	$36.15	$39.17	$38.48	$38.64	$42.11
Estimated Annual Savings to Metro**	$1,234,841	$1,234,841	$1,567,712	$2,781,402	$3,397,708	$4,893,700

** Other riders indicated as "Not ADA Paratransit Eligible" means that they have not registered for the Access paratransit service and been found ADA paratransit eligible. Many "other" riders are seniors, including seniors with disabilities. Some may actually be ADA paratransit eligible but have elected not to apply to Metro for eligibility.*

*** Estimated annual savings calculated as ((Boardings)(% Boardings by ADA Paratransit Eligible Riders)(Cost per Trip on Access Paratransit) – (Boardings)(Average Metro Subsidy per Boarding on Advantage Vans and Vanworks)).*

Access Paratransit Ridership Trend

Figure D-30 and Table D-25 show Access ADA paratransit ridership (boardings) from calendar years 2001 through 2012. Table D-26 identifies significant service changes by year.

From 2001 through 2006, ridership increased from 976,707 to 1,128,496, or about 3.1% per year. During this period, the Access paratransit fare was $0.75 and the first Hyde Shuttle was implemented (2003).

The growth in ridership slowed from 4% in 2005 to 2% in 2006. Ridership then declined 1% in 2007. By this point in time, there were 14 Hyde Shuttles and senior programs being supported with CAT vehicles. There were also 20 agencies and communities participating in the Advantage Vans and Vanworks programs. Also starting in 2006, Metro began requiring that all applicants for ADA paratransit eligibility participate in interviews and functional assessments and trip-by-trip eligibility determinations were implemented.

After the 1% decrease in 2007, Access paratransit ridership remained essentially unchanged from 2008 through 2010. In 2011, ridership declined 2%. And in 2012, it declined by 1%. During this period, the number of Hyde Shuttles, Advantage Vans and Vanworks vehicles continued to grow. The Access paratransit fare was also increased twice—first from $0.75 to $1.00 in 2008, and then from $1.00 to $1.25 in 2010.

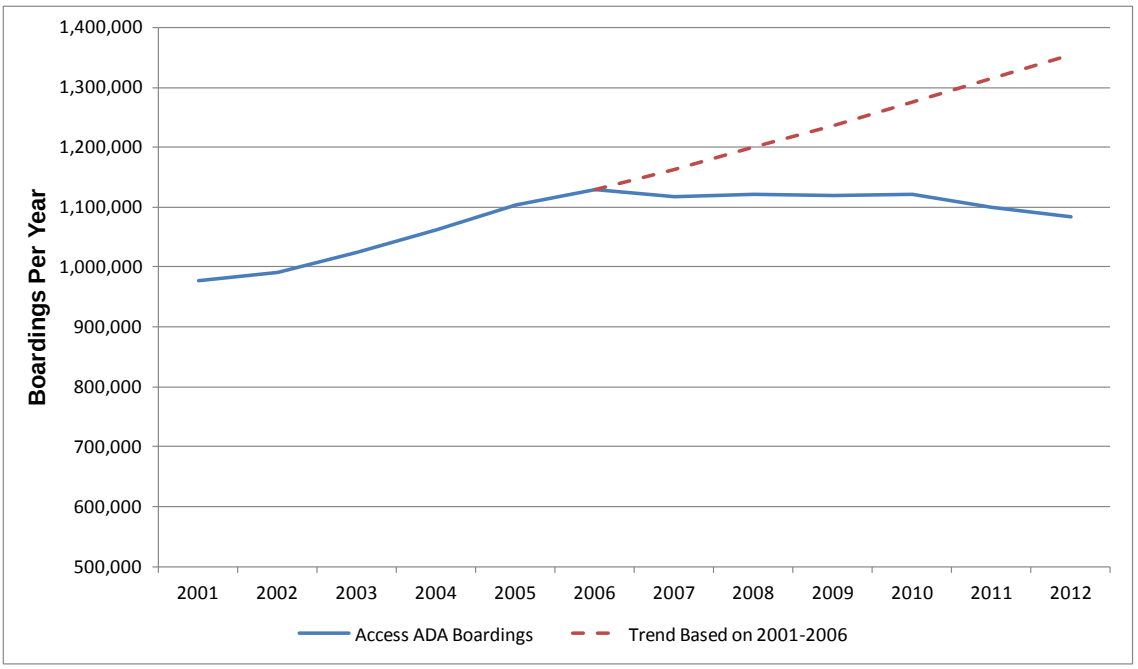


Figure D-30. Access ADA Paratransit Ridership, 2001–2012

Table D-25. Access ADA Paratransit Ridership, 2001–2012

Calendar Year	ADA Paratransit Boardings	% Change	Est. Boardings (2001-2006 Trend)
2001	976,707	NA	976,707
2001	991,464	2%	991,464
2003	1,024,491	3%	1,024,491
2004	1,062,092	4%	1,062,092
2005	1,104,480	4%	1,104,480
2006	1,128,496	2%	1,128,496
2007	1,118,400	-1%	1,163,479
2008	1,121,776	0%	1,199,547
2009	1,119,927	0%	1,236,733
2010	1,120,990	0%	1,275,072
2011	1,099,954	-2%	1,314,599
2012	1,084,041	-1%	1,355,352

Table D-26. Significant Eligibility and Service Changes by Year

Year	Changes
1997	First Senior Services community shuttle implemented.
2003	First Hyde Shuttle implemented.
2006	Increased use of in-person interviews/assessments (from 40% of applicants to 100% of applicants). Started trip eligibility determinations.
2007	Implemented Transportation Resource Center
2007–2012	Expanded Hyde Shuttles and community buses.
2008	Access fare increased from $0.75 to $1.00.
2010	Access fare increased from $1.00 to $1.25

The many service options provided by Metro, along with changes in eligibility determinations appear to have had an impact on the use of Access paratransit. If the trend experienced from 2001 through 2006 had continued, the expected ridership in 2012 would have been 1,355,352. The actual ridership of 1,084,041 in 2012 was about 20% less than this projection.

Findings and Conclusions

Metro Transit has developed a range of travel options to supplement traditional fixed route and ADA paratransit service. Metro has also implemented a large Travel Instruction program to encourage and facilitate use of the accessible fixed route system.

The range of options allows individuals to select the service that best meets their needs, from the accessible fixed route service, to a local community van, to ADA paratransit.

Many of the travel options, including the community shuttles, taxi script, and travel training programs promote transportation that is integrated and not separate.

The programs implemented have been cost-effective. The Travel Instruction program saves Metro about $1.2 million per year, more than twice the annual program cost. The Advantage Vans and Vanworks programs save Metro almost $5 million per year.

The many service options provided by Metro, along with changes in eligibility determinations appear to have had an impact on the use of Access paratransit. Access ridership in 2012 is estimated to be about

20% less than if the CAT programs had not been implemented and changes to the eligibility determination process had not been made.

Beyond dollar savings, the CAT program has expanded travel options for all riders in the Metro Transit area. Riders are better able to use the accessible fixed route services. Local shuttles are available to supplement the fixed route and ADA paratransit services. And local agencies and organizations are better able to provide transportation for individuals participating in their services.

APPENDIX

E

Sample Cost Proposal Forms

APPENDIX E:
Sample Cost Proposal Forms

The sample forms included in this appendix illustrate the level of cost proposal form detail, discussed in Section 2, that can help transit agencies:

- Compare and evaluate costs across multiple proposers
- Determine exactly what is included in the proposed costs
- Negotiate costs more effectively in the Best and Final Offer (BAFO) stage of procurement
- Negotiate costs should changes occur during the term of the contract

The sample forms are based generally on forms used by the Massachusetts Bay Transportation Authority (MBTA) in Boston, Massachusetts to procure ADA paratransit services in 2014. Some of the more unique aspects of the MBTA forms have been generalized to be more applicable to broader service design. The forms also show calculations for per trip as well as per revenue-hour reimbursement rates for variable costs, although typically only one method would be specified. Note also that these sample forms still contain line items that reflect the MBTA's service design—such as having contractors provide facilities, some vehicles and some in-vehicle communications equipment, paying for fuel separately based on prevailing prices for the month invoiced, and the MBTA providing scheduling software and scheduling software customization and maintenance. If these sample forms are considered for use, they should be modified to include line items appropriate to the service design intended.

Fixed and Variable Costs

List all costs that will be incurred operating the service in accordance with the requirements detailed in this RFP for the five year base contract period from July 1, 2014 through June 30, 2019, as well as for the two option years (July 1, 2019 through June 30, 2020, and July 1, 2020 through June 30, 2021). Complete the **Fixed and Variable Costs Form** following the instructions provided.

Also provide information about personnel salaries, wages and fringe benefits on the **Personnel Salaries/Wages and Fringe Detail Page.**

The **Vehicle Detail Page** shows the number of sedans and vans that will be provided by the transit agency each year as well as the number of sedans and vans to be provided by the contractor. This information should be used to develop costs associated with providing the required number of each type of vehicle per year. Note that the contractor shall also be responsible for equipping all vehicles with MDCs and AVL. A place to identify these costs is provided in the cost forms.

The Proposer must also provide detail supporting each line item in the **Fixed and Variable Costs Form**. This must include the significant cost assumptions used to estimate prices including, without limitation: number and classification of personnel, estimated number of labor hours, hourly rates for personnel, material and supplies expenses, overhead and profit rates*(not to exceed 8% and excluding all capital expenses), and any and all capital expenses. A **Sample Cost Detail** form is provided. This or a similar cost detail format should be used.

Fixed and Variable Cost Form, Page 1

						Option Period	
	FY-15	**FY-16**	**FY-17**	**FY-18**	**FY-19**	**FY-20**	**FY-21**
FIXED COSTS							
Administrative							
1. Admin. Personnel Salaries/Wages							
2. Admin. Personnel Fringe Benefits							
3. Management Support							
4. General Liability Insurance							
5. General Supplies							
6. Mail/Courier							
7. Travel/Workshops/Training							
8. Non-Vehicle Financing Costs							
9. Other (describe:)							
10. Other (describe:)							
11. Profit (not to exceed 8% of Administrative Costs)							
Facility							
12. Rent							
13. Utilities							
14. Janitorial Services/Supplies							
15. Facility Insurance							
16. Other (describe:)							
17. Other (describe:)							
Equipment							
18. Phone/Fax System/Hardware							
19. IVR System							
20. Two-Way Comm. Equipment and Installation							
21. Computer Hardware							
22. Computer Hardware Maintenance							
23. Furnishings							
24. Copier Leases							
25. Large Maintenance Equipment (> $1,000)							
26. Other (describe:)							
27. Other (describe:)							
28. Total Fixed Costs (Incl. Call Ctr Functions)							

Fixed and Variable Cost Form, Page 2

						Option Period	
	FY-15	**FY-16**	**FY-17**	**FY-18**	**FY-19**	**FY-20**	**FY-21**
VARIABLE COSTS							
Call Center							
29. Call Center Personnel Wages							
30. Fringe Benefits							
31. Recruitment/Training/Drug testing							
32. Monthly Telephone Service							
33. Monthly Two-Way Communications Fees							
34. Supplies							
35. Other (describe:)							
36. Other (describe:)							
37. Profit (not to exceed 8% of Call Ctr. Var. Cost)							
38. Sub-Total Call Center Variable Costs							
Vehicle Maintenance							
39. Maintenance Personnel Wages							
40. Fringe Benefits							
41. Recruitment/Training							
42. Maintenance Supplies/Tires							
43. Other (describe:)							
44. Profit (not to exceed 8% of Veh. Maint. Cost)							
45. Sub-Total Veh. Maintenance Variable Costs							
Road Supervision and Non-Revenue Vehicles							
46. Road Supervision Personnel Wages							
47. Fringe Benefits							
48. Recruitment/Training							
49. Non-Revenue Vehicle Lease/Purchase							
50. Non-Revenue Vehicle Insurance							
51. Non-Revenue Vehicle Fuel & Maintenance							
52. Towing							
53. Other (describe:)							
54. Profit (not to exceed 8% of Road Sup.& NR Veh)							
55. Sub-Total Road Superv. and Non-Rev. Vehicles							

Fixed and Variable Cost Form, Page 3

						Option Period	
	FY-15	**FY-16**	**FY-17**	**FY-18**	**FY-19**	**FY-20**	**FY-21**
Vehicle Operations – Sedans							
56. Veh. Operation Personnel Wages							
57. Veh. Operation Personnel Fringe							
58. Recruitment and Training							
59. Vehicle Insurance							
60. Other (describe:)							
61. Other (describe:)							
62. Profit (not to exceed 8% of Sedan Ops. Costs)							
63. Sub-Total Veh. Operations – Sedans							
Vehicle Operations – Vans							
64. Veh. Operation Personnel Wages							
65. Veh. Operation Personnel Fringe							
66. Recruitment and Training							
67. Vehicle Insurance							
68. Other (describe:)							
69. Other (describe:)							
70. Profit (not to exceed 8% of Sedan Ops. Costs)							
71. Sub-Total Veh. Operations – Vans							
Vehicle Costs – Contractor Provided Sedans							
72. Amortized Purchase or Annual Lease Costs							
73. Amortized MDC/AVL Costs							
74. Sub-Total Contractor Sedan Cost							
Vehicle Costs – Contractor Provided Vans							
75. Amortized Purchase or Annual Lease Costs							
76. Amortized MDC/AVL Costs							
77. Sub-Total Contractor Van Cost							

Revenue-Vehicle Fuel

Estimated Total Vehicle Miles – Sedans	XXX	XXX	XXX	XXX	XXX	XXX	XXX
Estimated Total Vehicle Miles – Vans	XXX	XXX	XXX	XXX	XXX	XXX	XXX
Estimated Fuel Use By Year – Sedans	_____gal	_____gal	_____gal	_____gal	_____gal	_____gal	_____gal
Estimated Fuel Use By Year – Vans	_____gal	_____gal	_____gal	_____gal	_____gal	_____gal	_____gal

Fixed and Variable Cost Form, Page 4, Fixed and Variable Cost Reimbursement Calculations

Fixed Cost Reimbursement

						Option Period	
	FY-15	**FY-16**	**FY-17**	**FY-18**	**FY-19**	**FY-20**	**FY-21**
78. Monthly Fixed Cost reimbursement (Row 28/12)							

Per Trip Reimbursement Rates (If This Method is used to Reimburse Variable Costs)

						Option Period	
	FY-15	**FY-16**	**FY-17**	**FY-18**	**FY-19**	**FY-20**	**FY-21**
79. Estimated Trips per Year	XXX	XXX	XXX	XXX	XXX	XXX	XXX
80. Total Variable Costs (Rows 38+45+55+63+71+74+77)							
81. Per Trip Rate (Row 80/Row 79)							

Per Vehicle Revenue-Hours Reimbursement Rates (If This Method is used to Reimburse Variable Costs)

						Option Period	
	FY-15	**FY-16**	**FY-17**	**FY-18**	**FY-19**	**FY-20**	**FY-21**
82. Est. Agency Sedan Revenue-Hours per Year	XXX	XXX	XXX	XXX	XXX	XXX	XXX
83. Est. Agency Van Revenue-Hours per Year	XXX	XXX	XXX	XXX	XXX	XXX	XXX
84. Est. Contractor Sedan Revenue-Hours per Year	XXX	XXX	XXX	XXX	XXX	XXX	XXX
85. Est. Contractor Van Revenue-Hours per Year	XXX	XXX	XXX	XXX	XXX	XXX	XXX
86. Est. Total Sedan Revenue-Hours per Year	XXX	XXX	XXX	XXX	XXX	XXX	XXX
87. Est. Total Van Revenue-Hours per Year	XXX	XXX	XXX	XXX	XXX	XXX	XXX
88. Cost per Veh-Rev-Hr to Operate Agency Sedans (Rows 38+45+55/Rows 86+87)+(Row 63/Row 86)							
89. Cost per Veh-Rev-Hr to Operate Contractor Provided Sedans (Row 88 + (Row 74/Row 84))							
90. Blended Rate to Operate Sedans (Row 88 x Row 82)+(Row 89 x Row 84)/Row 86							
91. Cost per Veh-Rev-Hr to Operate Agency Vans (Rows 38+45+55/Rows 86+87)+(Row 71/Row 87)							
92. Cost per Veh-Rev-Hr to Operate Contractor Provided Vans (Row 91 + (Row 77/Row 85)							
93. Blended Rate to Operate Vans ((Row 91 x Row 83)+(Row 92 x Row 85))/Row 87							

Fixed and Variable Cost Form, Pages 5–8, Instructions

(1) Administrative personnel salaries and wages. Identify all staff on the Personnel Salary/Wages and Fringe Detail Page. If applicable, should include the General Manager, Operations Manager, Call Center Manager, Maintenance Manager, Risk Management and Training Manager, the Information Technology (IT) Manager, and similar or other clerical and administrative staff. If janitorial staff is hired rather than these services being purchased, this staff cost can also be included.
(2) Fringe benefits for all administrative staff. Fringe percentage for each employee type to be included on the Personnel Salary/Wages and Fringe Detail Page.
(3) Management support provided by off-site management personnel, such as corporate specialists.
(4) General liability insurance. Do not include facility insurance, which should go on line 15. Also, do not include vehicle insurance costs, which should go on lines 50, 59, and 67.
(5) Administrative office supplies. Do not include call center supplies, which should go on line 34.
(6) Mail and courier costs.
(7) Costs for travel, workshops, and training for administrative personnel.
(8) Financing (borrowing) costs for everything except vehicle purchasing.
(9) Other administrative costs not identified above. Explain and justify these costs in the Cost Detail Page.
(10) Other administrative costs not identified above. Explain and justify these costs in the Cost Detail Page.
(11) Profit. Should not exceed 8% of the total administrative costs shown in lines 1 through 10 above.
(12) Rent for all administrative and operations facilities. If facilities are owned and not rented, provide a reasonable use fee for the facilities and justify on the Cost Detail Page.
(13) Utilities for all administrative and operations facilities.
(14) Janitorial services and supplies for all administrative and operations facilities.
(15) Facility insurance for all facilities.
(16) Other facility costs not identified above. Explain and justify these costs in the Cost Detail Page.
(17) Other facility costs not identified above. Explain and justify these costs in the Cost Detail Page.
(18) Telephone and fax hardware and system costs. Include monthly service costs for administrative and non-call center phones. These costs should be amortized over the first five years of the contract (non-option years). Ongoing monthly telephone service costs for the call center should be shown in line 32.
(19) Telephone Interactive Voice Response (IVR) system costs, including set-up. These costs should be amortized over the first three years of the contract.
(20) Two-way communications equipment and installation costs. Do not include monthly service costs for two-way communications, which should be shown in line 33. These one-time equipment and installation costs should be amortized over the first three years of the contract.
(21) Computer hardware, system and software costs for computers used in administration and operations. These costs should be amortized over the first five years of the contract (non-option years).
(22) Maintenance of computers and software used in administration and operations.
(23) Office furnishings used in administration and operations. These costs should be amortized over the first five years of the contract (non-option years).
(24) Lease and maintenance costs for copiers. If copiers are purchased, amortize the costs over the first five years of the contract (non-option years).
(25) Large maintenance equipment (over $1,000). These costs should be amortized over the first five years of the contract (non-option years). Smaller items should be included maintenance supplies in line 42.
(26) Other equipment costs not identified above. Explain and justify these costs in the Cost Detail Page.
(27) Other equipment costs not identified above. Explain and justify these costs in the Cost Detail Page.
(28) Total of all fixed costs (lines 1 through 27).
(29) Wages for call center personnel, including reservationists, schedulers, radio dispatchers, and data reconciler personnel. Identify all staff on the Personnel Salary/Wages and Fringe Detail Page. Note that the Call Center Manager and IT Manager salaries should be included in administrative fixed costs.
(30) Fringe benefits for all call center staff. Fringe percentage for each employee type to be included on the Personnel Salary/Wages and Fringe Detail Page. Note that fringe benefits for the Call Center Manager and IT Manager should be included in administrative fixed costs
(31) Recruitment, training, and drug testing costs for call center personnel only. Should include not only initial drug testing, but ongoing drug-testing. Note that recruitment, training, and drug testing costs for other operations personnel should be shown in lines 41, 48, 58, and 66.
(32) Monthly telephone service costs for the call center function. Note that telephone service costs for administrative phone lines or phone lines for other non-call center functions should be included in line 18.
(33) Monthly two-way communications service costs for call center operations. Should include monthly service costs for two-way radios or hand-held radios for

communications between the call center and drivers.
(34) Call center office supplies. Note that administrative office supplies and office supplies for other non-call center operations functions should be included in line 5.
(35) Other call center variable costs not identified above. Explain and justify these costs in the Cost Detail Page.
(36) Other call center variable costs not identified above. Explain and justify these costs in the Cost Detail Page.
(37) Profit on call center variable costs. Should not exceed 8% of the total of lines 29 through 36.
(38) Sub-total of all call center variable costs, including profit.
(39) Wages for maintenance personnel, including mechanics and vehicle cleaners. Identify all staff on the Personnel Salary/Wages and Fringe Detail Page. Note that the Maintenance Manager salary should be included in administrative fixed costs.
(40) Fringe benefits for all maintenance staff. Fringe percentage for each employee type to be included on the Personnel Salary/Wages and Fringe Detail Page. Note that fringe benefits for the Maintenance Manager should be included in administrative fixed costs
(41) Recruitment, training, and drug testing costs for maintenance personnel only.
(42) Maintenance supplies and tires. Should include all parts, oils, lubricants, and other fluids. Should also include small equipment (under $1,000).
(43) Other vehicle maintenance variable costs not identified above. Explain and justify these costs in the Cost Detail Page.
(44) Profit on vehicle maintenance variable costs. Should not exceed 8% of the total of lines 39 through 43.
(45) Sub-total of all vehicle maintenance variable costs, including profit.
(46) Wages for road supervision and driver supervision personnel, including road supervisors and window dispatchers. Identify all staff on the Personnel Salary/Wages and Fringe Detail Page. Note that the Operations Manager and Risk Manager/Trainer salaries should be included in administrative fixed costs.
(47) Fringe benefits for all road supervision staff. Fringe percentage for each employee type to be included on the Personnel Salary/Wages and Fringe Detail Page. Note that fringe benefits for the Operations Manager and Risk Manager/Trainer should be included in administrative fixed costs
(48) Recruitment, training, and drug testing costs for road supervision personnel only.
(49) Non-revenue vehicle lease or purchase costs. This would include maintenance vehicles, road supervisor vehicles, and vehicles used by administrative staff. If vehicles are purchased, costs should be amortized over the first five years of the contract.
(50) Vehicle insurance for non-revenue vehicles. Note that insurance for revenue vehicles should be separate and shown in lines 59 and 67.
(51) Fuel and maintenance for all non-revenue vehicles, including maintenance vehicles, road supervisor vehicles, and administrative vehicles.
(52) If towing services are purchased rather than operated in-house, towing service costs should be shown here.
(53) Other road supervision and non-revenue vehicle variable costs not identified above. Explain and justify these costs in the Cost Detail Page.
(54) Profit on road supervision and non-revenue vehicle variable costs. Should not exceed 8% of the total of lines 46 through 53.
(55) Sub-total of all vehicle maintenance variable costs, including profit.
(56) Wages for all sedan drivers (of transit agency provided and contractor provided vans). Identify the number of full-time and part-time sedan drivers, the average hourly wage, and the total hours of full-time and part-time sedan drivers by years in the Personnel Salary/Wages and Fringe Detail Page.
(57) Fringe benefits for full-time and part-time sedan drivers. Fringe percentage for each employee type to be included on the Personnel Salary/Wages and Fringe Detail Page.
(58) Recruitment, training, and drug testing costs for sedan operators only.
(59) Vehicle insurance for sedans. Should include all sedans—those provided by the transit agency as well as those provided by the contractor.
(60) Other sedan operation variable costs not identified above. Explain and justify these costs in the Cost Detail Page.
(61) Other sedan operation variable costs not identified above. Explain and justify these costs in the Cost Detail Page.
(62) Profit on sedan operation variable costs. Should not exceed 8% of the total of lines 56 through 61.
(63) Sub-total of all sedan operation variable costs, including profit.
(64) Wages for all van drivers (of transit agency provided and contractor provided vans). Identify the number of full-time and part-time van drivers, the average hourly wage, and the total hours of full-time and part-time van drivers by years in the Personnel Salary/Wages and Fringe Detail Page.
(65) Fringe benefits for full-time and part-time van drivers. Fringe percentage for each employee type to be included on the Personnel Salary/Wages and Fringe Detail Page.
(66) Recruitment, training, and drug testing costs for van operators only.
(67) Vehicle insurance for vans. Should include all vans—those provided by the transit agency as well as those provided by the contractor.
(68) Other van operation variable costs not identified above. Explain and justify these costs in the Cost Detail Page.
(69) Other van operation variable costs not identified above. Explain and justify these costs in the Cost Detail Page.
(70) Profit on van operation variable costs. Should not exceed 8% of the total of lines 64 through 69.
(71) Sub-total of all van operation variable costs, including profit.

(72) Amortized purchase costs or leased costs for contractor provided sedans. See Vehicle Detail Page for the number of sedans to be provided by the contractor each year.
(73) Amortized annual costs for mobile data computers (MDCs) and automatic vehicle locator (AVL) systems purchased for contractor provided sedans. Should include installation costs.
(74) Sub-total of annual contractor costs for providing sedans with MDCs and AVL.
(75) Amortized purchase costs or leased costs for contractor provided vans. See Vehicle Detail Page for the number of vans to be provided by the contractor each year.
(76) Amortized annual costs for mobile data computers (MDCs) and automatic vehicle locator (AVL) systems purchased for contractor provided vans. Should include installation costs.
(77) Sub-total of annual contractor costs for providing vans with MDCs and AVL.
(78) Monthly fixed cost reimbursement for operation including call center function. Total annual fixed costs (line 28) divided by 12 months.
(79) Estimated number of on-way passenger trips to be provided each year.
(80) Total variable cost of operation (lines 38 plus 45 plus 55 plus 63 plus 71 plus 74 plus 77).
(81) Per trip reimbursement rate. Calculated as the total variable cost of operation (line 80) divided by the estimated number of trip per year (line 79).
(82) Estimated number of revenue-hours that all **sedans** provided by the **Transit Agency** will be operated each year.
(83) Estimated number of revenue-hours that all **vans** provided by the **Transit Agency** will be operated each year.
(84) Estimated number of revenue-hours that all **sedans** provided by the **contractor** will be operated each year.
(85) Estimated number of revenue-hours that all **vans** provided by the **contractor** will be operated each year.
(86) Estimated **total** revenue-hours of **sedan** operation (lines 96 plus 98)
(87) Estimated **total** revenue-hours of **van** operation (lines 97 plus 99)
(88) Variable cost per vehicle-revenue-hour to operate Transit Agency provided sedans. Calculated as call center plus maintenance plus road supervision and non-revenue variable operating costs (Rows 38 plus 45 plus 55) divided by the total revenue-hours of operation for all vehicles (Rows 86 plus 87), plus the variable cost of sedan operation (Row 63) divided by the total revenue-hours of sedan operation (Row 84).
(89) Variable cost per vehicle-revenue-hour to operate contractor provided sedans. Calculated as the cost to operate Transit Agency sedans (Row 88) plus the added vehicle capital cost per revenue-hour for sedans provided by the contractor (Row 74 divided by Row 84).
(90) Blended rate per revenue-hour for sedan operation. Calculated as the cost per revenue-hour to operate Transit Agency provided sedans (Row 88) times the estimated number of revenue-hours of operation of Transit Agency provided sedans (Row 82), plus the cost per revenue-hour to operate contractor provided sedans (Row 89) times the estimated number of revenue-hours of operation of contractor provided sedans (Row 84), divided by the total estimated revenue-hours of all sedan operation (Row 86).
(91) Variable cost per vehicle-revenue-hour to operate Transit Agency provided vans. Calculated as call center plus maintenance plus road supervision and non-revenue variable operating costs (Rows 38 plus 45 plus 55) divided by the total revenue-hours of operation for all vehicles (Rows 86 plus 87), plus the variable cost of van operation (Row 71) divided by the total revenue-hours of van operation (Row 87).
(92) Variable cost per vehicle-revenue-hour to operate contractor provided vans. Calculated as the cost to operate MBTA sedans (Row 91) plus the added vehicle capital cost per revenue-hour for vans provided by the contractor (Row 77 divided by Row 85).
(93) Blended rate per revenue-hour for van operation. Calculated as the cost per revenue-hour to operate Transit Agency provided vans (Row 91) times the estimated number of revenue-hours of operation of Transit Agency provided sedans (Row 83), plus the cost per revenue-hour to operate contractor provided vans (Row 92) times the estimated number of revenue-hours of operation of contractor provided sedans (Row 85), divided by the total estimated revenue-hours of all van operation (Row 87).

Fixed and Variable Cost Form, Page 9, Personnel Salaries/Wages and Fringe Detail Page

Position	FY-15			FY-16			FY-17			FY-18			FY-19			FY-20			FY-21		
	FTE	Hrs	Rate	FTE	Hrs.	Rate	FTE	Hrs.	Rate	FTE	Hrs.	Rate	FTE	Hrs.	Rate	FTE	Hrs.	Rate	FTE	Hrs.	Rate
Administrative																					
Gen Manager																					
Operations Mgr.																					
Call Center Mgr,																					
Maintenance Mgr.																					
Risk Mgt/Trainer																					
IT Manager																					
Administrative																					
Janitorial																					
Est. Fringe %																					
Call Center																					
Reservationists																					
Schedulers																					
Radio Dispatchers																					
Reconcilers																					
Est. Fringe %																					
Maintenance																					
Mechanics – A																					
Mechanics - B																					
Vehicle Cleaners																					
Est. Fringe %																					
Road Supervision																					
Window Dispatchers																					
Road Supervisors																					
Est. Fringe %																					
Vehicle Operations, Full Time Drivers																					
FT Drivers – Sedans																					
FT Drivers – Vans																					
Est. Fringe %																					
Vehicle Operations, Part Time Drivers																					
PT Drivers – Sedans																					
PT Drivers – Vans																					
Est. Fringe %																					

Fixed and Variable Cost Form, Page 10, Vehicle Detail Page

Type	FY-15	FY-16	FY-17	FY-18	FY-19	FY-20	FY-21
Transit Agency Provided							
Sedan							
Van							
Contractor Provided							
Sedan							
Van							
Total							
Sedan							
Van							

Fixed and Variable Cost Form, Page 10, Sample Cost Detail

Line Item #	Cost Detail (attach and reference additional pages as needed)
Fixed Costs	
Administrative Cost Detail	
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
Facility	
12	
13	
14	
15	
16	
17	
Equipment	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
Variable Costs	
Call Center	
29	
30	
31	
32	
33	
34	
35	
36	
37	

Fixed and Variable Cost Form, Page 11, Sample Cost Detail

Vehicle Maintenance	
39	
40	
41	
42	
43	
44.	
Road Supervision & Non-Revenue Vehicles	
46	
47	
48	
49	
50	
51	
52	
53	
54	
Vehicle Operations – Sedans	
56	
57	
58	
59	
60	
61	
62	
Vehicle Operations – Vans	
64	
65	
66	
67	
68	
69	
70	
Vehicle Costs – Contractor Provided Sedans	
72	
73	
Vehicle Costs – Contractor Provided Vans	
75	
76	

GLOSSARY OF TERMS AND ACRONYMS

AAA	Area Agency on Aging
ACCESS	ACCESS Transportation Systems, Inc. (Pittsburgh, PA)
ADA	Americans with Disabilities Act of 1990
APTA	American Public Transportation Association
AT	Arlington Transit (Arlington, VA)
ATSA	Accessible Transit Services for All
AVL	Automatic Vehicle Location or Automatic Vehicle Locator
BAFO	Best and Final Offer
BART	Bay Area Rapid Transit District (Oakland, CA)
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CAD	Computer-aided Dispatch
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CapMetro	Capital Metropolitan Transportation Authority (Austin, TX)
CAT	Community Access Transportation Program (Seattle, WA)
CCT	Custom Community Transportation (Philadelphia, PA)
CMA	Congestion management Agency
CTAA	Community Transportation Association of America
CTSA	Consolidated Transportation Services Agency (California)
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DART	Dallas Area Rapid Transit (Dallas, TX)
DBE	Disadvantaged Business Enterprise
DOT	Department of Transportation
DREDF	Disability Rights Education & Defense Fund, Inc. (Berkeley, CA)
EFP	Electronic Fare Payment
ESPA	Easter Seals Project ACTION
ETA	Estimated Time of Arrival
EXB	Express Booking System

FHWA	Federal Highway Administration
FT	Full-time
FTA	Federal Transit Administration
FTE	Full-time Equivalent
GAO	Government Accountability Office
GGEDA	Grand Gateway Economic Development Association (Big Cabin, OK)
GPS	Global Positioning System
ITS	Intelligent Transportation Systems
IVR	Interactive Voice Response or Interactive Voice Recognition
JARC	Job Access Reverse Commute
LD	Liquidated Damages
LED	Light Emitting Diode
LEP	Limited English Proficiency
LRT	Light Rail Transit
MAP-21	Moving Ahead for Progress in the 21st Century Act (P. L. 112-141)
MBTA	Massachusetts Bay Transportation Authority (Boston, MA)
MDC	Mobile Data Computer
MDT	Mobile Data Terminal
Metro Transit	King County Department of Transportation, Metro Transit Division (Seattle, WA)
MPO	Metropolitan Planning Organization
MSAA	Mobility Services for All Americans
MV-1	Purpose-built accessible taxi vehicle
NAIPTA	Northern Arizona Intergovernmental Public Transportation Authority (Flagstaff, AZ)
NEMT	Non-emergency Medical Transportation
NTD	National Transit Database
NTI	National Transit Institute

NYCT	New York City Transit Authority
OUTREACH	Outreach and Escort Service, Inc. (San Jose, CA)
PAT	Port Authority of Allegheny County (Pittsburgh, PA)
PCA	Personal Care Attendant
PDA	Personal Digital Assistants
PT	Part-time
RFP	Request for Proposals
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
Samtrans	San Mateo County Transit District (San Carlos, CA)
SEPTA	Southeastern Pennsylvania Transportation Authority (Philadelphia, PA)
STAR	Specialized Transit for Arlington Residents (Arlington County, VA)
TANF	Temporary Assistance for Needy Families
TCRP	Transit Cooperative Research Program
Title VI	Title VI of the Civil Rights Act of 1964
TLPA	Taxi, Limousine and Paratransit Association
TRB	Transportation Research Board
TRI	FTA Office of Demonstration, Research, and Innovation
TRI-10	FTA Office of Mobility Innovation
USDOT	United States Department of Transportation
UTA	Utah Transit Authority (Salt Lake City, UT)
UWR	United We Ride
VTA	Santa Clara Valley Transportation Authority (San Jose, CA)
WMATA	Washington Metropolitan Area Transit Authority (Washington, DC)

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