

# **Optimal Split of Dedicated and Non-Dedicated Services for Demand-Responsive Paratransit Case Study Report**

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## Appendix A: Glossary of Terms for the Paratransit Practitioner

## SECTION 1 INTRODUCTION

### Research Goal

The goal of this research effort is to identify how some transit agencies have used non-dedicated service delivery mechanisms to improve the cost efficiency of their paratransit services, while maintaining desired or required levels of service quality. A major part of this research was to explore how various factors influence the particular service mix of dedicated and non-dedicated service for a given system, and to produce a tool that will assist organizations in determining the optimal service mix for them

### Dedicated vs. Non-Dedicated Service

Before proceeding, it is appropriate to first define what is commonly understood as dedicated service and non-dedicated service. These definitions are provided below. In addition, a full glossary of terms for the paratransit practitioner is presented in Appendix A.

- **Dedicated Service** – This is an operation where the vehicles are dedicated exclusively to the transportation of customers of a transportation program (or coordinated set of programs) during a specified period of time. The trips scheduled or dispatched to dedicated paratransit vehicles are typically controlled by one entity – either the responsible organization, its call center or broker contractor, or its operations contractor (for that system or a specific service area).
- **Non-Dedicated Service** – This is an operation where the vehicles used to provide paratransit service do not exclusively provide transportation for the customers of a particular transportation program (or coordinated set of programs); hence, these vehicles are also used to transport other passengers. The most common example is a taxicab operation that can be called upon to serve a particular trip or a set of trips from a transportation program, but is otherwise free to serve general public trips (dispatched from the base office or flagged from the street) or trips from another contract. Another nuance of the definition is where the non-dedicated service provider has the option of co-mingling trips from different, unrelated contracts on the same vehicle at the same time. An entire transportation program can be based on non-dedicated service. Alternatively, it can augment a dedicated service in an integrated

fashion or a supplementary fashion, as described below:

- » *Integrated Non-Dedicated Service* – This is a service where trips to be served are booked via a central source (e.g., responsible organization, its call center or broker contractor, or its dedicated operations contractor) for the program at large or for a service region, and where the trips are either scheduled onto dedicated vehicles or are assigned to a provider of non-dedicated service for dispatching to specific drivers/vehicles. Thus, ultimately, it is the program or carrier staff that decides the vehicle or the carrier to which the trip is scheduled or assigned. Sometimes, an operations contractor can provide both dedicated and non-dedicated service.
- » *Supplementary Non-Dedicated Service* – This is an auxiliary service that may cater to the same set of (certified/eligible) riders as the dedicated service; however, the riders either directly contact the non-dedicated service provider or are empowered to choose from the central booking staff the auxiliary service option (and sometimes the specific non-dedicated provider as well). The most common example is a taxi subsidy program.

Due to the nature of the research, the study focused more on integrated non-dedicated service and on systems that use non-dedicated service in its entirety, and less so on supplementary non-dedicated service.

## Background

In order to more efficiently serve their current paratransit demand, some transit agencies have implemented policies and practices to improve the productivity of their dedicated fleet in order to increase the cost efficiency of the system. Examples of such policies and practices include:

- shortening the number of days in advance that a rider may place a reservation;
- implementing harsher no-show penalties (to reduce no-shows and late cancellations);
- implementing trip-time negotiation and/or limiting the number of trip requests per time slot (to spread the peak demand);
- overbooking and filling gaps in the schedule from late cancellations with unassigned trips;
- encouraging more pro-active dispatching; and
- altering or fine-tuning the methods for paying, penalizing, and rewarding service contractors, especially where contractors are responsible for scheduling.

Much less attention has been directed to the service delivery structure itself, and in particular to the structure of dedicated runs and the mix of dedicated and non-dedicated service, and their effect on cost efficiency.

In establishing or refining a service delivery design, paratransit managers and practitioners should be looking at the mix of dedicated and non-dedicated service, and how that mix can be modified to minimize the overall cost per trip (or cost per passenger-mile) while meeting or exceeding service quality standards. This is not an easy chore, and often takes months if not years of experimentation to identify just the right service mix. And, if one looks around the industry, one will find systems that are predominantly dedicated, ones that are predominantly non-dedicated, and ones that have different splits. In many of these cases, management has figured out the service mix that makes sense for them, based largely on the weight that each places on service quality vs. service efficiency, as well as other factors such as the availability and comparative cost and quality of non-dedicated service providers.

This process begins with gaining a basic understanding of the spatial and temporal characteristics of demand. Armed with this information, it should be then possible to develop a system-wide or zone-based dedicated run structure that results in:

- good spatial coverage of the peak demand periods;
- minimization of over-supply of service in low-demand areas and periods; and
- minimization of pull-out and pull-in deadheading.
- once the dedicated vehicle runs have been optimized, the strategic use of carriers operating non-dedicated vehicles can be used to:
  - cover the peak overflow trips;
  - serve trips in low-demand periods and areas,
  - serve long, out of the way trips that are not rideshareable and that would otherwise adversely affect the productivity of the dedicated fleet;
  - better handle special events or seasonal fluctuations, and
  - improve the match between the demand curve and the dedicated run structure, and, by doing so, improve cost efficiency.

This split between dedicated and non-dedicated vehicle service is a delicate one and is highly dependent on the characteristics of the trips. For example,

a service that has a relatively condensed service area (with shorter trips and common trip patterns) will undoubtedly benefit from a high percentage of dedicated service. In contrast, a more regional service (with longer less “ridesharable” trips, and more diverse trip patterns) would probably benefit from a higher percentage of non-dedicated service.

The “acid-test” lies with the productivity of the dedicated fleet and the system-wide unit costs (per passenger trip and per passenger-mile), noting again that cost per trip is a more appropriate measurement for systems where the trips are more homogeneous, and cost per passenger-mile is a more appropriate measurement for systems where the trips are more diverse. With a goal of sizing the supply of the dedicated vehicles so that each vehicle is productive, the task of the scheduling and dispatch staff is to identify when it makes financial sense to add a new dedicated vehicle run (or extend an existing run) in order to cover trips in a specific time period or to expand spatial coverage of the dedicated fleet vs. when it makes sense to continue serving those “other” trips with non-dedicated vehicles. It is also important to note that this is not a one-time analysis but should be an on-going task.

Up until now, there has been little guidance in this area. This research project has been designed, by way of a national survey and several case studies, to demonstrate how different transit agencies have used non-dedicated service in an integrated fashion to help improve the cost efficiency (and service quality) of their overall paratransit system.

The other core product of this research effort is an easy-to-use automated optimizer-based planning application, into which a transportation manager will input local data and characteristics of his/her service, and information on the availability and characteristics of non-dedicated vehicles in his/her community/region. This application generates specific guidance to the user, detailing how, when, and the degree to which non-dedicated vehicle services can be integrated with the dedicated fleet, as well as an estimate of the benefits that would result. The accompanying handbook identifies many of the obstacles commonly encountered. The handbook also describes, via the case studies and other best practices identified through the literature review and survey, ways that various systems have overcome these obstacles. A sample contract for non-dedicated service provision is also included. The automated tool provides assistance in shaping the run structure of dedicated vehicles.

## Summary of Initial Research

The initial research phase of the project consisted of a literature review and survey. The literature review provided insights into the use and benefits of non-dedicated service in paratransit operations, based on earlier research studies and results provided by transit agencies as their paratransit programs evolved.

The survey was intended to gain insight into the how's and why's of the use of non-dedicated service from a cross-section of organizations representing different geographic areas, different demographic settings, and different types of paratransit services. The 31 responding organizations reflected a wide geographic representation. The respondents also reflected a good mix of service area environments which were categorized into metropolitan, suburban, small urban and rural areas.

## Survey Results

One interesting result of the survey was a finding that systems that make the most use of non-dedicated vehicles tend to be located in small urban areas. Nine of the 15 systems (60%) that provide service in such environments use non-dedicated operations for at least 50% of their passenger trips. This is twice the rate of the other service environments. In contrast, systems located in suburban and rural areas tended to use non-dedicated vehicles for a relatively small portion of their total service — less than 15% of their passenger trips, while systems in metropolitan areas were most likely to employ a moderate use of non-dedicated service — 15% to 50% of all trips.

Not surprisingly, taxis were the prevalent type of non-dedicated service used. Seven out of every eight respondents utilized taxis. The predominant use of non-dedicated service is for peak overflow trips and other trips that could not be efficiently scheduled onto the dedicated fleet. The extent of non-dedicated service ranges from a very small portion of a paratransit operation all the way up to 100% of the service.

While the predominant payment structure for dedicated vehicle contractors is a rate per revenue vehicle hour (over half of the systems reported paying for dedicated service by the vehicle hour), non-dedicated service is mostly purchased by trip mileage – based either on the taxi meter or on vehicle miles with passengers on board. Taxi meter fares are almost universally based upon the combination of a price per pick-up (often called a flag drop)

and a price per mile. Since so many of the respondents use taxis (88% of the respondents), it was not surprising that the most common payment structure corresponds to the existing rate structure (for taxis) already in use.

It was also found that non-dedicated vehicle operations appear to be somewhat more productive than dedicated vehicle operations, registering approximately 7% to 19% more passengers per revenue vehicle mile. However, this may be an artifact of how revenue vehicle miles are measured in non-dedicated vehicle operations, typically only when a passenger is in the vehicle. In contrast, in dedicated vehicle operations, revenue vehicle miles are generated whenever the vehicle is in service, even if no passenger is on board, with deadhead miles contributing to as much as 50% of the total revenue miles. Therefore, this comparison of productivity may not be useful.

A noteworthy finding was that non-dedicated vehicle operations have significantly lower costs per passenger trip than do dedicated vehicle services, approximately \$14.00 to \$16.00 per trip compared to \$23.00 to \$24.00 per trip. However, it is important not to overlook that this difference may be at least partially attributable to the difference in capital and operating costs (most of the vehicles utilized by non-dedicated providers are sedans and minivans), overhead, and trip length.

Trip length can provide a glimpse into a transit agency's use of non-dedicated service. There are some transit agencies that consider the use of non-dedicated providers as an "out-of-pocket" expense. These agencies will tend to shift the shorter trips to the providers (especially if the rate is distance based) in order to minimize out of pocket costs. This is one reason why the trip lengths and cost per trip for non-dedicated service (vs. dedicated service) are lower. However, in taking this approach, these same transit agencies may be unintentionally increasing the overall cost per trip for the entire system. This is due to the fact that as shorter trips are taken away from the dedicated service, the productivity (and cost efficiency) of the dedicated fleet decreases. Indeed, some of the case study systems that have taken the opposite approach point to resulting improvements in cost efficiency.

The survey also identified the underlying reasons why non-dedicated service is used. Based on the survey response, responsiveness and cost efficiency were tied as the number one advantage.

Somewhat surprisingly, there was very little difference in the perception of problems between systems that make substantial use of non-dedicated



vehicles and those that use them in a more limited fashion. Those at either end of the spectrum were most likely to cite issues with contract compliance (compared to those with moderately low or moderately high use of dedicated vehicles), and the systems with moderately low usage—15% to 50% of all trips—were most likely to cite problems with the lack of accessible vehicles: 50% compared to 23% overall. But in other respects, there was a striking consensus on the nature of the problems that existed and their perceived severity.

### **Factors Affecting the Use of Non-Dedicated Service**

It was found from the survey that the following demand and supply characteristics of the paratransit service have an impact on the decision to use non-dedicated vehicles:

- The temporal characteristics of daily demand
- The spatial characteristics of demand
- Expected fluctuations in demand
- Unexpected increases in demand
- Unexpected decrease in supply

*Temporal Characteristics* – The demand profiles of many paratransit systems typically have a pronounced peak in the morning, and a more elongated peak in the afternoon, with demand slowly tapering out into the evening, overnight, and early morning hours. Some systems also have a mini-peak around the noon hour.

There are a few strategies (e.g., staggered runs combined with partial or split shifts) that can be employed to develop a run structure that closely mirrors the demand profile, bearing in mind that driver work rules that limit the length and structure of shifts can sometimes pose an obstacle to this. Recognizing the prevalence of this traditional demand profile, the use of contracted, non-dedicated service provides an additional tool to: (1) generally improve the temporal match between the supply and demand for service; (2) accommodate the peak overflow trips; and (3) serve trips during the low-demand off-peak hours.

If the sole or dominant portion of the service is provided with a dedicated fleet (as is the case with most paratransit systems in the United States and Canada), it behooves the paratransit manager, as a good steward of the program, to maximize the productivity of the dedicated fleet in order to

be as cost efficient as possible while otherwise meeting established service standards. The general idea is to remove – or not add -- unproductive dedicated service. Among our survey respondents, 69% reported that they were able to do this by using non-dedicated service.

*Spatial Characteristics* – Dedicated vehicles are often an expensive way to serve long out-of-the-way trips. Serving long trips that do not fit into common trip patterns will therefore adversely affect the productivity of the dedicated fleet, lowering its productivity and cost efficiency. In contrast, the use of a non-dedicated vehicle is a comparatively cost-efficient way to serve such a trip. First, the dedicated vehicle can be reserved for more productive service. Second, the cost of serving such trips with non-dedicated vehicles may be less expensive than pulling out an additional dedicated run for a minimum number of hours (typically at least 4 hours, and often as much as 8 hours) or extending a run and factoring in overtime. Thus, a spatial demand pattern that is quite dispersed and that does not fall into spatial (and temporal) patterns conducive to grouping trips may suggest a service delivery mix that relies on non-dedicated service.

*Expected Fluctuations in Demand* – Special events and/or seasonal fluctuations can outstrip the capacity of a dedicated fleet. Use of non-dedicated service presents a way to handle these short-term spikes in demand. From the survey, 21% of the respondents indicated that they utilized non-dedicated service providers to accommodate spikes in demand caused by special events or seasonal fluctuations.

*Unexpected Increase in Demand* – In general, it is difficult to quickly expand a dedicated fleet to meet an unexpected or sudden increase in demand. (Such sudden demand changes may result from a policy change, expansion of the service area, changes in operating days or hours, and/or an influx of new riders from a new sponsor.) In many systems, it may not be possible to rapidly increase the fleet size, the number of drivers, or even the number of vehicle hours of existing dedicated service to accommodate a sudden, rapid increase in demand. It typically takes months to order new vehicles or even acquire leasable vehicles that meet program requirements. In addition, the transportation provider must recruit, hire, and train new drivers, which may be particularly difficult in environments that are already experiencing driver shortages.

In circumstances such as these, the use of non-dedicated service can be a useful transitional strategy to bridge the gap until additional vehicles can be secured and/or until new drivers can be recruited, hired, and trained for the dedicated fleet.

The use of non-dedicated service can also be used as a “barometer” for measuring the point in time when the number and types of trips carried on non-dedicated vehicles reaches a critical mass that could yield a productive and efficient dedicated run, thereby justifying an expansion of the dedicated fleet.

*Unexpected Decrease in Supply* – The use of non-dedicated service can also provide an “insurance policy” in case of unexpected service disruptions due to work stoppages by unions, or a sudden and unexpected shortage of drivers that lasts for several months.

### **Problems and Obstacles in Using Non-Dedicated Service**

The most prevalent problem among the survey respondents was the amount of oversight that was required to ensure that non-dedicated service providers complied with contractual obligations associated with driver training, drug and alcohol testing, preventive maintenance programs, complaint investigation/resolution, reporting requirements, and record-keeping. The general problem was the lack of staff to properly perform contract oversight.

The second most-cited obstacle was that the prospective/existing non-dedicated service provider(s) lacked accessible vehicles, and so the use of the provider(s) was limited to ambulatory trips. Solutions to overcome this obstacle include providing, leasing, or even loaning accessible vehicles to the non-dedicated service provider(s).

The third most cited reason for not using non-dedicated service was the perception that the service quality and reliability of the non-dedicated service is substandard or poorer than the service provided by the in-house or dedicated service contractor(s). The service quality issues most commonly mentioned were the poor quality of customer service, lack of professionalism exhibited by the non-dedicated service drivers, and poorer on-time performance.

The other most commonly cited obstacles included the scarcity of non-dedicated providers, and the unavailability – or the lack of excess capacity -- of existing providers during peak demand times. This was particularly the

case among the nine respondents who served small urban areas, the five respondents who served rural areas, and the six respondents who served both small urban and rural areas.

In many rural communities and regions, there is not enough demand to support taxis and other non-dedicated providers. Thus, if there is any public transportation at all in these communities, it is likely to be demand-responsive service, with origins in human service transportation and operated with dedicated vehicles.

### **Other Issues from the Survey Concerning the Use of Non-Dedicated Providers**

*FTA Drug and Alcohol Testing* – The FTA first published drug and alcohol testing rules in February 1994, and then in 2001 revised, updated, and consolidated the rules into one. This regulation applies to any contractor who performs safety-sensitive functions (stands in the shoes) for a covered transit agency. Non-dedicated transportation providers that stand in the shoes of covered transit agencies must comply with the FTA regulation even if their involvement is limited or incidental. The preamble to the updated regulation clarifies applicability to non-dedicated taxicab operators. The regulation applies to taxicab operators when the transit provider enters into a contract (written or otherwise) with one or more entities to provide taxi service as part of the public transit service. Drug and alcohol testing rules do not apply to taxicab operators when service is provided where patrons are allowed to choose the taxicab companies that will provide the services. Thus, if the transit system, broker, etc. assigns trips to non-dedicated service providers, they are covered by the rule. If customers choose between service providers without direction or control of the transit agency, the non-dedicated service provider is exempt.

*Insurance Requirements* – In the taxi and livery industry, the insurance requirements are either regulated by the municipality, or fall under a state minimum. Either way, it is rare when the insurance levels are equal to the required levels for most ADA, municipal-based, or human service agency paratransit service, and if a lower insured vehicle is used, it places the purchasing organization at risk. Moreover, with the skyrocketing of insurance costs in the last several years, the higher insurance requirements of ADA paratransit programs, some municipal dial-a-ride programs, and some human service agency transportation programs have precluded program participation for

many taxi and livery operators, i.e., the higher costs of insurance cannot be recovered through the transit agency program revenues.

*Regulatory Environment* – The regulatory environment can also affect the usefulness of non-dedicated providers, and especially taxis. Taxis are usually regulated by municipalities. This may cause difficulty with respect to their usefulness when a regional program is larger than the area in which the taxi may pick-up trips. It is also worth noting that some municipalities, such as Santa Clara County in California, have taxi regulations that include requirements for drug testing, insurance, driver hiring (driver record and criminal history checks), driver training, and the condition of the vehicle. In the case of Santa Clara County, these taxi requirements were as stringent as those required by the Santa Clara Valley Transportation Authority’s broker (Outreach) for its primary contractor. Hence, these requirements have together paved the way for incorporation of taxis as non-dedicated providers in the ADA paratransit service.

## Case Study Research

Nine case study systems were selected to look into these issues in a detailed manner, as well as to collect additional data that would be used to ground the planning tool. The four primary criteria used to select the nine case studies were as follows:

- The lead agency is a transit agency or municipality responsible for public transportation.
- The paratransit service of the lead agency employs a mix of dedicated and non-dedicated vehicles in an integrated fashion, meaning that some entity is determining whether each trip or trip type is to be (a) scheduled to a dedicated vehicle (or assigned to a dedicated service provider) or (b) assigned to a non-dedicated service provider.
- In their survey response, the system cited improved productivity, a better match of capacity to demand, and/or overall cost-efficiency as major advantages of using non-dedicated vehicles.
- The system had the data to support its belief in the advantages of non-dedicated vehicle operations and is willing to share the data and participate in the project as a case study.

For systems meeting these criteria, additional selection criteria included:

- systems located in various geographic regions;
- systems that operated in major metropolitan areas vs. small cities or rural areas;

- systems that had varying program sizes and characteristics
- systems that employed different mixes of dedicated and non-dedicated service; and
- systems that also/alternatively retained different types of non-dedicated service providers other than taxis.

Five case studies in major metropolitan areas and four case studies in small cities and rural areas were conducted. An overview of the case studies is presented in Table 1.

**Table 1 Overview of Case Studies**

Agency	Location	Population	Area (sq. miles)	Population Density	Types of Non-Dedicated vehicles		% Non-dedicated	Passenger Trips
					Taxicabs	Other		
<b>Large Metropolitan Areas</b>								
Arlington Co. DOT / STAR	Arlington, VA	186,000	26	7,150	Y		76%	110,000
Pomona Valley TA / Get About	La Verne, CA	250,000	60	4,165	Y	Y	18%	107,000
Nashville MTA / AccessRide	Nashville, TN	570,000	502	1,135	Y	Y	15%	212,000
Calgary Transit / Access Calgary	Calgary, AB	951,000	279	3,410	Y		19%	825,000
Volusia County / Votran Gold Service	S. Daytona, FL	443,000	1103	400	Y	Y	37%	325,000
<b>Small Urban and Rural</b>								
Indiana County Transit Authority / Indigo	Indiana, PA	90,000	829	110		Y	31%	77,000
Merrimack Valley RTA / EZ Trans	Haverhill, MA	330,000	276	1,195		Y	9%	59,000
Ottawa County Transportation Agency	Port Clinton, OH	41,000	255	160	Y		6%	58,000
Link Transit / Link Plus	Wenatchee, WA	44,000	200	220	Y	Y	5%	85,000





## SECTION 2 KEY FINDINGS FROM CASE STUDIES

### Case Study Summaries

The full results of the case studies are presented in Section 3. The following case study summaries are intended to highlight the key elements of the dedicated and non-dedicated operations for each agency, and the results that they have been able to achieve in terms of increased productivity of the dedicated fleet and decreased cost per trip. When available, the summaries include information about customer satisfaction with the dedicated and non-dedicated services provided.

#### Arlington County, VA

(Agency: County DOT; Program: STAR)

Arlington County is located across the Potomac River from Washington DC. At the urging of its ADA paratransit-eligible residents, Arlington County in 1999 set up a service, called STAR, to provide these residents with a non-ADA alternative to WMATA's MetroAccess ADA paratransit service. To be eligible for STAR, a person must be a resident of Arlington County, and have already been certified as ADA paratransit eligible by MetroAccess. Reservations are taken by the County's call center contractor, and are either scheduled onto 10 dedicated vehicles operated by two contractors (Diamond – 6 vehicles, and Answers, Inc – 6 vehicles), or assigned to Red Top Taxi for dispatching onto non-dedicated taxicabs (including regular and accessible taxicabs).

One of the interesting aspects of this program is that most trips are served by Red Top Taxi. For example, of the 108,809 trips in FY 05 (Jul-Jun), 82,750 trips (including 66,659 ambulatory trips and 16,091 wheelchair trips) or 76% of all trips were assigned to the non-dedicated service provider. This is the highest percentage of non-dedicated trips among all of the case studies, and they were all carried by a taxi operator. In Arlington County, Red Top had the resources to accommodate this volume of trips with 20 accessible taxis and 304 regular taxis (sedans). They also continue to invest in additional regular and accessible resources to match the growing

demand. Moreover, Red Top's management believes in providing nothing less than highly-trained drivers. Indeed, this business philosophy would appear to be attracting businesses from transit agencies.

The County achieves a considerable cost savings due to a service mix with a high percentage of non-dedicated trips carried by Red Top, since their cost per trip in FY 2005 (\$20.50) was 37% less than Diamond (\$32.46) and 21% lower than Answers (\$25.96). It should also be noted that Red Top, with their 20 accessible taxis, transported 74% of all wheelchair trips during FY 2005, virtually the same percentage as the overall rate for all trips.

Despite the availability of 7 accessible vehicles in the dedicated fleet and 20 accessible taxis, there are an increasing number of times when there is insufficient wheelchair trip capacity during the peak periods. This is partly due to the need for Red Top to serve the transportation needs of other organizations, even though they give the highest priority to STAR customers. The County is exploring the possibility of adding three new accessible taxi certificates and/or adding one or more dedicated vehicle runs operated by accessible vehicles.

The County has also achieved cost savings as a result of implementing STAR as an alternative to WMATA's MetroAccess service.. In FY 2005, the service cost per trip on STAR was approximately \$27.00 across the different carriers, while the fully-loaded cost per trip (including the call center and county administrative costs) amounted to about \$28.30. Without STAR, the county of Arlington would have been paying \$35.00 for each ADA trip that an Arlington Resident took on MetroAccess. Using this as a range and the total number of trips made by eligible customers (108,809) in FY 2005, the County of Arlington saved between \$729,000 and \$870,000 by having its own service. These cost savings are directly attributable to the very large proportion of trips that are carried by the non-dedicated provider.

To gauge customer satisfaction in service quality, the County commissioned a customer satisfaction survey that was conducted by WB&A Market Research in September 2004. One hundred fifty (150) riders were interviewed, of which 14% used wheelchairs. The results of the survey were staggeringly positive. Overall, 94% of the respondents were satisfied, giving scores of 8-10 out of 10. Half of these (46%) gave the service a score of 10. When split between the major functions, 92% of those surveyed gave high satisfaction marks for call center customer service, and 96% for service delivery. The

two most prominent reasons for the impressive satisfaction levels were the drivers (friendly, helpful, safe), and the on-time performance.

The riders on the Advisory Committee had similar feedback, especially noting that both the drivers and call center staff demonstrated particular sensitivity to the needs of individuals, and that STAR as a whole was a “critical to allowing them to lead more independent lives and to be a part of the fabric of society.” The only shortcomings mentioned by these riders were a shortage of wheelchair service during the peak periods and on Sundays.

Also contributing to driver satisfaction with the program where the \$2.00 and \$5.00 driver “tips” that the County pays to Red Top for each ambulatory and wheelchair STAR trip. Because of this extra incentive, drivers are more willing to accept a STAR trip, which ultimately results in better on-time performance.

The Arlington STAR program is a highly successful example of the impact that non-dedicated providers can have on both the cost and quality of paratransit service. It is also somewhat unusual in that most metropolitan area paratransit services do not make such extensive use of non-dedicated providers. Based on the survey results, paratransit services in metro areas typically made moderate use of non-dedicated service (from 15% to 50% of trips), while 76 % of STAR trips were on non-dedicated vehicles. Much of the credit for the success of STAR has to be attributed to the fact that Red Top is a taxi company that has the resources and management capability to provide high quality transportation at a competitive price.

### **La Verne, CA**

(Agency: Pomona Valley Transportation Authority; Program Name: Get About)

PVTA is located in Los Angeles County and operates a four-city (Claremont, La Verne, Pomona and San Dimas) elderly and disabled paratransit system that carried approximately 107,000 passengers in FY 2005. PVTA's primary operations contractor (Laidlaw) receives all trip requests (generally one day in advance and subscription, and some same day service on a space-available basis) and schedules about 82% of these trips onto the 18 (18-passenger) dedicated accessible vehicles that it operates. The balance (18%) of the trips are then assigned to the on-demand non-dedicated provider (Diversified Paratransit Services, Inc. (DPI) which operates taxi service in the area under the name Paul's Yellow Cab) based primarily on scheduling and efficiency criteria.

PVTA contracts directly with Laidlaw and with Paul's Yellow Cab (DPI). Because Laidlaw has productivity standards to meet, it will naturally select the trips based on scheduling efficiencies. Paul's Yellow Cab uses a mix of cabs and accessible minivans. The major use of the non-dedicated service provider is to cover trips at peak periods as well as trips at the edges of the service area which would otherwise consume a large amount of time on the dedicated vehicles causing on-time and ride time issues. Since a small number of the cabs are accessible low floor minivans, cabs are effective in serving isolated rides particularly for those in mobility devices. The cabs are also effective in covering the start and end of the day when demand does not justify pulling out a large number of dedicated vehicles.

While the majority of trips are referred to the taxi company a day in advance, the dedicated contractor is allowed to refer trips to the cab as late as 45 minutes prior to the pick up time. This permits the contractor to overbook on the dedicated service, and hence have more trips available to plug gaps that emerge from late cancellations.

PVTA began using taxicabs for a portion of Get About service in 1996. It was hoped that having the dedicated vehicle contractor assign some trips to taxis would improve overall productivity and also address certain persistent service problems. At that time there was very little demand for Get About from San Dimas or La Verne. On-demand trips from these cities were often picked up late because most service tended to be concentrated in Pomona and all vehicles were in use at peak periods. In addition there was a problem serving will-call return trips in all parts of the service area. PVTA calculated that if dedicated vehicle productivity could be increased from around 3.8 to 4.3 passengers per revenue vehicle hour, then the increase in cost efficiency would pay for an increased level of trip making in San Dimas using taxicabs.

Laidlaw's contract with DPI requires that trips be allocated to the cab provider and states that:

*"The goal of the trip allocation is to optimize cost effectiveness, while maintaining a maximum access to the service of riders in mobility devices and residing in outlying areas."*

The PVTA-Laidlaw contract originally set a target of assigning no more than 1,700 trips per month to the cab provider, and specified that a penalty applies if more than 1,850 trips are assigned to the cab provider in any cal-

endar month. For the 2005-06 fiscal year, the limit is described as 60 trips per day. Previously more trips had been assigned to taxicabs as implied by the contract provision.

Laidlaw is paid for Get About service using a fixed rate per month plus a rate per revenue vehicle hour, plus a fuel price escalator. The contract also specifies that Laidlaw must achieve passenger productivity of at least 4.3 passengers per revenue vehicle hour. If productivity drops below that, PVRTA will pay only for those revenue hours that would have been needed to carry the actual patronage if productivity had been 4.3. In other words PVRTA pays a fixed amount per passenger equal to revenue hours divided by 4.3. These provisions were negotiated at a time when Laidlaw was actually achieving about 4.0 passengers per hour, with the understanding that better use of taxicabs would enable Laidlaw to meet the target. This arrangement gives Laidlaw a very strong incentive to create efficient driver schedules and to assign to taxicabs any trips that would reduce productivity.

The service statistics for FY 2005 show that the dedicated fleet has achieved a productivity of 3.92 passengers per hour resulting in a cost per trip of \$12.65. For the same time period the cost per taxi trip was \$17.56, and the average taxi trip was 6.9 miles while the dedicated trips were averaging 2.9 miles. The PVRTA contracting arrangement is apparently achieving the desired cost-saving effect of having the taxis carrying the longer trips since they operate at a much lower cost per mile (\$2.56) than the dedicated fleet (\$4.31). PVRTA management believes that while the productivity goal of 4.3 passengers per hour has not been achieved, the current productivity (3.9) would be much lower without the use of non-dedicated taxis. This is based on the measured improvement in productivity (approximately 8%) that occurred when PVRTA initiated the use of taxis in 1996.

There was no specific information regarding customer satisfaction with the service; however, after some customers indicated a preference for taxicabs, PVRTA added language to the Get About brochure to say: "Get About service is provided using vans, minivans, and cabs. Because of limitations both in terms of funding and vehicle availability, Get About cannot accept requests for specific types of vehicles (for example cabs or minivans)." It was also noted that a small minority of passengers had indicated a preference for the dedicated vehicles.

## Nashville, TN

(Agency: Nashville Metropolitan Transit Authority; Program: AccessRide)

AccessRide is the MTA's ADA complementary paratransit service. AccessRide provides a higher level of service than many other ADA paratransit services, in that (1) drivers provide door-to-door service, as opposed to curb-to-curb service, and (2) service is provided to trips going to/from origins and destinations within 1-1/2 miles corridors, as opposed to 3/4 mile corridors. The latter policy effectively means that the AccessRide service area extends to the entire Davidson County, noting that only about 8% of the trips go to/from areas beyond the 3/4 mile corridor.

Up until recently, AccessRide consisted of two components: an in-house dedicated fleet consisting of 51 vehicles (41 accessible), and a non-dedicated service provided by American Taxi. During FY 2005, 79% of the 212,282 completed trips were on the dedicated vehicles and 21% on the non-dedicated vehicles.

Since then, the MTA has added two new non-dedicated service providers, Johnson Transportation and All City Transportation, while also enlarging the in-house fleet operate by the MTA. With these changes, the service mix has changed to 85% dedicated/15% non-dedicated on weekdays, and an 88%/12% split on weekends.

The general strategy in assigning trips to All City and Johnson is to first schedule trips to maximize the productivity of the MTA-operated AccessRide fleet, then assign trips to Johnson Transportation and then All City, with the remaining trips assigned to American Music City Cab. With shorter trips tending to be scheduled onto the AccessRide vehicles (to maximize the productivity), it is not surprising that the average length of trips assigned to the overflow contractors are longer than the average length of trips scheduled onto the AccessRide vehicles. Using revenue miles per trip as a surrogate for trip length, the average weekday trip lengths calculated for June 15-21, 2005 were 7.4 miles for trips scheduled to the MTA-operated AccessRide vehicles, compared to 14.8 miles and 12.3 miles for trips assigned to Johnson Transportation and All City Transportation, respectively.

As mentioned above, the MTA assigns all the "leftover" trips to American Music City Cab, and utilizes this taxi resource as a "second tier" resource for back-up service. Based on the analysis of data from June 15-21, 2005 data,

an average of 38 trips or 5% of the total trips on weekdays, and 12 trips or 8% of the trips on an average weekend day were assigned to taxis.

The MTA purposely overbooks by approximately 10%, knowing that most of these trips will be placed into gaps in scheduled runs that are created by next-day cancellations, with the remainder assigned to non-dedicated providers. This overbooking strategy has a positive effect on the productivity of the dedicated fleet, and on the overall cost-efficiency of the system. The productivity of the dedicated fleet for June 2005 was 2.37 trips per revenue hour. This reflects a 21% improvement in productivity over the preceding June. Based on FY 2005 data, the cost per trip on the dedicated fleet was \$19.53.

The MTA has found that the use of non-dedicated vehicles works well as a barometer for dedicated fleet expansion. In other words, rather than expend capital monies needlessly on new vehicles that might or might not be used, the MTA waits until there is a critical mass of trips on overflow providers that could yield a productive, dedicated run. At that point, the fleet is expanded.

Six riders were interviewed during the site visits. All six used AccessRide frequently, were familiar with all four providers (including the MTA), and were active in the disability community. All gave high marks to the service quality provided by the MTA and its overflow subcontractors. Interestingly, when quizzed on specific elements such as timeliness, there was no difference in the provider ratings. Several of the riders mentioned that the overflow carriers exhibited perhaps even more flexibility in catering to customer needs, and appeared to be more successful in communicating with their drivers than with the MTA drivers. Specifically, the riders mentioned that cancellations don't always get to the MTA drivers. At the same time, there was a consensus that the MTA vehicles (and particularly the inside of the vehicles) were cleaner. In addition, several of the riders had the impression that taxi drivers were not as well trained as the MTA drivers and the drivers of the other two overflow contractors (all of which receive the same training).

### **Calgary, AB**

(Agency: Calgary Transit; Program: Access Calgary)

Access Calgary is a shared-ride, door-to-door transportation service provided within the city limits of Calgary. Access Calgary is responsible for eli-

gibility certification, reservations, scheduling, and delivering trip manifests to three service providers. Access Calgary is also responsible for controlling the daily operation, and monitoring the service quality and contract compliance of the providers. The latter includes conducting customer satisfaction surveys and monitoring on-time performance.

Service delivery is provided by a non-profit operator, Calgary Handi-Bus Association, and two taxi companies, Checker Transportation Group, and Associated Taxi. In addition, Access Calgary also contracts with Calgary Handi-Bus to provide transportation for pre-school children, and manages a user-side subsidy taxi program, available to customers of Access Calgary.

Calgary Handi-Bus has a dedicated fleet of 121 accessible vehicles operating on a run structure consisting of approximately 100 runs each weekday. The supply of vehicles is designed to meet the peak demands for service by employing a substantial number of drivers on split shifts.

Associated Taxi has a fleet of 382 taxis and 15 accessible taxis. However, Access Calgary only makes use of 5 of these accessible minivans – for dedicated service only. Access Calgary schedulers will send over driver manifests for these dedicated runs, and the drivers will essentially drive these runs as is.

Checker Transportation Group has a fleet of 108 non-accessible taxis (70 sedans and 38 vans). On any given day, there are roughly 89 taxis providing Access Calgary service, and of these, approximately 40 vehicles (or 45%) would be considered to be dedicated as they work “full-time” for Access Calgary, while the others (55%) serve a mixture of Access Calgary trips and other trips, and hence are non-dedicated.

Checker does not track how many trips were served by its dedicated vs. non-dedicated taxis, therefore it was assumed that each dedicated vehicle serves twice as many trips as the non-dedicated vehicles. Using this estimate, along with the ridership figures for Calgary Handi-Bus and Associated Taxi, the overall dedicated/non-dedicated service mix was calculated to be 81%/19%.

The origins of Access Calgary provide an interesting perspective on the development of the service mix. Calgary Handi-Bus is a private, not-for-profit organization with its origins stemming from an effort involving Easter Seals, the Shriners, the United Way, and the City of Calgary’s Community and Social Development Department. Calgary Handi-Bus began service in



the late 1970s providing door-to-door, shared ride transportation service for Calgary residents who had physical and/or cognitive disabilities which prevented them from using public transit “with safety and dignity.”

The City’s Community and Social Development Department also began a Frail and Elderly Taxi Subsidy Program, which evolved into the Special Needs Taxi (SNT) subsidy program, available to lower-income residents with special needs.

In 1997, the City commissioned a review of transportation services for people with disabilities in Calgary because the City realized (1) it could not financially keep up with the dramatic growth in each program’s ridership, (2) with the general population aging, the demand would only grow, (3) the cost of service was increasing at a disproportional rate; and (4) Calgary Transit was becoming increasingly accessible. In short, the study recommended a consolidation of the two separate services.

Access Calgary was established as a division of Calgary Transit in 2002, and in concert with the study’s recommendations, the reservations, scheduling, and dispatch staff at Calgary Handi-Bus was shifted over to the newly created service.

The City of Calgary found that merging customers from two separate systems into one program and using dedicated and non-dedicated service providers to provide shared-ride service has allowed the overall delivery of service for people with disabilities to be more efficient and to optimize the use of existing resources, thereby enabling more service to more customers.

Access Calgary reports that the main advantages of using the taxi companies for both dedicated and non-dedicated service are (1) the lower labor costs, and (2) the flexibility they have in adjusting the needed number of vehicles or start/end times to better match the demand. They also state that the use of the taxi providers has caused Calgary Handi-Bus to be more responsive to Access Calgary’s requirements in terms of consistency in providing manpower, vehicles, and adjusting driver shifts to better match the demand profile.

Access Calgary acknowledges the key role that non-dedicated service plays in maximizing the productivity of the dedicated fleets. Since Access Calgary has a “fixed” commitment of revenue hours to Calgary Handi-Bus, Access Calgary schedulers make sure that any gaps in Handi-Bus schedules result-

ing from late cancellations are filled, even if they have to recall trips that had already been assigned to the non-dedicated providers.

Without this commitment to Handi-Bus, Access Calgary could balance the productivity of the dedicated fleet against the cost savings associated with increasing the percentage of non-dedicated trips in the service mix. Using the cost data for FY 2004, the cost per trip on Checker Taxi (the only non-dedicated provider, estimated to provide 42% of its trips on a non-dedicated basis) was 22.54% (\$13.15 US) lower than Handi-Bus (\$42 US). The addition of accessible vehicles as non-dedicated resources could have a further positive effect on system-wide cost efficiency.

Calgary Transit conducts an annual telephone survey to assess customer satisfaction with Access Calgary services. The types of issues examined in the 2004 survey included:

- Frequency and use of Access Calgary services
- Service expectations and performance ratings
- Customer satisfaction with key issues
- Use of various telephone services
- Expectations for future initiatives for Access Calgary

A total of 400 telephone interviews were conducted with Access Calgary customers using a random sampling technique to draw names from the customer database.

The results from the survey showed that the vast majority (87%) of Handi-Bus customers considered the service to be excellent (49%) or good (38%). The specific service attributes that respondents were most likely to agree with included:

- Drivers are nice
- Vehicles are clean
- Drivers provide help to and from the vehicle.

As part of the case study, four riders were interviewed during the site visits. All four used Access Calgary frequently, and were familiar with all three providers. In general, all gave high marks to the service quality of Calgary Handi-Bus, noting especially that the drivers were well-trained, also adding that the “full-time” drivers of the taxi companies were well-trained as well. Shortcomings of the systems included some drivers having trouble with

seurement equipment, and communicating in English, drivers talking on their cell phones (for personal calls) while driving, and the rough ride of the accessible vehicles.

### Volusia County, FL

(Agency: Votran; Program: Votran Gold Service)

Volusia County is located on Florida's Atlantic coast and includes the Daytona Beach metropolitan area. The county's land area has 1103 square miles. In 2000, the county had a population of 443,343. However, this population is unevenly spread, with heavily populated areas between I-95 and the coast, and along I-4 (which connects Daytona Beach with Orlando), with the rest of the county being very rural.

Votran Gold Service is Votran's door-to-door shared-ride paratransit service.

Votran Gold Service is provided to the following individuals:

- Persons with disabilities who are certified as **ADA paratransit eligible**. ADA trips are limited to trips with origins and destinations within the  $\frac{3}{4}$  mile transit route corridors, where and when fixed route transit is provided.
- Persons with disabilities who qualify under Florida's **Transportation Disadvantaged (TD)** program. TD trips are for persons who reside within Volusia County but outside the ADA paratransit service area (i.e., they aren't eligible for ADA paratransit service).
- Volusia County residents who are Medicaid recipients and who are deemed eligible for paratransit service. Eligible trips are for **Medicaid-sponsored non-emergency medical transportation** only. Some destinations for authorized trips are out-of-county. Some trips also require stretcher service.
- **Senior transportation** sponsored by the Volusia County Council on Aging, as well as **other human-service agency contract transportation**. Sponsored senior transportation currently includes transportation associated with Foster Grandparent programs and nutrition/dining programs.

Votran Gold Service consists of three components: (1) a dedicated fleet operated by Votran; (2) a set of eight contractors operating non-dedicated vehicles; and (3) two taxi companies. Overall, the service mix between dedicated and non-dedicated service was 63%/37% in FY 2005. In order to improve cost efficiency, Votran is in the process of modifying this split so that it is closer to half and half.

Votran tries to assign trips to the eight contractors based upon the location/service area, and in such a way that maximizes the cost efficiency of the entire

system. Indeed, it is generally true that Votran uses its contractors to serve trips in the outlying regions of the county and trips that would otherwise adversely affect the productivity of the in-house fleet.

Votran purposely overbooks by approximately 10%, knowing that most of these trips will be placed into gaps in scheduled runs created by next-day cancellations, with the remainder assigned to non-dedicated providers. This overbooking strategy has a positive effect on the productivity of the dedicated fleet, and on the overall cost-efficiency of the system. Indeed, Votran has estimated that the productivity of the dedicated fleet would be reduced from 2.1 to 1.9 trips per hour if they did not employ this strategy. Overbooking has been employed by Votran since the onset of Votran Gold Service.

Votran also has purchase orders with two taxi companies, both based in Daytona Beach. Between the two, these taxi companies get assigned about 30 ambulatory trips per weekday. These include ADA, TD, Medicaid, and senior/agency trips. These taxi companies are utilized to accommodate peak overflow trips, provide back-up service (in case a vehicle operated by Votran or one of the contractors is running late, has broken down, or is involved in an accident), or to serve a trip that adversely affects the productivity of the Votran fleet or cannot fit onto a contractor run.

The current productivity of the dedicated fleet is approximately 2.1 trips per hour. Votran staff undertook an analysis that concluded that this productivity would decrease to 1.4 trips per hour with an all dedicated fleet, also noting that the current fleet would have to be enlarged. As a result it was estimated that the unit cost of ambulatory trips that are currently served by the contractors would increase from \$14.26 per trip to approximately \$21 per trip, while the unit cost of wheelchair trips currently served by the contractors would increase from \$22.52 per trip to about \$27.00 per trip.

Two riders were interviewed during the site visits. These two riders, however, also represented numerous other riders. One is a Rehabilitation Supervisor for the Florida Department of Education's Division of Blind Services (and is herself blind). The second rider sits on the Transportation Disadvantaged Local Coordinating Board (which is a subcommittee of the Volusia County MPO and is also the president of Handicapped Adults of Volusia County. Both riders not only drew from their own experiences

riding Votran Gold Service, but also could speak of the experiences of their clients and constituents.

There was a clear and rather interesting pattern. Of the three components of the system, in-house, contractor, and taxi, the riders indicated that Votran's in-house service was clearly the best in terms of customer satisfaction. Interestingly, taxi service was not that far behind, recognizing that currently this consists of ambulatory service only. Surprisingly, there was a significant drop-off in the customer satisfaction of the contracted service. According to the informal poll taken by the two rider representatives, there was no one carrier that was clearly superior or inferior. One of the reasons that this is surprising is that Votran has worked with the contractors to ensure that drivers receive the same training, and are subject to the same drug and alcohol testing, and vehicles must be maintained to the same standards. Meanwhile, the training received by taxi drivers does not compare. And yet, the taxi service is considered to be of higher quality than the contractor service.

## **Indiana, PA**

(Agency: Indiana County Transit Authority, Program: IndiGO)

IndiGO is a public transportation agency that provides a family of transportation services designed to meet the mobility needs of the residents of Indiana County. In addition to a small (7 route) fixed route system and a fixed route/route deviation service, there are several paratransit and shared ride options for residents with special needs. The ADA Paratransit service had 78 persons registered in 2005, with approximately 8 one-way ADA trips provided in the average week. These trips are scheduled in with the Senior Shared-Ride Program, funded by the Pennsylvania State Lottery and available to persons 65 years of age or older for trips to senior centers, shopping centers, and medical appointments. IndiGO also provides Job Access and Reverse Commute (JARC) transportation services on dedicated vehicles, and is also responsible for the Medical Assistance Transportation Program (MATP), the Medicaid non-emergency medical transportation service in Indiana County.

IndiGO's paratransit services are served in three different ways: (1) IndiGO's dedicated fleet; (2) dedicated fleets operated by contractors; and (3) non-dedicated fleets operated by contractors. The dedicated fleets are used to operate the public transit service, ADA complementary paratransit service and the majority of the Shared Ride program service. The non-dedicated service providers are used to provide the MATP service.

In the past, the Shared Ride program was provided through a contract with a service provider that used non-dedicated vehicles. In an effort to control the quality of service, IndiGO decided to lease six vehicles and one spare on a lease arrangement to Stewart Bus Lines. These vehicles are dedicated to the operation of the Shared Ride program and are leased from IndiGO to SBL for their exclusive use with the Shared Ride program. Occasionally, an ADA complementary paratransit passenger or MATP passenger is transported on the Shared Ride program, but no other non-IndiGO trips are transported on these vehicles.

IndiGO currently has four private for-profit contractors operating non-dedicated vehicles that provide approximately 90 percent of the non-emergency medical transportation under MATP. These carriers are Stewart Bus Line, Inc. (SBL), Pittsburgh North Air-Ride (PNAR), Citizen's Ambulance Service and Med-Van Transport. The SBL division that operates the MATP service is separate and distinct from the division that operates the shared ride and ADA Complementary Paratransit services.

During FY 2004 the combined Shared Ride, ADA and MATP service carried 60,149 total passenger trips. The service mix between dedicated and non-dedicated service is 69% dedicated and 31% non-dedicated.

By contracting with four carriers, IndiGO is afforded the flexibility to shift trips among carriers depending on the capabilities and quality of service of each provider creating an on-going competitive environment. If one carrier cannot perform, IndiGO can move trips to another carrier thus maintaining a fluid, but stable service delivery system. The challenge is to maintain a competitive environment that will keep the costs low and maintain service quality, but will also provide sufficient volumes of trips for each carrier to sustain their ongoing participation in a market with limited demand for service.

Public transit systems that purchase service from small rural private operators often are the sustaining force of a company that would not otherwise be able to exist. By sustaining the company with a stable revenue source companies are often able to serve other agencies and individuals that would not otherwise have service. This relationship is beneficial for the transit system, service provider, purchasing agencies and individuals, as well as the community-at-large. Even though the public transit system may not receive

any direct benefit by using subcontractors with non-dedicated vehicles, the intangible benefits to a community are significant.

IndiGO conducted a customer service survey on the Shared Ride service in the spring of 2005. Respondents were very pleased with the service and provided positive feedback. IndiGO management staff speculated that most people don't make a distinction between the service directly operated by IndiGO and that contracted out and that they do not perceive any difference in quality.

### **Haverhill, Massachusetts**

(Agency: Merrimack Valley Regional Transit Authority;  
Program: Special Transportation Services)

Special Transportation Services (STS) offer curb-to-curb ADA paratransit service, non-ADA service to seniors/disabled, general public service along two former fixed route services, general public service/senior service through contracts with five communities, and some business commuter service. The STS service area covers the same 276 square miles of the overall MVRTA area but the subcontracted service providers, Assist Transportation and the non-dedicated service provider Andover Livery, operate within a much smaller geographic area.

STS has a fleet of 19 accessible paratransit vehicles equipped with MDT and AVL systems. STS assigns 16 to their primary turnkey contractor First Transit, and three to First Transit's subcontractor, Assist Transportation, which provides ADA and senior paratransit services in the town of Methuen. All 19 vehicles are operated on a dedicated basis.

First Transit schedules about 91% of the 61,000+ annual STS trips onto the dedicated vehicles as efficiently as possible. The remaining 9% of the trips are assigned to a livery operator, Andover Livery. Non-dedicated vehicles are primarily used to serve trips that do not fit on the dedicated vehicles, peak overflow trips and in a back-up role serving trips for passengers whose appointments run late. Andover Livery is responsible for vehicle operation, maintenance, operating facility, vehicles, fuel and insurance. Both Assist Transportation and Andover Livery get reimbursed based on zonal rate.

While STS service has expanded since its introduction in 2002, the mix between dedicated and non-dedicated service has not changed significantly since that time: 53,143 one-way passenger trips were provided in FY 2005 by the dedicated fleet, with an additional 5,574 trips on the non-dedicated

vehicles, amounting to 9% of total service provided by the non-dedicated provider.

The productivity of the dedicated fleet in FY 2005 was 2.4 trips per hour, and the cost per trip was \$19.92. The zone rate for the non-dedicated provider starts at \$10.50 for Zone 1 and goes up to \$28.00 for inter-zonal trips. Most of the non-dedicated trips are at the Zone 1 rate, since Zone 1 covers the major towns in the STS area.

STS has not recently conducted customer satisfaction surveys but the paratransit manager reports that this activity should occur within the current fiscal year. The number of complaints handled per year was not provided but the STC manager reported that there are few and these are handled by her when they arise. Customer satisfaction appears to be high overall for all services.

### **Ottawa County, OH**

(Agency: Ottawa County Transportation Agency; Program: OCTA)

OCTA is a public transportation agency that provides curb-to-curb demand response transportation service to all residents of Ottawa County. The service is also available to all County visitors including tourists to the Put-In-Bay area along Lake Erie. Door-to-door service is provided upon request to meet specialized needs. Reservations for service within the County are required with a minimum of 24 hours notice. Out of County trip reservations are requested one week in advance. Same day requests are accommodated only if the schedule permits or there is a trip cancellation.

In 2005, OCTA merged its Mental Retardation Developmental Disabilities (MRDD) transportation service with the public transit service. The MRDD service includes flex routes for day rehabilitation and sheltered workshop trips and demand response trips for community based service.

The OCTA service consists of two types of services provided by an OCTA directly operated dedicated fleet and one contractor operating non-dedicated vehicles. The OCTA fleet consists of sixteen accessible vans used for in-County and out-of-county demand response service, and four accessible buses used primarily for MRDD sheltered workshop trips.

The contractor, Linda's Dependable Transportation Service, Inc., is a taxi company which is used to provide late evening trips (after 8:00 pm) and additional capacity within the City of Port Clinton when OCTA has a capacity



limitation or personnel shortage. Overall, the service mix is 94% dedicated and 6% non-dedicated. The contractor rarely provides service outside the City due to the perceived cost of the long distance trip and the limited budget for purchased transportation.

Linda's standard rates are significantly lower than OCTA's unit costs. For example, Linda's contract rate outside of the County is \$1.60 per mile, whereas, the OCTA fully allocated rate is \$1.81 per mile, a savings of nearly twelve percent (12%), noting that the contractor has the ability to use the vehicles for other purposes and to fill in runs with other agency and general public customer demands. OCTA is thus able to purchase service at a trip cost lower than they would be able to provide if they operated the service directly.

OCTA's use of the contractor is limited by the total purchase of service contract amount (\$20,000). This artificial cap has resulted in limited use of the contractor especially near the end of the year when the cap is approached. Historically, the dispatcher has tried to assign as many trips as possible within the budget cap. Given the lower per mile charge, the contractor would be the most likely choice for long trips that are difficult and expensive for OCTA to provide directly. However, since these trips would be more costly because of their length and would consume the limited budget faster, they are instead assigned to OCTA with a higher per mile cost. This practice results in a much higher overall cost to the system.

The additional volume of trips associated with the OCTA service is sufficient to provide system stability for Linda's by covering system overhead costs especially during the winter months when demand for services from private customers is low. The OCTA contract thus enables the contractor to be viable throughout the year so that it is available to provide a much needed service during the tourist season. The tourist population and business community benefit greatly from the taxi service. Thus, the public/private partnership provides intangible benefits to the County as a whole.

OCTA has not conducted any customer service surveys to determine satisfaction with the service. Consequently, comparisons can not be made between the directly operated and contracted service. However, passengers interviewed appear to be very appreciative of the service and there are few complaints.

## Wenatchee, WA

(Agency: Link Transit; Program: Link Plus)

Link Transit is the public transportation operator in Wenatchee, Washington, and the surrounding area in Chelan and Douglas Counties. Wenatchee is almost exactly in the center of Washington State. The service area has a population of roughly 44,000 people of whom about three-fourths live in the twin cities of Wenatchee and East Wenatchee on opposite sides of the Columbia River.

Two of several outlying communities served by Link Transit have figured prominently in the agency's use of non-dedicated vehicles. Leavenworth is a community of about 2,100 located 23 miles west of Wenatchee. Leavenworth is a base for mountain-oriented sports; by developing itself as a Bavarian village it has attracted a substantial tourist trade. Chelan, about 40 miles north of Wenatchee on the shore of Lake Chelan, has a year-round population of about 3,500. The area attracts a high volume of tourism oriented to the lake during the summer months. An Indian casino in the lakeshore community of Manson, eight miles from Chelan, is also a significant draw.

Link Plus service, Link Transit's ADA paratransit service, is provided principally by transit agency staff who take reservations, prepare schedules, dispatch rides, and operate and maintain the fleet of 30 accessible vehicles. In addition there are two small contracts with non-profit agencies and agreements with four non-dedicated providers.

The four non-dedicated providers primarily serve inter-community trips between several outlying communities and the central area of Wenatchee and East Wenatchee. These trips are very expensive to serve using Link Plus dedicated vehicles; opportunities for trip sharing are often limited.

Overall, 5.1% of trips in FY 2004 were carried on non-dedicated vehicles. However, these trips accounted for 19% of revenue vehicle miles because the non-dedicated vehicles are mostly used for inter-community trips.

Within its core service area, Link is able to group trips very effectively. By comparison, for long inter-community trips such grouping opportunities are less common, and long deadheads are sometimes unavoidable. While exact dollar savings are not known, it is clear that it is much less expensive to serve long inter-community trips with non-dedicated providers than with Link's own vehicles. Trips carried by non-dedicated providers were 16 miles long on average in 2004 and cost about \$17 or roughly \$1.07 per

mile. By comparison, the typical directly-provided Link Plus trip was about four miles long and had a direct operating cost (excluding allocated agency cost for administration, planning, or marketing) of about \$15 per trip. Link Plus's direct operating cost per revenue vehicle mile in 2004 was approximately \$3.80.

Link Transit has experimented with a number of innovations designed to maintain service levels for people with disabilities in the face of extreme budget pressure resulting from the loss of a major portion of its operating funding. A number of these innovations are non-ADA service intended to increase the overall efficiency of Link's services for people with disabilities. For trips to and from outlying areas, Link has used taxis and Medicaid van providers and has limited pick-up times in order to concentrate these trips at particular times. This is a principal innovation of interest to this research, since it uses non-dedicated vehicles integrated with the use of dedicated vehicles.

Link Transit has also experimented with flexible service in two of these same outlying areas and developed fixed-routes in its central service area designed to allow older people and people with disabilities to meet many of their needs without needing to rely on paratransit. Link has contracted with two non-profit organizations to provide service to clients of specific programs at very favorable rates. Lastly, as of July 2005, Link was in the process of developing a taxi scrip program to provide ADA paratransit in one outlying community.

The principal motivation of Link's innovations was to reduce Link Plus's operating cost per trip, which was one of the highest in Washington State. These high costs stem, at least in part, from the fact that paratransit and fixed-route drivers are paid the same at Link, and from the fact that Link Transit and Link Plus serve some very long trips. Pressure to cut costs also came from the passage of Initiative 695 in November 1999 which repealed the state motor vehicle excise tax that had provided about half of Link Transit's budget. The agency cut fixed-route transit service, but this did not reduce paratransit demand. The agency also began charging a fare. However, the \$.50 basic fare is quite low, and is the same for fixed-route and paratransit.

Link Transit currently limits its use of non-dedicated vehicles due to budget considerations and a need to make productive use of its available driver

runs. All of the non-dedicated providers indicated that they could provide more Link Plus service. All of them operate small fleets. Clearly they could handle additional occasional trips. All were willing to add vehicles to their fleets if they could be sure of some consistent level of trips from Link Plus. Link Plus service does not appear to pay well enough to support additional vehicles and drivers on its own, but could be combined with other business to be viable.

From the perspective of people with disabilities, the most positive aspect of Link Transit's innovations has been the preservation of service in outlying communities. For example, a rider who takes trips within Leavenworth was happy with service provided by the non-dedicated vans, and liked the smaller vehicles. This rider did not like using the prior trolley route deviation service and noted the difficulty the driver had maintaining a schedule. Two riders in Chelan get taxi rides within town on days that Lake Chelan Community Hospital does not operate bus service under contract to Link. Both riders found that the arrangement worked fine, and noted that Link Plus no longer sent its own vehicle for trips within Chelan since the trolley began providing deviation service. One rider was interviewed who regularly travels into Wenatchee on a non-dedicated vehicle. This rider was not pleased with the limitation of pick-up times that was introduced in March 2005, which limits the times he can get to medical appointments, but felt that otherwise non-dedicated vehicles provide service just as good as Link's own vehicles.

## **SECTION 3 CASE STUDIES**

This section of the report presents each of the case studies as a free-standing sub-section. The presentation format for each of the case studies is as follows:

- 1.0 Responsible Agency**
- 2.0 General Service Policies**
- 3.0 General Service Design, Service Mix, Dedicated Run Structure, Scheduling**
- 4.0 Service Statistics**
- 5.0 Costs**
- 6.0 Background / History / Goals**
- 7.0 Highlights**

## **Arlington County, VA**

### **Specialized Transportation for Arlington Residents (STAR)**

#### **1.0 Responsible Agency**

Arlington County DOT  
2100 Clarendon Blvd., Suite 900  
Arlington, VA 22201

Website: [www.arlingtonstar.com](http://www.arlingtonstar.com)

Contact: Eric Smith  
Transit Operations Coordinator

Tel: 703-228-3692

Fax: 703-228-7548

E-mail: [Esmith@arlingtonva.us](mailto:Esmith@arlingtonva.us)

#### **2.0 General Service Policies**

##### **2.1 Service Type and Eligibility**

STAR is an alternative curb-to-curb paratransit service for Arlington residents who are certified as ADA paratransit eligible by WMATA. There are 1658 such customers of which roughly 450 are active, i.e., have taken a trip on STAR during the last six months. STAR is also available to other authorized Arlington residents whose trips are sponsored by a County agency.

##### **2.2 Service Area**

Arlington County is located across the Potomac River from Washington DC. STAR's service is commensurate with the service area of Metro Access, WMATA's ADA paratransit service. The only exception is that STAR will not serve weekend trips to/from portions of the Metro Access service area in Prince George's County, MD.

##### **2.3 Service Days and Times**

STAR is available during the same days and hours as Metro Access: between 5:30 AM and midnight, 7 days a week.

##### **2.4 Fares**

A one-way trip fare is \$2.00. Fares may be paid in cash or by scrip tickets. Books of 10 scrip tickets (each ticket is valued at \$2.00) are sold by Arlington

County DOT. Customers whose trips are sponsored by a County agency are not required to pay a fare.

## 2.5 Reservations

Customers may call STAR one-to seven days in advance to reserve a trip between 8:30 AM and 4:00 PM on weekdays only. Requests for both advance trips and subscription trips (standing orders) may be placed. Same-day trips requests may also be placed on Mondays and the day after County holidays but on a space available basis only. Customers who request a specific carrier are told that STAR will try to honor their request, but that there are no guarantees.

## 2.6 Pick-Up Window

Vehicles are on time if they arrive between 0 and 10 minutes after the requested pick-up time.

## 2.7 Cancellations

Cancellations must be called at least 30 minutes before the requested pick-up time. Later cancellations are equivalent to a chargeable no-show.

## 2.8 Trip Confirmations, Same-day Adjustments, Where's My Ride? Calls

Customers may call STAR during normal business hours (weekdays, 7:00 AM to 6:00 PM) to get the carrier to which their trip has been assigned. Calls for tomorrow's trips should generally be placed after 4:30 PM. Same-day adjustments to trips can be requested by calling STAR during normal business hours or their carrier after hours. If the vehicle has not arrived on time, customers may call STAR (or their carrier after hours) to determine the status of the vehicle.

## 3.0 General Service Design, Service Mix, Dedicated Run Structure, Scheduling

### 3.1 General Service Design and Service Mix

**Arlington County DOT** is responsible for the service. Arlington County DOT retains First Transit as its call center contractor, and Answers, Inc., Diamond Transportation Services, Inc, and Red Top Cab as its operations contractors.

**First Transit** performs the client registration, reservations and scheduling functions, as well as the dispatching function for one of the carriers (An-

swers). First Transit also provides the computer system, Trapeze PASS, noting that the County will own this at end of contract. Client registration involves entering into Trapeze PASS new Metro Access customers residing in Arlington. (Metro Access' broker, LogistiCare sends a list of between 100 and 150 new Arlington clients every month to First Transit' these are then manually entered into Trapeze. First Transit also monitors the service quality (by in-taking and processing customer complaints), performs trip reconciliation and checks and processes the carrier invoices. (After normal business hours on weekdays, and on weekends, **Red Top Cab** provides back up call center functions for First Transit.)

**Answers, Inc.** and **Diamond Transportation** provide dedicated service. Answers operates 6 vehicles (1 accessible bubble-top, 1 straight minivan, and 4 sedans). Diamond operates 6 accessible minivans, and sometimes a 7th accessible minivan if needed (out of a total fleet of 35-40 vehicles).

**Red Top Cab** is the non-dedicated vehicle provider, with 20 accessible taxis and 304 regular taxis (sedans). In FY 2005, the service mix was 24% dedicated and 76% non-dedicated, with Answers and Diamond Transportation each serving about 12% of the trips.

### 3.2 Dedicated Vehicle Run Structure

Answers starts 4 of its dedicated vehicles between 6:30 AM and 7:15 AM for straight 8-hour shifts, and sends 3 more vehicles, at 8:35 AM, 1:35 PM, and 3:00 PM for half length shifts. Diamond starts 6 shifts between 5:30 AM and 11 AM, of which all but the 8-hour 9:15 shift are around 11 hours long. There is usually 30 minutes of deadheading to/from the garage, and one hour of unscheduled breaks built into these runs.

### 3.3 Reserving / Scheduling / Assigning Trips

Trapeze PASS is used for the intake and scheduling of trips. No trip scheduling is done while the customer is on the phone.

The scheduling of advance request trips begins on the day before the trip date. Wheelchair trips are manually scheduled first, first onto Answers' one accessible vehicle, and then onto Diamond's accessible fleet. Customer trips that require "special handling" are manually scheduled next. Then, Trapeze's batch scheduling capabilities are used to schedule the remainder of the dedicated vehicle runs, with an appropriate amount of manual tweaking thereafter. Those trips that do not get scheduled onto dedicated



vehicle runs are assigned to Red Top. Subscription trips represent 25% to 30% of the total trips.

Answers drivers pick up their trip manifests the afternoon before – and some cases the morning of – the service date. Diamond and Red Top receive their trip manifest or lists electronically.

#### 4.0 Service Statistics

##### 4.1 Ridership

	June 2005	FY 05 (Jul-Jun)	Percent Total
<b>Dedicated Service</b>			
Answers – Ambulatory	1,035	11,278	
Answers – Wheelchair	114	1,306	
<b>Answers – Total</b>	<b>1,149</b>	<b>12,584</b>	<b>12%</b>
Diamond – Ambulatory	858	9,266	
Diamond – Wheelchair	469	4,209	
<b>Diamond – Total</b>	<b>1,327</b>	<b>13,475</b>	<b>12%</b>
Total – Ambulatory	1,893	20,544	
Total – Wheelchair	583	5,515	
<b>Total – Dedicated Service</b>	<b>2,476</b>	<b>26,059</b>	<b>24%</b>
<b>Non-Dedicated Service</b>			
Red Top – Ambulatory	6,231	66,659	
Red Top – Wheelchair	1,374	16,091	
<b>Red Top -- Total</b>	<b>7,605</b>	<b>82,750</b>	<b>76%</b>
<b>Total Ridership</b>			
Ambulatory	8,124	87,203	80%
Wheelchair	1,957	21,606	20%
<b>Total Eligible Riders</b>	<b>10,081</b>	<b>108,809</b>	<b>100%</b>
PCAs/Companions	178	1,631	
<b>Total Trips</b>	<b>10,259</b>	<b>110,440</b>	

##### 4.2 Trip Statistics

	Revenue Hours of Service		Productivity		Revenue Miles of Service		Revenue Miles per Trip		Average Trip Length	
	June 2005	June 2005	June 2005	FY 2005	June 2005	FY 2005	June 2005	FY 2005		
Answers	1,057.70	1.09	8,975	94,762	7.81	7.53	7	6.7		
Diamond	1,154.70	1.15	9,212	100,662	6.94	7.47	6.2	6.9		
Red Top			68,727	739,389	9.04	8.94	N/A	N/A		
<b>Total</b>	<b>2,212.40</b>	<b>1.12</b>	<b>86,914</b>	<b>934,813</b>	<b>8.62</b>	<b>8.59</b>	<b>N/A</b>	<b>N/A</b>		

### 4.3 Cancellations and No-Shows

In fiscal year 2005 approximately 1.8% of all scheduled trips were canceled in advance, 6.2% were late cancellations (calculated after subtracting advance cancellations) and 2.7% of trips ended up as no shows (calculated after subtracting cancellations).

### 4.4 Telephone Statistics

In fiscal year 2005, the First Transit call center received 74,356 calls and answered 94.2% of them. The remaining calls were abandoned. The average hold time over the course of the year was 19 seconds, and the average call lasted 108 seconds, while abandoned calls lasted 50 seconds on average.

## 5.0 Costs

### 5.1 Cost and Rate Structures

**First Transit** – This is a cost plus fee contract. Five-year contract (May 2001-April 2005). FY 2005 cost was \$492,411. Seven person staff includes a GM, a Transportation Coordinator, a Scheduler, a lead CSR, and three CSRs (two of whom also do trip reconciliation).

**Answers, Inc.** – Answers gets paid \$29.00 per revenue hour, and \$5.00 per no show, less fares collected.

**Diamond Transportation** – Diamond gets paid \$36.82 per revenue hour for the first 999 revenue hours served per month, and \$35.23 per revenue hour for every revenue hour over that, less fares collected. [Note: Diamond also put in for a 1.5% on-time performance incentive fee (on the gross amount invoiced); while the other contractors qualify for the incentive payment, neither put in for it.]

[Note: Revenue hours are measured first pick-up to last drop-off, less breaks, although breaks are done on the fly (e.g., during no-shows), so for the most part, revenue hours are first pick-up to last drop-off.]

**Red Top Cab** - Red Top Cab gets paid based on the metered amount of the trip. The meter rate is \$2.75 for the flag-drop, and \$1.60 per mile. Red Top also gets paid \$2.00 per ambulatory trip and \$5.00 per wheelchair trip; these additional fees go to the drivers.

### 5.2 Costs for FY 2005

June 2005 Costs and FY 2005 Costs are shown below:

	June 05	FY 2005
<b>Service Delivery</b>		
Answers	\$32,516	\$326,677
Diamond	\$42,564	\$437,362
Red Top	\$157,491	\$1,696,010
<b>Total</b>	<b>\$232,571</b>	<b>\$2,460,049</b>
<b>Call Center (FT)</b>		
Call Center (FT)	\$45,874	\$492,411
<b>Total Operations</b>	<b>\$278,445</b>	<b>\$2,952,460</b>
<b>County Oversight</b>		
County Oversight	\$10,860	\$130,319
<b>Total</b>	<b>\$289,305</b>	<b>\$3,082,779</b>

### 5.3 Total and Operations Cost Per Trip

	June 05	FY 2005
<b>Service Delivery</b>		
Answers	\$28.30	\$25.96
Diamond	\$32.08	\$32.46
Red Top	\$20.71	\$20.50
<b>Total</b>	<b>\$23.07</b>	<b>\$22.61</b>
<b>Call Center (FT)</b>		
Call Center (FT)	\$4.55	\$4.53
<b>Total Operations</b>	<b>\$27.62</b>	<b>\$27.13</b>
<b>County Oversight</b>		
County Oversight	\$1.08	\$1.20
<b>Total</b>	<b>\$28.70</b>	<b>\$28.33</b>

## 6.0 Background / History / Goals

At the urging of its ADA paratransit eligible residents, Arlington County in 1999 set up a paratransit service to provide these residents with an alternative to WMATA's Metro Access ADA paratransit service. The purpose of the service was two-fold: (1) to provide a higher quality service than was offered by MetroAccess, and, at the same time, to reduce the cost to the County.

The County of Arlington is within WMATA's service area, and is hence assessed an annual fee for WMATA's services (including MetroAccess). In FY 2005, the service fee per trip amounted to \$35.00 per trip. On top of this, there was also an administrative fee to cover things like certification. In FY 2005, the formula for the administrative fee (which is based on the percent of Arlington applicants certified over the number of applicants certified systemwide) totaled about \$400,000. While Arlington was willing to continue to pay the administrative fee (as it was not interested in directly performing

the certification process), the County believed that it could provide a higher quality service at a cost less than the WMATA service fee.

The system was first set up with call center functions (mainly reservations) handled by the transit market contractor, and with two operations contractors. All ambulatory trips were assigned to Red Top and all wheelchair trips to Diamond Transportation. Initial marketing was done by direct mail to the list of Metro Access customers living in Arlington County (supplied by the Metro Access broker, LogistiCare). Because of the goals of the project, a focus was placed on providing high service. The popularity of the program, as measured by the growth in ridership, increased significantly. In May 2000, a transportation management firm, First Transit, was retained to “professionalize” the call center functions. A year later, a third carrier, Answers, was added to the service mix.

## 7.0 Highlights

### 7.1 Customer Satisfaction

Survey results: A customer satisfaction survey was conducted by WB&A Market Research in September 2004. 150 riders were interviewed, of which 14% used wheelchairs. The results of the survey were staggeringly positive. Overall, 94% of the respondents were satisfied, giving scores of 8-10 out of 10. Half of these (46%) gave the service a score of 10. When split between the major functions, 92% for call center customer service; 96% for service delivery. The two most prominent reasons for the satisfaction were the drivers (friendly, helpful, safe), and the on-time performance.

The riders on the Advisory Committee had similar feedback, especially noting that both the drivers and call center staff demonstrated particular sensitivity to the needs of individuals, and that STAR has a whole was a “critical to allowing them to lead more independent lives and to be a part of the fabric of society.” The only shortcomings mentioned by these riders were a shortage of wheelchair service during the peak periods and on Sundays.

Red Top Cab has interesting philosophy about service quality. Unlike many of its peers, Red Top believes in supplying nothing but the highest quality taxi service. Not only does Red Top provide sensitivity training to its drivers (and wheelchair securement training to drivers of accessible vehicles), it also has a minor league system for drivers. The owners of Red Top have several other companies in Northern Virginia. Together, with Red Top,

these companies collectively have over 800 taxi/livery vehicles, including 15 additional accessible taxis. Some of these companies are used to train drivers, i.e., a driver cannot become a Red Top driver until he/she has proven himself/herself as a driver in one of the other companies. Thus, all Red Top drivers enter service with much experience providing taxi service to the general public. They then receive specialized transportation training before providing STAR service. The philosophy of Red Top's management is: "If we build it, they will come," where the "it" is a high quality service. Management's screening of drivers, additional training, and attention to oversight is hence viewed as an investment. In addition, accessible and non-accessible resources from these other companies are often used by Red Top for back-up purposes, as needed and available.

Also contributing to driver satisfaction with the program is the \$2.00 and \$5.00 driver "tips" that the County pays to the Red Top for each ambulatory and wheelchair STAR trip. Because of this extra incentive, drivers are more apt to "take" a STAR trip, which ultimately results in better on-time performance.

## 7.2 Cost Reduction

The County achieves a considerable cost savings due to a service mix with a high percentage of non-dedicated trips carried by Red Top, since their cost per trip in FY 2005 (\$20.50) was 37% less than Diamond (\$32.46) and 21% lower than Answers (\$25.96). It should also be noted that Red Top, with their 20 accessible taxis, transported 74% of all wheelchair trips during FY 2005, virtually the same percentage as the overall rate for all trips.

The County has also achieved cost savings as a result of implementing STAR as an alternative to WMATA's MetroAccess service.. In FY 2005, the service cost per trip on STAR was approximately \$27.00 across the different carriers, while the fully-loaded cost per trip (including the call center and county administrative costs) amounted to about \$28.30. Without STAR, the county of Arlington would have been paying \$35.00 for each ADA trip that an Arlington Resident took on MetroAccess. Using this as a range and the total number of trips made by eligible customers (108,809) in FY 2005, the County of Arlington saved between \$729,000 and \$870,000 by having its own service. These cost savings are directly attributable to the very large proportion of trips that are carried by the non-dedicated provider.

### 7.3 Additional Services

With the success of STAR, the County has added additional, peripheral services (aimed at seniors) that are mostly delivered through this same network of carriers (except where noted). These include:

- "Add-on" driver/escort door-to-door service for health care trips
- Door-to-door service for participants in the Madison Adult Day Health Care Center
- Senior center adult transportation (SCAT) program
- Senior center nutrition program transportation
- Weekly grocery shopping for residents of four retirement housing facilities
- Supplemental taxi subsidy program (Super Senior Taxi), sponsored by the Arlington Agency on Aging
- Additional taxicab discounts for seniors

### 7.4 Regulatory Environment

Answers, Inc. and Diamond Transportation Services, Inc. are regulated both by the Washington Metropolitan Area Transit Commission (which authorizes transportation to and from the District of Columbia) and the Commonwealth of Virginia's Department of Motor Vehicles as an Irregular Route Common Carrier (which authorizes transportation within Virginia).

Red Top Cab is "regulated" by Arlington County, which issues taxi certificates. Taxi-company applicants for taxi certificates must prove that there is a need and necessity for more cabs. Red Top leases taxi certificates to independent contractors. In looking out for its current set of drivers, Red Top Cab has been careful to not dilute the supply of taxis.

Red Top is permitted to serve trips with pick-ups in Arlington County, and can take them anywhere in Virginia, and anywhere in the Washington Metro Area. And, while it is permitted to also pick-up in the District of Columbia and Montgomery County, Maryland, it is not licensed to pick-up in Prince George's County, portions of which are in the MetroAccess Area. This licensing restriction limits STAR trips on weekends. While Answers and Diamond may pick-up trips in Prince George's County, they do not operate on weekends; Red Top is the only carrier on weekends. And, while Red Top could take a STAR customer to Prince George's County on the weekend, it could not get them back. Because of this, the County has opted to disallow weekend trips to/from Prince George's County all together.

## 7.5 Problems and Solutions

**Customer (Mis)understanding of the Pick-Up Window** – Vehicles are considered on-time if they arrive within 10 minutes of the requested pick-up time. However, this is not communicated well – if at all – to the customers. It does not appear in the materials sent to the customer, nor is it re-enforced when the customers place reservations. Consequently, there are customers who call within 10 minutes of the requested pick-up time in response to vehicles that do not arrive exactly at the pick-up time. **Solution:** Plans are afoot to communicate this better in materials and at the time of reservations.

**Carrier Assignment Requests** – At the point when the third carrier was introduced to the system, there were some customers, with long-time allegiances to certain carriers and drivers who were re-scheduled onto vehicles operated by different drivers or carriers. This led to several complaints. **Solution:** First Transit, in response to these complaints, has explained to customers the program policy that they will try to honor specific requests for certain carriers but, in the interest of providing cost efficient service, there are no guarantees.

**Same-Day Pick-Up Adjustments** – As a customer convenience, the County instituted a policy whereby customers may call STAR to adjust a pick-up time on the day of the trip if, for example, the customer realizes they will not be ready for the trip at the initially requested pick-up time. The problem that has arisen from this policy stems from after-hour calls that go to Red Top. As a result of these calls, some trips are sometimes cancelled and other new trips are sometimes booked, and this information is not getting to First Transit. **Solution:** First Transit and Red Top are exploring an electronic connection for the transference of this data.

**Trip Reconciliation** – Trip reconciliation involves entering actual trip time and mileage information into Trapeze. This is done manually now by First Transit from completed manifests and taxi slips submitted with carrier invoices. However, with the growth of the system, First Transit lacks the manpower to keep up with trip reconciliation, especially with the massive number of taxi slips submitted by Red Top. **Solution:** First Transit and Red Top are exploring a process where this information is entered by Red Top into their systems, and then that data is electronically transferred into Trapeze.

**Shortage of Wheelchair Van Capacity during Peak Periods** – Despite the availability of 20 accessible taxis operated by Red Top, there are an increas-

ing frequency of cases where there is insufficient wheelchair capacity during the peak periods. Part of the problem is that there are other organizations, including other county agencies, MetroAccess' broker Logisticare, and the Virginia Medicaid broker DynCorp, as well as the general public all of whom are competing with STAR for the same set of vehicles, and while Red Top gives its highest priority to STAR customers, there are times when the competition does affect service capacity. **Solution:** The County is exploring (1) advocating for the addition of three new accessible taxi certificates and/or (2) the adding one or more dedicated vehicle runs operated by accessible vehicles



## La Verne, CA

### Get About

#### 1.0 Responsible Agency

Pomona Valley Transportation Authority (PVTA)  
2120 Foothill Boulevard, Suite 116  
La Verne, CA 91750

Web site: <http://www.pvtrans.org/>

George Sparks, Administrator

Tel: 909-596-7664

Fax: 909-596-7399

E-mail: [glspvta@aol.com](mailto:glspvta@aol.com)

#### 2.0 General Service Policies

##### 2.1 Service Type and Eligibility

The Pomona Valley Transportation Authority provides local, door-to-door transportation for seniors and people with disabilities in four cities on the eastern edge of Los Angeles County. The service is called **Get About**. In addition PVTA operates general public dial-a-ride in two of the cities, San Dimas and Claremont. All of these local services supplement regional services, including Foothill Transit, which operates conventional fixed-route service, and Access Services Inc., which operates ADA paratransit throughout Los Angeles County.

The focus of this case study is Get About, since it combines dedicated vehicle operation with use of taxicabs for certain trips to improve productivity and service quality. In contrast, **San Dimas Dial-a-Ride** and **Claremont Dial-a-Ride** (except for its group trip component) are shared-ride taxi services operated entirely by the local taxi provider. In some cases, this case study provides information about Get About and Claremont group service together, because these are operationally combined.

PVTA is governed by a Board of Directors made up of two representatives from each city. Each city determines the type and level of service to be provided to its residents. The agency is staffed by an Executive Director and two assistants.

## 2.2 Service Area

The four cities, Claremont, La Verne, Pomona, and San Dimas, have a combined population of 250,089 in an area of 59.7 square miles.

City	Population (2000 Census)	Land Area	Population per Square Mile
Claremont	33,998	13.1	2,595
La Verne	31,638	8.3	3,812
Pomona	149,473	22.8	6,556
San Dimas	34,980	15.5	2,257

## 2.3 Service Details

The details of service provision for each of the three paratransit providers are provided below.

	Get About	San Dimas Dial-a-Ride	Claremont Dial-a-Ride
Reservations	Day before	One hour advance	One hour advance
24 hours for groups			
Eligibility	Seniors (60+) and disabled	General public	General public
Area served	Four cities and nearby destinations	San Dimas and nearby destinations	Claremont and specific nearby destinations
Hours	Weekdays 6:00 AM to 5:30 PM		
Sundays 8:30 AM to 3:00 PM	24 hours	General Public:	
Mon – Fri 6 AM to 7 PM			
Sat 7 AM to 6 PM			
Seniors/disabled/children:			
24 hours			
Fare	\$1.00 or 12 tickets for \$10.00	\$1.50 to \$4.00 depending on age, disability, destination.	\$.75 to \$2.00 depending on age, disability, time of day, destination, service type.
Contracting arrangement	Dedicated vehicle contract, with some trips assigned to taxis	Shared-ride taxi	Shared-ride taxi, plus group service operated by Get About contractor
Passengers (2004-05)	106,562	8,855	22,769 share-ride taxi
24,623 group			
Revenue Vehicle Hours (2004-05)	27,354	Not applicable	2,060 group only

### 3.0 General Service Design, Service Mix, Dedicated Run Structure, Scheduling

#### 3.1 General Service Design and Service Mix

Get About is operated by a private contractor, currently Laidlaw Transit Services, using a fleet of 18 PVTA-owned vehicles. In addition, five vehicles owned by the City of Claremont are used principally for Claremont group services but can also be used for Get About under a vehicle sharing arrangement. PVTA has a separate contract with Diversified Paratransit Services (DPI), which operates taxi service in the area under the name Paul's Yellow Cab. PVTA requires the Get About contractor to assign some trips to DPI in order to increase productivity and service quality. On any given weekday, as many as 20 cabs may provide some Get About service, although typically only a handful are doing so at any time. This arrangement is facilitated by the fact that DPI also operates San Dimas Dial-a-Ride and the taxi portion of the Claremont Dial-a-Ride. Get About carried 106,562 passengers in fiscal year 2004-05, of which 82% were served on dedicated vehicles and 18% were served by taxicabs.

Laidlaw receives reservations, schedules trips onto vehicles, assigns certain trips to DPI, and dispatches trips on the day of service. On a typical weekday, Laidlaw schedules 16 driver shifts and has a maximum of 14 vehicles operating at any time, of which up to four may be used for Claremont group service, especially in the early afternoon. Of the remaining ten vehicles in service, about half are used for subscription runs that typically carry the same riders every week and half are used for "on-demand" service. The subscription runs carry manifests which are created in advance. The on-demand trips include trips reserved one day in advance, will-call return trips, and also "periodic" trips which are similar to subscriptions except that they are not placed on manifested vehicle runs.

The on-demand service is dispatched on the day of service using trip tickets which are printed out the previous afternoon, placed on magnets, sorted by time of day, and arranged on a wall map as they are assigned to vehicles, usually in groups of three or four. The method used is a simplified version of one formerly used by many general-public dial-a-ride systems.

At the time of the case study site visit, in September 2005, up to 60 trips each day were being assigned to taxicabs. Of these between 15 and 21 (depending on the day of the week) are standing orders that are the same every week.

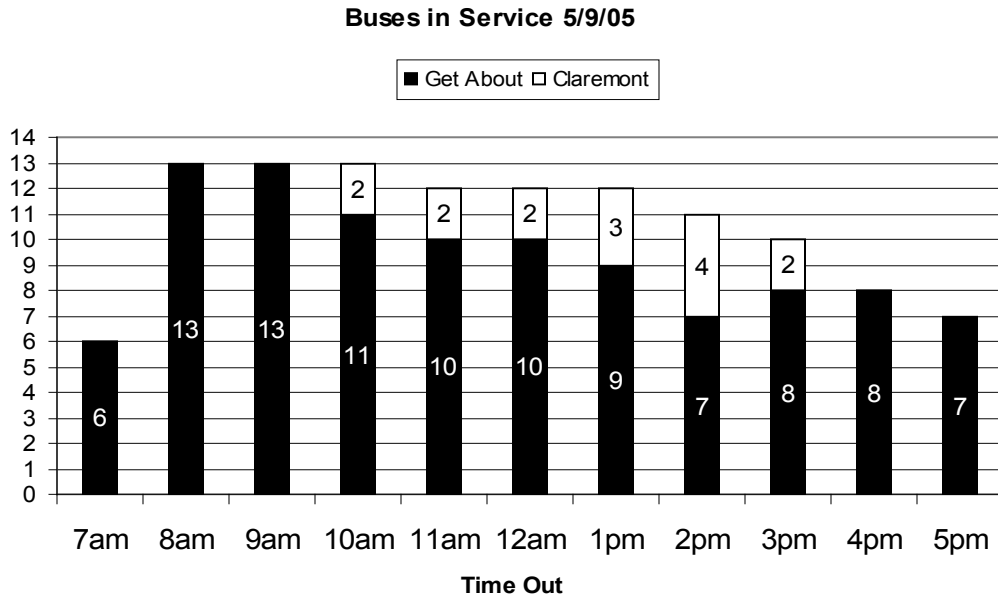
These “standing” taxi trips are shown on a single printed sheet that is marked up with changes. Most of the remainder are selected from the on-demand trip tickets. The trip tickets selected for assignment to taxis are taped onto sheets of paper and faxed to DPI at the end of the day. In addition, a small number of will-calls or other trips may be assigned on the day of service.

Typically trips are assigned to taxis because they would not fit into a productive run, for example because they involve serving out-of-the way locations. Taxis also serve some locations that cannot be served by Get About’s buses (for example on some cul-de-sacs and in some mobile home parks) and some will-call return trips that cannot be accommodated on a Get About bus because of other trip demand. The selection process is done by Laidlaw staff based on experience and judgment. No automated aids of any kind are used.

Overall Get About service tends to be concentrated in Pomona, which is the largest of the four cities in terms of population and has many of the larger facilities. Taxi trips tend to have at least one end in the other cities. (See section 4.1 for origin-destination details.)

### 3.2 PVRTA Dedicated Vehicle Run Structure

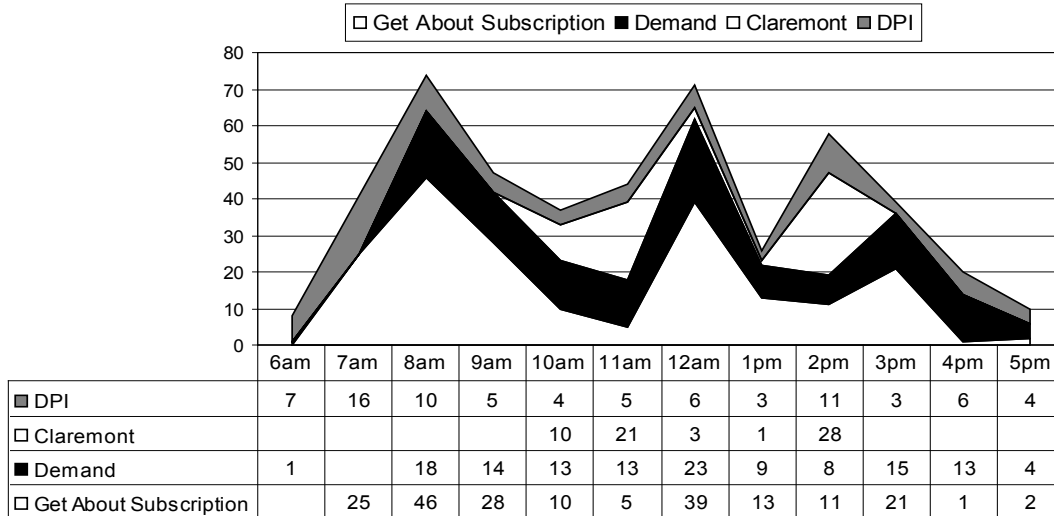
Laidlaw Transit is not limited by labor contract from employing part time drivers or from assigning drivers to split shifts. PVRTA established minimum dedicated vehicle driver wage rates in its contract. These are the same for full time and part time drivers and average \$9.82 per hour plus health benefits and sick pay. Full time drivers also get paid vacation and holidays. Split shifts can be used as needed. Sample driver schedules for one week in May 2005 do not indicate any planned split shifts, but do show a number of part-time shifts. These shifts cover both Get About and Claremont Dial-a-Ride group service (vehicles clock in and out of each service during the day). For example, the driver shifts for a Monday in May 2005 are shown below; three of the 15 shifts would be considered part-time since, if operated five days a week, they would provide less than 35 hours of work.



By using part-time and split-shift assignments, and by assigning trips to taxicabs, the dedicated vehicle driver has great flexibility to match capacity to demand.

The graph below shows actual patronage on May 9, 2005, the same Monday for which driver shifts were shown. Get About ridership is strongly peaked at 8 AM and at noon, with a third, smaller peak at 3 PM. Claremont group ridership fills in the gap between 10 AM and 11 AM and at 2 PM. The 2 PM Claremont ridership somewhat overlaps with the beginning of the afternoon Get About peak, which, at least on this day, is reflected in a surge in the use of the taxi subcontractor. The other time period when there is a peak in taxi trip assignments is during the morning peak.

**Passengers per Hour 5/9/05**



The actual number of dedicated vehicles in service each hour of the day, shown in the figure on the previous, is far flatter than might be expected from the demand curve. The figure does not include the impact of lunch breaks, which are concentrated in the noon hour. It appears that a small number of vehicles assigned to Claremont group service is able to handle this demand, since it consists of true group travel, i.e. multiple people traveling between one origin and one destination.

### 3.3 Taxi Operations

DPI dispatches the Get About trips assigned to it from its dispatch center in Pomona, a few blocks from Laidlaw’s facility. This dispatch center also dispatches Paul’s Yellow Cab trips in DPI’s 13-city operating area (including the four PVRTA cities), San Dimas and Claremont Dial-a-Ride taxi trips, shared ride taxi service in three nearby cities, dial-a-ride bus service in two cities, and contracted service for developmentally disabled clients of the Pomona/San Gabriel Regional Center. The taxis are dispatched using a Windows-based system from Digital Dispatch Systems (DDS). All of the cabs have DDS mobile data terminals with GPS that communicate with the dispatch system. Two people are dedicated to receiving taxi calls; a third person also receives these calls as needed. DDS automatically assigns general taxi calls to zones and then to individual drivers. Get About and shared-ride taxi trips are entered into the system and marked with a Dial-a-Ride “attribute” for dispatch by another person. This person groups trips and can send them via the automated dispatch system to specific drivers, depending on availability. In the case of shared-ride taxi trips, which require only one hour advance

notice, the policy is to wait for 15 minutes after receiving the request before dispatching them to see if any grouping opportunities arise.

DPI management indicated that the company could take on more Get About trips, although acknowledging that they were having some difficulty meeting peak demand this year. DPI feels that if PVTA were to award the Get About dedicated vehicle contract as well as the taxi service contract to the same company, then they could truly optimize the two modes of operation.

### 3.4 Contract Provisions

PVTA contracts directly with Laidlaw and with Paul's Yellow Cab (DPI). The current Laidlaw contract covers the period July 1, 2003 through June 30, 2006 and allows for up to seven one-year extensions. The taxi contract covers the period July 1, 2005 through June 30, 2007 and allows for up to six one-year extensions.

Laidlaw's contract requires that trips be allocated to the cab provider and states that:

"The goal of the trip allocation is to optimize cost effectiveness, while maintaining a maximum access to the service of riders in mobility devices and residing in outlying areas."

The contract originally set a target of assigning no more than 1,700 trips per month to the cab provider, and specified that a penalty applies if more than 1,850 trips are assigned to the cab provider in any calendar month. For the 2005-06 fiscal year, the limit is described as 60 trips per day. Previously more trips had been assigned to taxicabs as implied by the contract provision.

Laidlaw is paid for Get About service using a fixed rate per month plus a rate per revenue vehicle hour, plus a fuel price escalator. The contract also specifies that Laidlaw must achieve passenger productivity of at least 4.3 passengers per revenue vehicle hour. If productivity drops below that, PVTA will pay only for those revenue hours that would have been needed to carry the actual patronage if productivity had been 4.3. In other words PVTA pays a fixed amount per passenger equal to revenue hours divided by 4.3. These provisions were negotiated at a time when Laidlaw was actually achieving about 4.0 passengers per hour, with the understanding that better use of taxicabs would enable Laidlaw to meet the target. This arrangement gives Laidlaw a very strong incentive to create efficient driver schedules and to assign to taxicabs any trips that would reduce productivity.

The taxi contract includes requirements for Claremont Dial-a-Ride, San Dimas Dial-a-Ride, and Get About. In the case of Get About, the taxicab contractor is required to provide service based on trip assignments received from the Get About van contractor via fax. The contract specifies that the trip assignment will be provided at least 30 minutes prior to the scheduled pick up. As described earlier, in practice Get About trips are mostly faxed to DPI the evening before.

Under the contract which began in June 2005, the taxi provider is paid a fixed price for each type of service. The original rates (which have increased based on gasoline prices and general taxi rate increases) were based on average trip lengths and taxi fares as follows:

Claremont Dial-a-Ride	\$7.95	per passenger trip
San Dimas Dial-a-Ride	\$10.30	per passenger trip
Get About	\$17.50	per passenger trip

When PVTA began using taxicabs for Get About, the contractor was paid based on meter fares for each trip or combination of trips. It was up to the taxi provider to combine trips for efficiency and submit invoices based on the fare from the first pick up to the last drop off. PVTA could have required the dedicated vehicle contractor to group trips before sending them to the taxi provider, but considered inappropriate to have one contractor controlling the work of another. PVTA found that the average mileage paid per taxi trip increased over time. There was also a concern about ways in which drivers could be manipulating the system. In response PVTA initiated the current method of payment per trip.

Standards and penalties for the dedicated and non-dedicated vehicle contracts are quite different. In both cases, penalties are described as deductions from contract payments. These are summarized below.



Issue	Standards and/or Contract Payment Deductions	
	Dedicated Vehicles	Taxicabs
On-time performance	\$750 per month with less than 88% on-time (earlier or within 15-minute window) \$50 per occurrence for pick-up over 60 minutes late.	\$500 per month with less than 92% of Get About trips picked up within 45 minutes of call. \$50 per occurrence for Get About rider picked up over 45 minutes late.
Response time	\$50 per occurrence for will-call response over 75 minutes	\$50 for wait time over 60 minutes for an immediate response trip.
Ride time	\$50 per occurrence for ride time over 75 minutes	None
Telephone access	\$100 per day for all reservations lines full.	Goal for average hold time < 75 seconds.
Terminal inspection	\$3,000 for unsatisfactory rating	None
Vehicles issues	Various amounts for vehicles out of service over 20 days, vehicles declared unfit for service by PVRTA.	None
Lifts	\$100 per occurrence for lift failure or improper tie-down.	\$100 per occurrence for improper tie-down.
Preventive maintenance	\$200 for preventive maintenance not done on-time	None
Drivers	\$20 per occurrence for driver out of uniform.	None
Use of taxis	\$500 per month if more than 1,850 trips referred to cab provider.	Not applicable.

### 3.5 Other Paratransit Services

The Los Angeles area has a wide variety of paratransit services that provide business opportunities for taxi companies and others. Each of the 88 cities in Los Angeles County receives funds from a county-wide half-cent sales tax to support local public transportation. This Proposition A Local Return program is the principal source of support for PVRTA. Many of the cities choose provide dial-a-ride programs, including services for seniors and people with disabilities. In addition, the countywide ADA paratransit program, administered by Access Services Inc. on behalf of all the public transit operators in the county, has historically relied principally on taxicab companies as contract operators.

As a result, many taxi operators have experience providing paratransit service and are used to the requirements of these services, including record keeping, driver training for serving people with disabilities, operating wheelchair accessible equipment, shared ride scheduling, and drug testing. As mentioned earlier, DPI operates dial-a-ride (shared ride taxi) service in three nearby cities, dial-a-ride bus service in two cities, and contracted service for developmentally disabled clients of the Pomona/San Gabriel Regional Center. Until October 2003, DPI was also one of the contract operators for Access Services Inc. providing subscription service in the west-central portion of Los Angeles.

#### 4.0 Service Statistic

##### 4.1 Get About Operating Statistics

The following table presents the basic operating and cost statistics for Get About service in FY 2005

	Dedicated Fleet	Taxi	System
Trips	86,919	19,643	106,562
Hours	22,162		
Miles	255,440	134,809	390,249
Cost	\$ 1,099,911	\$ 344,976	\$ 1,444,887
Miles Per Trip	2.94	6.86	3.66
Trips Per Hour	3.92		
Cost per Trip	\$ 12.65	\$ 17.56	\$ 13.56
Cost per Hour	\$ 49.63		
Cost per Mile	\$ 4.31	\$ 2.56	\$ 3.70

##### 4.2 Bus and Taxi Breakdown for Get About Trips

Based on rough estimates by DPI and Laidlaw staff, Get About trips amount to about 6% of the 900 to 1,000 daily taxi trips provided by DPI, while the San Dimas and Claremont services amount to about 3% and 8% respectively.

Of both bus and cab trips, Pomona was the city with the greatest percentage of origins and destinations by each mode. Trip-ends of Get About Taxi and Bus Trips are as follows:

City	Cab	Bus
Claremont	9%	13%
Glendora	4%	0%
La Verne	11%	9%
Montclair	7%	3%
Pomona	45%	70%
San Dimas	15%	5%
Walnut	8%	0%
All cities	100%	100%

Source: Analysis data compiled by PVRTA from manifests for March 13–18, 2005

At the time of the case study site visit, DPI was operating 67 taxicabs, as well 120 buses. The taxicabs include 12 wheelchair accessible minivans, of which seven were on the road on the day of the site visit. Five of the minivans were originally bought for a contract with Access Services Inc., the regional ADA paratransit system, which DPI no longer operates. Some of the minivans were obtained using an FTA Section 5310 grant by Community Senior Services, a non-profit organization that also provides registration for PVRTA. According to PVRTA statistics, in fiscal year 2004-05, 22% of Get About passengers carried by taxis were wheelchair users compared to 13% of those carries by buses.

For five weekdays in March 2005, based on manifest data compiled by PVRTA, there were from six to nine taxis that did at least three Get About trips, of which three or four carried passengers in wheelchairs.

At the time of the site visit about 130 drivers were working for DPI as taxi drivers, of which 50 to 55 were actually driving on the day of the site visit. The drivers are all independent contractors who lease their vehicles from DPI. The drivers receive payment from DPI equivalent to the meter fares for the Get About and dial-a-ride trips that they carry. These rates are \$2.20 drop charge plus \$2.20 per mile. Discounted daily lease rates apply to drivers who drive one of the accessible minivans or work one of DPI’s shared-ride dial-a-ride contracts as authorized by a dispatcher on a given day. In addition, a \$.10 per mile maintenance fee is waived for drivers who pick up at least 10 dial-a-ride trips in a day. These lower rates allow for the drivers making less revenue on these assignments than on other taxi work.

## 5.0 Costs

The overall costs of providing Get About service in FY 2005 were:

Dedicated Fleet	\$1,099,911
Non-Dedicated (Taxi) Fleet	\$ 344,976
Total Get About Costs	\$1,444,887

The cost per trip on the dedicated fleet was \$12.65, while the cost per trip on the taxi fleet was \$17.56. While the cost per trip is higher on the dedicated fleet, PVRTA has actually made a wise choice for the service mix, because the taxis were assigned much longer trips on average (6.9 miles per trip vs. 2.9 on the dedicated vehicles). Since the taxi fleet operating costs are much lower (\$2.56 per mile) compared to the dedicated fleet (\$4.31 per mile), PVRTA saved approximately \$236,000 by using taxis instead of their dedicated fleet. Under such operating conditions the overall cost per trip would have increased from \$13.56 to \$15.77.

## 6.0 Background / History / Goals

Get About was created in 1975 when four retirement communities and the Red Cross began working together to operate service. In 1977, the four cities established PVRTA as a joint powers agreement to manage the service and receive state subsidy funds under Article 4.5 of the Transportation Development Act. Between 1982 and 1986 the state funding was replaced by funds under Los Angeles County's Proposition A Local Return Program. For both funding sources, under regionally established rules, the cities qualified for an additional level of incentive funding by working together. At the time Get About began, fixed-route service was largely inaccessible, and there was no regional paratransit service. Claremont Dial-a-Ride began in 1985 and San Dimas Dial-a-Ride began in 1987.

PVRTA began using taxicabs for a portion of Get About service in 1996. It was hoped that having the dedicated vehicle contractor assign some trips to taxis would improve overall productivity and also address certain persistent service problems. At that time there was very little demand for Get About from San Dimas or La Verne. On-demand trips from these cities were often picked up late because most service tends to be concentrated in Pomona and all vehicles can be in use at peak periods. The problem is compounded in San Dimas because a large park prevents direct travel to many parts of San Dimas from Pomona. In addition there was a problem serving will-call return trips in all parts of the service area. PVRTA calculated

that if dedicated vehicle productivity could be increased from around 3.8 to 4.3 passengers-per-revenue-vehicle-hours, that would pay for an increased level of trip making in San Dimas using taxicabs.

By this time, DPI has already been operating San Dimas Dial-a-Ride for 11 years and Claremont Dial-a-Ride for nine years. As a result the company already had experience providing paratransit service in the PVTA area, and an established relationship with PVTA. DPI also had accessible taxicabs.

The incorporation of taxis into Get About occurred in conjunction with a re-procurement of the Get About provider contract in 1996. The new contract contained provisions concerning allocation of trips to taxicabs by the Get About provider. The dedicated vehicle contract was won by Laidlaw, which was the incumbent. DPI was the only bidder for the taxi service contract. As Paul's Yellow cab, DPI is the single franchise taxi operator in Claremont, San Dimas, and La Verne, and one of two franchise operators in Pomona.

In principle, PVTA could have contracted with another non-dedicated provider that did not operate taxi service in the four cities, but the advantages of combining PVTA trips with taxi trips would have been lost. Since no other companies bid, this issue did not arise. DPI has also bid on the dedicated vehicle contract, but the work has always been awarded to Laidlaw (or to Mayflower, which was bought by Laidlaw). The procurements have been done as requests for proposals, allowing PVTA to choose based on qualifications and experience in addition to price.

Before taxis were added to the service mix, San Dimas accounted for about 5% to 8% of Get About trips and La Verne accounted for about 6%. According to PVTA staff, as a result of improved service using taxicabs, demand from these communities grew by about 50%. Ridership in mobility devices increased because of the availability of accessible cabs.

## **7.0 Highlights**

### **7.1 Effective Use of Non-Dedicated Fleets**

PVTA service and cost statistics for FY 2005 illustrate the effective use of non-dedicated service providers. By scheduling the shorter trips onto the dedicated fleet, PVTA has been able to achieve a high level of productivity at nearly 4 trips per hour. The longer trips that would adversely impact the productivity of the dedicated fleet are assigned to the taxi fleet, and such long trips are of great value to the taxi drivers.

The net effect of PVTA's choice to assign nearly 20% of their Get About trips, particularly the long trips, to the taxi fleet was to reduce their overall cost per trip from \$15.77 (estimated for a 100% dedicated service mix) to the actual FY 2005 cost per trip of \$13.56. The overall cost savings attributable to their use of the non-dedicated taxi fleet was an estimated \$236,000.

## 7.2 Contractor Relationships

The relationship between the two contract providers appears to work smoothly for the most part, although it is not without occasional friction. PVTA staff members participate in a joint meeting of the two providers each month. According to PVTA staff, DPI has complained of sometimes not receiving any trip ticket for trips that Laidlaw was expecting them to carry, or that the trip ticket that was received was unclear. For its part, Laidlaw staff sometimes has difficulty reaching DPI's dispatchers to coordinate trips. DPI has a phone dedicated to this purpose, but if dispatchers are pressed for time, calls on it may be on hold for some time. The process of assigning trips to taxis is thoroughly integrated into Laidlaw's method of operation, as described earlier. A productivity guarantee in Laidlaw's contract gives it a very strong incentive to make effective use of the non-dedicated vehicle option.

## 7.3 Customer Satisfaction

There was no specific information regarding customer satisfaction with the service; however, after some customers indicated a preference for taxicabs, PVTA added language to the Get About brochure to say: "Get About service is provided using vans, minivans, and cabs. Because of limitations both in terms of funding and vehicle availability, Get About cannot accept requests for specific types of vehicles (for example cabs or minivans)." It was also noted that a small minority of passengers had indicated a preference for the dedicated vehicles.

## Nashville, TN

### AccessRide Service

#### 1.0 Responsible Agency

Metropolitan Transit Authority  
130 Nestor Street  
Nashville, TN 37210

Website: [www.nashvillemta.org](http://www.nashvillemta.org)

Contact: Sherri Milliken  
AccessRide Manager

Tel: 615-880-3291 or 615-880-3970 x1291

Fax: 615-880-3294

E-mail: [sherri.milliken@nashville.gov](mailto:sherri.milliken@nashville.gov)

#### 2.0 General Service Policies

##### 2.1 Service Type, Eligibility, and Service Area

AccessRide is the MTA's ADA complementary paratransit service. It is available to persons with disabilities who are certified as ADA paratransit eligible. AccessRide provides a higher level of service than many other ADA paratransit service, in that (1) drivers provide door-to-door service, as opposed to curb-to-curb service, and (2) service is provided to trips going to/from origins and destinations within 1-1/2 miles corridors, as opposed to 3/4 mile corridors. The latter policy effectively means that the AccessRide service area extends to the entire Davidson County.

Nashville and Davidson County is located in central Tennessee. The county's land area is 502 square miles. In 2000, the county had a population of approximately 570,000, of which over 545,000 reside in the Nashville metropolitan area.

##### 2.2 Service Days and Times

AccessRide service is available 7 days a week. Service hours are roughly between 5:00 AM and 11:15 PM on weekdays, 5:30 AM and 10:15 PM on Saturdays, and 5:00 AM and 9:15 PM on Sundays and holidays.

### 2.3 Fare

The fare for AccessRide is a flat \$2.20 per trip. Fares may be paid in cash or with a trip ticket, available in books of 10, which can be purchased through the MTA's Customer Service department.

### 2.4 Reservations

To reserve a trip, customers may call the MTA one to 7 days in advance between 8:00 AM and 4:30 PM on weekdays and from 10:30 AM to 2:30 PM on Saturday and Sunday. The MTA also accepts reservations via fax and e-mail.

Requests for both advance trips and subscription trips (standing orders) may be placed. Open-ended or will-call returns are not accepted. Same-day trip changes or requests are accepted on an emergency basis only.

### 2.5 On Time Policy

**Going trips:** Pick-up times for going trips are manually calculated by reservation agents based on the requested drop-off or appointment time. Generally, the pick-up time is set at 1 hour before the requested drop-off or appointment time. For longer trips, the pick-up time is set 1-1/2 hours before, noting that maximum on-board travel time standard for the service is 90 minutes. For the going trip, a vehicle is on time if the vehicle arrives within a 30-minute window (+/- 15 minutes about the negotiated pick-up time.)

**Return trips:** Pick-up times for return trips are requested by the customer. A vehicle is on time if the vehicle arrives within a 30-minute window (0-30 minutes after the negotiated pick-up time.)

### 2.6 Cancellations and No-Shows

Cancellations must be called at least 2 hours before the requested pick-up time. Later cancellations, whether called-in or cancelled at the door, are equivalent to a chargeable no-show. If there is a no-show on the "going" leg of a round trip, the customer is still expected for the return segment and will be charged for two no-shows if he/she does not specifically cancel the return trip.

The MTA does have a no show abuse policy; however, it is currently not being exercised and is under review.



## 2.7 Trip Confirmations Calls

On the day of the trip, customers can call the MTA’s dispatch office anytime after 3:30 AM to confirm a trip. One of the common underlying reasons for these trip confirmation calls is to ascertain the identity of the carrier to which the trip was scheduled/assigned, i.e. whether it would be an AccessRide van, a contractor vehicle, or a taxi. In the past, dispatchers did identify the carrier for the customer; however, this practice led to customers then making a follow-up “special” request to change the trip to a preferred carrier, with (some) dispatchers attempting to honor that request. This in turn adversely affected both service productivity and staff productivity. Consequently, by policy, dispatchers have been instructed to respond to such requests with “the first available vehicle.”

## 2.8 Where’s My Ride? Calls

MTA instructs customer to call dispatch for “Where’s my ride?” calls; however, some customers call reservations agents anyway. If the trip involves an AccessRide van, the dispatcher puts the caller on hold, radios the driver to find out his/her ETA, and notifies the customer accordingly. If the reservation agent fields the call, he/she calls the dispatcher, who then calls the driver as above. If the trip is scheduled to a contractor vehicle or taxi provider, the dispatcher or reservation agent puts the customer on hold and calls the contractor’s dispatcher or taxi dispatcher to determine the status of the assigned vehicle while the customer is placed on hold.

Note also that some drivers with cell phones (and this is especially the case with the contractors’ drivers) often call the customer directly if the vehicle is running late, and if they have the customer’s contact phone number.

## 3.0 General Service Design, Service Mix, Dedicated Run Structure, Scheduling

### 3.1 General Service Design and Service Mix

Up until recently, AccessRide consisted of two components: an in-house dedicated fleet and a non-dedicated service provided by American Taxi. The service mix between dedicated and non-dedicated service during FY 2004 and FY 2005 was very similar, as shown below.

	Trips Served by Dedicated Fleet (MTA)		Trips Served by Non-Ded. Service “Overflow” Provider		Total
FY 2004	141,778	78%	39,715	22%	181,493
FY 2005	167,705	79%	44,677	21%	212,282

Since then, the MTA has added two new non-dedicated service providers, Johnson Transportation and All City Transportation, while also enlarging the in-house fleet operate by the MTA. With these changes, the service mix as morphed to a 85/15% split on weekdays, and an 88%/12% split on weekends, as evidenced by trip data from June 15-21, 2005.

Service	June 15,16,17,20,21 Average Weekday		June 18 and 19 Average Weekend Day		
	Providers	Sched. Trips	%	Sched. Trips	%
MTA		651	85%	130	88%
Johnson Transportation		70	9%		
All City Transportation		6	1%	6	4%
American Music City Taxi		38	5%	12	8%
Total		765	100%	148	100%

### 3.2 MTA AccessRide Dedicated Fleet and Run Structure

The AccessRide fleet consists of 51 cutaways, arranged in different seating configurations. All but 10 of the vehicles can seat 16 ambulatory passengers with no wheelchairs, with each wheelchair taking up 2 seats. Twelve of the vehicles can hold up to 6 wheelchairs. Another 12 are equipped with a farebox and, because of this, can hold up to five wheelchairs; these vehicles are also used for fixed-route and hybrid service.

On weekdays, the MTA has a morning peak pullout of 35 runs and an afternoon peak pullout of 34 runs. While the fleet totals 51 vehicles, there are rarely more than 41 or 42 available, with the remainder in for maintenance. Hence, there is an effective spare ratio of 17% (6/35) on most weekdays.

Weekday runs are organized morning, mid-day, afternoon, and evening shifts of either 8 hours ("straight" shifts) or 4 hours ("split" shifts). There are 10 straight shifts and 27 split shifts in the mornings starting as early as 4:40 AM and as late as 6:50 AM. Mid-day shifts are all straight and start in the 10:00 hour. Twelve afternoon and 3 evening shifts start between 1 PM and 3 PM, with the evening shifts being all straight and the afternoon shifts split. There are also 6 5.5-hour shifts starting in this time frame which are partial run paired with fixed route runs. Finally, 2 evening straight shifts start at 5:25 PM and run until 1:15 AM. This totals 25 straight and 45 split shifts.

The Saturday run structure is composed of 17 straights. The Sunday run structure is composed of 19 straights.

There are no set, scheduled breaks on the 8-hour straight runs; breaks are taken “on the fly” when there is a same-day cancellation or no-show, or otherwise where one can be squeezed in.

It is also important to note that there is no distinction at MTA between fixed-route and paratransit drivers. All drivers may bid on either service. All drivers are paid on the same wage scale. And, as noted above, some drivers operate a fixed-route run and then a paratransit run. Others operate a paratransit run and then operate “night owl” service, a late night hybrid service.

### 3.3 Non-Dedicated “Overflow” Service Provider “Runs”

On weekdays, the MTA also schedules/assigns trips to “runs” operated by its two “overflow” contractors, All City Transportation and Johnson Transportation, which are currently under contract through 2005.

All City operates two runs: an early morning run (4:45 to 7:30) and an evening run (17:00 to 23:30). Both of these are operated daily with sedans.

Johnson Transportation operates ten runs, on weekdays only. Nine of these runs are operated with the 2 straight (non-accessible) vans and 7 sedans. The wheelchair runs are operated with an accessible van.

It is important to underscore that none of these “runs” are dedicated, as the MTA is not paying these contractors to provide dedicated service. The contractors are being paid according to taxi-style rate: a base “boarding” fee per passenger plus a mileage rate (see below); moreover, the contractors are free to run the trips in any order they desire (indeed, Johnson treats these runs as lists and totally re-schedules the trips among its fleet of vehicles) and are allowed to weave in any other trips from other contracts or private-pay customers. The commingling of other trips with AccessRide trips is actually more frequent with All City than with Johnson, as the MTA tends to overload the Johnson runs, i.e., there are not that many gaps left to fit in other trips. Still, commingling on the Johnson vehicles does happen. For example, during our site visit, Johnson Transportation committed to serving a non-MTA wheelchair trip in a hole in the schedule, and could not accommodate a same-day request from MTA because of this commitment.

The contractual rates for All City Transportation and Johnson Transportation are shown below:

	<b>Boarding Fee</b>	<b>Rate Per Mile</b>	<b>No-Show</b>
All City	\$3.00	\$2.00	\$5.00
Johnson	\$2.00	\$1.70	\$5.00

If there are two more riders traveling from the same origin to the same destination, a boarding fee is charged for each rider; however, duplicate mileage charges are not charged. On the other hand, if there is ridesharing and the origins and/or destinations are not the same, duplicate mileage is charged.

Note also that the mileage on which the mileage charge is based is calculated by the MTA from Trapeze, thus avoiding/circumventing opportunities for fraud.

Fare collected is to be deducted from the carrier invoice.

As described later, the general strategy in assigning trips to All City and Johnson is to first schedule trips to maximize the productivity of the AccessRide fleet, then assign trips to Johnson Transportation and then All City, with the remaining trips assigned to American Music City Cab (see below). With shorter trips tending to be scheduled onto the AccessRide vehicles (to maximize the productivity), it is not surprising that the average length of trips assigned to the overflow contractors are longer than the average length of trips scheduled onto the AccessRide vehicles. Because MTA pays its non-dedicated providers based on a pre-estimated trip mileage, we may use revenue miles per trip as a surrogate for trip length. Using this definition, the average weekday trip lengths between June 15-21 were 7.4 miles for trips scheduled to the MTA-operated vehicles, compared to 14.8 miles and 12.3 miles for trips assigned to Johnson Transportation and All City Transportation, respectively.

The MTA also utilizes these carriers as a backup for same-day requests, and to accommodate trips that the dispatchers wish to transfer off of AccessRide vehicles, e.g., in the event of a breakdown or accident, or in case a vehicle is running late.

### 3.4 Taxi Resources

American Cab (now American Music City Cab since American Can acquired Music City Taxi) has long been apart of AccessRide (see Section 6.0, History), although there has never been a contract.

As mentioned above, the MTA assigns all the “leftover” trips to American Music City Cab, and utilizes this taxi resource as a “second tier” resource for back-up service. Based on the analysis of data from June 15-21, 2005 data, an average of 38 trips or 5% of the total trips on weekdays, and 12 trips or 8% of the trips on an average weekend day were assigned to taxis.

American charges its meter rate (which also is identical to Johnson Transportation’s rate): a \$2.00 boarding fee, plus \$1.70 per mile, and with a \$5.00 no show charge.

American Music City Cab has a fleet of 95 metered taxis (plus 6 spares); this fleet includes 2 accessible taxicabs that were purchased in July 2005, the only accessible taxicabs in Davidson County. These are full size vehicles with lifts that were retired from THE RIDE program in Boston, and that were purchased at auction. Curiously, while the MTA staff is aware of these accessible taxicabs, the MTA is not utilizing them.

American Music City Cab also has a sister organization, called American Transportation Company (or ATC) that provides livery service with non-metered vehicles. ATC has a 5-vehicle fleet that includes 3 mini-vans, 1 sedan, and 1 lift-equipped van. American Cab sometimes relies on this fleet for back-up purposes in serving AccessRide trips. Curiously, the one ATC accessible vehicle is not being used by the MTA either.

### 3.5 Reserving / Scheduling / Assigning Trips

The MTA performs the client registration, reservations and scheduling functions, as well as the dispatching function for its own fleet. Trapeze PASS, installed in September 2004 and replacing MIDAS-PT, is used for these functions.

When Trapeze was initially installed, the MTA reservation agents would utilize Trapeze’s automated scheduling capabilities to schedule trips immediately after a trip was booked, i.e., while the customer was on the phone. However, this practice has since been changed: the reservation and scheduling processes are now totally separate. The MTA found that this change resulted in better customer service: the average call time was reduced from 4.2 minutes to 2.4 minutes, and the percentage of calls answered increased from 76% to 90%. Booked trips are hence placed into holding runs (organized by time of day) pending scheduling. As mentioned above, negotiated and ultimately booked pick-up times for going trips are based on the requested drop or appointment times: for most trips, reservation agents will suggest

pick-up times that are 60 minutes earlier than the requested drop-off/appointment time, and 90 minutes for longer trips.

The first task in the scheduling process is to schedule new subscription trips. These are scheduled one at a time with the help of Trapeze PASS. Subscription trips represent approximately 57% of the total trips, and are scheduled onto AccessRide runs, the one Johnson Transportation run (that is designated for subscription trips only), and American as well.

The scheduling of advance request trips begins 7 days before the trip date. Schedulers will periodically (2 to 3 times a day) use Trapeze's batch scheduling capabilities throughout the seven days preceding the trip date to schedule trips onto AccessRide vehicles. The remaining trips are put onto the overflow runs. As gaps open up in the AccessRide runs, trips from the overflow runs are reviewed to determine if they can fit into these gaps. The schedulers also actively use Trapeze's "freeze" capabilities to freeze certain runs from further automated manipulation in subsequent batching. On the day before the trip date, schedulers make an attempt schedule next-day trip requests, and to turn the overflow runs into run-able schedules. This is done both with batch scheduling and trip-by-trip scheduling. The schedulers report that 85% of the trips are routinely scheduled via batching. Ambulatory trips that do not fit into AccessRide or overflow runs are assigned to the taxi list. Manifests and taxi trip lists are usually faxed to the vendors around 6:00 PM on the night before.

Note also that the MTA purposely overbooks by approximately 10%, knowing that most of these trips will be placed into gaps (in scheduled runs) that are created by next-day cancellations, with the remainder assigned to non-dedicated providers. This overbooking strategy has a positive effect on the productivity of the dedicated fleet, and on the overall cost-efficiency of the system.

As mentioned above, the MTA schedulers focus on maximizing the productivity of the AccessRide fleet, sending longer out of the way trips to its overflow contractors. The productivity of the AccessRide fleet in June 2005 was 2.36 trips per hour.

Scheduling parameters in Trapeze:

- Load times
  - » o Ambulatory trip 2 minutes
  - » o Wheelchair trip 5 minutes

- Unload times
  - » o Ambulatory trip      2 minutes
  - » o Wheelchair trip      5 minutes
- Pick-up tolerance                      +/-30 minutes
- Max travel time                        90 minutes
- Average speed                         26 mph

#### 4.0 Service Statistics

The following service statistics compare service statistics from the last two fiscal years, as well as the last two Junes.

	Jun 2004	Jun 2005	FY 2004	FY 2005
<b>Passenger Trips</b>				
MTA	12,757	17,270	141,778	167,705
Overflow	3,309	2,789	39,715	44,467
<b>Total</b>	<b>16,066</b>	<b>20,059</b>	<b>181,493</b>	<b>212,382</b>
<b>Scheduled Revenue Hours</b>				
MTA	6,592	7,301	72,411	73,912
<b>Productivity (Trips/Hour)</b>				
MTA	1.94	2.36	1.96	2.27
<b>Scheduled Revenue Miles</b>				
MTA	103,304	107,955	1,119,102	1,160,012
<b>Trip Length (Rev Mi/Trip)</b>				
MTA	8.1	6.3	7.9	6.9
ADA Denials	0	0	16	1

#### 5.0 Costs

The following table presents FY 2005 costs for AccessRide service.

Revenue Vehicle Operation	\$1,740,311
Scheduling/Dispatch/Reservations	279,084
Maintenance	368,003
Administrative	132,958
Operations	718,980
Eligibility	36,000
<b>Total</b>	<b>\$3,275,336</b>

Based on these costs, the cost per trip on the dedicated vehicles was \$19.53.

## 6.0 Background / History / Goals

The MTA has long provided paratransit in Nashville and Davidson County. Prior to the creation of AccessRide, the MTA retained a private, non-profit provider called Special Transportation Services, Inc. (STS) to run paratransit services for persons with physical disabilities. During this era, STS introduced an MTA-funded taxi voucher subsidy system, called Red Mobility, partnering with American Cab.

The MTA brought the service delivery functions in house in 1990, while STS continued to provide the eligibility certification and reservation and scheduling functions. This involved hiring the paratransit drivers that were working for STS. (Note: these are the only MTA drivers who are exclusively paratransit drivers; the other MTA drivers are both fixed-route and paratransit drivers.)

Wishing to gain more control over the program the MTA brought the rest of the functions except for eligibility certification in-house in 1995. During this stretch, the MTA continued to use STS for overflow/back-up purposes. At this point, STS was functioning as a broker, with American Taxi being one of its carriers.

In 2003, the MTA stopped using STS for eligibility certification and for overflow/back-up service, and began a direct relationship with American Cab. At this point, the Red Mobility taxi subsidy program was also dissolved. In addition, the service area was expanded from  $\frac{3}{4}$  mile corridors to  $1\frac{1}{2}$ -mile corridors, which effectively expanded the AccessRide service area to the entire Davidson County.

In September 2003, Trapeze was implemented. By May 2004, the MTA staff was fully utilizing batch scheduling. In February 2005, the MTA implemented 30-minute pick-up windows.

Movement toward alternative non-dedicated service began in October 2004 when the MTA began a relationship with Johnson Transportation, largely because some service quality issues had manifested themselves with taxi service. Johnson Transportation began with 2 runs. By the end of March 2005, Johnson was operating 9 runs. Wishing to solidify this arrangement, the MTA put out an RFP for contract overflow service in April. Two companies responded: Johnson Transportation and All City Transportation. Both were retained, with Johnson Transportation operating 10 "runs" worth of trips, as described above, and with All City Transportation operating a morning and evening run.



The contracting effort has the following goals. The first was to improve cost efficiency, while improving service quality through the solidification and expansion of non-dedicated carriers. The second was to become more compliant with the ADA, especially in terms of eliminating capacity-related denials and meeting equivalency issues. Clearly, progress has been made on both fronts. With these successes, the short-term (6 month) contracts were recently extended until the end of 2005

American (under the American Cab or ATC banner) opted not to respond to the RFP. The reason given by American Music City owner was a requirement in the RFP that 10% of the fleet be accessible. American Cab, with over 90 taxis, could not meet this requirement, and while the ATC would have been able to meet the requirement, the owner that had the best approach would have had to include the taxis. Interestingly, this requirement did not stop the MTA from contracting with All City Transportation, which has no accessible vehicles, and from continuing to send trips to American Music City, albeit at a lesser degree: currently, American Music Cab serves about 50 trips per weekday compared to 250 trips per weekday at its peak.

## 7.0 Highlights

### 7.1 Productivity Improvement

The productivity of the dedicated fleet this past June was 2.37 trips per revenue hour. This reflects a 21% improvement in productivity over the preceding June. This improvement is attributable, in part, to the increased flexibility of three (as opposed to one) non-dedicated service providers.

### 7.2 Customer Satisfaction

Six riders were interviewed during the site visits. All six used AccessRide frequently, were familiar with all four providers (including the MTA), and were active in the disability community. All gave high marks to the service quality provided by the MTA and its overflow subcontractors; interestingly, when quizzed on specific elements such as timeliness, there was no difference in the provider ratings. Several of the riders mentioned that the overflow carriers exhibit perhaps even more flexibility in catering to customer needs, and exhibit more success in communicating with their drivers. Specifically, the riders mentioned that cancellations don't always get to the MTA drivers. At the same time, there was a consensus that the MTA vehicles (and particularly the inside of the vehicles) are cleaner. In addition, several of the riders believe that taxi drivers are not as well trained as the MTA drivers

and the drivers of the other two overflow contractors (all of which receive the same training).

### 7.3 Barometer for Dedicated Fleet Expansion

The MTA has found that the use of non-dedicated vehicles works well as a barometer for dedicated fleet expansion. In other words, rather than expend capital monies needlessly on new vehicles that might or might not be used, the MTA waits until there is a critical mass of trips on overflow providers that could yield a productive, dedicated run. At that point, the fleet is expanded.

### 7.4 Problems and Solutions

**Lack of Non-Dedicated Accessible Service** – With Johnson Transportation operating only one accessible vehicle, and All City Transportation and American Music City Cab operating all non-accessible vehicles (as part of the AccessRide contract), MTA schedulers and dispatchers are constrained by the lack of accessible vehicles. During our site visit, for example, one scheduler spent an inordinate amount of time moving three ambulatory trips from a productive MTA run to various overflow contractors in order to make room for a long, out of the way wheelchair trip. **Solution:** The management of all three contractors expressed a willingness to expand their fleets to include accessible vehicles if they could be promised a steady diet of AccessRide trips. One of the carriers also mentioned the need for a two different rates to offset the higher costs of purchasing and operating an accessible vehicle. Also, as mentioned above, American Music City Cab does have two ADA-compliant (according to American) accessible taxis in operation. We would encourage the MTA to begin discussions with American to take advantage of these vehicles.

**Non-Equivalency Issues** - A common set of issues in using taxis or any non-dedicated service provider for ADA paratransit service is equivalency of service issues. In short, drivers of taxis used for ADA paratransit service must be trained to the same extent as the “regular” paratransit drivers, and must be subject to the same drug and alcohol testing requirements. In addition, the taxi vehicles must be insured to the same level as the paratransit vehicles. And, while these requirements are being met by All City Transportation and Johnson Transportation, they are being met only in part by American. For example, American’s and ATC’s drivers do not receive the same level/type of training as compared to the MTA’s drivers and its contrac-

tors' drivers. Still, they are being used to meet the MTA's ADA paratransit obligation. (American's owner has stated that he is willing to send his drivers – all independent contractors -- to receive MTA training; however, this has not been orchestrated.) Drug and alcohol testing would appear to be less of a non-issue, as Davidson County has strict and ADA-compatible drug and alcohol testing requirements. However, insurance is an issue. Davidson County requires that taxis be insured at levels of \$25,000, 50,000, and 100,000. In contrast, the MTA requires \$1.5 million insurance coverage for its AccessRide vehicles and for its contractor's vehicles. (Interestingly, the ATC vehicles are covered at this level. **Solution:** The MTA will soon begin discussions with American to carve out an equivalent fleet and roster of drivers who are willing to meet these requirements and/or explore how American's sister company, ATC, can be used.

## Calgary, AB

### Access Calgary

#### 1.0 Responsible Agency

Access Calgary, Calgary Transit  
928 32nd Avenue NE  
Calgary, AB T2E 6T9  
CANADA

Website: [www.calgarytransit.com](http://www.calgarytransit.com)

Contact: Karim Rayani  
Manager, Access Calgary

Tel: 403-537-7924

Fax: 403-537-7922

E-mail: [krayani@calgary.ca](mailto:krayani@calgary.ca)

#### 2.0 General Service Policies

##### 2.1 Service Type, Eligibility, and Service Area

Access Calgary is a shared-ride, door-to-door transportation service for Calgarians with disabilities who cannot always use Calgary Transit buses and C-Trains. It is managed by Access Calgary, a division of Calgary Transit, which is responsible for eligibility certification, reservations, scheduling, and delivering trip manifests to the three service providers. Access Calgary is also responsible for controlling the daily operation, and monitoring the service quality and contract compliance of the providers. The latter includes conducting customer satisfaction surveys and monitoring on-time performance.

Service delivery is provided by a non-profit operator, Calgary Handi-Bus Association (CHBA), and two taxi companies, Checker Transportation Group, and Associated Taxi. In addition, Access Calgary also contracts with CHBA to provide transportation for pre-school children, and manages a user-side subsidy taxi program, available to customers of Access Calgary.

Access Calgary only provides service within the city limits of Calgary. The City's land area is 279 square miles. In 2004, the city had a population of approximately 951,400.

## 2.2 Service Days and Times

Access Calgary service is available 7 days a week between 6:00 AM and midnight.

## 2.3 Fare

The fare for an Access Calgary trip is one Calgary Transit adult ticket. Only Calgary Transit tickets are accepted as payment; no cash is accepted. Books of 10 tickets are available for \$17.50 Canadian (\$15.23 US), although this will be increased to \$19.50 Canadian (\$16.97 US) on January 1, 2006. Ticket books are available for purchase from Calgary Transit ticket vendors, or on line at [www.calgaryonlinestore.com](http://www.calgaryonlinestore.com). In addition, Access Calgary accepts the Low-Income Transit Pass.

## 2.4 Reservations

Two types of trips may be requested: subscription and casual. Casual trips are further sub-divided into (a) scheduled trips; (b) time-sensitive trips, and (c) same-day trips. *Subscription* trips are defined as trips made at least once a week on the same day(s) of the week, to and from the same places at the same time, for at least 6 weeks. *Scheduled* casual trips are other trips that are known and requested in advance. *Time-sensitive* casual trips are trips taken to events that have a specific start-time. *Same-day trips* requests are trips that are more spontaneous, noting that Access Calgary has very limited capacity to provide same-day trips, and that these are therefore accepted on a space –available basis only.

Customers call Access Calgary to request trips between 9:00 AM and 5:00 PM daily. Subscription trip requests take 10 days to process. Scheduled casual trips must be requested by 1:00 PM on the day before the trip date, and can be made up to 2 days in advance. (Medical trips may be requested on a next-day basis after 1:00 PM.) Requests for time-sensitive trips can be placed up to 7 days in advance.

If a casual trip cannot be accepted at the requested time because of capacity constraints, an alternative time will be offered. If the alternative times are not suitable, the request will be placed on a “no-guarantee” wait list. Access Calgary maintains a 24-hour automated telephone system called ACROBAT, which wait-listed customers may call to ascertain whether or not their wait-listed trip has been scheduled.

## 2.5 On Time Policy

Access Calgary has a 20-minute on-time pick-up window, which begins 5 minutes before the confirmed pick-up time, and ends 15 minutes after the confirmed pick-up time. If a customer's confirmed pick-up time is changed in the scheduling process such that the scheduled time is outside the pick-up window, Access Calgary will attempt to call the customer.

## 2.6 Cancellations and No-Shows

Cancellations must be called at least 2 hours before the requested pick-up time. Later cancellations, whether called-in or cancelled at the door, are equivalent to a chargeable no-show. Customers can use ACROBAT to cancel their trips.

Access Calgary's no-show policy is as follows: (1) 3 no-shows in a 30-day period results in a letter of warning; (2) 6 no-shows in 60-day period results in a 2-day suspension; (3) 9 no-shows in a 60-day period results in a 7-day suspension; and (4) 12 or more no-shows in a 60-day period may result in a discontinuance of service.

No-shows will not be counted if the vehicle arrives outside the on-time pick-up window.

Also, if a customer cancels more than 40% of his/her subscription trips in a 30-day period, the subscription trip request is discontinued, and the customer is relegated to requesting trips on a casual trip basis, noting that the customer may re-apply for subscription service after 90 days.

## 2.7 Trip Confirmations Calls

After 7:00 pm on the day prior to the trip, customers can call ACROBAT or a reservation agent to confirm a trip and pick-up time.

## 2.8 Where's My Ride? Calls

Access Calgary instructs customer to call a special number (Dispatch and Same-Day Service) for "Where's my ride?" calls, but only after the on-time pick-up window.

## 3.0 General Service Design, Service Mix, Dedicated Run Structure, Scheduling

### 3.1 General Service Design and Service Mix

Access Calgary utilizes three service providers:

(1) Calgary Handi-Bus, which in 2004 operated 253,160 hours of service with a dedicated fleet 121 (106 peak) accessible vans, and provided 429,967 shared-ride trips for Access Calgary. In addition, CHBA operated 16,525 service hours with 12 vehicles and provided 50,276 trips on their Pre-school service.

(2) Associated Taxi, which operated up to 5 dedicated runs with 5 accessible minivans, and provided 30,599 trips in 2004.

(3) Checker Transportation Group, which provides up to 108 non-accessible taxis (70 sedans and 38 vans). On any given day, there are roughly 89 taxis providing Access Calgary service, and of these, approximately 40 vehicles (or 45%) would be considered to be dedicated as they work “full-time” for Access Calgary, while the others (55%) serve a mixture of Access Calgary trips and other trips, and hence are non-dedicated. In 2004, Checker served 364,651 Access Calgary trips.

Because Checker does not track how many trips were served by its dedicated vs. non-dedicated taxis (as defined above), we shall estimate that each dedicated vehicle serves twice as many trips as the non-dedicated vehicles. Based on 250 operating days, the ridership split can be estimated as follows:

**Checker Taxi Service**

	Taxis	Trips/Day	Service Days	Trips/Yr
Dedicated	40	21	250	210,000
Non-Dedicated	59	10.5	250	154,651
Total	89			364,651

Using this estimate, along with the ridership figures for Calgary Handi-Bus and Associated Taxi, we can then calculate the overall 81%/19% service mix for Access Calgary, as shown below:

**Overall Dedicated vs. Non-Dedicated Split for Access Calgary**

	Trips Served on Dedicated Vehicles	Trips Served on Non-Dedicated Vehicles	Total Trips
Calgary Handi-Bus	429,967		429,967
Associated Taxi	30,599		30,599
Checker Transportation	210,000	154,651	364,651
Total	670,566	154,651	825,217
	81%	19%	

### 3.2 Access Calgary Dedicated Run Structure

#### *Calgary Handi-Bus*

Calgary Handi-Bus provides a dedicated fleet of 121 accessible vehicles operating hours of service, of which 269,685 hours are Pre-school service.

The weekday dedicated runs include:

- 78 runs that operate on Monday through Friday
- 10 runs that operate on Tuesday through Friday
- 11 runs that operate on Monday through Thursday
- 5 that operate on Monday only
- 5 that operate on Friday only

The above represents "signed-on" work. Access Calgary typically increases CHBA runs to a maximum of 106 runs at peak and to cover variable evening work. Thus, there are 99 (not including spareboard and casual work) runs on Tuesday through Thursday, with slightly fewer runs on Monday and Friday. Hence, there is an effective spare ratio of 18% (22/121) on most weekdays. The run structure on Thursdays is illustrated below.

#### *Calgary Handi-Bus Dedicated Run Structure*



As shown below, this Thursday run structure is accomplished through a blend of staggered straight and split shifts, all of which are 7-1/2 hours or revenue service in length.

Time of Shift	Starting Times		
	5:30 to 8:00 AM	10:30 to 11:30 AM	14:30 PM
7-1/2 hour straights	5	13	9
7-1/2 hour split	67		

On weekends, there are 5 runs that operate on both Saturday and Sunday, 8 that operate on Saturday only, and 9 that operate on Sunday only. Thus, a total of 13 and 14 runs on Saturday and Sunday, respectively.

**Associated Taxi**

Associated Taxi has a fleet of 382 taxis and 15 accessible taxis. However, Access Calgary only makes use of 5 of these accessible minivans – for dedicated service only. Access Calgary schedulers will send over driver manifests for these dedicated runs, and the drivers will essentially drive these runs as is.

Four of these minivans are operated daily on 12 hour shifts from 6:00 AM to 6:00 PM. The fifth minivan is operated each weekday from 4:00 PM to 12:00 midnight.

Note: the licenses on these five accessible mini-vans, and the other 10 in the fleet, are regular taxi licenses. Associated Taxi is in the process of lobbying the City for 30 accessible taxi license plates. With these plates, Associated can not only get additional accessible taxis, but it can use half of these for its existing accessible vehicles, thereby freeing up an additional 15 regular taxi licenses for additional cabs.

**Checker Transportation Group**

As discussed above, about 40 of the 89 taxis provide Access Calgary service full-time. Because these cabs provide service virtually exclusively, we have opted to place these cabs in the dedicated category. However, there are no real set start and end times, as there are with most dedicated runs, as these cabs are driven by independent contractors, who can start and end when then wish. As discussed below, we shall see that the Access Calgary scheduling staff sends over several 7 to 10 hours pieces of work, with trips scheduled onto these pieces of work, much like driver manifests are sched-

uled for the Calgary Handi-Bus runs. These trips are dispatched to a driver, without much change. Access Calgary also sends over pieces of work that range from 3 to 6 hours. These are also generally dispatched as a piece to drivers who are not “dedicated” to Access Calgary. And, in some cases, the Checker dispatchers may split up one of the pieces of work, and dispatch individual trips to different drivers. Ultimately, it is up to the dispatchers how much of the pre-scheduled trips remain as such, and how much are dispatched separately. Virtually all of the drivers who are “dedicated” to Access Calgary have received special training geared to the Access Calgary customers. Some of the other drivers (i.e., who do not serve Access Calgary trips full-time) have been so trained; some have not.

### 3.3 Rates

#### *Calgary Handi-Bus*

Calgary Handi-Bus was paid \$44.00 Canadian (\$38.28 US) per revenue hour for dedicated service. Note that this covers operational costs only. Access Calgary does not reimburse Calgary Handi-Bus for the capital cost of the vehicles. Through various fundraising activities, Calgary Handi-Bus raises approximately \$900,000 Canadian (\$783,000 US) annually for the purchase of accessible vehicles (and other capital projects).

#### *Associated Taxi and Checker Transportation Group*

Access Calgary’s contractual rates with both Associated Taxi and Checker Transportation Group are shown below, noting that these rates are commensurate with its regular meter rates, regulated by the municipality of Calgary.

	<b>Boarding Fee*</b>	<b>Meter Rate</b>	<b>Load/Unload</b>
Canadian Dollars	\$2.50	\$1.23 per km	\$0.40 per min
US Dollars	\$2.18	\$1.73 per mi	\$0.35 per min

\*Boarding fee includes first 162 meters.

As of November 1, 2005, this changed to

	<b>Boarding Fee*</b>	<b>Meter Rate</b>	<b>Load/Unload</b>
Canadian Dollars	\$3.00	\$1.37 per km	\$0.40 per min
US Dollars	\$2.61	\$1.93 per mi	\$0.35 per min

\*Boarding fee includes first 150 meters

In this shared-ride environment, the “running” meter rate begins when the first person of a group enters the vehicle up until the last person of the group

alights the vehicle, i.e., Access Calgary is charged the meter rate whenever there is at least one passenger in the taxi. Access Calgary does not pay Checker for deadheading.

Associated Taxi and Checker Transportation are also both paid \$5.00 per no-show.

In addition, Access Calgary pays Associated Taxi a \$1.00 Canadian (\$0.87 US) per trip surcharge which goes to cover the accessible vehicle conversion cost, operating cost, and training cost that is associated with the cost of providing this service.

### 3.4 Reserving / Scheduling / Assigning / Dispatching Trips

Access Calgary staff is responsible for reservations, scheduling, and controlling same day operations, utilizing Trapeze to perform these functions. Once the scheduling function has been completed, staff forwards them electronically to the three contractors via fax or are e-mailed as PDF files. Checker, for example, uses Acrobat to alter these PDF files as needed.

See Section 2.4 for reservations policies.

Access Calgary has 4 schedulers. The scheduling process begins 7 days out with batching. This is continued on a daily basis, up to and including the day before the trip. Daily trip totals are around 3,500 trips, 2,400 of which (or about 68%) are subscription trips. After batching on the day before the trip, it is rare when there are more than 150 (of the 1,100 casual trips booked) that are left unscheduled. These are then scheduled one-by-one using Trapeze, noting that some are scheduled into gaps that result from cancellations that come in the day before the trip, or are left unscheduled for assignment to all service providers.

It is important to understand that most trips are scheduled onto runs that are forwarded to Calgary Handi-Bus and Associated Taxi, or to “pieces of work” that are forwarded to Checker. As mentioned above, many of the pieces of work are the equivalent of 7 to 10 hour dedicated runs. Other shorter pieces of work constitute “mini-runs.” The productivity of these schedules usually ranges between 1.9 and 2.2. (Actual productivity usually is about 20% less.)

Scheduling parameters in Trapeze:

- Load times
  - » o Ambulatory trip 4 minutes
  - » o Wheelchair trip 5 minutes

- Unload times
  - » o Ambulatory trip      3 minutes
  - » o Wheelchair trip      3 minutes
- Pick-up tolerance                      -5/+15 minutes
- Drop-off tolerance                      -20/+0 minutes
- Max travel time                        75-90 minutes

Recognizing that Checker can only accommodate ambulatory trips, and that Calgary Handi-Bus and Associated Taxi can accommodate either ambulatory or non-ambulatory trips, Access Calgary schedulers will generally batch non-ambulatory trips first, and then fill gaps with ambulatory trips. Because Access Calgary has a “fixed” commitment of revenue hours to Calgary Handi-Bus (and in a sense has already bought this service), schedulers ensure that the CHBA hours commitment is met first. During periods of lower demand, trip count at Checker and Associated is reduced first.

Access Calgary has the responsibility for dispatching to Calgary Handi-Bus vehicles via 2-way radio communications, noting that they are hoping to install MDTs in the Handi-Bus fleet by 2007. Dispatching for the other two operators is vested with the carriers. Checker, for example, will electronically transfer driver manifests to its drivers by e-mail or fax on the night before the trip. (And for the 2% of the drivers who do not have e-mail or a fax machine, the company will send the driver manifest to those drivers via other drivers. During the day of the trip, dispatchers for these two taxi companies are in close contact with Access Calgary dispatchers. Cancellations e-mailed from the Access Calgary dispatcher, for example, are “pasted” into electronic messages which are batched to the drivers.

#### 4.0 Service and Cost Statistics

The service statistics for Access Calgary for FY 2004 are as follows:

<b>Calgary Handi-Bus</b>	
Passenger Trips	429,967
Revenue Hours	253,160
Productivity	1.70
<b>Associated Taxi</b>	
Passenger Trips	30,599
<b>Checker Transportation</b>	
Passenger Trips	364,651
<b>Total Passenger Trips</b>	<b>825,217</b>

## 5.0 Costs

The cost statistics for Access Calgary for FY 2004 are as follows:

<b>Calgary Handi-Bus</b>		
Passenger Trips	429,967	
Cost	\$11,139,040 Canadian	\$9,691,000 US
Cost per Hour	\$44.00 Canadian	\$38.28 US
Cost per Trip	\$25.91 Canadian	\$22.54 US
<b>Associated Taxi</b>		
Passenger Trips	30,599	
Cost	\$481,838 Canadian	\$419,199 US
Cost Per Trip	\$15.75 Canadian	\$13.70 US
<b>Checker Transportation</b>		
Passenger Trips	364,651	
Cost	\$5,512,678 Canadian	\$4,796,030 US
Cost Per Trip	\$15.12 Canadian	\$13.15 US

## 6.0 Background / History / Goals

Calgary Handi-Bus is a private, not-for-profit organization that was chartered under the Societies Act of Alberta. With its origins stemming from an effort involving Easter Seals, the Shriners, the United Way, and the City of Calgary's Community and Social Development Department, Calgary Handi-Bus began service in the early 1970's. This consisted of door-to-door, shared ride transportation service for Calgary residents who had physical and/or cognitive disabilities which prevented them from using public transit "with safety and dignity."

The City's Community and Social Development Department also began a Frail and Elderly Taxi Subsidy Program, which evolved into the Special Needs Taxi (SNT) subsidy program, available to lower-income residents with special needs. The City would provide users with an \$80.00 Canadian (\$69.60 US) subsidy each month. The customer paid the first \$2.00 Canadian (\$1.74 US), the balance of the fare was paid by the City of Calgary up to the maximum amount of the subsidy. Customers could apply for an increased subsidy to cover work, medical and education trips.

In 1997, the City commissioned a review of transportation services for people with disabilities in Calgary because the City realized (1) it could not financially keep up with the dramatic growth in each program's ridership, (2) with the general population aging, the demand would only grow, (3) the cost

of service was increasing at a disproportional rate; and (4) Calgary Transit was becoming increasingly accessible. In short, the study recommended a consolidation of the two separate services.

Access Calgary was established as a division of Calgary Transit in 2002, and in concert with the study's recommendations, the reservations, scheduling, and dispatch staff at Calgary Handi-Bus was shifted over to the newly created service.

## **7.0 Highlights**

### **7.1 Merging of Programs; Use of Both Dedicated and Non-Dedicated Service**

Merging customers from two separate systems into one program and using dedicated and non-dedicated service providers to provide shared-ride service has allowed the overall delivery of service for people with disabilities to be more efficient and to optimize the use of existing resources, thereby enabling more service to more customers.

Access Calgary reports that the main advantages of using the taxi companies for both dedicated and non-dedicated service are (1) the lower labor costs, and (2) the flexibility they have in adjusting the needed number of vehicles or start/end times to better match the demand. They also state that the use of the taxi providers have caused Calgary Handi-Bus to be more responsive to Access Calgary's requirements in terms of consistency in providing manpower, vehicles, and adjusting driver shifts to better match the demand profile.

### **7.2 Cost Efficiency**

Access Calgary acknowledges the key role that non-dedicated service plays in maximizing the productivity of the dedicated fleets. The attractiveness of the meter rates and resulting \$15.12 Canadian (\$13.15 US) per trip cost for non-dedicated (ambulatory) service, compared to the \$25.91 Canadian (\$22.54 US) per trip cost of Calgary Handi-Bus suggests that further cost efficiencies might be possible, if it were not for the minimum commitment of hours to Calgary Handi-Bus. The addition of accessible vehicles as non-dedicated resources could further have a positive effect on the system-wide cost efficiency.

### 7.3 Customer Satisfaction

Calgary Transit conducts an annual telephone survey to assess customer satisfaction with Access Calgary services. Hargroup Management Consultants, Inc. was engaged to conduct the 2004 survey. The types of issues examined in the survey included:

- Frequency and use of Access Calgary services
- Service expectations and performance ratings
- Customer satisfaction with key issues
- Use of various telephone services
- Expectations for future initiatives for Access Calgary

A total of 400 telephone interviews were conducted with Access Calgary customers using a random sampling technique to draw names from the customer database.

The results from the survey showed that the vast majority (87%) of Handi-Bus customers considered the service to be excellent (49%) or good (38%). The specific service attributes that respondents were most likely to agree with included:

- Drivers are nice
- Vehicles are clean
- Drivers provide help to and from the vehicle.

Four riders were interviewed during the site visits. All four used Access Calgary frequently, and were familiar with all three providers. In general, all gave high marks to the service quality of Calgary Handi-Bus, noting especially that the drivers were well-trained, also adding that the “full-time” drivers of the taxi companies were well-trained as well. Shortcomings of the systems included some drivers having trouble with securement equipment, and communicating in English, drivers talking on their cell phones (for personal calls) while driving, and the rough ride of the accessible vehicles.

### 7.4 Problems and Solutions

**Effect of Cancellations** - Cancellations can have a significant impact on taxi runs and revenues. Typically, Access Calgary experiences a cancellation rate of about 8% each day. Depending upon the situation, cancellations can turn a well-designed run into a costly, inefficient run with unnecessary deadhead and out-of-the-way travel. Taxi operators often request that trips be removed

when they feel there is excessive deadhead. One concern from the point of view of Associated Taxi is that Access Calgary dispatch will often reassign trips back to Calgary Handi-Bus after cancellations have made some Handi-Bus runs unproductive. Associated Taxi's manager finds that this practice has a significant impact on their revenues. As mentioned earlier, Access Calgary has already made a commitment of a minimum number of hours to Calgary Handi-Bus; hence, it is not surprising that they want to get the most out of that investment. Unlike Calgary Handi-Bus which is paid by the hour, Associated Taxi is paid by the meter, which is interesting given that it is, in effect, providing dedicated service. *(Note: it was Access Calgary's preference to use Associated in a non-dedicated fashion. However, Associated preferred to use their fleet in a dedicated manner where possible.)* So, from Access Calgary's point of view, it makes perfect sense to switch a trip to a carrier that you have pre-paid, and away from a carrier that will result in no downside. However, from Associated Taxi's and its drivers' perspective, there is huge downside: they have committed these drivers to provide dedicated service, but are being paid as if they are providing non-dedicated service. Indeed, Associated Taxi's manager reported that on a "good" day, he will see 8 to 10 cancellations which represents about 11% of his trips – and revenue. On a "bad" day, he might see up to 25 cancellations, which represents about 28% of his trips – and revenue. He also reported that his drivers can almost predict which trips are going to be cancelled by Access Calgary dispatchers. **Solution** – Access Calgary's acknowledges this is an issue, however, cancellations are a normal part of paratransit operations. One solution proposed by Associated Taxi is that Access Calgary pay a per hour rate if it expects dedicated service, or can pay the current meter rate for non-dedicated service, recognizing that non-dedicated service means that the drivers are free to look for other service or contracts, and may not be available at a particular time for Access Calgary trips.

**Lack of Non-Dedicated Accessible Service** – There is currently no non-dedicated accessible service, as (1) Associated Taxi's accessible taxis are being used in a dedicated mode; and (2) Checker Transportation Group does not have any accessible vehicles. **Solution:** Associated Taxi has requested 30 accessible taxi licenses from the Taxi Commission. With 10 of 15 accessible taxis not available to Access Calgary, Associated Taxi obviously sees a growing market for accessible taxis. (In asking for 30, it also is in effect enlarging its regular cab fleet by 15, as it can transfer the 15 regular taxi licenses that are currently on its accessible vehicles to 15 new regular taxis.) In 2005 Associ-



ated Taxi increased its accessible fleet to 17 vehicles, 6 of which are used in Access Calgary service. The City has recently created a task force to review how to best increase the number of accessible taxis in Calgary.

**Inconsistent Driver Training** – Not all of Checker Transportation drivers’ have been trained to serve Access Calgary customers. Some of this is due to driver turnover. **Solution:** Currently, drivers who haven’t received special training are getting Access Calgary trips anyway, so perhaps they do not feel like they have to become “certified” to get these trips. However, it is imperative that all taxi drivers that serve Access Calgary customers be properly trained. Calgary City Council has recently approved a mandatory 4-day training course for all new taxi drivers. This training includes a component on how to serve people with disabilities, which should go a long way toward educating these drivers

**Tight Scheduling** – Calgary Handi-Bus’s manager reports that scheduling is perceived by some operators as being very tight, often to the point where the schedule, as planned, cannot be run in the time frame indicated. **Solution:** Schedulers might try keeping trips unassigned and using the non-dedicated resources more.

**Access to Access Calgary Dispatchers** – All three operators mentioned that it is difficult to get through to the Access Calgary Dispatchers. **Solution:** Access Calgary may wish to consider a combination of additional lines going into dispatch, and the addition of dispatch assistants, noting that the addition of MDTs in 2007 should mitigate some of these issues. Once MDTs are implemented, Access Calgary will be in a position to respond more effectively and will also be able to optimize the mix between dedicated and non-dedicated service for their operation.

## Volusia County, FL

### Votran Gold Service

#### 1.0 Responsible Agency

Votran  
950 Big Tree Road  
South Daytona, FL 32119-8815  
Website: [www.votran.org/gold.htm](http://www.votran.org/gold.htm)

Contact: Lois Bollenback  
Assistant GM, Planning, Customer Service  
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Tel: 386-756-7496 x4112

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#### 2.0 General Service Policies

##### 2.1 Service Type and Eligibility

Votran Gold Service is a door-to-door shared-ride paratransit service. Votran Gold is provided to the following individuals:

- Persons with disabilities who are certified as **ADA paratransit eligible**. ADA trips are limited to trips with origins and destinations within the ¾ mile transit route corridors, where and when fixed route transit is provided.
- Persons with disabilities who qualify under Florida's **Transportation Disadvantaged (TD)** program. TD trips are for persons who reside within Volusia County but outside the ADA paratransit service area (i.e., they aren't eligible for ADA paratransit service).
- Volusia County residents who are Medicaid recipients and who are deemed eligible for paratransit service. Eligible trips are for **Medicaid-sponsored non-emergency medical transportation** only. Some destinations for authorized trips are out-of-county. Some trips also require stretcher service.
- **Senior transportation** sponsored by the Volusia County Council on Aging, as well as **other human-service agency contract transportation**. Sponsored senior transportation currently includes transportation associated with Foster Grandparent programs and nutrition/dining programs.

## 2.2 Service Area

Volusia County is located on Florida’s Atlantic coast and includes the Daytona Beach metropolitan area. The county’s land area has 1103 square miles. In 2000, the county had a population of 443,343. However, this population is unevenly spread, with heavily populated areas between I-95 and the coast, and along I-4 (which connects Daytona Beach with Orlando), with the rest of the county being very rural.

For purposes of Gold Service delivery, Votran has divided the County into four service areas:

- **East Volusia** - includes the municipalities of Ormond Beach, Ormond-by-the-Sea, Holly Hill, Daytona Beach, South Daytona, Port Orange, Daytona Beach Shores, Wilbur-by-the Sea and Ponce Inlet
- **Southeast Volusia** - includes the municipalities of New Smyrna Beach, Edgewater, and Oak Hill.
- **West Volusia** – includes the municipalities of Osteen, Enterprise, Cassadaga, DeLand, Orange City, Debary, Deltona, and DeLeon Springs.
- **Northwest Volusia** – includes the municipalities of Astor, Barberville, Person, and Seville.

## 2.4 Service Days and Times

Service times vary by service area and by trip type. For most trip types, service hours are Monday through Saturday, 6:00 AM through 6:00 PM. In East Volusia, there is also limited service for ADA trips on weekday/Saturday evenings and on Sunday. There is limited service on some holidays and no service on others. Medicaid trips are accommodated 7 days a week, 24 hours per day.

Sometimes Medicaid trips, especially out-of-county trips, have to be made at times that are beyond these core hours; this will primarily happen in for pick-ups on the going trips and drop-offs on return trips.

## 2.5 Fare

For ADA and TD trips, the fare is \$2.00. Fares may be paid in cash or by scrip tickets. Fare tokens, available in quantities of 10, are also accepted.

The fare (co-pay) for Medicaid trips is \$1.00 (one-way). This is an optional fare.

Customers whose trips are sponsored by the Volusia County Council on Aging or other agency sponsor are not required to pay a fare.

## 2.6 Reservations

Customers may call Votran one to 14 days in advance to reserve a trip between 7:00 AM and 6:30 PM on weekdays and from 7:00 AM to 4:00 PM on Saturdays. Requests for both advance trips and subscription trips (standing orders) may be placed. Same-day trips requests may also be placed on a space available basis.

## 2.6 On Time Policy

The vehicle is on time if it arrives early enough to deliver the passenger to their destination by the prescribed appointment time and no more than one hour before the appointment time (two hours for cross county trips).

## 2.7 Cancellations and No-Shows

Cancellations must be called at least 60 minutes before the requested pick-up time. Later cancellations, whether called-in or cancelled at the door, are equivalent to a chargeable no-show. If there is a no-show on the “going” leg of a round trip, the customer is still expected for the return segment and will be charged for two no-shows if he/she does not specifically cancel the return trip. Customers with more than 3 no-shows and/or 6 same-day cancels in a rolling 90-day period are subject to suspension of eligibility.

## 2.8 Trip Confirmations and Where’s My Ride? Calls

On the day of the trip, customers can call Votran’s dispatch office anytime after 4 am to inquire whether their trips will be served by a Votran-operated vehicle, a contractor-operated vehicle, or a taxi.

Where’s my ride? calls are always placed to Votran’s dispatch staff. If the trip involves a contractor or taxi provider, the dispatcher then calls the contractor or taxi dispatcher to determine the status of the assigned vehicle while the customer is placed on hold.

## 3.0 General Service Design, Service Mix, Dedicated Run Structure, Scheduling

### 3.1 General Service Design and Service Mix

Votran Gold consists of three components: (1) a dedicated fleet operated by Votran; (2) a set of eight contractors operating non-dedicated vehicles; and

(3) two taxi companies. Overall, the service mix between dedicated and non-dedicated service was 63%/37% in FY 2005. In order to improve cost efficiency, Votran is in the process of modifying this split so that it is closer to half and half. For example, in June 2005, Votran served 51.6% of the trips, while the contractors and taxi companies served 48.4% of the trips.

### 3.2 Votran Dedicated Vehicle Run Structure

Votran divides its Gold Fleet into two sets of runs, Eastside and Westside, based on the areas served and the garage. The Eastside fleet is based at the South Daytona garage. The Westside fleet is based in Deltona at a facility shared with Volusia County Schools.

On weekdays, Votran operates between 32 and 34 runs, depending on the day of the week (32 runs are operated on Mondays and 34 on Tuesdays and Fridays). Votran operates between 22 and 23 runs on the Eastside, and between 10 and 11 runs on the Westside. On Saturdays, Votran operates 14 runs – 12 on the Eastside and 2 on the Westside. All but a couple runs are straight runs. All runs are either 8 hours or 10 hours in length. There are no set, scheduled breaks in the schedule, although it is estimated that there is 30-35 minutes of non-revenue time.

On weekdays, the runs have a staggered start. For example, on Mondays, the start time distribution ranges from 5 AM to 10 AM, with half (16 of the 32 morning runs) starting between 6 and 7. Votran has a Gold Service fleet of 44 vehicles. With a peak pullout of 34 runs, that would equate to spare ratio of 23%.

The Votran vehicles are all 22 to 25 foot cutaways. The 22-foot cutaways can seat 14 ambulatory passengers with no wheelchairs. Each wheelchair takes up roughly 4 seats. Some of the vehicles can hold up to 4 wheelchairs. The 25-foot cutaways can seat 20 ambulatory passengers with no wheelchairs. Each wheelchair takes up roughly 4 seats. Some of the vehicles can hold up to 7 wheelchairs (with no ambulatory seats remaining).

### 3.3 Non-Dedicated Contractor Resources

Votran currently has eight carriers who contract with Votran to provide service at the rates of \$14.26 per trip for ambulatory trips, \$22.52 per trip for wheelchair trips, \$59.23 per stretcher trips, plus \$1.55 per mile (pick-up to drop-off) for inter-county trips. In FY 05, about 35% of the trips were

served by these carriers (with 2% of the trips being served by taxis). In June 2005, the carriers served 46.3% of the trips.

Votran tries to assign trips to contractors based upon the location / service area, and in such a way that maximizes the cost efficiency of the entire system. Indeed, it is generally true that Votran uses its contractors to serve trips in the outlying regions of the county and trips that would otherwise adversely affect the productivity of the in-house fleet. The following table indicates the general areas served by each of the eight carriers.

<b>Contractor</b>	<b>Facility</b>	<b>Service Area</b>
Med One Shuttle	Ormond Beach	Northeast and Northwest
Trans Med	Daytona Beach	Northeast Volusia
Transportation Services	New Smyrna Beach	Southeast Volusia
Florida Glider	Deland	West Volusia
Little Wagon	Debary	Southwest Volusia
Medi Quick	Debary	Southwest Volusia
All Volusia Transportation	Deltona	Southwest Volusia
AJ Transportation	Orlando	Southwest Volusia

There is actually a ninth carrier, Flagler County Public Transportation, which is the CTC and operator of the coordinated paratransit system in neighboring Flagler County. FCPT will serve inter-county transfers heading north from Volusia County.

With its network of carriers supplementing the in-house fleet at common rates, Votran moves trip volumes among the carriers based on service performance. Generally, if a carrier does well, it will get a higher share of the trips sent to the contractors; if it does not perform well, it will get less of share. Often, this works out well. For example, there are some documented cases where some carriers have performed better at a lower volume.

Thus, the number of runs that each contractor uses for Gold service is rather fluid. The number of daily runs and vehicles available per carrier in June 2005 are as follows:

<b>Operations Contractors</b>	<b>Weekday Runs</b>	<b>Vehicles Available</b>
AJ Special Transportation	3	4
All Volusia Transportation	1	1
Florida Glider	2	2
Little Wagon	7	7
Med One Shuttle	9	9

Operations Contractors	Weekday Runs	Vehicles Available
Medi-Quick	2	2
Trans-Med	6	8
Transportation Services	7	8
<b>Total</b>	<b>37</b>	<b>41</b>

Note that these runs are non-dedicated in the sense that the carriers may chose to run the manifests as delivered (and some do), while filling gaps in the manifest with non-Votran work, e.g., from hospitals, insurance companies, and private pay customers (and most do), or even mixing Votran and non-Votran trips as long as it does not compromise the on-time performance of the Votran work. In addition, all carriers are “allowed” to disassemble the manifests, and assign these trips to their vehicles as they see fit; indeed, Votran staff has suggested that they often schedule trips to the contractor runs assuming that this happens. (However, we did interview one carrier who has been instructed not to disassemble the manifests and to run the manifests as is, despite the fact that the schedule was developed with disassembly in mind.)

To bolster the accessibility of the contractor fleets, Votran has offered vehicles that are being retired from the Votran Gold fleet to some of the contractors. To date, three accessible vehicles have been provided to contractors, in a lease-to-own program.

### 3.4 Taxi Resources

Votran also has purchase orders with two taxi companies, Southern Komfort Taxi and Yellow Cab / AAA Metro, both based in Daytona Beach. Between the two, these taxi companies get assigned about 30 ambulatory trips per weekday. These include ADA, TD, Medicaid, and senior/agency trips. These taxi companies are utilized to accommodate peak overflow trips, provide back-up service (in case a vehicle operated by Votran or one of the contractors is running late, has broken down, or is involved in an accident), or to serve a trip that adversely affects the productivity of the Votran fleet or cannot fit onto a contractor run.

Southern Komfort typically gets most of these trips. In June, 280 (57%) of the 490 Votran Gold service trips served with taxis were served by Southern Komfort. The other 210 taxi trips were served by Yellow Cab / AAA Metro. Note that each of these taxi companies has additional resources that can be utilized by Votran. For example, Southern Komfort typically utilizes 12

taxis for Votran Gold but has a fleet of 14 taxis, while Yellow / AA Metro generally uses about 10 taxis for Votran Gold service work but has a total of 62 taxis.

Also note that Votran and the two taxi companies are currently planning to introduce two leased accessible taxis into the system. These will be two accessible minivans purchased by Votran and leased to the taxi companies. This will give the schedulers and dispatchers more flexibility, and it will provide the community with additional accessible transportation options when these vehicles are not be used for Votran Gold.

### **3.5 Reserving / Scheduling / Assigning Trips**

Votran Gold staff performs the client registration, reservations and scheduling functions, as well as the dispatching function for its own fleet. Trapeze PASS, installed in 2003 and replacing Mobility Master, is used for these functions. Trapeze PASS' automated scheduling capabilities are not used while the customer is on the phone; instead, scheduling is handled solely by the scheduling staff at a later time (on the day before the trip date). Booked trips hence are placed into holding runs (organized by time of day) awaiting scheduling.

Because Votran has this non-dedicated component, they are able to purposely overbook by approximately 10%, knowing that most of these trips will be placed into gaps in scheduled runs created by next-day cancellations, with the remainder assigned to non-dedicated providers. This overbooking strategy has a positive effect on the productivity of the dedicated fleet, and on the overall cost-efficiency of the system. Indeed, Votran has estimated that the productivity of the dedicated fleet would be reduced from 2.1 to 1.9 trips per hour if they did not employ this strategy. Overbooking has been employed by Votran since the onset of Votran Gold service.

The first task in the scheduling process is to tackle new subscription trips. These are scheduled one-by-one with the help of Trapeze PASS. Subscription trips represent approximately 50% of the total tips, and are scheduled onto Votran runs, and assigned to contractors and taxis. The second task in the scheduling process is to schedule customer trips that require special attention. These too are scheduled in the same fashion.

The scheduling of advance request trips begins on the day before the trip date. Trips in the holding runs are scheduled one-by-one into gaps created around on the standing orders on both the Votran dedicated fleet and the



contractor runs. Votran has two schedulers: one focuses on the east side of the county, the other the west side. Hence, the east-side scheduler will schedule trips onto Votran’s 300 series runs, as well as onto the east-side runs operated by TransMed and Med One Shuttle, and Transportation Services, while the west-side scheduler tackles the rest of the runs.

Left-over, unscheduled trips are then batched. This is followed up by some manual tweaking of the runs, and the manual insertion of still unassigned trips per the discretion of the schedulers. After this, the trips that are still unassigned are either assigned to a taxi company (noting that all trips sent to the taxi companies must be ambulatory), or are left in a holding run, per the overbooking strategy described above.

Any trip type may be scheduled/assigned to a Votran vehicle, a contractor vehicle, or a taxi company, with the following exceptions: (1) senior trips, sponsored by Volusia County Council of Aging, must be served by a Votran vehicle, and (2) ADA trips cannot be served on taxis (because of equivalency standards), unless the customer specifically chooses this option.

Trapeze is used to schedule trips by Votran, with trips meeting the following parameters:

- Load times:
  - » o Ambulatory trip 4 minutes
  - » o Wheelchair trip 10 minutes
  - » o Stretcher trips 15 minutes
- Unload times:
  - » o Ambulatory trip 2 minutes
  - » o Wheelchair trip 5 minutes
  - » o Stretcher trips 15 minutes
- Pick-up tolerance 0-30 minutes
- Drop-off tolerance 30-0 minutes
- Max hostage time 10 minutes
- Max travel time 60 minutes
- Average speed 21.89 mph
- Distance calculation methodology triangulation

#### 4.0 Service Statistics

##### 4.1 Fleet, Services Supplied, Services Consumed

FY 04 NTD data for Gold Service is presented in the following table.

	<b>Directly Operated</b>	<b>Purchased</b>	<b>Total</b>
Total Vehicles Available	44	45	95
Peak Vehicle Pullout	34	37	75
Average Weekday	34	37	75
Total Vehicle Miles	1,495,774	1,126,535	2,622,309
Average Weekday	5,318	4,266	9,584
Total Revenue Vehicle Miles	1,337,375	1,126,535	2,463,910
Average Weekday	4,765	4,266	9,031
Total Vehicle Hours	101,156	78,671	179,827
Average Weekday	367	337	704
Total Revenue Vehicle Hours	91,407	78,671	170,078
Average Weekday	322	337	659
Ridership	199,605	116,042	315,647
Average Weekday	668	448	1,116
ADA Ridership	80,965	61,184	142,149
Passenger Miles	1,967,370	1,129,818	3,097,188
Average Weekday	7,108	4,274	

#### 4.2 Trips Booked by Trip Type and Ridership Detail by Carrier

The following table presents the trips booked to and served by each carrier and component of the systems for June 2005.

Ridership Detail by Carrier – June 2005

	Scheduled		AMB	WC	Stretcher	Escort	Taken	
<b>Dedicated</b>								
Votran	15,887	53.5%	10,983	4,904	0	2,757	14,105	51.6%
<b>Non-Dedicated Contractors</b>								
Med 1 Shuttle	3,989	13.4%	2,109	1,714	166	919	3,922	14.4%
Tran. Services	2,671	9.0%	1,576	1,091	4	638	2,385	8.7%
Trans-Med	2,102	7.1%	1,605	497	0	467	1,822	6.7%
Little Wagon	1,991	6.7%	1,153	838	0	478	1,785	6.5%
AJ Special Tr	1,444	4.9%	1,162	282	0	250	1,309	4.8%
Florida Glider	601	2.0%	524	77	0	72	535	2.0%
All Volusia	595	2.0%	375	220	0	159	491	1.8%
Medi Quick	439	1.5%	299	140	0	70	405	1.5%
<b>Subtotal</b>	<b>13,832</b>	<b>46.5%</b>	<b>8,803</b>	<b>4,859</b>	<b>170</b>	<b>3,053</b>	<b>12,654</b>	<b>46.3%</b>
			63.6%	35.1%	1.2%			
<b>Non-Dedicated Taxis</b>								
Southern Komfort							280	1.0%
Yellow Cab							210	0.8%
<b>Subtotal</b>							<b>490</b>	<b>1.8%</b>
<b>Others</b>								
<b>Subtotal</b>							<b>60</b>	<b>0.2%</b>
<b>Total</b>	<b>29,713</b>						<b>27,309</b>	<b>100.0%</b>

Trips by Trip Type

ADA	14,313	52%
Medicaid	7,400	27%
Agency/Medwaiver	2,981	11%
TD	2,615	10%
<b>Total</b>	<b>27,309</b>	

## 5.0 Costs

The following table presents FY 04 costs for Votran Gold service. Note that some of Votran's costs have been apportioned between in-house services and contracted/purchased services.

	Dedicated	Non-Dedicated	Total
<b>Votran Costs</b>			
Administration	\$361,786	\$211,412	\$573,198
Reservations	\$146,126	66,372	\$212,498
Scheduling	\$52,237	\$23,835	\$76,072
Dispatch	\$93,213		\$93,213
Operations	\$2,028,156		\$2,028,156
Road Supervision	\$78,782		\$78,782
Maintenance	\$368,558		\$368,558
Subtotal	\$3,128,858	\$301,619	\$3,430,477
Contractor Service	\$2,264,005	\$2,264,005	
Taxi Service	\$ 89,481	\$ 89,481	
<b>Total</b>	<b>\$3,128,858</b>	<b>\$2,655,105</b>	<b>\$5,783,963</b>

The FY 2004 hourly wages for Votran Gold Service operators varied from \$8.13 for 0-12 months of service to \$11.60 for over 61 months of service. These wages went up about 4% for FY 2005. Fringe benefits for full time operators are estimated at about 30%

Florida Chapter 1490 regulations stipulate that operators may work up to a 12 hour work shift without a break (which may include 4 hours of non-driving) with the next 8 hours off, and work a maximum of 72 hours a week.

As noted earlier, Votran staff undertook an analysis that concluded that the current productivity of 2.1 trips per hour would decrease to 1.4 trips per hour with an all dedicated fleet, also noting that the current fleet would have to be enlarged. As a result it was estimated that the unit cost of ambulatory trips that are currently served by the contractors would increase from \$14.26 per trip to approximately \$21 per trip, while the unit cost of wheelchair trips currently served by the contractors would increase from \$22.52 per trip to about \$27.00 per trip.

## 6.0 Background / History / Goals

In 1994, Votran took over the role of County Transportation Coordinator for Volusia County, replacing the Volusia County Council on Aging. Four types

of trips were being served in the coordinated system: ADA trips, TD trips, Medicaid NEMT trips, and senior trips. Collectively, they totaled between 800 and 900 trips per weekday. While Votran centralized the reservations, scheduling, and administrative functions for this coordinated program, Votran decided to contract with operations carriers to serve the 500-600 Medicaid weekday trips primarily because Votran did not have enough vehicles to carry all these trips. Two Medicaid transportation vendors carriers contracted with Votran to serve these trips: Medieval and Non-Emergency Transportation (NET). These vendors were paid a rate structure that included a base rate (per trip) plus a mileage rate.

In 1995, Votran increased the in-house fleet, and made a decision to combine all trips into one set of trips. With the in-house fleet, Votran could handle approximately 65% of the 900 weekday trips. The remaining trips were dispersed among the two carriers. In addition, Votran established its first taxi purchase order with East Coast Cab, which was used for peak overflow and back-up.

In 1996, Votran increased the number of contractors to three, not only to stimulate competition but also to protect themselves against service delivery problems should one of the companies default. These three companies included NET, Medical Shuttle, and Trans-Med. Three year contracts were signed with each of the three. The payment structure was changed to a flat per trip rate, to ease administration and circumvent fraudulent reporting of trip mileage. By 1999, ridership on the system had grown to 1100 trips per weekday. Also, during this time frame, there was a decision to use the TD funds for trips outside the ADA service area.

In 2000, the vendor base was increased to 5 contractors, noting that Votran was still maintaining a service mix of 65% dedicated and 35% non-dedicated. New three-year contracts were signed. Notable changes in 2000 included the policy decision of Medicaid to no longer fund trips to nutrition programs and workshop trips that could be grouped, which reduced the in-house productivity of the dedicated fleet from 2.4 to 2.1 trips per hour.

In 2003, purchase orders were established with Southern Komfort and Yellow Cab. That same year, Votran installed Trapeze PASS.

In 2004, two additional providers were added to the mix, bringing the total number of contractors to eight. This was done to further stimulate com-

petition, and to accommodate the additional demand, which had grown to 1400 trips per weekday.

Thus, the evolution of the Votran service mix was largely based on two factors. Initially, contractors were used to supplement the in-house fleet, which could not accommodate all the trips that fell under the CTC's responsibilities. Use of the contractors was continued because Votran found that it was cost effective to do so. Not only did it provide a way to more cost efficiently cover the peak overflow trips, the fringe trips, the cross-county trips, the inter-county trips, and the trips during low-demand times, but the use of non-dedicated service providers (and the addition of more providers) also provided a way to keep up with the growing demand.

## **7.0 Highlights**

### **7.1 Cost Reduction**

The current productivity of the dedicated fleet is approximately 2.1 trips per hour. Votran staff undertook an analysis that concluded that this productivity would decrease to 1.4 trips per hour with an all dedicated fleet, also noting that the current fleet would have to be enlarged. As a result it was estimated that the unit cost of ambulatory trips that are currently served by the contractors would increase from \$14.26 per trip to approximately \$21 per trip, while the unit cost of wheelchair trips currently served by the contractors would increase from \$22.52 per trip to about \$27.00 per trip.

### **7.2 Customer Satisfaction**

Two riders were interviewed during the site visits. These two riders, however, also represent numerous other riders. One is a Rehabilitation Supervisor for the Florida Department of Education's Division of Blind Services (and is herself blind). The second rider sits on the Transportation Disadvantaged Local Coordinating Board (TDLCB), which is a subcommittee of the Volusia County MPO. He is also the president of Handicapped Adults of Volusia County (HAVOC). Both riders not only drew from their own experiences riding Votran Gold service, but also could speak of the experiences of their clients and constituents.

There was a clear and rather interesting pattern. Of the three components of the system, in-house, contractor, and taxi, the riders indicated that Votran's in-house service was clearly the best in terms of customer satisfaction. Interestingly, taxi service was not that far behind, recognizing that currently

this consists of ambulatory service only. Surprisingly, there was a significant drop-off in the customer satisfaction of the contracted service. According to the informal poll taken by the two rider representatives, there was no one carrier that was clearly superior or inferior. One of the reasons that this is surprising is that Votran has worked with the contractors on equivalency: e.g., drivers receive the same training, and are subject to the same drug and alcohol testing, while vehicles must be maintained to the same standards. Meanwhile, the training received by taxi drivers does not compare. And yet, the taxi service is considered to be of higher quality than the contractor service.

### 7.3 Contractor Service Quality Issues

As noted above and as recognized by Votran, the quality of service as provided by the Contractors is not at the same level as the in-house service. There would appear to be several reasons for this. (1) The wage rate of Votran Gold drivers is higher than most of the contractors; with higher rates, Votran has a better pick of drivers. Furthermore, there is less attrition than with the contractor. Thus, the Votran drivers as a group have more experience. (2) Votran controls the particular trips that wind up on its dedicated fleet. For the most part, these trips have been selected to increase productivity, and are thus generally shorter and bunched in the same area. Thus, there is less chance of getting behind schedule, and where this does happen, Votran has the contractors and the taxis cab to bail them out. (3) Conversely, the manifests that get sent to the carriers include tightly-scheduled trips that often are not conducive to efficient tours or are tours that cannot be run. It is not uncommon for contractors to be late as a result. (4) The vehicles in the contractor fleet are generally older than the vehicles in Votran's dedicated fleet. Remember that some of the better vehicles in the contractors' fleets are those leased from Votran after Votran has retired them for having exceeded their useful lives. Solution: Votran is upgrading its efforts to monitor contract compliance; indeed, Votran recently hired for a new contractor compliance officer position. This person will focus on ensuring that contractor drivers are properly trained and vehicles are properly maintained. Votran is also changing its philosophy with respect to the carriers. For a while now, there has been an adversarial relationship with many of the contractors. This is evolving into more of a partnership.

#### 7.4 Lack of Accessible Taxi Service

The use of taxis has been a great boon for Votran. They are used to serve the peak overflow trips, the trips that do not fit well into any of the runs, and the trips that get sent back from the contractors, not to mention the trips that get shifted off from Votran vehicles running late, and the overbooked trips from the holding runs that do not get scheduled into gaps created by late cancellations. However, the one shortcoming is that the taxis can only accommodate ambulatory passengers. Solution: Votran is working with the two taxi companies to introduce accessible minivans to their taxi fleets by the end of 2005. This should greatly enhance the dispatching flexibility of Votran, and provide additional accessibility resources to the community.



## Indiana, Pennsylvania

### IndiGO

#### 1.0 Responsible Agency

IndiGO  
1657 Saltsburg Avenue  
P.O. Box 869  
Indiana, PA 15701

Web site: [www.IndiGObus.com](http://www.IndiGObus.com)

Contact: Gerald L. Blair, Executive Director, IndiGO

Tel: 724-465-2140  
800-442-6928

Fax: 724-465-1933

E-mail: [gblair@indigobus.com](mailto:gblair@indigobus.com)

#### 2.0 General Service Policies

##### 2.1 Service Type and Eligibility

IndiGO is a public transportation agency that provides a family of transportation services designed to meet the mobility needs of the residents of Indiana County. In addition to a small fixed route system (operating 7 routes) and a fixed route/route deviation service, there are several paratransit and shared ride options for residents with special needs. The ADA Complementary Paratransit service is a demand responsive service for residents eligible under federal ADA criteria, of which there were 78 persons registered in 2005. Approximately 8 one-way ADA trips are scheduled in the average week. These trips are scheduled in with the Pennsylvania Shared-Ride Lottery Program, funded by the state lottery and available to persons 65 years of age or older for trips to Aging Services' Social Centers, shopping centers, and medical appointments. IndiGO also provides Job Access and Reverse Commute (JARC) transportation services on dedicated vehicles.

There is also a Medical Assistance Transportation (MATP) operated separately from the other IndiGO services; this non-emergency medical transportation service is provided under contract with the Indiana County Department of Human Services to residents with valid Pennsylvania Medical Assistance (MA) Cards.

## **2.2 Service Area**

Indiana County is located in western Pennsylvania approximately 46 miles northeast of Pittsburgh and 36 miles west of Altoona. The County has a land area of 829.27 square miles with a 2000 population of 89,605. The City of Indiana has a land area of 1.76 square miles and a non-student population of 14,895. The City is the home of Indiana University of Pennsylvania with a 2003 undergraduate enrollment of 13,253.

## **2.3 Service Days and Times**

Service days and times vary by service type. The core public transit fixed route service operates from 7:30 AM to 6:25 PM, evening service operates until 10:00 PM and late night service operates until 2:40 AM. The majority of service operates Monday thru Saturday with a limited hour Sunday Shuttle service. The service hours, days and seasonal variation are reflective of the transportation needs of University students. The ADA complementary paratransit service operates during the same days and hours as the fixed route service. JARC service is available 24 hours a day every day of the week, but thus far requests for service have been very limited. The Medical Assistance trips can also be requested at anytime, but usually are requested between 4:00 AM and 8:00 PM on weekdays and Saturdays. The Shared Ride service usually operates between 6:00 AM and 8:00 PM on weekdays with the center trips operating between 7:00 AM and 4:00 PM.

## **2.4 Fares**

The fare for the Shared Ride program varies depending on the extent of Aging Services, Inc. participation. Members of the general public that do not meet the age requirements must pay the total fare for the service area. Fares for demand response service range from \$6.30 to \$10.85 and trips to Pittsburgh cost \$40.00 for the general public and \$12.00 for seniors. If eligible for Shared Ride reimbursement, the 85 percent of the cost will be paid for by the 203 program with the remaining 15 percent paid either by the passenger or Aging Services. Passengers pay \$0.15 of the fare on Aging Services, Inc. sponsored trips.

The MATP service is provided free of cost to the passenger.

## **2.5 Reservations**

Customers for the MATP must call in at least 48 hours in advance to make a trip reservation. Service providers call back passengers the day before

the trip with schedule information and to reconfirm trips. Reservations are accepted with less notice if the trip is considered urgent. Reservations can not be made more than 30 days in advance.

The ADA Complementary Paratransit service accepts trips requests up to the close of business the day before the trip is to be made. Standing orders are accepted, but must be reconfirmed periodically. Shared Ride service is also scheduled in advance using Paraplan scheduling software. Aging Services provides the trip requests for the standing order for nutrition sites.

## 2.6 On Time Policy

Trips are scheduled by appointment time. To be considered on time, the passenger must be dropped off at his/her appointment location within 30 minutes prior to and 5 minutes after the appointment time. The Shared Ride program defined on-time to mean that customers must be picked up and dropped off within  $\pm 20$  minutes of the scheduled times. Additionally, no passenger is allowed to spend more than 60 minutes on a vehicle unless the travel time is that great. Drivers are allowed to wait up to ten minutes for passengers at their pick-up locations.

## 2.7 Cancellations and No-Shows

If a trip is cancelled the night before or day of the trip and before the driver is dispatched, the trip is considered a cancellation. However, anytime the driver has been dispatched and the passenger is not at the pick-up location, the trip will be considered a no-show. The vendors estimated that approximately 5 percent of the trips are cancelled and up to 10 percent are no-shows. In 2004, 652 trips were cancelled and 891 no-shows were reported.

No shows on the Shared Ride program are reported to Aging Services. On the MATP program, two no shows in a Month or three cancellations in a month will result in DHS sanctions.

The service providers provide all trips that are requested under the contract. The only trip denials that occur are when a request outside of the contract parameters is made. Occasionally, a contractor refuses a trip. In this case, the other contractors will be asked to pick up the trip. This process has worked well.

## 2.8 Trip Confirmation and Where's My Ride? Calls

The service providers call the passengers back the day or evening before the trip. The call is to confirm the trip and inform the passenger of the

scheduled pick-up time. The system does not have an official “Where’s My Ride?” procedure. However, if a passenger is not picked-up the contractor will be notified to determine if the pick-up is in fact late and to remedy the solution. In most cases the contractor will dispatch another vehicle to pick up the passenger. If the service provider cannot get the person picked up, another contractor will be called to see when the individual can be picked up.

### 3.0 General Service Design, Service Mix, Dedicated Run Structure, Scheduling

#### 3.1 General Service Design and Service Mix

The IndiGO service consists of three types of services: (1) IndiGO directly operated dedicated fleet; (2) contractor operated dedicated fleets; and (3) contractor operated non-dedicated fleets. Dedicated fleets are used to operate the public transit service, ADA complementary paratransit service and the majority of the Shared Ride program service. The Pittsburgh North Air Ride (PNAR) uses non-dedicated vehicles to transport Shared Ride passengers to Pittsburgh. The non-dedicated fleets are used to provide the MATP service.

Type of Service 2003/2004	Public Transit Fixed Route County-wide JARC	ADA Complementa- ry Paratransit Service	Shared Ride Lottery (203) Program	Medical Assistance Transportation Program
Contracted Out (%)	0%	99%	71%	90%
Non-Dedicated Vehicles (%)	0%	0%	0.2%	90%

For demand responsive service, the service mix is 69% dedicated and 31% non-dedicated.

#### 3.2 IndiGO Dedicated Vehicle Run Structure

IndiGO directly operates the fixed route, county-wide route deviation, JARC service and a small portion of the Shared Ride service. The fixed route service consists of seven routes.

The County-wide fixed route/route deviation service operates on different days of the week for different locations. The Blairsville/Indiana fixed route operates on Monday thru Saturday from 6:22 AM to 10:07 AM and from 12:30 PM to 4:40 PM. The Indiana/Saltsburg fixed route operates two days

per week. The East and West Wheatfield and the Plumville route deviation routes each operate one day per week.

The IndiGO fleet consists of eleven fixed route vehicles, five demand response vehicles and two vehicles that can be use in either service. The fixed route service has a peak requirement of eleven; the demand response service has a peak requirement of three, leaving four vehicles as spares. IndiGO also operates two Chance trolley look-alikes for special services.

In the past, the Shared Ride program was provided through a contract with a service provider that used non-dedicated vehicles. In an effort to control the quality of service, IndiGO decided to lease six vehicles and one spare on a lease arrangement to the Contractor. The Shared Ride service area is divided into six different service areas, each of which is defined around a senior center. The major source of trips in the Rossiter/Mahoning Hills service area is the Mahoning Hills Senior Center; in the Two Lick/Clymer service area the major source of trips is the Two Lick Senior Center; and, in the Armagh service area, the Armagh Senior Center is the primary source of trips. Similarly, the Blairsville Senior Center and the Saltsburg Senior Center are the primary trip generators in the Blairsville and Saltsburg service areas, respectively. The Indiana Boro/White Township service area includes mostly medical trips provided by mini-vans. IndiGO paratransit provides the service to the Mahoning Senior Center, Twolick Senior Center, and shoppers shuttles. The subcontractors provide the remainder of the service.

Stewart Bus Line, Inc. was the successful proposer and is currently under contract to provide the Shared Ride service through December 31, 2005. The current rate is \$1.116 per mile with wait time charged at \$13.50 per hour plus a fuel surcharge. The fuel surcharge is calculated using a formula based on average fuel prices for each month. If the cost of fuel in \$3.00, the fuel surcharge is \$0.14 per mile; if the cost is \$3.50 the surcharge is \$0.19. These vehicles are dedicated to the operation of the Shared Ride program and are leased from IndiGO to SBL for their exclusive use with the Shared Ride program. Occasionally, an ADA complementary paratransit passenger or MATP passenger is transported on the Shared Ride program, but no other non-IndiGO trips are transported on these vehicles.

### 3.3 Non-Dedicated Contractor Resources

IndiGO currently has four private for-profit contractors that provide approximately 90 percent of the non-emergency medical transportation under

MATP. These carriers are Stewart Bus Line, Inc. (SBL), Pittsburgh North Air-Ride (PNAR), Citizen's Ambulance Service and Med-Van Transport. PNAR provides a small number of Shared Ride trips to Pittsburgh. The SBL division that operates the MATP service is separate and distinct from the division that operates the Shared Ride and ADA Complementary Paratransit services.

Each of the contractors responded to a Request for Proposals (RFP) that defined the basic minimum requirements to be a service provider. The RFP defined the scope of services, operating hours, scheduling and dispatching procedures, service standards, driver requirements, reporting requirements, vehicle requirements, insurance requirements, contractor requirements, service area, type of service to be provided, and regulatory requirements. The contractors submit a cost quote on a per mile basis and include an additional charge for layover time. In general, the contractors are provided trips that are closest in proximity to the location of their base facility. Contractors are not given guarantees. The quantity of trips that each contractor is given is related to the service cost, geographic location and the quality of service provided.

PNAR provided the MATP service in 2005 for \$1.03 per mile for a regular van and \$1.30 per mile for a wheelchair accessible van. The layover rate is \$13.00 per hour charge in 15 minute increments. PNAR receives approximately 40 percent of the IndiGO MATP contract. PNAR operates primarily in the southern portion of the county.

SBL's 2005 rate is \$0.968 per mile for a regular van and \$1.07 per mile for a wheelchair accessible van. The layover rate is \$13.25 per hour. SBL receives approximately 40 percent of the MATP contract. SBL serves primarily the north central and north western portion of the county.

Citizen's Ambulance Service 2005 rate to provide the MA service is \$1.00 per mile for van service with a minimum round trip charge of \$40.00 for all trip 40 miles or less. The layover rate is \$14.00 per hour. Citizen's receives approximately 17 percent of the total MATP contract. Citizen's operates primarily in the western and central portions of the county.

Med-Van is a new contractor that was added to the service in 2005. Med-Van charges \$1.00 per mile plus a flat fee of \$20.00 for all pick-ups. The layover charge is \$13.50 per hour. Med-Van operates primarily in the north east portion of the County.

The per mile fuel surcharge is applied equally to each of the contractor's.

Each of these carriers is a full service transportation provider serving the transportation needs of other customers in addition to the service provided for IndiGO. Carriers provide trips for social service agencies, school districts, nursing homes, camps, emergency medical transportation, etc. IndiGO does not require that the vehicles used to provide the IndiGO MATP service be dedicated solely to the service. The contractors have the ability to use these vehicles for other contracts and trip purposes outside of IndiGO. However, the demand for trips outside of the IndiGO service is limited. The volume of trips generated by other agencies, social service programs, or individuals is small and the demand is spread amongst the private for profit companies that contract with IndiGO resulting in limited market share for any one service provider. The larger contractors, however, operate services in other counties enabling the parent companies to benefit from the economies of scale and only rely on the Indiana services for one part of their businesses. One of the private operators also segregates its services into operational divisions that operate independently from one another.

The contractor's price their service based on the cost of the service and what the market will bear in the competitive county environment. Based on interviews with two of the contractors (e.g., SBL and Med-Van), the ability to use non-dedicated vehicles to provide the IndiGO service does not factor into their pricing decisions. The IndiGO contracts make up the base of the contractors' Indiana County service with other trips filled in as possible.

### 3.4 Reserving/Scheduling /Assigning Trips

IndiGO provides a dispatch/scheduler specifically for the MATP program. All trip requests are made directly to the MATP dispatch/scheduler who logs all trips requests into the Horizon software package that is provided by DHS. The software determines eligibility and prepares invoices and billing reports.

Trip requests are accepted 48 hours in advance until 2:00 PM on weekdays. The software determines eligibility and with the assistance of the dispatcher creates master logs of trips requests that are faxed to the service contractors by 4:00 PM each day. The contractors re-enter the trips requests into their logs (some are manual, some are automated) and they build their own schedules from the master logs provided by IndiGO. The contractors make their own driver manifests and call back passengers the day before the trip

to confirm the pick-up and drop-off times. Each contractor schedules and dispatches trips differently. Travel times, load times, unload time, speed, pick-up and drop-off times are determined by the contractors' schedulers and are based on actual experience with a limited client base and geography. Trip requests made with less than 48 hours notice are assigned to contractors if they are considered urgent. Contractors are contacted by telephone to determine if the trip can be fit into their schedule. Once trips are completed, copies of the schedules are returned to IndiGO for oversight purposes. Radio transmissions are also monitored.

The ADA Complementary Paratransit service, Job Access and Shared Ride services are scheduled in advance by IndiGO staff using Paraplan scheduling software. IndiGO performs reservation, scheduling and dispatch functions for its own fleet and provides trip logs to the contractors for trips they are to provide. The trip logs are provided to the contractors by 4:00 PM the day before the trips are to be provided. Standing order and other trips scheduled in advance may be provided to the contractor a week or more in advance. IndiGO does not overbook trips. Each individual service providers' scheduler makes up their own respective driver manifests using travel times, wait times, load times, unload times based on area knowledge and previous experience to determine pick-up and drop-off times.

IndiGO provides the schedules to the respective contractors—Shared Rides and ADA to Stewarts Bus Line (Shared Ride division), Shared Ride and MATP to Pittsburgh North Air Ride, and MATP to Stewarts (MATP division), Citizens, and Med-Van.

## **4.0 Service Statistics**

### **4.1 Fleet, Service Supplied, Services Consumed**

The following tables provide information on the service supplied and service consumed by the IndiGO services. Service supplied is expressed in terms of total vehicle miles and total vehicle hours. If available, information was also provided on revenue miles and hours. Service consumed is expressed in terms of passenger trips, and total passenger miles. Additional data regarding trip characteristics (e.g., % of passengers requiring wheelchair lifts, escorts, shared rides) was also provided if available.

During 2004 the combined Shared Ride and ADA service operated 1,052,515 vehicle miles and carried 76,638 total passenger trips. A sample week of



data is summarized below. The average trip length was 8.1 miles and the average speed was 21.5 miles per hour.

**Shared Ride Program and ADA Service Statistics  
(Sample Week of 4/2/05-4/9/05)**

	Total Vehicle Miles	Total Rev. Miles	Total Pay Hours	Total Rev. Hours	Total Pass. Miles	Total Pass. Trips	% Wheel Chair
Subcontractor Shared Ride	3102	1509	159:17	67:32	3815	489	0.006
Subcontractor ADA	731	356	47:31	15:40	12	8	0.000
IndiGO Paratransit	1248	749	81:35	37:56	2596	292	0.000
<b>Total</b>	<b>5081</b>	<b>2614</b>	<b>288:40</b>	<b>121:20</b>	<b>6423</b>	<b>789</b>	<b>0.0005</b>

Approximately 63 percent of the Shared Ride/ADA service is subcontracted out and 99.98 percent of the trips are provided on dedicated vehicles. Only 0.02 percent of the service is provided by non-dedicated vehicles operated by Pittsburgh North Air Ride.

The Medical Assistance Transportation Program is provided by IndiGO and four subcontractors. The subcontractors provide 93 percent of the trips using non-dedicated vehicles. The average trip cost varies significantly between carriers reflecting different pricing structures, geographic service areas, and trip characteristics. Also, the service providers vary in their ability to provide shared rides and to curtail no-shows. IndiGO' low average trip cost is attributed to the fact that they only provide the low cost, low mileage, short duration trips within the City of Indiana. The subcontractors provide the high mileage, long duration trips within the County.

### Medical Assistance Transportation Program Service Statistics (March 2005)

	Undup Pass.	Total Pass. Trips	% of Total Trips	Total Escorts	Total Shared Rides	# of No-Shows	# of Cancelled	Total Vehicle Miles	% WC	Avg. Trip Cost
<b>DEDICATED</b>										
IndiGO	29	139	7.0	2	0	3	4	-	-	\$8.04
<b>NON-DEDICATED</b>										
Citizens	53	173	8.7	13	6	10	7	-	-	\$53.01
Stewart Bus Line	118	690	34.9	22	62	26	29	21,838	12.8	\$35.68
Pittsburgh North Air Ride	89	673	34.0	19	168	21	23	15,401		\$30.24
Med-Van	83	303	15.3	25	4	21	9	11,246	3.7	\$44.83
<b>Total</b>	<b>344</b>	<b>1978</b>	<b>99.9</b>	<b>81</b>	<b>240</b>	<b>81</b>	<b>72</b>	-	-	<b>\$34.80</b>

#### 4.2 Trips Booked by Trip Type and Ridership Detail by Carrier

A detail of the total trips provided by service type is provided below. The fixed route portion of the public transit service makes up the majority of trips followed by the Shared Ride program and MATP. The ADA service makes up the smallest portion of the IndiGO service.

#### IndiGO Trips By Type of Service (July 2003 – June 2004)

	Trips By Trip Type	Percent of Trips
<b>Public Transit—Directly Operated</b>		
☐ Fixed Route	212,046	73%
☐ County Service	15,880	5.5%
Total	227,926	79.1%
<b>Public Transit—Subcontracted</b>		
☐ ADA Shared Ride	406	0.14%
☐ IndiGO	11,500	4.0%
☐ SBL	27,575	9.6%
☐ PNAR	74	0.03%
Total	39,149	13.9%
<b>MATP</b>		
☐ IndiGO	2,074	0.72%
☐ Citizens	4,265	1.5%
☐ SBL	7,114	2.5%
☐ PNAR	7,141	2.5%
☐ Med-Van		*
Total	20,594	7.1%
<b>TOTAL</b>	<b>288,075</b>	<b>100%</b>

## 5.0 Costs

The following table presents the FY 2004 budget for the IndiGO service. The first column represents the public transit component of the service and the second column provides the agency sponsored service including the Shared Ride and MATP programs. The public transit column is directly operated, dedicated vehicle service. The second column is also directly operated, dedicated vehicle service except for the Purchase of Service/Subcontractor line item. This line item is contract service that includes both dedicated (Shared Ride and ADA programs) and non-dedicated service (MATP). The expenses associated with the reservations, scheduling, dispatch, and road supervision functions are included in the Transportation Wages/Fringes/Pension line item. The contractor dispatch functions are included in the Purchase of Service line item.

### IndiGO 2004/2005 Budget

	Public Transit Budget	Agency Budget	Total Budget
<b>Equipment &amp; Garage</b>			
☐ Wages/Fringes/Pension	\$82,514	\$153,240	\$235,754
☐ Contract Maintenance	\$3,595	\$6,675	\$10,270
☐ Parts	\$17,804	\$33,064	\$50,868
☐ Other	\$6,188	\$11,492	\$17,680
<b>Transportation</b>			
☐ Wages/Fringes/Pension	\$184,527	\$553,582	\$738,109
☐ Fuel	\$21,365	\$68,565	\$89,930
☐ Tires & Tubes	\$3,210	\$9,250	\$12,460
☐ Consumables	\$5,520	\$9,633	\$15,153
<b>Promotion &amp; Marketing</b>	\$7,377	\$22,113	\$29,490
<b>Insurance &amp; Safety</b>	\$17,630	\$37,101	\$54,731
<b>General Administration</b>			
☐ Wages/Fringes/Pension	\$105,558	\$166,038	\$271,596
☐ Other	\$49,655	\$124,086	\$173,741
<b>Purchase of Service</b>			
☐ Shared Ride	\$170,785		\$170,785
☐ MATP/Other	\$750,000		\$750,000
☐ ADA		\$3,995	\$3,995
Other		5,000	\$5,000
<b>Total</b>	<b>\$1,425,728</b>	<b>\$1,203,834</b>	<b>\$2,629,562</b>

The hourly wages and pay steps for IndiGO operators range from \$6.50 to \$13.15, depending on length of duty. IndiGO wages are highest, averaging \$11.17, with Stewart Bus Line and Pittsburgh North Air Ride averaging \$7.75 and \$7.00 respectively. Work schedules are designed to create as many Monday through Friday, straight eight hour work days or 36 to 40 hour work weeks as possible. Employees are guaranteed a three hour minimum work period. Drivers are provided a five minute layover during each hour of bus operation and a thirty minute paid lunch period is provided for all employees scheduled for a six hour shift. Employees are paid overtime (1 ½ times the employee's regular rate) for any hours worked over 40 in one week.

## **6.0 Background/History/Goals**

IndiGO began as a human services transportation provider in the early 1970's. The agency incorporated in 1979 and provided 1800 rides the first year. Twenty-five years later the service has grown to provide more than 350,000 trips per year. The fixed route service is designed to meet the needs of the community and the faculty, staff and students of Indiana University Pennsylvania (IUP).

The agency is governed by a Board of Directors (7) appointed by the Indiana County Commissioners. The agency employs thirty employees, directly operates twenty vehicles and subcontracts service out to four locally based subcontractors. All IndiGO vehicles are fully accessible to persons with disabilities.

The IndiGO mission statement is as follows:

**"To positively affect the quality of life for all citizens of Indiana County by providing safe, affordable and comfortable transportation services with dignity. Everyone at IndiGO will strive to be sensitive to customer's need and stewards of public resources."**

Guided by innovative and inspired leadership, the agency continues to reinvent itself to gain financial support, create a comprehensive network of services, and to maximize mobility options. The agency philosophy is based on discontent with the status quo and an ongoing quest for continued improvement. IndiGO management recognizes that the mobility needs of area residents are great and that its efforts are just the beginning.

## 7.0 Highlights

### 7.1 Maintaining a Competitive Environment

By contracting with four carriers, IndiGO is afforded the flexibility to shift trips among carriers depending on the capabilities and quality of service of each provider creating an on-going competitive environment. If one carrier cannot perform, IndiGO can move trips to another carrier thus maintaining a fluid, but stable service delivery system. The challenge is to maintain a competitive environment that will keep the costs low and maintain service quality, but will also provide sufficient volumes of trips for each carrier to sustain their ongoing participation in a market with limited demand for service.

Public transit systems that purchase service from small rural private operators often are the sustaining force of a company that would not otherwise be able to exist. By sustaining the company with a stable revenue source companies are often able to serve other agencies and individuals that would not otherwise have service. This relationship is beneficial for the transit system, service provider, purchasing agencies and individuals, as well as the community-at-large. Even though the public transit system may not receive any direct benefit by using subcontractors with non-dedicated vehicles, the intangible benefits to a community are significant.

### 7.2 Customer Satisfaction

IndiGO has conducted a customer service survey on the Shared Ride service in the spring of 2005. Respondents were very pleased with the service and provided positive feedback. Surveys that had been conducted previously were not successful therefore; there was no baseline upon which to compare the 2005 data. However, passengers appear very appreciative of the service and there are few complaints. IndiGO management staff speculated that most people don't make a distinction between the service directly operated by IndiGO and that contracted out and that they do not perceive any difference in quality.

### 7.3 Problems and Solutions

Due to the rural nature of the service area and the relatively small demand for service, IndiGO has not been able to realize any real tangible benefits from contracting with subcontractors that use non-dedicated fleets. Subcontractors are able to benefit from economies or scale attributed to other areas of their businesses. Since IndiGO's subcontractors compete for the

other limited opportunities within the County, no one company has sufficient volume of trips to benefit from the flexibility provided by use of non-dedicated vehicles.

## Haverhill, MA

### Merrimack Valley Regional Transit Authority Special Transportation Services (STS)

#### 1.0 Responsible Agency

Merrimack Valley Regional Transit Authority  
85 Railroad Avenue  
Haverhill, MA 01835

Website: [www.mvrta.com](http://www.mvrta.com)

Contact: Monica Anderson  
Director of Paratransit Operations  
Special Transportation Services

Tel: 978-469-6878

Fax: 978-521-5956

E-mail: [manderson@mvrta.com](mailto:manderson@mvrta.com)

#### 2.0 General Service Policies

##### 2.1 Service Area, Service Types, and Eligibility

The Merrimack Valley Regional Transit Authority (MVRTA) provides fixed route and paratransit service for the residents of the Merrimack Valley northeast of Boston. The MVRTA also has commuter rail service from the Massachusetts Bay Transportation Authority (MBTA) within the region.

The MVRTA service area covers 276 square miles and can be primarily characterized as a small urban/mid-sized urban area with suburban pockets. Service centers on the City of Lawrence and spreads outward from that core. The City of Haverhill is a secondary focus. The service area extends to the north to the New Hampshire border. The highest concentrations of people are in Methuen, Haverhill, and Lawrence. The next highest population densities are in Newburyport, Amesbury, and Andover. The increasing elderly population in the MVRTA region has been identified as requiring new transportation solutions to meet the growing service needs.

Special Transportation Services (STS) offer curb-to-curb ADA paratransit service, non-ADA service to seniors/disabled, general public service along two former fixed route services, general public service/senior service through contracts with five communities, and some business commuter service. The

STS service area covers the same 276 square miles of the overall MVRTA area but the subcontracted service providers, Assist Transportation and the non- dedicated service provider Andover Livery, operate within a much smaller geographic area.

STS paratransit services along with service area and eligibility requirements are outlined below.

Service Name	Service Type	Service Area	Customer Served/ Eligibility
EZ Trans	ADA Complimentary Service	Eight communities served: zone 1 - Andover, North Andover, Lawrence, Methuen; zone 2-Havehill, Merrimac; zone 3-Amesbury, Newburyport  (3/4 mile radius from fixed route bus service)	Registered disabled customers that are not able to take the fixed route service. Service is provided to trips going to/from origins and destinations within ¼ miles of the fixed route.
EZ Trans	Non ADA	Eight communities served: zone 1 - Andover, North Andover, Lawrence, Methuen; zone 2-Havehill, Merrimac; zone 3-Amesbury, Newburyport	Senior service, 60+ years old and ADA eligible passengers
Ring & Ride	Public Transportation (along former fixed routes service routes)	Routes 22 & 42	General Public, no eligibility requirements
Ring & Ride	Public Transportation for select towns through contract	<b>Boxford:</b> Boxford, North Andover, Haverhill, Georgetown, Holy Family Hospital (Methuen), Anna Jacques Hospital (Newburyport), Lawrence General Hospital (Lawrence), Amesbury Dialysis (Amesbury)  <b>Georgetown:</b> Georgetown, Haverhill,  Anna Jacques Hospital (Newburyport), Lawrence General Hospital (Lawrence), Rowley Commuter Rail Station (Rowley)  <b>Groveland:</b> Groveland, Haverhill, Lawrence General Hospital, Newburyport, Amesbury Dialysis  <b>Salisbury:</b> Salisbury, Amesbury, and Newburyport  <b>West Newbury:</b> West Newbury, Amesbury, Newburyport, Groveland, Haverhill, Holy Family Hospital (Methuen), and Haverhill (connection to fixed route service)	General Public/Residents Only: Boxwood, Georgetown, Salisbury, and West Newbury  Senior Service/Residents only: Groveland
Call & Commute Service	Shuttle service for employees of contracting companies.	Current employers served: Wyeth BioPharma & JE Merit Constructors, Inc.	Employer subsidized.



## 2.2 Service Days/Times/Fares

The table below shows the service days, times, and fares for paratransit services. The MVRTA does not operate service on Sundays and the following holidays: New Year’s Day, Martin Luther King Day, President’s Day, Patriot’s Day, Memorial Day, Independence Day, Labor Day, Columbus Day, Veteran’s Day, Thanksgiving Day, and Christmas Day.

With the exception of service through Assist Transportation, service is curb to curb. The Assist Transportation customer was accustomed to door-to-door service prior to the start up of STS so that practice continues.

### Service Days/Hours and Fares

Service Name	Days/Hours of Operation	Fare
EZ Trans – ADA	Monday-Friday: 5:00 AM – 7:40 PM Saturdays: 8:00 AM – 6:00 PM	\$2.00 one way
EZ Trans – Non-ADA	Monday-Friday: 8:00 AM – 5:00 PM (note: the City of Andover pays for extended hours to 10:00 PM for residents of Andover)	\$3:00 to \$9.00 one way depending on zone
Ring & Ride – Routes 22 & 42	Monday-Friday: 6:00 AM – 6:00 PM (Route 42 service also operates on Saturdays: 9:00 AM- 6:00 PM)	\$2.00 one way, ½ fare for seniors, passengers can use/receive bus transfer
Ring & Ride – Boxford	Monday-Friday: 5:00 AM – 7:00 PM; Saturdays: 9:00 AM- 6:00 PM	\$2.00 one way, free for seniors going to the senior center
Ring & Ride – Georgetown	Monday-Friday: 5:00 AM – 7:00 PM; Saturdays: 9:00 AM- 6:00 PM	No charge
Ring & Ride – Groveland	Monday-Friday: 5:00 AM – 7:00 PM; Saturdays: 9:00 AM- 6:00 PM	\$2.00 one way
Ring & Ride – Salisbury	Monday-Friday: 5:00 AM – 7:00 PM; Saturdays: 9:00 AM- 6:00 PM	\$2.00 one way
Ring & Ride – West Newbury	Monday-Friday: 5:00 AM – 7:00 PM; Saturdays: 9:00 AM- 6:00 PM	\$2.00 one way
Call & Commute	Monday-Friday: 6:00 AM – 9:00 AM & 3:00 PM – 6:00 PM	Subsidized employer transportation

### 2.3 Customer Reservations and Registration

To reserve an advanced trip or standing/subscription trip, customers may call STS at minimum 24 hours before their scheduled trip. Same-day trip requests are not accepted. Reservations are accepted for all service by STS reservationists (excluding Assist Transportation) from 8 AM to 4:30 PM, Monday through Friday. Return trips are booked at initial reservation and STC does not process “will calls”. Assist Transportation handles reservations for Methuen residents directly Monday through Friday, 8 AM to 4:30 PM

With the exception of Ring & Ride and Call & Commute service passengers, all other ADA and non-ADA passengers must be certified by STS, with re-certification occurring every three years. The STS office sends a monthly list of registered passengers to Assist Transportation since they are not permitted to transport unregistered passengers. Assist Transportation and Andover Livery only perform ADA and non-ADA trips in specified geographic areas and do not transport Ring & Ride and Call & Commute customers.

### 2.4 On Time Policy/Service Standards

The goal of STS is to be within the pick-up window 90% of the time within a given month. This goal is also passed onto the subcontractors. The maximum length of time for any passenger trips is 60 minutes.

### 2.5 Cancellations and No-Shows

STS’s cancellation and no-show policies were recently updated and are clearly outlined. Patterns of no-shows or cancellations can result in disruption of service (no fare payments are collected). Cancellations are accepted up to one hour prior to the scheduled trip. If a passenger does not arrive outside to the van within the pick-up window, the trip is considered a no-show.

Vendors are only paid for completed trips.

## 3.0 Service Design

### 3.1 General Service Design and Service Mix

While STS service has expanded since its introduction in 2002, especially with Ring & Ride services, the mix between dedicated and non-dedicated service has not changed significantly since that time: 53,143 one-way passenger trips were provided in FY 2005 by the dedicated fleet, with an additional 5,574 trips with the non-dedicated service provider, amounting to 9% of total service provided by the non-dedicated provider.

### 3.2 STS Dedicated Fleet and Run Structure

Special Transportation Services (STS) has a fleet of 19 wheelchair-equipped vehicles. All vehicles are installed with MDT's and AVL systems. The MVRTA provides 16 vehicles to their turnkey operator First Transit and three to First Transit's subcontractor, Assist Transportation, which provides ADA and senior paratransit services in the town of Methuen. All 19 vehicles are operated on a dedicated basis. First Transit schedules trips (about 91% of the 61,000+ annual trips) from all three programs into these vehicles as efficiently as possible.

Of the 19 vehicles, eighteen are Ford El Dorado 12-passenger vans. One vehicle, the back-up vehicle for Assist Transportation, is a nine passenger Dodge Braun. All vehicles are wheelchair accessible. Wheelchair/seating configurations for the 12-passenger vans vary depending on the number of wheelchairs aboard from 1 wheelchair and 8 ambulatory passengers to 3 wheelchairs and 2 ambulatory passengers.

On weekdays, while First Transit has 13 scheduled runs they average nine to ten morning and afternoon peak vehicle pullouts. Ten of the 13 runs are split shifts. The other three runs have ½ hour built in breaks. Most morning runs start between 4:45 AM 7:15 AM, with a few straight runs starting at 10:45 and 11:45. Afternoon split shifts generally start between 12:45 and 1:30 PM.

All 13 First Transit van drivers are full-time. The STS main office also has a manager, 3 reservationists, and 2 dispatchers. Two reservationists work 8:00 AM to 5:00 PM and one has hours of 7:00 AM to 4:00 PM One dispatcher works 4:30 AM to 12:30 PM and the other is scheduled from 12:15 PM to 8:15 PM Drivers wages range between \$10.00 and \$11.70 per hour depending on how long the driver has been with STS. Drivers receive Medical, dental, 501K, short-term disability, life insurance, vacation days (5 days after year 1, 10 days after year 2, and 15 days after year 3), personal days, sick days, and FMLA.

Assist Transportation has five drivers approved for transporting STS customers. They have the flexibility of setting up runs and scheduling drivers as is most efficient for their overall operation.

STS does not maintain a breakout of runs for Assist Transportation since they allow this subcontractor to manage their runs utilizing the three vehicles provided to them. Assist Transportation operates two of the three vehicles

during peak AM and PM hours while one serves as backup. Assist Transportation is responsible for maintenance of these MVRTA assigned vehicles.

### 3.3 Non-Dedicated "Overflow" Service Provider

STS schedules/assigns trips to its "overflow" subcontractor, Andover Livery, currently under contract through June 30, 2006. The runs are not set but vary from day to day depending on what trips cannot be scheduled efficiently into STS daily runs. These non-dedicated vehicles (sedans) are used only as a backup to meet peak demands and on occasions for a passenger or passengers whose appointments run late. They also serve trips that do not fit on dedicated vehicles.

The subcontractor is free to run the trips in any order he desires and commingle other trips from other contracts or private-pay customers. Trips are often shared-ride as the vendor fits referred STS passengers into his existing service most efficiently.

Andover Livery is a seven-day per week, 24 hour per day operation. Their fleet consists of 24 sedans. Since this vendor only operates sedans no wheelchair trips can be assigned.

This subcontractor (along with Assist Transportation) is paid a flat rate based on zone. With few exceptions, trips that fall within Zone 1 (Andover, Lawrence, Methuen, or North Andover) and the expanded hours in Andover are assigned to Andover Livery. Zone 1 is the lowest cost per trip. Zone flat rates are identified below.

#### Zonal Rates

Trip Type	Contractor Rate
Within Zone 1	\$10.50
Within Zone 2	\$19.00
Within Zone 3	\$28.00
Between Zone 1 and Zone 2	\$19.00
Between Zone 1 and Zone 3	\$28.00
Between Zone 2 and Zone 3	\$28.00
Expanded Hours Andover	\$10.50
Expanded Hours Haverhill	\$18.00

Andover Livery is responsible for vehicle operation, maintenance, operating facility, vehicles, fuel, and insurance.

### 3.4 Reserving/Scheduling/Assigning Trips

First Transit performs the client registration, reservations, scheduling, and dispatching functions for its fleet of 16 vehicles. They use Stratagen Systems software for scheduling, reporting, and dispatching as well as some other functions.

The scheduling parameters in Stratagen include:

- Wheelchair accessibility (yes or no)
- Pick-up tolerance (+/-15 minutes)
- Zone definitions
- Average speed (set at 16 miles per hour)
- Load time
- Unload time
- Maximum travel time (60 minutes)

The paratransit manager reported that there may be other parameters she is not aware of since these were set before she began working with the software.

The STS central office (First Transit) determines eligibility for Assist Transportation customers but this subcontractor directly accepts reservations and schedules trips for Methuen residents onto their two peak vehicles. Approximately 70% of customers are ADA certified and about 30% are considered standing/subscription trips. Assist Transportation is required to purchase and maintain 2-way radios for communications since they do not utilize scheduling software and the onboard technologies. Per contract, vendor trips are capped at 1,150 per month and must be evenly distributed throughout the month.

As indicated previously, First Transit utilizes the non-dedicated provider, Andover Livery, as a backup specifically for trips that fall within Zone 1 (Andover, Lawrence, Methuen, or North Andover) and the expanded hours in Andover (City of Andover pays for trips up to 10:00 PM, past STS hours of operations). First Transit therefore determines customer eligibility, takes reservations, and schedules these trips. After running their batch scheduling in the late afternoon, dispatching staff determine which trips do not fit into their schedule and these trip requests are then faxed to Andover Livery for pick-up. The vendor may contact the customer directly if slight time

adjustments need to be made. Andover Livery performs within the range of 6 to 30 trips daily.

#### 4.0 Service Statistics

The following table provides the operating statistics for STS dedicated and non-dedicated service for FY 2005

##### FY 2005 Trip Data

	Dedicated	Non-Dedicated – Andover Livery	Total
Passenger Trips	53, 143	5,574	58, 717
Vehicle Hours	26,424	-	
Vehicle Miles	443,732	-	
Revenue Vehicle Hours	22,130	-	
Revenue Vehicle Miles	360,434	20,958	381,392

The service mix was 91% dedicated and 9% non-dedicated. The productivity of the dedicated fleet was 2.4 trips per hour.

The table below presents cancellation and no show data for the entire system in FY 2005.

##### No Shows/Cancellations

Trips	Total
Actual Trips	58,717
Total Trips Denied	0
Total Trips Cancelled	16, 171
Total Trips No Showed	995
% Trips Cancelled/No Showed	29%

#### 5.0 Costs

The total operating expense for STS dedicated fleet operations in FY 2005 was \$1,058,602. The cost per trip for the dedicated service was \$19.92, and the cost per mile was \$2.94.

The cost per trip on the non-dedicated provider was estimated to be in the range of \$11 to \$12, because the rate for Zone 1, which covers the major towns in the STS area, is \$10.50.

## 6.0 Background / History / Goals

The focus of this case study is the MVRTA's paratransit services, Special Transportation Services. Prior to 2002, the MVRTA had management oversight of paratransit services but contracted with four private vendors to operate these services. The MVRTA staff determined eligibility, accepted reservations, scheduled trips, and provided vehicles to the vendors. The vendors were then responsible for operations to include managing their fleet and drivers and maintaining the vehicles. The MVRTA did not give serious consideration to in-house operation of services until 2001 when there were no responses to a bid process (existing vendors did not respond). This failed procurement caused MVRTA administration to look at alternative scenarios and the decision was made to bring the service in-house under the management of their fixed-route service operator, First Transit. A subsidiary of First Transit, Special Transportation Services, was started in 2001 to operate the paratransit service.

At the time of transition, two of the four vendors remained as service providers. Assist Transportation was retained for Methuen service since the passengers in this City were accustomed to this provider and rallied in support of the company. Since the MVRTA provides Assist Transportation with vehicles for STS passenger transport they are considered a dedicated provider. This company provides other medical transportation in the community utilizing other vehicles in their fleet.

Andover Livery, the non-dedicated provider, was also retained in a more limited capacity since STS had a continued need for backup to handle overflow passengers and Andover Livery had the vehicles and flexibility to perform same day trip requests from STS.

## 7.0 Highlights

### 7.1 Productivity

When paratransit service was taken in house under First Transit in 2002 it was anticipated that costs would increase (i.e., administrative costs, maintenance). Additional service, Ring & Ride, was also added during the past several years (the latest Ring & Ride service was just added in West Newbury in December 2005).

A thorough analysis has not been conducted by MVRTA staff to determine the cost benefits of using Andover Livery for certain trips rather than having

First Transit conduct these trips in-house. The MVRTA administrator and the STS manager both report that costs are reasonable taken into consideration the costs that would be incurred in sending a van to cover single trips that did not fit into the schedule. Again, trips assigned to Andover Livery are trips within the lowest cost zone. The MVRTA administrator indicated that if this vendor was no longer a viable option in the future (i.e., if he did not respond to a bid for service) they would give consideration to expanding their capacity internally to conduct these trips. One reason given for this was that it would be unlikely that another private taxicab/livery vendor in their region could provide this service since no other has the capacity and could meet the demand in a timely manner.

## **7.2 Customer Satisfaction**

STS has not recently conducted customer satisfaction surveys but the paratransit manager reports that this activity should occur with this fiscal year. The number of complaints handled per year was not provided but the STC manager reported that there are few and these are handled by her when they arise. Customer satisfaction appears to be high overall for all services.

## **7.3 Insurance**

MVRTA requires that all service providers carry umbrella liability coverage of \$1,000,000. The cost for this insurance coverage likely prohibits other taxicab and livery type vendors from responding to service bids. Insurance coverage verification is required monthly from the vendors.



## Ottawa County, Ohio

### Ottawa County Transportation Agency (OCTA)

#### 1.0 Responsible Agency

Ottawa County Transportation Agency (OCTA)  
1702 W. Lakeshore Drive  
Port Clinton, OH 43452

Web site: None

Bill Lowe, Executive Director

Tel: 419-732-7433

Fax: 419-732-6572

E-mail: bill.lowe@ocbmr.org

#### 2.0 General Service Policies

##### 2.1 Service Type and Eligibility

OCTA is a public transportation agency that provides curb to curb demand response transportation service to all residents of Ottawa County. The service is also available to all County visitors including tourists to the Put-In-Bay area along Lake Erie.

The door to door service is provided upon request to meet specialized needs. Reservations for service within the County are required with a minimum of 24 hours notice. Out of County trip reservations are requested one week in advance. Same day requests are accommodated only if the schedule permits or there is a trip cancellation.

OCTA also provides a seasonal fixed-schedule shuttle service on the east end of Ottawa County serving the special needs of tourists. The FISH shuttle (Food, Ice, Shopping, & Hospitality) provides service to area hotels, marinas, downtown shops, restaurants, boat lines, ferry, and other area attractions on three routes.

In 2005, OCTA merged its MRDD transportation service with the public transit service. The MRDD service includes flex routes for day rehabilitation and sheltered workshop trips and demand response trips for community based service.

## **2.2 Service Area**

Ottawa County is located in northern Ohio on Lake Erie between Lucas and Erie Counties. The County is located approximately 32 miles northeast of Toledo and 63 miles west of Cleveland. The County has a land area of 255 square miles with a 2000 population of 40,985. The City of Port Clinton is the largest City within the County with a year round population of 6,391. During summer months, the County is home to a significant tourist population that is attracted to the Lake Erie, Put-In-Bay, and Cedar Point recreational areas. Service is also provided to three locations in neighboring counties: Toledo, Sandusky, and Fremont.

## **2.3 Service Days and Times**

Service days and times vary by service type. The core public transit demand response service within Ottawa County operates from 6:00 AM to 8:00 PM Monday thru Saturday with Sunday service operating between 6:00 AM to 6:00 PM. The service is closed on Thanksgiving, Christmas, New Years, Easter, Memorial Day, Independence Day and Labor Day. The Out-of-County trips operate between 8:00 AM and 4:00 PM on selected weekdays. The FISH shuttle operates from 9:00 AM to 9:00 PM on weekdays and Saturdays and 9:00 AM to 3:00 PM on Sundays, during the summer months and on festival weekends.

## **2.4 Fares**

The fare on the OCTA demand response system within the county is \$2.00 for the first zone with each additional zone costing \$0.50. Transfers onto the FISH shuttle service are free. The maximum fare within the County is \$4.00. The FISH shuttle service is \$1.00 for adults and \$0.50 for youth 11 year old and under. Service to neighboring Counties varies by County. Service to Lucas, Seneca, and Huron counties is \$10.00 and service to Erie, Sandusky and Wood counties is \$5.00. Trips outside the regular schedule are double the fare. Senior citizens and disabled individuals ride for half-fare.

## **2.5 Reservations**

OCTA passengers must make advanced reservation for their travel needs. Trip requests are accepted Monday through Thursday from 7:00 AM to 3:00 PM and on Friday from 7:00 AM until 2:00 PM. Trip requests must be made a minimum of 24 hours in advance for in-county trips and one week in advance for out of county trips. The transit system offers a toll free number for customers outside the local telephone service area.

Trips are scheduled on a first come, first served basis using Paratransit Management and Scheduling (PtMS) software developed by Automated Business Solutions. Standing orders are accepted and are maintained in the system until cancelled. The software is primarily a database management dispatch assist system. Utilizing the trip request information and the software's sorting capabilities; the dispatcher makes up the runs and creates the driver manifests. Every effort is made to schedule trips to meet the travel needs of customers. However, travel time negotiation is sometimes a necessity to accommodate all travel requests. Same day requests are accommodated if the schedule permits. Reservations can not be made more than 14 days in advance.

## 2.6 On Time Policy

Passengers are notified of their scheduled pick-up time. Passengers must be ready to be picked up 15 minutes before to 15 minutes after their scheduled pick-up time. Additionally, no passenger is allowed to spend more than 90 minutes on a vehicle unless the travel time is that great. Drivers are allowed to wait up to three minutes for passengers at their pick-up locations.

## 2.7 Cancellations and No-Shows

Trips may be cancelled by calling the OCTA transportation office no later than two hours before the scheduled pick-up time. Failure to give at least two hours advance notice of a cancellation is considered a no-show. Three no-shows within a one-month period result in a one month service suspension of the passenger. The suspended person has the option of immediate reinstatement by paying for the no-show plus a \$5.00 reinstatement fee for the first offense or paying for all the no-shows and a \$10.00 reinstatement fee for the second and subsequent offenses. OCTA has a published appeal process in place for suspended passengers.

During the first nine months of 2005, OCTA recorded 6367 cancellations and 597 no-shows adjusted for holidays and calamity days. This accounted for a 1.04 (%) percent no show rate.

The service provider provides all trips that are requested under the contract. The contractor puts on additional vehicles and drivers as necessary to meet the demand. Occasionally dispatchers will deny trip requests if they cannot be fit into the schedule and the trip cannot be assigned to the contractor due to budget or service area constraints. In 2004, 193 trip requests were denied due to lack of available capacity and 100 trip requests were denied because

the trip requests were outside of the service hour or area parameters of the transit system.

## 2.8 Trip Confirmation and Where's My Ride? Calls

When a trip request is made, the reservationist enters the request into the PtMS software database and determines if and when the request can be accommodated. The reservationist informs the customer of his/her pick up times at the time of the call.

The system does not have an official "Where's My Ride?" procedure. However, if a passenger is not picked-up the dispatcher contacts the driver or the contractor to determine the estimated pick-up time. If the trip cannot be made in a timely fashion, the trip will be assigned to another driver or the contractor.

## 3.0 General Service Design, Service Mix, Dedicated Run Structure, Scheduling

### 3.1 General Service Design and Service Mix

The OCTA service consists of two types of services: (1) OCTA directly operated dedicated fleet; (2) contractor operating non-dedicated fleets. Dedicated vehicles are used to operate the majority of the public transit service including the day-time and long distance in-county trips, out-of-county trips, and the FISH shuttle service.

The contractor, Linda's Dependable Transportation Service, Inc., is a taxi company that uses non-dedicated vehicles to provide late evening trips (>8:00 PM) and provides additional capacity within the City of Port Clinton when OCTA has a capacity limitation or personnel shortage. The contractor rarely provides service outside the City due to the perceived cost of the long distance trip and the limited budget for purchased transportation. Use of the contractor is reactive in response to an unmet need rather than as a strategic component of the overall OCTA service delivery system.

The following table shows the percentage split between dedicated and non-dedicated trips for the different types of services provided by OCTA.

Type of Public Transit Service

2004	In-County DR (< 8:00 PM)	In-CountyDR (> 8:00 PM)	Out-of-County DR	FISH Shuttle
OCTA Directly Operated (%)	96.4%	12%	100%	100%
Contracted Out Non-Dedicated Vehicles (%)	3.6%	88%	0%	0%

Overall, the service mix between dedicated and non-dedicated service is 94% dedicated and 6% non-dedicated.

**3.2 OCTA Dedicated Vehicle Run Structure**

OCTA directly operates the Ottawa County demand response service, regular scheduled service to neighboring counties, the FISH Shuttle service, MRDD sheltered workshop service and MRDD community based transportation service.

The Ottawa County demand response service is provided Monday thru Saturday from 6:00 AM to 8:00 PM and on Sundays from 6:00 AM to 6:00 PM. Trips are provided after 8:00 PM on an as needed basis. The neighboring county service is provided to different destinations during different days of the week. Service is provided to Toledo on Mondays, Wednesdays and Fridays. Service is provided to Sandusky and Fremont on two separate routes on weekdays. The neighboring county service is operated from 8:00 AM until 4:00 PM. OCTA provides contract services to several social service agencies including the Ohio Department of Jobs and Family Services (ODJFS) and the local Area Agency on Aging (AoA).

The FISH shuttle consists of three shuttle routes that operate between Memorial Day weekend to Labor Day weekend. The shuttles run from 9:00 AM to 9:00 PM on Fridays and Saturdays and from 9:00 AM to 3:00 PM on Sundays. As of 2005, the MRDD service was completely incorporated into the in-county demand responsive service and does not have a separate service identity. As described previously, the out-of-county service operates on different days of the week for different locations.

The OCTA fleet consists of sixteen demand responsive vans used for in-County and out-of-county demand response service, and four buses used primarily for MRDD sheltered workshop trips. During summer months,

four of the vans also do double duty making up the FISH shuttle fleet. The peak requirement is sixteen vehicles, leaving four vehicles as spares (20% spare ratio). The off-peak requirement is six vehicles. Three buses have 7 wheelchair positions and the fourth has 3, with ambulatory capacity of 24-28. The vans have 0, 1, 2, or 4 wheelchair positions and range from 4 to 16 seats for ambulatory passengers (depending in part on how many wheelchair positions are being used).

### 3.3 Non-Dedicated Contractor Resources

OCTA currently has one private for-profit contractor that provides approximately six percent of the public transportation service within Ottawa County. The current contractor, Linda's Dependable Transportation Services, Inc. (Linda's), has been operating the service since 2000 under a Memorandum of Understanding (MOU). The MOU outlines the rules and responsibilities of the County and the contractor. OCTA assigns trips to Linda's on an as needed basis to supplement the OCTA directly operated service. Linda's acceptance of the assigned trips is contingent upon the availability of vehicles and drivers. Once a trip is accepted, Linda's promises to provide on-time service. Linda's also agrees to adhere to quality standards for operating and maintenance functions including hiring and training of drivers, drug and alcohol testing, supervising personnel, processing reservations, dispatching vehicles, providing adequate insurance, and maintaining, servicing and repairing vehicles.

Linda's primarily provides trips that are outside of the OCTA published service hours or outside the service area. Linda's is also used to fill the gap if/when OCTA experiences personnel shortages or when trips are too cost prohibitive for OCTA to provide themselves. OCTA will also use the contractor to avoid a trip denial or cancellation if a trip has been overbooked. Linda's does not receive any guarantee of trips. OCTA refers charter requests and other service that OCTA cannot provide to Linda's.

Use of the contractor is reactive in response to service problems rather than part of a strategic service plan. The amount of service contracted out is defined by a budget line item that has remained constant and is not based on demand for service or efficient use of resources.

Linda's is paid their discounted published rate for in-county service and \$1.50 per mile for out-of-county service. The in-city rate for Port Clinton is \$5.00. Group trips are charged at \$3.00/person. Other destinations within

the County are charged a predetermined flat rate up to \$15.00. Currently OCTA does not provide a per mile fuel surcharge for its contractor.

Linda's is a full service taxi provider serving the transportation needs of other customers in addition to the service provided for OCTA. In the summer tourist season, OCTA service makes up approximately 30 percent of Linda's business (4500 calls a month). The majority of service is provided to tourists, connecting with the Put-in-Bay ferry service and transporting passengers to late night entertainment establishments. From September through May, however, the bulk of Linda's service is OCTA. Linda's provides a small amount of service to social service agencies (DHS), the local school district, and private customers. The OCTA trips make up the base of the contractors' service with other trips filled in as possible. The OCTA service provides a base of service that ensures stability and allows Linda's to remain viable during the winter months. This stability allows Linda's to provide a valuable service to the tourists and community during the summer months.

The contractor prices its service based on the cost to provide the service and what the market will bear in the competitive county environment. Linda's owner values the OCTA service as its lifeline and is hesitant to raise prices even as the cost to provide the service rises. Based on the owner interview, the ability to use non-dedicated vehicles to provide the OCTA service does not factor into her pricing decisions. The owner acknowledges that her association with OCTA has helped the company establish credibility within the community and has opened doors that would have otherwise been closed. OCTA also provides referrals for charter service, agency and school district service requests that OCTA can not provide.

Under contract, Linda's has provided service to local area school districts including Danberry, Oak Harbor and Kelly's Island Schools for students with special needs. Service is also provided for the Department of Human Services dialysis patients.

Linda's Dependable Transportation Service, Inc. has eleven taxis including seven minivans, three fifteen passenger vans and one sixteen passenger light transit vehicle with two wheelchair positions. All of the vehicles are considered commercial vehicles with livery stamps. Only five of the vehicles are registered with OCTA for use in the public transit service. These are a

1998 Dodge Caravan, a 1998 GMC 15 passenger van, a 2000 Dodge Caravan, a 2001 Ford Windstar and a 2005 Dodge Caravan.

The majority of the OCTA service is provided directly by the owner of Linda's. The other drivers are independent contractors. The drivers retain thirty percent of the fare and tips. They pay their own taxes and are responsible for their own insurance.

### **3.4 Reserving/Scheduling /Assigning Trips**

The OCTA Operations Manager uses the PtMS dispatch assist software to assign trips and make up drivers' trip manifests. All trip requests are made directly to the OCTA dispatch/schedulers who log all trips requests into the PtMS software package. The software is designed to assist the dispatcher schedule trips, track clients and preparing billing and reports.

Trip requests for in-county service are accepted 24 hours in advance until 3:00 PM on all weekdays except Friday when trip requests are only accepted until 2:00 PM. OCTA performs reservation, scheduling and dispatch functions for its own fleet and provides trip logs to the contractor for trips they are to provide.

Linda's owner assigns the majority of the OCTA trips to herself and gives the remaining trips to one or two other drivers as needed. The owner assigns most of the private cash calls to the other drivers. The contractor provides on average eight to ten trips per day.

Travel times, load times, unload time, speed, pick-up and drop-off times are determined by the OCTA Operations Manager and are based on actual experience with a limited client base and geography. Average dwell times for ambulatory passengers are estimated at three minutes. Dwell times for passengers requiring a wheel chair lift is estimated at five minutes. Trip requests made with less than 24 hours notice are incorporated into OCTA schedules as space permits. Same day trip requests are not assigned to contractors. Once trips are completed, copies of the schedules are returned to OCTA for billing and oversight purposes.

## **4.0 Service Statistics**

### **4.1 Fleet, Service Supplied, Services Consumed**

The following tables provide information on the service supplied and service consumed of the OCTA services in 2004. Service supplied is expressed in



terms of total vehicle miles, service miles, total vehicle hours and service hours. Service consumed is expressed in terms of passenger trips.

**OCTA Service Statistics (CY 2004)**

Service Provider	Total Hours	Total Miles	Service Hours	Service Miles	Passenger Trips
OCTA Demand Responsive	18,903.7	419,083.10	17,078.5	400,087.1	31,924
FISH Shuttle	1521.3	26,026	1521.3	26,026	1,152
Large Capacity/ Workshop	2,795.1	60,386	2,605.3	56,174	22,227
Contracted Out— Non-Dedicated	839.1	19,692	838.2	19,692	2,392

For a sample week, from 9/26/05 to 10/2/05, the average trip length was 14.2 miles for the system as a whole. The average trip length for the contracted service was 6.6 miles—significantly lower than the average for the OCTA directly operated demand responsive service of 11.8 miles. The OCTA large capacity service had the longest trip lengths with an average of 18.7 miles. An analysis performed by the OCTA Director concluded the OCTA directly operated service has a fully allocated cost of \$1.81 per mile. Even though the contractor provides service on a flat rate basis for trips within the county, a per mile cost analysis indicated that the average cost per mile for the contracted service equaled \$1.20. Outside the County, the contractor charges \$1.60 per mile.

During the sample week the FISH service did not operate. The contractor operated 3.2 percent (%) of the sample week’s trips. Of the forty-eight (48) passengers, thirty percent (30%) were provided on a subscription basis and all (100%) were ambulatory passengers. The contractor operated a total of 318 miles or 1.5 percent of the total passenger miles. The contractor had one no-show (4.5% of the total) and 5 cancellations (2.6% of total).

During the sample week, the number of no-shows was comparable between the OCTA directly operated service and the contractor. However, the contractor had significantly fewer cancelled trips. The contractor provided low mileage, short duration ambulatory trips within the City of Port Clinton. The average passenger trip length was 5.85 miles.

The OCTA directly operated demand response service provided the high mileage, long duration trips within the City, Ottawa County, and neighboring counties. Nearly sixty percent of the OCTA demand response trips

were subscription trips. The average passenger trip length was 10.1 miles. The OCTA large capacity vehicles were used solely for subscription service within the County. The average trip length was 16.8 miles.

A detail of the total trips provided by service type is provided below. The OCTA large capacity program makes up the majority of trips followed by the directly operated subscription portion of the OCTA transit service, contracted service and then the FISH service.

### OCTA Trips by Type of Service (2004)

	Trips By Trip Type	Percent of Trips
<b>Public Transit—Directly Operated</b>		
☐ Demand Response	15,068	26.1%
☐ Subscription	16,856	29.2%
☐ FISH	1,152	2.0%
☐ Large Capacity Subscription	22,227	38.5%
<b>Total</b>	<b>55,303</b>	<b>95.9</b>
<b>Public Transit—Subcontracted</b>		
☐ Demand Responsive	1,674	2.9%
☐ Subscription 718	1.2%	
<b>Total</b>	<b>2392</b>	<b>4.1%</b>
<b>TOTAL</b>	<b>57,695</b>	<b>100%</b>

## 5.0 Costs

The following table presents the FY 2004 expenses and FY 2005 budget for the OCTA service. The expenses associated with the reservations, scheduling, dispatch, and road supervision functions are included in the Vehicle operations Other Salaries and Wages line item. All of the expenses for the contractor including dispatch functions are included in the Purchase of Service line item.

### OCTA 2004 Expenses & 2005 Budget

	2004 Expenses	2005 Budget
<b>Vehicle Operations</b>		
Operators Salaries & Wages	\$340,840	\$366,550
Other Salaries and Wages	\$114,743	\$110,000
Fringes	\$112,742	\$106,000
<b>Vehicle Maintenance</b>		
Wages & Salaries	\$35,093	\$40,000
Fringes	\$5,712	\$7,500
<b>General Administration</b>		
Wages & Salaries	\$83,101	\$48,000
Fringes	\$16,774	\$11,000
Services	\$29,013	\$20,600
<b>Materials &amp; Supplies</b>		
Fuel	\$69,646	\$75,000
Tires and Tubes	\$2,649	\$3,650
Consumables	\$34,000	\$30,500
Utilities	\$9,235	\$10,200
Casualty and Liability Costs	\$10,377	\$14,000
Promotion & Marketing	\$7,748	\$ 7,000
Miscellaneous Expense	\$8,882	\$8,900
<b>Purchase of Service</b>		
Linda's Dependable Taxi	\$18,695	\$20,000
Leases & Rentals	\$13,058	\$14,200
Other	\$9,789	\$9,000
<b>TOTAL</b>	<b>\$922,097</b>	<b>\$902,100</b>

The purchased transportation line item includes the contract services provided by Linda's. In-side the County, Linda's flat rate is \$5.00 per trip. Outside the County, the rate is \$1.60 per mile.

OCTA employs thirty-eight employees. The employee roster includes twenty-seven drivers, three aides, two mechanics, four dispatchers, one finance director, and one general manager.

The hourly wages for OCTA range from \$7.50 to \$16.51 per hour, with an average of \$12.24. Work schedules are designed to create as many Monday through Friday, straight eight hour work days or 36 to 40 hour work weeks as possible. Drivers are paid for hours in revenue service plus a fifteen minute pre-trip inspection and fifteen minute post-trip. Gaps in service less than thirty minutes are paid. Gaps greater than thirty minutes are off the clock. Employees are paid overtime (1 ½ times the employee's regular rate) for any hours worked over 40 in one week.

Linda's does not pay the taxi drivers by the hour. Other than the owner, the other drivers are considered independent contractor and retain thirty percent of the fares plus tips.

## **6.0 Background/History/Goals**

The Ottawa County Board of MRDD began operating in 1968 with contracted transportation. In 1980, the Board purchased their first school buses and began operating their own transportation system for children and adults with disabilities. In 1988, two sedans were purchased and "Network" transportation began to transport individuals to employment sites. "Network" transportation continued to expand and in 1994, the Board of MRDD voted to begin integrating transportation with the community. Since there was no public transit services available within the County, the Board reasoned that the MRDD vehicles could offer service to transportation disadvantaged citizens while providing MRDD service throughout the County.

In 1994, the transportation budget for the Ottawa County MRDD Board was \$421,562. In 1996, it increased to \$528,756. In January 1997, the MRDD Board became the lead agency to coordinate transportation with other human service agencies as the result of a grant from the Ohio Department of Transportation (ODOT). Initially, thirteen agencies participated in a consolidation of effort known as the Ottawa County Transportation Agency (OCTA) and the MRDD Board office became the centralized location for scheduling, dispatching, and billing. They set a goal of becoming a "rural Transit" system by January, 2000.

In July of 1999, the Ottawa County Commissioners named the Board of MRDD as the designated grantee of state and federal funds for the operation of a public transit system. A seven member advisory board for OCTA was named. On July 11, 2002, the commissioners created a seven-member County Transit Board, named a chairman and appointed the advisory board members as the transit board members. The Board of MRDD transitioned staff, vehicles, equipment, and fiscal resources to the Transit Board.

The system has contracted with a private carrier to provide supplemental services since the beginning. The current contractor has been in place since 2000. In 2005, the MRDD yellow school bus service was incorporated into the public transit system. In 2006, the OCTA budget is \$1.4 million up from \$900,000 in 2005.

## 7.0 Highlights

### 7.1 Cost Reduction

Linda's standard rates are significantly lower than OCTA's unit costs. For example, Linda's contract rate outside of the County is \$1.60 per mile, whereas, the OCTA fully allocated rate is \$1.81 per mile, a savings of nearly twelve percent (12%), noting that the contractor has the ability to use the vehicles for other purposes and to fill in runs with other agency and general public customer demands. OCTA is thus able to purchase service at a trip cost lower than they would be able to provide if they operated the service directly.

OCTA's use of the contractor is limited by the total purchase of service contract amount (\$20,000). This artificial cap has resulted in limited use of the contractor especially near the end of the year when the cap is approached. Historically, the dispatcher has tried to assign as many trips as possible within the budget cap. Given the lower per mile charge, the contractor would be the most likely choice for long trips that are difficult and expensive for OCTA to provide directly. However, since these trips would be more costly because of their length and would consume the limited budget faster, they are instead assigned to OCTA with a higher per mile cost. This practice results in a higher overall cost to the system.

In effect, OCTA use of the non-dedicated fleet has been reactive to funding constraints rather than as a strategic component of the operation.

## 7.2 Customer Satisfaction

OCTA has not conducted any customer service surveys to determine customer satisfaction with the service. Consequently, comparisons can not be made between the directly operated and contracted service. However, passengers appear very appreciative of the service and there are few complaints. OCTA management staff speculated that passengers do not perceive any difference in quality.

## 7.3 Balancing Trip Costs and Contractor Viability

The relationship between OCTA and the contractor has evolved over time and has grown into a mutually beneficial relationship. A major concern of OCTA management was the need to keep contractor costs low while at the same time ensuring that the per unit rate and volume of trips was sufficient to maintain the viability of the contractor. Additionally, determining the optimum mix of directly operated versus contracted services and establishing parameters for the strategic use of the contractor are issues that OCTA management needs to address.

The additional volume of trips associated with the OCTA service, however, is sufficient to provide system stability by covering system overhead costs especially during the winter months when demand for services from private customers is low. The OCTA contract enables the contractor to be viable throughout the year so that it is available to provide a much needed service during the tourist season. The tourist population and business community benefit greatly from the taxi service. Thus, the public/private partnership provides intangible benefits to the County as a whole.

In addition, by being the sustaining force of a local transportation company that would not otherwise be able to exist, the public transit service enables the contractor to serve other agencies and individuals that would not otherwise have service especially during non-tourist season. This relationship is beneficial for the transit system, service provider, purchasing agencies and individuals, as well as the community-at-large.

## Wenatchee, WA

### Link Plus

#### 1.0 Responsible Agency

Link Transit  
2700 Euclid Avenue  
Wenatchee, WA 98801

Website: <http://www.linktransit.com/>

Contact: Richard DeRock  
General Manager

Telephone: 509-662-1155

Fax: 509-662-1595

E-mail: [richard@linktransit.com](mailto:richard@linktransit.com)

#### 2.0 General Service Policies

##### 2.1 Service Area

Link Transit is the public transportation operator in Wenatchee, Washington, and the surrounding area in Chelan and Douglas Counties. Wenatchee is almost exactly in the center of Washington State. The service area has a population of roughly 44,000 people of whom about three-fourths live in the twin cities of Wenatchee and East Wenatchee on opposite sides of the Columbia River.

Two of several outlying communities served by Link Transit have figured prominently in the agency's use of non-dedicated vehicles. Leavenworth is a community of about 2,100 located 23 miles west of Wenatchee. Leavenworth is a base for mountain-oriented sports; by developing itself as a Bavarian village it has attracted a substantial tourist trade. Chelan, about 40 miles north of Wenatchee on the shore of Lake Chelan, has a year-round population of about 3,500. The area attracts a high volume of tourism oriented to the lake during the summer months. An Indian casino in the lakeshore community of Manson, eight miles from Chelan, is also a significant draw.

##### 2.2 Service Days, Times, and Fares

Link's ADA paratransit service, called Link Plus, provided 84,614 passenger trips in 2004. Service is provided Monday through Friday from about 6:00 AM to 7:00 PM and on Saturday from about 7:30 AM to 6:30 PM. The

paratransit fare is the same for fixed-route and paratransit: \$.50 for most trips, and \$1.00 for trips to and from several outlying communities. Monthly passes costing \$15 (good for any \$.50 trip) or \$20 (good for all trips) are available for either mode.

### **3.0 General Service Design, Service Mix, Dedicated Run Structure, Scheduling**

#### **3.1 General Service Design and Service Mix**

Link Plus service is provided principally by transit agency staff who take reservations, prepare schedules, dispatch rides, and operate and maintain the fleet of 30 accessible vehicles. In addition there are two small contracts with non-profit agencies and agreements with four non-dedicated providers.

Link has experimented with a number of innovations designed to maintain service levels for people with disabilities in the face of extreme budget pressure resulting from the loss of a major portion of its operating funding. A number of these innovations are non-ADA service intended to increase the overall efficiency of Link's services for people with disabilities. For trips to and from outlying areas, Link has used taxis and Medicaid van providers and has limited pick-up times in order to concentrate these trips at particular times. This is a principal innovation of interest to this research, since it uses non-dedicated vehicles integrated with the use of dedicated vehicles.

Link has also experimented with flexible service in two of these same outlying areas and developed fixed-routes in its central service area designed to allow older people and people with disabilities to meet many of their needs without needing to rely on paratransit. Link has contracted with two non-profit organizations to provide service to clients of specific programs at very favorable rates. Lastly, as of July 2005, Link was in the process of developing a taxi scrip program to provide ADA paratransit in one outlying community. Information about these components of Link service is presented for the sake of context following the description of non-dedicated vehicle service.

The principal motivation of Link's innovations was to reduce Link Plus's operating cost per trip, which was one of the highest in Washington State. These high costs stem, at least in part, from the fact that paratransit and fixed-route drivers are paid the same at Link, and from the fact that Link Transit and Link Plus serve some very long trips. Pressure to cut cost also came from the passage of Initiative 695 in November 1999 which repealed



the state motor vehicle excise tax that had provided about half of Link Transit’s budget. The agency cut fixed-route transit service, but this did not reduce paratransit demand. The agency also began charging a fare. However, the \$.50 basic fare is quite low, and is the same for fixed-route and paratransit.

Link currently limits its use of non-dedicated vehicles due to budget considerations and a need to make productive use of its available driver runs. All of the non-dedicated providers indicated that they could provide more Link Plus service. All of them operate small fleets. Clearly they could handle additional occasional trips. All were willing to add vehicles to their fleets if they could be sure of some consistent level of trips from Link Plus. Link Plus service does not appear to pay well enough to support additional vehicles and drivers on its own, but could be combined with other business to be viable.

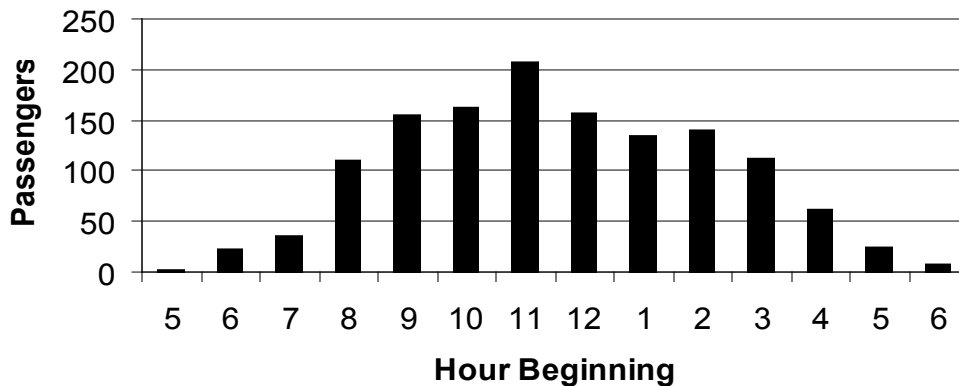
Provider	Total vehicles available for Link service	Maximum vehicles typically used for Link at one time	Able to take on more Link trips?
Gateway	2 minivans with ramps 1 18-passenger lift-equipped cutaway.	1	Yes. Would purchase additional vehicles. Have part-time drivers who would do the work.
Classic	5 station wagons (usually 3 in operation)	1 or 2	Yes if it was consistent.
Wenatchee Mobility Services	2 minivans with ramps	1	Yes if it was more consistent
Lake Chelan Taxi	3	Was as high as 2, currently almost none	Yes

### 3.2 Link Plus Dedicated Vehicle Run Structure

The Link Plus fleet of 30 accessible vehicles consists of 19 cutaway buses with lifts, each carrying from 10 to 16 ambulatory passengers and two passengers with mobility devices, and 11 minivans with ramps, each carrying from two to three ambulatory passengers and/or two passengers with mobility devices. Some of the cutaway buses are also used for fixed-route service. The maximum vehicle deployment is 15.

The chart below shows the time of day demand pattern for weekday trips, using the week of June 6 to 10, 2005. Travel peaks in the middle of day, instead of in the morning and afternoon as in many paratransit systems.

*Passengers by Hour of the Day (Weekdays, June 6-10, 2005)*



This demand pattern is relatively easy to serve using straight shifts. As a result, although Link’s labor agreement allows split shifts with up to 14 hours spread time (i.e. from the beginning of the first piece to the end of the second), no split shifts are used for Link Plus. There is no limit on the use of part-time drivers. Typical weekday Link Plus schedules include one or two part-time runs and 10 or 11 straight runs of approximately eight hours. Other work rules include:

- 35 guaranteed hours per week for full-time drivers (actually assignments are typically 40 hours per week)
- A 30-minute lunch break in each full-time run
- Two 10-minute breaks in each full-time run, one at least one hour after the beginning of the run and one at least one hour after lunch.
- Shift times can be modified by up to one hour earlier or later than the time in the schedule as bid.

Overtime is paid for work over eight hours in a day or 40 hours in a week.

### 3.3 Use of Non-Dedicated Providers / Taxi Resources

Link has agreements with four non-dedicated providers, primarily for serving inter-community trips between several outlying communities and the central area of Wenatchee and East Wenatchee. These trips are very expensive to serve using Link Plus dedicated vehicles; opportunities for trip sharing are often limited. Overall 5.1% of trips during FY 2004 were carried on non-dedicated vehicles. However, these trips accounted for 19% of revenue vehicle miles because the non-dedicated vehicles are mostly used for inter-community trips. Non-dedicated vehicles are also used for some

trips within outlying communities and for certain trips within Wenatchee and East Wenatchee for which customer compatibility is an issue.

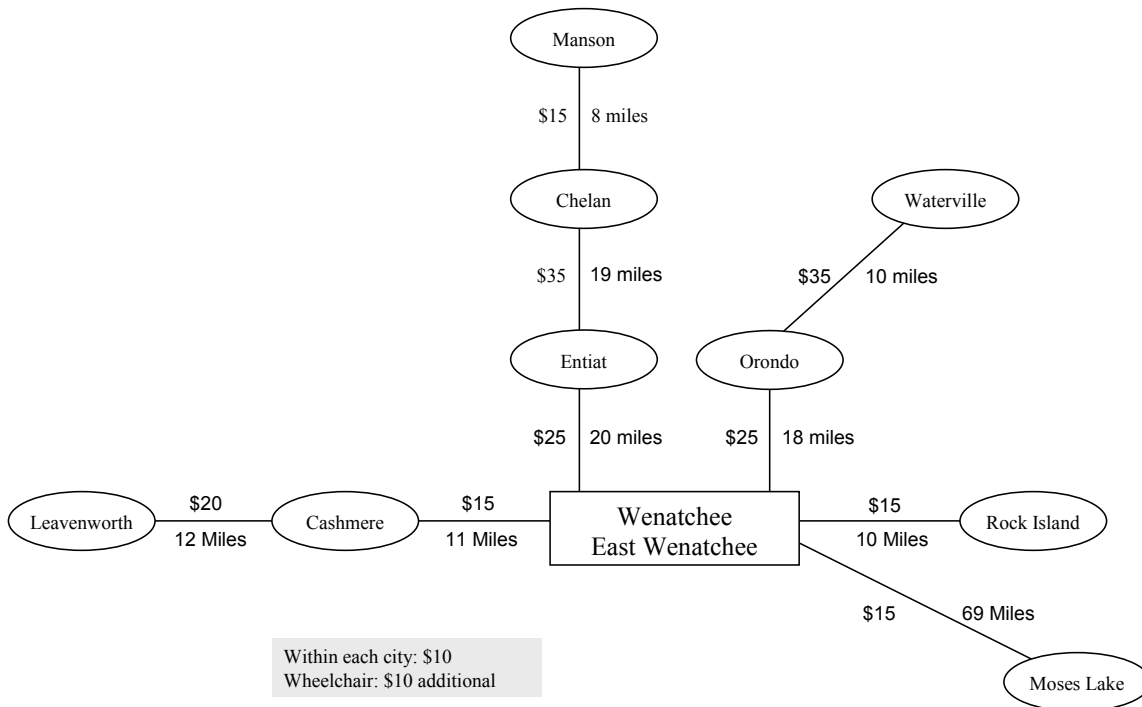
The four non-dedicated providers are:

- Classic Taxi in Wenatchee
- Lake Chelan Taxi, based in the city of Chelan
- Gateway Bus Company, based in East Wenatchee, which provides Medicaid transportation and charter bus service using a fleet of minivans, lift-equipped cutaway buses, and over the road coaches.
- Wenatchee Mobility Services, based in Wenatchee, which provides Medicaid transportation using two minivans.

The inter-community service is designed to operate on the principle that riders can choose which if any of non-dedicated providers they will ride with. When a rider requests an inter-community Link Plus trip, the reservationist will check to see if the ride can be part of a productive run using a Link Plus vehicle, or if it is needed to fill out a driver's minimum guarantee. If not, the reservationist checks with the rider to see if a non-dedicated vehicle can be used and whether the rider has a preference among the available companies. Generally preferences have already been noted in the rider's record. The reservationist then schedules the trip on a holding run for a scheduler to assign later to one of the non-dedicated providers.

The non-dedicated providers are paid for each trip using rates that were established by Link as a result of discussions with the providers; they are fixed based on the communities between which the trip operates as shown in the diagram below. Trips within a community are paid \$10, and since November 2004 an additional \$10 has been paid for transporting a passenger in a wheelchair in a "wheelchair tie-down vehicle." There is also a provision to pay a deadheading fee for some trips. These rates are less than taxi rates or Medicaid rates for similar trips. For example, Classic Taxi's regular rates are \$3 drop plus \$2 per mile. Trancare, the broker for Medicaid transportation in this area, pays \$2 drop plus \$1.60 per mile for taxi service, and \$25 drop plus \$2.50 per mile for wheelchair trips.

**Non-Dedicated Provider Reimbursement Rates**



The taxi agreements built on a foundation of a prior guaranteed ride home program that was created in late 2003. Under that program, members of a Commuter Club who needed a ride home from work after regular Link hours could call Link and request that a cab be sent for them. Link developed agreements with several taxi companies for this program. About a year later, the guaranteed ride home agreements were amended so that the reimbursement took account of shared riding that would be more common with paratransit trips. If a series of linked pick-ups and drop-offs is carried by a non-dedicated provider, each segment is paid according the rates in Figure 2, regardless of the number of passengers on board.

The non-dedicated providers record the details of each trip on a three-part voucher and submit these vouchers to Link for payment. The vouchers were originally created for the guaranteed ride home program. Link is planning to eliminate the vouchers for Link Plus trips, since correct origin and destination information is known to Link from the reservations process and customer comments can be relied upon to alert Link to situations in which a ride was not delivered as planned.

Fares are not collected for trips served by non-dedicated providers. The Link Plus fare is only \$.50. Further, most riders use monthly passes and

therefore pay no cash fare. As a result the administrative effort to collect fares would not be justified.

On-time performance issues are not addressed in the non-dedicated provider agreements. The taxi companies do not call in pick up times and do not record actual pick up times. However, riders do complain if trips are not picked up within the established 20-minute Link Plus pick up window. The manager of Classic Taxi was aware of this service standard, and indicated that adhering to it is one aspect of the service that their drivers find challenging.

If a rider calls to check on a ride that has been assigned to a non-dedicated provider, Link calls the company, in some cases via cell phone since three of the company owners also drive. If a rider cancels a ride, Link prints out a paper record of the cancellation and call the company.

### 3.4 Reservations and Scheduling

Link Plus trips may be reserved from one to six days in advance. Between noon and 5:00 PM each day Link's scheduler determines which trips will be assigned to each taxi company. Manifests are created for each taxi company, treating each one as a driver run. The manifests are used only as a convenient way to show the trips to the served. The providers assign the trips to vehicles as convenient to them and do not necessarily perform the trips in the sequence shown on the manifest. The manifests are faxed to three of the companies and conveyed verbally by telephone to one shortly after 5:00 PM for the next day. Sometimes a company will turn down a trip, and occasionally a company will call during the day to say that they cannot perform a trip.

In addition to using non-dedicated providers, Link has also pursued a scheduling strategy to reduce the cost of service between Wenatchee and Leavenworth and between Wenatchee and Chelan, the two most popular inter-community corridors. Beginning in March 2005, pick-ups for these trips were scheduled according to established time points with available pick up times at each time point spaced two hours apart. The time points are posted in the call-taking and dispatch area in a format much like a fixed-route bus schedule for each inter-community corridor. By requiring riders to choose from among the available pick up times, Link hopes to group inter-community trips more than would be possible by matching each caller's requested

time. This procedure applies regardless of whether the trip is assigned to a Link Plus vehicle or a non-dedicated vehicle.

### 3.5 Other Paratransit Services (Contracting with Non-Profits)

Link has two small contracts for repeated group trips. One is with Chelan Douglas Developmental Services (CDDS), a non-profit in Wenatchee that serves people with developmental disabilities. Link pays CDDS a fixed amount of \$4,833 per month to provide a minimum of 1,200 trips per month with a goal of carrying at least 1,500 trips per month as part CDDS’s agency transportation program. The cost to Link for this service amounts to about \$4 per trip.

In a second contract, Link reimburses Lake Chelan Community Hospital for its expenses, up to a maximum of \$1,500 per month, to operate a Link-provided vehicle, principally to provide transportation to a senior meal site in Chelan for approximately 12 people daily. The cost to Link of this contract comes to about \$7 per trip. This arrangement is an outgrowth of a loan-a-bus program, which was subsequently modified to relieve demand that could not be accommodated on the route deviation trolley service.

The CDDS and Lake Chelan Community Hospital trips are not reserved, scheduled, or dispatched through Link Transit.

### 4.0 Service Statistics

The following tables present the operating statistics for dedicated and non-dedicated Link Plus service during FY 2004.

#### *Service on Dedicated Link Plus Vehicles\**

Passenger Trips	80,258
ADA riders	74,483 (approx. 36% using wheelchairs)
Attendants	4,250
Companions	1,525
Total vehicle hours	30,153
Total vehicle miles	388,131
Revenue vehicle hours	21,187
Revenue vehicle miles	297,453**

\*Not including 17,127 trips carried by Chelan Douglas Developmental Services or trips carried by Lake Chelan Community Hospital.

\*\*Due to reporting problems these miles include miles to and from the base. They exclude miles to and from break locations.

**Service on Non-dedicated Vehicles**

Passenger Trips	4,356
ADA riders	3,883 (approx. 25% using wheelchairs)
Attendants	297
Companions	176
Revenue vehicle miles*	69,797

\*"Live miles" with passengers on-board.

**5.0 Costs**

Link Plus's direct operating cost per revenue vehicle mile in FY 2004 was approximately \$3.80, with an average trip length of four miles. Trips carried by non-dedicated providers were 16 miles long on average in 2004 and cost about \$17 or roughly \$1.07 per mile.

**6.0 Background / History / Goals**

When Link introduced flexible trolley routes in Leavenworth and Chelan, the intention was to serve local paratransit trips using deviations by the trolleys. The level of demand proved high enough that the trolleys were not able to maintain their schedules. In the case of Chelan, this was addressed by contracting with Lake Chelan Community Hospital to serve a volume of repeat trips as described below. Most of the remaining trips are still served by trolley deviations. The trolleys are "historic" replicas with wooden, side-facing seats and wheelchair lifts, appropriate to a tourist-oriented business. They have reportedly not been popular with older riders.

In the case of Leavenworth, local ADA service is now being provided under a temporary arrangement with Gateway Bus Company, one of the non-dedicated service providers. As of July 2005 Link was in the process of preparing an RFP for a permanent provider of ADA paratransit within Leavenworth using taxi scrip. Link is working together with the City of Leavenworth with the aim of providing an economic foundation to help support taxi service there. A city of this size might not normally be able to support a taxi company. However, Leavenworth is a tourist destination, so it is hoped that the combination of tourist business, paratransit trips, and other work will support a taxi service.



## 7.0 Highlights

### 7.1 Cost Reduction

The principle goal and benefit of using non-dedicated vehicles has been to reduce the unit cost of Link Plus service. By reducing the cost of long-distance inter-community service, this has also helped to maintain the viability of providing service to outlying communities.

Within its core service area, Link is able to group trips very effectively. By comparison, for long inter-community trips such grouping opportunities are less common, and long deadheads are sometimes unavoidable. While exact dollar savings are not known, it is clear that it is much less expensive to serve long inter-community trips with non-dedicated providers than with Link's own vehicles. Trips carried by non-dedicated providers were 16 miles long on average in 2004 and cost about \$17 or roughly \$1.07 per mile. By comparison, the typical directly-provided Link Plus trip was about four miles long and had a direct operating cost (excluding allocated agency cost for administration, planning, or marketing) of about \$15 per trip. Link Plus's direct operating cost per revenue vehicle mile in 2004 was approximately \$3.80.

### 7.2 Customer Satisfaction

From the perspective of people with disabilities, the most positive aspect of Link Transit's innovations has been the preservation of service in outlying communities. For example, a rider who takes trips within Leavenworth was happy with service provided by the non-dedicated vans, and liked the smaller vehicles. This rider did not like using the prior trolley route deviation service and noted the difficulty the driver had maintaining a schedule. Two riders in Chelan get taxi rides within town on days that Lake Chelan Community Hospital does not operate bus service under contract to Link. Both found that the arrangement worked fine, and noted that Link Plus no longer sent its own vehicle for trips within Chelan since the trolley began providing deviation service. One rider was interviewed who regularly travels into Wenatchee on a non-dedicated vehicle. This rider was not pleased with the limitation of pick-up times that was introduced in March 2005, which limits the times he can get to medical appointments, but felt that otherwise non-dedicated vehicles provide service just as good as Link's own vehicles.

### 7.3 Maintaining Viability of Non-Dedicated Providers

Another benefit of non-dedicated service has been helping to maintain the viability of taxicabs and other non-dedicated providers in the community. The operator in Chelan was on the verge of going out of business until it began carrying trips for Link Plus. As the owner of the company explained, Chelan is mainly a “summer town,” with an influx of population related to leisure activities on Lake Chelan. The permanent residents have limited incomes and make little use of taxis. At the time of the case study site visit, this company was not being assigned as many Link Plus trips as previously, apparently as a result of complaints from one of the regular riders.

The manager of Classic Taxi in Wenatchee estimated that about 30% of their business consists of trips for Link Plus, and about 45% consists of Medicaid trips. The owner of Wenatchee Mobility Services, which began business in January 2005, estimated that 25% to 30% of his business consists of trips for Link Plus. Even though Link does not pay as well as other business, it appears that Link Plus trips are helping to provide a foundation that expands the availability of transportation services in the community. Link hoped that the arrangement would encourage taxi companies to add accessible vehicles but this has not happened so far.

The owner of Gateway Bus Company described Link Plus service as more consistent than his charter business. However, at the time of the interview, this company was carrying all local service within Leavenworth and only occasional inter-community trips.

### 7.4 Implementation Issues

Implementing the non-dedicated vehicle arrangement required some experimentation in the scheduling process, for example with respect to assignment of route numbers in the PASS scheduling software and enforcing the requirement to allow rider choice regarding assignment to a non-dedicated vehicle. Since it is generally easier for the schedulers to assign a long-distance trip to a non-dedicated provider, it was necessary to establish limits to use of non-dedicated vehicles. In the first half of 2004, non-dedicated provider billings averaged about \$14,000. These were reduced in the second half of the year to about \$5,500 per month.

A factor in Link’s ability to make the changes it did is the availability of suitable providers, including one taxi company and the hospital in Chelan, a taxi company in Wenatchee, and Medicaid providers. Multiple providers

are essential to being able to claim that there is no contract between Link and the providers that would bring with it drug testing requirements and liability issues. In addition, the economics of the taxi and Medicaid transportation business in the area appear to work in Link's favor, since otherwise it would probably be necessary to pay more for non-dedicated service than has been the case.

### 7.5 Institutional and Regulatory Issues

Link is prevented by labor agreement from basing vehicles in any of the outlying communities. However, it is not limited in its ability to refer trips to non-dedicated providers or to contract for paratransit service.

Link considers that its agreements with the non-dedicated providers are not contracts. The agreements specify no service standards other than those that may be established by local and state regulation. For example, as noted before, the agreements do not require adherence to on-time performance standards. Instead, the agreements specify that the company shall "recognize that this is a user side subsidy agreement, and as the Commuter Club member chooses the Taxi/Livery provider for his/her trip, it is in the best interest of the Taxi/Livery provider to offer the best quality service and equipment possible." This language reflects the origins of non-dedicated vehicle service as a guaranteed ride home option before it was used for Link Plus. In the case of Link Plus, the principle is that riders can choose not to ride any company that does not meet the usual Link Plus service standards. The agreements contain no language related to driver training, selection, or drug testing. A sample agreement provided to the research team is signed for Link Transit by the Planning Manager.

With respect to liability, the provider agreement specifies only that the company maintain, at its sole expense, comprehensive general and automobile liability insurance covering its operations in the program at levels required by local and State regulations. The most recent company to join the program provided Link a certificate of insurance naming Link as an additional insured. Link staff recalled that a passenger was injured riding a non-dedicated vehicle and the claim was handled by the provider or its insurance company.

Taxicabs appear to be subject to little local regulation. According to the manager of Classic Taxi, East Wenatchee is the only community in the area that issues licenses specifically for taxicabs. Each company sets its own rates.



**Appendix A**  
**Glossary of Terms**  
**for the Paratransit**  
**Practitioner**

## Appendix A: Glossary of Terms for the Paratransit Practitioner

- Abandoned calls** These are reservations calls that were put on hold (manually by an automated telephone system), and that were subsequently terminated by the customer. The number of abandoned calls, if tracked by a telephone MIS, can be used as a service quality measure. A high rate of abandoned calls may indicate that there is an insufficient number of call-takers or telephone lines.
- ADA** **Americans with Disabilities Act** - 1991 Act that contains provisions on the acquisition of accessible vehicles by public and private entities, requirements for complementary paratransit service by public entities operating a fixed-route system, and provision of nondiscriminatory accessible transportation service.
- Advance request period** The period of time (before the day of the trip) when a trip request may be placed. The ADA requires that systems provide, at a minimum, next-day service. It does not require same-day service, although many systems do provide same-day service, most on an “as available” basis and/or in response to request for **will-call returns**. The ADA formerly required a 14-day advance request period, but no longer does. As a result, many systems have shortened the advance reservation period to one week or less.
- AVL** **Automatic Vehicle Location** - Computer-based vehicle tracking based on location technology, such as the global positioning system. Transmitter devices on board vehicles are used in conjunction with location technology to transmit the location of the vehicle to the radio dispatcher. In conjunction with some paratransit scheduling software and MDTs, the AVL system can be used to “location-stamp” each stop, in order to ensure that the arrival and departure time data really does pertain to the stop in question. The AVL system also is integral to systems that provide the driver with automated directions, because the system knows at any given point, where the vehicle is, and which direction it needs to go to get to the specified destination.

**Brokerage**

A paratransit brokerage serves as a middleman between one or more trip-sponsoring (funding) agencies and a complex service delivery network, usually involving more than one service provider. Typically, the broker enters into agreements with the funding sponsors, and organizes the service delivery network. This may include contracting with the service providers. The broker may also directly perform call-center function (such as reservations and scheduling), and in some cases, may operate some of the service (sometimes known as a **partial or hybrid broker**). The broker may also perform or be responsible for certain functions more typically associated with the funding agencies (e.g., eligibility determination, trip ticket/scrip management, carrier/service monitoring, and carrier invoice processing).

**Complementary paratransit**

Specialized demand-responsive service provided for people who cannot use fixed-route transit or rail service due to a disability, meeting specific comparability requirements as established by the Americans with Disabilities Act. The service is called “complementary” because it is provided, at a minimum, where and when the fixed route service is provided, and because it complements fixed-route service, that is it provides additional service needed to make the entire system usable by people with disabilities.

**Contract rate structure**

A rate structure defines how a contracted service provider is paid for its service. Typically rate structures for paratransit include per revenue vehicle hour, per revenue vehicle mile, and per trip, or a combination thereof. Revenue vehicle hours or miles often begin with the first pick-up and end at the last drop-off of a run, although they sometimes are calculated from pull-out to pull-in, and, in the case of revenue hours, sometimes excludes breaks of a predetermined minimum length. It might also include a monthly fixed amount covering expenses that do not change significantly with the change in service volume, and a variable rate (per revenue vehicle hour, per revenue mile, or per trip) to cover costs that could change significantly with a change in service volume.

**Cost efficiency**

Cost efficiency for paratransit systems is usually measured in terms of cost per trip, although it can also be measured in terms of cost per mile, and for dedicated service, cost per hour. The lower the cost per trip, the more cost-efficient the system. Service productivity, typically measured in trips per hour, can serve as a surrogate measure for cost efficiency but only for dedicated service.

<b>Curb-to-curb service</b>	A demand-responsive service that picks up and delivers passengers at the curb or roadside nearest their origin or destination. Passenger assistance is not provided other than for actual boarding and alighting.
<b>Dedicated service</b>	This is an operation where the vehicles in operation are dedicated to the transportation of customers of a transportation program (or coordinated set of programs) during a specified period of time. (See also <b>Non-Dedicated Service</b> .)
<b>Demand curve</b>	A graph depicting the volume of trip requests (or trips served) during the service day.
<b>Demand-responsive</b>	A characteristic of transit service in which vehicles are routed according to passenger boarding and alighting requests.
<b>Demand-responsive feeder or connector</b>	A transit service in which vehicles operate in demand-responsive mode within a zone, with one or more scheduled transfer points that connect with a fixed-route network. A high percentage of ridership consists of trips to or from the transfer points.
<b>Dial-A-Ride</b>	A form of demand-responsive public transportation without fixed stops or fixed schedules in which vehicle routing is determined entirely in response to passenger service requests made by telephone or similar means.
<b>Dispatching</b>	The dispatching function is divided into Radio Dispatching and Window Dispatching. Both involve activities that happen on the day of the trip. <b>Radio Dispatching</b> is the process of monitoring vehicle operations and issuing voice instructions (via radio or cell phone) or text messaging (via MDTs) to drivers to make adjustments to a pre-planned schedule. This may involve making sure that the drivers are keeping up with their schedules, responding to no-shows, assisting drivers with incidents and emergencies, communicating late cancellations to the drivers, scheduling same-day “add-on” trips to vehicle runs and communicating these add-on trips to the drivers, switching trips from one run to another in response to vehicle running late or to vehicles that have become disabled and communicating these changes to the drivers, assisting lost drivers, responding to “Where’s my ride?” calls from customers, and, where the system has MDT/AVL capabilities, ensuring that the proper pick-up/drop-off times are being entered into the system, and ensuring that vehicle is in the right place. <b>Window Dispatching</b> involves assigning vehicle drivers and vehicles to scheduled vehicle run, providing the <b>driver manifests</b> for each <b>vehicle run</b> to the assigned driver, and recording or blessing shift start and end times, and pull-out and pull-in times and mileages.



<b>Door-to-door service</b>	A demand-responsive service that picks up passengers at the door of their place of origin and delivers them to the door of their destinations. The driver escorts or physically assists passengers between the vehicle and door of the origin or destination. Door-to-door service provides a higher level of assistance than curb-to-curb service. (Sometime used loosely as a synonym for “demand-responsive service.”)
<b>Driver manifest, trip manifest, or trip sheet</b>	A driver manifest or trip manifest or trip sheet includes the list of trips or stops in the proper sequence for a specific vehicle run, along with needed information about the customers to be transported (name, mobility device used, disability, etc.). The manifests also provide spaces to document actual service data that pertain to each trip and stop, and run-level summary information.
<b>Driver wait time</b>	The number of minutes a driver is instructed to wait for a customer after arriving at the pick-up location (and within the pick-up window), before calling the dispatcher to indicate a no-show and to get instructions as to whether the driver should wait longer or proceed to the next stop.
<b>Dwell time</b>	The time it typically takes to load or unload a passenger. Includes <b>Driver wait time</b> , use of the lift or ramp, and securement of the passenger. Computerized scheduling systems often accommodate different dwell times for ambulatory and non-ambulatory customers.
<b>FTA</b>	<b>Federal Transit Administration</b>
<b>GIS</b>	<b>Geographic Information System</b> – A system that is used to display service areas and other locations. GIS systems interface with automated paratransit systems to locate addresses and distances for scheduling purposes, and with AVL systems to locate vehicles.
<b>GPS</b>	<b>Global Positioning System</b> - Technology using signals transmitted from a network of satellites in orbit to determine locations on the earth.
<b>Hold time</b>	The period of time that a caller is placed on hold. Some telephone systems track and differentiate between initial hold time (up until a customer first speaks with a call-taker) and total hold time. Average hold time and maximum hold time, can be used as a service quality measure. A high average hold time may indicate that there may be an insufficient number of telephone lines or call-takers (or that a re-adjustment of call-taker schedules to better match the call volumes is warranted)..
<b>Holding run</b>	A “bin” into which unscheduled trips can be placed, pending their being scheduled.

<b>Human service agency</b>	A government or not-for-profit organization that provides services for essential needs such as medical care, income support, housing, education, training, and public health, typically for people requiring help due to age, disability, low income or similar reasons.
<b>Human service transportation</b>	Transportation provided by or on behalf of a human service agency to bring people participating in the agency's programs or services to those programs or services.
<b>ITS</b>	<b>Intelligent Transportation Systems</b> - Advanced technologies applied to various aspects of transportation to enhance mobility, energy efficiency, and environmental protection.
<b>IVR</b>	<b>Interactive Voice Response</b> – A software application that accepts a combination of voice telephone input and touch-tone keypad selection and provides appropriate responses in the form of voice, fax, callback, e-mail or other media. IVR is usually part of a larger application that includes database access.
<b>MDT</b>	<b>Mobile Data Terminal</b> also sometimes called MDCs or Mobile Data Computers. These are on-board monitors/keyboards or computers that are used to communicate data between the vehicle and the dispatch office. Sometimes, also refers to an integrated on-board device that combines a mobile data terminal with a vehicle logic unit and other devices such as GPS, a communications interface, or smart card reader. MDTs are typically used to display today's schedule (driver manifest) for that vehicle, taking the place of a paper driver manifest. Much of the information typically entered onto the driver manifest by hand (e.g., pull-out and pull-in times and odometer readings, actual arrival time and departure time at each stop, the odometer reading at each stop, break times) is instead entered into the MDT by the push of a button. The drivers can transmit codes back to the radio dispatcher, rather than by voice, for standard communications. Also, radio dispatchers can transmit add-ons, late cancellations, and changes to the drivers via the MDTs.
<b>Missed trip</b>	This is a trip that was scheduled to be served but was not served due to provider or driver error or adverse operational circumstances. This is not a customer <b>no-show</b> , where the customer was at fault. Some systems also include in the missed trip count trips that were served but where the vehicle arrived very late (e.g., 60+ minutes late after the negotiated pick-up time or window).
<b>Negotiated pick-up time</b>	The quoted pick-up time after a customer places the trip request (vs. the requested pick-up time).

<b>Non-dedicated service</b>	This is an operation where the vehicles in operation are <u>not</u> dedicated to the transportation of customers of a transportation program (or coordinated set of programs) and also carry other passengers. For example, a user-side subsidy taxi program. Non-dedicated service can be used in conjunction with dedicated service to meet peak demands or other situations where the use of additional dedicated vehicles may not be cost-effective or possible.
<b>Overbooking</b>	A strategy where more trip requests are taken than can be scheduled onto dedicated vehicle runs. Trips that are unable to be scheduled at the time of the reservation are placed into <b>holding runs</b> where they reside until they are scheduled or dispatched into holes in the schedule that are created by late cancellation and no-shows, or assigned to a non-dedicated service provider (if available). Accepting these trip requests is telling the customer that the trips will be served. Thus, it is generally a good idea to have a back-up plan (e.g., non-dedicated service provider) in case a trip cannot be subsequently scheduled/dispatched onto the dedicated fleet.
<b>Paratransit</b>	Most commonly used to refer to specialized demand-responsive service provided for seniors and people with disabilities, especially ADA complementary paratransit. Historically, used to refer to a variety of shared-ride transportation services other than conventional transit service, usually using small vehicles.
<b>Pick-up window</b>	A window of time, constructed from the negotiated pick-up time, in which a vehicle may arrive for a pick-up and not be deemed early or late. For example, a common pick-up window is +/- 15 minutes from the negotiate pick-up time. Some systems also have a <b>Drop-Off Window</b> .
<b>Productivity</b>	A measure of the quantity of desired results produced per unit of resources applied. In paratransit (and especially for dedicated service), productivity is commonly measured using passenger trips per hour. Unfortunately, systems do not all define “passenger trips” and “hours” the same way. With some systems, trips are defined as total passenger-trips, including PCAs, companions, etc. In other systems, trips are defined as just the program-eligible passengers. As the denominator for the productivity calculation, most systems use <b>revenue vehicle hours</b> . The NTD defines revenue vehicle hour as first pick-up to last drop-off less breaks, whereas <b>total hours</b> also including the breaks and the deadheading to and from the yard, and hence pullout to pull-in.

<b>Request stop service</b>	A transit service in which vehicles operate in conventional fixed-route, fixed-schedule mode and also serve a limited number of defined stops near the route in response to passenger requests. (Request stops differ from flag stops in not being directly on the route.)
<b>Reservations</b>	The process of receiving and booking requests for same-day, advance-reservation, and/or subscription (standing order) trips. In many systems, the staff that receive reservations also receive process cancellations, change-orders, and provide general information about the system and other customer service functions.
<b>Ride time or travel time</b>	The time a customer is on board the vehicle. Many paratransit systems have established a maximum ride time as a scheduling parameter and service quality measure.
<b>Run structure</b>	The set of dedicated vehicle runs that are constructed in such a way as to provide adequate capacity at various times of the service day. The run structure may include a combination of straight runs, split runs, and/or partial or part-time runs, with staggered start and end times, and accommodations for deadheading and breaks, and are generally constructed to match the demand curve. Run structures are often depicted with bar graphs for comparison with the demand curves for the same day.
<b>RVH</b>	Revenue Vehicle Hour – A span of time when a vehicle is available for carrying passengers, including layover and recovery time, but excluding deadhead time to and from a vehicle storage location or break location, or between routes.

## Scheduling

In a demand-responsive service, the process of determining the path and schedule of vehicles in the system so that they serve the trips that have been requested. Also, the process of assigning a booked trip request to a specific vehicle run, and determining in the vehicle run the scheduled (as opposed to requested) pick-up time and drop-off times for the trip. In some systems, trip requests are initially scheduled onto a vehicle run immediately after the trip request is booked and while the customer is still on the phone; this is called **real-time** or **immediate** scheduling. Some of these systems also have automated **batch scheduling** capabilities, where the system schedules all trips to be scheduled as efficiently as it know how, noting most operations that utilize batch scheduling have schedulers review and further refine the schedule, as need. In a system that permits trips to be requested on short notice, the process of scheduling may be merged with dispatching. In most systems, the scheduling process ends when the driver manifests for each vehicle run are printed. In cases where a system utilizes taxi contractors (or other non-dedicated service providers), the scheduling process also includes assigning trips to the non-dedicated provider for subsequent dispatching by the provider; this includes giving/sending the list of such trips to the provider.

Computerized paratransit scheduling systems typically provide computer-assisted scheduling and/or automated scheduling capabilities. Computer-assisted scheduling provides help to the scheduler, but ultimately it is the scheduler who must decide where to schedule a trip. These are often used by smaller systems, and greatly increase office staff productivity as they are used to generate driver manifest and various reports. Automated scheduling systems, based on **GIS** map of the service area that underlies the system, and based on various parameters such as average vehicle speed, allowable pick-up window, dwell times, and maximum on-board travel time suggests one of more runs onto which the trip would fit, and automatically inserts the trip into each run for reservation agent or scheduler blessing.

## Service mix

Dedicated service can be combined with non-dedicated service as an efficient response to the demand. The combination of these two different types of service is often referred to as a service mix, and is often expressed as the ratio of dedicated service to non-dedicated service.

**Service quality** Paratransit service quality is typically measured by average and maximum hold times of the reservations staff, by the percentage of abandoned calls, by on-time performance of service delivery and degree of lateness for the late trips, by percentage of missed trips, the complaint ratio, and the complaint resolution response time.

**Slack time** The amount by which the time scheduled for a process exceeds the time required for its completion. In demand-responsive or flexible transit, slack time refers to time in a vehicle schedule that is available to schedule a deviation or an additional passenger stop without affecting the rest of the schedule.

**Split shift** A driver assignment that has two distinct pieces during a given day, with a period of non-paid, non-work in between. This is not to be confused with a straight shift with a lunch break. A split shift has two sets of starting and ending times in one day. If the two pieces are assigned to two different drivers, each piece is often referred to as a **partial** shift.

**Standing order or subscription trip** Standing Orders and Subscription Trips (one in the same) are typically defined as trips of a specific customer that recur in regular pattern (e.g., at least once a week and that go to and from the same origin and destination at the same times). This might include a daily work trip, a senior nutrition trip, or a Monday / Wednesday / Friday dialysis trip, for example. They involve a one-time request, and hence are booked automatically after the one-time request is processed. Customers call again only to cancel, or to arrange a temporary suspension.

With automated scheduling systems, standing orders are scheduled onto runs in templates for each day of the week. When the template is used to create the schedule for a specific date, all the standing order trips that were scheduled into runs in the template are copied over into the respective runs for that date (unless there is a customer or trip suspension). This is done before the rest of scheduling process begins.

If an ADA paratransit system is capacity-constrained (noting that under the current no-denial requirement, there should be no capacity constraints), then the system, by law, is limited to having standing orders represent no more than 50% of the trips served at any time of day. However, if there is no capacity constraint, then this regulation is moot, and there is no such limit.

**Straight shift** A driver assignment that has one starting time and one ending time in a given day.

<b>Trip</b>	In the paratransit industry, a trip is usually synonymous with a “passenger trip” which is a movement of passenger from origin to destination.
<b>Trip time negotiation</b>	The process in reservations of negotiating an alternative pick-up to the one requested in order to create a more efficient schedule or to be able to accommodate the trip request. For ADA paratransit systems, negotiated trip times that are more than 60 minutes before or after the requested pick-up time constitute denials, regardless of whether the customer agrees to the offered pick-up time or not.
<b>Turnkey contract</b>	This is contract to provide all operational functions, including reservations, scheduling, dispatching, operations, and maintenance. It can also include the provision of an operations/maintenance facility, paratransit scheduling software (and hardware), and/or vehicles. It seldom includes, but can include, the eligibility determination function.
<b>Vehicle run</b>	A vehicle run or tour is the piece of work that a driver performs between pull-out and pull-in. Trip requests are scheduled onto specific vehicle runs. <b>Holding runs</b> , usually organized by time of day, are used as a temporary place to store unscheduled trip requests in some computer systems.
<b>Will call return trips</b>	These are round-trip requests that are booked with an unspecified return pick-up time. Some systems permit will-call return trips for medical appointments and dialysis trips, where there is wide fluctuation (beyond the control of the customer) as to when the customer will be ready to go home. So, instead of scheduling the return trip pick-up time, the return is left open. When the customer is ready to be picked up, the customer calls and the dispatcher “live-dispatches” the trip to a vehicle, much like a taxi dispatcher.