Survey of Implementation Strategies by Rural Paratransit Agencies Using Low Cost Software

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May 2004

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OVERVIEW

In 1964, Congress passed the Urban Mass Transportation Act, creating the Urban Mass Transportation Administration (UMTA) within the Department of Transportation. This initiated federal funding for public transportation. In 1978 a rural component was added, catalyzing the formation of rural public transportation systems. A genre of public transportation evolved: coordinated transportation systems.

The coordinated transportation industry is relatively young. The early systems sprouted in the mid-1970s, and because most were rooted in human services, they were known as "elderly and handicapped," or E&H systems. By 1980, the community based alternatives to fixed route transit and private autos were calling themselves "paratransit" systems. In the late '80s the name evolved to "specialized transit," then eventually to "coordinated transportation," which best describes the industry's scope and product.

When the rural component of UMTA funding was established, known as "Section 18," the late '70s and early '80s saw transit operations beginning to spring up across rural areas all over the United States. These operations were usually small and gritty, doing whatever it took to get the job done. System operators essentially functioned alone, serving their communities, developing each process as needed. Scheduling and dispatching functions were performed manually. Demand for the service was immature, and marketing efforts were minimal.

Through these formative years, the industry grew in volume, professionalism, complexity and value to their communities. System professionals established networks with their peers. Informal associations were created as a forum to share concerns and innovative practices. Coordinated systems were organized locally, regionally, at state and national levels.

During this time, at state and federal levels, funding managers and regulatory agents were developing and standardizing policies and practices on issues such as licensing, certification, and vehicle specifications. Coordinated transportation managers began to establish relationships with their regulatory and funding administrators.

The common denominator for the thousands of coordinated transportation systems serving rural areas is:

> *Coordinated transportation systems are created and supported by local communities to provide and/or improve mobility for its citizens who are unable to use conventional public transit or personal transportation.*

There are a variety of reasons that citizens are unable to use conventional transportation to get where they must go, or choose to go, including:

- Physical restrictions
- Cognitive or emotional restrictions
- Lack of money
- Age
- Safety or security
- Environmentally conscientious

Many citizens living in rural areas don't have fixed route services available to them. Many citizens living in urban areas may be surrounded by fixed route options, but are unable to access them due to physical or cognitive limitations. The need for coordinated transportation is not limited to a specific socio-economic category, geography or age.

Mobility issues are particularly challenging in rural areas. Service areas tend to be much larger than their urban and suburban counterparts. Low residential densities, lack of fixed route transit including commuter rail, and limited medical, employment, therapeutic and other critical destinations result in lengthy average ride lengths/ride times, and lower opportunities to share, or group, riders with similar origins, destinations and travel times.

In addition, any federal or state funding formula using a per capita basis puts rural areas at a financial disadvantage. Overall, transportation dollars spent at the national level on rural areas is a fraction of total transportation funding.

1. THE BUSINESS OF COORDINATED TRANSPORTATION

The objective and daily task for a coordinated transportation system is to assemble the wide variety of individual requests for rides for the following day and create efficient, effective routes. The passenger takes some responsibility in this process as well; systems usually require flexibility from riders, including a time "window" in which their pick-up is considered acceptable.

Every day, employees of coordinated transportation systems report to work to "do it all over again" – to plan and deliver high quality, safe, productive, personalized transportation service for members of the community who would otherwise be homebound.

The process of assembling productive routes is difficult and time consuming, complicated by the unique characteristics of both the supply – our tools and human resources – and the demand – our passengers and their trip requests. The following section will discuss some of those unique characteristics.

1.1 Coordinated Transportation Systems - Consumers

Many passengers using coordinated transportation services in rural areas are able-bodied men, women and children going to work, school, or the market. However, a significant portion of riders is not as capable of using the service.

Coordinated transportation passengers include persons with ambulatory issues, including dependency on wheelchairs or walkers, crutches or other aides. Some passengers have knee joints that cannot bend, thus making bus or van steps impossible. Some have physical weaknesses, or are very frail. Others deal with vision, speech, and hearing impairments.

Less obvious forms of disability include respiratory illnesses, kidney failure, incontinence, emotional, cognitive or mental disorders, dementia, and disorientation. Some passengers must adhere to strict medicine and/or eating schedules.

When planning service for a passenger, schedulers must take into account not only the individual passenger's special characteristics, but the special characteristics of his individual trip as well. Consider, for example, the possible combinations of factors that must be juggled by a scheduler attempting to assemble efficient yet responsive routes and schedules.

It is important to note that in addition to a coordinated transportation system's consumers, there are many other beneficiaries of this service in the community. Systems must constantly work at its relationships with these beneficiaries, nurturing as many partnerships as possible. These partnerships are critical to a number of the difficult issues that systems routinely face, especially issues of responsiveness. Some community beneficiaries include:

- Families and caregivers of passengers
- Health, social, and community care service providers
- Local businesses and services
- Elected officials and community leaders
- Local employers

Consider as an actual example how the special characteristics of one beneficiary – a passenger's caregiver – can impact a coordinated transportation system's daily processes. A woman with a

full-time job also cares for her mother with Alzheimers. The rural coordinated transportation service picks up Mom each morning and takes her to an adult day care program. Mom cannot be left alone at all because she wanders, so the woman cannot leave for work until the coordinated transportation vehicle arrives for Mom. Mom's pick-up time varies depending on the number and location of other pick-ups that driver has assigned to him on any given morning. Conversely, the woman must be home in the afternoon before Mom is dropped off, otherwise Mom is returned to the day care center, which charges a "late pick-up" penalty.

In another actual example, a man in a rural community with a full-time job and family responsibilities has an adult brother with a cognative disability living with him in his home. The man has been working hard with his brother to help him lead as independent a life as possible. Each day the coordinated transportation system transports the brother to and from a vocational rehab center which the brother refers to as his "job."

In each of these cases, the dependability and integrity of the coordinated transportation system has a very significant impact not only on the lives of its passengers, but on their caregivers and family members. The quality of the coordinated transportation service will determine whether a mother with dementia or a brother with mental disability can continue to live and interact as part of the community.

1.2 Types of Trips

In coordinated transportation systems, some portion of the day's business is repeat in nature. Passengers call to arrange a ride every day to work, or every Thursday to therapy, or every Wednesday and Saturday to a volunteer assignment. Systems refer to these types of trips as "repeaters," "subscriptions," "standing orders," "reruns," etc. Rerun trips can represent from about 30 to 70 percent of a system's volume.

The balance of the business is random in nature, and very likely to be very different on any two days. A passenger requests a ride for a medical appointment, a banking errand, a special event being held at the library, etc. Following is a list of possible "destinations" served by coordinated transportation systems:

- Medical, including regular appointments, appointments related to a hospital stay, therapies, dialysis, outpatient mental health, substance abuse clinics, etc.
- Nutrition-related, including grocery shopping or senior centers with hot meals
- Vocational rehabilitation or workshops
- Education, including vocational training
- Employment, including Welfare-to-Work initiatives
- Volunteer workers, to and from the work sites
- Day care, for elderly adults, cognitively impaired, special needs children and children of working parents
- Socialization, recreation, visiting, local events, etc.

Coordinated transportation systems often face the issue of "prioritizing" trips by purpose, especially in systems with more demand than supply. This is a sensitive problem that often causes bad publicity for the agency. It is obvious that trips that are life-sustaining in nature, such as kidney dialysis trips, can be considered top priority. Beyond that, any ranking will be subjective. Consider, for example, two requests for rides:

- An elderly man going to his primary care physician for an appointment

- An elderly woman going to the local beauty salon for a "wash and set"

At first glance, most would agree that the gentleman's ride to his doctor appointment would be more important than the beauty salon trip. But would the scheduler assembling tomorrow's rides, with limited resources, know that:

- The gentleman's appointment is a weekly trip to his doctor for a B-12 shot, which many physicians would claim to be superfluous
- The woman's appointment would be the first time that she is able to have her scalp and hair washed in seven weeks because she is too frail to handle this job alone in her home

To avoid the pitfalls of ride prioritization, many systems establish a "first come, first serve" policy. Other systems "black out" certain hours of the day for medical, employment, day care and education trips only.

1.3 Levels of Service

The levels of service provided by a coordinated transportation system can be as diverse as the types of trips they provide to their consumers. Levels of service can be viewed as a continuum, from very basic to very complex, as depicted in Table 1.

Systems must choose which levels of service they can afford to provide, and frame policies and procedures around their decision. Service levels may be dictated by Federal or State regulations, or may be shaped by the system in cooperation with the community.

Determining appropriate service levels for a given community is a balancing act, trading levels for cost. For example, a community may be willing to forfeit "same day service" to assure "door-to-door service." Once determined, service levels, or system parameters, must be clearly and consistently articulated to passengers and communities. In times of financial hardship, coordinated transportation systems have reduced service levels until funding/financial security is restored.

Service parameter	***from…..***	***to…..***	***to…..***	***to…..***
pick-up and drop-off location	nearest intersection	curb to curb	door to door	door through door
driver assistance	no physical contact	driver's discretion	whatever is needed	driver and aide team
advance notice required	one week before	one day before	two hours before	none required
arrival time "window"	driver waits 3 minutes after scheduled pickup	driver leaves after pickup window	driver waits at dispatcher's discretion	driver returns when passenger is ready
passenger drop-off	driver drops off with no conditions	driver returns patron to pickup if no one home	driver returns when caregiver gets home	driver waits with patron until caregiver gets home
vehicle accommodations	closest vehicle is dispatched	closest appropriate vehicle is dispatched	dispatcher considers special needs request	patron requires certain vehicle type
impact on operation				
difficulty of scheduling	Easy	requires more consideration	options are more restricted	very difficult to predict driver availability
degree of dispatcher or scheduler control	almost complete control	fair amount of control	more dependent on driver	least amount of control
level of productivity	very high	high	fair	low
cost to provide	Moderate	higher	fairly high	very high

1.4 Administrative Structure

Coordinated transportation service is delivered through a variety of administrative models. Systems can be non-profit or for-profit corporations, departments of county or city government, or transit authorities.

Systems can choose to provide the service directly, keeping these functions "in house:"

- Human resources: hiring, training, certifying, disciplining, evaluating, etc.
- Vehicles: buying, insuring, maintaining, replacing, etc.
- Trip scheduling: call-taking, scheduling, dispatching, billing and accounting, etc.
- Marketing, strategic planning, passenger and community relations, etc.

Systems can choose another model of service delivery, acting as a lead agency, for example, taking primary responsibility for coordinating services among a number of systems, or serving as a broker with responsibility for accepting all trip requests and allocating these requests to other systems under contract.

A coordinated transportation system's administrative structure will determine its level of involvement in day-to-day operations, specifically the function of assembling and scheduling the community's request for service.

1.5 Equipment

A system's vehicle inventory is at the crux of the system's "supply." It is the first determination of how much service can be provided, and when.

Coordinated transportation systems experience the same peak-hour phenomenon as fixed route and school bus systems. All available vehicles will be deployed during the conventional peak hours of 7 to 9 a.m., and 3 to 5 p.m. During the off-peak hours, the same number of vehicles may not be needed, but the specific characteristics of certain vehicles may be called for. Examples of vehicle characteristics affecting their scheduling include:

- Capacity for both ambulatory seats and wheelchair tie-down locations
- Hydraulic lifts or ramps for boarding wheelchairs and passengers unable to handle bus steps or stepping up into a van
- Location of wheelchair tie-down "seats"
- Ability to safely handle child car seats, oversized wheelchairs or motorized scooters
- Requirement for a professional CDL licensed driver
- Size, and ability to negotiate narrow and/or steep driveways and roads, or in the case of some converted mini-vans, ground clearance
- Compliance with appropriate regulations, such as the Americans with Disabilities Act

Coordinated transportation systems depending on federal and state capital grants for vehicle replacement must plan strategically. Procurement cycles can often take an average of 18 months.

1.6 Driver Characteristics

While the vehicle inventory is the first factor when determining a system's ability to provide service, the characteristics of the system's drivers will make or break the efficient, effective use of the vehicles.

Coordinated transportation systems have to have a supply of trained, competent drivers willing to handle the vagaries of coordinated transportation: little predictability to their schedules and assignments, passengers with an assortment of special needs, and in most cases, a wage that is less than competitive.

These drivers will most likely be subjected to drug and alcohol testing on a pre-hire, random, post-accident and reasonable suspicion basis. They will often be required to push and pull heavy wheelchairs up and down some number of steps. They must be able to brave all kinds of weather conditions. They will have to keep their concentration on the road, in spite of a half dozen youths with emotional disorders on board, being transported to a special after-school therapeutic program. They must be adept at securing wheelchairs and motorized scooters on vehicles that have a variety of different lock-down systems. They may have to have a CDL or other special license to drive specific vehicles. And at some point in their day they will want and need a lunch break.

Coordinated transportation systems have had great success with hiring mature workers, i.e., men and women who are 55 years and older. As drivers, these men and women have proven to be:

- Very good drivers with low preventable accident rates
- Compassionate towards their passengers
- Reliable with good on-time attendance
- Working more for job gratification than financial security

However, mature driver pools present challenges when attempting to assemble productive routes and schedules. Older men and women often have physical limitations that prevent them from handling wheelchairs on steps or from driving after dark. They may opt to drive only a certain type of vehicle with which they are comfortable. They may be resistant to training and testing for a CDL license.

Ideally a coordinated transportation system could integrate mature workers into their driver forces to benefit from their positive contributions, in spite of the fact that this would require more flexibility in the routing and scheduling process. Systems must determine at what point its schedulers can no longer integrate yet another "special characteristic" into their process of assembling efficient routes and schedules. As with differing levels of service discussed above, coordinated transportation systems must be clear and consistent when articulating driver expectations.

1.7 External Influences

Over the years, coordinated transportation professionals have observed a significant impact on their service related to the changes in the health care field in the '80s and '90s. A single medical "episode of care" would involve a ride to the hospital for admission, and a ride home following discharge – two one-way trips.

Today that same episode may involve as many as 16 or 18 one-way trips

- to the hospital for pre-admissions testing, then home
- to the hospital for "same day surgery," then home
- a return to the hospital the following day for an appointment with the surgeon, and home
- to the primary care physician's office weekly, for four weeks, for check-ups, then home
- to the surgeon one month later for a check-up, then home

Changes in our health care delivery systems have impacted the demand for coordinated transportation service, as well as the levels of service that we offer.

Transporting a patient home from same-day surgery may call for a different level of care than transporting that same person home after a 4- or 5-day hospital stay.

The local economy and its resulting unemployment rate also affect the coordinated transportation systems. High unemployment rates usually offer systems a rich labor pool for drivers, dispatchers, etc. at reasonable wage rates. The low unemployment rate experienced in recent years in many areas forced coordinated transportation systems to be more creative with their employee recruiting and retention efforts, and to consider more realistic "livable wages," with a dramatic impact on operating costs.

State and federal programs are another significant external influence on coordinated transportation systems. Often a system bases its service parameters on requirements of a state or federal program. Such programs can be the "critical mass" that affords the community the opportunity to establish and build coordinated transportation service; sometimes the programs are simply an incremental contract for a system, with new service simply integrated into existing service. Two large national programs warrant noting:

1.7.1 ADA Complementary Paratransit

With the passage of the Americans with Disabilities Act in 1990 came a mandate for public transit authorities across the country to make their fixed route services "accessible" to persons with disabilities. The Federal Transit Administration recognized that in some cases disabled passengers would be unable to use fixed route services, no matter how accessible. Thus "complementary paratransit" service was mandated, requiring fixed route transit service operators to make demand responsive service available to eligible persons with disabilities who live within a 3/4-mile band on either side of all fixed routes. The ADA Complementary Paratransit Program has a very comprehensive set of regulations and service parameters which usually exceed any demand responsive service already established in an area. Often these regulations become the defining parameters of any system participating in the transit authority's program as a contractor. Rural coordinated transportation systems providing fixed route service must comply with all regulations as well.

1.7.2 Medicaid Transportation

State offices that administer the Federal Medicaid Program are required to provide free transportation for Medicaid-eligible persons to access medical services. The programs vary from state to state, but at a minimum, a combination of personal reimbursement and demand responsive services are offered. Like the ADA program, the Medicaid transportation programs have specific requirements on service parameters that apply to all participating transportation providers.

1.8 A Balancing Act

In the previous paragraphs we looked at some of the "special characteristics" of the components of coordinated transportation:

Consumers:
Their specific trip requests
Their minimum level of service required
Their caregivers

And

External Sources influences daily events
Weather
Community Emergencies

And

Resources:
Administrative structure
Fleet of vehicles
Driver Pool
Funders

All members of the coordinated transportation team, from the drivers to the governing board, must keep their focus on a very delicate balancing act. Each day the team must attend to and accommodate the "special characteristics" described above within the framework of its principle values:

- **Safety** – the passengers, the drivers, the office employees
- **Responsiveness** – is the product delivered by the system what the community needs?
- **Quality** – on-time performance, driver and staff courtesy, vehicle cleanliness … would the community be willing to support and defend this service?

- **Productivity** – is the system making the best use of its resources to meet the need? …Can the system defend its trip/vehicle hour measure?
- **Profitability** – "there is no mission without a margin" … will the system still be around in 3, 5 or 10 years to provide this necessary service to the community?
- **Satisfying work environment** – are employees generally productive, and gratified by their contribution? Can the system recruit and retain the quality and quantity of employees needed?
- **Accountability** – are agencies who are buying rides for their clients and patrons comfortable with the trip billing, accounting and reporting processes?

2. RURAL PARATRANSIT NEEDS

2.1 Typical Operations

When most small to medium size agencies started up they used a manual system for reserving and scheduling trips, and they would require that trip reservations be made at least 24 hours in advance. Two types of manual systems were typical: the clipboard and the trip ticket.

The clipboard system is the simplest method and is practical for only small agencies. Five clipboards are hung on hooks on the wall representing the next five business days. Each clipboard contains one or more lined sheets for each vehicle. Each line on a sheet represents a 15 to 20 minute time interval. When a client calls in to reserve a trip, the client's name and pickup and drop off times and addresses are written in an empty line on one of the sheets. If no empty lines are available, the client either adjusts their desired times or the trip is denied. Each day the sheets for that day become the driver manifests and are distributed to the vehicle drivers. Blank sheets are placed on the clipboard and it now becomes the schedule for the fifth day. If the agency accepts subscriptions, each subscription is written on a separate sheet of paper and kept in files for each day of the week. Typically, when a new fifth-day clipboard is created, the subscription trips are written onto the sheets before any telephone reservations are accepted. The driver manifest sheets provide data for the monthly reports.

In the "trip ticket" system, each trip is hand written onto a color-coded sheet of paper (e.g. yellow for a single trip, blue for a subscription (recurring) trip, pink for a subscription with variations, etc.). The basic information for each trip is recorded on the trip ticket (e.g. client name, pickup and drop off times and addresses, purpose of the trip, etc.). These sheets of paper are called trip tickets. All of the trip tickets for a given day are assembled on the previous day. They are then sorted into piles, with each pile containing the trips for a particular vehicle. Lined sheets of paper are used to record the information from each trip ticket in a pile. The lines on the sheet may represent 15- or 20-minute intervals. Once filled out, the sheets of paper become the driver manifests. During the day, the driver records that status of each trip onto his/her driver manifest and returns it at the end of the day to the accounting person. The accounting person assembles all of the trip tickets and driver manifests for the accounting period (usually a month) and extracts, aggregates and summarizes the data for the reports and invoices.

As agencies grew and reporting requirements became more complex, the administrative workload began to require a disproportionate share of the agencies' time and resources. At some point during the growth process most agencies looked for computer technology to help with the scheduling and reporting functions. Several commercial packages were available to choose from ranging in price from about $5,000 to more than $75,000. Software features varied with the price from basic spreadsheet type applications to sophisticated geographical information systems (GIS) with automatic trip scheduling. Agency personnel, who were not skilled in computer use, were faced with the necessity to evaluate the trade-offs between cost and features.

Competition among software vendors is quite intense, and the permutations of purported features and prices are overwhelming. The purpose of this report is not to compare the claims of various software vendors, but rather to survey a select group of small-to medium-sized agencies and attempt to shed some light on the software features that are most useful for them, and the strategies used by the various agencies to implement these features. In order to meet these objectives effectively, a software product was identified that is both low cost ($5,000 to $7,500) and that is being used successfully by a wide range of small- to medium-sized agencies.

2.2 Agencies Surveyed

Data were obtained from nine small- to medium-sized transit agencies from around the country in order to evaluate the types of information that they consider most important. The agencies vary in size and type of operation. The number of clients served ranges from about 450 to about 8,000. The number of trips per month ranges from about 700 to about 17,000.

All of the agencies surveyed are currently using computer software to assist them with their operations. All of the agencies selected are successfully using the same low-cost software product.[1] The variety of ways in which it is applied provides insight into the most important needs of small- to medium-sized agencies. The details of the survey are included in Appendix A. The data summarized below and included in Appendix A were collected March 2000 to September 2001 and, therefore, do not necessarily represent current activity.

Clinton, Iowa

Approximate Number of Clients Served	462
Approximate Number of Cities Served	3
Avg. Number of Trips / Month	2,300
Avg. Number of Subscriptions	48
Approximate Number of Vehicles	3
Approximate Number of Drivers	6
Approximate Number of POV Volunteers	2

Colfax, Washington

Approximate Number of Clients Served	1,830
Approximate Number of Cities Served	43
Avg. Number of Trips / Month	4,570
Avg. Number of Subscriptions	195
Approximate Number of Vehicles	15
Approximate Number of Drivers	17
Approximate Number of POV Volunteers	130

Coos Bay, Oregon

Approximate Number of Clients Served	898
Approximate Number of Cities Served	3
Avg. Number of Trips / Month	4,340
Avg. Number of Subscriptions	147
Approximate Number of Vehicles	10
Approximate Number of Drivers	15
Approximate Number of POV Volunteers	8

[1] Easy Rides produced by Mobilitat, Inc., 1605 Green River Way, Green River, WY 82935. (888) 806-6595

Ellsworth, Maine

Approximate Number of Clients Served	8,070
Number of Cities Served	86
Avg. Number of Trips / Month - paid drivers	7,800
Avg. Number of Trips / Month - POV Voltrs.	4,485
Avg. Number of Subscriptions	663
Approximate Number of Vehicles	15
Approximate Number of Drivers	21
Approximate Number of POV Volunteers	40

Grants Pass, Oregon

Approximate Number of Clients Served	822
Approximate Number of Cities Served	11
Avg. Number of Trips / Month	3,593
Avg. Number of Subscriptions	377
Approximate Number of Vehicles	6
Approximate Number of Drivers	34
Approximate Number of POV Volunteers	10

Ithaca, New York

Approximate Number of Clients Served	888
Approximate Number of Cities	2
Avg. Number of Trips / Month	4,632
Avg. Number of Subscriptions	236
Approximate Number of Vehicles	22
Approximate Number of Drivers	56
Approximate Number of POV Volunteers	0

Kearney, Nebraska

Approximate Number of Clients Served	600
Approximate Number of Cities Served	10
Avg. Number of Trips / Month	4,800
Avg. Number of Subscriptions	300
Approximate Number of Vehicles	10
Approximate Number of Drivers	15
Approximate Number of POV Volunteers	

Salem, Oregon

Approximate Cities Served	25
Approximate Number of Clients Served	6,215
Avg. Number of Trips / Month	17,000
Avg. Number of Subscriptions	1,102
Approximate Number of Vehicles	44
Approximate Number of Drivers	64
Approximate Number of POV Volunteers	0

Woodburn, Oregon

Approximate Number of Clients Served	596
Approximate Number of Cities Served	17
Avg. Number of Trips / Month	792
Avg. Number of Subscriptions	45
Approximate Number of Vehicles	1
Approximate Number of Drivers	2
Approximate Number of POV Volunteers	15

2.3 Typical Operational Procedures

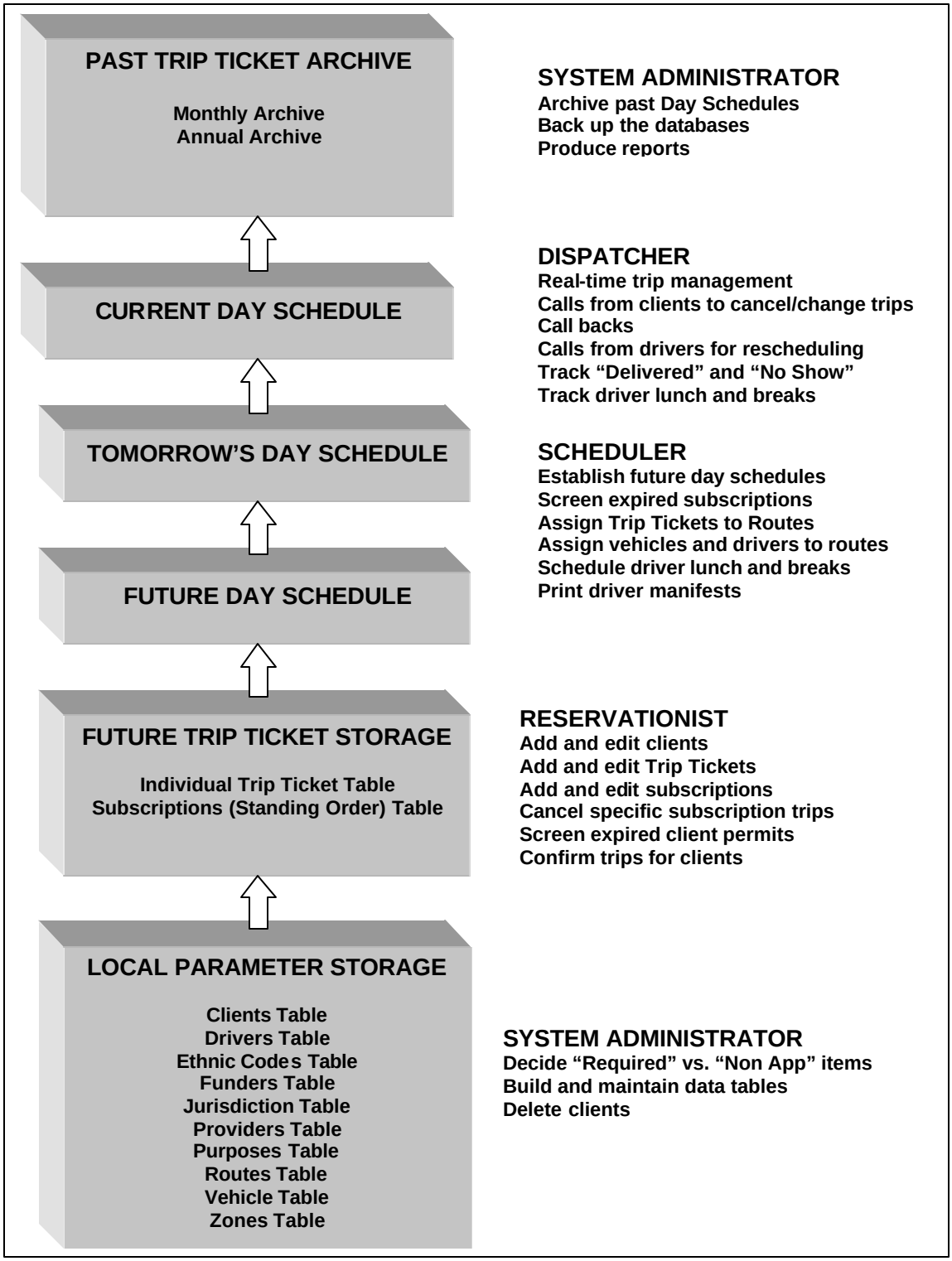

Figure 2.1 Typical Operating Procedures

Figure 1 depicts the typical operating procedures for the nine agencies. There are four distinct areas of responsibility listed along the right-hand-side of the Figure.

The s**ystem administrator** is frequently the office manager. He/she has the responsibility for running the office, specifying the appropriate data to be collected, maintaining the integrity of the data, and producing the reports.

The r**eservationist** is responsible for updating the client list, accepting trip requests from clients, establishing subscription trips for clients, verifying the eligibility of clients, confirming trips for clients, and changing and canceling trips for clients.

The s**cheduler** is responsible for assigning trips and drivers to vehicles taking into account special conditions (e.g. wheelchair, car seat, etc.), pickup and drop off times, compatibility between driver and passenger (e.g. avoiding personality conflicts, drivers' ability to assist certain types of disabled persons, etc.), lunch breaks, and allowance of adequate time for loading and unloading individuals with a variety of disabilities.

The d**ispatcher** is responsible for real-time trip management during the day's operations. He/she handles reassignment of trips due to changing schedules caused by new and/or cancelled trips, keeps track of trip "call backs," maintains communications with the drivers, and makes major schedule revisions in the case of breakdowns or other unanticipated events.

Often in small systems duties of the administrator, reservationist, scheduler, and dispatcher are all undertaken by one or two people.

2.4 Computer Support Needs

A computer application has been found to be beneficial for even the smallest paratransit agency (Woodburn, OR). The optimal software tool will provide a balance among functionality, ease of use, and cost. The boxes on the left-hand-side of Figure 1 indicate the principal data parameters that are needed in support of each of the responsibilities listed along the right-hand-side. Different software products use different schemes for storing data, but the basic data parameters remain the same. For purposes of conceptual clarity, each data parameter will be described as a database table in the following discussion.

Starting at the bottom of Figure 1, the system administrator customizes database tables containing selection criteria for the local situation. The Reservationist maintains the clients table in the database and enters trip tickets into the trip request table as they are received. The scheduler creates a day schedule for all tickets for a given day, and updates the trip request table to assign each trip to a vehicle and driver. A manifest is printed for each driver. The dispatcher utilizes the day schedule for the current day to make real-time adjustments to the vehicle schedules, and updates the final status of each trip in the trip request table for that day (e.g. delivered, no show, canceled, suppressed). The system administrator archives the completed trips and generates the report statistics. The principal database tables required to support these functions are described below.

2.5 Principal Software Data Parameters

As mentioned above, the principal data parameters needed by small- to medium-sized agencies will be conceptualized as database tables because that is the way they are typically configured in practice; even though the specific details of each software product will very. The information below is generalized from the data contained in Appendix A.

2.5.1 Clients Table

All agencies need a database table to record their clients (riders). One of the most time-consuming and redundant activities in non-computerized offices is the rewriting of the client's name and information each time a trip is reserved. The client table should contain the name and address of each client and also typical information specific to the client such as the funders of the client's trips.

2.5.2 Routes

The term, route, has several connotations. At the two extremes are: fixed route and demand-response route." Somewhere in between is the deviated fixed route. Fixed routes will not change for months or years, demand-response routes change daily and in some cases even hourly. Paratransit routes are combinations of demand-response and deviated fixed routes. Consequently, a paratransit route is commonly thought of as a place-holder (or vehicle slot) for a group of tickets that will eventually be assigned to the same bus and driver. For example, some schedulers start planning day schedules seven or even 14 days in advance by grouping the trips into routes. The vehicle and driver are then assigned to each route the day before the actual date of the day schedule, and manifests are printed for each route containing the driver, vehicle and list of trips.

Appendix A indicates that routes are used differently by different agencies. For example, Salem uses generic route names, Coos Bay uses some specific vehicle identifiers as well as two fixed route vehicles, and Colfax uses routes in some cases to help identify providers. Ellsworth, Maine, utilizes 40 POV volunteers for providing trips and they have elected to identify routes for each volunteer as well as some generic routes, as has Woodburn with 15 POV volunteers.

2.5.3 Trip Request Table

Historically each paratransit trip is recorded on a trip ticket. The trip tickets for future trips are stored in a trip request file whether it's a paper folder or a computer database table. The trip tickets for past trips are moved to an archive file where they are available for reporting purposes.

Each trip ticket must contain the information necessary for both scheduling and reporting purposes. The information necessary for scheduling includes the pickup time and address and the drop off time and address as well as special needs of the client (e.g. wheelchair, car seat, etc.). The detail reporting information varies from agency to agency, but the general types of information can be grouped into principal data parameters as described below.

Funders. This parameter identifies who pays for the trip. Typical funders include: Medicare, charities, state senior and disabled services, self (the rider pays), etc.

Providers. This parameter identifies who gets paid for the trip. Typical providers include: agency vehicles, taxi companies, other transit agencies, common carriers, privately owned vehicle (POV) volunteers, etc.

Purposes. This parameter identifies the purpose of the trip for eligibility and accounting purposes. A wide variety of purposes are displayed in Appendix A, common ones include: medical, dental, counseling, pharmacy, child care, adult day care, day rehabilitation, education, personal, and work.

Fare Types. Many agencies wish to print on the driver manifest the type of fare that the driver should expect from the rider. Appendix A indicates that typical fare types include: funder paid, direct bill, donation, cash, ticket, pass, permit, punch card, and no-pay.

Zones. Zones are geographical areas that are color coded to assist with the scheduling. Schedulers can group trips from and to the same geographical areas by visually grouping the color codes. For example in Appendix A it can be seen that Salem has identified zones by geographical sections of the city such as North, Northwest, North east, South, and Southeast as well as other meaningful neighborhood identifiers. Ellsworth, Maine, brokers rides for 85 cities and has identified cities for their zones, as has Woodburn with 17 Cities.

Jurisdictions. Agencies have found it important to identify jurisdictions for reporting purposes. Jurisdictions can be used to group clients (riders) by mutually exclusive political entity. For example, county commissioners or a city council may wish to know the extent of transit services being provided to their constituents. Appendix A indicates the wide variety of ways that Jurisdictions are used. For example Colfax, Wash., simply wishes to record whether the client was in the urban or rural area. Ellsworth and Ithaca identify cities as jurisdictions. Salem identifies a combination of a city, two counties, and rural vs. urban.

Other Special Codes. Most agencies require data parameters that are unique to themselves. To be useful, software must provide for customizable codes that can be recorded on each trip ticket, and in some cases printed on the driver manifest. Colfax and Ellsworth record billing codes for each trip. Ithaca provides custom codes that are printed on the driver manifest including: "Assist to door," "Enters via lift," "Oxygen," Get Hosp. WC," etc. Salem provides number codes that are printed on the driver manifest indicating the status (e.g. disability) of the rider.

Other Trip Ticket Information. Software should provide the capability for recording other information on the trip tickets such as the rider's gender, age group (e.g. child, youth, adult, elderly), ethnicity, phone number, etc.

Trip Status Code. Software should provide the capability for recording the trip status (delivered, no show, canceled, suspended) for each trip ticket.

Time and Mileage. Software should provide the capability for recording the time and mileage when each trip ticket is picked up and delivered. For most small- to medium-sized agencies this level of detail is seldom necessary. When it is necessary, it is typically achieved by means of a mobile data terminal (MDT) on the vehicle.

2.5.4 Route, Vehicle, Driver Information

For reporting purposes it is necessary for the software to record the vehicle and driver assigned to each route each day as well as to record the starting and stopping times and mileages for service and non-service time.

2.6 Principal Software Interface Features

Just as important as the type and amount of data parameters, is the ease with which the data can be entered and manipulated by the user. The functionality for the entry and manipulation of data are provided by "interface features." In the following section, the principal interface features are associated with the responsibilities of the users as depicted in Figure 1.

2.6.1 System Administrator

Data Entry and Editing. The system administrator needs features to customize the selection data for the trip tickets such as: the client table, vehicle table, driver table, funder table, jurisdiction table, providers table, purposes table, routes table, and zones table.

Archiving and Backup. Features need to be available for archiving past trip tickets and periodically backing up the databases.

Reporting. Different agencies have very different reporting requirements. Features must be provided to assist the user with selecting the data needed for individual reports. For example agencies need to be able to sort and select by any combination of the data parameters that they have defined for their system such as: client, funder, provider, purpose, jurisdiction, age group, client status (e.g. wheel chair, elderly, etc.), driver, etc. Figure 2 shows one type of summary report being used in Nevada.

For the nine agencies surveyed, more than 20 different reports are required. Therefore, the trip ticket information must be stored in database tables that are accessible to the user. For example, a commercial database like Microsoft Access® or Microsoft SQL Server® will provide the system administrator with the opportunity to easily develop his/her own queries and reports, whereas proprietary databases would require the system administrator to hire the software vendor whenever a change in reporting requirements occurred.

Trips

Type of trip	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Monthly Avg.	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Annual
Nutrition (Meals/Groceries)	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0	0	0	0	0
Medical/Dental	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0	0	0	0	0
Education	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0	0	0	0	0
Employment	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0	0	0	0	0
Social/Recreational	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0	0	0	0	0
Personal	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0	0	0	0	0
Deadhead	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0	0	0	0	0
Total Trips	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Riders

Description of Riders	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Monthly Avg.	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Annual
Elderly - General	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0	0	0	0	0
Elderly - Disabled	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0	0	0	0	0
Elderly - Wheelchair	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0	0	0	0	0
Total Passengers	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Vehicles

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Monthly Avg.	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Annual
Miles for Passenger Svc	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0	0	0	0	0
Vehicles Used for Svc	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0	0	0	0	0

Figure 2.2 A Typical Agency Summary Report.

2.6.2 Reservationist

Client Updates. One of the main duties of the reservationist is to maintain the client table. Interface features should be available to add and edit client information.

Enter and Edit Trip Tickets. Features should be provided to select a client from the client list and initiate a new trip ticket with all of the client's default information already entered on the ticket. Changing the pickup and delivery times and addresses may be all that is necessary to create the trip ticket and enter it into the trip request table.

Enter and Edit Frequented Addresses. A table of frequented addresses contains a list of all of the addresses frequently visited by all of the clients. When creating a new trip ticket the reservationist need not type in each address, only click on one from the frequented address list.

Enter and Edit Subscription Trips. Features should be provided to enter subscription trips for a specified period of time and to check to see when existing subscriptions expire. It is also important to be able to suppress individual subscription trips without having to stop and restart the subscription.

Review Client Eligibility. The reservationist should have features available to check the eligibility of each client and to update the eligibility as appropriate.

Review Client Trips. Features should be provided to click on a client name and bring up all of the future trips tickets and subscription information for that client, and further to edit information on any trip or subscription.

2.6.3 Scheduler

Scheduling Trips. Features should be provided for the scheduler to view a day's trips in such a way that it helps him/her assign trip tickets to routes, and subsequently assign vehicles and drivers to those routes. This can best be accomplished by displaying the trip tickets in a matrix on the screen and providing features for conveniently moving the trip tickets between cells in the matrix. Automatic routing and scheduling using geographic information system (GIS) is normally not required by small agencies.

Pre-assignment of Trips to Routes. Features should be provided to assign a route to a trip ticket or a subscription at the time the ticket or subscription is created, and to automatically load the ticket into the appropriate route when the scheduler creates a new day schedule.

When an agency has 40 percent or more subscription trips, a pattern eventually emerges where the same trip tickets are grouped on the same routes each week. By pre-assigning the trips to routes, the scheduler is relieved of much unnecessary repetition. After the pre-assigned trips are loaded into a route, the scheduler loads the unassigned trips. In some ways a route populated with trip tickets by this method can be considered a deviated-fixed-route with the fixed part being the same group of trip ton the same day each week, and the deviated part the one-time-only trips that are inserted each week.

Driver Manifests. Features should be provided so that the scheduler can print driver manifests for each Route. The manifest should contain the vehicle, the driver and the list of trip tickets.

2.6.4 Dispatcher

Rearranging Trips in Real Time. It is the dispatcher's responsibility to communicate with the drivers and reassign trips in the case of an unexpected event such as a breakdown or a vehicle falling significantly behind schedule. Interface features should be available to facilitate the comprehension of the current status and the rearrangements that are necessary to meet the current situation.

Trip Feasibility. It is typically the dispatcher's responsibility to decide whether or not a new trip can be added to a vehicle that is already in operation. The dispatcher should be able to view a display, or access some other feature, that would permit him/her to decide immediately if the trip should be denied or accepted.

Trip Status. Frequently someone (often a parent) will call the dispatcher to inquire about someone else's trip. The dispatcher must have a convenient way for locating specific trips by client name.

Assigning Trip Status. The disposition of all of the day's trips must be recorded. Most agencies signify that a trip has been: delivered, no-show, canceled, denied, or suspended. Features for assigning these indicators to groups of tickets as well as individual tickets should be provided. For larger systems, the software should provide for interfacing with MDTs to accomplish this task.

2.7 Wide Area Implementation Technology

It is generally recognized that pooling vehicles and combining the reservations, scheduling, dispatching, reporting, and other operations of small transit providers can result in significantly better service for everyone. Each of the agencies included in this survey conduct their own operations. However, there is serious consideration in other areas for networking widely dispersed small agencies into a centralized system in order to achieve economies of scale. Such a system would have a single location for maintaining a centralized database, taking phone calls, and reserving trips. In the extreme, such a system would also dispatch vehicles from the central location. The proposed mechanism for achieving centralization over a wide area is referred to as thin-client technology.

Thin-client technology is characterized by the implementation of all data and processes on computers at a single location, and connectivity to remote sites by means of high speed lines (e.g. the Internet). Some of the advantages and disadvantages of centralization are summarized below.

Management and oversight. Centralization facilitates maintaining records, standardizing reports, generating special high level (political) presentations, preparing grant proposals, quality control, and numerous other important functions that can be performed by aggregating and comparing region wide data. It may also foster consistency throughout the region in order to obtain economy of scale and also to provide affordable assistance and support to the small communities.

Coordination between Public Providers. Centralization facilitates linking demand-response trips between public providers over a wide area. However, this type of activity is normally handled by shuttles that have more-or-less fixed schedules and are not part of a global optimization scheme.

Connectivity. Implementing thin-client technology is problematic for a system constrained by 56K modem. Our experience indicates that many rural communities have unreliable service and, even with a 54K modem, actual transfer rates vary from about 24K to less than 7K at times. It may be several years before DSL or other high speed connection is available and reliable in rural areas.

Local familiarity. Knowledge of the local situation is important for the success of any small transit agency. In the case of an unexpected event, such as a bus breakdown, it is necessary to: 1) accommodate the current riders, 2) notify parents that their children on the bus are OK but will be late, 3) notify and reschedule scheduled riders, 4) possibly mobilize another bus (with adequate special equipment) and driver, 5) make arrangements for the disabled vehicle. From the practical standpoint these activities would be difficult to accomplish from a remote centralized location by persons unfamiliar with the local situation.

Local schedulers and dispatchers know the idiosyncrasies of the clients and the vehicle drivers and they are best equipped to anticipate problems and/or make allowances to avoid problems.

Technology Dependency. A rigid centralized approach may have a tendency to replace local judgment with computer decision-making. The purported ability of computers to make decisions, and for technology to off-load our problems, is sometimes overly optimistic. If an agency becomes technologically dependent, and the technology falls short, the agency has increased its problems rather than solving them. Perhaps a more conservative approach would be to modify the centralized strategy by also providing individuals compatible tools which may be customized for the local situation to help them make better decisions at the local level.

2.8 Costs

The necessity for software features depends on several factors: the complexity of the reporting system, the number of individual trips vs. the number of subscriptions, the geographical extent of the area served, the need for mobile data terminals (MDTs) and swipe card technology, the number of privately owned vehicle (POV) volunteer drivers, and the perceived need for automatic positioning (global positioning system) and routing of vehicles. The cost of commercially available software for ranges from $7,500 to more than $50,000 for small- to medium-sized agencies. Installation and training is extra at a a rate between $1,000 and $2,000 per day. Service contracts range from about $100 per month to $1,000 per month.

2.9 Small- to Medium-Sized Operation

About 600 to 15,000 trips per month. The needs of most agencies in this range can be met with software costing between $7,500 to $10,000. The more complex features like automatic scheduling, GPS, point-to-point routing are usually not necessary.

2.10 Medium-Sized Operation

About 10,000 to 30,000 trips per month. The needs of most agencies in this range can be met with software costing between $10,000 to $35,000.

3. SUMMARY AND CONCLUSIONS

3.1 Summary

Mobility issues are particularly challenging in rural areas. Service areas tend to be much larger than their urban and suburban counterparts. Low residential densities, lack of fixed route transit including commuter rail, and limited medical, employment, therapeutic and other critical destinations result in lengthy average ride lengths/ride times, and lower opportunities to share or group riders with similar origins, destinations, and travel times.

In addition, any federal or state funding formula using a per capita basis puts rural areas at a financial disadvantage. Overall, transportation dollars spent at the national level on rural areas is a fraction of total transportation funding.

Most communities receive small amounts of private charitable funds and federal, state, and local public funds to provide transportation for needy individuals including the elderly and disabled. Funding may be obtained through annual proposals written by non-profit organizations for specific needs (e.g. Options for Independence provides transportation for the physically disabled). Typically, most of the money is restricted for the purchase of vans and buses and little is available for operations. Consequently there has been a proliferation of small organizations, each with inadequate operating funds, and each owning a few vehicles that can be used only for their own designated purpose.

In many of these communities, pooling vehicles and combining administrative operations could provide significantly better service for everyone. However there are a variety of obstacles that must be overcome in order for a community to form a centrally coordinated operation. Five of the major concerns relate to effective trip reservations, scheduling, dispatching, record keeping and reporting.

When most agencies started up they used a manual system for reserving and scheduling trips. In a typical operation, trip reservations had to be made at least 24 hours in advance and each trip was hand written onto a color-coded sheet of paper (e.g. yellow for single trip, blue for subscription (recurring) trip, pink for subscription trip with variations, etc.). These sheets of paper were called trip tickets. All of the trip tickets for a given day were assembled on the day before. They were then sorted into piles, where each pile would become the list of trips for a particular van or bus. The basic data from each trip ticket (client name, pickup address and time, drop off address and time, special needs, etc.) were recorded in one or two lines onto a separate sheet of paper which then became the schedule for the day's trips for a particular driver and vehicle (the driver manifest). During the day, the driver would record the status of each trip onto his/her driver manifest and return it at the end of the day to the accounting person. The accounting person would assemble all of the trip tickets and driver manifests for the accounting period (usually a month) and extract, aggregate and summarize the data for the necessary reports and invoices.

However, as agencies grew and reporting requirements became more complex, the administrative workload began to require a disproportionate share of the agencies time and resources. At some point during the growth process most agencies looked for computer technology to help with the scheduling and reporting functions. Several commercial packages were available to choose from ranging is price from $5,000 to more than $75,000. The features varied with the price of the software from basic spreadsheet type applications to sophisticated geographical information

systems (GIS) with automatic trip scheduling. Agency personnel, who were not skilled in computer use, were faced with the necessity to evaluate the trade-offs between cost and features.

The competition among software vendors is quite intense, and the permutations of purported features and prices are mind-boggling. The purpose of this report is not to compare the claims of various software vendors, but to survey the users of one low-cost product in an attempt to shed light on the software features that are most useful for small- to medium-sized communities and the strategies used by various agencies to implement these features.

Nine small- to medium-sized paratransit agencies that are using the same low-cost software product were surveyed, and the detailed results are included in Appendix A. A review of the data and interviews with the agencies indicates that the following features have been found to be most important for small- to medium-sized agencies:

3.1.1 Reservationist

- A client database containing default information for each client (name, phone number, principal funder, typical provider, emergency contact, service expiration date, etc.).
- A trip ticket request form with pre-assigned data from the client database, and convenient features for creating return trips and subscriptions.
- Convenient features for editing clients, trip tickets and subscriptions.
- Convenient features for viewing future trips reservations for a client.

3.1.2 Scheduler

- A display of a day's trip tickets that can be sorted by pickup time, drop off time, and client name.
- Color-coded trip tickets indicating geographical zones for the pickup and drop off addresses.
- A visual indicator on each ticket signifying the condition of the client (e.g. ambulatory, wheel chair, walker/cane, motorized cart, etc.).
- Convenient features for grouping trip tickets by time and geographical zone.
- Convenient features for scheduling volunteers using privately owned vehicles (POVs).
- Point-and-click features and/or drag-and-drop features for assigning trip tickets to vehicles.
- A convenient display for viewing unscheduled trips prior to assignment to vehicles.
- Automatic printing of driver manifests.

3.1.3 Dispatcher

- A convenient display of all trip tickets for the current day.
- Convenient features for inserting new trips into the current day schedule.
- Immediate access to each trip for viewing and editing.
- Convenient features for reassigning trips among vehicles.
- Convenient features for updating the status of each trip as:
    1) as yet unassigned to a vehicle (e.g. a call-back ticket),
    2) scheduled for pickup,
    3) client on board the vehicle,
    4) client delivered at destination,

5) trip cancelled by client,
6) client did not show up (no-show).

3.1.4 Administrator

- Convenient features for archiving old trip tickets and backing up the database.
- Sufficient data on each trip for producing reports including: client name, age group, gender, ethnicity, funder, provider, trip purpose, revenue and non-revenue mileages, condition client (e.g. ambulatory, wheel chair, walker/cane, motorized cart, etc.), subscription vs. non-subscription trips.
- Convenient features for maintaining the database tables (e.g. list of funders, list of providers, outdated subscriptions, etc.).
- Convenient features for editing past trips.

3.2 Conclusions

The size of agencies surveyed ranged from about 700 to 17,000 trips per month, and may be classified as small to medium. All of the agencies in this range benefited from low-cost computer software for the purposes of making trip reservations, scheduling trips, dispatching trips, record keeping, and reporting. Low-cost software included in this survey ranges from about $5,000 to $15,000 depending on the number of work stations, complexity of customizing the database to the community, and amount of training.

The principal data items that were considered necessary for each trip were client name and physical/cognitive condition, age group, funder, provider, and trip purpose. For volunteers driving their own vehicles, revenue and non-revenue mileages were necessary.

The principal feature that were considered important for the computer interface included: fast access to client and trip information, ease of creating trip tickets and subscriptions, color-coded visual display of trip tickets, drag-and-drop and point-point-and-click functionality, and convenient features for generating end-of-month report statistics.

Features that were considered not to be of high priority for small- to medium-sized agencies included geographical information systems (GIS), global positioning systems (GPS), automatic trip routing, and automatic trip scheduling. The cost and added complexity of these features were not considered necessary and could not be justified within the agency budgets. Agencies at the higher end of the range (e.g. over 15,000 trips per month), and with a significant number of buses, may benefit from automatic trip scheduling.

Agencies with a few as five buses were considering the use of mobile data terminals (MDTs) for communications between the dispatcher and vehicle drivers. Also, there was serious consideration for the implementation of swipe cards for automatic verification and data recording. However, at this time these advanced technologies are probably practical only for the agencies approaching medium size and larger.

APPENDIX A

SURVEY RESULTS

CLINTON, IOWA

Funders	Providers	Purposes	Fare Type	Routes	Zones	Jurisdictions
Self - Client Pays	MTA-Para - Paratransit	Medical	Cash	Will Call - ADA	North - North of 1st Ave.	Iowa
Mercy -Mercy Medical Center	Service at MTA	Beauty	Punch Card	Route1 - ADA	South - South of 1st Ave.	Illinois
County - Mental Health Coordinator	MTA-Fixed - Fixed Route Services at MTA	Dental	Direct Bill	Route2 - ADA	Out of Area - Out of Service Area	
School - Administration		Dialysis	Coupon	Route3 - ADA	Camanche - Town of Camanche	
Other		Dining	Other	Route4 - ADA	Fulton - Town of Fulton, IL	
		Education		Sat. Script - Saturday Fixed	Other - Any Where Else	
		Entertainment				
		Shopping				
		Therapy				
		Visiting				
		Other				

COLFAX, WASHINGTON

Funders	Providers	State Billing Codes	Purposes	Fare Type	Routes	Zones	Jurisdictions
MAA - Washington Medical Assistance Administration	COAST - Council On Aging Specialized Transportation	311A	Medical	Donation	NA - Not Assigned	S Whitman Cnty - South of Hwy 26 & 272	Urban
ALTCEW- Aging & Long Term Care of Eastern Washington	Interlink- - Clarkston/Asotin County	312A	Dental	Ticket	Route 1 - Route 1 Moscow	N Whitman Cnty - North of Hwy 26 & 272	Rural
SEALTC Aging & Long Term Care of Southeast Washington	Valley Transit - Clarkston & Vicinity	313A	Vision	Cash	Route 2 - Route 2 Moscow	Asotin County - All Asotin County	
DSHS Washington Department of Social & Health Services	BCAB Clarkston	315A	Physical Ther	Charge	Route 3 - Route 3 Moscow	Garfield County - All Garfield County	
SELF Passenger responsibility	COAST ID Moscow & Vicinity	316A	Mental Health	Pass	Route 4 - Route 4 Moscow	Latah County ID - All Latah County	
LCG Latah County Grant	RSVP Retired Senior Volunteer Program/Lewiston-Orofino	317A	Speech Therapy	Donation	Interlink - Interlink	Nez Perce ID - All Nez Perce County	
ID MEDICAID Idaho Medicaid	LINK Moscow/Pullman/Spokane/Deary, Id	317A	Shopping	Ticket	Valley Transit - Valley Transit	Region II ID - Lewis/ Clearwater/ Idaho Counties	
COMM OF BLIND Idaho Commission of the Blind	A Good Taxi Moscow area	318A	Child Care	Cash	BCAB - Black & White Cab	Out Of Zone	
AAA REGION II Area Agency on Aging - Region II	Evergrn Towncar Seattle	323A	Counseling		Other - Misc Routes/Providers		
ID DHW Idaho Department of Health and Welfare	Pullman Transit - Pullman/Dial a Ride	325A	D/A		Allways Trans - Misc Routes		
RSVP Retired Senior Volunteer Program - Mealsite	Whit Co Travel - Whitman County Travel	327A	Day Program		SELF - Personal Vehicle		
	WCCS Whitman County Counseling/Child Intervention Speci	346A	ID Dev. Therapy		VOLUNTEER - Volunteer Rides		
	SELF Self or POV Driver	4410	Education		Comm Van Trips - Scheduled Community Van Trips		
	VOLUNTEER Volunteer Driver	2000	Job Training		Colf Nutrition - Colfax Nutrition		
	Other	1999	Nutrition		Colf Nutrition - Colfax Nutrition		
	COAST - Council On Aging		Personal		Colfax Shopping - Colfax Shopping		
			Work				
			Medical				
			Dental				
			Vision				

Funders	Providers	State Billing Codes	Purposes	Fare Type	Routes	Zones	Jurisdictions
trans ID CNH Idaho County Nursing Home MS Swim Multiple Sclerosis Foundation MOSCOW SD Moscow School District PRESBYTERIAN Moscow Presbyterian Church 5310 WA Disabled or Elderly/no other funding source CCCC Community Child Care Center MAA-Food Medicaid Food - Out of Town Medicade-Overnight Lodging Medicaid Other Events MAA Washington Medical Assistance Administration ALTCEW Aging & Long Term Care of Eastern Washington SEALTC Aging & Long Term Care of Southeast Washington	Specialized Transportation Interlink- - Clarkston/Asotin County Valley Transit - Clarkston & Vicinity BCAB Clarkston COAST ID Moscow & Vicinity RSVP Retired Senior Volunteer Program/Lewiston-Orofino LINK Moscow/Pullman/Spokane/Deary, Id A Good Taxi Moscow area Evergrn Towncar Seattle Pullman Transit - Pullman/Dial a Ride Whit Co Travel - Whitman County Travel WCCS Whitman County Counseling/Child Intervention Speci SELF Self or POV Driver		Physical Ther Mental Health Speech Therapy Shopping Child Care Counseling D/A Day Program ID Dev. Therapy Education		COAST 1-1 - Van 1-1 Medicaid Colfax - Trips in/around Colfax/ALTCEW/Gen Public COAST VAN - Harvest House COAST WA - All Misc COAST WA Trips (Grp Excursions, etc) RSVP - RSVP Idaho Orofino - Orofino/Kooskia/Kamiah/ Sites/Lenore/Peck Grangeville - Grangeville/Kamiah/Kooskia /Nez Perce/Riggins/Cotto Weippe - Weippe/Pierce CCCC - Community Child Care Center WCCS - Whitman County Counseling Service Rogers - Rogers Counseling Events - Non Trip Tickets Sub-Contractor - All Sub-contracted Rides (Interlink/etc) O/F/G/P to P-M - Oakesdale/Farmington/Garfi		

Funders	Providers	State Billing Codes	Purposes	Fare Type	Routes	Zones	Jurisdictions
DSHS Washington Department of Social & Health Services SELF Passenger responsibility LCG Latah County Grant ID MEDICAID Idaho Medicaid COMM OF BLIND Idaho					eld/ Palouse to Pull-Mosc P/G/F/O/R toSpo - Palouse/Garfield/Farm/Oakes/ Rosalia to Spokane Tekoa to Spok - Tekoa to Spokane St John to Spok - St. John to Spokane Col/Pul to P-M - Colfax/Pullman to Pullman/Moscow Lax/End to P-M - Lacrosse/Endicott to Pullman/Moscow		

COOS BAY, OREGON

Funders	Providers	Purposes	Fare Type	Routes	Zones	Jurisdictions
Self - pays for trip SDSD - Senior & Disabled Services SCBEC - South Coast Business Medicare - AFS - Mental-Health - St.Mpre - St. Monica Pre-Authorized St.M - St. Monica Star/Hope - Star Of Hope Caction - Community Action	CCT - Coos County Transit Taxi - Yellow Cab SELF VOLUNTEER	Business Child Care Counseling Day Program Education Hair Appt Home Job Training Medical Nutrition Personal Recreation Shopping Social Work Other	Cash Permit Ticket Pass DirectBill No-Pay	BAY-1 - BAY AREA BAY-2 - COQ - COQUILLE BAN - BANDON MP - MYRTLE POINT BAY-3 - BAY AREA SCC - South County Connector LOOP-1 LOOP-2 SELF VOLUNTEER	BAND - Bandon BHILL - Bunkerhill CB - Coos Bay CHSTON - Charleston COQ - Coquille EMP - Empire ENGWD - Englewood ESIDE - Eastside MILGTON - Millington MP - Myrtle Point NB - North Bend POW - POWERS	MyrtlePoint BayArea - Coos County Coquille

ELLSWORTH, MAINE

Funders	Providers	Billing Codes	Purposes	Fare Type	Routes	Zones	Jurisdictions
Medicaid - Maine Medicaid and Cub Care	SELF - Friend and Family	T042	Home 50	Funder Paid	Calais Lubec	NA Addison	Prname Isle Au Haut
EAA - Special -Eastern Agency on Aging - Regular Contract	Foster Parent -State Employee Rate for Foster Parents	T027	Medical 05	Donation	Milbridge Addison	Alexander Amherst	Abbott Addison
PIC - Partners in Caring - EAA	WHCA -WHCA Agency Vehicle	LX08	Dental 04	Cash	Ellsworth1 Ellsworth2	Asticou Atlantic	Alexander Baileyville
DHS - Regular -DHS Regular Contract	VOLUNTEER -Volunteer Driver	PX09	Optometrist 07	Ticket	Blue Hill Bucksport	Augusta Aurora	Baring Beals
CHCS - W - Community Health and Counseling - Washington	Taxi -Taxi	CX09	Phys Ther 17	Other	NA VAlley	Baileyville Bangor	Beddington Calais
CHCS - E - Community Health and Counseling - Hancock	DTI -Downeast Transportation Bus	CX09	Counseling 24		JBunker RCassidy	Bar_Harbor Baring	Centerville Charlotte
Space Available - Passenger responsibility	West's - West's Transportation Bus	AX09	Speech 31		GCerini BChambers	Baring Beals	Cherryfeild Columbia
DHS - Special - DHS Child Protective Services	Common Carrier - Greyhound, Amtrack, Airlines	GX09	Pharmacy 09		SChute SDemoranville	Beddington Belfast	Columbia_Falls Cooper
TAP - TAP	PPT - Pleasant Point Transportation	PX99	Child Care 70		TDoucette EFarnsworth	Bernard Blue_Hill	Crawford Cutler
SCF - Special Childrens Friends	IT - Indian Township Transportation	CX99	Hospital 01		CFletcher SFletcher	Brewer Brooklin	29170 Deblois
BMR - Bureau of Mental Retardation		AX99	Adult Day 24		EGirouard JHart	Brooksville Brookton	Dennysville East_Machias
Ells Respite - Ellsworth Respite Center		MX08	Day Hab 38		PHatt NHerlan	Bucks_Harbor Bucksport	Eastport Grand_Lake_Str
CFO - Child and Family Opportunities		LX09	Podiatrist 06		JHoward MHoward	Calais Castine	Jacksonville Jonesboro
CDS-W - Child Development Services - Washington County -		LX99	Education 71		BJones SJordon	Centerville Centerville	Jonesport Lubec
CDS-H - Child Development Services - Washington County		HX08	Work 72		JJoy EKeene	Charlotte Cherryfeild	Hoyttown Bucks_Harbor
		RX08	Nutrition 65		RLane PLegere	Codyville Columbia	Marshfield Meddybemps
		FX08	Personal 80		MMcneil SMcphail	Columbia_Falls Cooper	Milbridge Northfield
			Other 52		PMiller PNash	Corea Codyville_Plt	29350 Perry
			Med Supply 14		RNorton BPinkham	Cranberry_Isles Crawford	Princeton Robbinston
			Chiropractic 18		APolk LPottle	Cutler Deblois	Roque_Bluffs Steuben
			Ind Lab/Xray 12		MSimmons	Dedham	Talmadge

Funders	Providers	Billing Codes	Purposes	Fare Type	Routes	Zones	Jurisdictions
ASPIRE - ASPIRE - LX09 PC - Peaceful Choices WINGS - Wings AAL - AAL Donation R3CC - Region 3 Childrens Cabinet VFW - Veterans of Foreign Wars DDS - Disability Determination Services			Family Pl 27 Clinic 37		RSmith FSnider FWilcox CWilcox JWyeth ITHC PPHC MachiasBH MILRes SELF VOLUNTEER	Deer_Isle Dennysville East_Machias Eastbrook Eastport Edmunds Ellsworth Franklin Frenchboro Gouldsboro Grand_Lake_Str Grove Hancock Harrington Hinckley Holden Hoyttown Indian_Township Isle Au Haut Isleford Jacksonville Jonesboro Jonesport Jonesport Kennebec Lambert_Lake Lamoine Little_Deer_Isl Long_Island Lubec Machias Machiasport Manset Mariaville Marion Marshfield Meddybemps Medway Milbridge Milltown Minturn Mt_Desert Northeast_Hbr	Topsfield Vanceboro Waite The_Pines Whiting Whitneyville Pleasant_Point Brookton Edmunds 29808 Lambert_Lake 29810 Trescott Indian_Township 33221 Amherst Aurora Bar_Harbor Blue_Hill Brooklin Brooksville Bucksport Castine 9090 Dedham Deer_Isle Eastbrook Ellsworth Franklin 9150 Hancock Lamoine Frenchboro Mariaville Asticou Orland 9230 Otis Penobscot Sargentville Sorrento Manset 9290

Funders	Providers	Billing Codes	Purposes	Fare Type	Routes	Zones	Jurisdictions
						Northfield Orland Otis Pembroke Penobscot Perry Peter_Dana_Poin Pleasant_Point Portland Princeton Quoddy_Village Red_Beach Robbinston Rockland Rockport Roque_Bluffs Sargentville Sedgwick Somesville Sorrento South_Addison Southwest_Harbo Steuben Stonington Sullivan Sunset Surry Swans_Island Talmadge The_Pines Topsfield Tremont Trenton Trescott Vanceboro Verona Waite Waltham Waterville Whiting Whitneyville Winslow Winter_Harbor	Sullivan Surry Atlantic Tremont Trenton Verona Waltham Winter_Harbor Plantation 8 9806 NA

Funders	Providers	Billing Codes	Purposes	Fare Type	Routes	Zones	Jurisdictions
						Woodland Out of Zone	

GRANTS PASS, OREGON

Funders	Providers	Special Codes	Purposes	Fare Type	Routes	Zones	Jurisdictions
Medicaid - Medicaid Escort - Enrolled Escort Self/Prvt100% - Self or other 100% pay OPC - Oregon Parent Center Unknown - STF - State Transportation Fund OMAP - Office Of Medical Ass.Plan OHP - Oregon Health Plan	City - Grants Pass County - Josephine - Non City Jackson - Jackson County Douglas - Douglas County Other - Not listed Above	DD MED	NA Child Care Counseling Day Program Education Job Training Medical Nutrition Personal Recreation Shopping Social Work Other1 Other2	NA Cash Permit Ticket Pass DirectBill Other1 Other2	NA - Not Assigned South 1 - Jerome Prairie South 2 - Fruitdale NV 1 - Hugo/Merlin NV 2 - Galice/Merlin Senior Bus - North River Senior 2 - South River DAR-1 - Dial-A-Ride DAR-2 - Dial-A-Ride DAR-3 - Dial-A-Ride DAR-4 - Dial-A-Ride DAR-5 - Dial-A-Ride DAR-6 - Dial-A-Ride Escort-1 - Escort Escort-2 - Escort Escort-3 - Escort Escort-4- Escort Escort-5 - Escort Escort-6 - Escort Escort-7 - Escort Escort-8 - Escort CAP-1 - CAP CAP-2 - CAP CAP-3 - CAP CAP-4 - CAP CAP-5 - CAP CAP-6 - CAP CAP-7 - CAP CAP-8 - CAP CAP-9 - CAP CAP-10 - CAP CAP-11 - CAP CAP-12 - CAP SELF - Self Driver VOLUNTEER - Volunteer Driver	Fruitdale NE-GP NW-GP SE-GP/Murphy SW-GP/Jerome Prairie Williams North Valley Sunny Valley /Wolf Creek Illinois Valley Jackson County Murphy Jerome Prairie Douglas Lower River Redwood	Grants Pass Josephine - Non City Jackson County Douglas County Not listed Above

ITHACA, NEW YORK

Funders	Providers	City Names	Special Manifest Codes	Purposes	Fare Type	Routes	Zones	Jurisdictions
ALTERRA	Gadabout	Brooktondale	Assist to door	Child Care	Donation	ADA	Caroline	Caroline
DSHS		Dryden	Assist to walk	Counseling	Ticket	14A 14B	Cayuga Hts	Caygua Hts
LAKESIDE		Etna	Electric WC	Day Program	Cash	16A 16B	Danby	Danby
MEDICAID		Freeville	Enters via lift	Dental	Funder	20A 20B	Dryden	Dryden
OAK HILL		Groton	Get hosp WC	Dev. Therapy	Pass	21A 21B	Dryden - Vil	Dryden - Vil
OTHER		Ithaca	Large client	Dialysis	To be billed	23A 23B	Enfield	Enfield
RECON		Jacksonville	Need extra help	Education	No charge	25A 25B	Groton	Groton
RSVP		Lansing	Oxygen	Hair/Nails	Other	26A 26B	Groton - Vil	Groton - Vil
SELF		Newfield	Oxygen + lift	Medical		27A 27B	Ithaca - City	Ithaca - City
		Slaterville Spr	Scooter	Mental Health		29A 29B	Ithaca - Town	Ithaca - Town
		Trumansburg	Scooter + Large	Nutrition		31A 31B	Lansing	Lansing
			Step stool	Other		32A 32B	Lansing - Vil	Lansing - Vil
			Take Gad WC	Personal		33A 33B	Newfield	Newfield
			Xfers from WC	Physical Ther.		34A 34B	T'burg - Vil	Other
			NA	Recreation		35A 35B	Ulysses	T'burg - Vil
				Shopping		36A 36B		Ulysses
				Speech Ther.		37A 37B		
				Volunteering		37C 38A		
				Work		38B 39A		
						39B 41A		
						41B 42A		

Funders	Providers	City Names	Special Manifest Codes	Purposes	Fare Type	Routes	Zones	Jurisdictions
						42B 43A 43B 44A 44B 45A 45B 46A 46B		

KEARNEY, NEBRASKA

Funders	Providers	Supplemental Manifest Codes	Purposes	Fare Type	Routes	Zones	Jurisdictions
Self - Self pay GSHS - Good Samaritian Health Systems Foundation MNIS - Mid-Nebraska Individual Services CNGI - Central Nebraska Goodwill Industries St Jonhs - St JohnGood Samritan Center HHS - SSAD - Health and Human Services - Aged and Disabled HHS- SSCF - Health and Human Services - Children and Families HHS - WAD - Health and Human Services - Waiver Aged/Disabled HHS - Health and Human Services - Buffalo County HHS - Emp First - Health and Human Service - Employment First NA - Not Available - Northridge - Northridge Retirement Community MNCA - Mid-Nebraska Community Action, Inc.	RYDE - Local Public Transportation provider Kearney Cab Com - Local cab and livery service provider Prince of the R - Long distance cab and livery service, city of Ravenna	out town rt - 3.00 out town ow - 1.50 In town ow - 1.00 in town rt - 2.00 Axtell - 7.00 Cozad - 10.00 Elm Creek - 7.00 Gibbon ns - 6.00 Shelton ns - 9.00 Holdgrege - 9.00 Lexington - 8.00 Litchfield - 7.00 Minden - 8.00 Overton - 8.00 Pleasanton ns - Ravenna ns	Child Care Counseling D/A Day Program Dental Education ID Dev. Therapy Job Training Medical Mental Health Nutrition Personal Physical Ther. Recreational Shopping Social Social Services Speech Therapy Vision Voulenteer Work	Charge Punch Card Ticket Cash Pass Donation Other	Kearney1 Kearney2 GSHS GSHS PM MNIS County1 Kearney3 Kearrney4 Kearney5 TAXI	Krny CBD - Kearney Central Business District Krny Manor Area - Railroad north to 39th and 2nd east East Kearney - Kearney East of N NE Kearney - North of 39th St East of 2nd Ave NW Kearney - North of 39th St, west of 2nd Ave North Kearney - Kearney North of 56th University Area - South of Railroad West of 2nd Sw Kearney - South of railroad, east of 2nd SE Kearney - South of the interstate SO River Krny - South of the interstate Gibbon - Gibbon Mailing Addresses Shelton - Shelton Mailing Addresses Ravenna - Ravenna Mailing Addresses	City of Kearney - Kearney city limits Buffalo County - all of Buffalo County Out of County - All rides outside Buffalo

Funders	Providers	Supplemental Manifest Codes	Purposes	Fare Type	Routes	Zones	Jurisdictions
						Pleasanton - Pleasanton Mailing Addresses Miller - Miller Mailing Addresses Amherst - Amherst Mailing Addresses Riverdale - Riverdale Mailing Addresses Odessa - Odessa Mailing Addresses Elm Creek - Elm Creek Mailing Addreses Out of Zone - All other counties	

SALEM, OREGON

Funders	Providers	Print Codes	Purposes	Fare Type	Routes	Zones	Jurisdictions
DD	WHEELS	1 2	Child Care	Cash	NA R-1	Northwest	Polk
STF	CHERRY LIFT	3 4	Counseling	Permit	R-2 R-3	North	Portland
AFS	TAXI	5 6	Day Program	Ticket	R-4 R-5	Northeast	Rural
AFS	OTHER	7 8	Education	Pass	R-6 R-7	South	Urban
OMAP	SELF	9 10	Job Training	DirectBill	R-8 R-9	Southeast	Other
ADA 1	CARTS	11 12	Medical	Other1	PORT OMAP	Hollywood	
ADA 2	VOLUNTEER	13 14	Nutrition	Other2	A B	Fourcorners	
ADA 3		15 16	Personal		C D	Portland	
SELF		17 18	Recreation		E F	Polk	
SLTAXI		18 20	Shopping		G H	North County	
CARTS			Social		I J	South County	
CONTRACT 3			Work		K L	Message	
JARC-P			Other1		M EX-1		
JARC-SoM			Other2		EX-2 PolkEX PoCo1 PoCo2 DAR MATC NoCoConn TriCtyC SaSiSh CanCon Loop SELF VOLUNTEER		

WOODBURN, OREGON

Funders	Providers	Purposes	Fare Type	Routes	Zones	Jurisdictions
DD - Developmentally Disabled	Van	Child Care	Donation	Shopper Van	Portland	Marion County
STF - Special Transportation Fund	POV	Counseling	Cash	Call Back Van	Salem	Washington County
AFS - Adult and Family Services	Self	Day Program	Billed	Names of the 15 POV volunteer drivers	Tualatin	NA
ADA1 - American Disabilities Act	Volunteer	Education			Silverton	
ADA2 - American Disabilities Act					Tigard	
Self		Job Training				
		Medical			Beaverton	
		Nutrition			Woodburn	
		Personal			Gladstoon	
		Recreation			Wilsonville	
		Shipping			Keizer	
		Social			Camby	
		Work			Oregon City	
		Other			Mt. Angle	
		Rehabilitation			McMinnville	
		Spouse Visit			Marquam	
					West Linn	
					Lake Oswego	