Chapter 4: Case Studies of High-Performance Systems

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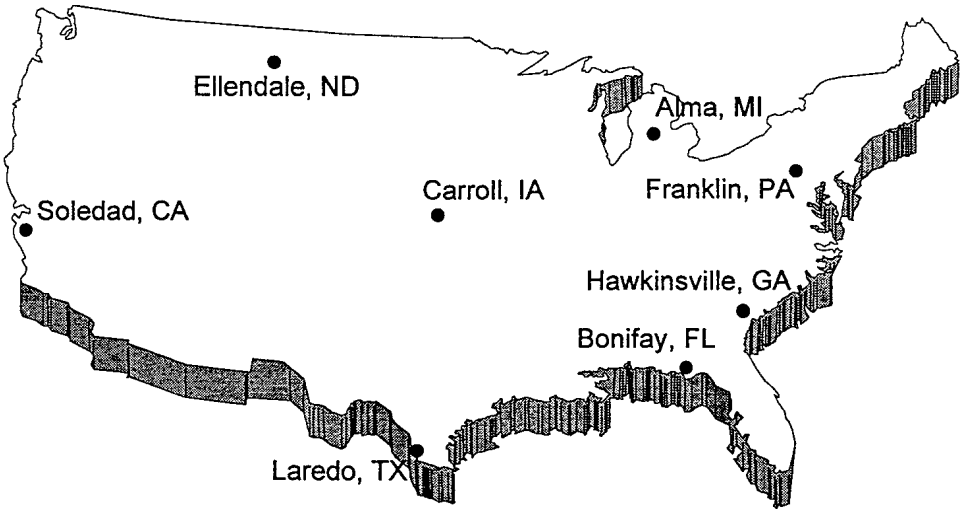
THE CASE STUDIES

Most successful rural transit operators have fashioned unique responses to their local conditions. They have determined transportation system goals and objectives based on local community values, have determined service types and levels according to the constraints on local resources, and have operated services which they have changed over time to better meet their goals, objectives, and constraints.

This chapter describes several case studies in depth. Note that each of these cases represents a real attempt to tailor the service specifications to local conditions. Read these cases from the perspective of gaining lessons on how to tailor services to your own community. The systems described in these case studies also reported exemplary results on one or more performance measures. The case studies are the result of on-site visits to each of these systems (except for the one-bus systems). These systems are



- **Alma Dial-a-Ride, Alma, Michigan:** This six-bus system offers demand-responsive and other (not fixed-route) services within a small town in central Michigan. It reports high passengers per hour and per mile.

- **Tri-County Community Council, Bonifay, Florida:** This 39-vehicle system offers demand-responsive services to residents of a large three-county area in northwestern Florida. It reported low costs per vehicle mile.

- **Western Iowa Transit System, Carroll, Iowa:** This six-county area has 3,481 square miles and 78,836 persons. Demand-responsive transportation services are provided by a 40-bus fleet.

This system reports low costs per mile and per hour, plus high numbers of passengers per hour.

- **El Aguila, Laredo (Webb County), Texas:** Fixed-route services are provided in this 3,324 square mile county into the City of Laredo by this 14-vehicle system, which reported high passenger volumes per vehicle hour and low costs per trip.

- **Venango County Transportation, Franklin, Pennsylvania:** This system provides both fixed-route and demand-responsive services. It reported low costs per hour and per trip.

- **"One-Bus" Services:** Because of the pervasiveness of the one-bus services, and the differences among them, we looked at services in the City of Soledad, California (a demand-responsive service reporting low costs per trip and a high number of passengers per hour), Dickey County Senior Citizens in Ellendale, North Dakota, (a demand-responsive service reporting low costs per mile and high passengers per vehicle hour), and the Pulaski County Transit System of Hawkinsville, Georgia (another low-cost, high productivity demand-responsive system).

While each of these systems is unique in some way, all of them have succeeded in providing effective or efficient transportation services to their own rural communities. Therefore, they offer examples of the possibilities for rural transportation services elsewhere.

ALMA, MICHIGAN: DIAL-A-RIDE TRANSPORTATION

City of Alma Dial-A-Ride - Alma, Michigan

Service Area:	6 Square Miles 9,034 Residents One small town in Central Michigan
Services Provided:	On-Call Demand Responsive Service Fleet of six vehicles 83,854 Annual Revenue Vehicle Miles 8,705 Annual Operating Expenses 70,000 Annual One Way Passenger Trips
Lessons for other Communities:	Shows benefits of a rapid response in a small service area. Strong focus on good employee relations. Budgetary considerations have a strong effect on service levels.

The City of Alma is located in the center of Michigan's lower peninsula, about 30 miles east of Saginaw and 40 miles north of Lansing. Alma, whose 1990 population was 9,034, is the county seat of Gratiot County, which had a 1990 population of 39,982. The populations of both the city and county have declined by a very small amount since 1980.

While the majority of the County's land area is in agricultural uses, there is a significant manufacturing base. Local industries within the City include a refinery, car parts production, boat manufacturer, boxes, plastic moldings, bolts, and containers. Wages are said to be higher in the city than in the county. Sixty-two percent of Alma's housing units are owner-occupied, compared to a statewide average of 71 percent; at $39,900, the median value of Alma's owner-occupied housing units is about 65 percent of the statewide average.

Over 15 percent of Alma's population is 65 years of age and older, compared to the statewide average of 11.9 percent. Almost one-quarter of Alma's households have one or more persons 65 years of age or older. The land area for the County is 570 square miles and the population density is 68.4 persons per square mile. Alma has 5.4 square miles of area and a population density of 1,673 persons per square mile.

Transportation Services

The City of Alma Transportation Center, a department of city government which reports directly to the City Manager, operates one of the older dial-a-ride public transit services in Michigan, locally known as DART (Dial-A-Ride Transportation). DART began operations in June of 1975; since the system's inception, it has been partially financed through a local tax millage.

DART's services focus on demand-responsive and subscription trips. They also offer contractual services on a very limited basis. DART's services are curb-to-curb; door-through-door services are provided by the other transportation provider in the area, the Handicapped Information Council/Patient Equipment Locker (HIC/PEL), which can be considered a human services transportation agency focussing on seniors, "handicappers," rural residents, and medical services.

DART provides 98 percent of the public transportation within the City of Alma. Services were pulled back to trips only within city boundaries on July 1, 1994, because the surrounding townships would not provide financial support for transit services in their areas. HIC/PEL provides services throughout the rural portions of Gratiot County and to a few persons with disabilities in Alma who are transported outside of Alma.

Services Provided

The demand-responsive services account for about two-thirds of the actual vehicle miles and the subscription services account for nearly all of

the rest. Operating hours are 7:30 am to 5:30 pm on weekdays. Six vehicles operate during peak hours (which are those times when children are traveling to and from school); three to four operate at other times. Services are usually available to riders on a 15-minute notice; shorter response times are possible. The total estimated annual one-way trips is 70,000 — 47,000 of which are on demand-response basis.

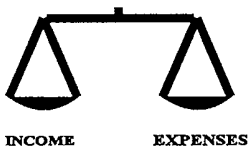
The service is essentially a publicly sponsored shared-ride taxi operation, available on demand to all residents of a small urbanized area. Those persons who require door-through-door hands-on attention use HIC/PEL's services. DART does not provide trips to persons in the surrounding rural communities because of the lack of financial assistance from the rural townships.

Services Consumed

The system reports recent annual ridership of 70,000 — 47,000 of whom are demand-responsive passengers and the bulk of the remainder are subscription passengers. Sixteen percent of the passengers are fullfare general public riders; 25 percent are school children, 29 percent are seniors, 24 percent are persons with disabilities, 14 percent are contract fares, and 8 percent are fare-free rides. The subscription trips are primarily school children: subscription trips account for 40 percent of rides in the winter but only 5 to 10 percent of all trips during the summer.

DART monitors services carefully so as not to be overwhelmed with demand. Six years ago, services were cut and fares were raised to reduce service demand and to maintain operating expenses within the established budget. Saturday and city holiday services were eliminated, and weekday services were reduced by 2 hours per day. The system has closely monitored the effects of these changes, and believes that it lost 10 to 12 percent of its ridership as a result of the fare increase and 4 to 5 percent as a result of the elimination of Saturday services. Ridership is now slowly climbing back to previous levels, which may lead to other actions to maintain services within budgetary constraints.

Personnel and Administration



The system works to maintain stable employment among its drivers and administrators, as the managers believe that long-term employees make a substantial contribution to efficient operations. Furthermore, the system manager believes that it takes a driver 4 to 5 months to effectively learn the street pattern in this small town. In 1994, starting salaries for drivers were $8.60 per hour and were capped at $11.15 after 6 years of service. Dispatching salaries range from $9.10 to $11.20. All drivers are part-time employees and many are cross-trained in office and janitorial services as well as driving. Tests, competitions, hands-on training, employee inputs, and annual awards are an active part of employee relations. Employee-generated system modifications are actively encouraged.

Finances

The most unusual aspect of DART's financing is that annual budgets are established with the explicit purpose of returning a surplus to a capital fund. In the fiscal year of July 1992 through June 1993, the system reported total annual revenues of $376,000 and total expenses of $351,800. Using the objective of a typical annual surplus of approximately $20,000, a fund of about $750,000 has been accumulated by the system. This capital now generates annual interest payments in excess of $20,000, putting the system on an extremely solid financial basis.

In FY 1993, DART received $35,000 in passenger revenues, $120,000 in local millage, $129,000 in state Section 18 match, $40,000 in federal Section 18 funds, and $42,000 from local assistance (about half of which was interest on their reserve fund and half was a payment from the locality from state funds that the city receives for unspecified public works functions). Salaries and fringe benefits accounted for 72 percent of the total expenses, with depreciation, materials and supplies, fuel and oil, and insurance accounting for most of the remaining expenses.

Performance

Alma was chosen as a case study of systems offering demand-responsive and other (not fixed-route) services because of its high productivity figures (passengers per vehicle hour and per vehicle mile). The case study shows Alma to be atypical of other rural systems; the high productivity per vehicle mile is due to the focus on trips within an extremely limited geographic area. The high productivities reported on a per hour basis are due in part to a unique reporting practice for vehicle hours: only that time spent while actually driving the vehicle (that is, not time spent waiting for calls) is recorded as revenue vehicle hours. This differs from the usual reporting practices of most demand-responsive transit systems under which time **available** for service, whether or not actually on the road, is counted as revenue vehicle hours (thus making revenue vehicle hours essentially the same as driver pay hours). However, even if we were to conclude that this system is only reporting half of their actual hours (downtime was 41.2% of driver pay hours during one sample week of September 1994), Alma's DART system would still outperform most demand-responsive Section 18 systems in the United States. The system reported figures of 0.96 passengers per revenue vehicle mile and 13.64 passengers per revenue vehicle hour; even if these are adjusted (according to the September sample) to 0.65 passengers per revenue vehicle mile and 9.25 passengers per revenue vehicle hour, the figures are excellent.

Assessment

The situation in Alma is unusual in many respects. The city is an older, small, densely settled community with a higher than average proportion of older citizens. The public transportation services resemble taxi (and school bus) operations more than they resemble "standard transit" practices: this system provides very short response times within a highly limited geographic area. The citizens (and their local government) support the public services with their patronage and their tax dollars, and children are encouraged to ride the bus and establish transit usage habits early in life. The focus on building a financial security fund for the transit service is extremely rare.

This is a system that has operated for almost 20 years, and the system manager is highly aware of lessons learned over that period of time. The DART system is well aware of its strengths and its operations are specifically tailored to benefit from those strengths.

DART offers a number of features worth emulating. These include the focus on service, the support of the locality, the operation of the system on a highly "business-like" manner, and the low staff turnover. Drivers know clients whom they have served for many years. This is a highly successful and stable operation that is strongly service-oriented.

BONIFAY, FLORIDA: TRI-COUNTY COMMUNITY COUNCIL, INCORPORATED (Tri-County)

Tri County Community Council - Bonifay, Florida

Service Area:	2,121 Square Miles 64,453 Residents 3 counties in Northern Florida
Services Provided:	On-Call Demand Responsive Service Scheduled service with deviations Fleet of forty-four vehicles 1,343,301 Annual Revenue Vehicle Miles 94,000 Annual Operating Expenses 158,613 Annual One Way Passenger Trips
Lessons for other Communities:	Satellite offices decrease driving times and increase access to clients. A variety of cost-cutting measures employed.

Tri-County serves Holmes, Walton, and Washington Counties in Northwest Florida. The main office is located in Bonifay, Florida, which is approximately 40 miles north of Panama City and 90 miles west of Tallahassee. The three-county service area traverses about 60 miles of the Interstate 10 corridor between Tallahassee and Pensacola. The northern boundary begins at the Alabama state line and extends as far south as the Florida coastline.

The largest cities in the service area are Bonifay in Holmes County, DeFuniak Springs in Walton County, and Chipley in Washington County. The remainder of the service area is rural in nature and consists mostly of very low-density single-family housing and small farms.

The total population for the three counties in 1990 was 60,457. The 1993 estimated population is 64,453, which represents a 6.6 percent increase. Most of the population increase is due to the rapidly

expanding tourist and resort industry along the coastline in Walton County. Economically, the Tri-County service area is relatively stable with no significant additions or losses in the employment market.

Current Operations

Tri-County was established in 1965. It is a private nonprofit organization dedicated to providing or coordinating an array of services available to low-income residents of Holmes, Walton, and Washington Counties. Some of the programs covered by this umbrella organization area Head Start, Florida Energy Efficiency, home weatherization, assistance to the homeless, Housing and Urban Development Section 8 rent assistance (in Washington County only), and a variety of community-oriented services.

The transportation program at Tri-County was initiated in 1983. This program was undertaken in response to a state mandate (Chapter 427) that required each county to designate one agency that would be responsible for coordinating all social service transportation efforts. Tri-County requested that the state designate it as the transportation coordinating agency in each county they were already serving, and this request was approved.

Tri-County operates a small transportation office in each county that is staffed by a Coordinator/Dispatcher, Clerk-Typist/Dispatcher, and part-time Secretary. The offices are located in Bonifay, DeFuniak Springs, and Chipley. The facilities are provided free of charge by the county governments.

The individual offices are designed to coordinate travel services in their respective county. Each county has its own nutrition sites and Head Start office, and most travel needs are served within the county. Tri-County will transport passengers out of the county if required. Depending on the type of medical service needed, some trips are made to Panama City, Pensacola, and Tallahassee. Other trips are made to Tuscaloosa and to Dothan, Alabama, and Biloxi, Mississippi. Tri-County requests that the agencies or individuals call 24 hours in advance to reserve trips, but they will arrange service with less notice whenever possible.

Each office also has its own assigned vehicles and drivers. For FY 1993-1994, no county had more than 15 vehicles or less than 12; the number of drivers per county ranged from 11 to 13. Vehicle maintenance is performed under a 5-year contract with an automotive repair facility located in Bonifay. The work performed and the charges are managed by Tri-County's main office in Bonifay. Oil changes and some minor maintenance work are obtained at other locations and overseen by the local offices to minimize the amount of time the vehicle is out of service. The vehicles are stored in the parking lots of the local offices in Holmes County and Washington County. A county corporate yard is utilized in Walton County.

Most of the requests for transportation service provided by Tri-County are made by other federal and state government agencies who also pay for the service. Transportation service is provided to the clients

of these programs as a part of other services they receive from these agencies. The largest purchaser of transportation service through Tri-County is the Medicaid program. Other agencies that utilize Tri-County for transportation service include: Councils on Aging, Mental Health, Head Start, Health and Rehabilitative Services, Safety Net (infant child care), Project Independence, U.S. Department of Agriculture (for delivery of food items), and insurance companies.

Some passengers receive subsidies for transportation service through the State of Florida Commission for the Transportation Disadvantaged. This program helps residents that do not receive assistance from any other programs. It is funded by a $1.00 fee that is added to the Florida license plate fees.

Tri-County has purchase of service agreements with each agency. Medicaid and nonsponsored clients contact Tri-County directly to arrange their transportation service. All other clients must allow the agencies to arrange their transportation. Other residents, regardless of their financial status, many use the Tri-County transportation services if they are willing to pay the full fare out of their own pocket.

Because the majority of Tri-County transportation service consists of travel related to the services of other support agencies, trip purposes are limited. Medical, rehabilitation, and therapy account for the majority of trips. Other trip purposes served by Tri-county include travel to nutrition sites, vocational schools, infant day-care, and sheltered workshops. Another result of Tri-County's focus on providing agency related transportation is that most passengers ride on a regular basis.

COST PER MILE

January $1.25
February $1.20
March $2.50

The portion of trips associated with commuting to work is minimal. Travel to sheltered workshops subsidized by the Association for Retarded Citizens represents a small number of work trips occasionally; Project Independence will also subsidize work related trips. However, they seldom have funding available to provide this type of travel. The current rate for Tri-County transportation service is $0.92 per mile. The cost for a one-way trip is equal to the total number of miles traveled multiplied by the per mile rate. Individual fares are calculated by dividing the total trip cost by the number of passengers on a given trip. The cost per mile figure has remained the same for approximately 3 years. The previous rate was $0.88 per mile. The rate has remained relatively stable for a significant period of time due to a little or no change in the number of Tri-County employees and aggressive cost control efforts. One example is the cost of vehicle liability insurance, which the agency reported is very low compared to other agencies in the state.

Assessment

Tri-County appears to be a well-organized agency that is providing effective service to its clients. The current Executive Director has held the position for several years. During this time, she has developed a very efficient program and capable staff.

Based on observations made during the site visit and discussions with selected staff, the following strengths were identified for the Tri-County program.

- Administrative costs are distributed among several agencies that subsidize client transportation.
- Office space in the three counties is donated.
- Decentralization of the transportation/dispatching function improves the scheduling of trips and reduces nonrevenue vehicle miles and hours of service.
- Competitive procurement of centralized maintenance services reduces total transportation costs.
- Vehicle costs are minimized by utilizing the state purchasing system and vehicle specifications.
- Use of part-time drivers controls labor costs.

Weaknesses identified for the program include:

- They need a significant amount of capital assistance because of the relatively short life of the vehicles.
- The large service area results in rapid accumulation of vehicle miles and minimizes the life of the vehicles.
- Unmet travel demand still exists.
- Recordkeeping requires more automation, which is currently not available.

Tri-County believes that the four main reasons for their success include sound accounting management, having county coordinators help monitor and control expense, efficient scheduling, and good recordkeeping.

CARROLL, IOWA: WESTERN IOWA TRANSIT SYSTEM

Western Iowa Transit System - Carroll, Iowa

Service Area:	3,481 square miles 78,836 residents Six rural counties in Western Iowa
Services Provided:	On-Call Demand Responsive service Fleet of forty vehicles 785,866 Annual Revenue Vehicle Miles $662,164 Annual Operating Expenses 324,381 Annual One Way Passenger Trips
Lessons for other Communities:	Stationing vehicles at satellite offices decreases deadhead mileage and provides a more local flavor. Using part-time and volunteer personnel helps to control costs. Full cost allocation to participating agencies.

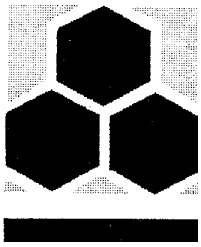
The service area for the Western Iowa Transit System is comprised of six counties: Audubon, Carroll, Crawford, Greene, Guthrie, and Sac. These counties make up Iowa's Region XII, which is one of 16 planning areas in the State of Iowa. Region XII is located in west-central Iowa, midway between Omaha, Nebraska and Des Moines, Iowa, approximately 100 miles from each. The combined county area for the six counties is 3,481 square miles. Within the six counties are 56 municipalities, ranging in population from 20 to 9,579 persons.

The land use pattern in the Region is predominantly agricultural; row crops, pastures and livestock operations. The area is extremely low density, and these agricultural-related uses often occur within the corporate limits of urban areas. However, in the last ten years, the region has shown an increase in economic diversification — especially in retail trade. The City of Carroll has had new Wal-Mart and K-Mart stores enter the community within the past few years and, in the 1990 Census, retail trade was the stated occupation of 16.5 percent of the population while agriculture was 16.9 percent, down from 28.2 percent in the 1980 Census.

Only five communities in the six-county area qualify as urban areas (areas with a population of 2,500 or larger), all of which are the county seats for their respective counties. These communities are Audubon, Carroll, Denison, Jefferson, and Sac City. Guthrie County has no urban area with a population of 2,500 or larger. The total population for the six-county area is 78,836 and the population density is 22.64 persons per square mile. The total Region XII area has had a downward trend in population over the last 20 years, which is expected to continue in the Region; however Carroll and Crawford counties are projected to show modest gains in population between 1990 and 2000.

As the population has declined in Region XII, the demographics of the population have also changed. The percentage of older persons has grown while, at the same time, the percentage of younger members of the workforce has decreased. In the 1990 Census, there were 20,429 people in Region XII over age 60—nearly 26 percent of the population. The median age of the Region, 37.9, is higher than the Iowa statewide median of 34. No county in the region had a median age lower than the Iowa median. At the same time, younger members of the workforce have left the region, and the decrease in the number of persons 20-29 are usually explained by the loss of jobs associated with the declining farm economy and the lack of entry-level jobs requiring a college education. Thus, there is a growing number of older persons in Region XII, with a shrinking base of younger persons available to support their needs. The only areas experiencing growth in the Region are the urban areas with diversified economies.

The City of Carroll maintains the Region's largest population, and the greatest diversity of economic, social, environmental, and physical characteristics. Carroll is viewed as the Region's economic center and is the home of the Region XII Council of Governments—the agency that operates the Western Iowa Transit System.



Transportation Services

Region XII COG operates the Western Iowa Transit System (WITS), providing demand-response and subscription service to the general public, senior citizens, persons with disabilities, and human service agency clients throughout the Region XII service area—the six-county area in west-central Iowa described above. The program is funded by the Iowa DOT, the Federal Transit Administration, Elderbridge Area Agency on Aging, local governments, fares, contracts, and donations. WITS is the only public transportation provider in the Region.

Much of the service is concentrated on helping rural residents access social services and perform basic activities, like shopping, banking, and errands. Although the basic service model is individually scheduled demand response, WITS has a very flexible philosophy for agencies wishing to contract with WITS on an on-going basis; in a nutshell, the WITS perspective is, "If you have a transportation need, we'll try to fill it."

Services Provided

Service is door-to-door, and is offered weekdays, from 7:00 am to 5:00 pm, but service outside of normal service hours can be arranged. Service is provided by a 40-vehicle fleet, in addition to a contracted fleet available through taxi companies, human service agencies, and other private providers.

From July 1, 1992 through June 30, 1993, WITS directly provided a total of 112,931 trips, and another 211,450 through contractors, for a total of 324,381 trips. As Section 18 operating assistance in Iowa is distributed based upon the volume of service (trips and miles) provided, WITS has a tremendous incentive to provide as many trips as possible. This has led

to an aggressive marketing and outreach effort, and a truly customer-based service.

WITS directly provided 372,287 miles of service, with an additional 413,579 through contractors, for a total of 785,866 revenue miles. There were 23,409 revenue hours directly provided, and 21,586 hours through contractors, for a total of 44,995 revenue hours of service. The contractors used by WITS greatly expand the program's reach through the provision of "indirect" service.

As described briefly above, WITS works in a variety of ways, in order to provide a maximum level of service. In terms of direct operations, each county has an independent operation with an answering machine and a dedicated driver/scheduler/dispatcher. The driver picks up messages requesting rides, schedules the trips, and then informs passengers of their pick-up times. Operations are based out of Senior Centers, and seniors requiring a trip to the Center or a congregate meal site must sign up each day for the next day. In this manner, the system is truly demand-responsive — individuals must initiate their transportation arrangements on an ongoing basis. Other demand-response trips are scheduled using blocks of time that are, in effect, reserved — from 9:00 am to 11:00 am, drivers provide medical trips; 11:00 am to 1:00 pm, trips are made for Head Start, and to Senior Nutrition meal sites; from 1:00 pm to 3:30 pm, drivers continue with medical trips, but also provide "quality of life" trips, for shopping, errands, etc.; 3:30 pm to 5:00 pm drivers return clients home from activity centers and school.

Virtually all of these trips are made surrounding a "backbone" of service — early morning (7:00 am - 9:00 am) and afternoon contract runs for human service agencies throughout the Region. The most significant of these in New Hope Village, which provides comprehensive services to adults with mental and/or physical disabilities, and head trauma. New Hope Village's facilities include residential sites, group homes, work activity centers, and educational facilities. As the single-largest customer of the system (44% of all trips are New Hope Village-related), much of the service is built around the needs of this key human service agency and major Regional employer. In order to meet the needs of various agencies and organizations, and to extend the reach of WITS, service is structured in a variety of ways:

- ***Direct service*** — WITS provides the vehicle and the driver, and bills the agency contracting for service on a per mile basis. (The base rate was 87¢ per mile in FY 1992-1993).

- ***Taxi voucher*** — WITS contracts with cab companies to accept taxi vouchers provided for seniors and persons with disabilities, and WITS reimburses the difference between the voucher value and the total fare. WITS counts these trips in its service statistics.

- ***Lease Vehicle, Agency Operates*** — WITS will provide a vehicle to an agency, when an agency staff person operates the vehicle. WITS reimburses a portion of the operating cost for this service, and provides vehicle maintenance and insurance. New Hope Village has such vehicles in its fleet. WITS counts these trips in its service statistics.

- ***Agency-Owned Vehicle, Subsidized Operations*** — WITS subsidizes operating expenses for a vehicle, but not insurance, in exchange for counting trips generated. The agency agrees to provide local general public transportation in the immediate area.

- ***WITS Leases Vehicle from Agency, WITS Operates*** — For agencies with capital, but no staff to operate the vehicles, WITS will lease the vehicle for $1, and provide service back to the agency. The vehicle can be used for other programs' needs, and WITS gets to count these trips in its service statistics.

- ***Timesharing Staff*** — WITS timeshares driving staff with agencies that have drivers on their payrolls. WITS pays the driver on a part-time basis. The driver is maintained at the agency pay rate. WITS gets an additional part-time driver, and the trips are included in service statistics.

- ***Senior Shopping Trips*** — HYVEE grocery stores in the City of Carroll subsidize door-to-door shopping trips from four pickup sites throughout the Region. HYVEE pays all costs for this service, regardless of ridership numbers.

All of these flexible contracting arrangements are meant to promote increased coordination. Virtually all scheduled services are prearranged on an ongoing basis. The system does not operate routes; rather, it sets aside blocks of time for specific client groups.

Services Consumed

Despite the downward population trend in the Region, the volume of service consumed has increased. This increase is probably due to the growing percentage of older persons in the Region, and the flexible contracting relationships encouraged by WITS.

In FY 1992-1993 WITS provided a total of 324,381 passenger trips, with 78,489 of those trips for seniors (24%), and 202,046 trips for people with disabilities (62%). The extreme emphasis on passengers with disabilities is a direct reflection of the impact New Hope Village has on the service.

Personnel and Administration

Service is provided using seven full-time staff, four of which are drivers. The three remaining full-time staff are the Service Manager, Operations Manager, and the Transit Director. A significant portion of the service is delivered using part-time drivers — 43 in all. Many of these are

retirees or women that previously worked only in the home. Frequently, part-time drivers work a split shift, with a long break in the middle of the day. This type of scheduling also helps to reduce staff costs, as drivers are maintained as part-time workers.

The full-time drivers have a fairly complex job, as they act as their own schedulers and dispatchers, as well as directing the part-time driving staff in their individual county area. Each county has its own independent operation with at least one driver/dispatcher. Drivers actively promote the service, both informally and through structured outreach activities including public service announcements, radio interviews, and participation in community activities. WITS strongly encourages a sense of ownership among its employees, and supports driver-initiated ideas throughout the service.

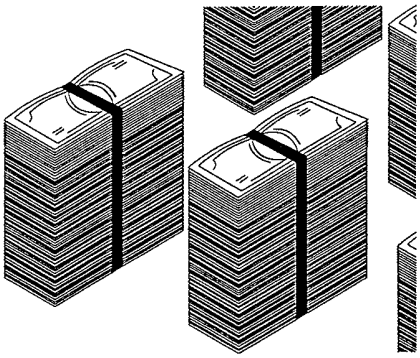
Finances

In 1994 the system built a new administration and vehicle maintenance facility, using FTA Section 3 resources. This commitment to capital investment is part of an overall philosophy to provide high-quality and efficient coordinated service.

The system operates with very carefully structured accounting and costing procedures. Each agency that purchases contracted service is billed for the portion of the total service it consumes. With the wide variety of contracting arrangements, financial accountability and fully allocated costs are a crucial aspect of system control.

The system runs with a balanced budget, and in FY 1992-1993, expenses totaled $662,164, while revenues totaled $654,164. The surplus or shortfall from a previous year is carried into the next fiscal year's operating expenses. It is WITS' guideline that two-thirds of the income necessary for operating the system must be generated by the service. WITS achieves that benchmark through its contracts, and fills the remaining third of the budget with funding from passenger fares, local government support, Section 18 funds for operations and IDOT state formula funds.

As the dedicated recipient of transit funds for Region XII, the Council of Governments plays a role as a "pass through" for Section 16 capital resources, as well. Thus, agencies receiving vehicles through Section 16 also participate in the coordinated system.



Performance

The performance of this system is composed of two pieces — direct service provision and indirect service provision. Approximately two-thirds of the service is provided through contractors, which serves to greatly expand the reach and scope of the service.

Thus, with relatively small staff, WITS provides an extremely large volume of service, at very low cost. Its operations have grown substantially. In FY 1992-1993, WITS delivered 324,381 trips, 726,886 vehicle miles, and 44,995 hours of service, for a total operating cost of $662,164. (Comparable figures for 1983-84 were 184,867 trips, 382,854 miles, and a $212,264 operating budget. Over this 10-year period, the fleet size has increased from 14 to 40.) The current cost per hour for this service is $14.72, well below the median value of $19.74 per hour for other Section 18 operators. Cost per trip is also very low — at approximately $2.04 per trip; it is also well below the reported values for other operators. Despite these very low costs, the productivity of the service does not seem to suffer. The service is very productive, with 7.2 trips per hour, even though much of the service is actually delivered by individually dispatched taxis. Overall, WITS records strong performance as a rural transit system, providing individually tailored service.

Assessment

The low cost for this service is exceptional. It seems to arise from a variety of creative contracting procedures, plus carefully analyzed, allocated, and tracked operating costs, and a genuine commitment to do business with anyone needing transportation. Furthermore, the regional aspect of the service is exploited to create efficiencies, without compromising a commitment to individual and locally based service. Through satellite operations and individual driver initiative, every county has a lead driver to call its own. Also, as the agency is housed in a Council of Governments, it has a regional perspective in terms of Board leadership and administrative resources. Finally, the system's success appears due, in part, to the effective use of IDOT resources, and to the aggressive pursuit of additional transportation resources through contractors. This program offers an exceptional example of coordinated rural transportation service.

LAREDO (WEBB COUNTY), TEXAS: EL AGUILA

Laredo Webb County Community Action Agency (El Aguila) - Laredo, Texas

Service Area:	3,357 Square Miles 10,728 Residents One large rural county in South Texas
Services Provided:	Fixed Route, Fixed Schedule Service Fleet of six vehicles 235,500 Annual Revenue Vehicle Miles 8,008 Annual Revenue Vehicle Hours $343,527 Annual Operating Expenses 150,000 Annual One Way Passenger Trips
Lessons for other Communities:	Long-distance fixed-route work trips from outlying rural areas to a major urban center operate near capacity. Various cost saving techniques employed.

Webb County is Texas' second largest county, with 3,357 square miles, and is located on the southwest border of the State of Texas, adjacent to Mexico. The City of Laredo is the single focus of the county in terms of employment and, to a large degree, population. The 1990 Census lists the population of Webb County as 133,239, although, it is generally recognized within the County that outlying rural areas were significantly undercounted — by more than 5,000 persons. The Laredo Chamber of Commerce estimated the 1993 Webb County population at 149,000. In Texas, Webb County is the fifth fastest growing county in terms of population, and the fastest growing county in terms of employment.

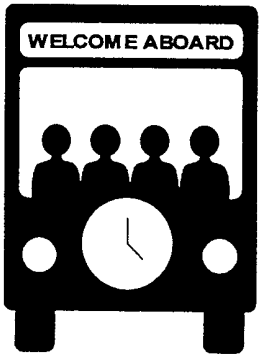
The majority of the land area is rural — only 33 square miles are within the City of Laredo. The remaining 3,324 square miles are rural, with very low density. All economic activity is centered around the City of Laredo, which is generally considered the second fastest growing city in the United States. A border city, the population of Laredo, Texas is far overshadowed by the population of Nuevo Laredo, on the other side of the Rio Grande — estimated at 400,000 persons. Within Laredo, Texas, 95 percent of the population is Hispanic, and Spanish is the preferred language for both formal and informal communication.

The economic base of the County is the City of Laredo, and the most significant large private employers (1,000 employees +) are Mercy Hospital, HEB Grocery Store, and Transamerican Natural Gas Corporation. In addition to these large Laredo employers, government employees, and a plethora of retail malls and shopping centers catering to the border trade, there are approximately 80 "maquiladoras" plants in Nuevo Laredo that provide 3,000 jobs to Laredo residents. Of the 80 plants, 30 have office, distribution, or manufacturing facilities in Laredo, Texas, including such companies as Packard Electric, R.G. Barry, Sony, Rheem, and Modine.

Despite the tremendous economic growth, the salaries and standard of living are very low throughout the county. Of 254 counties in Texas, Webb ranked 245 in per capita income in 1990. In 1990, 38 percent of the population was below the poverty level, and 33 percent of all families were below the poverty level. Of the 34,438 occupied housing units, 5,371 (16%) had no vehicle available, and 4,832 (14%) were without a telephone. These extremely low income persons tend to live outside the city of Laredo, in the rural area that is served by El Aguila (The Eagle), the transportation program operated by the Webb County Community Action Agency. El Cenizo and Rio Bravo are the two smaller cities within the County. Other smaller communities, many without water or power, are referred to as "colonias" and are also part of the El Aguila's scheduled service.

The population in Webb County is very young and is in part what fuels the economic growth of the city. The median age in Webb County is 25.2 for men and 28.5 for women. Less than 8 percent of the population is over age 65; and Webb

County ranks 246 out of 254 Texas counties in the percentage of total population over age 65.



Transportation Services

The Laredo Webb County Community Action Agency operates El Aguila transportation, a fixed-route service (and, since July 1993, demand-response service), that links the rural parts of Webb County with the urbanized area of Laredo, Texas. El Aguila has been in operation since 1988, and the service is financed primarily through the Federal Section 18 program administered by Texas DOT, local county funds, and passengers fares.

Other organizations in Webb County also provide transportation. The City of Laredo operates "El Metro" an urban bus system serving the City. The Society of St. Vincent de Paul provides transportation for Medicaid clients using Title XIX funds, and the South Texas Development Corporation provides transportation to elderly persons and people with disabilities through a network of neighborhood community centers, using Section 16 funds.

El Aguila's services focus on transporting people from the outlying rural areas into Laredo, using a network of 6 routes, operating 7 days per week. In addition to the fixed routes, the system also provides very limited paratransit services exclusively to persons with disabilities who are unable to use the fixed-route services. For the rural portion of the County, El Aguila provides 100 percent of all public transportation trips. Within the City of Laredo, El Aguila service is extremely limited, as vehicles stop at medical facilities and "La Plaza" the central square in downtown Laredo. El Aguila passengers wishing to travel within the City of Laredo must transfer to the El Metro city bus system.

Services Provided

From September 1, 1992, through August 30, 1993 (FY 1992-1993), the El Aguila system provided a total of 122,752 one-way trips, and an estimated 8,008 hours of service and 235,500 revenue miles of service. As demand-response service was initiated during July 1993, and there were only 38 passengers during the first month, virtually all of the service provided was in the form of fixed-route trips. Operating hours are from 6:00-11:00 am and 1:00-7:30 pm, 7 days a week. (Demand-response service is available Monday through Friday.) For the fixed-route service, four vehicles operate during peak hours. Two vehicles are used for demand-response service, and the system has a total of 14 transit vehicles. There are six routes, and on a typical weekday there are 14 runs on the service.

Services Consumed

The ridership trend has moved steadily upward since the initiation of service, rising from 22,679 trips in FY 1988-1989 to over 150,000 in FY 1993-1994. For analysis purposes, passengers are grouped in the following categories: elderly, other; paid fare, free fare; and persons with disabilities. In FY 1992-1993, 12,222 passengers were elderly (10%),

and 20,255 (16%) traveled without paying a fare. Thirty-eight persons with disabilities were also transported on either the fixed-route or demand-response system. The fare-free passengers include persons that qualify for CSBG or Head Start programs. The commitment to free fares is part of the Laredo Webb County Community Action guidelines.

As demand has increased, the service has consistently expanded. The addition of demand-response service with two dedicated vehicles is one example of the attempt to meet expanding need. The Community Action Agency has also recently built a new administration and vehicle storage facility for El Aguila. The staff moved to the new facility in 1993, and all operations are coordinated there.

Personnel and Administration

The system works to maintain a stable driver base, and maintains 15 full-time staff. Ten drivers operate the vehicles, and there are two full-time operations staff and three administrative staff. As the service is based in a Community Action Agency, there is a fair amount of staff sharing between programs. For example, the Executive Director of the agency bills approximately 25 percent of his salary to the transportation program.

As discussed earlier, the wage structure in the County is low, and this is reflected in the salaries paid to El Aguila staff. The Program Director's annual salary was $25,200 in FY 1992-1993, and the average driver salary in FY 1992-1993 was approximately $10,000. These low personnel costs help to lower the overall operating costs of the service.

The system operates as a cost center within the Laredo Webb County Community Action Agency. The total cost for the service (including capital) was $343,527 in FY 1992-1993. The system runs with a small surplus, and revenues for the system come from passenger fares, Federal Section 18 allocations administered through Texas DOT, and local and interagency in-kind support. The total revenues (including inkind donations from within-agency transfers) for the system in FY 1992-1993 were $375,234.

It is important to note that the transportation program is intricately woven into the administrative fabric of the Community Action Agency. Agency clients receive subsidized transportation, and El Aguila serves as the agency's major transportation resource. All of the agency's fleet is stored at the El Aguila facility, and the transportation program's resources serve to enrich the total agency's ability to respond to community needs.

Performance

El Aguila was chosen as a case study of fixed-route systems because of its high volume of service at very low cost. At $2.80 per trip and $1.00 per mile, El Aguila is far below the median values of other Section 18 operators in both cost per mile and cost per trip. El Aguila has reduced its costs through the provision of very efficient service, due to the concentration of trips with shared origins and destinations. All six routes terminate in downtown Laredo, and each route circulates within outlying

communities to pick-up or drop-off passengers, providing scheduled service into town.

The service provides an estimated 8,008 hours of direct operations, with a productivity of over 15 passengers per hour, above both the median and mean for this study. Revenue miles were estimated, based on route lengths and frequencies. The system provided an estimated 235,500 revenue miles of service. Using this estimate, the passengers per revenue mile is also higher than the study averages, at 0.52 passengers per mile. Despite the fact that vehicles go out empty for at least two runs each day, the overall productivity is very high, due to the high load factors for this much needed service.

Assessment

The low cost and high efficiency of the El Aguila service is due to a number of factors, some of which could be generalized to other systems. They are:

- ***Efficient Service*** — The most significant aspect of this exceptional performance is the emphasis on extremely efficient fixed routes. Vehicles run at capacity, with overflow vehicles ready, when necessary. El Aguila has "trained" its riders to schedule their activities around the service schedule. People living in El Cenizo and Rio Bravo use El Aguila for their daily commute — and have jobs scheduled around the available transportation. This is highly unusual in a rural setting, to have line haul routes that operate this efficiently. There are few deviations on the service — in effect because there is no development between the outlying areas and the City of Laredo.

- ***Low Wages*** — There are very low income levels in the region, and wages and the cost of living are also both very low. The service can therefore hire drivers and administrative staff inexpensively. Also, as the percentage of households without vehicles is very high (16%), there is increased demand for a public transit-type service.

- ***Concentrated Origins*** — The land use pattern in the region is especially well suited to line haul routes. After passengers are picked up in the outlying areas, there are no route deviation trips needed. Laredo is the center of all activity, and the cooperation between El Aguila and El Metro facilitates internodal transfers between the two systems.

Because the service specializes in one kind of transportation — line haul routes in peak periods — and offers this service to a significant number of transit-dependent persons, it has proven uniquely successful, indeed integral, to the economy and population of Webb County. In areas that are rapidly developing, especially with dense concentrations in specific areas, the El Aguila model could prove useful. The service is less flexible than many rural programs, and far more specialized. It is also very employment based, rather than human services based. This specialization has created a niche for the service.

VENANGO COUNTY, PENNSYLVANIA, AND ITS TRANSPORTATION SYSTEM

Venango Bus - Venango, Pennsylvania

Service Area:	1,024 Square Miles 59,381 residents 3 small Townships in Central Pennsylvania
Services Provided:	On-Call Demand Responsive service Fleet of 21 Vehicles 330,103 Annual Revenue Vehicle Miles 13,894 Annual Revenue Vehicle Hours $110,236 Annual Operating Expenses 92,022 Annual One Way Passenger Trips
Lessons for other Communities:	Cost-efficient service in economically depressed service area. Special ridership promotions are use to attract riders.

Venango County is situated in northwestern Pennsylvania approximately 90 miles north of Pittsburgh and 70 miles south of Erie. The County is generally rural with a 1990 population of 59,381 down 8 percent from 1980 when the population was 64,444. The major communities are Oil City with a 1990 population of 11,949; Franklin, the County Seat, with a 1990 population of 7,329; and Sugarcreek with a 1990 population of 5,532.

In recent years, the County has lost two major employers: Franklin Steel and Chicago Pneumatic Tool. The largest industrial employer in the County (with 1,100 employees) is Joy Technologies, which makes mining equipment. Other major employers are the Polk Center State Hospital with 1,260 employees and the Northwest Medical Center with 1,220 employees. The employer ranking fourth in number of employees with 400 is the County of Venango.

Economically, Venango County is one of the most depressed in Pennsylvania. In 1989, 11.1 percent of the population in Pennsylvania was below the poverty level. In the same year, 15.1 percent of the residents of Venango County was below the poverty level. The poverty densities were even higher in the two major communities — 18.3 percent in Oil City and 19.6 percent in Franklin. These numbers were reported before the recent closing of Franklin Steel. They were probably higher in 1994.

Oil City and Franklin continue to be the residential and economic hubs in Venango County. Cranberry Township, south of Oil City and southeast of Franklin, is the County's fastest growing region. It has been a prime

location for suburban housing, and various businesses including the Cranberry Mall.

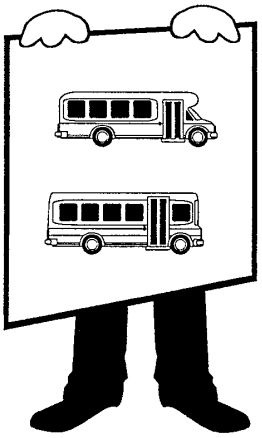
Transit Operations

The Venango County Transportation Program is operated as a part of the Office of Economic Opportunity (OEO). This arrangement requires an allocation of expenses to the transportation program. The transportation coordinator is, in essence, responsible for day-to-day operations. The transportation clerk assists the coordinator in her duties. All of these persons' costs are allocated to the transportation program. A portion of the time of the OEO director and the fiscal staff is charged to the transportation program. The County Illustrator provides her services at no cost to the program.

The County provides fixed-route and demand-response service. The demand-response service is categorized into shared ride and exclusive ride. All service is contracted through Baker's Transportation Services, a private, for-profit corporation. All planning, marketing, record keeping, and most customer relations are conducted in the County offices on Liberty Street. Baker's dispatch office is located on Liberty within a 5-minute walk of the County offices. Baker's garage is located a block away from the dispatch offices.

There are various interrelationships between Baker and the County service. The fixed-route service is operated on a cost plus fixed-fee basis. The operator provides for all operating and maintenance services. The County provides the three regular buses for the fixed route. There are no amortization costs for the vehicles included in the annual operating costs. The operator provides a spare vehicle when required.

The demand-response service is provided by Baker's on an hourly basis at a rate of $20.00 an hour for a lift-equipped van and $19.50 for a nonlift van. These rates include all services except those associated with the dispatcher. Baker uses a combination of his own and County vehicles for the service. When using a County vehicle, he reimburses the County at a rate of $0.11 per mile. Costs associated with the dispatcher are billed separately to the County.



Demand-response service is attractive to the elderly in Pennsylvania because the Section 203 program finances about 85 percent of the cost of the trip. These funds come from the State Lottery. In Venango County, about 60 percent of the demand-response trips are to and from the four Department of Aging Centers in the County. These are in Franklin, Oil City, Riverview, and Scrubgrass. The seniors are transported to the centers in the morning and back to their homes in the evening. In many cases, the Venango County Area Agency on Aging will pay for the other 15 percent of the trip.

The County works with and accepts reimbursements from other agencies for demand-response service. Primary agencies are the Department of Public Welfare, Human Services Development, and Community Service.

The County also operates fixed-route service. This consists of a loop in Oil City, a loop in Franklin, and a connector route between Oil City and Franklin through Cranberry Township. The loop routes run on 1-hour headways from 7:30 a.m. to 5:30 p.m. The connector route is actually a loop that reverses its direction each hour. It coordinates with the Franklin loop on the half hour and the Oil City loop on the hour.

The Franklin loop was initiated in January 1994. Since then significant efforts have been spent converting agency riders from the more expensive demand-response to the fixed route.

Analysis of Reported Information

The total operating expenses appear to be relatively accurate as they are presented, but the allocations among the three types of service can be questioned. Specifically, allocations to the fixed-route service should be increased and those to the shared ride decreased accordingly. In addition, some expenses associated with the transit service are not being allocated at all (i.e., the director's salary). The arrangements with the vehicles and the lack of including their amortization costs makes it difficult to compute overall annual costs that have a similar basis to other rural transit operations. As all vehicles have been purchased partially or in full with grant funds, depreciation charges to others for purchases made with grant funds would be questionable. Thus, cost indicators such as cost per mile, hour, or passenger as computed from the reported information are probably low.

The reported annual fixed-route ridership of 51,022 or about 4,250 per month does not reflect the new Franklin service. The remaining information does reflect that service, however. Fixed-route ridership for August 1994 was 6,200; in September it was 5,900. Ridership is determined by clickers used by the drivers.

The reports of ridership, miles, and hours for demand response appears to be relatively accurate. The average productivity of 5.9 passengers per revenue hour reflects the significant grouping of trips to the senior centers.

Exemplary Activities

The success of the transit system is due largely to the efforts of the Transportation Coordinator. Her zeal in promoting the system and controlling costs has caused the system to be a highly regarded rural transportation system in the Commonwealth of Pennsylvania. One state official has called the Venango system the most proactive system in the state. Specific observed items leading to the success of the system are as follows:

1. ***The dedication and length of service of the Transportation Coordinator.*** She has been with the system since 1985. Several other staff members have also demonstrated special dedication to service.

2. ***The various promotional methods used to attract riders and make them comfortable using the system.*** These include various flyers, a survey for the riders to complete, a "GO-BUS" coloring book for younger riders, and other promotional items, which are periodically given away.

3. ***Specific information and letters to clients and prospective clients explaining the merits of the service and how to use the service.*** This comfort level tends to increase the level of usage of the system. A letter explaining the system is sent to all citizens who have reached the age of 65.

4. ***Concentration on eliminating no shows.*** Easy-to-read calendars with important phone numbers are sent to each customer every 6 months. These calendars are intended to record the date of scheduled trips, the destination, and the pickup time. In addition, a firm no-show policy is defined in the distributed literature. Penalty fees of $1.00 to $3.00 are assessed for each no show. This policy has reportedly significantly decreased the number of no shows.

5. ***Partnership with the operator.*** The county and the operator work closely together. This partnership leads to reduced costs and higher customer satisfaction.

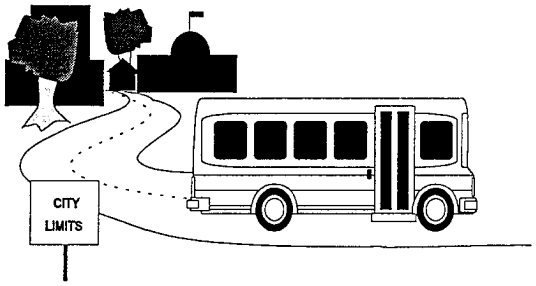
HIGH PERFORMANCE ONE-BUS SYSTEMS

A number of high-performance rural public transportation systems consist of a single vehicle. This suggests that there is no minimum scale for having an efficient, effective rural transit operation. What makes these systems effective and efficient is shown in the following three case studies.

City of Soledad System, California

City of Soledad - Soledad, California

Service Area:	9.5 Square Miles 9,000 residents One rural township in Northern California
Services Provided:	On-call Demand Responsive Fleet of one vehicle 27,201 Annual Revenue Vehicle Miles $49,093 Annual One Way Passenger Trips
Lessons for other Communities:	Short response times increase ridership within a small community. Some administrative services donated by other agencies.

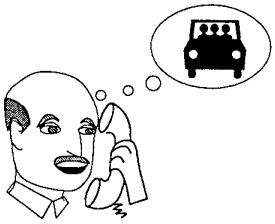


The City of Soledad, in Soledad, California, provides an example of a single-bus system open to the general public that is both efficient and effective. Actual total annual expenses during FY 1992-1993 amounted to $49,093; and total revenue (fares and Federal/State assistance) was $48,560. Fare revenues amounted to $9,072. In FY 1993 the system operated 27,201 revenue miles, and operated 1,990 revenue hours. There were 7.55 boardings per revenue service hour, which is an extremely high level of productivity for a demand-response system. The cost per mile was $1.80, and the cost per service hour was $24.67. With 15,029 fare-paying passengers in FY 1993, the total cost per trip was $3.22, and the net cost was $2.58 per paid trip. The "system" is actually a single 10-passenger cutaway van with a lift that functions as a taxi in the City of Soledad. There is a 1986 minivan that is available for backup. The system is operated by City employees. There are two part-time drivers, and no full-time staff. Administrative costs of $4,725 in FY 1993 amounted to just 9.6 percent of the total expense. Most of the operating costs are spent on driver salaries and fringe benefits.

The base fare is $0.75, with children paying $0.25, elderly $0.25 in town and $1.50 for up to 2.5 miles. Persons with disabilities are charged $0.25 per trip. Service hours are from 8:10 a.m. to 5:00 p.m. There are no other public transportation providers in the service area.

The City of Soledad's transit service area includes about 9,000 persons within a radius of one and a half miles, a demand-responsive service area of 9.5 square miles. The City of Soledad had a 1990 population of 7,146, with a median household income of $27,078 and a

per capita income of $6,889. The City is 90 percent Hispanic and 6 percent Swiss. The vehicle operates within town; it also makes what they call "out-of-town" trips to Gonzales, Greenfield, and the Soledad prison. These places are within 2 1/2 to 3 miles of Soledad. The system does not perform contract service, though it does carry seniors to the YMCA-operated nutrition site as fare-paying passengers. About 5 percent of all trips are work trips.



Soledad is known as the location of a state prison, and the system does make trips to the prison, linking it with the town's two hotels. However, prison trips do not comprise a large percentage of the total number of trips: in FY 1994 the prison was the destination on 144 trips, out of 1,600 "out-of-town" trips. There were another 15,000 "in-town" trips as well, for a total of nearly 17,000 fare-paying passengers. Ridership has been growing; current ridership has increased from the FY 1993 level of 15,029 boardings.

The system functions like a taxi in that patrons call when they want to go, and the City radio operator patches through to the driver to find out how long it will take to get to that pickup point. Typically, service is provided within 10-15 minutes, rarely over 30 minutes. Five minutes is the minimum advance reservation time quoted by the system.

This "system" reveals that there really is no minimum size for a public transportation system, as long as the level of service and type of service is appropriate to the needs of the community and the administrative costs allocated to the transportation program are reasonable. In this case, the administration is performed by the City's bookkeeper as one of many tasks, so the administrative cost burden is a reasonable proportion of the total costs. Small systems often face high costs per hour or per mile because administrative costs are allocated over a relatively small amount of service, but that is not the case in Soledad.

Dickey County Senior Citizens, Ellendale, North Dakota

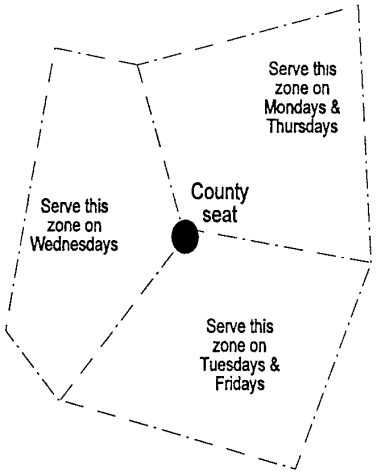
Dickey County Senior Citizens - Ellendale, North Dakota

Service Area:	1,131 Square Miles 5,869 residents One rural county in North Dakota
Services Provided:	On-call Demand Responsive Fleet of one vehicle 25,328 Annual Revenue Vehicle Miles 1,900 Annual Revenue Vehicle Hours $25,159 Annual One way Passenger Trips
Lessons for other Communities:	Service zones are served on different days of the week. Agency clients are a focus. Volunteers and part-time staff help to reduce costs.

This senior center-based program has made the transition from a Title-III-funded service dedicated to seniors to a general public system funded by Section 18, state and local millage levy funding. Nevertheless, it is typical of many in its operation of a single van to transport a user group primarily made up of seniors and persons with disabilities.

Dickey County is rural in nature, located near the border with South Dakota. The County population in 1992 was 5,869 (according to the U.S. Census), of which 27 percent were 60 and older. The County's population density is five persons per square mile, but within the County there are two towns: Ellendale in the west and Oakes in the east, each with about 1,700 persons.

The County has been divided into four service zones by the transit operation. Once a week, the bus serves Ellendale and the two western zones. The next day, the bus picks riders up in Ellendale and the two western zones and takes them to Oakes. The third day, the bus picks up riders in Oakes and the two eastern zones and takes them to Ellendale. The last day the bus serves Oakes and the eastern two zones. Thus, each zone of the county is served twice a week and people from each town have the opportunity to go to the other town. On the fifth day, once a month the van makes an out-of-County trip to Fargo, North Dakota. Once a month the van goes to Aberdeen, South Dakota;



and the other two "fifth days" are available for scheduled maintenance or makeup service from unscheduled vehicle repairs. Passengers are asked to make trip reservations the day before their trip, although the system will attempt to provide same-day service if the van is in close proximity to the passenger's origin at the desired time. There are no trip purpose restrictions or eligibility requirements.

The basic service pattern calls for the van (which is kept at the driver's home) to do rural pickups in the outlying areas of the two zones in the morning, arriving in the town at about 8:30 a.m. Local service is provided in town until 3:30 or so, when a return trip is made to the outlying areas. In case the van goes out of service, the staff will use their own vehicles (scheduled maintenance is done on one of the two nonservice days each month). There is a full-time driver, and a backup driver available.

Only about 5 percent of the trips are for senior nutrition programs, and there are essentially no other human service agencies in the County that have a transportation component. The system provides 100 percent of the public transportation trips in the County. Two nursing homes have their own vehicles and offer their residents 7-day per week service availability, so the Senior Center vehicle does not need to serve their residents. Most trips are for medical purposes, shopping, prescriptions, banking, etc., while work trips make up an estimated 5 percent of all trips.

In each town there are 3 days per week in which the bus (a liftequipped van capable of carrying 12 ambulatory and two wheelchair passengers) is not available — during these periods the Dickey Senior Center uses volunteer drivers to meet essential trip needs. There are 25 volunteer drivers available in the County to provide these needed trips. They are truly volunteers, as they use their own vehicles and do not receive any expense reimbursement.

Dickey County Senior Citizens is able to operate its vehicle at a relatively low cost of $13.24 per vehicle hour or $1.11 per vehicle mile. It operates 1,900 revenue-hours per year, and 25,328 vehicle-miles. With annual ridership of 8,215 (not including trips provided by volunteers), productivity is high at 4.32 passenger boardings per hour, and 0.36 boardings per mile. The overall cost per trip is only $3.06, and donations ($0.50 per ride is suggested) cover 14 percent of the operating costs. Other funding includes Section 18 and state funding. Local funding is provided from a millage levy dedicated to services for senior citizens.

Of the total annual operating expense in FY 1993, $25,159, administrative costs came to only $2,759. This amount includes salary and fringe benefits only for that portion of the Project Director's time that is devoted to the transit program. These administrative costs come to only 11 percent of the total annual operating cost, with the remainder of the costs consisting of the driver's salary and fringe benefits, fuel and oil, vehicle maintenance and insurance. The Director is a full-time worker, but only about 12-14 percent of her time is devoted to the transit program.

Pulaski County Transit System, Hawkinsville, Georgia

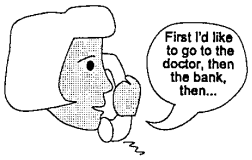
Pulaski Transit - Hawkinsville, Georgia

Service Area:	247 Square Miles 8,106 residents One rural county in Western Georgia
Services Provided:	On-call Demand responsive service Fleet of one vehicle 25,000 Annual Revenue Vehicle Miles 2,040 Annual revenue Vehicle Hours $26,280 Annual Operating Expenses 8,700 Annual One Way Passenger Trips
Lessons for other Communities:	The use of scheduled service zones and the focus on elderly riders helps to increase productivity. Volunteer drivers cut costs.

Pulaski County is located in the center of Georgia and is a predominantly rural county. In 1990, the Census found that the total county population was 8,106, of which 3,526 lived in Hawkinsville, the largest town. The transit system is a single 13-passenger high-top van with a wheelchair lift. It is operated under the Sole Commissioner of Pulaski County as a general public transit system. The Heart of Georgia Community Action Council, Inc. is the third-party operator of the system under the supervision of the County. The system has had only one manager in the past 5 years.

The Pulaski County Transit System operates approximately 30,000 miles per year, of which 25,000 miles are in revenue service. The service operates 2,040 vehicle revenue hours per year. With ridership of 8,700 passengers in calendar year 1993, the vehicle is kept busy. It averages 4.26 passenger boardings per service hour, and 0.35 boardings per mile. The cost per vehicle hour is only $12.08, and the cost per vehicle mile $1.05. The total cost per trip is $3.02. The system has one full-time staff member, but there are three others who provide staff services on a part-time basis. Of the $26,280 in annual operating expenses in 1993, $6,145 were administrative in nature (including $809 in insurance). This comes to 24 percent of total operating expenses. Administrative and operating funding is provided by Federal Section 18 funds, with additional match provided by the County at the standard program ratios. The Georgia Department of Transportation also provides a share of the local match for capital expenses. The current vehicle is brand new, and replaces an older van. In 1993, the County provided $13,242 in local matching funds. The Heart of Georgia Community Action Council operates the system under the supervision of the Sole Commissioner of Pulaski County. Fare revenue in calendar year 1993 came to $651, and $5,345 came from contract revenue, primarily Medicaid transportation. Charter services are not provided.

The service is completely demand-responsive. Users are asked to make reservations 3 days in advance of their trip, or at least 24 hours in advance, but last-minute medical trips and similar needs are often worked into the schedule on the same day if possible. Service hours are from 8:00 a.m. to 5:00 p.m., Monday through Friday. The vehicle is radioequipped. Passengers include the elderly, low- and moderate-income persons, but the system is open to the general public. It is estimated that only 2 percent of all trips provided are work trips, while the system provides about 65 percent of all public transportation trips in its service area (which is limited to Pulaski County). The low percentage of work trips reflects the fact that most of the County receives service only one time per week. The County is divided into four zones, each of which is served one day per week, with Friday available for other services on request. The basic fare is $1.00, but if riders are unable to pay a fare it is not required. The vehicle is also used for home delivery of special diet meals for homebound persons, and the system provided delivery of Salvation Army Christmas packages. The transit system does perform some Medicaid transportation, but with only one vehicle it does not have much capacity to perform additional contract service.



General Conclusions

These three examples of single-bus systems in different parts of the United States are remarkably similar in several ways:

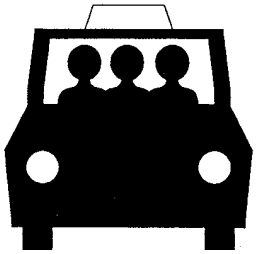
- All operate demand-responsive services exclusively.
- All serve populations of 6,000 to 9,000 persons.
- All have similar costs per passenger trip.
- All have limited administrative costs, with administrative functions performed as one of a number of different responsibilities, and administrative costs allocated appropriately.
- All operate the single vehicle in *general public* service, without restrictions on passenger eligibility or trip purpose.
- All operate the vehicle all day, everyday (weekdays only).
- All utilize available Section 18 and state funds for operating and capital expenses.

The picture that emerges is one of a situation in which the use of a single vehicle is appropriate to the size of the population and its demand, and that vehicle and its driver are used productively to meet a wide variety of the local transportation needs. Although service is demandresponsive, these systems use zones and scheduled service patterns in order to concentrate service to particular areas at particular times, allowing grouping of trips. Also, these services do not bear the cost of a

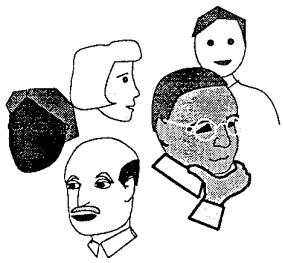
full-time administrator or dispatcher, but rather the allocated costs of part-time administration performed by persons who have other responsibilities.

OVERALL LESSONS

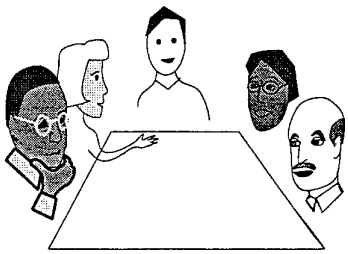
From these case studies, a number of lessons stand out. The first is to **take advantage of local geographic and demographic patterns.** In Alma and Soledad, the demand-responsive services function like highly responsive taxi companies, often arriving within 15 minutes of a call for service. This high level of responsiveness would not be possible except that these two systems serve highly limited geographic areas, which have high population densities. The Tri-County Community Council and the Western Iowa Transit System both use satellite offices to decentralize operations and vehicle storage within their large regions, reducing nonrevenue miles and service hours. These two systems and Dickey County often store vans at the homes of the drivers, thus reducing deadhead mileage.



Tailoring service types to the locality is part of this process. The fixed-route work trips in Laredo-Webb County are ideally suited for that area, while the focus on Medicaid and other agency transportation works well for Pulaski and Dickey Counties and the Western Iowa system. (These last two operations serve unusually high proportions of elderly persons.) The spatial concentration of origins and destinations benefits the Laredo-Webb system, while the temporal concentration of origins and destinations allows the systems in Dickey and Pulaski Counties to concentrate services to particular areas at particular times, thus creating more groupings of trips.



Another lesson is to **aggressively manage costs.** Alma, the Tri-County Community Council, and the Western Iowa Transit System focus on the use of part-time personnel as a means of providing services throughout the day without incurring overtime salary expenses and reducing the necessary level of benefits. The Laredo-Webb County system pays drivers according to prevailing wage scales, which are unusually low, thus reducing a major component of system costs. Alma's program of producing a budgetary surplus each year has created a sizable reserve fund, which now pays the system a significant level of interest each year. The Tri-County Community Council employs a variety of cost-saving measures, including the distribution of administrative expenses among several agencies, obtaining donated office space, competitive procurement of



Advisory Committee

maintenance services, and participation in the statewide vehicle procurement process. Venango County Transportation obtains services for transit operations from other county offices. Nontransit personnel perform many administrative functions in Soledad and Dickey County.

A cost-control strategy used successfully by the Tri-County Council, Western Iowa, Dickey and Pulaski Counties is the use of **volunteer drivers.** While in some cases these drivers are not reimbursed at all, even with generous mileage reimbursement the volunteers can reach remote passengers for a small fraction of the costs required for paid drivers and specialized vehicles. The use of **private contractors** in Venango County and Western Iowa also helps to control costs there.

Another lesson is that of **focussing on customer needs.** Alma does this by offering a high level of responsiveness. Venango County runs special promotional campaigns. Laredo-Webb widely publicizes trip schedules in the communities where their trips originate. The Western Iowa Transit System promotes a "we can do it" attitude about serving their customers' needs. All of these systems focus their services on the public in general rather than focussing on particular client groups.

Among the other useful lessons are **the importance of good employee relations**, which is stressed in Alma, and the need to **fully and accurately allocate costs among all participating individuals and agencies**, which is a key administrative task in Western Iowa.

As a result of these techniques, demand for services is growing rapidly at most of these sites. Soledad, Laredo-Webb County, and Western Iowa have seen substantial ridership growth in recent years. In Alma, on the other hand, the system actively discourages ridership growth. This system makes special efforts to keep the demand for its trips within the limits that the system can manage and afford.

Adoption of the lessons of these case studies could significantly improve the cost-effectiveness of many rural transit operations in this country.

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