

The Need for New Paradigms in Rural Transit Service

FACING SOCIETY

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In 1996, eighty-three million people — or roughly 30 percent of the U.S. population — lived in rural or small urban areas, places which have been transformed over the last five decades in ways that provide formidable challenges, but also opportunities, to rural transit operators. As a 1995 U.S. Department of Agriculture report summarized,

Rural America has changed in many ways over the century. The rural economy, in particular, has changed — shifting from a dependence on farming, forestry, and mining to a striking diversity of economic activity. ... While it continues to provide most of the nation's food and fiber, rural America has taken on additional roles, providing labor for industry, land for urban and suburban expansion, sites for storage of waste and hazardous activities, and natural settings for recreation and enjoyment. (USDA, 1995)

These changes all have significant potential to alter rural travel patterns and resources in expected and unexpected ways. (Urbitrans Associates, 1995; TCRP Report 28, 1998; U.S. DOT, *Serving Rural America*, 1999)

To respond to these changes, the Transit Cooperative Research Program of the National Research Council (TCRP) has suggested that both rural and urban operators must move beyond their traditional service approaches by developing “new paradigms” or different ways to organize, design, and deliver public transit services. This means thinking about more than direct service delivery to traditional clients and dependence on traditional sources of financial support. This article reports, in part, on a study arising from TCRP's emphasis on new transit paradigms. It briefly de-

scribes the trends buffeting rural areas and identifies five “new paradigms” in rural service organization and delivery.

Of course, many rural operators have been innovative and quick to adopt new ideas or services, if only because necessity is the mother of invention. But what is really new about the five paradigms suggested here is that they represent a very different way of thinking about the basic role of the rural public transit operator. These paradigms suggest that what rural operators really need to change is how they view themselves and the strategies they employ to provide services. The underlying theme is that by first thinking differently about themselves and their role in their communities, and by adopting non-traditional structures and approaches, rural operators will both develop and embrace a wider range of innovative ideas and services than they ever would have if they maintained their traditional role.

This article first summarizes a complex set of interrelated forces facing rural areas. The following section suggests the ways in which rural operators can expand and enhance their role and better meet the transportation challenge of a changing population.

Profound Societal Changes

Massive societal changes are occurring that may affect rural and urban areas differently. Although these trends are thought to more often negatively impact rural areas, the reality is more complex. Major innovations in communications or changes in international markets can both advantage and disadvantage different rural areas. Industrial restructuring and changing labor force composition can profoundly affect the structure of rural economies—for better or worse. New governmental policies can help some rural areas and harm others. For example, the deregulation of

An aerial, black and white photograph of a vast agricultural field. The field is divided into numerous long, parallel rows of crops, likely corn, stretching from the foreground towards a distant horizon. The perspective is from a high angle, looking down at the rows. The sky is filled with soft, white clouds, and the overall lighting is even, highlighting the texture of the crops and the rhythmic pattern of the rows.

AL CHALLENGES



the communications industry can provide greater opportunities for rural areas to share in technological advances but at the same time increase the gap between rural and urban areas because technology will be adopted more rapidly in urban areas. The shift to a service economy can reduce some rural manufacturing jobs while ubiquitous highway systems make it possible for other production facilities to move into rural areas.

Ultimately, complex societal trends have transportation implications because they create new, different, and varied:

- housing and residential concentrations
- community economic bases
- public and private service delivery systems

Most of these trends directly and indirectly affect the relationship of home to work, the origins, schedules, and destinations of a range of trips, the trade-offs between travel and other activities, the ability of people to give or receive transport or other services in their communities, and the capacity of communities themselves to meet rural mobility needs.

Changes in Housing and Residential Concentrations

Prior to 1990 most rural areas experienced continuing population losses as people left (out-migrated) in large numbers for urban areas. Although families dependent on agriculture or mining have continued to leave, during the first two-thirds of the 1990's there was a remarkable increase in population in almost every kind of rural county and in most US regions. In fact, in the West, rural growth outstripped metropolitan growth (USDA, 1998). And most of those gains were due entirely to immigration-both from metro regions and from abroad. (Beale, 1999)

These net population changes had six major components, not all of which moved in the same direction and not all of which were found in all rural areas:

- an influx of young commuters and their families (Nord and Cromatie, 1999)

- the increasing immigration of retirees (Rogers, 1999 a & b; Fagin and Reeder, 1997, Stallman and Siegel, 1995; Snyder, 1994)
- increasing concentrations of older people aging in place (Rogers, 1999a; USDA, 1997)
- growing rural concentrations of minority populations (Cromatie, 1999; Swanson, 1999; USDA 1998)
- changing family structures and living patterns (Rogers, 1999b)
- continued suburbanization (Aldrich, Beale, and Lassel, 1997; Campanelli, 1994; Forstall, 1993)

These population changes have created a far more complex set of travel patterns and mobility needs than seen in rural areas in the past. Many rural residents are commuting long distances, some to suburban and even central city jobs in adjacent metro areas, others to rural jobs in different counties. Travel patterns internal to rural areas are changing in response to the changing population mix. The influx of both younger and older people — with different needs, abilities, and resources — plays out in changing travel patterns. In-migrant retirees, older people aging-in-place, ethnic minorities, poor families, and the increasing labor force participation of women have created growing mobility needs, even as the number of family and friends and community resources which can meet those needs may be declining.

Changing residential patterns in suburban and rural areas have also altered origin and destination patterns; there are growing clusters of jobs, shopping, and service opportunities at the edge of metropolitan areas and increasingly in rural areas themselves. These housing and residential trends have also changed the ability of communities to respond to community mobility needs. Some rural areas have growing concentrations of older people or minorities who are poor or disadvantaged and whose needs may be greater than the community can support. At the same time, both younger and older in-migrants may offer additional volunteerism and make social contributions that improve a community's ability to help people in need.

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Changing Community Economic Bases

Rural areas have traditionally based their economies on farming, fishing, forestry, and/or mining. But these industries have been declining nationally for well over three decades. At the same time there has been a sometimes startling increase in nontraditional rural employment—from high tech manufacturing to so-called invisible service sector products such as computer programs and advertising campaigns designed by people working at home or in small offices sometimes hundreds of miles from major metro areas.

Analyses show five major economic changes seen in some, although not all, rural areas:

- the declining role of agricultural and other land based industries (USDA 1997, Nelson and Beyers, 1998)
- an expanding manufacturing base (McGranahan, 1998; Gordon and Richardson, 1998; Roth, 2000)
- the growth of an amenities-based service sector (McGranahan, 1999; Freshwater, 2000)
- the growth of a retirement-based service sector (Glasgow and Reeder, 1990; Hodge, 1991; Schneider and Green, 1993; Stallman and Siegel, 1995; Day, 2000)
- the growth of other service sector industries such as prisons, Indian gaming and river boat gambling (Beale, 1996; Bell and Everett, 1997, US GAO, 1997)

These economic trends have also created new and different work trip patterns. Growing rural manufacturing and large scale tourism and casinos have created employment concentrations within rural areas that not only provide a rural work trip focus but also draw workers from adjacent rural and metro areas. Some rural residents who once worked on farms or in mines now have jobs in local manufacturing plants or tourist destinations or prisons; others commute to the suburban fringe of nearby metropolitan areas.

The larger shift to a service economy creates greater variability in the timing and scheduling of work and other trips in rural areas and generally. Only a minority of service sector workers commute during traditional morning and afternoon peaks; many work different hours on different days. And the multi-job holding which has helped some rural families rise above poverty level creates even more complex and complicated travel patterns.

These trends also affect the ability of rural communities to respond to transportation and other needs. Many of the jobs being created by retirement- or amenities-driven in-

dustries are low-skill and low-wage jobs, which partially explains why so many rural working families still live at or below the poverty level. Although these jobs do bring additional income into the community, local residents, including those aging-in-place, may have even higher demands for governmental or social services. Rural workers who commute out of the area for work may spend most of their money shopping and using services near their metro area jobs. But at the same time, new rural industries may also provide additional support and resources to a community; rural manufacturing plants or casinos, for example, may be willing to pay for transit services for workers or develop childcare facilities for working mothers.

Changes in Public and Private Service Delivery Systems

In the last decade there have been almost unprecedented changes in transportation, communications, and service delivery systems in both rural and urban areas; these changes have been accompanied by sometimes major shifts in government programs and policies in these areas. From welfare reform to deregulation in the communications sector, rural areas are being challenged by new situations.

Research suggests four major trends in the way public and private entities structure and deliver services in many rural and small urban areas which have important transportation and community implications.

- advances in production and communications technology (US Department of Commerce, 1995; Gibbs and Bernat, 1997; Kusmin, (1996); McGranahan, 1998; Gordon and Richardson, 1998)
- competition and deregulation in the communications industry (US Department of Commerce, 1995; USDA, 1997; Stenberg et al, 1999; Van Wart, Rahm, and Sanders, 2000)
- changes in rural transit service delivery (MidWest Transportation Center, 1996; North Carolina State, 1999; TCRP B-17, 1999; Black, 1999)
- changing patterns of rural health care (Spann, 1994; Ricketts and Slifkin, 1995; Powers, 1996; Perch et al, 1997, Black, 1999, US GAO, 2000)

New commuter patterns may arise as some rural areas attract high tech and “new tech” firms which can locate outside major metropolitan areas because of advances in communications and other technology. Competition and



deregulation in the communications industry can help narrow the social and economic gaps between rural and urban areas, making rural areas more attract places to live or visit, changing a variety of travel patterns, and even creating rural congestion. Advances in communications technologies may affect both industry and the ways in which community transportation providers can respond to changing needs in low density areas; the most obvious example is the growing use of computer dispatching based on satellite communications.

Public policies can have profound rural impacts; for example, even as rural hospitals close in response to Medicare cost containment policies (Kohrs, 1997; Frenzen, 1997), HMOs and other managed care programs are moving into rural areas in unprecedented numbers (Rickets & Slifkin, 1995; US GAO, 2000). This may provide more convenient medical options for some rural residents, changing medical travel and even creating new work commutes within rural areas.

Summary of Major Impacts

Rural areas are at the apex of many, sometimes conflicting, trends and changes. Of course, not all rural areas are the same and will not be impacted in the same way. As a rural advocate noted, "When you've seen one rural community...you've seen one rural community." (McKinley, 1998, p. 14) The macro- or societal-level trends just described may well have different impacts in different kinds of rural areas. Overall, however, the trends and changes described above profoundly affect:

- the organization, location and concentration of commercial and industrial activities in rural and adjacent metropolitan areas
- the movement of people in and between rural, small urban, and metropolitan areas
- the parameters of rural and urban labor catchment areas
- the ways in which rural and urban households and businesses conduct their activities and interact with one another
- the ability of rural households and businesses to substitute other activities for travel or transport, and,
- the capacity of public and private systems to respond effectively and efficiently to changing rural travel needs and patterns.

Note that most of these trends are not inherently "good" or "bad" for rural areas or for local transit operators. Some

trends may adversely affect the ability of rural operators to provide their traditional services but, at the same time, offer opportunities to involve additional partners or develop inventive financing strategies or offer new or expanded services.

How can rural operators know or understand the changes occurring in their service environment? How can they become aware that new firms or people or technologies are moving into their region or that new residents or industries offer important opportunities for collaboration or partnerships or new service delivery models? The actual paradigms suggested below incorporate ways for rural providers to be aware of and responsive to a range of demographic, economic, social, and policy impacts in their own individual communities.

New Service Paradigms in Rural Transportation

In 1997 the Transportation Research Board established a New Paradigm Project recognizing that current and emerging circumstances require "fundamental reinvention of how public transportation services are organized, designed, and delivered." That TRB Project was begun with the assumption that,

[L]ocal public transit organizations and the services they currently provide are being marginalized at every turn. More specifically, traditional transit organizations:

- have been slow to adapt to fundamental changes throughout society
- are facing circumstances that threaten their continued relevance in the future, and,
- must act out of a renewed sense of urgency to reinvent themselves as agile, responsive, and responsible "managers of mobility" (TCRP 53, 1999, p. ES 1)

Most of the TRB New Paradigm work since has focused on urban operators and the challenges and opportunities they face. But transit operators in rural areas are also in a position to take advantage of their opportunities by adopting five alternative approaches to meeting rural mobility needs:

- Serving as community change agents
- Optimizing rural resources
- Becoming early-adopters of technology and innovation
- Acting as public entrepreneurs
- Providing state-of-the art service



The section below describes each of these paradigms and offers examples of individual service options that could help create them.

Transit Operators as Community Change Agents

Arguably, the most important role for a rural transit system is to see itself as an active participant in public decisions about how and where communities grow and develop. Land use and development patterns profoundly impact the competitiveness, cost, and efficiency of delivering public transit services, no matter how those services are organized or provided. By becoming an active participant in all phases of community growth and development, transit operators can learn about emerging demographic or economic or policy trends, influence land use and development in ways that facilitate efficient transit service delivery, and seize opportunities to involve a wide range of community participants in the financing and delivery of rural transit services.

By becoming actively involved with the actors and agencies that plan for, promote, or moderate growth and development, rural transit operators become part of the community decision-making process, rather than letting these decisions be made solely by other participants or guided only by market forces. This kind of active role in community decision making also gives transit officials access to reports, studies, plans, and projects they might not ordinarily encounter and brings to their attention in a timely way changes in the kind of people or industries or technologies moving in or out of area.

By actively involving themselves in all aspects of community development, transit operators will be able to sense new markets and understand new travel needs. This same involvement will help them work with a wide variety of community participants to create rural employment and other land use concentrations, locate intermodal and other transit facilities in close proximity to major rural or regional trip attractors, and develop and locate community services in ways that enhance transit use.

Transit staff should sit on all governmental committees at the local, county, or regional level that attempt to bring business to the community, as well as those which make decisions

on land use, zoning, subdivision, and building permit requests within rural areas served by the system (to the extent these processes exist or are formalized). Besides all the benefits previously described, this involvement will also provide operators with a timely window of opportunity to suggest site-specific exactions (such as requiring a firm to construct covered transit stops adjacent to the front entrance) or urge (or insist) that firms offer employees transit passes or even provide funding for specially designed commuter (or other) services.

Moreover transit operators can actively work to create the denser patterns that make public transit more attractive and efficient. While rural areas are never going to develop high-density patterns, they can organize commercial, industrial, and public hubs, sometimes in the historical center of existing towns, and sometimes miles away at highway interchanges. In general, such concentrations make public transit more attractive to potential users, while making service provision more efficient. In Wallace, Nebraska, for example, a public private partnership developed an economic strategy that included organizing a farmer's market - which both provides an outlet for small gardeners and an opportunity for community residents (as well as tourists) to shop for produce and other products locally. This, in turn, provides a more concentrated destination easier to serve with a variety of transit options.

Other communities have worked to create a rural trip focus; some have turned deserted or underutilized facilities into multiple-use rural community centers — including an abandoned jail in McLean County in western Kentucky, a closed cannery in San Benito County, California, and a failed manufacturing mill in Franklin, New Hampshire. In San

Benito, the cannery became the site of a community college, a number of small local businesses, several banks, and a small business development center. Franklin, NH turned the deserted mill into a place for daycare, Evenstart, Headstart, GED programs, the senior center, and a Meals on Wheels program, creating opportunities for local transit operators to provide more service and to better schedule and group trips.

When transit agencies themselves locate facilities such as transfer points or terminals they should care-

By viewing their mandate as providing mobility rather than just transit service, rural transit operators could expand the amount, quality, and quantity of services they provide.



fully chose sites that bring transit closer to active land uses (and not simply take advantage of cheap land on the outskirts of town). CARTS, a rural transit operator in central Texas, located its intermodal facility in Bryan, Texas, next to several buildings that house a variety of low-income health care and human services, a dentist, and a pharmacy. This creates a fairly high-density trip attractor, making it possible to more efficiently group a number of rural trips.

Rural Transit Operators Optimizing Community Resources

Autos are the dominant transportation mode in rural areas—and the greatest resource available in rural communities. An equally important resource is the large number of capable drivers. By viewing their mandate as providing mobility rather than just transit service, rural transit operators could expand the amount, quality, and quantity of services they provide. Rural operators can facilitate the optimal use of rural transportation resources by initiating or facilitating a variety of car-sharing programs, coordinating shared-vehicle use, organizing vehicle purchase and sharing schemes, and facilitating new roles for volunteers.

Rural operators can actively implement a variety of ways to share both private and public vehicles. Rural transit operators could facilitate the better utilization of empty seats in privately driven cars through ordinary carpooling and matching programs or by developing more inventive programs, using the power of new communications technology to offer real-time car sharing.

Rural systems could also facilitate one driver using the private car (or van or truck) owned by another when that driver is not using it. A rural operator could also implement a car-sharing variation based on schemes tried in a few urban areas. Large residential complexes, like trailer parks or naturally occurring retirement communities (NORCs) could cooperatively buy and operate a small fleet of vehicles with a set of procedures allowing individual residents to reserve and drive them, with payment and other rules known in advance. Rural transit systems could encourage residential areas to set up their own such programs or actually purchase and maintain the vehicles. Or rural operators could themselves become car rental agencies, maintaining a fleet of vehicles for the sole purpose of rental to rural residents.

Rural operators could also provide a mechanism through which other public or non-profit agencies could effectively sell (or barter) the underutilized capacity of their vehicles. The transit system role might include developing a match-

ing process, providing regional maintenance facilities, supplying group insurance or umbrella policies to facilitate sharing, and/or offering driver training programs to the personnel of cooperating agencies. A rural transit operator could also act as a facilitator in the joint grant purchase of one vehicle by two (or more) agency providers.

For example, since maintenance is a serious problem for many small rural providers the rural transit operator could develop new or open available regional maintenance facilities to those agencies that agreed to participate in a meaningful way in a cooperative program. A regional facility might achieve economies of scale, and thus reduce individual maintenance costs enough that it would pay for small agencies to become involved, even if they didn't make much money in selling their excess capacity. This option would also help ensure that all vehicles were maintained to roughly the same standard, so that, for example, an agency renting a vehicle need not worry about breakdowns. The Illinois DOT in Springfield operates such a regional maintenance center for rural paratransit vehicles.

A rural transit operator could also encourage more active participation by small agencies in such a scheme by providing group insurance coverage or establishing insurance pools to which such agencies could belong. In many areas the lower insurance costs (or better coverage) might provide a substantial incentive for participation. Moreover, some agencies' insurance costs would rise if they used their vehicles more extensively; the availability of such a pool might offset any increased costs they incurred by participating. The Colfax, Washington, Council on Aging and Human Services (COAST) operates an insurance pool that has grown from covering its own 21-vehicle fleet to insuring 46 vehicles for nine agencies. As a TCRP report notes,

This policy allows participating agencies lower-cost insurance at a level of coverage typically higher than they could get on their own. ... Management has indicated that this program reduces agency cost by as much as 50%. The program has also been instrumental as part of COAST's efforts to build community transportation resources. (p. 39)

Rural transit agencies could also help local providers expand their fleets by obtaining new vehicles, or the rights to future vehicles through the purchase of used vehicles. For example, COAST in Colfax, WA, has such a system; if a local agency will pay the required local match for a new 5310 vehicle, which COAST retains, that agency is given an older vehicle being retired by COAST. In the future when COAST retires the newer vehicle bought with that agency



match, it will go automatically to the agency, without additional cost. COAST has used this technique to obtain five vehicles for four agencies.

Rural operators could also expand the volunteer-based services they have long used, paying volunteers to provide services too expensive for the system to directly provide. For example, rural operators could pay local drivers more than simple mileage charges, or pay — directly or indirectly (through user-side subsidies) — family and friends to provide transport services for people living in areas or traveling at times when it was not efficient for the operator to respond. Both Section 5311 (Non-urbanized Area Formula Grant Programs) and Section 5310 (Elderly and Persons with Disabilities Programs) funds can be used for voucher or user-side subsidy programs.

A 1999 study by University of Montana researchers found that voucher programs were a useful way to encourage volunteers to provide rural transportation service (as well as encouraging small private operators). The University researchers concluded that,

Expanding available transportation using vouchers and volunteers may be less expensive than hiring additional drivers or purchasing, maintaining, and insuring a vehicle...Voucher systems offer many advantages over traditional systems. First, more hours of service can be available to riders because riders are not necessarily restricted to the time and days of operation of scheduled services. Second, there may be less direct cost to service agencies. (Bernier and Seekins, 1999, p. 69)

Becoming an Early Adopter of Technology and Innovation

In industry, early adopters of technology usually surge to the head of their field. Rural transit operators can incorporate this paradigm by focusing on institutional as well as technological innovations, including overall improvements in communications and dispatching, statewide applications and real support of technology, and coordinating improvements with state advances in rural emergency systems.

A major TCRP project (B-17) found a number of rural systems that had implemented a variety of basic or advanced technology, and concluded that there was much wider scope for rural operators to invest in such technology. For example, Community Transit of Delaware County, PA, a system serving a 185-square-mile service area, has already implemented

computer-assisted demand responsive (DRT) software and undertaken a pilot test of MDTs; the system is currently testing an automated customer identification program and evaluating a demonstration of using Web TV for taking reservations while planning to implement automated DRT dispatching software.

The Cape Cod Regional Transit Authority developed an in-house computer-assisted DRT software package in 1990 and in 1999 implemented an AVL system, MDT, and an internet-based customer information system. The Aiken County Council on Aging installed bar code scanners and odometers on 15 vehicles to automatically collect trip, vehicle, and rider data, significantly reducing personnel entry time. The Aiken system has recently developed a GIS system that it uses for planning purposes.

Other technical ideas have important rural system applications. TCRP Project A-21 (2001) describes the State of New York's Rural Transit GIS initiative, which developed a GIS database for each county in the State, incorporating bus routes and stops and local agency data on the location of riders and the sites they visit. In a demonstration project a number of rural providers were able to achieve improved route efficiencies and develop powerful planning tools. Even very small operators were able to use the "GIS analyses to assess existing services, plan welfare-to-work services and evaluate coordination opportunities."

In addition, many states are gradually developing statewide emergency systems, based on a variety of communications technologies. But emergencies, while extremely serious in low-density rural areas, are fairly rare, and the system and equipment are substantially underutilized on a daily basis. It may be possible for rural operators to, at a minimum, become part of the emergency system. But a more comprehensive collaboration could allow the transit system to use the emergency system to deliver real-time information to riders waiting for service, to assist in real-time dispatching, and to improve data collection through automatic message systems.

There are also institutional innovations open to rural transit systems. As first suggested by the ITN network in Portland, Maine, a transit operator can develop innovative ways to help individuals, their families, and the community save resources to be used in the future for needed transportation services. Transit systems can develop ways for rural residents to "bank" transportation rides or credits or put away money for future transport needs, allowing riders themselves to save for services they (might) need in the future,



and for relatives and friends to easily pay for services for them, directly through automatic electronic deposits or by writing a check or using a credit card.

Money, however, would not be the only way in which a bank account might be built or replenished. Rural residents could serve as volunteer drivers, maintenance workers, or dispatchers, having a certain number of rides credited to their transportation bank account for the future. Or family members could serve as volunteers with their ride “credits” being used immediately by their own relatives. This would be especially useful when the family driver lives in the community but his/her windows of time do not match the transport needs of the relative in whose name the account is held.

A more sophisticated notion is the development of transportation insurance — where people pay in over the years for guaranteed transportation services sometime in the future. Some services might be provided free to the insured while others would require some type of “co-pay.” A transit system might partner with an insurance company or some large and well-regarded non-governmental organization or public entity to handle administrative and financial matters. The success of this concept depends on how well the rural system is regarded; current riders and residents must see it as likely that there will be viable transportation services available in the future to be willing to invest funds now. It would be best if a variety of providers agreed to take these transportation credits, even if they charged different prices for different services.

Rural Transit Operators as Multi-Function Public Entrepreneurs

Public agencies can adopt a more entrepreneurial focus without abandoning concern about non-monetary factors, such as customer comfort or the needs of low-income people. Instead, acting as public entrepreneurs, rural operators would focus more clearly on their customers, exploit every opportunity to increase whatever they see as the bottom line, and consider carefully how to maximize their output given their scarce resources. Acting as public entrepreneurs, rural operators could expand contract services to non-traditional clients, provide alternatives to travel, and

sell delivery or other non-client services to the private sector to better utilize system resources.

Although many rural providers currently offer some contract services, they could more aggressively pursue contract arrangements with urban or suburban operators. A rural operator with down time in urban areas (created, for example, by transporting rural workers to urban jobs) could seek contracts with an urban transit system or Area Agency on Aging. Under such contracts, the rural operator could provide ADA transport or congregate meal services or grocery shopping to urban residents during the middle of the day. JAUNT in Charlottesville, VA, provides fixed-route employment service into Charlottesville and to a ski resort from rural areas. “A unique feature of this system is that the employment vans terminating in the Charlottesville area are reassigned to [demand-response] uses during the day.” (TCRP Report 34, 1998, p. 85)

Rural operators could also expand some of the services in which they already engage (e.g., meal deliveries) by contracting with profit-making

firms needing home deliveries. By coordinating the delivery of other goods-ranging from prescriptions to heavy items like dog food-with either their meal deliveries or regular transportation services, some rural operators could substantially increase their income without substantially increasing their costs.

An equally promising option would be to develop a coordinated system of volunteer drivers (and perhaps shoppers) to provide delivery. Users could simply mail or phone in a list of things needed, or the system could use internet or Web TV or other electronic media to take orders and let users know when the goods will be delivered. Deliveries could be limited to disadvantaged people, or to those in areas hard to serve with transit, or to those who require door-to-door paratransit service. In general, delivering even fragile or perishable goods is easier than providing demand-responsive services for people. The rural system could occasionally offer the delivery of goods instead of a trip to the grocery store when capacity was limited or the grocery trip difficult to serve during specific time periods.

The rural operator could also contract with private delivery firms to deliver packages in its rural service area. The

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delivery charges paid by the recipient would be arranged between the buyer and seller—the transit operator would only be the “delivery man.” This option has potential in areas where national or regional freight delivery firms have only contract providers, rather than directly effecting delivery themselves.

A rural operator could also offer delivery services to rural residents: for a fee, taking packages to an urban post office on passenger runs into urban areas. Or the transit operator could make goods deliveries of small items, for example specialty agricultural items to urban restaurants or farmers markets. This might be a very productive way to use vehicle and driver downtime in the middle of the day on commuter trips into adjacent metropolitan areas.

Acting as entrepreneurs transit operators can find more business-like ways to increase revenues — by selling existing services to large employers and trip attractors. For example, Downeast Transit assesses and collects fees from a U.S. Park Service campground, as well as from private campground operators, to operate a shuttle service to Bar Harbor, ME, and within communities in the area. In addition, working with local retail establishments can provide both funding and a way to more efficiently deliver non-work trips to local residents. FREDericksburg Regional Transit (VA) gets \$125,000 directly from a variety of local businesses as long as FRED routes provide service to their facilities and members can sit on the advisory board. In turn, these establishments advertise transit service, provide schedules, and often sponsor special promotions for their employees and customers.

TCRP Report 34 (1998) described a number of rural systems that have obtained employer support for specific services. In Connecticut, the Northeastern CT Transit District has one commuter run totally subsidized by an area employer. The Pee Dee Regional Transportation Authority in Florence, SC, provides employer-supported transportation to jobs in Myrtle Beach and the Grand Strand; this operator also contracts with parent groups to take kids on outings.

Rural Operators as State-of-the-Art Service Providers

Local operators must move beyond the services they have traditionally provided, offering alternatives to new markets and new trips, expanding institutional arrangements and seeking new partnerships. Certainly this is the area in which some rural systems have been the most innovative. A re-

cent CTAA study for the FTA found that rural operators have not only expanded their vehicle fleets and the number of passengers served in the last decade, they have also extended their service areas and began providing new and different travel options.

Although some systems have expanded their services, not all have expanded their role, and not all rural systems have taken advantage of their opportunities. Even the more innovative systems have not generally gone as far as they could. Overall rural operators need to actively seek opportunities to expand their service offerings to match a changing range of user needs, matching the most appropriate providers to each market niche (rather than viewing direct service as the first or only response) and differentiating services by fares.

If they do not already, rural operators should consider route and service restructuring, park-and-ride and express service for suburban or urban commuters, vanpooling for local, regional, or metropolitan commuters, transport for childcare and after-school care, and specific services geared to families and older people. A recent CTAA study for the FTA found that, besides extending services into multiple counties, many rural operators added services to those they had traditionally provided. In 2000, roughly half of rural operators surveyed by CTAA offered route- or point-deviation services in addition to demand-responsive or fixed-route service. TCRP Study A-21 (2000), evaluating innovative public transit in rural areas, identified several systems successfully offering new services to respond to changing markets, often by changing from demand-responsive to variable or flexible fixed routes. For example, the Santee Wateree Regional Transit Authority (SC) converted their traditional rural demand-responsive services to “flex routes,” which had higher productivity and lower costs per passenger trip. These changes were in recognition of the mobility needs of a variety of clients of human service agencies and a desire to improve services through coordination with both community providers and social service agencies.

TCRP Study A-21 also singled out the Baldwin Rural Area Transit (AL) system, which had graduated from paratransit to flexible routes with timed transfers at central locations; as a result, ridership increased significantly over the low productivity demand-responsive services, and productivity more than doubled. Recognizing a new market for home-to-work trips, and turning most paratransit services into feeders to fixed routes, this Alabama system developed specific work routes (some with targeted employer fund-



ing) that coordinated with the flexible routes, eliminating deadheading and increasing ridership.

Citibus in Lubbock, TX, recognized the need for home-to-work transportation for the growing segment of the service sector that worked at night (in restaurants and stores, for example). After careful consideration, the operator decided that it would be more cost-effective to provide those commuter services with demand-responsive rather than fixed-route services. Although productivity is low and unit costs are high, they are less than the total costs the operator would have incurred in extending existing fixed-route services.

Rural operators can also offer a range of commuter services from rural areas into nearby metropolitan areas. CARTS, a large rural operator in central Texas, offers several kinds of commuter services into several urban areas from its rural base while operating nine park-and-ride lots. The Brazos, TX, operator also provides a park-and-ride service, combined with an express service, into the Houston metropolitan area, 30 miles away. CARTS also contracts with a private provider, Coach USA, to provide a high-end commuter service into Houston, which covers more than 90 percent of operating costs because higher fares are charged.

As rural areas change, and commuters with young families move in, services geared toward children and their families, may be an important option. In Zanesville, OH, the South East Transit Authority recognized that a growing population of single working mothers created a need for reliable services to transport children to and from daycare. In response, the operator began a successful service for children in the Early Start program using a paid part-time attendant who rides with the children, securing their seat belts, etc.

It is equally important to remember that not all new community needs revolve directly or indirectly around the work trip. A growing elderly population and new young families moving to rural areas may create the need for shopping services. In 1975, Citibus in Lubbock, TX, began working with the senior community and a local grocery store chain to develop a shoppers bus. Today, that system is still in operation, carrying about 48,000 trips annually, and fully funded by the grocery stores themselves. While the original service was provided only one day per week, the current system operates every weekday and goes to a greater variety of stores. The service is scheduled and fixed-route but will deviate to

provide door-to-door service for those who have scheduled a flexible trip in advance.

Rural operators can actively create more service options by helping to create individual contract providers to serve as sub-contractors. In a program funded by the FTA, the University of Tennessee at Knoxville and the Knoxville Community Development Corporation, a group of transportation entrepreneurs (many of whom were TANF recipients), were invited to participate in a microenterprise loan program that provided business support, technical assistance and training, small business loans, and vehicles needed to start and expand a transportation business.

One of the entrepreneurs "grown" by this program, G&E Enterprises, is now working under contract to the transit operator in three rural counties, taking welfare recipients to work and training. G&E Enterprises has grown from one vehicle to five, giving jobs to other disadvantaged people. A second small entrepreneur established by the program, KidTrans Enterprises provides childcare transportation for children in a small town. Access Express provides a range of rural services, especially for disabled people. Each of the three developed contract or subscription services to act as a base level of support although none had ever owned a business. The transit operator viewed these systems as important resources, and not as competition, because it currently faced major capacity constraints. (Newsom, Wegmann, and O'Mary, (2000)

Finally, using fare differentials to promote some services over others or to charge more fairly for premium service has been long talked about in the public transit industry-but practiced more in urban systems than in rural ones. Operators can use lower fares to encourage people to travel in the off-peak (or whenever demand is lowest on certain routes or in certain areas), to induce either the general public or clients or staff of social service agencies to group their travel, or to motivate users to call in advance rather than seeking real-time service (or vice versa depending on system needs). The ITNetwork in Portland, ME, charges different fares for individual travel and shared ride service; people willing to wait longer, be flexible in their pick-up times, and incur longer ride times because others are on board, are charged less. People who wish to travel immediately, and alone, are charged premium fares. The fare differentials make the premium services more attractive to well-off retirees who have migrated to rural areas.



Summary and Implications

Major societal changes are occurring in rural areas that challenge rural transit operators. Both work and non-work travel patterns are changing as more and different kinds of people move into rural areas. Some are, or will be, very disadvantaged, needing many community services, while others may bring new resources into the community through jobs or local spending or volunteer activity. Many societal trends both change the ability of rural operators to provide their traditional services and offer the opportunity to view themselves in new ways, more effectively meeting existing and changing needs without sacrificing traditional concerns about disadvantaged rural residents.

To respond to the myriad societal trends buffeting rural areas, rural operators must think differently about how, when, why, and where they provide services. At the heart of TRB's New Paradigm Project is the belief that transit operators should move away from direct service provision to critical strategic planning, from buying and using their own equipment to leasing vehicles and contracting for others to directly provide services.

The new paradigm is not a single model or organizational formula that can be precisely drawn or embraced by every agency or community. It is, however, a fundamental shift in mission and orientation...leading to...in some cases, clear organizational separation or "decoupling" of the responsibility for service design, monitoring, and feedback from the actual production of the services. (TCRP, 2000, p. 24)

What distinguishes the five paradigms suggested by this article is not that they use innovative services or technologies (although some do) but that they:

- require and build new organizational structures
- involve new providers, or old providers in new roles
- adopt different models of service delivery
- extend jurisdictional and other boundaries and/or,
- develop new partnerships and nontraditional alliances

Above all, this article suggests that there is an important difference between helping rural operators by suggesting new operational ideas on one hand, and giving them the way to continually generate their own great ideas on the other. Rural operators may do well by adopting interesting or innovative ideas they learn about at conferences or from other systems, but they are more likely to adopt such ideas and, more importantly, to generate their own innovative strategies, if they have adopted approaches, or paradigms,

that encourage and reward them for thinking outside the box.

Rural operators will always face a different, and arguably, greater set of difficulties than do urban operators. But rather than limiting their outlook and services to meet their constraints, the analyses reported on here suggest that rural operators can meet the mobility needs of their changing communities by seizing opportunities for restructuring their whole approach to service delivery. By viewing themselves not simply as reactive operators but as pro-active entrepreneurs and innovators, rural transit operators can use fundamental rural changes as a springboard to providing greater rural mobility and access.

In order to create rural transit systems that continually seek innovative solutions, plan for on-going change, and act instead of merely react, rural operators need to do more than adopt interesting or novel ideas, as some clearly have. Rural operators need to substantially modify how they view themselves, their role in the community, and the strategies they employ to provide services. In fact, it is only when rural operators begin by adopting the latest technology, non-traditional organizational structures, an active role in community development decisions, new approaches to service delivery, and entrepreneurial financing strategies, that they are likely to develop, adapt, and adopt a wide range of innovative ideas and services that will better meet their changing community's needs. 🚌

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