



A publication of the National Association of Development Organizations Research Foundation

## Transit and Air Quality Make a Connection

Public transportation systems provide vital services to the residents of rural and small metropolitan regions. For many people, employment, medical appointments, education opportunities, shopping trips or visits to friends and family might be inaccessible or unaffordable without rural transit.

Having access to public transportation also allows residents to reduce their number of car trips and decrease the impact on regional air quality. Compared to larger cities, rural transportation providers face such challenges as low population density over large geographic areas. The U.S. Department of Agriculture's Economic Research Service found that public transportation service is available in 60 percent of rural counties, but service is limited; about two-thirds operate in a single county or town.<sup>1</sup> However, transit use is on the increase. According to the American Public Transportation Association, nationally, more than 10 billion trips were taken on local public transportation in 2006, and ridership for rural and small urban systems grew about 20 percent between 2002 and 2005.<sup>2</sup>

Transit trips may be necessary for people who cannot drive or do not own cars or where congestion makes driving difficult or unpredictable. In addition, access to transit can have a substantial impact on a region's economy and environmental quality. Public transportation's benefits include:

- Providing reliable transportation for the workforce
- Enhancing mobility for those without cars
- Minimizing congestion in highway corridors
- Preserving transportation capacity, open space and community character
- Reducing the use of non-renewable fuels
- Improving air quality

### Economic Impacts of Public Transportation

Recent research has shown that rural and small metropolitan transit services offer a number of measurable economic benefits. In one study, rural counties with transit service were found to have 11 percent greater average net earnings growth over counties without transit, and the estimated annual impact of rural public transportation on the national economy was over \$1.2 billion.<sup>3</sup>

Public transportation can be especially effective in small communities that are becoming popular resort destinations. The Roaring Fork Valley in Colorado is one such area. Home to towns such as Glenwood Springs and Aspen, the region has a small year-round population but draws thousands of part-time residents and tourists, especially during peak ski season.

The public transportation services provided by the Roaring Fork Transportation Authority (RFTA) are essential to the region's economy and help preserve air quality. RFTA's predecessor, the Roaring Fork Transit Agency, was created by Aspen and Pitkin County in 1983. The Transportation Authority was created in 2000 by voters in seven jurisdictions. The original transit agency was then merged into the new authority, along with the Roaring Fork Railroad Holding Authority, an organization formed by a consortium of local governments to purchase 34 miles of the Rio Grande Rail Corridor. RFTA serves nine municipalities and three counties in a 70-mile corridor along Colorado Highway 82 and Interstate 70. RFTA provides fixed-route commuter service between the towns, demand-response service, free local routes within two communities and shuttles to skiing and hiking



People are boarding this RFTA bus destined for the X-Games, one of the many special events held in the region.

areas. RFTA is also constructing a regional recreational trail, while preserving the Rio Grande corridor for a future fixed-guideway system.

RFTA's year-round workforce is about 180 people, increasing

to 225 during winter. But its economic impact extends beyond direct employment. In 2006, passengers completed over 4 million trips. Surveys indicate that on some routes as many as 87 percent of riders are workers commuting. Local routes also give residents and tourists access to recreation areas, a major economic sector. For example, RFTA partners with Aspen Skiing Company, which employs 3400 people in ski season, to provide free shuttles to ski areas and lodges.<sup>4</sup>

Many employers are located in the resort areas around Aspen, but geographic and economic factors make travel to work difficult. RFTA Executive Director Dan Blankenship explained, "The increasing desirability of living in Aspen has caused real estate prices to appreciate dramatically. As a result, the ability of the average worker to live in the area is virtually nonexistent." In 2000, the median value of homes in Aspen was over \$1 million, while 40 miles away in Glenwood Springs, the median home value was about \$235,000.<sup>5</sup> Home values have continued to rise sharply.

People who cannot afford to live close to work tend to move further down the valley. "If we did not have bus services, the region would have a real problem obtaining employees. We don't have the roadway capacity or the parking capacity to support all the cars. Transit services help to keep the communities more livable and offer a tool for managing auto congestion," Blankenship said.

Because little space is available for commuter parking in the mountainous area, Aspen began charging parking fees in 1995 to discourage driving into town and to provide an incentive for more people to use transit. The combination of parking controls and expanded transit services resulted in attracting approximately 1.1 million additional passengers to transit over a two-year period. But limited highway capacity still causes major congestion at Aspen's western entrance. In contrast, the bus uses a combination

of dedicated lanes and wide shoulders to move passengers past bottlenecks, providing a quicker and more reliable route. RFTA carries about one-third of the person trips entering and exiting Aspen on Highway 82 in the winter during peak commuting hours, an indication of how much worse congestion might be without a regional public transportation option. Strategies such as the paid parking policy, carpooling incentives and RFTA service, which many employers subsidize for workers, keep traffic volumes at the 1993 level.<sup>6</sup>

Since the Roaring Fork region relies on high quality natural features to attract economic activity, the environmental effects of RFTA's efforts are also significant. Mitigating congestion reduces tailpipe emissions that can lead to poor air quality, climate change and natural resource degradation. For example, air pollution from cars driving to the popular Maroon Bells recreation area caused noticeable damage to the scenic viewshed in the past. Now that the Forest Service closes the route to most private automobiles each summer, RFTA's service allows visitors to produce fewer emissions while visiting Maroon Bells, often called the most photographed peaks in North America. Since visitors have been using public transportation, air quality has improved and wildlife and plant resources have recovered.

In addition, RFTA's fleet of 80 vehicles runs on a 10 percent biodiesel blend and contains several hybrids, reducing air pollution levels even further. Blankenship explains why renewable energy is a key issue for transportation providers: "Events that interrupt the flow of energy resources could cause the price of fuel to become so expensive that it might be difficult for us to maintain operations, or we may not be able to get fuel at a time when more people need our services because no one else has it either. We also want to reduce the impact of carbon emissions on the environment." Climate change is a priority for the region, with Glenwood Springs and Aspen signing the U.S. Mayors Climate Protection Agreement to reduce global warming pollution levels.

Environmental projects such as renewable energy production and investments in transit-oriented development projects (mixed-use developments along the transit corridor) that reduce the need for automobile trips may also become entrepreneurial funding strategies, as RFTA continues to improve service and examines a possible bus rapid transit (BRT) system. Currently the authority is funded through a combination of local sales taxes and parking fees, bus fares, contracts and federal support (including the 5311 rural transit program).

## Alternative Transportation Helps Air Quality

One of the newer components of the 2007 Franklin County Regional Transportation Plan in Massachusetts, is the section, "Promotion of Energy Efficient and Sustainable Transportation," which focuses on initiatives to promote energy efficient alternative transportation modes for the Franklin County area in Massachusetts. The goal of this section of the plan is to promote energy efficient transportation that will have a positive impact on air quality in the region.

The Franklin Regional Council of Governments (FRCOG) is responsible for developing a Regional Transportation Plan every three years. The FRCOG also works to implement the recommendations of the plan in partnership with federal, state and local entities. The FRCOG is expanding several programs that promote energy efficient transportation. While the region is more rural, and automobiles are often the most reasonable mode of transportation for many residents, the 2007 plan suggests other options not only for rural areas, but for the entire region.

These programs, which have been in the works since the early 1990s, include MassRIDES, a state program operated by the Executive Office of Transportation (EOT). It provides employees, employers, students and other travelers with information and free assistance on alternative transportation. This includes information on establishing carpool, vanpool, preferential parking, transit, teleworking flexible work hour programs and other cost saving alternatives that encourage the public to reduce their use of automobiles.



*The Zipcar is one of the alternative modes of transportation being considered in the more rural area of Franklin County.*

The Park and Ride Lots program is available to commuters who do not live in walking distance of public transit routes. Individuals can park on the lot, use available public transportation or carpool

with other commuters. There is currently one park and ride lot located in Charlemont established by MassHighway in 2002. Because of the success of this lot, FRCOG is working with MassHighway to establish other park and ride lots throughout the region.

## Public Transportation Improves Air Quality

- Public transportation reduces pollution and helps promote cleaner air.
- Public transportation produces 95 percent less carbon monoxide (CO), 90 percent less in volatile organic compounds (VOCs), and about half as much carbon dioxide (CO<sub>2</sub>) and nitrogen oxide (NO<sub>x</sub>), per passenger mile, as private vehicles. Energy-related carbon dioxide emissions represent 82 percent of total US human-made greenhouse emissions.
- By reducing smog-producing pollutants, greenhouse gases and by conserving ecologically sensitive lands and open spaces -- public transportation is helping to meet national air quality standards.

Source: [www.publictransportation.org/facts](http://www.publictransportation.org/facts)

The region is also exploring shared vehicle programs that will service individuals who do not need a car every day, but can access a vehicle when needed. The program would be similar to the member-based "Zipcar," which is currently available throughout the more metropolitan areas of Massachusetts. To become a member, individuals pay a one-time \$25 application fee and an annual fee of \$50. It costs \$7 per hour or \$55 per day to use a vehicle. Cars are located in Northhampton and Amherst in Western Massachusetts, and can be reserved online or via telephone. Members receive a special "Zipcard" that can be used to unlock the vehicle.

The Franklin County region is also promoting numerous smart growth-related programs that encourage land use and development options that do not force the public to rely solely on automobiles to get around. The programs' goals are to focus on growth in and around central business districts, traditional city/town centers and near transit stations. The protection of natural resources is also a focus of the smart growth initiatives.

Generally, the projects receive federal funding through the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). MassRIDES is state-funded, while the Park and Ride Lots program is funded through federal and state funds. The shared vehicle programs are funded by privately-owned companies.

According to FRCOG's Senior Transportation Planner Elizabeth Giannini, the COG expects that many will embrace the benefits of using alternative transportation and realize that there are other travel options available.



“The anticipated impact is to further improve air quality through the reduction of emissions from driving single occupancy vehicles,” Giannini said.

However, she conceded that while some have expressed the economic benefits of energy efficient transportation, it is difficult to convince others because Franklin County is a rural region and using cars is usually the easiest way to get around. But she added that one immediate economic impact would be cost savings on rising gas prices.

Giannini said that FRCOG hopes to encourage more people to consider the benefits associated with alterna-

tive transportation options available throughout the region by continuing outreach to the community. She explained, “We always work to keep the public informed of the projects that we are working on by providing information, holding public meetings and also meeting with our local communities. We generally provide information through whatever media outlets are available including, but not limited to, the FRCOG agency newsletter, FRCOG agency Web site and press releases.”

### Clean Air Act Amendments of 1990

In 1990, Congress amended the Clean Air Act (CAA) to bolster America’s efforts to attain the National Ambient Air Quality Standards (NAAQS). The amendments required further reductions in the amount of permissible tailpipe emissions, initiated more stringent control measures in areas that still failed to attain the NAAQS (nonattainment areas – areas where monitored pollutant levels exceed EPA standards and are considered unhealthy), and provided for a stronger, more rigorous linkage between transportation and air quality planning. This act largely affected rural areas and neighboring metropolitan areas, which were classified as “nonattainment areas.” Under the act, metropolitan planning organizations within “nonattainment areas” must perform air quality conformity determinations before their transportation plans and transportation improvement plans can be approved. Conformity ensures that federal funding and approval goes towards projects that are consistent with air quality goals.

<sup>1</sup>Dennis Brown, 2005, *Rural Transportation at a Glance*, U.S. Department of Agriculture, p. 3

<sup>2</sup>American Public Transportation Association, [www.publictransportation.org/facts](http://www.publictransportation.org/facts) and [www.apta.com/media/releases/070312\\_ten\\_billion.cfm](http://www.apta.com/media/releases/070312_ten_billion.cfm), accessed 03/09/2007

<sup>3</sup>Transportation Research Board, 1997, *Assessment of the Economic Impacts of Rural Public Transportation*, Transit Cooperative Research Program Report 34, p. S-2

<sup>4</sup>Personal communication with Dan Blankenship, 2007; and Federal Highway Administration, Office of Operations, 21st Century Operations Using 21st Century Technology, [http://ops.fhwa.dot.gov/publications/mitig\\_traf\\_cong/aspen\\_case.htm](http://ops.fhwa.dot.gov/publications/mitig_traf_cong/aspen_case.htm), accessed 03/28/2007

<sup>5</sup>*American FactFinder*, Census 2000; U.S. Census Bureau

<sup>6</sup>Personal communication with Dan Blankenship, 2007

*The NADO Research Foundation provides case studies of noteworthy practices in rural and small metropolitan areas through two series of issue papers. This report, authored by Research Foundation staff Transportation Manager Carrie Kissel and Communications Manager Zanetta Doyle, serves as the first issue of both the transportation and the environmental stewardship series. It was funded under agreements with the U.S. Environmental Protection Agency (EM-83329901) and the Federal Highway Administration (DTFH61-06-H-00029). Any opinions, findings and conclusions or recommendations expressed in this publication are those of the authors and do not necessarily reflect the view of the Environmental Protection Agency or the Federal Highway Administration.*



400 NORTH CAPITOL STREET, NW, SUITE 390  
WASHINGTON, DC 20001  
202.624.7806 PHONE • 202.624.8813 FAX  
INFO@NADO.ORG • WWW.NADO.ORG  
[www.ruraltransportation.org](http://www.ruraltransportation.org)  
[www.nado.org/rf/innocenters/envstew.php](http://www.nado.org/rf/innocenters/envstew.php)

RESEARCH, EDUCATION, AND TRAINING OPPORTUNITIES FOR COMMUNITY,  
ECONOMIC AND RURAL DEVELOPMENT PRACTITIONERS AND POLICYMAKERS