The Challenges of Rural Transportation

By Ben Kidder
The Western Rural Development Center (WRDC) is one of four regional centers in the U.S. funded by the USDA/CSREES to strengthen the capacity of local citizens to guide the future of their rural communities. Each center links the research and extension capacity of the land grant universities with local decision makers to address a wide range of rural development issues. The WRDC also receives substantial support from Utah State University through Cooperative Extension, the Agriculture Experiment Station, the College of Humanities, Arts and Social Sciences and the College of Natural Resources. The WRDC does not discriminate on the basis of race, color, religion, national origin, sex, age, disability or veteran status.
The success of rural communities across America depends on access to well-planned, efficient transportation systems.
ABSTRACT
Transportation is a central issue for rural communities. This paper examines five central questions of rural transportation: the relationship between transportation and economic growth, the balance between transportation needs and the environment, the need for wider access to transportation in rural areas, the division of decision making power and responsibility, and the means of financing transportation improvements. These questions are complicated by the ambiguous line between rural and urban and by the great diversity of rural areas. Solutions to transportation challenges may differ by region, and will require the participation of researchers, public officials, and all stakeholders.

Introduction: The Unique Challenge of Rural Transportation

Definitions and Diversity
The success of rural communities across America depends on access to well-planned, efficient transportation systems. Providing such systems is as urgent as it is breathtakingly complex. The difficulty starts with the word “rural” itself. The line between rural and urban is ambiguous and there are many valid ways of drawing it. Not surprisingly, many agencies of the Federal Government use different definitions:

The U.S. Census defines any agglomeration of 2,500 or more people as “urban” and everywhere else as “rural.”

The Office of Management and Budget (OMB) sorts the country into “metropolitan” counties, which contain or have commuter relationships with a large city, and “nonmetro” counties, which do not. Nonmetro is further subdivided into “micropolitan” counties, which contain small cities, and “noncore” counties, which do not. The difference between the county-based metro/nonmetro definition and the Census Bureau’s urban/rural definition may seem superficial, but as the pie charts in Figures 1-4 show (see page 9), the two definitions hardly overlap. “Rural” America consists of roughly 59 million people to “Nonmetro” America’s 49 million. But only 29 million people are included in both categories simultaneously. To switch from one definition to the other is to change the status of the 50 million people who are either “rural” or “nonmetro” but not both!

The Department of Transportation uses two definitions. A rural area is anything outside of an agglomeration of 5,000 people for highway functional classification and outdoor advertising regulations. A rural area is anything outside an agglomeration of 50,000 for planning purposes.

To add to the confusion over the definition of “rural” is the fact that rural communities are extremely diverse. Although “rural America” is often referred to as if it were one entity, there is a great deal of regional variation. The economic structure of the rural Great Plains is quite different from that of the rural South, which is in turn unlike the rural Northeast, and all of these differences have implications for transportation planning.

Furthermore, rural communities can vary widely within each region. The American West, for example contains the country’s most and least populous states. The plains of Wyoming do not face the challenge of terrain that confronts communities in the Sierra Nevada. Some communities in the West are home to extreme poverty, while some are havens for the affluent. In the Pacific Northwest, the Snake-Willamette-Columbia river system is a major waterway transportation network, but for Arizona and New Mexico water transportation is not an option. Long distance truck freight cannot exist in Hawaii and many communities in Alaska are only accessible by plane. The agriculture-dependent central valley of California has different transportation needs than the ski towns of Colorado. There is very little that can be said conclusively about all rural transportation, or even all western rural transportation.

Meeting local needs is a difficult challenge for any policy official. A key challenge for stakeholders is to develop theories and tools that can be applied across these widely diverse areas. There are, however, a few key distinctions that rural areas have in common as compared to urban areas and that affect their transportation needs.

Small Population Base
Population density is one of the most important factors in transportation planning. Large cities rely on subway systems; smaller cities depend on multilane highways. The countryside in much of America is accessible by two-lane rural routes. In Alaska travel between communities is often by small aircraft. As population density decreases, transportation systems move from transporting large numbers of people for short distances to transporting small numbers of people for great distances. The funding implication of low population density is that smaller populations provide a much smaller tax base for the construction and maintenance of transportation systems. Additionally, regions with low population density sometimes
have trouble wielding influence in population-based state legislatures over transportation spending decisions.

Distance and Terrain
Rural transportation planning is made considerably more difficult by the spaces through which it must pass. Rural communities are separated by greater distances than urban communities, automatically adding to the construction and maintenance cost of transportation systems, and fuel cost once they are constructed. Furthermore, rural America has considerably rougher terrain than urban America. This is not true of all rural areas (such as the Great Plains), but is certainly true of Appalachia and the Rocky Mountain West. Rough terrain also adds to both construction and fuel costs.

Different Economic Structure
The structure of the rural economy is different from urban areas, requiring different transportation infrastructure. Agriculture and other extractive industries were once the primary economic activities of rural areas, but have declined greatly as both sources of income and providers of jobs. However, commodity production and manufacturing in general remain very important for the rural economy. Together, 25.2% of earnings in rural areas come from farming, forestry, fishing, mining, and manufacturing. These industries provide only 13.7% of earnings in urban areas, where services predominate. The greater reliance on commodities and manufacturing, rather than services, implies that rural areas are much more dependent on freight transportation than urban economies.

Five Questions
Armed with awareness of the diversity of rural areas, as well as knowledge of the characteristics they share, rural researchers and policy makers can begin to resolve some of the most urgent debates surrounding rural transportation. This paper will focus on the following five major questions in rural transportation that stakeholders must answer:

1. How can transportation be used to influence rural economies?
2. What is the appropriate balance between providing for effective rural transportation and preserving natural resources?
3. How can rural transportation be made more widely accessible?
4. How should decisions on rural transportation be made?
5. How should rural transportation best be funded?

The success of rural communities across America depends on the answers they find to these questions.

How can transportation be used to influence rural economies?
By a number of indicators, economic growth in rural areas is slower than in urban areas. However, aggregate figures are misleading, since communities throughout rural America have experienced widely disparate rates of growth and decline. One researcher suggests that rural communities can be divided into two categories of transportation needs based on growth levels. One type is experiencing slow or even negative growth and is primarily concerned with the growth-promotion aspects of transportation. The other type has experienced rapid growth of economy and population, and is interested in transportation policy that will help it manage its growth. It may be concerned with preserving a small town feel in the face of rapid expansion.

Areas that Need Growth: What is the Effect of Transportation on Growth?
All rural communities must promote economic growth, and transportation systems should be planned with this purpose in mind. However, for some communities the need for growth is much more urgent. This need can manifest itself in different ways. From 2000 to 2003, 51.6% of nonmetro counties lost population. The most concentrated area of population loss is the Great Plains. Communities facing population loss need economic growth to prevent citizens from leaving to find work.

Another negative effect of low economic growth is poverty, a serious challenge in rural communities. The Economic Research Service of USDA defines a “persistent poverty” county as one that has had high poverty (at least 20 of the population) on each of the last four censuses. Of the 382 persistent poverty counties, 363 (95%) are nonmetro. Moreover, 16% of nonmetro counties, but only 2% of metro counties, are persistently poor. Rural counties with the highest and most persistent poverty tend to be located in clusters in four regions: Appalachia, the rural Deep South, the U.S.-Mexico Border, and in some Native American areas of the West.

Both high poverty communities and communities experiencing population loss must revitalize and grow their economies. Will improved transportation systems have an effect on job creation in rural areas? If so, how can transportation funds be applied most effectively toward this purpose? Is economic growth caused by reductions in freight costs, by coordination of labor markets with industry demand, by improved access...
to services and amenities, or by some combination of these? An examination of various types of transportation used by rural communities may shed some light on this question.

Highways
The sizable portion of the research into the relationship between transportation and economic growth in rural areas has looked at the relationship between highways and surrounding areas. An impressive annotated bibliography compiled by the ERS catalogs the results of many of these studies from the past two decades.8

Freight Rail
Another area of investigation has been the role of freight rail in rural economic activity. Railroads were once a considerable economic force, opening up vast areas of the United States to development, especially in the West. While their prominence has declined somewhat, railroads are still the most popular method of freight shipment, making up 40% of intercity freight shipments in the United States.9 In some rural areas rail remains the cheapest method of shipment.9

Deregulation of freight carriers has resulted in consolidation of the industry, which has offered some shippers and farmers lower rates.11 However, in many cases it has also led to the abandonment of unprofitable rail lines. The ability of rail companies to abandon lines may have been what saved the industry from collapse in the 1980’s, but the impact on the rural economies they once served is potentially quite negative. One model simulating line abandonment in a wheat growing area of Kansas predicts that agricultural producers would see little change in transportation cost but dramatic increases in handling costs, resulting in declining farm income.12 However, a series of case studies of rail abandonment in rural communities in the 1970’s predicts that the impact on communities similar to those studied will be minimal.13 In order to cope with rail abandonment some communities have attempted to open abandoned lines to new, regional and short line rail in the hopes that on a smaller scale rail operators can be more profitable.14 Even as rail mileage decreased by 18% in the 1990’s, rail freight shipments nationwide increased by 45%, increasing seasonal congestion of the rail system.15

The new transportation bill may increase the level of funding to support freight rail use in rural communities. There are several reasons why encouragement of freight rail may be beneficial.16 First, many rail lines already exist and can be used to link rural communities with other markets without the expense of new highway or waterway construction. Second, communities may reap the economic benefits of freight rail without causing as much environmental damage. There are, however, some disadvantages. It is still not clear in the long term how profitable freight operators can be in a highway-dependent economy. Furthermore, rail scheduling is difficult and companies may be forced to keep extra stocks of goods and supplies on hand to cope with shipment delays. Increased fuel costs could also undermine profitability.

Railroads are still the most popular method of freight shipment, comprising 40% of intercity freight shipments in the U.S.

Airports
Like many other forms of transportation, the air industry was deregulated in the late 1970’s, and as was the case with other deregulated industries, the result was cheaper and improved service to some rural areas and reduced service to other rural areas.17 Essential Air Service, a federal program created as part of the Airline Deregulation Act
of 1978, mandated continued service to a list of qualifying locations. In some cases, the government would subsidize air service to ensure continued access. Deregulation allowed airlines to set up hub and spoke systems that could ferry passengers and freight from local airports to regional hubs and beyond. This is important for rural areas because more than 84% of all businesses in nonmetro counties are not located within commuting distance of a hub airport of any size, while only 15.4% of metro businesses have this problem. Therefore, rural businesses must rely primarily on small, local airports rather than hub facilities.

In addition to adjusting to deregulation, another, even more recent challenge for air travel has been the need for increased security following the September 11, 2001 attacks. Concerns about ensuring security have added to the complexity and cost of administering air travel, even at small, rural airports. The long-term impact of these changes on rural communities remains to be seen.

Is airport access important to local economies? In a 1998 survey of rural manufacturers, 44% of respondents identified access to airport facilities and services as a problem. Another study indicates that while airport availability may not be the first priority of firms, its absence may be one factor that keeps firms away. Furthermore, the study reports that airports, by providing better access to medical services and opportunities for recreation, improve the quality of life in rural communities. The potential of airports to affect economic growth is an issue that requires more study, but must be weighed carefully against the costs of construction and operation.

Areas that Have Growth: What is the Effect of Growth on Transportation?

Not all of rural America is struggling for growth. Two major factors that determine growth rates in rural communities are the presence of natural amenities or tourist opportunities and the proximity to urban areas. Rural communities with natural amenities that are adjacent to cities tend to experience high rates of economic and population growth. This growth comes with costs, including the need for greater transportation capacity. This may take different forms depending on the reason for high growth.

The first type of community serves as a tourist destination or has an economy that specializes in services. In the West, these include communities with ski resorts, natural features such as hot springs or unique landforms, and “Old West” historic sites. These communities will need to ensure that visitors can easily travel to the area. This may require airport access or proximity to an interstate. It also must insure that visitors can travel easily from lodging locations to attractions. Finally, tourist communities are often seasonal, and must build transportation systems designed to handle surges in usage. It is argued that the availability of public transportation is important in tourism- and service-dependent communities because the service industry depends on putting workers into close proximity with the clients they serve, but often housing in these areas is not affordable.

The second type of community is adjacent to urban areas and may serve as a bedroom community for residents who commute to work in cities. This type of rural community is becoming important in the highly urbanized West. Residents of the West often have a preference for large open spaces and proximity to natural beauty. This leads many to live in homes far from urban areas even if commutes are long. The transportation challenge this proposes is where urban transportation policy and rural transportation policy intersect, as methods must be devised by which commuters can be ferried into and out of cities efficiently without disturbing either community too greatly.

These two types of high-growth communities have the same transportation tools available to them as low-growth communities: highways, rail, airports, etc. The uses of these tools, however, are quite different from communities using them to spur development. There is much that remains to be understood about the relationship between the economy and transportation, and much that is understood by researchers has yet to be implemented by policy makers. Communication between these and other stakeholders is essential.

What is the appropriate balance between providing for effective rural transportation and preserving natural resources?

Environmental concerns surrounding transportation planning continually make headlines across rural America. All rural transportation systems have an impact on the environment and natural resources, and these concerns cannot be ignored. A careful balance must be found between the conservation of the environment and the economic goals of the previous section.

One major transportation-related environmental issue is vehicle emissions. This issue is not specific to rural areas. Although many rural residents may experience less direct
exposure to harmful vehicle emissions than the residents of polluted cities, the indirect effects of vehicle emissions could have a significant impact on rural well-being. The relationship between emissions and climate change is not yet completely understood, but even small fluctuations in global climate could have unintended consequences for agriculture and forestry. Many studies have produced conflicting estimates of the effect of climate change on agriculture, but farmers, transportation planners and other rural residents would do well to exercise caution.\textsuperscript{24}

Another environmental hazard posed by transportation systems is habitat disruption. Roads can disrupt habitats either by destroying them directly—by running through an old growth forest or a wetland, for instance—or by disrupting the migration routes of animals between habitats. Rural areas may play a major role in the development and production of biofuels since their agricultural origins lie mainly in rural areas.

This is a problem almost entirely specific to rural areas, since they contain the habitats and wildlife that are at risk.

A related issue is the habitat loss stemming not from transportation systems themselves but from the sprawl they sometimes encourage. With easier access to remote urban areas, the appeal of living “away from it all” increases. Sprawl is a form of growth. Some rural communities desperately need additional population and the resulting increase in consumer demand, but additional development harms the environment both through emissions and other pollutants and through habitat destruction. Unfortunately, the rural counties that most desperately need more population and economic growth are remote and short on natural amenities—the least likely to attract sprawl.\textsuperscript{25}

Growth comes at a price. However, there are some cases in which environmental concerns go hand in hand with economic development, and transportation solutions that promote both can be found. One study refers to these cases as “no regrets solutions,” in which a transportation system has positive or neutral net benefits for the economy, environment, and social health of a community.\textsuperscript{26}

One example is the growing interest in biofuels and other alternatives to gasoline. Such fuels, if they can be made more cost effective, could potentially reduce vehicle emissions greatly in both rural and urban areas. Rural areas may play a major role in the development and production of biofuels since their agricultural origins lie mainly in rural areas. A second example of aligned economic and environmental interests is the necessity of preserving rural natural beauty. Scenery is very important to the economies of many rural communities, primarily by bringing in tourist dollars. A transportation system that destroys natural beauty (and with it, natural habitat) can have a very negative effect on the local economy.

A final alliance of economic and environmental concerns has to do with sprawl. In the fast growing communities discussed in the previous section, the concern is less about how to promote more growth and more about how to manage the growth that exists. Sprawl threatens to destroy the rural way of life and eventually to urbanize some rural areas. Rural transportation planners in these communities have no more interest in encouraging sprawl than environmentalists do. Balancing environmental and economic considerations is a difficult challenge for transportation planners, but win-win solutions should be found whenever possible.

How can rural transportation be made more accessible?

Rural America is dominated by the automobile. This is the logical result of rural America's long distances between communities. In urban areas the challenge is to move large numbers of people over short distances; hence the prevalence of bus and subway systems. In rural areas, by contrast, the challenge is to move a few people over long distances. Automobiles and roads have been a cheap and effective means to this end. Thus car ownership rates are higher in rural areas than in urban areas, with 92.7% of rural households having access to a car.\textsuperscript{27} But as a result of the automobile’s dominance, those rural households that do not have access to a car, numbering some 1.6 million (7.3%) have few other alternatives.\textsuperscript{28} A recent study of rural England found that residents frequently relied on the “social economy” for transportation, meaning that they received rides from friends and family.\textsuperscript{29} One study estimates that in America this accounts for 30% of nonmetro commutes.\textsuperscript{30}

People with Limited Transportation Access

Certain demographics, such as the elderly, rural Americans with disabilities, and the poor, may face additional difficulty in securing access to reliable transportation. The elderly form an increasing proportion of the residents of rural areas. From 1991 to 2001, the percentage of nonmetro population over 60 years of age increased from 19% to 19.7%.\textsuperscript{31} The percentage of metro population over 60 years of age dropped from 15.6% to 14.8%. This poses an additional challenge to rural transportation planners who will need to take into account the needs of a group whose mobility may be more limited.

Another group that has limited access to transportation is Americans with disabilities. The Americans with Disabilities Act of 1990 went far to improve access to public transportation
Poverty is a very important variable in transportation planning. Poverty, rurality, and difficulty with transportation are closely linked. The poor spend a higher percentage of income on transportation than more wealthy Americans. More than 90% of those on public assistance nationwide do not own a car. Poverty rates are about five percentage points higher in rural than in urban America. Since there is lower availability of public transit systems, lack of transportation becomes a considerable barrier to employment. In rural areas, transportation policy and poverty policy are often one and the same.

There is no cheap solution to the problem of widening accessibility to rural transportation. It has been suggested that there are two ways to address the transportation needs of low-income individuals in rural areas: either provide public transportation or subsidize the ownership of cars. Both can be quite expensive, and population density is a major factor in determining which is most cost-effective. The attractiveness of car subsidies diminishes with increases in gasoline prices, especially for low-income households. For the elderly and rural Americans with physical disabilities, car subsidies may not help at all.

For those without cars, the only alternative to getting rides from others is to use public transportation. However, in rural areas this can sometimes be hard to come by. Public transportation is available to the residents of 60% of nonmetro counties, leaving the residents of the other 40% without. However, availability does not guarantee ridership. In car-dominated rural America, only one half of one percent of residents uses public transportation as a primary means of getting to work. Rural communities will need to take into consideration the transportation needs of individuals with disabilities, the elderly and low incomes. Public transportation is difficult to fund due to the low population densities it serves. Different types of rural public transportation have met with varying levels of success.

Local Public Transportation
The provision of local public transportation in low population density areas is difficult. One barrier to the use of mass transportation systems in rural areas may be that many services stop at the county line. One study suggests that consolidation into multicounty transit systems may be more effective. Another warns that overlapping jurisdictions of different agencies may result in “turf wars” and suggests a brokerage model, in which one agency takes the lead and the others follow.

Intercity Bus
Despite the difficulty of providing local public transportation, 89% of rural residents are served by intercity bus. This is the primary long-distance public transportation option in rural America. As with many other forms of transportation, deregulation of intercity busing in the early 1980’s improved service to many areas, but limited access to other areas.

Passenger Rail
The national passenger rail system, Amtrak, has seen its share of troubles. It was founded in 1970 after the freight rail industry persuaded congress to relieve it of its statutory duty to provide passenger service. Since Amtrak’s foundation it has had trouble being profitable. One trend to maintain the viability of the service is route abandonment, in which Amtrak stops servicing unprofitable routes. Furthermore, since Amtrak mostly uses privately owned freight rail track, line abandonment by these companies also results in loss of Amtrak service. Today, most rural residents live outside the Amtrak Service area. Passenger rail service is currently available at fewer than 200 nonmetro locations.

The question of how to expand access to rural transportation despite its high cost is a difficult one and will require imaginative engagement by researchers and policy makers.
How should rural transportation decisions be made?

Transportation decision-making, like all other policy areas, is divided between many stakeholders at all levels of the federal system. Interstate highways are a cooperative venture between the federal government and state governments. Other roads are maintained by states or local governments, but often receive federal funding. Freight rail is operated by private companies. Passenger rail is operated by a semi-public firm on privately owned rail lines. Most mass transit systems are operated locally, but may be subsidized at the state or federal level. Many are multi-jurisdictional.

Devolution to state and local authorities can be traced through three most recent federal surface transportation bills, ISTEA, TEA-21, and SAFETEA-LU. The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) greatly increased participation of local leaders in transportation decisions. It came after the completion of the interstate highway system and marked a shift of emphasis away from highway construction and toward other emphases, such as safety and environmental soundness. ISTEA relinquished some federal control over decisions by establishing block grants to states (Dilger, 2003). Most importantly, the Act mandated that state authorities consult with municipal governments in order to access the block grants. However, it did not require states to consult with officials of communities with less than 50,000 people.

TEA-21, the Transportation Efficiency Act for the 21st Century, was passed in 1998 as a six-year reauthorization of ISTEA. The new Act improved the consultation process by mandating that rural leaders be consulted along with urban leaders. This process must be separate from consultation with the public in general. Additionally, if states do not follow local leaders’ recommendations, they must provide explanation. Finally, states must seek feedback after implementation of transportation plans. The new transportation bill, the Safe, Accountable, Flexible, Efficient, Transportation Act – Legacy for Users (SAFETEA-LU), passed in 2005, leaves the rural consultation provisions unchanged.

The emphasis on devolution has produced mixed results. There is some evidence that the new power held by states and local leaders has yet to be wielded effectively. When block grants were made available to states, many had already made commitments to certain projects, and so were unable to quickly realign spending to their priorities. Additionally, to meet federal matching requirements, many states used gasoline taxes, which in many cases were dedicated by law to highway spending, preventing the use of federal funds for other transportation purposes. Local leaders were also largely unprepared to recognize and communicate their transportation needs effectively through the consultation process. Indeed, some states found it difficult to convince local leaders that taking part in transportation decisions was worth their limited time.

Making sure that local leaders in rural areas have adequate policy and institutional knowledge, organization capacity, and advocacy skills to effectively participate in transportation planning is another key challenge for rural America.

At what level of government should which transportation decisions be made? The answer to this question has significant implications for the shape of rural transportation systems. For instance, there is some debate about whether transportation planning is best led by state or local leaders. State agencies generally have more capacity and can help ensure that all parts of the state transportation system fit well together; on the other hand, local needs and priorities may not receive enough attention.
How should rural transportation be funded?

Like decision-making authority, funding for rural transportation involves many stakeholders. Funding is provided and divided along many different lines: among federal, state, and local governments; between states, between rural and urban areas; and among various types of transportation. During the 1980s and 1990s, state and local governments assumed increasing financial responsibility for transportation spending. Their share of total government transportation spending rose from 55.5% in 1980 to 68.7% in 1994.37 Despite this trend, federal government spending remains substantial, both in dollar amounts and in the attention its funding decisions receive. Federal surface transportation spending has been determined by the same transportation bills that govern much policy-making: ISTEA, TEA-21, and SAFETEA-LU. Funds for these bills are raised primarily from gas and fuel taxes and placed in two trust funds: one for highways and one for transit.38 Dividing these funds between states and between rural and urban areas is always politically difficult. Under all three bills, there have been “donor” states, which contribute more in gas taxes than they receive in federal transportation funding, and “recipient” or “donee” states, which receive more than they contribute.39 (For a table of western states’ donor and recipient status under ISTEA, see Table 2.) Donor states, upset about not getting out as much as they had put in, succeeded in including in TEA-21 a guarantee that all states would receive at least 90.5 cents for every dollar contributed, whereas under ISTEA states could receive as low as 73 cents on the dollar. SAFETEA-LU will gradually raise this guaranteed return to 92 cents.40 However, the new bill also ensures that no state will receive less than a specified percentage (rising from 117% in 2005 to 121% in 2009) of its annual funding under TEA-21.41 The attempt to satisfy both guarantees simultaneously in part explains the large size of the new bill, estimated at $244 billion.42

Rural areas have not been forgotten in the allocation process. Both ISTEA and TEA-21 mandated a set-aside of funds for rural areas with less than 5,000 people.43 SAFETEA-LU allocates $90 million annually for the repair of rural roads with high fatalities and incapacitating injuries.44 Additionally, the percentage of transit spending going to rural areas was increased from 3.3% under TEA-21 to 5.2% under SAFETEA-LU.45 The new bill also includes a large number of special earmark transportation projects, some of which are located in rural areas. Whether these provisions are sufficient to fully meet the needs of rural communities across America remains to be seen. (See Table 3 for a list of Westerners on the House and Senate transportation committees, who are capable of inserting earmarks on behalf of Western rural areas.)

Summary

This paper has examined five major questions of transportation in rural America. Many organizations are currently working on these questions (see Table 4) but the answers do not come easily. All of these issues have competing interests that must be carefully balanced. All involve many stakeholders that wish to participate in the process of making transportation decisions. Since rural areas are so diverse, these questions may have different answers in different parts of the country. Finding more effective, efficient solutions to rural America’s transportation needs is an ongoing process that will require the hard work of researchers, elected and appointed policymakers, business leaders, non-profit advocacy groups, and, of course, all rural Americans that use transportation systems.
The Challenges of Rural Transportation

Population of Census Bureau-Defined "Rural" Areas
59,061,367 (21.0% of US)

- 30,060,121 (50.9%) live in OMB-defined "metro" counties
- 29,001,246 (49.1%) live in OMB-defined "nonmetro" counties

Data Source: ERS and 2000 Census using 2003 metro/nonmetro definitions

Population of OMB-defined "Nonmetro" Counties
49,258,673 (17.5% of US)

- 20,257,427 (41.0%) live in Census Bureau-defined "urban" areas
- 29,001,246 (59.0%) live in Census Bureau-defined "rural" areas

Data Source: ERS and 2000 Census using 2003 metro/nonmetro definitions

Population of Census Bureau-Defined "Urban" Areas
222,460,531 (79.0% of US)

- 202,203,104 (90.9%) live in OMB-defined "metro" counties
- 20,257,427 (9.1%) live in OMB-defined "nonmetro" counties

Data Source: ERS and 2000 Census using 2003 metro/nonmetro definitions

Population of OMB-defined "Metro" Counties
232,263,225 (82.5% of US)

- 202,203,104 (87.1%) live in Census Bureau-defined "urban" areas
- 30,060,121 (12.9%) live in Census Bureau-defined "rural" areas

Data Source: ERS and 2000 Census using 2003 metro/nonmetro definitions
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<th>State</th>
<th>Average Annual Spending</th>
<th>% Change</th>
<th>Average Annual Spending per Capita under SAFETEA-LU</th>
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<td>34.30%</td>
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<tr>
<td>Colorado</td>
<td>$334,594,734</td>
<td>$491,008,545</td>
<td>46.75%</td>
<td>$105.25</td>
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<tr>
<td>Washington</td>
<td>$491,625,367</td>
<td>$622,357,460</td>
<td>26.59%</td>
<td>$98.98</td>
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</table>

Source: Federal Highway Administration SAFETEA-LU Website and July 2005 Census Estimates
### Table 2
Western Members of Senate Committee on Commerce, Science & Transportation - 109th Congress

**Democrats**
- Daniel Inouye (D-HI), Ranking Member
- Barbara Boxer (D-CA)
- Maria Cantwell (D-WA)

**Republicans**
- Ted Stevens (R-AK), Chair
- John McCain (R-AZ)
- Conrad Burns (R-MT)
- Gordon Smith (R-OR)
- John Ensign (R-NV)

### Table 2
Western Members of House Committee on Transportation & Infrastructure - 109th Congress

**Democrats**
- Peter A. DeFazio (D-OR)
- Bob Filner (D-CA)
- Juanita Millender-McDonald (D-CA)
- Earl Blumenauer (D-OR)
- Ellen Tauscher (D-CA)
- Brian Baird (D-WA)

- Shelley Berkeley (D-NV)
- Jim Matheson (D-UT)
- Mike Honda (D-CA)
- Rick Larsen (D-WA)
- John Salazar (D-CO)

**Republicans**
- Don Young (R-AK), Chair
- Gary Miller (R-CA)
- Jon Porter (R-NV)
- David Reicher (R-WA)
### TABLE 3

#### Organizations Involved in Rural Transportation Research and Planning

<table>
<thead>
<tr>
<th>Category</th>
<th>Organization</th>
<th>Website Link</th>
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<tr>
<td><strong>General</strong></td>
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<td></td>
<td>Ruraltransportation.org</td>
<td><a href="http://www.ruraltransportation.org">http://www.ruraltransportation.org</a></td>
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<td></td>
<td>Transportation Research Board</td>
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<td><strong>Federal Executive</strong></td>
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<td>Federal Aviation Administration</td>
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<td>Environmental Protection Agency</td>
<td><a href="http://www.epa.gov">http://www.epa.gov</a></td>
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<td><strong>Federal Legislative</strong></td>
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<td>House Transportation and Infrastructure Committee</td>
<td><a href="http://www.house.gov/transportation">http://www.house.gov/transportation</a></td>
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<td></td>
<td>Senate Committee on Commerce, Science, and Transportation</td>
<td><a href="http://www.commerce.senate.gov">http://www.commerce.senate.gov</a></td>
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<td><strong>State and Local</strong></td>
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<td>National Association of Counties</td>
<td><a href="http://www.naco.org">http://www.naco.org</a></td>
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<td><strong>Organizations</strong></td>
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<td></td>
<td>National Association of Regional Councils</td>
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<td>Community Transportation Association of America</td>
<td><a href="http://www.ctaa.org">http://www.ctaa.org</a></td>
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<tr>
<td><strong>University Programs</strong></td>
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<td>University Transportation Centers</td>
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<td>University of California Transportation Center (Berkeley)</td>
<td><a href="http://www.uctc.net">http://www.uctc.net</a></td>
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<td>Mountain-Plains Consortium (North Dakota State University)</td>
<td><a href="http://www.mountain-plains.org">http://www.mountain-plains.org</a></td>
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<td></td>
<td>Western Transportation Institute (Montana State University)</td>
<td><a href="http://www.coe.montana.edu/wti">http://www.coe.montana.edu/wti</a></td>
</tr>
</tbody>
</table>

To visit the organization’s website, simply click on the web address listed above in Table 3.
Endnotes

3 Economic Research Service, USDA.
5 Roth (2001).
11 Ibid.
13 Allen (1975).
17 Stommes and Brown (2002).
19 Gale and Brown (2000).
22 McGranahan and Beale (2002).
24 Environmental Protection Agency (2006).
26 Littman and Bunwell (2003).
29 Williams and White (2001).
30 Nitschke (2004).
31 Rodgers (2002).
32 Stommes and Brown (2002).
33 Maggied (1982).
34 Rural Transportation at a Glance (2005).
40 Cook (2003).
41 Kidder (1989).
43 Stommes and Brown (2002).
46 Ibid.
47 Stommes and Brown (2002).
48 Ibid.
49 Roth (2002), Stommes and Brown (2002).
51 Ibid.
54 Dilger (2003).
57 Stommes and Brown (2002).
58 Fischer (2005).
60 Fischer (2005).
62 Fischer (2005). The more widely quoted figure is $284 billion, but since this includes fiscal years that had already expired by the time the bill had passed, CRS has estimated $244 billion as more accurate.
63 Roth (2002).
64 Fischer (2005).
65 Ibid.
Works Cited


Works Cited


Author’s Note

This paper was originally written as a capstone policy analysis for a Master in Public Policy at the John F. Kennedy School of Government, Harvard University. In its current form I have revised it to serve as a discussion piece for the conference on rural transportation hosted by the Western Rural Development Center (WRDC). I am trained in policy analysis but I am not an expert in transportation, rural or otherwise. This paper provides an outsider’s perspective on the subject; one that I believe is useful for building a framework for understanding such complex and challenging policy area. I have focused my inquiry around what I have determined to be the five most pressing questions in rural transportation. My hope is that the researchers, government officials, community leaders, and other stakeholders brought together by the WRDC can use these questions to begin discussions, and that by sharing their accumulated knowledge they can hasten progress toward more effective transportation in rural areas.