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Issue Report

Economic Returns to Rural Infrastructure Investment

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Local Perspectives on Rank and Selection of Infrastructure Projects

The infrastructure priorities and investment decisions of local government agencies—especially the decision-making process regarding investments in broadband internet, water and sewer infrastructure, and transportation—are an important consideration in the overall development of the nation's rural infrastructure. This paper provides a practitioner's perspective on how local government officials in the rural areas of the United States make decisions, as well as some of the hurdles and challenges they face due to limited resources.

The authors took a qualitative approach, conducting interviews with state and local officials to identify best practices and common practices in the decision-making process. The authors also reviewed related literature to validate the insights and practices shared in the interviews.

The most important lesson learned from this analysis, although perhaps not a surprising one, is that despite the wealth of information and resources available on best practices for public infrastructure planning and budgeting, many rural communities use a decision process that relies more on staff recommendations and less on quantitative analysis. This process may, however, not be as haphazard as it first appears, as most of the interviewees appeared to possess a comprehensive working knowledge of the inventory, condition and deferred maintenance aspects of the infrastructure under their stewardship. This less

formal approach to asset management may work because the typical inventory of rural infrastructure is much smaller, simpler and easier to keep track of than that of major cities.

There are problems associated with an informal inventory system and planning process. A review of state guidelines and requirements indicates that to qualify for many state and federal grant and loan programs, local governments must meet certain criteria or requirements. Typically, the government must have a comprehensive community plan, a capital improvement plan, and a debt management plan. For some rural communities, just doing the planning exceeds their available resources. Ultimately, these rural communities cannot apply for some state and federal grants or loan programs because the communities do not have adequate resources to satisfy pre-program guidelines.

From our analysis, some of the tools used by rural local governments for infrastructure decision-making include rating criteria, needs assessment data, a funding plan, and a financial forecast. These findings are consistent with what was learned in the interviews with local officials conducted for the present study: Some local governments engage in little to no formal asset management and risk analysis. Therefore, these rural communities are reactively addressing their infrastructure needs. Some states have grant programs to help local communities address life-safety and regulatory compliance issues with their infrastructure. State grants to help with routine maintenance of assets is less common.

The data and interviews conducted confirm that rural county governments have primary responsibility for road systems and that rural municipal governments spend a large share of their infrastructure funds on sewer and water and electrical systems. Taken together, rural local governments are focused on maintaining roads, sewer and water, and electrical systems.

Numerous interviewees noted that rural water and sewer needs are often met by private wells and septic tanks. Electricity demand is frequently supplied by private enterprises rather than public utilities, and rural residents often have a lower expectation of broadband service. However, in certain rural areas like Ammon, Idaho, and Thomasville, Georgia, city leaders recognized the competitive advantage they would have if broadband were available. In these two cities, existing infrastructure delivery systems provided a template and foundation for implementing broadband. In Thomasville, the electrical distribution model was used, and in Ammon, the water delivery system was the model used for broadband buildout.

Well-maintained roads and bridges were noted as being essential in rural areas where the economies rely on natural resources, such as agriculture or the oil and mining industries. These industries must move large quantities of heavy products on local roads.

Infrastructure Spending by Rural Government Type

	Rural county governments		Rural city governments		Rural township governments		Rural special district governments	
	Total spending (in thousands)	*% of total*	*Total spending (in thousands)*	*% of total*	*Total spending (in thousands)*	*% of total*	*Total spending (in thousands)*	*% of total*
Roads	$624,324,580	84.30%	$360,259,060	19.20%	$149,942,040	83.40%	$13,931,520	2.00%
Water/Sewer	$76,509,640	10.30%	$686,147,460	36.50%	$24,900,220	13.80%	$243,244,160	35.30%
Electric	$22,020,620	3.00%	$735,247,840	39.10%	$4,641,960	2.60%	$336,815,160	48.80%
Gas	$1,857,600	0.30%	$83,138,760	4.40%	$180,180	0.10%	$63,753,500	9.20%
Transit	$15,922,720	2.10%	$15,785,160	0.80%	$143,040	0.10%	$31,811,880	4.60%
TOTAL	$740,635,160	100.00%	$1,880,578,280	100.00%	$179,807,440	100.00%	$689,556,220	100.00%

Source: Census of Governments, 2012

In some states and communities, water, sewer gas and electric utilities are primarily the responsibility of private-sector entities, rather than governmental bodies. In rural areas, just over 50% of infrastructure spending occurs in municipalities, with counties and special districts accounting for another 40%.

Water resources are especially important in rural areas that border rapidly expanding metropolitan areas and are experiencing accelerated population growth. Water resource infrastructure projects, such as the Hard Labor Creek Reservoir in Georgia, are typically quite large, requiring considerable land, as well as expensive dams and water treatment and delivery equipment. To achieve economies of scale, these projects lend themselves to collaboration between cities, counties or groups of counties.

Rural communities may struggle for funding if they are not located near population centers or lack the potential for collaboration with other cities or counties. Most times, the funding of new water systems and treatment facilities is beyond the fiscal abilities of the rural locality. Without the infusion of external grants or funds, the local budgeting process is in "maintenance mode," with officials working to extend the life of the infrastructure beyond its originally engineered useful life.

If a rural community receives an external grant to upgrade facilities, officials lamented that adequate funds are not available to maintain those projects after completion. In some cases, rural communities cannot maintain grant funded, multi-million-dollar infrastructure improvement projects, since it would result in placing an excessive tax burden on the local populace. Rural communities need these infrastructure improvements, yet, without maintenance financing the infrastructure assets degrade faster.

The contrast in these two areas of infrastructure needs—transportation and water—highlights the differences that exist between rural counties that border metropolitan areas and are in the path of population growth, and those that are "very" rural and view their infrastructure needs in terms of supporting the local natural resources economy. Many very rural counties face declining populations, which could result in a declining tax base even as their infrastructure needs remain constant or grow due to gains in agricultural productivity or demand for natural resources, such as oil.

Though best practices are well documented and available through government and trade associations, many rural communities lack the staff and the funding to develop and implement a formal asset management or capital improvement plan. These plans and management practices are required to become eligible to apply for infrastructure grants and programs. Additionally, maintenance comes first. Most officials interviewed in rural areas reported that 75% to 80% of their capital budget goes toward maintenance. A reactive approach is most common, meaning assets are fixed when they break but routine maintenance that would extend the useful life of the asset is not done.

Future considerations to help rural communities may include assistance with basic capital planning, as well as asset management processes and documentation, so that more communities can meet the entry-level requirements to compete for federal and state infrastructure funds.

Infrastructure is expensive; economies of scale can reduce the costs for local governments. Federal and state grant makers can encourage economies of scale and interagency cooperation when structuring incentives in grant programs. Local governments strive to meet the needs of their citizens. Too often, governments only cooperate when there is a recognized mutual benefit, as was the case in Thomasville, Georgia, with broadband, or in Eatonton and Putnam County, Georgia, with water and sewer.

In summary, the research produced the following key findings:

- The large number of organizations with decision-making authority over infrastructure spending may limit economies of scale and efficiencies in the management of infrastructure. Rural areas in New England and the upper Midwest have as many as 58 to 109 different organizations in a county with some decision power over one or more aspects of infrastructure spending.

Infrastructure is expensive. Economies of scale can reduce the costs for local governments.

- In some states, the legal authority of local government to operate certain utilities, such as broadband infrastructure, is limited by state law.
- Rural communities face obstacles not faced by more urban communities, including available funds, limited staff and available expertise. Many rural local governments engage in minimal planning and risk analysis. As a result, a large number of rural communities are reactively addressing their infrastructure needs.
- Best practices exist on how local governments should manage capital assets and infrastructure, but many rural communities have limited human and financial capacity to do so thorough planning and management.
- Federal and state programs do exist to help rural communities with asset planning and some maintenance needs. However, for some rural communities, just doing the planning exceeds their available resources. Ultimately, some of these rural communities cannot apply for some state and federal grants or loan programs because the communities do not have adequate funding to satisfy pre-program guidelines.
- Many rural governments focus their spending on maintaining their existing aging infrastructure, with roads and sewer and water systems being the top priorities. Local officials noted that there are numerous sources of grant funds for capital projects, but few external fund sources for routine maintenance of the assets after completion.

Despite resources on best practices for public infrastructure planning and budgeting, the decision process of many rural communities relies more on staff recommendations and less on quantitative analysis

- Many rural areas across the country have declining populations and potentially shrinking tax bases, limiting the ability for rural governments to finance infrastructure.
- Economies of scale to build and finance infrastructure systems can be achieved through intergovernmental cooperation, such as joint authorities and intergovernmental agreements for sewer and water systems. Incentives from state or federal funders could be used to encourage local collaboration and economies of scale.
- Maintaining roads is a top priority for rural counties. Heavy equipment and loads from the agriculture and mining and extraction industries often disproportionately affect rural roads. In one case, in one rural county with a population of just 14,000 residents, researchers estimated the experienced wear and tear on the county's roads was roughly equivalent to that of 722 million passenger car trips a year.
- Infrastructure projects are often financed by pooling a mix of local, state and federal funds. For smaller localities, local matching funds are often difficult to find in their smaller budgets.
- Locally-elected decision makers tend to rely on their department and agency staff for decision support and less on economic or financial models.
- Decision tools used by rural governments include rating criteria, needs assessment data, funding plans, and financial forecasts.

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