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**Carl Vinson Institute of Government
And
Center for Agribusiness and Economic
Development, College of Agriculture and
Environmental Sciences**

Rank and Selection of Infrastructure Projects: A State and Local Perspective

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USDA and
Farm Foundation
Workshop

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Objectives

- Examine *RURAL* Government Infrastructure Spending
- Focus on Broadband, Water/Sewer and Transportation,
- Understand the Prioritization Process
 - Between Categories of Assets
 - Between New Construction and Maintenance of Existing Assets
- Identify Challenges Unique to Rural Governments
- Offer Suggestions for Federal Involvement

Author's Note: The paper is a working draft



A *VERY* Real Need

- Deteriorating Infrastructure/Significant Deferred Maintenance
- Eroding Tax Base (in many cases)
- Serious Consequences for Rural Communities
 - Attracting New Businesses
 - Supporting Existing Industries
 - Providing Adequate Educational Opportunities
 - Other Connectivity Issues (e.g. Healthcare, Agribusiness)
 - 2015 Menino Survey of Mayors
 - Greatest Concern is Infrastructure
- International City County Management Association
 - 42% Need More Funding Just to Maintain Existing Infrastructure
 - 45% Need Additional Infrastructure
 - 13% Have Infrastructure Sufficient to Meet Current Needs

Sources: 2015 Menino Survey of Mayors, United States Conference of Mayors, 2016; International City/County Management Association, 2016



Methodology

- Qualitative approach
- Literature review of best practices and current conditions
- Subject matter expert interviews
- County level analysis - economic status, population change, labor force participation, and median household income were examined for all contiguous counties in the U.S.
- Interviewed officials from rural counties that experienced positive population growth between 2009 and 2016 based on the assumption that these counties were most likely to be faced with significant infrastructure-spending decisions.

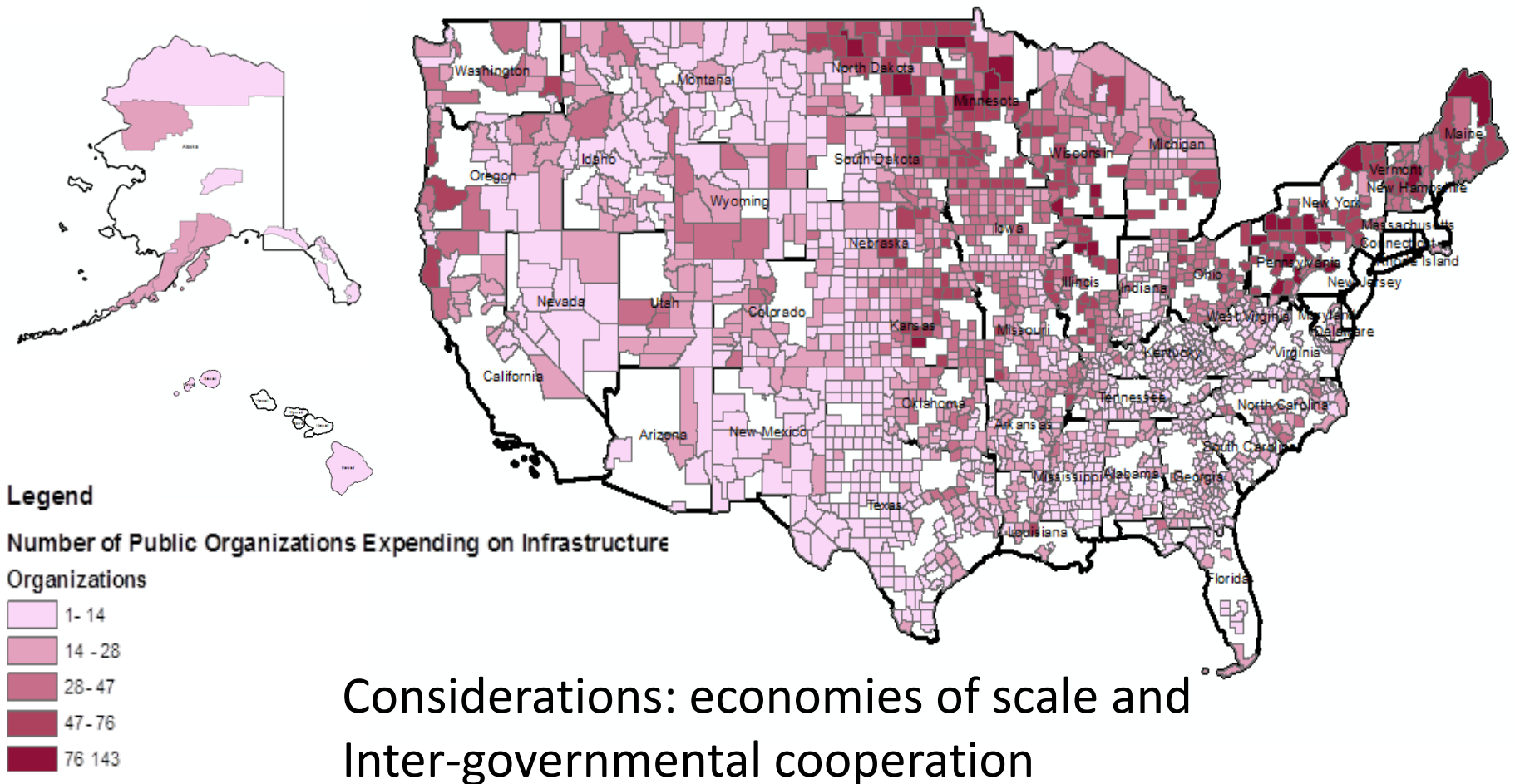


Rural County Interviews

- Interviewed County Managers/Decision Makers.
- 6 counties in Georgia
- Others
- 2 in Texas
- 1 in California
- 1 in N. Dakota
- 1 in Nevada
- 1 in Florida
- 1 in Iowa

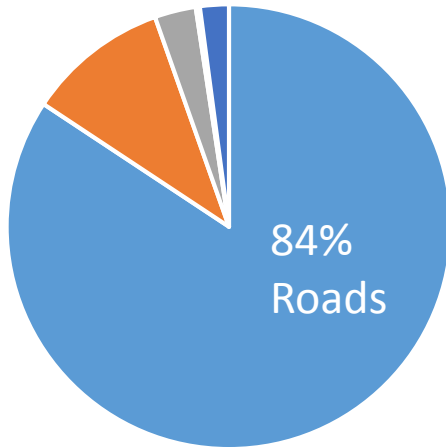


Number of Public Organizations Involved in Infrastructure In Rural Counties



Rural municipalities are focused on water/sewer and electrical service infrastructure and rural counties are focused on roads.

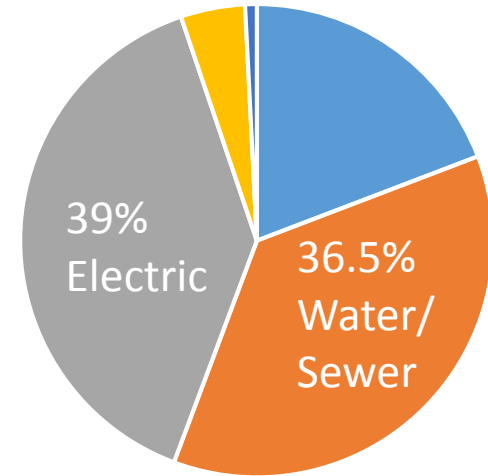
Rural County Governments



■ Roads ■ Water/Sewer ■ Electric ■ Gas ■ Transit

Rural County Governments Spending		
Type	Total Spending (in thousands)	Percent of Grand Total
Roads	\$624,324,580	84.3%
Water/Sewer	\$76,509,640	10.3%
Electric	\$22,020,620	3.0%
Gas	\$1,857,600	0.3%
Transit	\$15,922,720	2.1%
Grand Total	\$740,635,160	100.0%

Rural City Governments



■ Roads ■ Water/Sewer ■ Electric ■ Gas ■ Transit

Rural City Governments Spending		
Type	Total Spending (in thousands)	Percent of Grand Total
Roads	\$360,259,060	19.2%
Water/Sewer	\$686,147,460	36.5%
Electric	\$735,247,840	39.1%
Gas	\$83,138,760	4.4%
Transit	\$15,785,160	0.8%
Grand Total	\$1,880,578,280	100.0%

Source: Census of Governments

Traditional Infrastructure Financing Mechanisms

- General Fund (local tax revenues)
- Impact Fees
- User Fees (Enterprise Fund)
- General Obligation Bond
- Revenue Bonds
- State grant and loan programs
- Federal grant and loan programs



Five innovative financing methods for local infrastructure:

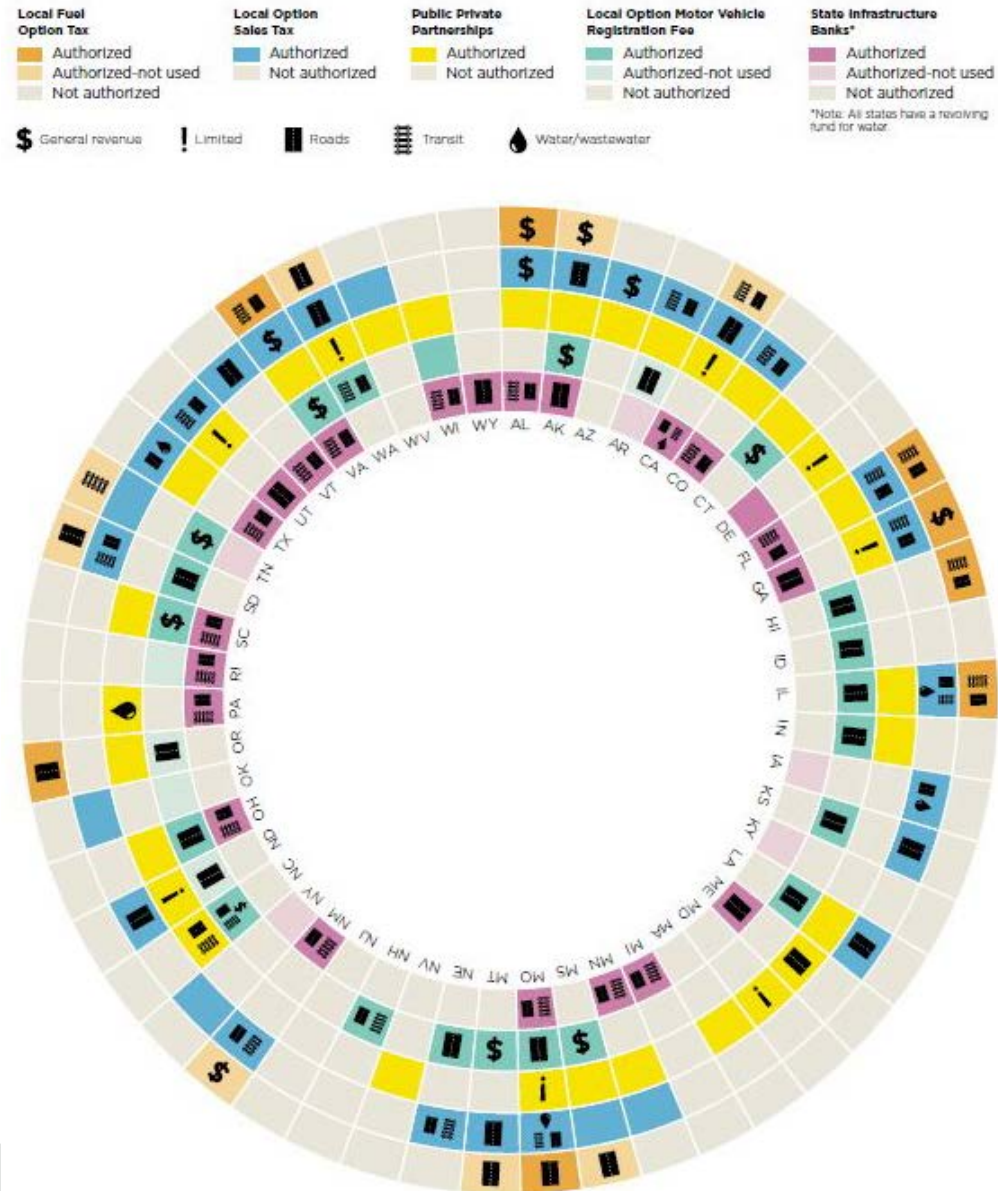
1. Local fuel option tax;
2. Local option sales tax;
3. Public-private partnerships;
4. Local option motor vehicle registration fee; and
5. State infrastructure banks.

3 states authorize all five methods,
7 states authorize four of the five.

18 states, legislatures have not authorized the use of public-private financing options

12 of the 32 states that do authorize public-private partnerships, there are limitations or the partnership is only allowed for road or water projects

Paying for local infrastructure in a new era of federalism



Best Practice

- There are standard plans and documents that are held up as best practices to guide local government rank and selection of infrastructure (ICMA, GFOA).
- The portfolio of plans that guides local infrastructure decision making includes:
 - Local Comprehensive Plan
 - Asset Management Plan
 - Capital Improvement Plan
 - Capital Budget
 - Debt Management Plan



Reality

- Maintenance is the only thing they can afford
- Safety and regulatory compliance comes first; followed by maintenance, and third everything else.
- Some governments can't access state and federal programs because they can't meet the pre-requisites – e.g. planning requirements, matching funds
- Limited funds
- Limited ability to do planning
- Limited in-house expertise

Overwhelming need to maintain what they have - especially in rural areas with little growth or negative growth



Reality - Lots of responsibilities on a small number of people

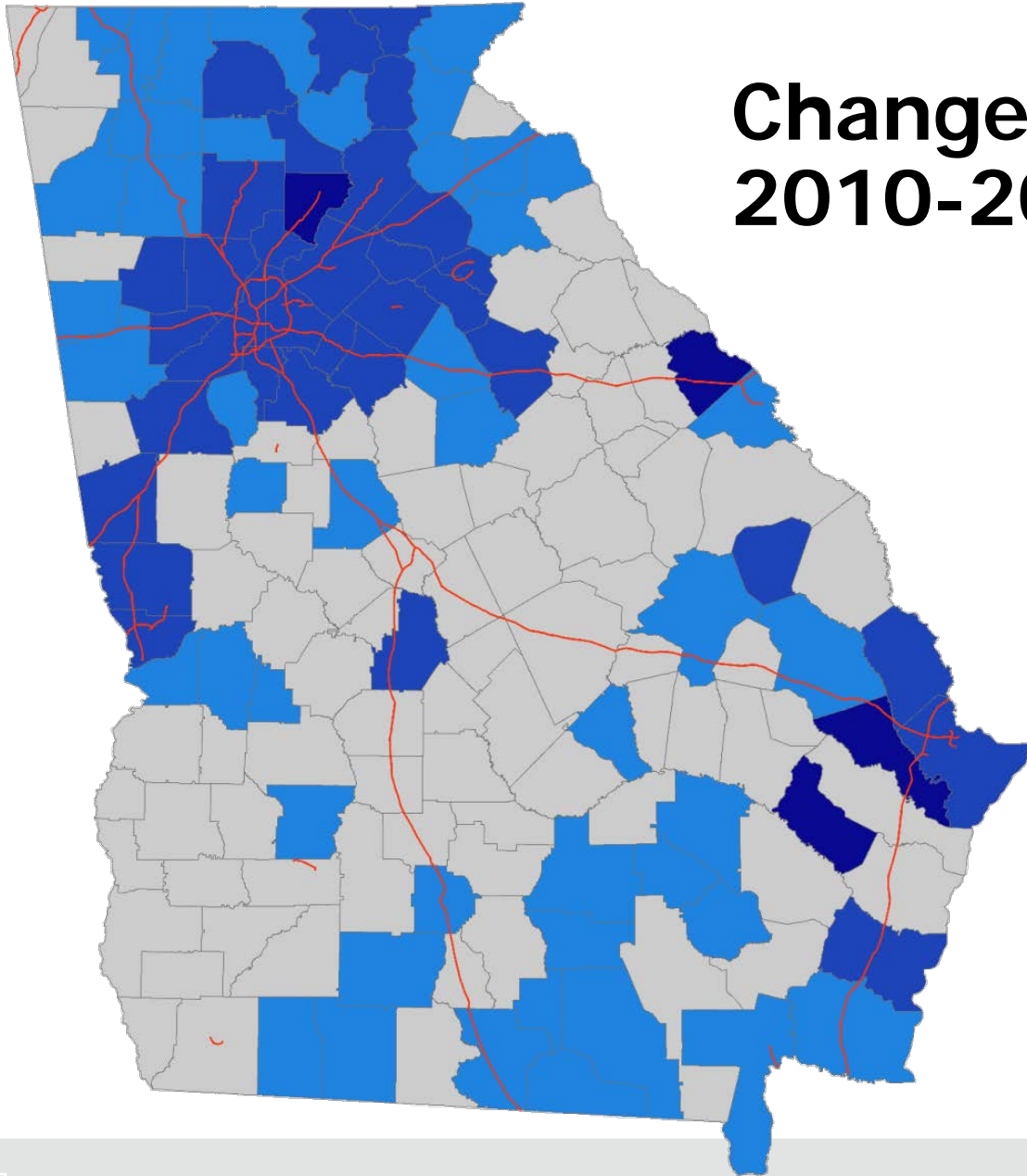


Local Context

Population Trends



Change in Population 2010-2015

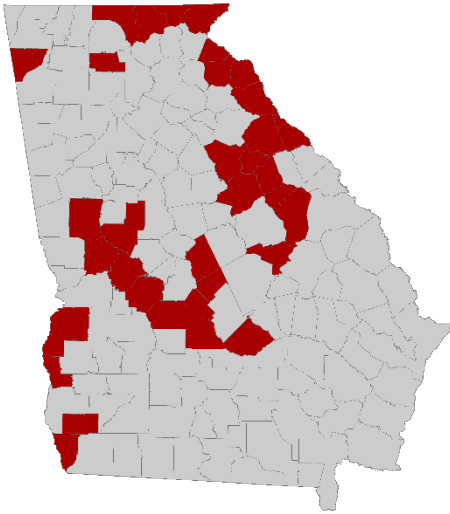


Source: US Census Bureau

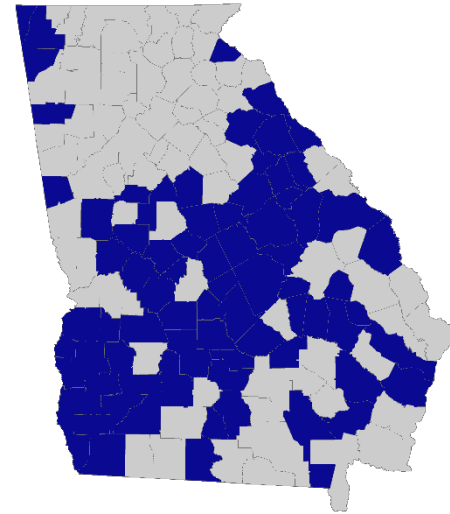


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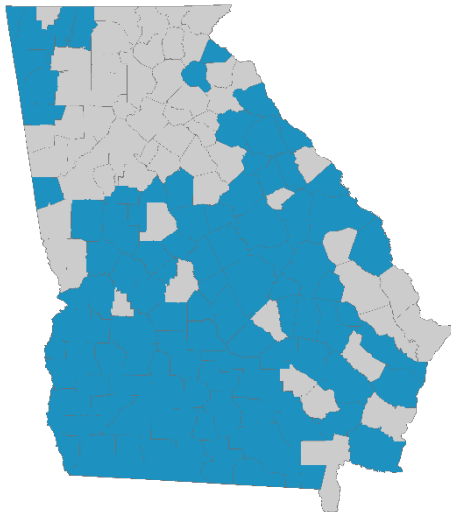
Change in Population, 2010-2015



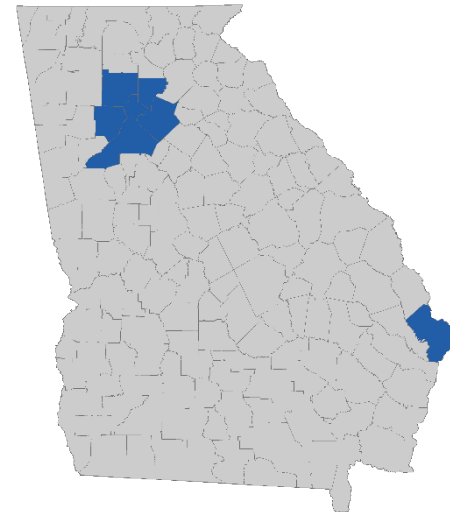
36 counties
have
negative
natural
increase



78
counties
have lost
population
since 2010



99 counties
have
negative net
migration

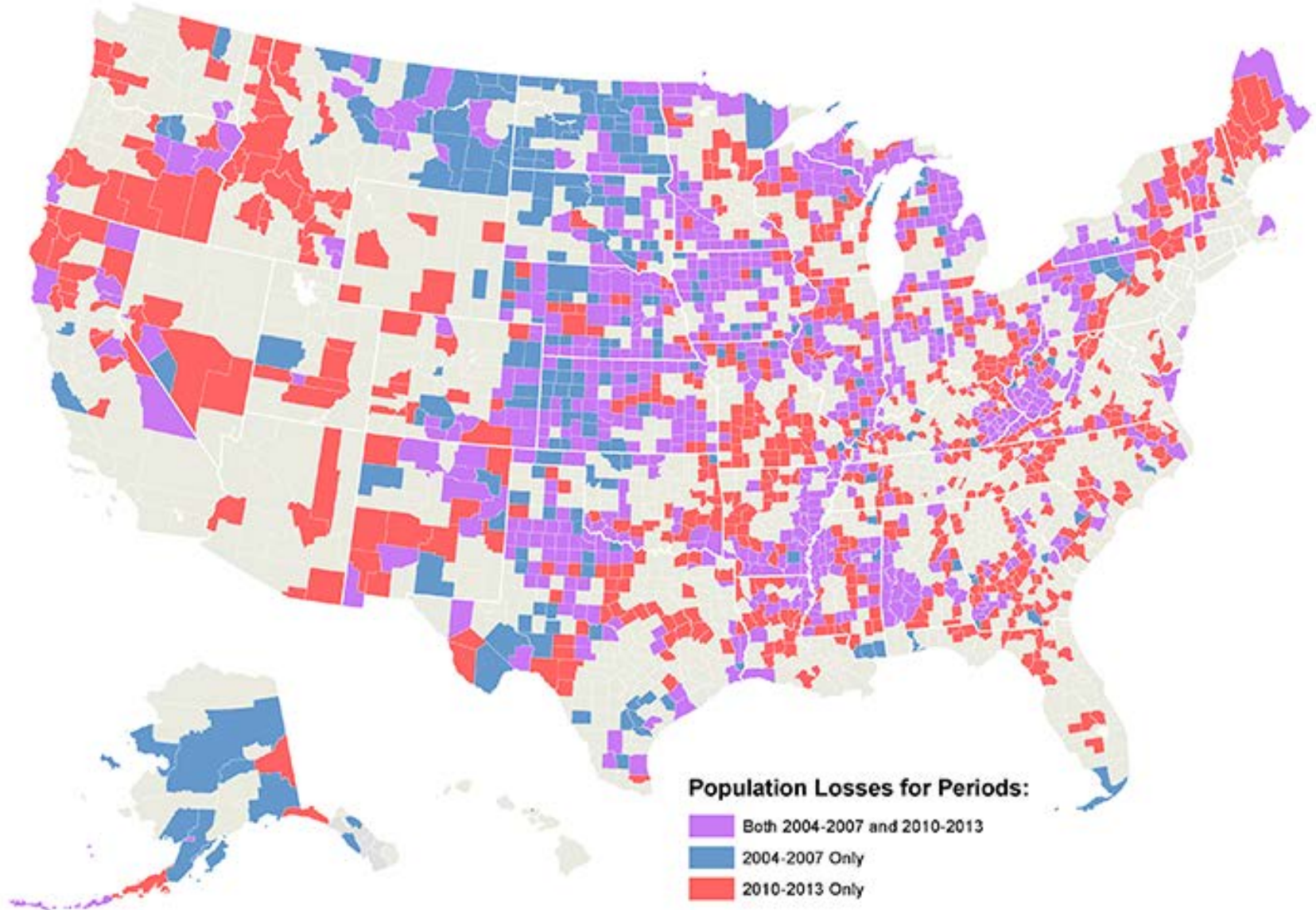


7 counties
account for
2/3 of all
population
growth since
2010



NOT Unique to Georgia

Population Loss Counties, Outside Large Metropolitan Areas, 2004-2007 and 2010-2013



Where are Rural Georgians moving?

Of those who moved
in 2013:

71% moved to an
Urban area in Georgia

23% moved out of
state

7% moved to a Rural
area in Georgia

Top 5 Destinations?

Fulton County (11%)

DeKalb County (9%)

Gwinnett County (7%)

Cobb County (7%)

Clayton County (4%)

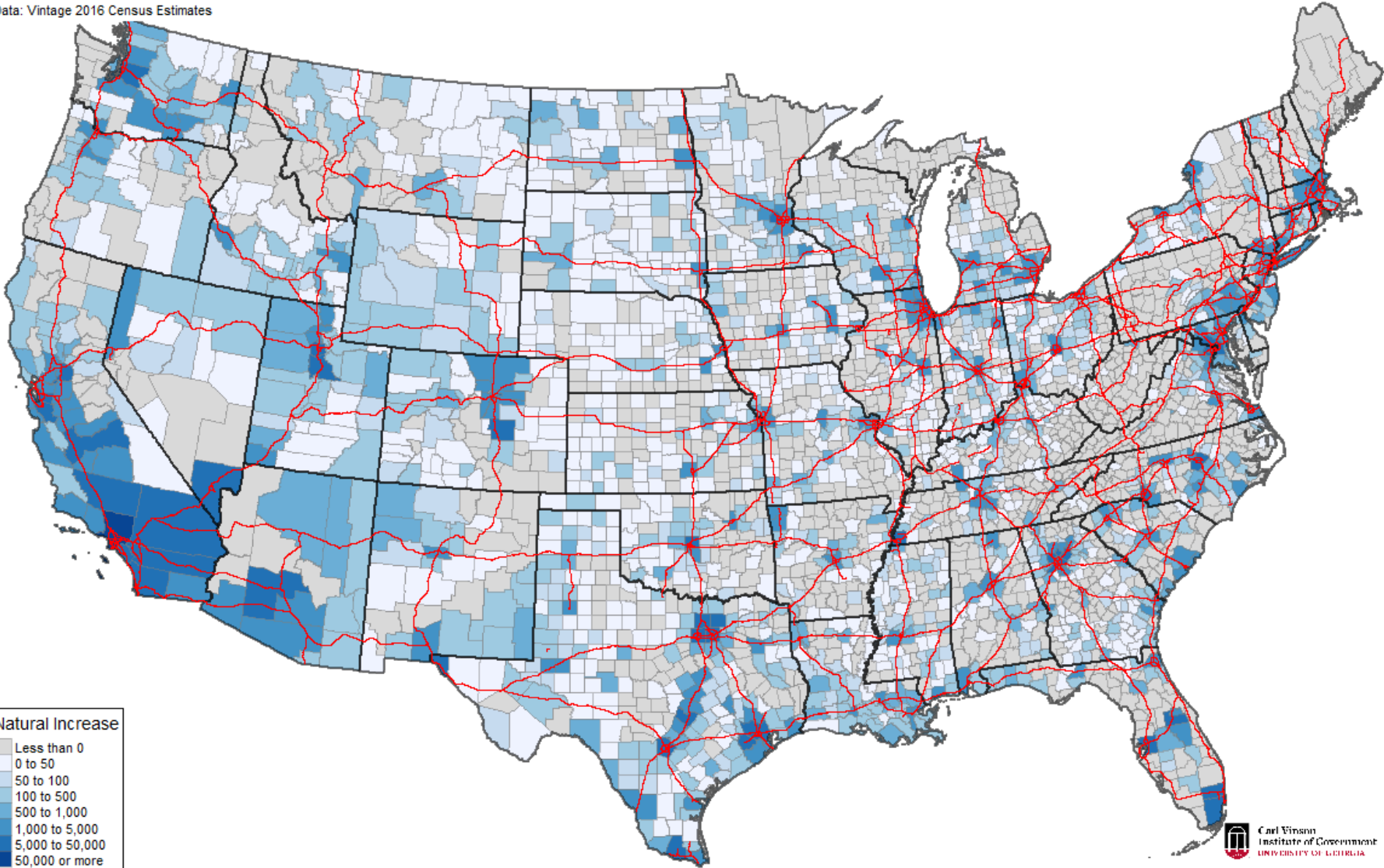
Destinations of 38% of all
Rural Georgians

Source: IRS Migration Data



Natural Increase, 2015- 2016

Data: Vintage 2016 Census Estimates

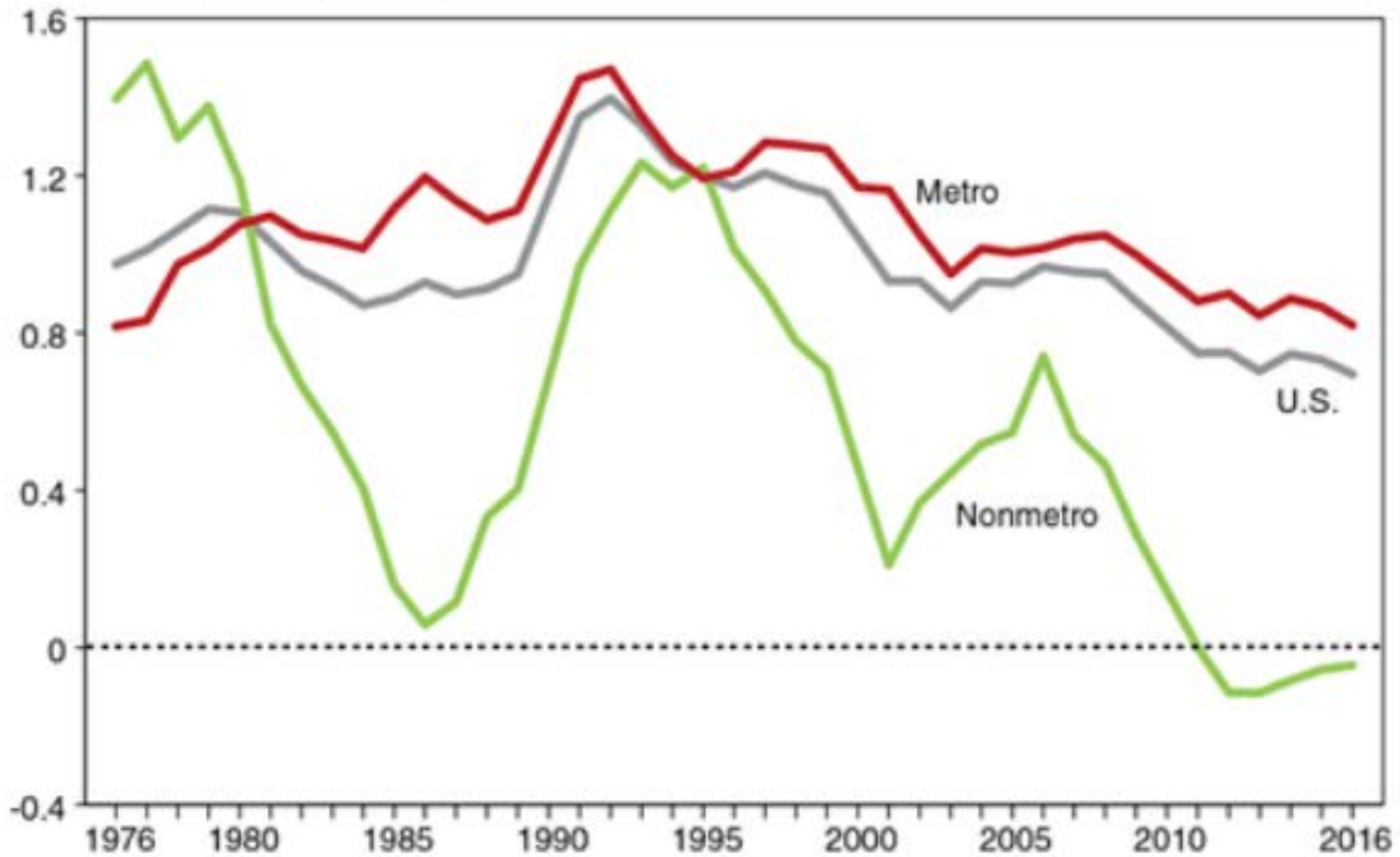


Natural Increase

- Less than 0
- 0 to 50
- 50 to 100
- 100 to 500
- 500 to 1,000
- 1,000 to 5,000
- 5,000 to 50,000
- 50,000 or more

Nonmetro population loss continues for sixth year

Percent change from previous year



Note: Metro status changed for some counties in 1980, 1990, 2000, and 2010.

Source: USDA, Economic Research Service using data from the U.S. Census Bureau.



Local Priorities



Sewer and water



Jails and Public Safety



Roads



Broadband – often not listed as a local priority (Maybe because some can't do it by statute, others may see it as a state or federal priority)

Decision Process

Best Case

- Needs Assessment
- Capital improvement plan
- Public input and support
- Revenue forecast and identification of funding options
- Capital budget
- Scheduled list of projects –
 - Maintenance,
 - Replacement (useful life)
 - New/Expansion

Our Findings

- “What has to be fixed or else we can’t function(high risk)?”
- “What will break soon that we have to make sure we can fix?”
- “What funds can I pool to finance this project?”



Rural Communities Face Obstacles Not Faced by Less Rural Communities

- Rural communities face larger hurdles and have less funding and flexibility to respond to failures.
- Rural communities do not have the same ability as larger governments to issue bonds, and for this reason, they have issues funding large infrastructure projects and performing necessary maintenance (Gomez, 2015).
- They also do not have experts on staff to design and inventory assets and, to do so, must face the costs of consultants.
- Additionally, this lack of human capital can make rural communities ineligible for some grants and loans due to a lack of required capacity: technical, financial, and managerial (Gomez, 2015)



Rural Infrastructure Spending

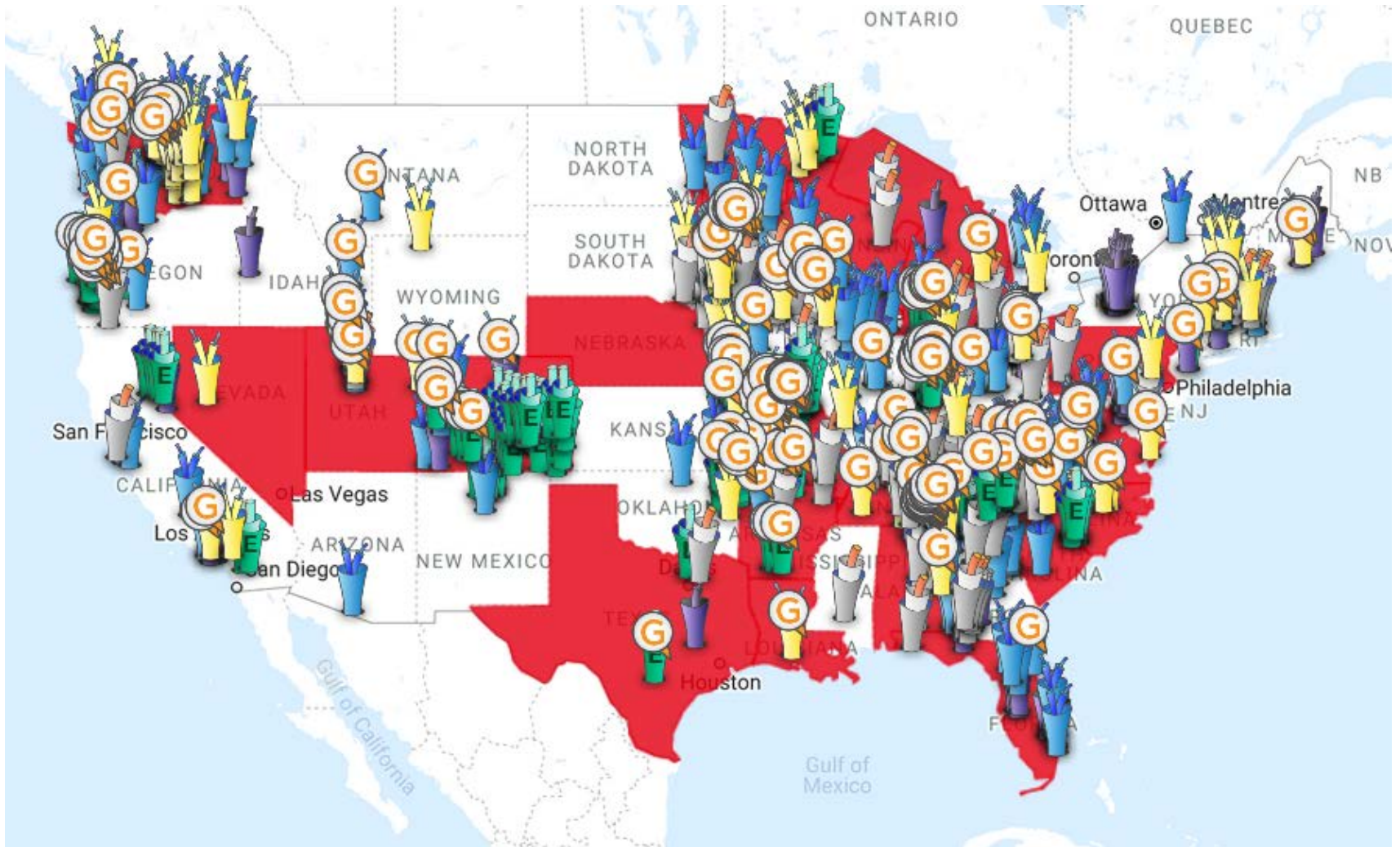
- Rural counties also utilize wells and septic tanks as the populations are dispersed and sparsely populated.
- Some locations rely on private entities to provide utilities.



Case Studies



Broadband



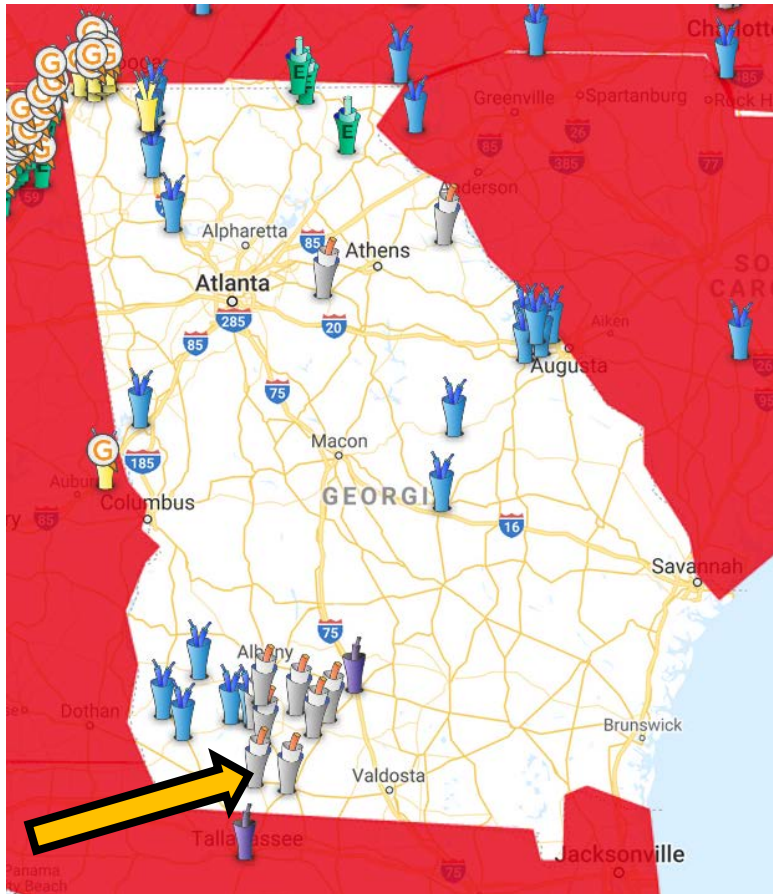
<https://muninetworks.org/communitymap>



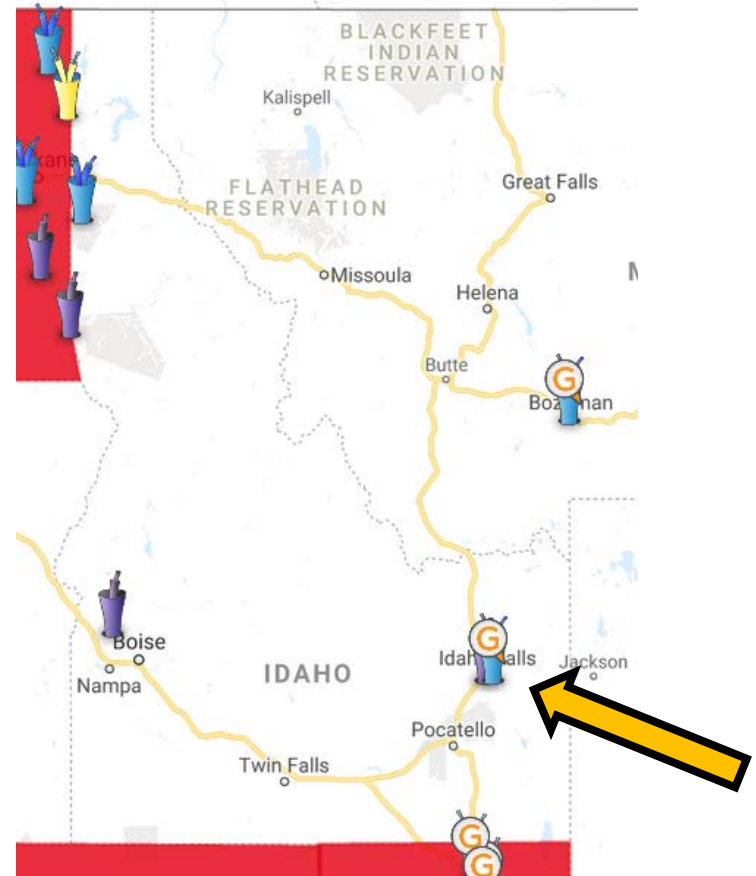
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Broadband

Thomasville, GA



Ammon, ID



Broadband – Lessons Learned

- Sustained leadership and vision
- Public support
- Built on their municipal utility know how
- Collaboration for economies of scale
- Cost analysis – municipal run vs private sector
- Solutions are unique to the area served



Sewer and Water

Water and Sewer

- Water infrastructure is essential for economic development, and disruptions to water services can be detrimental to local economies. However, many water systems in the U.S. are on the verge of failure due to deterioration and deferred maintenance.
- Small and rural communities contain over 80% of the water systems in the nation, and account for about \$64.5 billion in the total need over the next 20 years for drinking water infrastructure alone (U.S. Environmental Protection Agency, 2013).



Sewer and Water

Future Needs

- The largest area of need for water infrastructure, at \$247.5 billion over the next 20 years, is transmission and distribution.
- These costs are associated with the maintenance need for water mains (U.S. Environmental Protection Agency, 2013).
- By 2040, about one third of all water mains within the U.S. will need to be replaced (Quinn, e.t. all, 2017).



Sewer and Water



- Collaboration
- State funding priorities (GEFA)
 - Regulatory compliance (health and safety)
 - Maintenance/Replace
 - Economic development opportunities
 - Growth
- State evaluation
 - Project readiness
 - Financial Risk – can the municipality afford the loan and how much debt can the municipality can afford

Sewer and Water

GEFA Considerations

Factors that GEFA considers include:

- Median household income;
- Unemployment;
- Population on fixed incomes;
- Population over age 65;
- Percent of personal income from transfer payments; and
- Population trend (GEFA, 2018).



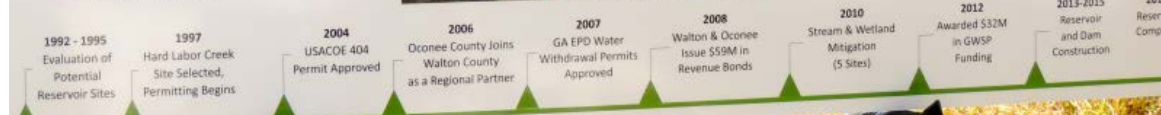
Sewer and Water

Economies of Scale through Cooperation



Reservoir Fast Facts

- Normal Pool Area: 1,367 Acres
- Reservoir Storage Volume: 12 Billion Gallons
- Depth at Dam: 82 Feet
- Water Supply Yield: 52 MGD (Monthly Average)
- Regional Partnership:
 - Walton: 71.2%
 - Oconee: 28.8%
- Raw Water Diversion From Apalachee River
- Provides Sustainable Water Supply for Walton and Oconee Thru 2050
- Recreational Opportunities:
 - Boating, Fishing
 - Electric Motors Only
- Visit the Hard Labor Creek Website:
 - www.hardlaborcreek.com



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Sewer and Water

Rural Counties Water Infrastructure

- Water and sewer tends to be a municipal service
- Assuming the nature of these rural counties, it is possible to expect that many locations relied on well and septic tank systems to handle their water and sewer needs.
- If needed for a large project, counties were able to work with municipalities to tie into their systems.
- Economies of scale can be achieved through cooperation – e.g. joint authorities and intergovernmental agreements



Rural County Transportation



Rural County Transportation



Rural County Transportation

**Bakken shale fracking traffic
on the rural roads of North
Dakota**

Image source: <http://frack-off.org.uk/faq/how-could-the-weald-be-affected-by-fracking/>



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Rural Counties and Transportation

- In sharp contrast to the more diversified economic base of large cities, the economies of rural areas are predominately resource-based.
- Agriculture, mining, and other forms of resource extraction (oil and natural gas, for example) are highly dependent on roads to transport inputs to production and finished products.
- Farming requires transportation of both inputs such as seed, fertilizer, animal feed, and fuel into rural areas as well as transportation of crops from the farm to urbanized areas for consumption or further processing.
- The mining and extraction industries, likewise, require efficient transportation systems to move raw products to processing and refining plants.



Rural Counties and Transportation

Findings

- Quite a few of the public officials from very rural areas explained that local citizens depend on private wells and septic tanks for water and waste disposal, and have little expectation of broadband service, but depend quite heavily on roads for their livelihood.
- They also noted that their infrastructure budgets were largely consumed by road and bridge maintenance.



Rural Counties and Transportation

Infrastructure Spending

- In both instances, the counties believe that having a good road system is vital to their communities.
- One county manager mentioned that they have 7,000 miles of roads to maintain, as well as cutting the right of ways and striping. This accounts for 90% of their infrastructure budget.



Rural Counties and Transportation

- Macon County, Georgia, is a rural county in the southwest part of the state. Like many of Georgia's rural counties, its economy is largely agriculture-based, with a total annual farm gate value of roughly \$250 million.
- Primary cash crops include turfgrass, poultry, milk, corn, cotton, soybeans, and peanuts.



Rural Counties and Transportation

Denied Grant Resources

- When several applications for U.S. Department of Transportation grants had been turned down based on the county's small, and dwindling, population of around 14,000 residents, county officials decided to take a different approach in establishing the need for road maintenance funding.



Rural Counties and Transportation

Road Wear and Tear

- The number of tractor trailer trips required to support the county's agriculture industry were estimated. This number included estimates of the number of truckloads of turf grass shipped outside the county, truckloads of poultry feed for broilers and layers moving into the county, as well as loads of chickens and eggs moving out, tanker loads of milk from local dairy farms, and the truck loads of feed hauled in to feed those dairy cows.
- Tractor trailer loads of cotton, corn, soybeans, peanuts, peaches, pecans, blueberries, and strawberries were also estimated. In total, it was estimated that more than 100,000 tractor trailer trips were made into, and out of, Macon County each year as the direct result of agricultural production



Rural Counties and Transportation

Why is this significant?

Based on conversion factors published by the Government Accountability Office (GAO, 1979) it was determined that Macon County, with a population of a mere 14,000 residents, experienced wear and tear on its roads that was roughly equivalent to that of 722 million passenger car trips a year



Observations

- Best practice vs reality
- Infrastructure projects are often financed by pooling a mix for local, state, federal funds. Matching funds are hard to find.
- Capacity to do some of the capital budgeting fundamentals is lacking
- Needs assessments and asset management plans are key inputs in the decision process, but often most neglected
- Decision tools are usually not very sophisticated – rating criteria, needs assessment data, funding plan, financial forecast
- Locally elected decision makers rely on their department and agency staff for decision support
- Some infrastructure options are limited by state statute
- Incentives from state or federal funders can encourage local collaboration
- Population Growth and Local Tax Base Issues Will Have a Significant Impact of Rural Infrastructure Spending Going Forward



Opportunities

- State and federal actors can incentivize local cooperative/collaborative infrastructure projects
- Assist local governments with developing and maintaining CIP, asset management, and other capital budgeting plans
- Encourage more collaborative efforts across governments (Economies of scale)
- Consider a 5 to 10 year maintenance cost projection as a required element for all grant and loan programs for new projects
- Streamline and standardize federal application requirements (2015 GAO study)
- Consider phased grants: Planning grant, then Implementation grant



Further Research

- Interview municipalities in counties already studied
- Identify innovative ways to assist rural local governments with needs assessment and capital improvement plans (pre-requisites)
- Research the impact of aging and declining populations on local government capital budgets and debt management plans

