

Strategies for Economic Improvement in Appalachia's Distressed Rural Counties

An analysis of ten distressed and formerly distressed Appalachian counties



APPALACHIAN
REGIONAL
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On the cover:

Background photo: View of the North Fork Valley landscape from the top of Nelson Rocks Recreation Preserve in Pendleton County, West Virginia. *(Photo courtesy of Nelson Rocks Outdoor Center)*

Foreground photos, left to right: An American flag outside a historic building in downtown McConnellsville, Ohio *(photo by Eric Ogle)*; a group of people crossing a sky bridge as part of the canopy tour at Nelson Rocks Outdoor Center near Circleville, West Virginia *(photo courtesy of Nelson Rocks Outdoor Center)*; a worker at a new factory expansion in Waynesburg, Pennsylvania *(photo courtesy of the Greene County Chamber of Commerce)*; hand-crafted storefront sign on a sidewalk in downtown Mountain City, Tennessee *(photo by Tim Ezzell)*.

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An analysis of ten distressed and formerly distressed Appalachian counties

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This project was based upon a simple premise: In order to truly understand the challenges of Appalachian communities one must visit the region and talk with the people. To that end, the project team from the University of Tennessee traveled over two thousand miles to visit ten case study communities in eight states. Along the way we met and held discussions with over 100 community leaders, ranging from elected officials to community volunteers, health care workers to youth educators, bank presidents to small business owners, hourly workers to retirees, and even a parish priest.

During our travels and discussions, we witnessed firsthand the paradox that often defines Appalachia: the region is one of great beauty and a wealth of resources, yet remains burdened with pockets of poverty and privation. We also noted the vast gains made by the region in the past half century and remain optimistic that Appalachia will reach its just potential.

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Tim Ezzell, Ph.D.

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Executive Summary

This report provides an understanding of the challenges confronting economic and community development efforts in rural Appalachian communities and explains the ways local governments, agencies, and community organizations plan and respond to challenging issues. The authors of this report examined ten representative case study counties, which were selected using a number of criteria, including economic performance, location, infrastructure investment, and demographic factors. The ten project counties are:

- Greene County, Pennsylvania
- Morgan County, Ohio
- Pendleton County, West Virginia
- Calhoun County, West Virginia
- Pike County, Kentucky
- Bell County, Kentucky
- Avery County, North Carolina
- Johnson County, Tennessee
- Lawrence County, Alabama
- Noxubee County, Mississippi

Each county was evaluated using both econometric and qualitative approaches. The counties were assessed using an economic modeling process, and county stakeholders were surveyed to learn more about local strengths, weaknesses, and perceptions. Project staff visited each community, met with local officials, and facilitated discussions with a wide range of community stakeholders. The results of this approach reveal much about local development efforts and the obstacles confronting rural and low-resource communities.

Regional and large-scale development strategies appear to have a mixed impact at the local level. Some communities have clearly benefitted from regional approaches. Lawrence County, Alabama, for example, can attribute much of its transformation to aerospace investments in nearby Huntsville and Decatur. Likewise, Pike County, Kentucky, can attribute its transformation to the county's designation as an ARC Growth Center. In many other cases, however, regional strategies appear to have had little effect. Local leaders and stakeholders are often, in fact, oblivious to such regional efforts. Local development programs are, in many cases, *ad hoc* initiatives perceived and conducted independent of any larger strategy. In some cases regional development efforts are even seen as a detriment to local growth, as they may siphon jobs, residents and resources away from smaller communities.

Location, not surprisingly, is a significant factor in determining economic status. Counties located closer to urban areas, major transportation corridors, or supplies of natural resources generally perform better than those in more rural areas with few resources. Yet, transportation improvement strategies appear to yield mixed results. While road enhancements can certainly improve local access and reduce isolation, they are far from being a panacea for economic distress and can often bring unintended consequences.

Although transportation-focused efforts encourage business development in some areas, they often have a negative impact on the vitality of downtown areas, existing business districts and adjacent neighborhoods. While better roads improve access and can reduce isolation, they cannot by themselves transform failing schools or resolve long-standing community conflicts. The limits of transportation improvements must be recognized, and such strategies are most effective in conjunction with other location-specific reforms.

For the most part, Local Development Districts (LDDs) in each state appear to be strong and effective community partners. In general, LDDs do an effective job of providing assistance and resources to local governments. In some cases, however, LDDs appear to fall short. Some LDDs appear overly politicized or favor more prosperous communities. In other cases the agencies fail to offer needed services or lack the capacity to address important needs. Further research is needed to assess the extent of these issues and examine possible improvements to this important system.

Not surprisingly, a strong correlation exists between educational attainment and economic performance. Investments in education are thus a critical element in any economic development strategy. The gains made by Morgan County, Ohio, are particularly impressive and their school-centered approach is especially noteworthy. Also, several communities exhibit direct benefits from collaborative relationships with higher education institutions. Local development efforts should be made in concert with local and regional colleges and universities for reasons ranging from educating and retaining local youth, to having access to research and expert-level advice and planning for community organizations and the issues they face.

Coal and other energy resources found in Appalachia remain an important economic mainstay and are an essential element of the nation's energy portfolio. Overreliance on the coal industry, however, is a serious issue. This is particularly true in the Central Appalachian subregion, where the culture of coal conflicts with the need for long-term economic diversification and sustainability. While progress in this area is acknowledged in this report, more should be done to help communities prepare for likely changes in the nation's twenty-first century energy profile.

This report shows a significant need for improved communications infrastructure, especially Internet access. Every community in this study reported issues with broadband and mobile communications, which present significant barriers to local development opportunities and public safety. The issue was most prevalent, as one might expect, in the poorer and more rural areas. Notable exceptions to this trend are the two counties in Kentucky, where these counties enjoy above average business and residential Internet access, and their state's approach serves as a model for the entire region.

Economic development efforts throughout Appalachia continue to be stymied by persistent social barriers and antiquated beliefs and customs. Fear of change, aversion to risk, and outmoded racial perceptions are among the cultural barriers noted in this study. Alcohol restrictions, including "dry" county laws remain in place, and serve only to deprive some areas of much-needed tax revenues and deter tourism growth.

Finally, this report offers recommendations to help address identified issues and to help promote current and emerging best practices. The recommendations reflect findings from the ten case study communities and include many observations and concerns expressed by local leaders and stakeholders:

- The ARC should encourage a dialog among regional communities and create opportunities for shared learning and the exchange of ideas.
- The ARC should evaluate the existing LDD network, assess its effectiveness, and develop new and uniform performance standards.
- Local and county governments should form strong partnerships with academic institutions. State and federal agencies, including the ARC, should encourage and promote these endeavors.

- Communities and agencies at all levels of government should make rural broadband access a priority. States should consider Kentucky a model for the development of digital infrastructure.
- Communities should develop youth leadership programs and encourage youth participation in entrepreneurship, college mentoring, and planning projects.
- Small counties should consider shared government services and combined marketing and development programs.
- ARC should assist counties with the redevelopment, repurposing, or adaptive reuse of vacant industrial sites and underutilized industrial parks.
- Small remote counties should focus on strategies that grow local jobs through entrepreneurship, education and training, and the leveraging of local assets.
- As infrastructure improves, more resources should be devoted to education, leadership development, and entrepreneurship programs.
- Communities should make use of social media networks to promote their communities, develop tourism, encourage local buying, build a sense of community, and increase government efficiency and transparency.
- Outmoded racial beliefs and policies undermine the region's competitiveness. Counties and agencies, including ARC, should do more to promote racial diversity and tolerance throughout the region.
- As Appalachian counties expand their tourism industries, they must also devote additional resources to marketing, training, and the development of hospitality services.

Summary of Best Practices

During visits and discussions with each of the ten Appalachian counties included in this report, several extraordinary examples of innovative local programs and partnerships for community and economic development were identified. Such outstanding examples are summarized below with further detail of each best practice provided in each county's respective county profile in Chapter 4 of this report.

Small Business Development

Avery County, North Carolina

The State of North Carolina leads the region in small business development, and as such Avery County was clearly the leader in entrepreneurship and business development among the ten study counties. A wide range of resources are available to entrepreneurs, including assistance developing business plans, business management training, and even affordable business loans. Of particular interest are programs at North Carolina community colleges and the loan program managed by the MAY coalition.

Contact Tommy Burlison, Avery Co. Economic Development Commission (avery.edc@ncmail.net); 828-733-8208

Incubator

Morgan County, Ohio

Morgan County's incubator project addresses local concerns related to economic development, educational attainment, workforce development, youth retention, and entrepreneurship. The vision for the facility, currently under phased development and construction, intends to link students in secondary school STEM (Science, Technology, Engineering, and Mathematics) and vocational training programs to develop new local innovations and business ventures. Particularly commendable are efforts to engage youth and encourage "cross pollination" of ideas between traditional and emerging technology students, encouraging youth with both college-bound and vocational interests to work and learn together.

Contact Mike Workman, Morgan County Improvement Corp (workmanwod@embarqmail.com); 740-962-6772

Health Care Access

Pendleton County, West Virginia

Calhoun County, West Virginia

Pike County, Kentucky

Access to health care is a vital issue for rural communities. Health care facilities not only improve the quality of life, they provide jobs and much-needed economic activity. Three counties stand out for their health care initiatives. Pendleton County's sliding scale clinic provides affordable health and dental care and helps the rural county remain among the healthiest in the state. Calhoun County, despite its isolated location and economic distress, has maintained a local hospital to serve its population. Pike County is noted for developing health care into an important local industry.

Contact Michael Judy, Executive Director of Pendleton Community Care; 304-358-2355
Bob Weaver, Calhoun County Commission Chairman (bob@hurherald.com); 304-354-6725
Juanita Deskins, COO, Pikeville Medical Center (juanita.deskins@pikevillehospital.org); 606-218-3565

Tourism Development – Visitor Centers

Morgan County, Ohio

Tourism was identified as a significant growth area by most study communities and visitor centers are an important resource to direct visitors to local businesses and raise awareness of local attractions. Visitor centers are also a central source of information to help residents stay informed of regional and local events. Morgan County's visitor center, located in the heart of downtown McConnelsville, is an outstanding example with a central location, accessible parking, a wide range of brochures, guides, and maps, and a helpful and well-trained staff.

Contact Amy Grove, Morgan County Chamber of Commerce (grove.68@osu.edu); 740-962-3200

Tourism Development – Adventure Tourism

*Bell County, Kentucky
Pendleton County, West Virginia*

Adventure tourism appears to be one of the fastest growing asset-based development segments in the region. Bell County is a leader in this field, with successful off-road vehicle trails, whitewater rafting, and other outdoor activities that take advantage of their mountainous terrain. Successful partnerships with state government, local businesses and nonprofits, and significant industry investments have played a major role in the county's success. Pendleton County is also showing leadership in this field, leveraging the county's unique rock-climbing sites in the county to promote tourism and attract new manufacturers and jobs complementary to the rock-climbing industry.

Contact Liz Warner, Pendleton County Chamber of Commerce (pendletoncoc@verizon.net); 304-358-3884
Alby Brock, Bell County Judge Executive (brock@bcje.com); 606-337-3076

Broadband Deployment

*Pike County, Kentucky
Bell County, Kentucky*

A common constraint for Appalachian counties is the lack of modern communications infrastructure, both mobile communications and Internet access. The exceptions in this study are the two Kentucky counties, where the level of Internet connectivity and broadband performance is largely due to ConnectKentucky, a statewide initiative to extend broadband access to all parts of the state. ConnectKentucky has been so successful that it has become a national public-private model, and led to the creation of Connected Nation, a organization currently active in 22 states and Puerto Rico.

Contact René True, ConnectKentucky, Executive Director (rtrue@connectky.org); 866-923-7501

Higher Education Partnerships	<i>Multiple Counties</i>
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Several counties in this study benefit from strong partnerships with academic institutions. Colleges and universities bring innovation, energy and capacity to counties in need of affordable assistance. While each of the ten counties in this study have ongoing programs with their state land grant institution, the most notable of these partnerships – each with a specific local focus – were found in these counties

Downtown Revitalization	Waynesburg University	<i>Greene County, Pennsylvania</i>
Contact	Bruce Werminger, Waynesburg Planning Commission (wbgboro@windstream.net); 724-852-5210	
Economic Development	Ohio University	<i>Morgan County, Ohio</i>
Food Access	Ohio State University	
Contact	Amy Grove, Ohio State Extension for Morgan County (grove.68@osu.edu); 740-962-4854 Jeff Shaner, Morgan County Extension Director (morg@postoffice.ag.ohio-state.edu); 740-350-8385	
Energy Research	Pikeville University	<i>Pike County, Kentucky</i>
Health Care Access		
Contact	Wayne T. Rutherford, Pike County Judge Executive (wayne@judgerutherford.com); 606-432-6247	
Small Business Development	Appalachian State University	<i>Avery County, North Carolina</i>
Nonprofit Support	Lees-McCrae College	
Workforce Development	Mayland Community College	
Contact	Tommy Burlison, Director of Avery County EDC (avery.planning@averycountync.gov); 828-733-8208 Bill Weeks, Director of MAY Coalition (mayloan@bellsouth.net); 828-765-8880 Rick Garrett, Dean of Mayland Community College (rgarrett@mayland.edu); 828-733-5883	
Youth Retention	Auburn University	<i>Lawrence County, Alabama</i>
Leadership Development		
Contact	Linda Robinson, Lawrence County Extension Coordinator (robinlh@aces.edu); 256-974-2464	

Social Networking	<i>Greene County, Pennsylvania Noxubee County, Mississippi</i>
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Communities increasingly recognize the importance of marketing themselves on the Internet and with social networking sites, such as Facebook, in promoting economic and community development. Greene County uses multiple Facebook pages to extensively assist downtown businesses, increase tourism, and improve communication with the community. Likewise, Noxubee County has established a Facebook presence that could serve as a model for other distressed rural counties.

Contact	Pam Snyder, Greene County Commission Chair (psnyder@co.greene.pa.us); 724-852-5210 Brad Moore, Noxubee County ECD Alliance (noxubeems@yahoo.com); 662-729-2603	
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Downtown Redevelopment	<i>Multiple Counties</i>
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Only two percent of survey respondents rated their local downtown area as “excellent.” The majority of respondents (54%) consider their local downtown as “fair,” but one-fourth classified their downtown as “poor.” A number of factors contribute to this decline, including changing transportation patterns and a shifting retail landscape. Not surprising, communities are taking steps to revitalize their downtown. Two trends in the study counties are especially noteworthy – theater renovations and buy-local campaigns. Buy-local efforts were found in several communities and show promise, and three communities have renovated performance venues. These improved facilities attract visitors, increase community pride and improve the local quality of life.

Downtown revitalization through strong partnership with Waynesburg University	<i>Greene County (Waynesburg), Pennsylvania</i>
Contact	Bruce Wermlinger, Waynesburg Borough Manager (wbgboro@windstream.net); 724-627-8111
Twin City Opera House and Buy-Local Campaign	<i>Morgan County (McConnelsville), Ohio</i>
Contact	Amy Grove, Morgan County Chamber of Commerce (grove.68@osu.edu); 740-962-3200
Buy-Local Campaign	<i>Pendleton County (Franklin), West Virginia</i>
Contact	Liz Warner, Pendleton County Chamber of Commerce (pendletoncoc@verizon.net); 304-358-3884
Bell Theater Renovation	<i>Bell County (Pineville), Kentucky</i>
Contact	Rob Lincks, Director, Bell County Chamber (chamber@bellcountychamber.com); 606-248-1075
Heritage Hall Theater Project	<i>Johnson County (Mountain City), Tennessee</i>
Contact	Karla Prudhomme, Director, Johnson County Chamber (prudhommerk@aol.com); 423-202-4386

Alternative Energy	<i>Pike County, Kentucky</i>
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Pike County has long been known as the epicenter of the Kentucky Coal Belt. The county is building on its heritage as an energy producer to become “America’s Energy Capital.” As part of this strategy, the community is engaged in energy research into emerging technologies and alternative and renewable sources. To promote this effort, local leaders have developed partnerships with a number of colleges and universities and Oak Ridge National Laboratory. This work promises to help the county adapt during the coal transition and retain its role as a center of energy production.

Contact	Charles Carlton, Director of Energy (ccarlton@americasenergycapital.com); 606-213-1041
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Youth Retention		Multiple Counties
<p>Youth retention is an important issue in every rural community. Young people in isolated areas often lack opportunities for recreation or career development and many move away once they reach adulthood. This phenomenon is especially prevalent among high achieving youth. In response, communities are trying a number of strategies to combat this "brain drain." Pendleton County improved recreational opportunities by constructing a bowling alley, Bell County is focusing on youth leadership development, and Lawrence County is promoting the development of agricultural careers. Most ambitious are efforts of Morgan County, where officials are integrating youth development into their business development strategy.</p>		
Business Incubator and Vocational Training Facility		<i>Morgan County, Ohio</i>
Contact	Mike Workman, Morgan County Improvement Corp (workmanwod@embarqmail.com); 740-962-6772	
Community Bowling Alley		<i>Pendleton County, West Virginia</i>
Contact	Liz Warner, Pendleton County Chamber of Commerce (pendletoncoc@verizon.net); 304-358-3884	
Leadership Development Program		<i>Bell County, Kentucky</i>
Contact	Rob Lincks, Director, Bell County Chamber (chamber@bellcountychamber.com); 606-248-1075	
Rural Entrepreneurship Program		<i>Lawrence County, Alabama</i>
Contact	Linda Robinson, Lawrence County Extension Coordinator (robinlh@aces.edu); 256-974-2464	

1 Introduction

In April 1964, when President Lyndon Johnson visited the rural home of Tom Fletcher in Inez, Kentucky, Appalachia was a region in despair. A report issued by the President's Appalachian Regional Commission (PARC) found that one-third of the region's families lived below the poverty line and per capita income was 35% lower than the national average.



Figure 1-1: President Lyndon B. Johnson declared a "War on Poverty" from the porch of this rural Kentucky home. (AP Photo)

In 1964, per capita earnings in Appalachian Kentucky, at \$841, were 44% of the national average of \$1,901. Just 32% of

the region's adults held a high school diploma and almost 12% lacked even a fifth grade education, with only one in twenty adults holding college degrees. More than a fourth of the region's homes needed major repairs, three-fourths of farm homes lacked complete plumbing, and 7.5% were considered unsafe for habitation.¹

Today, almost 50 years later, Appalachia is a region transformed. While income levels remain below the national average, they have improved significantly. In 2009, Appalachian income and wages were 20% below the national average. Living conditions and educational attainment have also seen significant improvements. By 2010, 82.3% of Appalachians over age 25 held a high school diploma, a figure on par with the national average of 84.6%, and one of five Appalachian adults over 25 have college degrees. Housing values have increased steadily since the 1960s, while the age of housing stock has decreased during the same period. This trend, particularly strong in the South, is an indicator of the region's improving housing stock. Likewise, almost 100% of the region's homes now boast adequate plumbing.²

¹ *President's Appalachian Regional Commission, Appalachia: A Report by the President's Appalachian Regional Commission (Washington: GPO, 1964), 1-3, 8-9, 13.*

² *Appalachian Regional Commission, "Appalachian Region Income Report, 2009," [http://www.arc.gov/images/appregion/AppalachianIncomeReport2009\(2007Data\).pdf](http://www.arc.gov/images/appregion/AppalachianIncomeReport2009(2007Data).pdf); Kevin J. Pollard and Linda A. Jacobsen, "The Appalachian Region in 2010: A Census Data Overview," http://www.arc.gov/assets/research_reports/AppalachianRegion2010CensusReport1.pdf, 30; Dan A. Black, et. al., "Standards of Living in Appalachia, 1960 to 2000," 5, 9-11.*

Yet, in spite of all this progress, hardship and economic distress remain the defining characteristics of many communities in the region. While many parts of Appalachia have shown significant improvements in income, public, health and quality of life, others still languish. As of 2011, 96 counties in Appalachia are still classified as distressed by the ARC. Defying intervention and investment, these areas lag far behind neighboring areas and the nation in many important areas.

This lack of progress raises several important questions:

- Why do some counties move forward while other, often similar counties lag behind?
- What factors contribute to local growth in improving areas and what barriers deter growth in persistently distressed communities?
- What role does the ARC and other investments make in the transition of counties from economic distress?
- Have innovations have taken place at the local level that have helped promote economic growth?
- How do regional development strategies affect communities at the local level?
- How should we gauge this progress? Do existing evaluation methods accurately depict conditions “on the ground?”

This study, commissioned by the Appalachian Regional Commission, attempts to answer these questions. From the outset, the ARC established several goals for this research:

- To identify the influence of metropolitan areas on the growth and development of adjacent and nonadjacent rural counties.
- To examine the influence of urbanized areas of rural Appalachian counties on the growth and development of surrounding counties.
- To assess spatial linkages, transportation corridors, and regional multipliers of industrial clusters with the economies of surrounding rural areas.
- To evaluate the contribution of knowledge-based, human, cultural or natural assets; social, political, and institutional factors; and quality of life factors to economic growth and development in rural areas.
- To study the contribution of transportation, broadband, water and wastewater, natural resources, and other infrastructure development to economic growth and development in rural areas.

1.1 Research Approach

Research staff from the University of Tennessee approached this project using an unusual mixed methodology. Unlike prior studies, which relied heavily on quantitative methods, this study also makes use of extensive qualitative tools and approaches. Project researchers surveyed community members, conducted site visits, and conducted interviews and focus groups with stakeholders to learn more about local efforts, policies, and perceptions. As a result, this report adds a local voice to the discussion of development efforts and results in a broad assessment of economic conditions at the community level.

This economic research report is unique when compared to other recent Appalachian Regional Commission research reports in three significant ways.

1. First, rather than focus strictly on regional or subregional strategies, this report focuses primarily on *local* development strategies and policies. Unlike past reports, which might have examined the entire Appalachian region or looked at multi-county regional strategies, this report addresses issues at a county, local, and even grass roots level by studying the unique experiences of ten rural counties from the five subregions of Appalachia. From within each subregion, a performing county is matched and compared with a non-performing county.
2. The second difference lies in the way these ten communities were selected. Past studies often cherry-picked case studies to highlight successful projects or to demonstrate particular approaches. The counties in this project, however, were selected based strictly on their location, local characteristics, and their level of economic performance. Then, once selected, each county's particular circumstances and strategies were identified, and unique local approaches and policies were analyzed and presented as case studies. As such, these counties and their practices may be more representative of typical Appalachian communities and their experiences may be more common, especially at the subregional scale.
3. Finally, this report is different in the research approach taken in its development. Unlike other recent economic development studies, this report includes a significant qualitative research element. While other reports have relied heavily on econometric modeling or other statistical methodologies, this study includes comprehensive qualitative surveys, site visits with face to face discussions, and overall participation by a wide range of local stakeholders. As a result, this study captures information that does not always show up in the numbers and attempts to reflect the real, human effects of development issues.

Although significant barriers still exist, Appalachian communities are making great strides in creating jobs and opportunities for their residents. In many cases, these efforts are entirely local and are unrelated to larger development strategies. As a result, many local innovations and success stories often go unrecognized or unreported when combined into larger, more regional analysis. Using a unique mix of quantitative and qualitative research, the authors hope this report will help illustrate these community based endeavors and help integrate this work into broader development programs.

1.2 County Cohort Introduction

Appalachian Subregions are five contiguous regions of relatively similar characteristics (topography, demographics, and economics) within Appalachia. This classification was developed in the early history of the ARC to provide a basis for subregional analysis. The ARC revised the classification in 2009 by dividing the entire region into smaller parts for greater analytical detail. This classification is used only for research purposes and not to allocate ARC funds or other external use.

Using the methodology detailed in Chapter 3, this project selected and examined two counties from each subregion, one distressed and one non-distressed, and compared them against each other. Appalachia is a diverse, encompassing region; therefore cohorts within the same subregion share similar topographic and demographic challenges and opportunities that enable a regionally relevant policy analysis.

Figure 1-2: Map of Appalachian Subregions

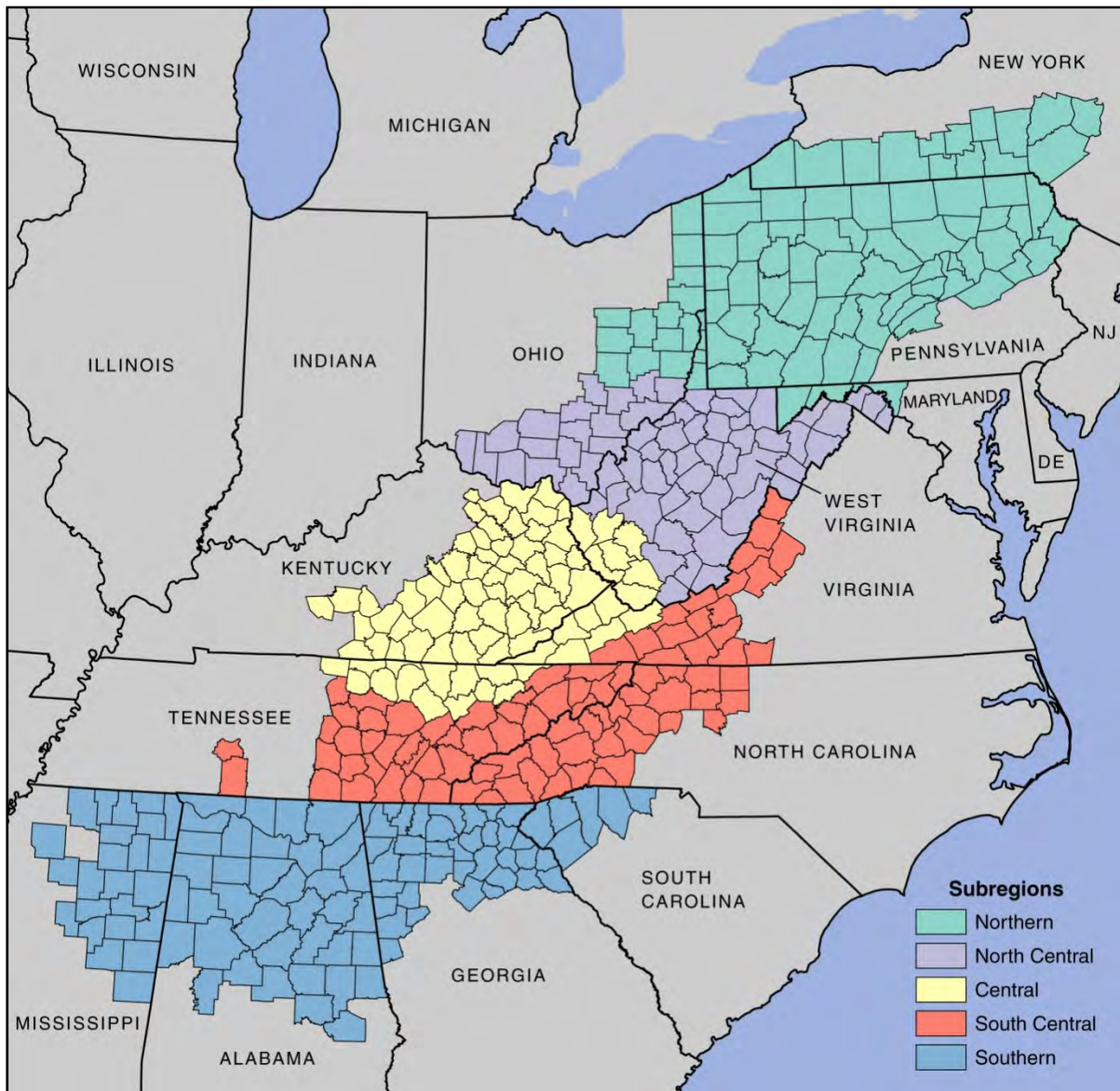
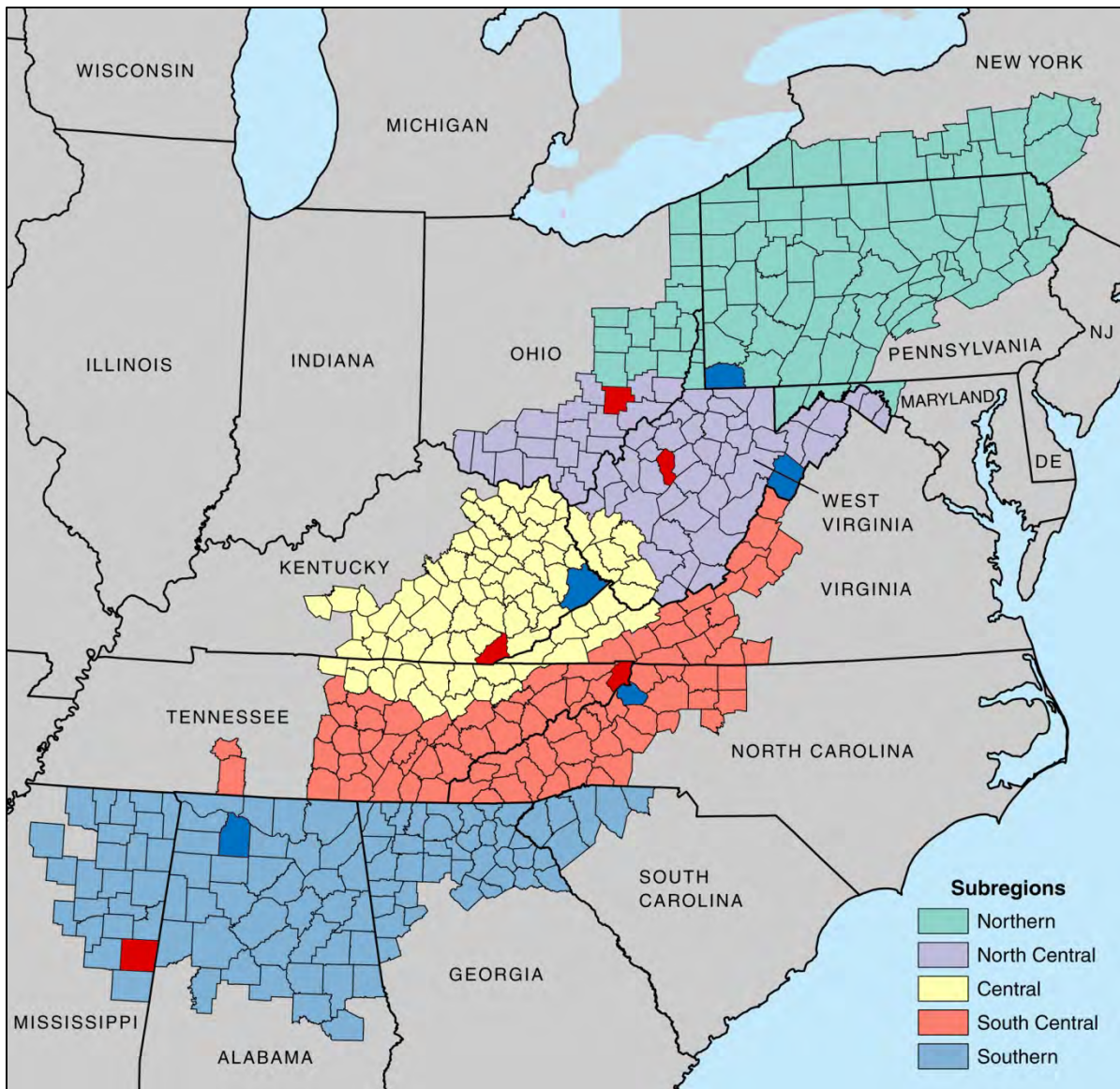


Figure 1-3: The Five County Cohorts for Subregional Analysis

Distressed County	ARC Subregion	Non-Distressed County
Morgan County, Ohio	Northern	Greene County, Pennsylvania
Calhoun County, West Virginia	North Central	Pendleton County, West Virginia
Bell County, Kentucky	Central	Pike County, Kentucky
Johnson County, Tennessee	South Central	Avery County, North Carolina
Noxubee County, Mississippi	Southern	Lawrence County, Alabama

Figure 1-4: Map of Highlighted County Cohorts



1.3 Public Input

Discussions with community stakeholders played a significant role in this research. To encourage open discourse among participants at each community meeting, participants were assured that any comments used in project reports would not be attributed to any single person. However, it is important to provide readers of this report an understanding of the types of local stakeholders who participated in each county's conversations. The figure below represents the number, gender, and types of community stakeholders who attended meetings in each county.

Greene County, PA



Morgan County, OH



Pendleton County, WV



Calhoun County, WV



Pike County, KY



Bell County, KY



Avery County, NC



Johnson County, TN







Lawrence County, AL



Noxubee County, MS



Legend	
	Local Officials Elected officials, department heads, county or city workers, economic development directors, etc.
	Business Leaders Chamber officials, business owners, bankers, industry representatives, etc.
	Education and Social Services School officials, extension staff, social workers, health care representatives, etc.
	Community Leaders Nonprofit representatives, community activists, ministers, etc.

In order to begin to understand local conditions and the reasons behind local decisions and policies, one must have conversations with those involved – the people who live and work in the area – and those with historical knowledge of local culture. Hearing such comments from individuals during these community discussions, and afterward including many of those comments in this report, is important for helping to describe or illustrate local experiences from a community member's point of view. By doing this, this report attempts to offer a look behind the statistics and the econometric data that typically characterizes a rural locality from a federal perspective.

In addition, this research was able to reach out to a broader audience than typical on-site research, which often consists only of interviews or discussions with a small number of key officials. By interviewing only the "usual suspects," such as the county or city mayor, the economic development director or county commissioners, researchers can often be presented a skewed picture of the way conditions may be in reality. In attempt to get a broader sense of local conditions and different perspectives on various community issues, this research included discussions with representatives across various private and public sectors – the business community, education and healthcare leaders, community volunteers and elected leaders, entrepreneurs and retirees, to name a few examples. Select comments are included throughout this report to provide frank opinions of local issues.

The graphical formatting of the quotes from public comment used in the report is shown below. As mentioned above, the individual sources of these comments made during the local meetings and interviews are not noted, as confidentiality was essential in assuring free discourse among participants.

At one of the first community meetings, for example, after hearing the purpose of our being there and meeting with various community members, a local resident made a simple request:



"Don't sugarcoat the results."

The authors have tried to honor this request in the text of this document. We learned through these discussions that, despite progress throughout Appalachia, harsh realities exist in parts of the region. Local and regional failed policies are as important to note as those that succeed. For the most part, however, this report is a story of success and perseverance and the communities involved should prove inspirational to other Appalachian residents, as well as their counterparts throughout rural America.

1.4 Word Clouds

As described in the introduction, this report consists of the analysis and presentation of both quantitative and qualitative data. Included are traditional demographic figures, county and regional economic statistics, income levels, and other quantitative data that will be shown in traditional forms, such as in tables and charts. Furthermore, also included in this report is a tremendous amount of qualitative data taken from county survey returns and from discussions with local stakeholders during site visits and group meetings.

To graphically represent such qualitative data, comments recorded from participants during the site visits and meetings are included in the report in the quoting format described in the previous section. For the surveying process that precluded the visits to each county, several survey questions asked for one-word or short-phrase responses to describe the local culture and conditions. Such brief, open-ended questions enabled survey participants to succinctly express local conditions from a unique local perspective, all of which provided powerful feedback for the research. In this report, word clouds will graphically present such qualitative survey data.

A word cloud, sometimes referred to as a tag cloud or a weighted list, is a visual representation for textual data. In each word cloud, the larger the word appears the more often that word was given as a response; the smallest words typically represent words or phrases that only appeared as a response once or twice. This graphic format is useful in perceiving the most prominent terms in a compiled list, and also for locating a term to determine its relative prominence overall among survey responses.

The word clouds are featured primarily in the county profiles chapter, Chapter 4, with word clouds representing responses to the same survey questions for each of the ten counties. The word clouds, when examined in the context of individual county profiles, provide a helpful abstract of responses to particular questions and offers insight into local characteristics and issues.

Further, when these words are combined from all ten counties in the study, an interesting and telling graphic emerges of how Appalachian residents regard their communities. The aggregated results somewhat reflect long standing characteristics and rural stereotypes, but they also provide a unique perspective into Appalachian life.

So to provide introductory examples of how word clouds will be used in this report, three word clouds follow that illustrate the aggregate responses of all ten study counties to three different survey questions. As such, these word clouds provide a composite of how Appalachian residents perceive themselves and their communities, and could be the first time such a graphic has been generated for Appalachia.

2 Literature Review

2.0 Introduction

Since its inception in 1965, the Appalachian Regional Commission (ARC) has made significant progress in promoting economic and community development in the Appalachian Region. Yet, despite these gains, portions of the region continue to lag behind the rest of the nation in terms of income, quality of life, and general economic performance incomes. Designated as "distressed counties" by the commission, these areas have not benefitted as fully from the ARC's investments in roads, infrastructure, and public services. Limited progress in some of these counties, when compared to better performing regional peers, suggests that these areas may possess additional physical, cultural, or institutional constraints and might benefit from creative or alternative development strategies.

Traditionally, poverty in Appalachia has been ascribed to a number of factors, including geographic isolation, external control of resources, land tenure policies, and cultural or historical constraints. Recent research continues to confirm this view. A 2006 report by researchers from the International Monetary Fund (IMF), for example, found that "initial conditions, including both geography and institutions, are very important for economic development, having significant effects lasting hundreds of years."³

The IMF report suggests that these historical or geographical barriers may, in fact, be more persistent in the region's distressed counties. In an effort to address these issues, considerable research has been conducted on development strategies and approaches for these types of communities. In 2007, for example, ARC published "Sources of Growth in Non-Metro Appalachia," an effort to increase understanding of the factors affecting economic growth in rural and distressed areas. The study, which relied on both statistical and qualitative approaches, found that "developmental path dependencies" often shape the direction of growth and recommended that local officials adopt a LEAP (Local Economic Assessment Package) approach to the creation of development strategies.

Other recent research has advocated the use of less conventional tools when working with Appalachian communities. Most recently, Susan Keefe explored and evaluated the use of participatory tools and approaches in regional development efforts. Her 2009 book, "Participatory Development in Appalachia," examined case studies from ten Appalachian communities and found that, within limits, participatory tools can be valuable in the creation and implementation of local development programs.

Building on these and other research findings, this report provides a multi-disciplinary assessment of economic development strategies in ARC's distressed counties. The evaluation identifies the constraints facing rural communities, notes the significance of geographic, cultural, and institutional factors, explores

³ Eric V. Clifton and Alma Romero-Barrutieta, "Institutions versus Geography: Subnational Evidence from the United States," *IMF Working Paper*, International Monetary Fund, July 2006, i.

the impact of regional metropolitan and micropolitan areas, and compiles proven strategies for addressing or overcoming these barriers.

2.1 Progress Achieved, but Problems Persist

Research conducted over the past decade points toward the considerable progress made in Appalachia since the ARC was founded in 1965. In 2000, Lawrence Wood and Greg Bischak noted significant gains in their report "Progress and Challenges in Reducing Economic Distress in Appalachia." They noted that since 1960, "the number of distressed counties in Appalachia has decreased by half." The researchers attributed this improvement to a number of factors, including increased urbanization and industrialization in the South, improved levels of educational attainment, and the migration of retirees into the region.⁴

Subsequent studies – published after the 2000 census – confirm these findings. Dan Black, Mark Mather, and Seth Sanders noted that along with increased earnings, Appalachian residents also enjoyed significant improvements in the quality of life. Their report, "Standards of Living in Appalachia, 1960-2000," found that the region's homes were approaching national standards in terms of plumbing, heating, and other characteristics. A companion report, "The Upskilling of Appalachia," noted similar improvements in family income and attributed this rise to the entry of women into the workforce and the aging of the population.

Regional demographic changes were confirmed in another post-census study, "Emerging Patterns of Population Redistribution and Migration in Appalachia." This assessment, compiled by researchers from Ohio State University, found that "the decade of the 1990s ushered in major demographic shifts in the migration patterns of Appalachia." Among these changes was a historic reversal of prior migration trends, with residents of northern industrial and urban areas now migrating into the Appalachian region. This growth was especially pronounced in southern states, particularly Georgia and the Carolinas.

Yet, while these reports noted progress, they also documented a number of issues that continue to plague the region. Wood and Bischak, for example, noted that, while manufacturing played an important role in recent progress, its future in the region was, in all likelihood, limited to "the most productive, capital intensive" sectors. These researchers also expressed concerns about the coal industry, noting that "the rising distress in coal-dependent counties points to the need for greater economic diversification."⁵

Wood and Bischak also highlighted the importance of educational attainment in building the regional economy. "Future trends in the knowledge based economy," they wrote, "leave little doubt that educational attainment will continue to be a key factor in improving the prospects for distressed counties."⁶ Black, et al. concurred, stating that "educational attainment was the key variable in explaining how individual earnings and employment in Appalachia continued to lag behind earnings and employment in the

⁴ Lawrence E. Wood and Greg Bischak, "Progress and Challenges in Reducing economic Distress in Appalachia: An analysis of National and Regional Trends Since 1960," *Appalachian Regional Commission, January, 2000, i.*

⁵ *Ibid.*, iii.

⁶ *Ibid.*, iv.

rest of the United States." They concluded their report stating, "further investment in education for the region's residents is necessary to ensure that any long-term trends towards economic parity continue."⁷

The importance in educational achievement was also emphasized in "Changing Patterns of Poverty and Spatial Inequality in Appalachia," a 2005 study produced by Daniel Lichter and Lori Ann Campbell. In that study, which examined regional poverty trends, the authors noted "little evidence that education doesn't pay in Appalachia." Interestingly, Lichter and Campbell also researched the impact of changing family structures on Appalachian families. They found that "family change...has been inextricably linked to recent poverty trends." They concluded that educational improvements, along with "welfare reform policies that emphasize work and healthy marriages" were necessary for long-term economic change.⁸

Another study, prepared for the ARC in 2008 by Joel Halverson and Greg Bischak, assessed the region's growing health care crisis. The report, "Underlying Socioeconomic Factors Influencing Health Care Disparities in the Appalachian Region," examined patterns of premature mortality across Appalachia. The study confirmed the presence of "well-defined clusters" of high mortality in Central and Southwestern Appalachia. These high rates, they argued, are associated with a number of factors, especially poverty and low access to health insurance.⁹

Recent research points towards the impact of poor health on the region's economy and productivity. A Gallup study released in August 2011 found significant links between substandard physical health, mental health, and low productivity in the region. The study, titled "Appalachia: America's Low Energy Zone," found that residents of Appalachian cities had exceptionally high rates of depression diagnoses, higher numbers of poor-health days, and "lacked the energy to get things done." The study's authors concluded that "for many communities in the region, poor psychological health may be a significant barrier to growth." The authors recommended that local leaders invest in "initiatives to improve physical and psychological well-being" and "establish a positive cycle of optimism and growth."¹⁰

⁷ Dan A. Black, Kelvin M. Pollard, and Seth G. Sanders, "The Upskilling of Appalachia: Earnings and the Improvement of Skill Levels, 1960 to 2000. Prepared for the Appalachian Regional Commission, September 2007, 16.

⁸ Daniel T. Lichter and Lori Ann Campbell, "Changing Patterns of Poverty and Spatial Inequality in Appalachia," Prepared for the Appalachian Regional Commission, April 2005, 29.

⁹ Joel A. Halverson and Greg Bischak, "Underlying Socioeconomic Factors Influencing Health Disparities in the Appalachian Region," Prepared for the Appalachian Regional Commission, March 2008, iv.

¹⁰ Steve Crabtree, "Appalachia: America's Low Energy Zone," The Gallup Organization, April 3, 2011, <http://www.gallup.com/poll/148787/Appalachia-America-Low-Energy-Zone.aspx>.

2.2 Case Studies in Appalachian Development

In addition to the aforementioned regional studies, a number of important subregional or local case studies have appeared in the past decade. Not surprisingly, the majority of these studies focus on the most distressed Appalachian subregion, Central Appalachia - an area dominated by the Eastern Kentucky Coal Belt. These research efforts provide additional insight into local development efforts and illustrate many of the obstacles and barriers faced by low-resource communities.

A summary of the state's woes can be found in the aptly named report "Why is Kentucky so Poor," by Kenneth Sanford and Kenneth Troske. In this study, Sanford and Troske examined factors explaining cross-state differences in wealth. They attribute the state's low income and productivity levels to a number of factors, including low levels of educational attainment, the prioritization of roads over schools, a lack of innovation, and a lack of urban growth. They concluded that, barring "fundamental changes, Kentucky will continue to be one of the poorest states in the union."¹¹

The same year, the Brookings Institute published a report on poverty in Kentucky. The study, titled "The High Price of Being Poor in Kentucky," examined the day-to-day obstacles that conspire to keep the state's working families in poverty. The study's authors found that "Kentucky's lower-income working families often pay a premium for goods and services, making it difficult for them to build wealth, save for their children's futures, and invest in their upward mobility." They discovered that low-income families generally pay some of the highest prices for basic necessities, including food, housing, and transportation. The Brookings report also argued that while Kentucky had made important progress at increasing incomes, the state had "done little to address problems on the other side of a family's ledger" and concluded that policies were needed to help reduce the cost of living for working families.¹²

Local development strategies were examined by a group from Pennsylvania State University in the 2000 study, "Social Capital and Economic Development in Central Appalachia." The study focused on the experiences of three Kentucky case study communities: Letcher, Pike, and Floyd Counties. The study found that while social capital is important to promote development, local strategies tended to reinforce the status quo in these communities and thus had a minimal impact.

This study also found that large-scale reforms, particularly in education, often did not have an impact at the local level. Small poor communities, the study found, were "often bypassed by the benefits of reform because they lack local technical capacity to apply for grants and other special funds that accompany these

¹¹ Kenneth Sanford and Kenneth Troske, "Why is Kentucky so Poor: A Look at the Factors Affecting Cross-State Differences in Income," *Center for Business and Economic Research: Kentucky Annual Economic Report, 2008*, 9.

¹² The Brookings Institution Metropolitan Policy Program, "The High Price of Being Poor in Kentucky: How to Put the Market to Work for Kentucky's Lower-Income Families," *Prepared for the Annie E. Casey Foundation, 2007*, 4.

changes." The study concluded that "until the 'worst first' are taken seriously, the region's most challenged communities will lag behind."¹³

2.3 Paths to Progress: The Debate over Growth and Development Strategies

The Appalachian Regional Commission has played a significant role in the region's progress in the past half century. ARC investments have helped transform the regional economy and have significantly improved living standards for many Appalachian people. ARC's approaches to development, however, have often been the subject of scrutiny and debate. As such, the agency has become an important global case study for regional development strategies.

One widely read analysis attributes regional improvements to the strategies and programs of the ARC. "The Economic Effects of the Appalachian Regional Commission," a 1995 study by Andrew Isserman and Terance Rephann, provided an "empirical assessment" of the agency's impact. Isserman and Rephann found that Appalachian counties "grew significantly faster" than similar non-Appalachian counties "in income, earnings, population, and per capita income." The authors argued, "with certainty," that these gains were the result of ARC investments which, in their view, "produce a handsome return." "Regional Development Planning," they concluded, "has been successful in Appalachia."¹⁴

In his 2008 book, "Uneven Ground: Appalachia Since 1945," Ron Eller gave the ARC mixed reviews for its accomplishments. While acknowledging undeniable progress in Appalachia, Eller argued that, in the 1960s and 1970s, political considerations and prevailing economic theories compelled ARC to favor larger communities and county seats at the expense of smaller, more rural communities. At the same time, political demands forced the agency to expand its service area well beyond the physical or traditional boundaries of Appalachia. As a result, few resources were directed to many of the region's poorest areas.

Since the 1980s, ARC has made efforts to improve service to the most impoverished areas through its distressed counties program. In 1999 it reviewed lessons from this program in a report compiled by Amy Glasmeier and Kurtis Fuellhart, "Building on Past Experiences: Creating a New Future for Distressed Counties." The authors of this report sought to learn from the experiences of counties with improved socioeconomic status and apply these lessons to other distressed areas.

Glasmeier and Fuellhart found that several factors were common among distressed counties. These include a high number of single mothers, high levels of government sector employment, and low levels of educational attainment. The authors also stated that counties that emerged from distress benefitted from high levels of private land ownership, significant infrastructure investments (including ADHS highway development), and local investments in educational and health care facilities. The study also found that

¹³ Armand Ciccarelli, Phil Corderio, Whitson, "Social Capital and Economic Development in Central Appalachia: Case Studies of Letcher, Pike, and Floyd Counties, Kentucky," Prepared for the Appalachian Regional Commission, September 2000, 75.

¹⁴ Andrew Isserman and Terance Rephann, *The Economic Effects of the Appalachian Regional Commission: An Empirical Assessment of 26 Years of Regional Development Planning*, "Journal of the American Planning Association, Vol. 61, No. 3, Summer 1995. 345, 362-363.

location played a major role, with communities near metropolitan areas being more likely to improve economically.

The researchers concluded that while some poor counties "were unable to receive funds under [ARC's] initial program design," the emergence of some counties from distress during the 1980s and 1990s validated the agencies distressed counties program. They argued that additional progress could be made through expanded investments in entrepreneurship and leadership development programs and through expanded efforts to assist women and single-parent households. Glasmeier and Fuellhart also recommended that Local Development Districts in each state be given training and incentives to expand partnership development and leverage private funding.

The largest (300+ pages), and most recent assessment of development trends occurred in 2007 with "Sources of Regional Growth in Non-Metro Appalachia" (SRG). The report, prepared by a consortium of researchers, was an effort to improve our understanding of factors affecting economic growth in smaller communities and better understand economic development strategies that can be used to improve them.¹⁵

The SRG report analyzed growth in the Appalachian region from a variety of theoretical and methodological perspectives. Importantly, recent advances conceptualizing and modeling in regional growth processes, including (1) the role of clustering, (2) the importance of agglomeration economies for understanding rural-urban economic linkages, and the (3) effects of distance on the trajectory and speed on economic growth; were overarching themes for inquiring and explaining growth trends in the region.

The SRG series was presented as four volumes. The first volume was a compendium of "white papers" that highlighted the theories of economic growth applicable to the Appalachian region, and emphasized, for example, cluster-based and economic base development theories. The second volume presented findings from six regions in the area that focused on local socioeconomic idiosyncrasies of each location and the constraints and opportunities characterized by these features. The third volume used secondary data sources to analyze the extent to which regional growth was influenced by spatial economic linkages and access advantage to agglomeration economies. Finally, the fourth volume summarized and assessed a suite of tools to gauge local opportunities for growth.

The authors of this report extended the methodological and theoretical orientations of SRG's first and second volumes, and follows up on the SRG report by examining local development efforts and assessing the impacts or regional or multi-county approaches at the local level. It differs from many of the prior studies, however, by incorporating both econometric and participatory research methods and through discussions with a wider range of case studies and stakeholder participants.

¹⁵ Amy K. Glasmeier and Kurtis Fuellhart, "Building on Past Experiences: Creating a New Future for Distressed Communities," Prepared for the Appalachian Regional Commission, January 1999, iii.

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Chapter 2: Literature Review

Sanford, Kenneth and Kenneth Troske. "Why is Kentucky so Poor: A Look at the Factors Affecting Cross-State Differences in Income," Center for Business and Economic Research: Kentucky Annual Economic Report, 2008.

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3 Methodology

3.0 Methodology Introduction

Regional analyses of income, employment, and business establishment growth typically apply one or a combination of methods to explain why some locations or regions are more likely to grow or decline compared to other places. These analytical methods can be broadly categorized as 'quantitative' or 'qualitative', but there is clearly overlap between these two types of methods. Findings from good, theoretically informed quantitative models may supplement inductive conclusions from qualitative studies. Solid inductive qualitative analyses, in turn, make generalizations deduced from quantitative models even more compelling.

The approach used in this study supplements a quantitative analysis of income, employment, and business establishment growth in the ARC region based on *secondary* data sources with *primary* information collected through surveys and focus groups in 10 counties in the region. The approach combines (1) spatial regression analysis, (2) case-cohort identification of paired counties, and (3) a survey of individual and structured focus groups in the paired counties. Specific details of each methodology are described in the three subsections that follow. The first subsection (3.1, "Analysis of Regional Growth in the ARC Region, 2000–2007") discusses the empirical model used to analyze growth of the aforementioned economic indicators in the ARC region. The second subsection (3.2, "Selection of County Cohorts") discusses the methodology used to select county cohort pairs. The final subsection (3.3, "Survey Design and Structured Focus Groups") discusses the methodology used to conduct the surveys and the focus groups.

3.1 Analysis of Regional Growth in the ARC Region, 2000–2007

Quantitative or 'econometric' approaches typically used to describe or explain the factors driving growth include regressions analyses, input-output modeling, or computable general equilibrium modeling. The quantitative approach used in this research applies regression analyses to understand the factors associated with growth in the ARC region from 2000 – 2007. Particular attention is given to the role of industry clusters on growth during this time period.

Regional economists and policy makers also increasingly emphasize the identification of industry clusters as an important component of regional development strategies (Barkley and Henry, 1997; Porter, 1998; Stimson, Stough, and Roberts, 2006; St. John and Pouder, 2006; Feser, Renski, and Goldstein, 2008). A regional adjustment model is used to test this industry cluster hypothesis by estimating the conditional influence technology clusters identified by Feser and Isserman (2009) (Appendix 7.1, "Basic Technology Industry Clusters") had on economic growth in the Appalachian region from 2000 – 2007. Regional adjustment models have been used in a wide variety of empirical applications studying jobs and population migration dynamics and conditional economic growth (e.g., Carlino and Mills, 1987; Carruthers and Vias, 2005; Carruthers and Mulligan, 2007; Lambert et al., 2007; Pede, Florax, and de Groot, 2006), explain changes in county per capita income (Monchuk, et al., 2007), or firm entry-exit (Brown, Lambert, and

Florax, 2010). Economic growth is hypothesized to move toward an unknown future state of spatial equilibrium where income, jobs, and employers are distributed such that individual utility or firm profits are maximized with respect to location.¹⁶

Local determinants typically hypothesized to influence job, business establishment, and income growth include demographic characteristics, settlement patterns, growth momentum, industry structure, infrastructure, human and social capital, and physical and natural amenities. A log-linear model was used to specify the regional adjustment model used in the regression analysis (Appendix 7.2.1, "Growth Regression Model"). The variable names and summary statistics are described in Appendix 7.4.2.

Growth determinants include the change in real per capita income ($\Delta pci_{2000-2007}$), change in employment ($\Delta emp_{2000-2007}$), and the change in business establishments ($\Delta estabs_{2000-2007}$); all in natural log ratios with the initial (terminal) years of 2000 (2007). The initial year for employment was normalized by county area; more densely settled areas tend to be correlated with employment density (Carruthers and Vias, 2005). These areas are attractive to business for their higher level of services, but employment density entails more than urban amenities. Rural jobs have tended to concentrate in densely populated areas, and employment density itself may suggest a relative shortage of land and higher housing prices (McGranahan, Wojan, and Lambert, 2010).¹⁷ Previous research also found that job growth in rural locations is faster in more densely settled rural areas and in sprawling urban areas perhaps because of the availability of larger labor pools (McGranahan and Wojan, 2007).

Access advantage to economic centers is measured by three variables. The percent of workers commuting outside a county (*percomm*) is expected to be positively associated with growth, given continuing advantages of urban proximity. Counties with relatively low unemployment (or higher employment rates) are expected to grow faster than counties with fewer available jobs (*empr*). Employment rates are obtained from the Regional Economic Information System (REIS) files from the Bureau of Economic Analysis (BEA, 2007) and the percent of workers commuting to other counties is taken from the 2000 Census.

¹⁶ But growth trajectories need not be similar across an entire region, and multiple but unstable equilibriums are possible. Baldwin et al. (2003) typify development in terms of regional adjustment as fits and starts occurring much in the same way biological species evolve through 'punctuated equilibrium' (Gould and Eldridge, 1977).

¹⁷ Conceivably, one could include the (2000) business establishment density, employment density, and per capita income as initial conditions pertaining to, for example, job growth. However, the correlation between the initial conditions of each outcome variable was substantial (all above 0.60), which is not too surprising. Employment typically follows business establishments growth, business establishment density tracks consumer demand which is related to per capita income, and earnings per job closely follow per capita income. In sum, little additional information would be gained by including all of these variables as initial starting points in each outcome equation. To avoid potential problems that could arise from multicollinearity between these factors, only the initial variables corresponding with the base of the change variables were included in each equation, and each equation was estimated separately. However, higher incomes might provide resources for new business startups, but higher labor costs may be associated with slower rates of job creation (McGranahan, Wojan, and Lambert, 2010). Thus, for the employment growth equation, the natural logarithm of median household income (in 2000) (*lnmedhhi*) was included to control for potential income effects on job growth.

Industry structure and composition are measured by the percentage of manufacturing establishments with less than 10 employees (*perestab20*) and the percentage of manufacturing establishments with more than 100 employees (*perestab100*). Both variables intend to capture effects due to agglomeration economies and economies of scale internal to the firm (Lambert, Brown, and Florax, 2010). We also included two broad indicators of industry structure; the percent employed in agriculture, forestry, and mining (*peragmi*, NAICS 11 and 21) and the percent employed in manufacturing (*permanf*, NAICS 31 – 33). Counties dependent on resource-based industries and manufacturing may exhibit slower growth (McGranahan, Wojan, and Lambert, 2010) than counties with more post-industrial economic activities.

Change measures from the previous decade (1990 – 2000) were included for business establishments ($\Delta estab_{9000}$), employment (Δemp_{9000}) and population (Δpop_{9000}). Including these variables suggests hypotheses about growth sustainability (McGranahan, Wojan, and Lambert, 2010). Population growth in the preceding decade may also be indicative of more favorable demand conditions. The relationship between growth in business establishments and jobs has also been found to have some lag (Fritsch and Mueller, 2004). Change in establishments over the previous decade should be related to changes in jobs where growth was sustained. These variables were calculated as the logged ratio of the end-of-the-decade to start-of-the-decade measures.

Demographic variables include the percent of the population age 20 – 64 (*perpop2064*), a proxy for labor availability (2000), and the proportion of the population over 65 (*perpop65up*), both measured at the beginning of the decade. Some counties in the Appalachian region have become magnets for retirees (Lambert et al., 2007; Clark et al., 2009). Retirees may be inclined to start small businesses, but with no intention of becoming major employers (Rogoff, 2008). The expected relationship is ambiguous. The proportions of the Black (*perblk*), Hispanic (*perhsp*), and Native Americans (*peramind*) populations were also included because these groups and Whites may have different opportunities to participate in different job markets or develop new businesses (McGranahan, Wojan, and Lambert, 2010).

Human capital, often found associated with economic growth, is represented by the percent of the population with bachelor's degrees (*perhsdip*), and the percent of persons working in creative occupations (*percc*). In earlier decades, many rural areas with low education attracted businesses offering low-skill, low-wage jobs, but many of these firms tended to relocate operations off-shore in the 1990s or adopted new technologies requiring higher skilled labor (Johnson, 2001). Demand markets may also harbor a relatively larger stock of creative individuals capable of solving difficult supply problems or combining old ideas in new ways, which may influence growth in businesses and per capita income. We include the percent of persons in creative occupations (Wojan and McGranahan, 2007) to control for stock of local talent and intellectual capacity.

Natural amenities and public land availability may play a role with respect to income growth and jobs by attracting new businesses and people to locations with wilderness or scenic environments (Deller et al., 2001; McGranahan, 2008). In low-amenity areas, growth may occur mostly through changes in demand for producer services from the local economic base or the expansion of local colleges or universities (McGranahan, Wojan, and Lambert, 2010). However, high-amenity areas, like many areas of the Appalachia region, may also be remote and difficult to access. A natural amenity index (*amenity*) was included to

measure the relationship between economic growth and locations rich in natural amenities (McGranahan, 1999). The variable is an aggregate index of sunlight, humidity, and temperature; topography; and water resources. The percent of the county in public land was also included to control for the effects of public access to un-built areas on growth (*landpub*).

Dummy variables indicating the presence of an interstate (*interstate*) or an Appalachian Development Highway (*adhs*) were included to control for the influence of transportation infrastructure on job and income growth. The expected sign is generally ambiguous. Good roads may be attractive to prospective firms, which may increase the likelihood of attracting new investment and jobs. However, roads may also encourage out commuting followed by growth elsewhere (Kahn, Orazem, and Otto, 2001).

3.1.1 Industry Cluster Concentration Measures

Industry clusters are built around export oriented firms that bring new wealth into a region and help drive regional economic growth (Barkley and Henry, 1997; Stimson, Stough, and Roberts, 2006). Gibbs and Bernat (1997) characterized industry clusters as businesses in similar industries seeking comparative advantage by locating near raw materials, demand centers, or labor markets. Industry clusters also influence competition by fostering innovation, research, and development, which in turn support future productivity growth by stimulating business formation. These exchanges encourage additional rounds of interaction, which advance core industry sectors and reinforce the cluster (Porter, 1996, 1998). The resulting agglomeration of competing but collaborating industries in a well-defined region is arranged into horizontal and vertical relationships with similar resource and/or labor needs (Fujita and Thisse, 2002). The basic technology clusters identified by Feser and Isserman (2009) are based on 1997 benchmark input-output account tables of the US economy. Feser and Isserman identified value chains which are groups of industries with highly similar sales and purchases patterns. While a variety of measures could be used to proxy industry concentration (Goetz, Shields, and Wang, 2009), the relationship between technology clusters and job and income growth was measured using a industry concentration index (CI) calculated as;

$$CI_{i2000}^k = (s_{ik} / \sum_j s_{ij}) / (\sum_i s_{ik} / \sum_i \sum_j s_{ij}),$$

where k is a technology cluster based on Isserman and Feser's (2009) results, and s is the number of establishments in technology cluster k (Appendix 7.1, "Basic Technology Industry Clusters")¹⁸. The index is similar to a location quotient. Location quotients may be the most commonly used measure for identifying clusters (Shields, Barkley, and Emery, 2009), and are typically used in economic base analyses to compare local economic composition to other economies. Location indices can also be useful for characterizing counties with comparative advantage in a given industry (Shaffer, Deller, and Marcouiller, 2004).¹⁹ The

¹⁸ Location quotients could be calculated using sector employment data, but disclosure issues precluded this convention. Guimarães, Figueiredo, and Woodward (2009) also suggest there may be some statistical advantages in using establishment counts rather than employment in terms of confounding effects that may arise arising from scaling issues.

¹⁹ Advantages, disadvantages, and the assumptions behind the location quotient are summarized by Shields, Barkley, and Emery (2009).

traditional location quotient would use employment data to construct the concentration index. But publicly available data tracking sector-specific employment is subject to disclosure. However, the number of firms in a given sector is fully available in the County Business Pattern files. When the measure exceeds 1.0, a region is considered to be competitive (self-sufficient, or “exporting”) with respect to that sector. We maintain no priors on the expected relationships the technology clusters might have on income and job growth.²⁰

Of interest is the extent to which the initial level (or “stock”) of a particular technology cluster is associated with job or income growth. Because the CI measure is an index, explaining the log-linear relationship between growth and the sector concentration index as an elasticity (as opposed to simple marginal effects) has some advantage. The issue would be trivial if the concentration index was in natural logs. However, some establishments belonging to a cluster classification were not observed in a county. This has implications with respect to calculation of the elasticities corresponding with each sector.²¹ The Smooth Transition Regression (STAR) model of Pede (2010) and Pede, Florax, and Holt (2009) allows for parameter variation across space. The elasticities associated with the concentration indices were mapped, and the resulting patterns subsequently analyzed using a Local Index of Spatial Association (LISA), the Local Moran’s I statistic (Anselin, 1995). The resulting LISAs identify the “core” counties of a technology cluster are areas where the elasticity associated with a cluster are, on average near neighboring counties where the growth indicator-concentration index is also relatively high. In this analysis, counties shaded “red” indicate these regions, which may be loosely interpreted as regions that exhibit comparative advantage with respect to a given sector.

Three important modeling concerns arise considering that (1) county eligibility to participate in ARC programs is based mainly on historical and political concerns; (2) the main focus of the application is on the performance of ARC counties; and (3) the economies of ARC counties are tied to wider regional economies. These facts preclude isolating the differential growth of ARC ($n = 420$) and non-ARC counties ($n = 650$) to local determinants, while simultaneously allowing for arbitrary correlation between ARC and non-ARC members. Dummy variables indicating ARC county inclusion (arc) and non-ARC counties ($nonarc$) were

²⁰ Feser, Renski, and Goldstein (2008) found that clustering did not guarantee employment growth, but was associated with new businesses formation from 1998–2002 in the Appalachian region.

²¹ The percent change in the economic growth indicator given a 1% change in the concentration index is approximated as

$$\eta_i^k = CI_{i2000}^k \cdot \theta_k,$$

which is the contribution of an industry sector in 2000 to the predicted value of growth until 2007. Elasticities of the index with respect to growth can always be written as (Chiang, 1984),

$$\eta_i^k \approx \frac{\partial \ln(y_{i2007}/y_{i2000})}{\partial LQ_{i2000}^k} \cdot \frac{\partial CI_{i2000}^k}{\partial \ln CI_{i2000}^k},$$

because $\partial \ln z / \partial z = 1/z$, the percent change in the economic growth indicator given a 1% change in the concentration index is approximated as $\eta_i^k = CI_{i2000}^k \cdot \theta_k$, which is the contribution of an industry sector in 2000 to the predicted value of growth until 2007.

interacted with the local determinants, allowing for slopes and intercepts to vary between ARC and non-ARC counties (Appendix 7.2.1, "Growth Regression Model"). Thus our regressions analysis allows us to focus on ARC counties specifically, but recognizing that these counties are connected to a wider regional economy by allowing for geographic dependence between ARC and non-ARC counties through the spatial process models.

3.1.2 Spatial Regression Model and Growth Regimes

We hypothesize that growth in jobs, business establishments, and real per capita income may be simultaneously determined by job or income growth in neighboring counties; a county with a given change in employment or income growth (y_i) may be surrounded by j other counties with similar growth rates, e.g., $\sum_{j=1, i \neq j}^n w_{ij} y_j$, suggesting information spillovers, thick labor markets, or forward-backward economic linkages across space (Anselin, 2002; Moreno et al., 2004). Most studies incorporating spatial dependence typically use a spatial process model attributed to Whittle (1954) in which an endogenous variable specifies interactions between spatial units plus a disturbance term. Anselin and Florax (1995) call this a spatial lag autoregressive (SAR) model (Appendix 7.2.2, "Spatial Process Model"). A more general spatial process model permitting spatial correlation between SAR disturbances is the Autoregressive-Autocorrelation model (ARAR, Anselin, and Florax, 1995), which is considered here as the "null model" explaining growth (Appendix 7.2.2, "Spatial Process Model")

The reduced form of the SAR-type models suggests that the calculation of the marginal effects is more complicated than ordinary estimates due to the spatial lag multiplier. LeSage and Pace (2009) identify two methods whereby the marginal effects implied by SAR-type models can be calculated. The first method interprets the lag spatial multiplier as an infinite geometric series (see also Anselin and Lozano-Gracia, 2008). For example, the "direct effect" of a covariate (β) is the impact it has on a given spatial unit. In the limit the "total" marginal effect is $\beta^{Total} = \beta(1 - \rho)^{-1}$. The "indirect effect" is the difference between the total and direct effect, or the impact neighboring locations (on average) have on a given spatial unit. The second approach partitions the marginal effects of the SAR-type models into neighborhood order effects, such that the effect decays over space moving away from a target county to neighboring counties (LeSage and Pace, 2009, page 40).²²

The economic geography literature generally predicts that friction caused by uneven trade costs due to geographic features may induce the concentration of firms and jobs across space into one or a few regions (Brakman, Garretsen, and van Marrewijk, 2001). This research applies a relatively new class of spatial econometric models to explain per capita income, jobs, and business establishment growth using the Smooth Transition Regression (STAR) model of Pedraza (2010) and Pedraza, Florax, and Holt (2009). The STAR model provides a direct test for identifying these so-called endogenous structural breaks, and the extent to which access to agglomeration economies affect the relationship between local resource constraints and

²² For example, $A^{-1}(I_n + \rho W) = [I_n + \rho W + \rho^2 W^2 + \rho^3 W^3 + \rho^4 W^4 + \rho^5 W^5 + \dots + \rho^q W^q] \beta_{\mu}$ where the order q refers to the location itself ($q=0$), the impact of the neighbors ($q=1$), the impact of the neighbors of the neighbors ($q=2$), etc.

growth (Appendix 7.2.3, "Endogenous Growth Regime Specification"). The STAR spatial regression model is modified to accommodate endogenous regime-switching potential (Appendix 7.2.1, "Growth Regimes and Spatial Process Models").

3.2 Selection of County Cohorts

The goal of the county cohort selection exercise was to identify counties that were closest in terms of local characteristics to the targeted counties in 1960. Thus, by selecting counties that were similar in characteristics to the target counties in 1960, questions can be asked as to why counties that were very similar in 1960 may have diverged over time (to 2010). In this study, a goal was to survey counties that were similar in certain characteristics, but for other reasons that may not be immediately evident in secondary data sources were qualitatively different.

Target counties were largely selected on the basis of their economic performance between 1960 and 2010. The Appalachian Regional Commission's (ARC) economic status index was used to measure the economic position of counties in 1960 and 2011. The index is composed of the average of three economic indicators: per capita income, the unemployment rate, and the poverty rate (all relative to the US average). This period was selected because (1) the ARC was not established until 1965, and (2) the 1960 and 2011 indices are comparable across years because they are constructed using the same variables but in different periods.

Two arbitrary cut-offs were considered to isolate counties that had improved their economic status substantially since 1960. The first criterion was that candidate counties were considered those with status indices greater than or equal to 200 or twice the value of the US average of the index during this time period. The second criterion was based on the status index value in 2011. In all, 11 counties were identified using this criterion (see table below). In 2011, 7 of these counties were labeled as "Transitional", 3 were "At-Risk", and one was categorized as "Distressed."

The second criteria considered candidate counties to be those with ARC distress indices greater than 200 in 1960, but had improved their index position by 2011 to less than 150. The second criteria resulted in 23 candidates. In 2011, two were considered "At-Risk", one was "Competitive", and 20 were "Transitional".

The matching procedure applied Isserman and Rephmann's (1995) method to counties that were cohorts (in quantitative aspects) to the candidate counties determined by the selection criteria outlined above. Measures of the similarity between counties were based on a set of key characteristics, as measured by the Mahalanobis d^2 statistic. The smaller the distance, the more similar the match, based on the characteristics examined. These matches were based on the components making up the ARC status index in 1960 (county per capita income relative to the average per capita income in the US, the county level unemployment rate relative to the average unemployment rate of the US in 1960, and the county level poverty rate relative to the average US poverty rate in 1960), and the US Census population density of 1960. Of the possible matches for each target county, the top five ranking counties were selected. The matching counties are therefore the counties that shared similar local economic conditions (in terms of employment, per capita income, poverty, and population density) in 1960. Counties were matched on a subregional basis following the 2009 ARC convention. The matching algorithm was conducted once for each candidate group; $n = 11$

under the first criteria, and $n = 23$ under the second criteria. Additional details of the cohort county selection process are provided in Appendix C, "County Cohort Selection."

The statistical matches that resulted from the matching procedure were then culled further using qualitative criteria. First, non-eligible counties were eliminated from the pool of potential cohorts. These included target counties that were currently at risk and matching counties that were no longer classified as distressed. ARC and project staff then used a consensus approach to the selection of cohort pairs. Several factors were evaluated in making these decisions, including the following:

- Geographic distribution of sites
- Proximity of sites
- Area and population
- Local economic and natural resources
- Transportation infrastructure
- ARC investments and interventions
- Historical levels of economic performance
- Project logistics

During this cohort selection process, concerns arose regarding two problematic subregions. In the Northern subregion, distressed county choices were very limited, and the favored nonperforming match, Monroe County, Ohio, had recently transitioned off the distressed counties list. Because of this, and after discussions with ARC staff, it was decided to select the next closest distressed county, Morgan County, Ohio, a county located on the northern border of the North Central subregion.

In the Central subregion, which includes the Coal Belt of Eastern Kentucky, the opposite situation occurred. In that area – the worst performing portion of Appalachia – there is a scarcity of target counties successfully transitioning from distress. The best performing county, in fact, appeared to be Pike County, Kentucky – a county that had made remarkable progress but was currently classified as at-risk. Given this rate of performance and Pike County's relative success in the midst of the region's most distressed area, staff elected to use Pike as the performing county in the Central subregion. As a result of this consensus approach, ARC and project staff concluded the following cohort pairings:

- Morgan County, Ohio, and Greene County, Pennsylvania (Northern)
- Calhoun County, West Virginia, and Pendleton County, West Virginia (North Central)
- Bell County, Kentucky, and Pike County, Kentucky (Central)
- Johnson County, Tennessee, and Avery County, North Carolina (South Central)
- Noxubee County, Mississippi, and Lawrence County, Alabama (Southern)

3.3 Survey Design and Structured Focus Groups

Once identified, the ten project case study counties were then surveyed to help determine possible sources of growth and to help identify potential barriers to economic growth. A comprehensive survey was developed to measure a number of important factors and perception. Among the topics covered by the survey were local infrastructure, local governments, community organizations, public facilities, schools, environmental impacts, and social capital. In addition to traditional scaled responses, the survey also included several open ended questions. Some of these questions, such as "list three words to describe your county," were designed to help determine local attitudes and perceptions. Others such as "list your

county's three top attractions for tourists and visitors" helped identify county-specific strengths and provided information for subsequent site visits.

From the outset, the survey delivery method was a topic of considerable discussion. Project staff acknowledged the benefits of a web-based survey approach. Internet surveys offer considerable benefits in terms of delivery time, data collection, and data analysis. Staff, however, also recognized the constraints present in many Appalachian communities. Rural Appalachian counties often have limited access to the Internet and in many areas few residents can obtain services at all. Staff also understood the digital divide that exists both geographically and generationally in the region. These limitations are often compounded in economically distressed communities.

For these reasons, the project staff feared that an Internet survey might, in effect, deny participation amongst the regions poorest and most isolated areas, communities whose voice was already largely unheard. While an Internet survey offered appealing cost and time savings, it was an approach that might further disenfranchise the region's most vulnerable residents and rob the study of vital data. Staff thus elected to conduct a traditional mail survey, which, while more time consuming and cumbersome, offered the advantage of accessibility to all residents of the region.

The project staff distributed 1,000 surveys among the ten counties, mailing 100 surveys to each case study county. Survey recipients included local officials, business owners, educators, health care providers, ministers, nonprofit organizations, and other key stakeholders and community leaders. Surveys were tracked using codes affixed to each questionnaire and responses were anonymous. Surveys were distributed according to the following process:

1. Recipients were first mailed a postcard, explaining the survey and informing them that they would receive the survey questionnaire in the next few days.
2. About 3 days later, recipients received a survey packet containing a questionnaire, cover letter, and a pre-paid return envelope.
3. After two weeks, non-respondents received a reminder postcard, asking them to return the completed survey.
4. After about a month, additional surveys were distributed to counties with low response rates.

To encourage participation, respondents were given the opportunity to participate in a drawing for an Apple iPad2 (value approximately \$500). Survey packets included a reply card, to be returned with the completed survey, for a random drawing. To maintain anonymity, completed surveys and iPad reply cards, which had names and contact information were separated once survey packets were opened. All the iPad reply cards were placed in a box until all surveys had been returned. Almost 75% of participants elected to participate in the drawing, which was won by a participant from Bell County, Kentucky.

The overall return rate for all counties was exactly 25% (250 completed surveys were returned and tabulated). Return rates for individual counties varied considerably from a high of 38% (Morgan County, WV) to a low of 15% (Lawrence County, AL). Approximately 5% of surveys were returned by the postal service as undeliverable. One survey was returned with no responses. Another recipient returned two identical surveys, one of which was discarded.

Survey responses were compiled using Survey Crafter Pro, a survey development and analysis program. Responses were assessed and cross tabulated by county, ARC Subregion, and ARC economic status (distressed versus non-distressed). A survey form and survey results can be found in Appendices E and F.

3.3.1 Historical, Descriptive, and Demographic Data

While developing the survey, the project staff also created a descriptive profile of each community using a wide range of data sources. These included census records, school test scores, county literacy reports, county health profiles, environmental risk assessments, county highway maps and traffic counts, and USDA food environment statistics. Important data sets, including educational attainment rates, income statistics, No Child Left Behind test scores, and historical population trends were then charted and analyzed using Excel spreadsheet software.

Project staff also conducted a Lexis-Nexis news search for each county and key communities. This search compiled news stories from the counties and helped identify potential local issues. This search was supplemented by Internet searches using Google and Google Earth.

3.3.2 Site Visits, Interviews, and Structured Focus Groups

From the outset, an important assumption of this study was that some information that was essential to understanding local conditions could not be readily detected using statistical models, secondary data, or primary data collected through surveys. Significant descriptive and qualitative information can only be collected by visiting the community, observing local conditions, and by actually talking directly with local residents. For these reasons, the project team conducted site visits to each of the case study counties where they collected observational data, conducted interviews, and facilitated local focus group discussions.

Project staff conducted site visits from November 2010 until June 2011. Each day-long visit included a morning interview with local elected and appointed officials and an afternoon focus group with an assortment of community stakeholders. The morning meeting typically included discussions with local elected and appointed officials, Chamber of Commerce leadership, local economic development leadership, and other participants invited by local officials. Afternoon focus groups included a wider range of community stakeholders, including educators, housing officials, business owners, public health representatives, university extension staff, local professionals, and representatives from faith and nonprofit organizations.

Discussions covered both county-wide issues, such as access to healthcare, wastewater issues, and broadband; and region-wide issues, such as coal production (Central subregion), geologic hydraulic fracturing (North subregion), and race relations (South subregion). Larger macro-economic issues were broached as well, with often healthy discussion around globalization, aging populations, and the national economy as it relates to the county.

Discussions usually began with broad topics, like, "How do you feel your county is doing," and then focused on specific concerns such as education, substance abuse, or entrepreneurship. Responses and reactions

were recorded in detail on paper for later analysis. While direct quotes were gleaned from these talks for analysis and for use in this report, they were not, in the interest of confidentiality, attributed to any particular participant.

During the site visits, the project staff also collected observational data. The site visit team, for example, noted road conditions, driving times, the quality of local tourism assets, cell phone access, and local fuel prices. When possible, the team also visited local attractions and local businesses. Team members also photographed site communities for later analysis. Select photographs that were taken during site visits are included in the report and are the work of study authors, unless otherwise noted.

4 County Profiles

4.0 County Profile Introduction

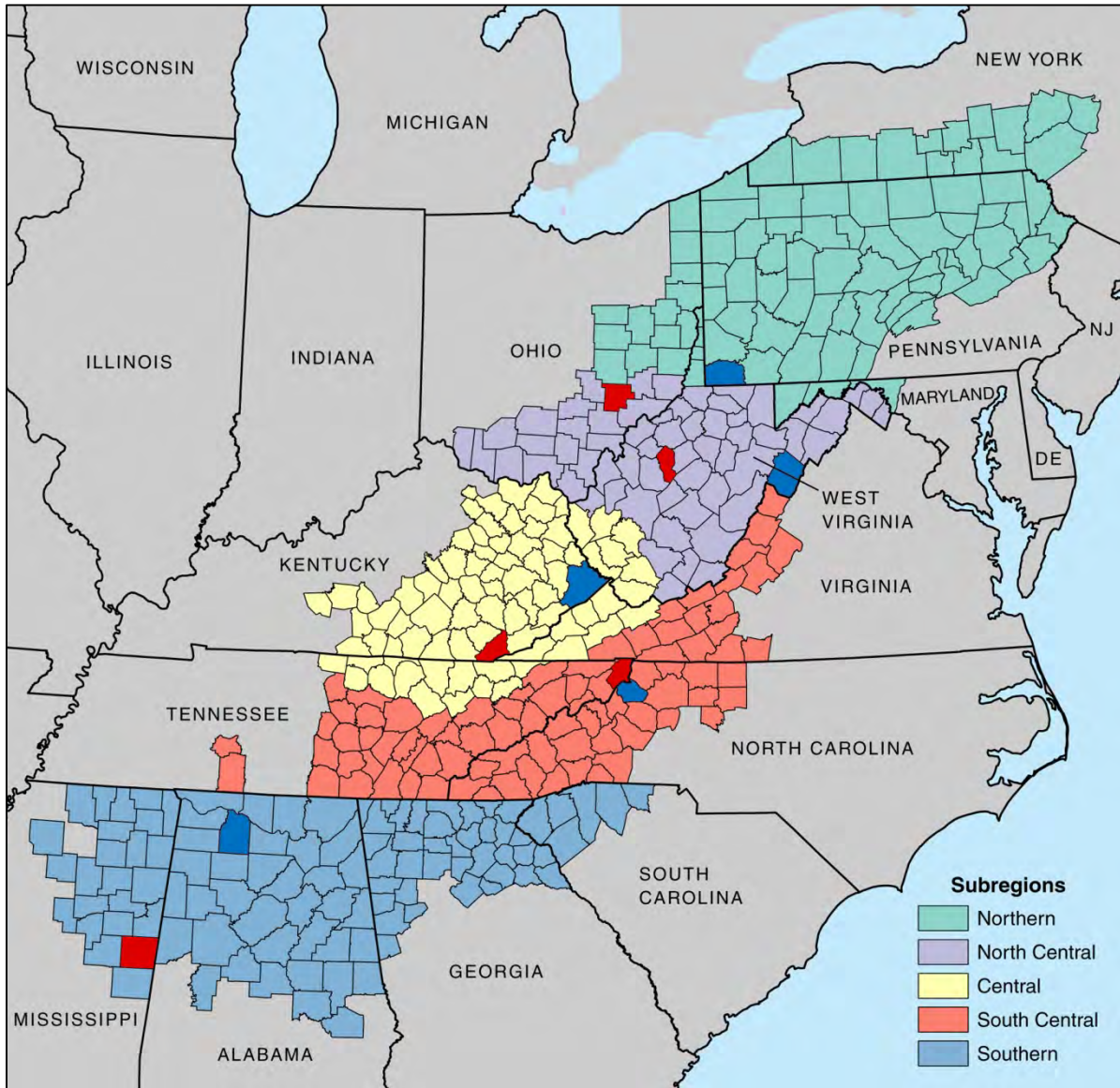
The ten counties will appear in this chapter by sections in north-to-south subregion order, beginning with the non-distressed county then followed by the distressed county in each subregion.

Section	County	Subregion
4.1	Greene County, Pennsylvania	Northern
4.2	Morgan County, Ohio	
4.3	Pendleton County, West Virginia	North Central
4.4	Calhoun County, West Virginia	
4.5	Pike County, Kentucky	Central
4.6	Bell County, Kentucky	
4.7	Avery County, North Carolina	South Central
4.8	Johnson County, Tennessee	
4.9	Lawrence County, Alabama	Southern
4.10	Noxubee County, Mississippi	

Within each of the county sections listed above, nine subsections will follow similar format across nine common topics to present relevant characteristics of each county.

Subsection	Topic
1	County Introduction
2	Population Profile
3	Access and Infrastructure
4	Economic and Housing Conditions
5	Tourism
6	Local Leadership and Planning
7	Health
8	Education
9	Summary and Lessons Learned

Figure 4-1: Map of the ARC Region with the five ARC subregions. The 10 study counties are highlighted by their economic distress designation (red is a distressed county, blue is a non-distressed county). This chapter examines a distressed and a non-distressed county from each ARC subregion.



Distressed County	ARC Subregion	Non-Distressed County
Morgan County, Ohio	Northern	Greene County, Pennsylvania
Calhoun County, West Virginia	North Central	Pendleton County, West Virginia
Bell County, Kentucky	Central	Pike County, Kentucky
Johnson County, Tennessee	South Central	Avery County, North Carolina
Noxubee County, Mississippi	Southern	Lawrence County, Alabama

4.1 Greene County, Pennsylvania

Figure 4-2: Word cloud responses to the question, "What are three words that describe your county?"



Figure 4-3: Word cloud responses to the question, "What is your county best known for?"



4.1.1 Greene County Introduction

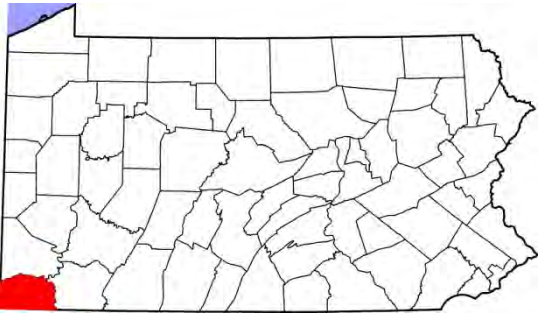
Located in the southwest corner of Pennsylvania, Greene County is notable among the ten study counties in several respects. Greene County is the northernmost county in the study and the second most populated. The county is also among the most urban, being nearly equidistant to both Pittsburgh, a major urban center, and Morgantown, WV, an important and growing mid-sized city.

Greene County is just one of two counties in the study to have a four-year college within its boundaries. Unlike other communities in this study, the county seat of Waynesburg is a busy and vital community that developed just off the Interstate 79 corridor. With this excellent transportation access, trucks of every size roar through the busy borough, and “Help Wanted” signs are visible on the windows and doors of business along local streets.

“After the Civil War, West Virginia and Pennsylvania fought a war and the loser got Greene County.”

Perhaps most importantly, the county still has an active coal industry and resides at the epicenter of the current Marcellus Shale natural gas boom. The extraction of natural gas largely accounts for the county’s recent economic progress and hearkens back to the community’s long association with coal mining.

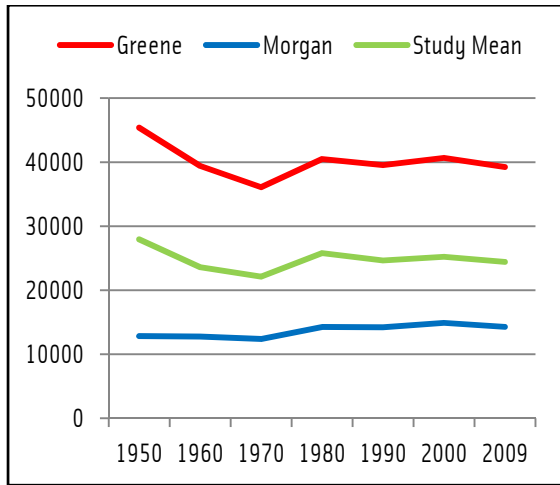
Resource extraction has long been the base of the local economy. Even today, a coal facility located on a local ridge top looms over the Waynesburg skyline. As such, Greene County provides an important case study in the future of Appalachian resources extraction and, perhaps, illustrates both the benefits and consequences of these practices.

Quick Facts	
Greene County, Pennsylvania	
	
Founded	1796
County Seat	Waynesburg
Land Area	578 sq. mi.
Water Surface Area	2 sq. mi.
Population	38,686
Density	67.2 per sq. mi.
Per Capita Income	\$19,832
Unemployment Rate	7.3%
ADHS Highway	No
Miles to State Capital	211
Miles from county seat to nearest Interstate	2 (I-79)
Miles from county seat to nearest commercial airport	41 (Pittsburgh, PA)

4.1.2 Population Profile

With nearly 40,000 residents, Greene County is among the most populated counties in this study. Despite its size, proximity to larger urban areas, well-developed downtown, and the Waynesburg University campus, the county remains quite rural. The county seat of Waynesburg has just 4,175 residents. Survey participants noted this fact, with “rural” being the word most frequently used to describe the county. As in many Appalachian

Figure 4-4: 60-year population trend with cohort (Morgan County, OH) and study average.



counties, diversity is low with almost 95% of the county population being white.²³

Age distribution in the county is weighted slightly toward middle-aged residents with the county having more males than females. This distribution likely reflects the presence of transient gas drilling and mine workers in the local labor force. These workers were a source of concern for survey participants, who blamed the workers for increased crime and other issues.

4.1.3 Access and Infrastructure

Greene County is easily accessed via Interstate 79, which runs along the eastern third of the county. The county boasts four interstate exits, and roads throughout the county appear to be in good condition. Survey respondents were divided over the quality of local roads, however, with 43% of residents rating them as adequate or fair. Thirty-nine percent of participants found road maintenance to be adequate, while 46% viewed it as inadequate and 14% rated it as poor.

²³ 2010 US Census.

These views were confirmed by discussions with local residents, who complained about large trucks associated with the coal and gas industries damaging roads. The majority of residents surveyed found public transportation to be either inadequate (43%) or poor (32%). In particular, they blamed road wear on the seemingly endless stream of trucks carting water to local shale-gas hydraulic fracturing or “fracking” operations.

“Our roads are good, but heavy truck usage is tearing them up.”

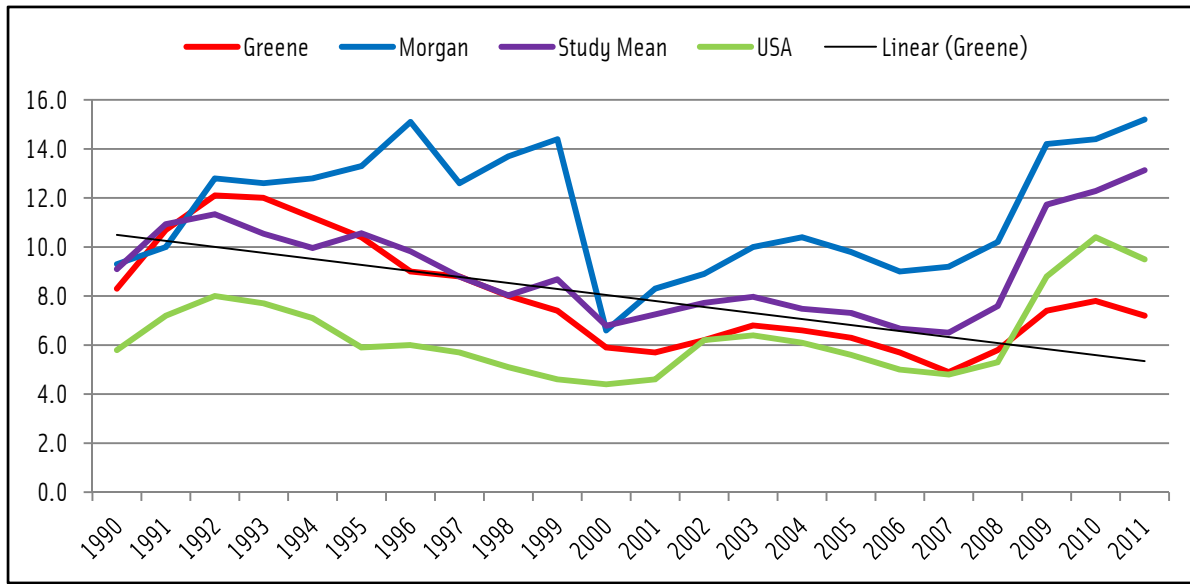
Fracking is a process in which water and other fluids are injected at high pressure into shale deposits to fracture the rock and release natural gas trapped inside. The process, which uses millions of gallons of water and other proprietary fluids, allows drilling companies access to previously untapped supplies of natural gas. The practice, however, also carries potentially serious environmental risks, particularly with surrounding water supplies. As such, the practice is becoming increasingly controversial throughout northern Appalachia.

It is not surprising, then, that Greene County residents raised concerns about the accessibility and quality of local drinking water. Greene County has some of the lowest water quality scores among

Figure 4-5: Waynesburg residential area with the local coal mine operation on a nearby ridge.



Figure 4-6: Greene County unemployment rate comparison, percentage by year.



the study communities, with 32% of respondents finding water services to be inadequate. In some cases, this is due to poor water access. Many residents, however, voiced concerns about the impact of gas drilling on local water supplies.

“Extractive industries are good for the economy, but at what cost? Of the 4-7M gallons of surface water in the county needed for fracking, 70% doesn't come back and the 30% that does is polluted.”

Local extension staff reported a record distribution of water test kits among county residents. These residents are concerned about the long-term safety of water supplies and, in many cases, are trying to establish pre-fracking baseline data. Penn State University extension service is working to help residents deal with fracking and gas drilling issues, though their services appear underutilized.

Internet access across all of Greene County appears to be uneven. Survey participants were generally favorable, with 18% reporting excellent service and

54% finding it adequate. One-fourth of residents, however, stated Internet access was inadequate. Discussions confirmed that while broadband availability in Waynesburg was good, some portions of the county still lacked broadband access. Those with high-speed access stated that while service was generally reliable, speeds were often slower than advertised. Cell phone service is very good in Waynesburg and areas near the interstate. Residents reported, however, that access was less reliable in more rural parts of the county.²⁴

4.1.4 Economic and Housing Conditions

Greene County is clearly benefitting from coal and gas extraction. County unemployment, at 7.3%, is the second lowest in Pennsylvania.²⁵ Residents, however, report that the low unemployment rate is

²⁴ Broadband access maps of the county also show service gaps in many areas, especially western Greene County. <http://www.bakerbb.com/pabroadbandmapping>

²⁵ US Bureau of Labor Statistics, February 2011.

somewhat deceiving. Many jobs are held by out-of-town drilling firms and are probably temporary. The local economy also benefits from revenues accrued through gas-well leases. Many local property owners are flush with cash and some spend freely. While this newfound wealth is a boon to local businesses, this influx of "found money" raises concerns about its impact on local values.

Given the relative state of prosperity in Greene County, entrepreneurship is surprisingly low. Empty storefronts are commonplace in Waynesburg, and the downtown area has only three restaurants. This lack of retail and dining options, despite the presence of college students, nearby workers, and steady highway traffic, is baffling, especially considering the relatively robust local economy and the current spate of gas lease payments.

Local officials blame the lack of local startup businesses on a risk-averse population and believe

small business development and entrepreneurship programs should be a high priority for future development efforts. In spite of this, one-half of survey respondents found the Greene County Chamber of Commerce to be adequate and another 21% judged it excellent.

The coal industry, long a fixture in the local economy, continues to be a major employer. Not surprisingly, local residents and officials are, for the most part, fiercely protective of the coal and gas industries. Local residents also express pride in their coal heritage. When asked what Greene County was best known for, "coal" was the leading response among survey participants.

The county boasts some industrial development, especially near the interstate exits. Manufacturing, however, appears to play a secondary role in the local economy, behind the dominant extractive industries. Residents were divided about the effects of globalization, with the largest

Figure 4-7: Downtown Waynesburg hosts several festivals each year. (courtesy Greene County Chamber)



percentage of survey participants, approximately one-third, stating they were “unsure” about local benefits of international trade.

The county is well-poised for residential growth. The community borders both the Pittsburgh and Morgantown Metropolitan Statistical Areas. Continued growth in those populated areas should eventually spill over into Greene County.

“We are the ham in the sandwich. Morgantown [WV] is out of land, and Washington County [PA] has casinos. Nobody wants to live near a casino.”

The county experienced a housing boom in the 1970s suburban development era, but the market has since cooled considerably. Local leaders point out the housing problems relate most to homeowners of 25-35 years who have not made home improvements.

A lack of land-use controls may also discourage growth. There is no county-wide zoning, and there are few rural land-use controls that are monitored. Waynesburg, however, has developed a well-executed master plan and is working towards downtown redevelopment. These plans would benefit from well-coordinated historic preservation ordinances or incentives, such as historic zoning or facade easements.

According to the community survey, 48% rate the performance of planning and zoning departments to be inadequate. Perhaps because of this, home values appear to be relatively low. Median home values are about 40% below the state average and Waynesburg features a number of stately historic structures that are either underutilized or in poor

repair.²⁶ Given its location, the community seems ripe for transformation. However, the nature of the local economy, and fears related to environmental risks, may deter investment.

Residential growth may be slowed by the county’s continued emphasis on extraction. Coal mining, fracking, and gas extraction do little to attract suburban growth, young families, or retirees.

“We’re excited about Marcellus Shale, but it presents lots of challenges.”

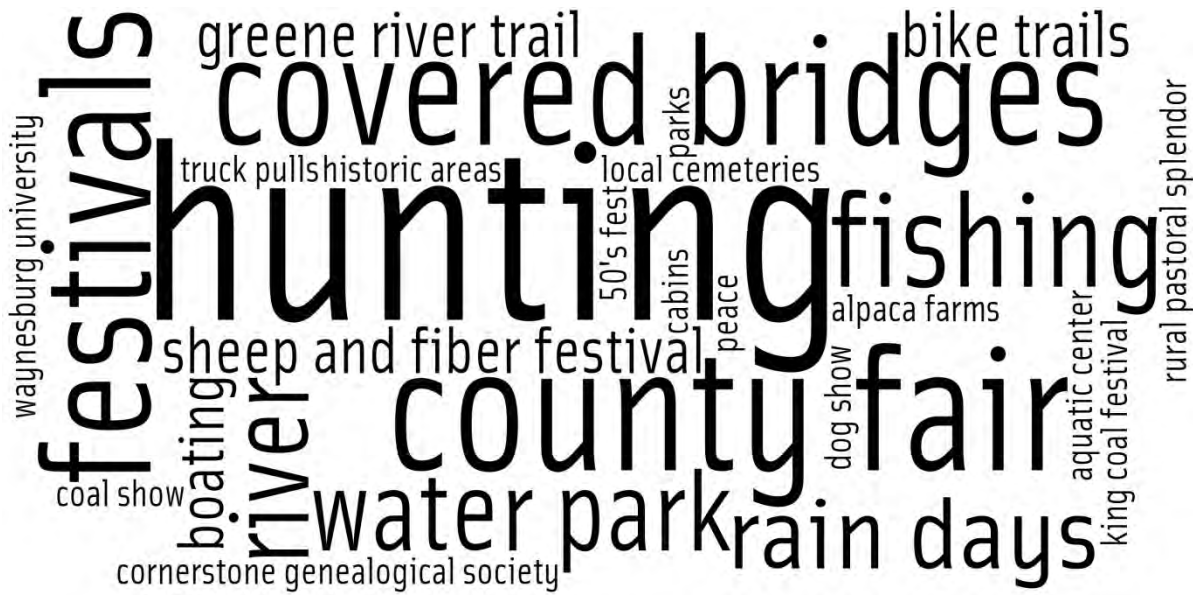
4.1.5 Tourism

Greene County has significant tourism potential. The county’s proximity to urban centers and its location on the I-79 corridor make it ideal for day trips or a weekend destination. The county boasts a number of tourism resources, including heritage and outdoor recreation sites. The county also promotes agritourism and has launched a number of attractions, including pick-your-own vendors, local vineyards, farmers markets, and overnight farm stays to help nurture a budding market.

The county benefits from excellent tourism marketing resources and the capacity of the county Tourism Promotion Agency is high. The county has an excellent tourism website that includes links to local sites, discount coupons, and pages devoted to agritourism, heritage sites, and outdoor recreation. The website even includes a “Kid’s Corner” with activities for young visitors. Print media, also downloadable from the website, is of high quality and includes lodging guides, bike trails, and driving tours. Marketing materials were readily

²⁶ Home value statistics are based on figures from the 2000 US Census.

Figure 4-9: Word cloud responses to the question, "What is your county's top attraction for tourism?"



available in both Waynesburg and in state Welcome Centers. The Tourism Promotion Agency also maintains a Facebook page for prospective visitors that helps promote local events and businesses.

The county has a number of lodging options, including national chain motels, rental cabins, and bed and breakfasts. Local residents report, however, that motels are often filled with itinerant gas industry workers and drilling crews, creating an atmosphere that might not be welcoming to casual visitors. The county also lacks dining options, creating a significant gap in services.

Downtown Waynesburg contains a number of historic structures and has the potential to become a regional destination. Currently, however, many of these structures are ill-maintained and the streets are, at times, dominated by loud and large hydrofracking water trucks. Recent efforts at downtown revitalization, however, are likely to resolve many of these issues. Improved land-use controls, preservation incentives and better traffic management will likely have a positive effect on the local visitor's experience.

It remains unclear how or if the emerging debate over fracking will impact tourism. Greene County will no doubt serve as an important case study to gauge the impact of this industry on local tourism.

Figure 4-8: Decorated barns and covered bridges provide an enjoyable touring experience through Greene County. (courtesy Greene County Chamber)



As such, county tourism development should be assessed in the coming years and findings should be incorporated into discussions related to shale gas drilling.

4.1.6 Local Leadership and Planning

Satisfaction with county and local governments is generally good. Nearly 70% of survey respondents found county government to be adequate or excellent. Satisfaction with municipal government was also good, with 61% rating it as adequate and another 14% finding it excellent. Good communication and transparency may help account for the favorable opinions from the surveys and public discussions. Greene County appears to have the best online outreach with a comprehensive website and public documents readily available. The three county commissioners also have a Facebook page to help maintain contact with residents. County leadership appears to be strong, and elected officials demonstrate energy and enthusiasm and appear to have a well-defined vision for the community.

Figure 4-10: Waynesburg University is a vital partner in many community activities.



Perhaps the most dynamic leadership in the community, however, comes from the local liberal arts college, Waynesburg University. The university is a vital partner in local development activities and helps drive many significant efforts in the community. Foremost among these is the revitalization of downtown Waynesburg.

“Waynesburg University is our most prized asset. If it was gone, we don’t know what we’d do.”

The college worked with the local Chamber to establish several public-private partnerships including, “Waynesburg Prosperous and Beautiful,” an impressive revitalization campaign, for which it maintains a Facebook page, the “Downtown Lowdown” to promote businesses and events. Local officials have also initiated a “buy-local” campaign to help promote local businesses.

Planning, conducted in conjunction with Waynesburg University, is strong in Waynesburg, but is less evident outside of the county seat. Execution may be hindered by a lack of strong land-use controls. County government is well-trained and well-versed in existing best practices.

The county enjoys a good relationship with the Southwest Pennsylvania Development District. The capacity of the development district, county government, and local governments all appear to be high. Information flows seem to be adequate for the county’s size, and there is an appropriate awareness of grants and external funding sources.

4.1.7 Health

Access to health care appears to be very good, and the Southwest Regional Medical Center was identified as a major asset. Waynesburg boasts a modern and convenient hospital with a range of

services. Major health care facilities are readily available in Pittsburgh, less than an hour away. This proximity may explain the remarkable lack of local physicians.

Greene County claims just 46 physicians per 100,000 residents, a fraction of the national average of 267 and below the state average of 297. Dental services are available, though services may be limited. The county has 28 dentists per 100,000 residents, about half the national average of 60 per 100,000. As with physicians, easy access to urban areas may help ameliorate this local deficiency.²⁷

Perhaps reflective of available services in the county, public health remains relatively poor – Greene County ranks 66th of 67 Pennsylvania counties in health outcomes. The county also ranks 63rd among Pennsylvania counties in health factors and 58th in morbidity.

"People who live next to mining compressors are getting sick."

Proper nutrition plays a part in a healthy populace, and while the county does provide a seasonal farmer's market, the county falls short in access to healthy food, with just 9% of residents having easy access to healthy food vendors.²⁸

Perhaps most telling, the county places 66th in the quality of its physical environment, exceeding state averages in air pollution and ozone days, with 19 days per year.

²⁷ US Department of Health and Human Services, "Community Health Status Report, 2009"

www.communityhealth.hhs.gov; US Census, "Doctors per 100,000 Population, 2006" www.census.gov/statab/ranks

²⁸ Robert Wood Johnson Foundation "County Health Care Rankings, 2010"

www.countyhealthrankings.org/pennsylvania/greene

Figure 4-11: Southwest Regional Medical Center was identified as an important asset in the county.



Five percent of county residents are dependent on SSI disability income. While this figure is double the national average, it is below the levels found in many active coal producing counties.

Drug use in Greene County, as with the other case study counties, is problematic. The drugs of choice in the county seem to be heroin and methamphetamine. So bad in fact, that prescription drug related home invasions were mentioned several times during the focus groups.

4.1.8 Education

Educational attainment figures are encouraging, and have shown steady improvement over the past twenty years. The graduation rate has risen over 15% since 1990, and is now near the national average. The county still lags behind the nation, however, in the percentage of college graduates and residents with graduate degrees, but has shown improvement in the number of Associate degrees earned.

Administrative issues are a major complaint. The county is divided into townships and, as a result, has five different school districts. These multiple districts, while providing local control, also exhibit considerable redundancy and administrative waste. They may also contribute to high local taxes, which were described in survey returns as "crippling." Residents also complain about the uneven

distribution of resources among school districts. This may help explain a disparity in test scores among the five local school districts.

County school statistics confirm this perception. Per-pupil spending, which included the highest levels among study counties, ranged from \$10,842 to \$14,318 among the five county districts. Test scores for children in lower grades were generally good, but tended to decline among high school students. An estimated 15% of residents lack basic prose literacy skills.

Waynesburg University is a key partner in local development efforts. This partnership reflects the institution's historical commitment to the surrounding community and its mission as a faith-based university. The relationship, however, is described as mutually beneficial. Campus officials recognize that an attractive downtown, vibrant local economy and good county schools are essential for their institutional growth and development. In fact, every student does a semester of service learning before graduating and faculty and staff perform a total of 44,000 hours of service each year.

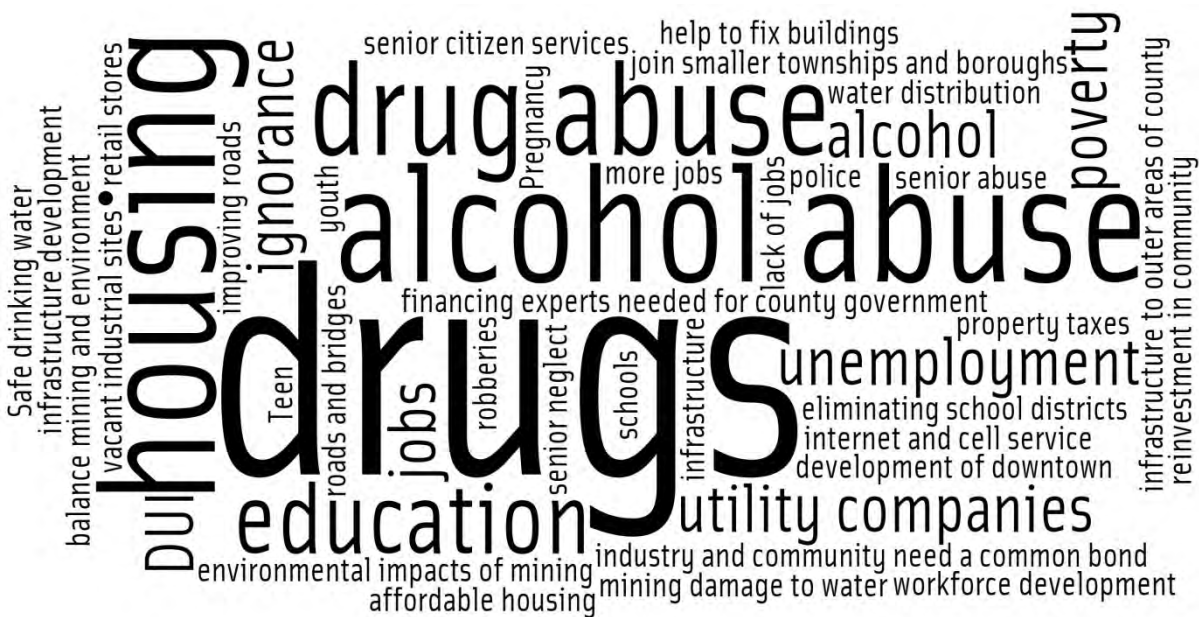
While Waynesburg University is a major local partner, the community also enjoys a good relationship with extension service of Pennsylvania State University. Penn State Extension provides valuable technical assistance, especially with fracking awareness and water quality issues.

"Extractive industries are not going away anytime soon, so we must find a way to let energy and water work well together."

4.1.9 Summary and Lessons Learned

It is difficult to ascribe Greene County's emergence from distress solely to any development strategy. The rise of the Marcellus Shale drilling industry plays a significant role in the county's recent economic progress. The community's location, on an interstate between two growing urban areas, certainly plays a major role as well. It is clear, though, that the community has undertaken strategies to better leverage these advantages to promote long-term growth.

Figure 4-12: Word cloud to the question, "What are three problems in your county that need solved?"

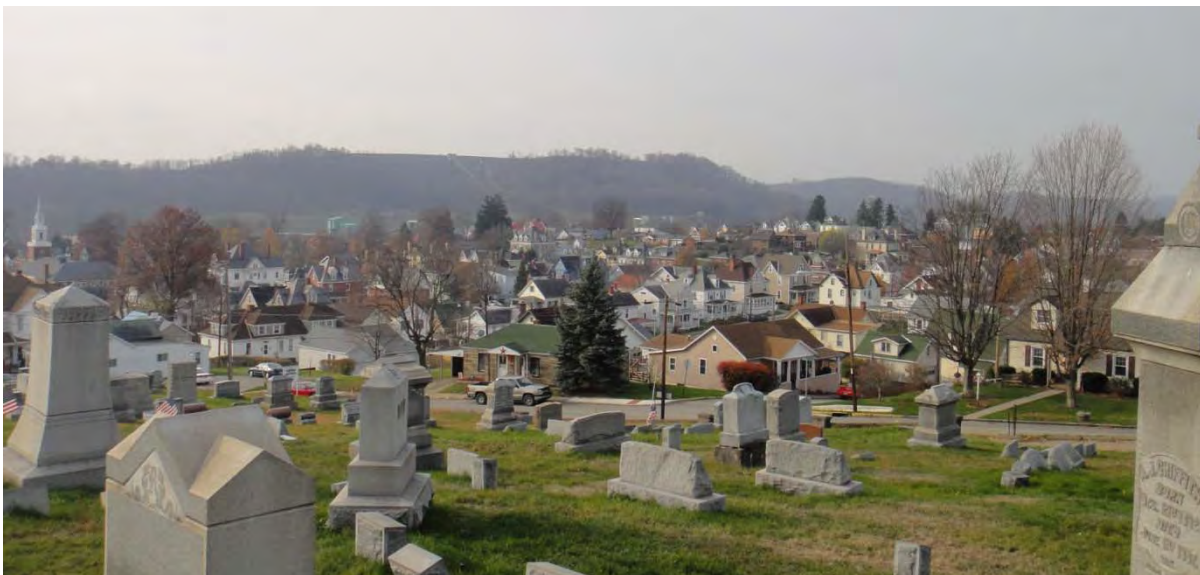


Residents show a deep attachment and affection for their home, and community pride appears to be high. Uncertainty related to the gas boom and drilling practices hang over the area, though, and the prevailing mood is one of anxious optimism.

Among the lessons learned from Greene County are the following:

- Strong partnerships with higher education can be vital to local development efforts. Greene County's partnership with Waynesburg University is commendable and a model for asset-based cooperation. The success of this relationship is a model for the Appalachian region that could be replicated elsewhere. The relationship with extension is significant and demonstrates how these services are among the most underutilized resources in the region.
- Greene County's success demonstrates the importance of capacity and cooperation among local government officials. The community generally benefits from sound decision making by strong leadership and a common vision among local leaders.
- Low levels of entrepreneurship and risk-averse residents can threaten long term development. Because of this, the community remains overly dependent on resource extraction - a reliance that may deter residential growth because of lack of diversification.
- Greene County is a leader in the use of social media to promote government transparency and local business development. Success in this area should serve as a model for other communities in the region.
- Greene County is a significant case study in shale gas extraction. The county is at the forefront of this industry, which promises to soon spread to other parts of the Appalachian region. As such, it has much to teach other communities about the promise, potential, and dangers of this rapidly growing activity. Greene County's experiences in the coming decade should be studied closely and shared with other shale-rich communities.

Figure 4-13: Waynesburg residential area as seen from a hilltop cemetery near downtown.



4.2 Morgan County, Ohio

Figure 4-14: Word cloud responses to the question, "What are three words that describe your county?"



Figure 4-15: Word cloud responses to the question, "What is your county best known for?"



4.2.1 Morgan County Introduction

Morgan County is located in southeast Ohio, between the micropolitan statistical areas of Athens and Zanesville. Once among the largest coal producing areas of the world, Morgan County is now a quiet rural community. Thanks to extensive remediation efforts, evidence of past mining operations are difficult to see and the surrounding countryside is dominated by scenic, rolling hills.


While the local environment is much improved, Morgan County's economic landscape is still visibly scarred from mine and plant closures. The county is classified as distressed by the ARC and unemployment is fourth highest in Ohio. In spite of this hardship, Morgan County remains hopeful and is implementing an impressive program to promote economic growth. The community's leadership, planning, and approach are among the most innovative in this study and rightly serve as a model for other distressed rural communities.

4.2.2 Population Profile

With less than 15,000 residents, Morgan County is one of the least populated counties in Ohio. Like many rural counties, the local population declined slightly during the last decade, dropping by 4.1%. The county's population distribution, however, has remained fairly well balanced. Nearly a quarter of the local population (23.1%) is under 18 years of age. Diversity is low, with whites making up 93% of the county population.

4.2.3 Access and Infrastructure

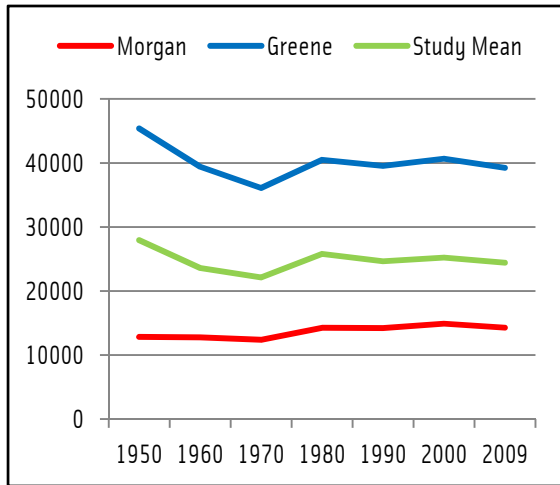
Morgan County is the only county in Ohio without a four-lane highway. To residents, this has been viewed as a mixed blessing. The lack of a major highway has probably deterred investment and made the drive to urban areas and other communities more difficult and time consuming. On

Quick Facts	
Morgan County, Ohio	
	
Founded	1817
County Seat	McConnelsville
Land Area	418 square miles
Water Surface Area	4 square miles
Population	15,054
Density	36 per sq. mi.
Per Capita Income	\$17,526
Unemployment Rate	15.2%
ADHS Highway	No
Miles to State Capital	82
Miles from county seat to nearest Interstate	27 (I-70); 25 (I-77)
Miles from county seat to nearest commercial airport	80 (Columbus, OH)

the other hand, the two-lane highway has allowed the county to retain a tranquil rural landscape and has helped the county seat of McConnelsville remain a viable community with an active historic downtown.

Even without four lane access, the drive to McConnelsville is not especially difficult from any direction. Distances to nearby Athens, Zanesville, and Marietta are manageable and less than an hour's drive from the county seat. Roads appear to be well-maintained in well-traveled areas, but may be wanting elsewhere. Nearly half (49%) of the

Figure 4-16: 60-year population trend with cohort (Greene County, PA) and 10-county study average.



county's survey respondents found road maintenance to be inadequate and another 11% classified it as poor. Morgan County received high marks, however, for public transportation. More than 60% of respondents found public transportation to be adequate and another 18% reported it to be excellent.

Results on other types of infrastructure appeared to be mixed. Not surprisingly, disparities exist between populated and more rural areas. For example, residents are almost evenly split in their opinions of water and sewer services.

More than half of survey respondents (56%) found water service to be adequate or excellent, and the remainder classified it as inadequate or poor. Likewise, 53% of participants had unfavorable

views of sewer service, while 42% found it to be adequate. Less than 6% of respondents classified sewer service as excellent.

Internet and mobile access are a major concern among residents. Almost 90% of survey respondents classified internet access as either inadequate or poor. Focus group participants identified poor access as a major local weakness and a significant barrier to economic growth. Discussions with local leaders, however, suggest that service providers are making improvements in the more populated areas of the county. Mobile phone reception, while good in McConnelsville, is spotty in other areas. State broadband access maps, developed by Connect Ohio, confirm the lack of telecom services in many areas.

4.2.4 Economic and Housing Conditions

Over the past two decades, Morgan County has been hit with a succession of negative economic impacts. Plant closures, the depletion of local coal reserves, and increased globalization have contributed to local economic distress and the fourth highest unemployment rate in Ohio. The county also recently experienced the loss of several auto dealerships. While jobs were lost, the financial impact of these closures was somewhat mitigated by Ohio tax policies, which directs the tax from the sale of automobiles to the county where the auto is titled, not where the auto is sold.

Figure 4-17: The McConnelsville town square, with the Twin City Opera House and Morgan County Courthouse anchoring an active downtown of restaurants, markets, and entertainment.

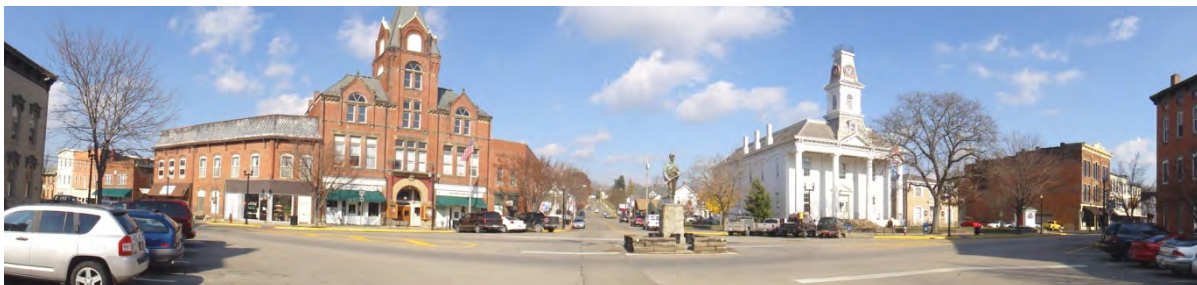
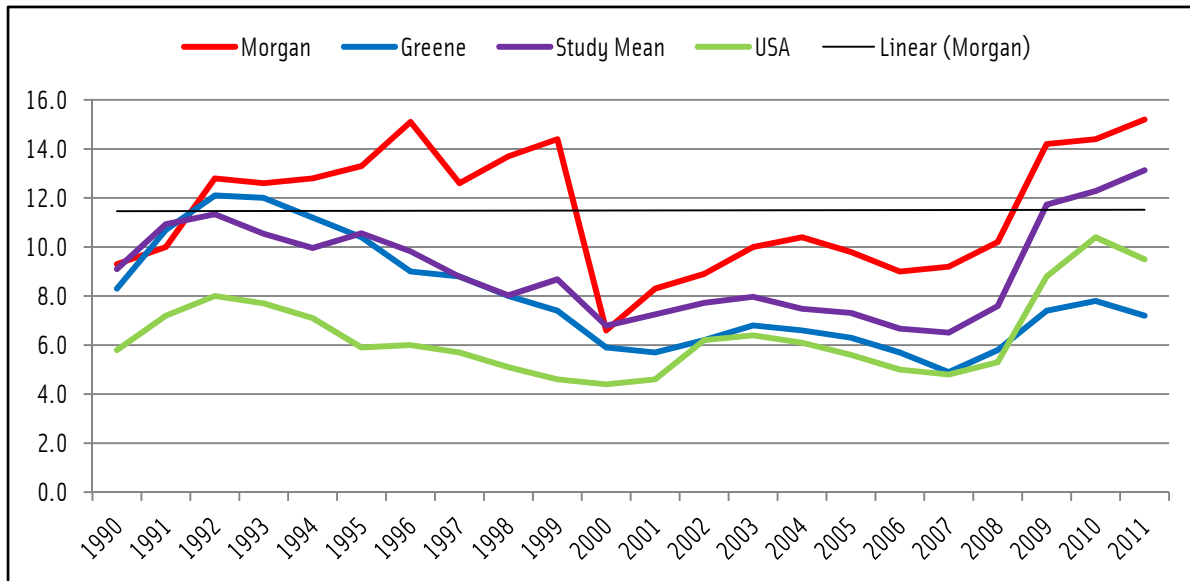


Figure 4-18: Morgan County unemployment rate comparison, percentage by year.



Yet, while local officials acknowledge the significance of these external forces, they also point fingers at themselves for complacency during good economic times.²⁹ Interestingly, while Morgan County certainly qualifies as distressed, it neither looks nor feels like a distressed county.

"We didn't plan. Had we planned 20 years ago, we wouldn't be in the shape we're in now."

McConnelsville is a picturesque and vibrant community with a number of attractive local businesses. Only when one gets outside of the county seat do signs of hardship emerge. Other townships and villages in Morgan County, while sharing aesthetic qualities with the county seat, show more signs of financial stress. Housing characteristics are similar. While housing within

²⁹ Based on March, 2011 unemployment rates compiled by the US Bureau of Labor Statistics.

McConnelsville is generally good, lower quality housing stock is visible in more rural areas.

There is no local Wal-Mart or clothing store, which means upwards of 2,700 residents drive out of the county for retail purchases. To offset this leakage, local leaders recently initiated a "buy local" campaign, in hopes of boosting local sales by a realistic 10%, which leaders say will equate to \$100,000 in added tax revenue in each of the first years of the program.

"We are an emerging county, awakening from a deep sleep of past complacency. We are ready for change and are willing to adapt to new ways of doing things."

Local officials are generally optimistic and hopeful for the future. In discussions, they seem to regard their current economic status as an anomaly and not as a permanent condition. Residents, however, seem less certain. Half of survey respondents expressed a lack of optimism about the county's future. Community leaders say that are actively

addressing these issues by changing a defeatist attitude to a "can do" attitude among our citizens.

Residents also expressed concerns about entrepreneurship, particularly among local youth. Local officials are working with both The Ohio State University and Ohio University to help promote small business development. In one case, for example, Ohio University staff received funding from the ARC to help the local farm bureau promote agricultural products. The county also benefits from a strong working relationship with their local development district, the Buckeye Hills-Hocking Valley Regional Development District.

4.2.5 Tourism

Morgan County has significant potential as a tourism destination. Downtown McConnelsville is a picturesque and historic attraction, with ample retail space and existing shopping and dining options. The town square features the Twin Cities Opera House, a historic entertainment venue. The

Opera House currently provides a full range of events and activities, including movies, theater, and live music. It is also home to the Ohio Valley Opry, a monthly country music concert and is even used for ghost-hunting tours and big-screen video gaming competitions.

Stockport, another village in Morgan County, is also a tourist destination and boasts a historic mill that has been converted into a restaurant and inn. Other local assets include the "AEP ReCreation Land," which is 42,000 acres of reclaimed mine land that is now used for a wide range of outdoor activities, including hiking, fishing, camping, hunting and horseback riding. Another popular attraction is the Miner's Memorial Park, a monument to the county's mining heritage. The park's centerpiece is the bucket from Big Muskie, a massive earth mover once used by the coal extraction industry.

Given their resources, Morgan County has done an excellent job of promoting local tourism. The county maintains a welcome center on the square in downtown McConnelsville. The center is operated

Figure 4-19: Word cloud responses to the question, "What is your county's top attraction for tourism?"



Figure 4-20: Morgan County staffs an accessible visitor information center and does a good job of promoting tourism assets.



by knowledgeable staff and offers helpful information and advice for visitors. Brochures and maps are professionally done and readily available.

While staffing and visibility of the tourism information center is adequate, tourism infrastructure is lacking in other areas. Roadside signage is sparse and the number of overnight accommodations is limited. While the county has a handful of local motels and bed and breakfasts, it lacks the exposure of a national hotel.

"We had a great white tablecloth restaurant. It sold, the buyers were clueless, and it closed. The closure reduced our quality of life and makes it difficult for management-type people to relocate here."

Morgan County, with its natural and cultural amenities, has significant potential as a weekend destination. In fact, ARC assistance with the development of promotional media and other marketing materials has played a significant role in the rise of the local tourism sector. Additional investment in tourism development and training would likely help foster this growing local industry.

4.2.6 Local Leadership and Planning

Local leadership is very strong and is a model of vision, cooperation, and innovation. Partnerships between elected officials, nonprofit organizations, and the local business community are strong. Across the board, leaders express a common vision, which also seems to cross local party lines.

"There are no 'Rs' and 'Ds' when it comes to turning this county around."

An important early step for local leaders was the creation of the Morgan County Community Improvement Committee (CIC). Among the first decisions of the CIC was the disposition of an older industrial site. Sale of the site was, according to residents, a difficult and controversial decision. In hindsight, though, they recognized that it was a watershed moment. It allowed the CIC to break with the past and move forward with a new vision for the community. Local leaders, working through the CIC, would go on to form another critical nonprofit - a community foundation - to help raise private and philanthropic funds for local improvement projects.

Plans for local economic development are impressive and innovative. A comprehensive plan was followed by a site-specific plan for an industrial/innovation park. In an effort to promote entrepreneurship, the proposed park will include a business incubator tied to school entrepreneurship programs. This incubator is also impressive in that it incorporates "cross-pollination" ideas. The facility is designed to include both "high-tech" and "old-tech" businesses, so that digital and mechanical innovators can interact and combine their efforts and expertise. This creative and visionary effort is rooted in current and emerging best practices in joining college-bound and vocational types of education.

Local officials and survey participants both bemoan the difficulty in securing matching funds for infrastructure improvements. So while local leaders say everyone works together, they also note state level political challenges to needed improvements.

"We have a 3:1 ratio of Republicans to Democrats. State politicians know they have our support and never have to produce anything. We get forgotten."

Not surprisingly, local officials get high marks for their efforts with 80% of survey participants having rated local officials as "excellent" or "adequate." Opinions of county officials, however, were less positive. Almost 66% of respondents rated county officials as "inadequate" or "poor." These differing perceptions are perhaps indicative of the evident disparity between McConnelsville and more rural parts of the county.

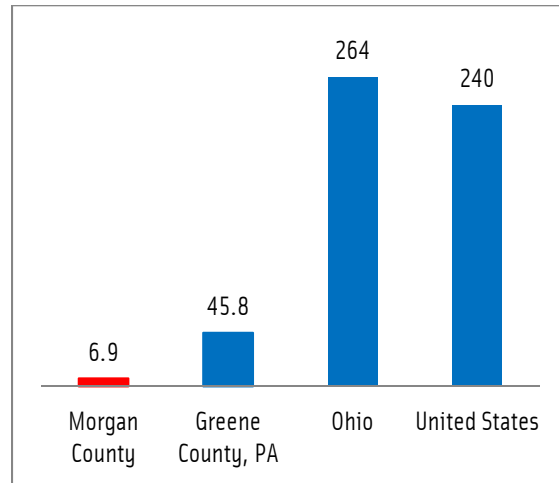
Residents appear less enthusiastic about current local land-use planning. Over 76% of survey respondents found planning and zoning to be inadequate or poor. While this figure is cause for concern, it may indicate a community that desires better land-use planning or stronger enforcement of existing policies and ordinances.

4.2.7 Health

With no full service hospital in the county, access to health care is limited, with 88% of survey participants reporting they live 30–60 minutes from the nearest full service hospital. Of the 88 Ohio counties, Morgan County ranks 57th in mortality and morbidity health outcomes, with heart disease the leading cause of death followed closely by cancer and stroke.

Poor health habits and socio-economic factors contribute to the relatively low health outcomes,

Figure 4-21: Comparison of Physicians per 100,000 county, state, and national residents



but the lack of a local hospital also contributes to a low number of local physicians. Morgan County reports 6.9 physicians per 100,000 residents, well less than its study cohort of Greene County, PA, and far below state and national averages.³⁰

Access to dental care, with 20.7 dentists per 100,000 residents, is better, though still well below the national average of 60 per 100,000 residents. It should be noted, however, that Morgan County's proximity to larger communities, such as Zanesville and Marietta, may help make up for these shortages. Residents benefit, however, from a relatively hospitable physical environment, ranked the 8th best in Ohio.³¹

Dependency on federal SSI is relatively low, at 3.4% of the county population. While this figure is above the national average of 2.5%, it lower than

³⁰ US Department of Health and Human Services, "Community Health Status Report, 2009" www.communityhealth.hhs.gov

³¹ Robert Wood Johnson Foundation "2010 County Health Care Rankings" www.countyhealthrankings.org

many rural Appalachian counties, particularly those associated with the mining industry.³²

4.2.8 Education

From the outset, the Morgan County Community Improvement Committee (CIC) recognized the importance of education and youth in the long-term economic recovery strategy. Improving schools was a key component of early development efforts and results are impressive. The percentage of residents with a high school diploma or higher stands at 83.5%, tied with Greene County for the best performance among study counties. The figure also represents a nearly 12% increase since 1990. The county also posts the highest literacy levels of the 10-county study, with 11% of residents estimated to be lacking basic prose literacy.³³

Test scores are also very impressive. High school reading and math proficiency scores, both in the 93rd percentile, are the highest among the counties in this study. Remarkably, these scores are comparable to those at Oak Ridge, TN, traditionally among the best performing school systems in the nation. Leaders of the CIC plan to continue this pattern by introducing STEM (Science, Technology, Math and Engineering) curricula into the schools in the near future.³⁴

Per pupil expenditures, at \$10,676, are slightly above average the ten-county average of \$10,745.

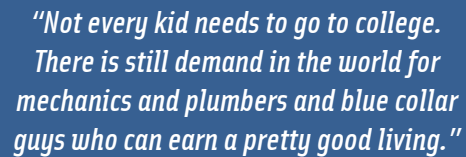
³² Social Security Administration, "SSI Recipients by State and County, 2009," (2010, SSA Publication No. 13-11976)

³³ 2010 US Census; National Center for Education Statistics, "National Assessment of Adult Literacy: State and County Literacy Estimates," nces.ed.gov/naal/estimates/stateestimates

³⁴ Ohio Department of Education, "2009-2010 School Year Report Card, Morgan Local School District" www.reportcard.ohio.gov

The majority (52%) of local students receive free or reduced price lunches.³⁵

Ironically, while high school student performance is very high, degree attainment remains well below the national average. Just 9.5% of residents have a bachelor's or advanced degree, the second lowest figure among study counties. This is in due, in part, to the county's level of economic distress. It also reflects the limited opportunities for local college graduates. Leaders are hopeful that investments in entrepreneurship and business development programs will expand opportunities to bring back local young people after they finish college. Local graduates appear to be making better use of community colleges. In fact, 7.7% of county residents hold associate degrees, third highest among study counties.³⁶



"Not every kid needs to go to college. There is still demand in the world for mechanics and plumbers and blue collar guys who can earn a pretty good living."

Despite the low number of local college graduates, the community enjoys strong partnerships with both Ohio University and The Ohio State University. OSU extension is well-utilized and is an active partner in community development efforts. Continued activity by these and other institutions and the positive trajectory of the CIC could pay dividends in the future.

³⁵ Federal Education Budget Project, "Morgan Local School District," <http://newamerica.net/k12/oh>

³⁶ 2010 US Census

Figure 4-22: Word cloud to the question, "What are three problems in your county that need solved?"



4.2.9 Summary and Lessons Learned

Morgan County, while still distressed, has developed and is implementing impressive plans for a long-term economic recovery. Local leadership, visible in the CIC, Community Foundation, and local government, has demonstrated considerable skill and vision through their planning efforts. Their willingness to break with the past and embrace youth and learning as the focus of their efforts is remarkable and should serve as a model for other distressed communities.

Among the lessons to be learned from Morgan County are the following:

- Early on, residents established an important partnership for recovery, the CIC, and later established a community foundation to help implement CIC initiatives.
- The ReCreation Land is a model for the reuse of remediated mining sites that could be replicated elsewhere.
- County leaders and residents recognized their tourism resources and are making significant strides in that area. Progress may be limited, however, by a lack of local lodging and other infrastructure.
- County leaders resisted a “quick fix” and instead focused on long-term development through investments in youth and education. Local leaders repeatedly spoke of planning fifty years into the future.
- Residents and officials understand the trade-offs between road improvements and downtown viability and have taken a measured approach to road construction that, while improving access, might prove detrimental to their historic downtown.
- Institutions of higher learning are an important local partner and contribute significantly to recovery and planning efforts. Local officials are also making effective use of the local extension service.

4.3 Pendleton County, West Virginia

Figure 4-23: Word cloud responses to the question, "What are three words that describe your county?"

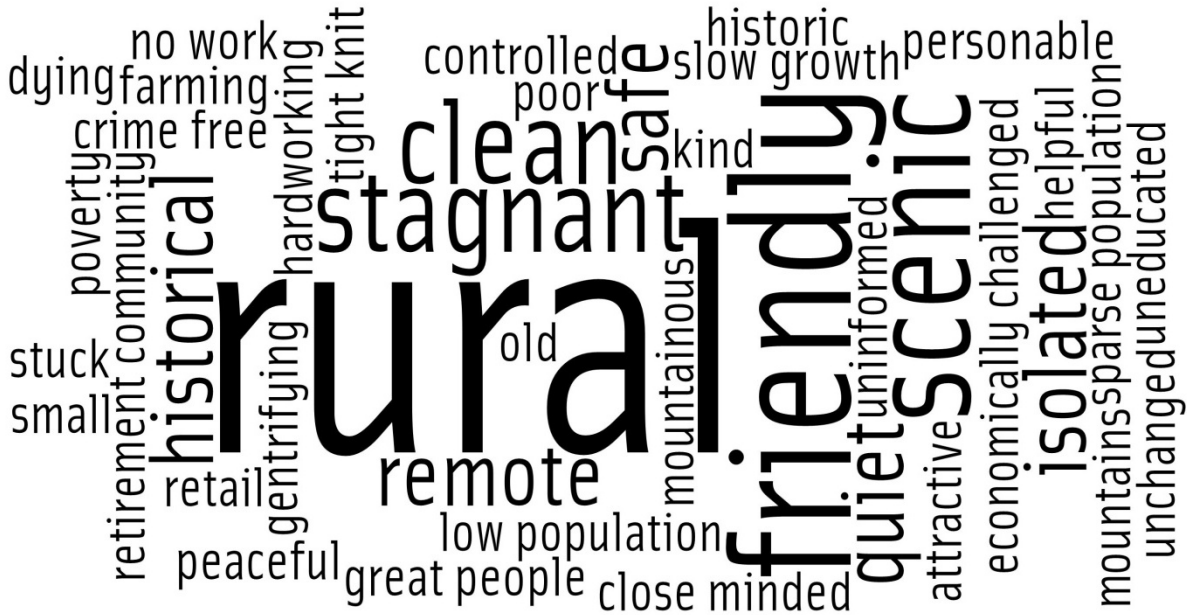
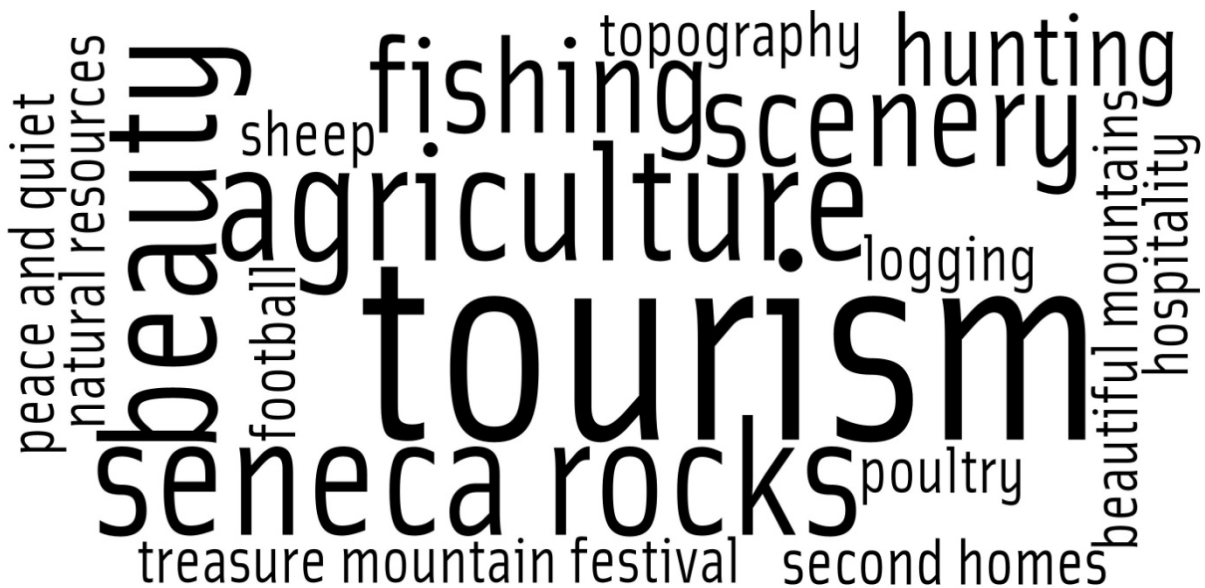


Figure 4-24: Word cloud responses to the question, "What is your county best known for?"




4.3.1 Pendleton County Introduction

Pendleton County, West Virginia, is located at the eastern edge of the state, just thirty miles from the fast-growing city of Harrisonburg, Virginia, and the busy I-81 corridor. Yet, while the county is adjacent to the Harrisonburg Metropolitan Statistical Area, it remains isolated and remote. Mountainous terrain and winding roads contribute to this isolation and help deter growth and investment. This terrain, however, also imparts a serene beauty to the local environment and, while an obstacle to conventional growth, makes the county a potential tourism and retirement destination.

Residents of the county have overcome this isolation through a combination of hard-work, resourcefulness, and luck. Yet, despite their relative success, community members feel far from secure. Most believe they are "treading water" and fear they will be unable to maintain their current economic status or quality of life. These fears are now exacerbated by recent changes in energy costs and political leadership. Improved access to available resources, however, could alleviate many fears and help the county reach its full potential.

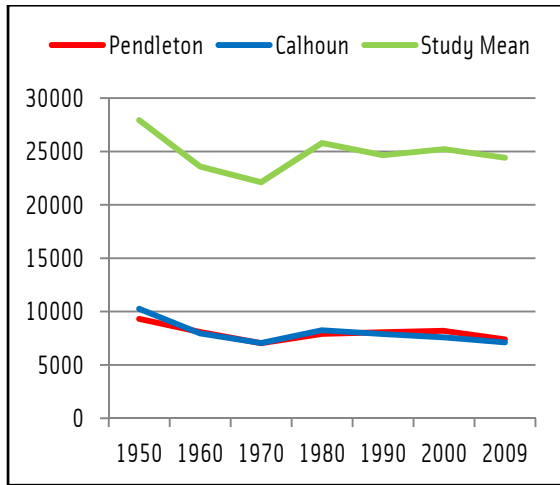
4.3.2 Population and Demographic Profile

Pendleton County's population is, in some respects, indicative of its rural topography. On the one hand, it is West Virginia's fifth largest county, with an area of 698 square miles. At the same time, however, it has the sixth smallest population, with 7390 residents. As such, Pendleton has the one of the lowest population densities in the state with 11 residents per square mile. The population dropped by nine percent during the past decade.

Quick Facts	
Pendleton County, West Virginia	
	
Founded	1787
County Seat	Franklin
Land Area	697.87 sq. mi.
Water Surface Area	.28 sq. mi.
Population	7,390
Density	11
Per Capita Income	\$20,570
Unemployment Rate	9%
ADHS Highway	No
Miles to State Capital	197
Miles from county seat to nearest Interstate	51 (I-81)
Miles from county seat to nearest commercial airport	152 (Dulles, VA)

As with many Appalachian communities, diversity is lacking. The local population is almost 96% white. In discussions, residents expressed concerns related to this lack of diversity. For one, they felt that this lack of familiarity promotes unintentional racism among some residents. The lack of diversity may also contribute to poor post-secondary school performance. Some young people, they believe, are overwhelmed when confronted with a diverse college environment and have difficulty adjusting to college life.

Figure 4-25: 60-year population trend with cohort (Calhoun County, WV) and 10-county average.



Age distribution is good, with a near even proportion of youth and senior residents. The senior distribution is slightly higher than the state average, but this is likely the result of the county's small, but growing population of retirees. The county also boasts a cadre of part-time residents who own second homes in the area.

4.3.3 Access and Infrastructure

Transportation access to the county is a major issue. Approaching from the west, drivers are confronted by a flashing sign at the county line announcing steep grades and stating "all trucks must stop." Access from other directions, while less foreboding, is also challenging.

"The roads aren't going to get any better."

Roads are in good condition and residents give them high marks. Over 16% of survey participants rated county road conditions as excellent and 55% found them adequate - among the highest rankings

among study communities. Most residents accept transportation access issues as a fact of life.

Water and sewer services also received fairly high marks, with approximately three-fourths of residents finding them to be adequate or excellent. Residents in remote areas, however, experience somber water issues.

"Last summer people ran out of water because the springs and wells were dry. My spring was dry so we hauled in water from another location in a tank on the pickup. Not everyone can do this because we have so many poor families."

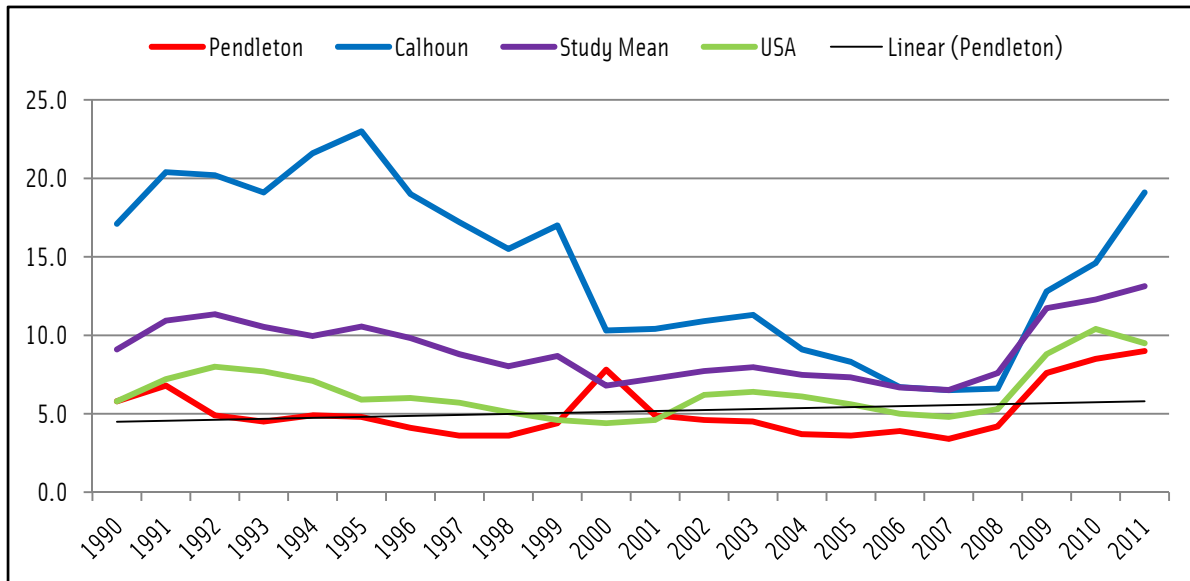
Internet and cell phone access are very limited and a major concern among local residents. Few residents have high-speed Internet access and those who do complain that broadband speeds are slower than those outside the county. Cell phone service is nonexistent in many parts of the county.³⁷ Residents and local leaders expressed a strong desire for ARC telecommunications assistance.

"We need a new type of infrastructure."

Officials expressed concerns about their ability to implement future grant-funded infrastructure improvements. The often required matching funds are a major obstacle for the small rural county and could deter potential improvements or other projects.

³⁷<http://www.wvcommerce.org/business/wvbmp>

Figure 4-26: Pendleton County unemployment rate comparison, percentage by year.



4.3.4 Economic and Housing Conditions

Despite the remote location, the county seat of Franklin appears to be well maintained and the housing stock is generally good. Empty storefronts, however, plague the main street of town. The county has no car dealerships and just one grocery.

The town does, however, have a number of well-established retailers, including two hardware stores, a hunting and fishing supplier, and a couple of small restaurants. The local Chamber of Commerce recently launched a buy-local campaign to help promote local businesses.

Aversion to risk and a lack of entrepreneurship are all cited as major barriers to local improvement. Residents believe that small business development is the key to their community's future. Participants are frustrated that while they can obtain support for large scale industries, which they cannot either attract or retain, they feel that they cannot obtain help to develop or support small businesses.

Despite the number of vacant storefronts, retail rents remain relatively high (\$400 per month) and

the community has little funding to help develop or sustain new businesses. Residents expressed a strong desire for microloan, business development, and entrepreneurship programs.

Although Pendleton County is classified as transitional, local residents feel far from secure. Most focus group participants expressed surprise, in fact, that their county is not distressed. The county's largest employer, a shoe factory, closed down a decade ago and since that time, officials state they have been "treading water" trying to sustain the local economy. They feel they are unable to move forward, and constantly struggle to maintain the status quo. Fear of change and a lack of vision may also deter growth efforts.

"We have too many retirees who fight any type of job opportunities that show interest in this county."

The Pendleton County Economic Development Association (EDA) is heavily burdened by a legacy or inherited industrial properties. The county has a

number of these properties in industrial parks and other areas of the county. The scale of these developments is no longer viable in the county, as they are too large for existing needs. Many are older properties, and are increasingly inefficient in their energy use. The county lacks the funding to adapt or improve these sites and the costs of maintaining the structures are increasingly unsustainable. Unless these issues are resolved, leaders feel these costs may threaten the survival of the local EDA.

The consensus among residents is that the local economy is largely supported by the existence of the Sugar Grove Navy Information Operations Command, a military communications facility that intercepts and processes telecommunications traffic for military and national security agencies. The facility pumps several million dollars into the local economy, supports local nonprofits, and provides direct funding for local schools. It also

attracts career military personnel, many who often choose to retire or remain in the area. The main drawback to the facility is that it creates a shortage of rental housing and drives up the price of non-owned housing stock.

Residents and officials believe that this facility is largely responsible for keeping the county out of distress and expressed concerns about the future of the base. It had been slated for closure in the past, but managed to remain open – perhaps due to the influence of Senator Robert Byrd. The passing of Senator Byrd was a subject of serious concern among all residents and, in their view, pointed towards an uncertain future for the state.

Unemployment is high and conditions for those with jobs are often difficult. A large number of residents work outside of the county and long commutes are common. This factor, combined with increasingly high fuel costs and flat wages, make many jobs increasingly untenable.

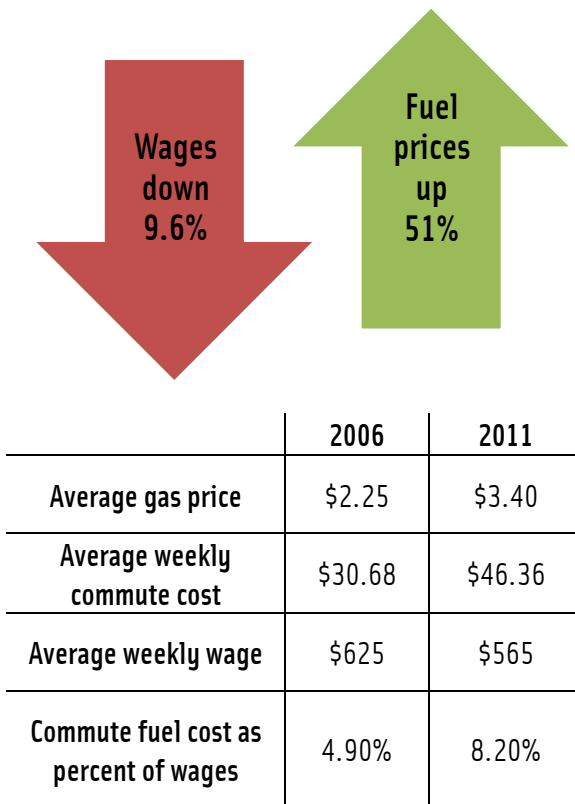
Figure 4-27: Geological “fin” patterns along ridgelines in the region provide for unique outdoor recreation experiences and have allowed tourism opportunities to prosper. (photo courtesy Nelson Rocks Outdoor Center)



Adding to these already difficult situations, since 2006, average wages in the state have dropped 9.6% while fuel prices have increased by over 50%, as detailed in the table below. Though employed, some residents struggle to merely break even.

Local officials criticized ARC for not including these sorts of factors when determining a county's economic status. They also cited the human costs of these long but necessary commutes and the strain they placed on marriages and families.

Figure 4-28: Between 2006 and 2011, the cost of being employed outside of Pendleton County dramatically changed.³⁸



³⁸ Hypothetical West Virginia commuting costs, assumes five day work week, daily commute of 60 miles, and 22mpg fuel economy. Historical average state fuel costs from gasbuddy.com; Weekly wages from Bureau of Labor and Statistics, www.bls.gov.

Figure 4-29: A rock climber at Nelson Rocks and the Via Ferrata. (photo courtesy Nelson Rocks Outdoor Center)



4.3.5 Tourism

Pendleton County has tremendous potential as a tourism destination. The area is blessed with natural beauty and natural amenities, most importantly, Seneca Rocks and Nelson Rocks, which are recreation areas named for large rock walls or “fins” that have resisted erosion along the crest of prominent ridge lines in the region.

Collectively, “the Rocks” are a major local attraction and draw a range of visitors, from day-hikers to serious rock climbers. Two climbing school and guide services exist in the county to serve these visitors and the Rocks are credited with helping attract a climbing equipment manufacturer. The Via Ferrata, a climbing experience using a system of permanently installed handles and footholds, is part of Nelson Rocks Outdoor Center.

Other tourism and recreation attractions include Germany Valley, Judy Gap, and Seneca Caverns, a local cave attraction. The town of Franklin also has tourism potential. It is a quaint and scenic community, with tree lined sidewalks and a number of historic structures.

Tourism development is hampered by a lack of local infrastructure - another indicator of low levels of entrepreneurship. Lodging options, while well maintained, are dated and limited. The county also has few dining options. Marketing efforts and materials, while adequate, could also be improved. Local sites are not well promoted at state welcome centers and the Visitor's Center at Seneca Rocks, maintained by the National Forest Service, is often closed. Local leaders, for their part, are keenly aware of the deficiencies, but lack the resources to address them. They are also unaware of some programs or funding sources that may exist to assist them, including some ARC resources.

4.3.6 Local Leadership and Planning

Survey respondents have a favorable opinion of local and county government. Seventy-one percent

of participants rated county officials as adequate or excellent. Local officials were viewed similarly, with 69% of respondents sharing this perception.

The capacity of local governments appears to be good, and most services were generally viewed as adequate or better. While the county has a website, it is largely geared toward visitors and there is no clear link to government or local officials. Most participants believed the county would benefit from having a clearly designated point of contact.

Political representation at the state level is also an issue. As a small and rural area, Pendleton County shares representation with adjacent counties with larger populations. As a result, county residents feel they have little impact on state elections and, as a result, are rarely a priority for its state representatives.

The leadership exhibited by local nonprofits and community organizations is impressive and reflects a high level of social capital. The community has a young, bright, and energetic Chamber leader who has initiated some innovative programs, including the recent buy-local program.

Figure 4-30: Word cloud responses to the question, "What is your county's top attraction for tourism?"



Figure 4-31: A view of the town of Franklin, the county seat of Pendleton County, West Virginia.



Another innovative Chamber program was the development of a young professionals association. This dynamic group appears to be assuming a significant leadership role in the community and should provide a new generation of local leaders.

Established and traditional service organizations such as the Ruritans, Lions Club, and Sertoma also play an important role in community affairs. Often forgotten in more urban areas, these groups have initiated several major community projects and appear to be an important local asset. In one case, for example, local leaders were concerned about a lack of recreational activities for local youth and families. These organizations addressed this need by combining resources and constructing a local bowling alley, a facility that provides safe, affordable and family-friendly recreation.

Planning, or rather a lack thereof, is a significant local issue. During discussions with local officials, the lack of a comprehensive strategic plan for the county was identified as a major barrier to continued development. The county has virtually no planning. A couple of *pro forma* plans had been created in the past for specific projects, but they were essentially boilerplate documents created with no community input. Because they had no plan, the local development district, the Region 8

Planning and Development Council, determined the county ineligible for some grants and declined to pursue them. Curiously, officials stated that Region 8 did not offer to assist them with creating plans and did not appear to assist them in identifying funding sources for planning services.

4.3.7 Health

Pendleton County ranks first among West Virginia counties for health outcomes and ranks among the top three counties in the state for morbidity, mortality, and health behaviors. A number of factors contribute to this high ranking, including the presence of military personnel, access to outdoor recreation, and good local schools.³⁹

Residents also have access to affordable health care. The community boasts a local sliding-scale health care facility and offers affordable dental services to local residents. Physician access, at 52.8 per 100,000 residents is below the national average, but good for an isolated rural county. Dental access, at 79.1 dentists per 100,000 residents, is even better.

³⁹ Robert Wood Johnson Foundation. "County Health Care Rankings, 2010" www.countyhealthrankings.org/west-virginia/pendleton

While access to routine health care is good, hospital services require remain distant. Just 3% of survey respondents stated they lived within 30 minutes of the nearest hospital. Nearly half of respondents, 48%, reported they lived more than an hour's drive from the nearest facility.⁴⁰

Just 3.2% of residents rely on SSI disability income, a low figure compared to other counties in this study. Pendleton County has the lowest number of SSI recipients among West Virginia counties.⁴¹

4.3.8 Education

Educational results are mixed. On the one hand, Pendleton County has one of the best public school systems in West Virginia. Pendleton County High School is ranked the seventh best high school in West Virginia and boasts a high number of experienced teachers and educators with advanced degrees. Not surprisingly, test scores are slightly above average when compared to other communities in this study. Almost 76% of county residents have a high school diploma or higher.⁴²

Surprisingly, though, local schools were among the worst in the state in "lack of follow through" – the gap between students taking the ACT exam and those enrolling in college. The county system was fourth worst in the state, with 19.3% of ACT

students failing to enroll in post-secondary institutions. In discussions, local residents noted this fact and blamed it on a number of factors. These include isolation, lack of preparation, lack of family support systems, and inability to cope with a college environment. With limited local opportunities, youth who do graduate from college rarely return home. As in other Appalachian communities, this "brain drain" is a cause for significant concern among residents.

In spite of these issues, the county has demonstrated remarkable progress in degree attainment. The percentage of residents with a bachelor's degree has nearly doubled since 1990, rising from 8.2% to 15.2% in 2010.⁴³

The county enjoys a good relationship with University of West Virginia Extension staff. The extension office is an important and, perhaps, underutilized local asset.

⁴⁰ U.S. Department of Health and Human Services, "Community Health Status Report, 2009" www.communityhealth.hhs.gov

⁴¹ Social Security Administration, "SSI Recipients by State and County, 2009" (2010, SSA Publication No. 13-11976), 106.

⁴² "West Virginia's Best Public High Schools, 2007-2008," www.wvreport.com/highschool/index.html; West Virginia Department of Education, "NCLB Report Card: Pendleton County, 2008-2009;" <http://pendletoncountyschools.com/pchs/staff.htm>; 2010 Census.

⁴³ www.wvreport.com/highschool/index.html; 2010 Census.

Figure 4-32: Word cloud for the question, "What are three problems that need solved in your county?"



4.3.9 Summary and Lessons Learned

Pendleton County is a community with vast potential. It possesses great beauty, is relatively close to growing urban areas, and has good leadership. In order to reach this potential, it needs better access to assistance programs and increased awareness of important opportunities.

Access to information is an issue for both community residents and local officials. Local leaders are unaware of many funding opportunities and government programs, many of which might prove beneficial to the community. Residents also expressed a desire for more data about their community and easier access to information related to their status and performance.

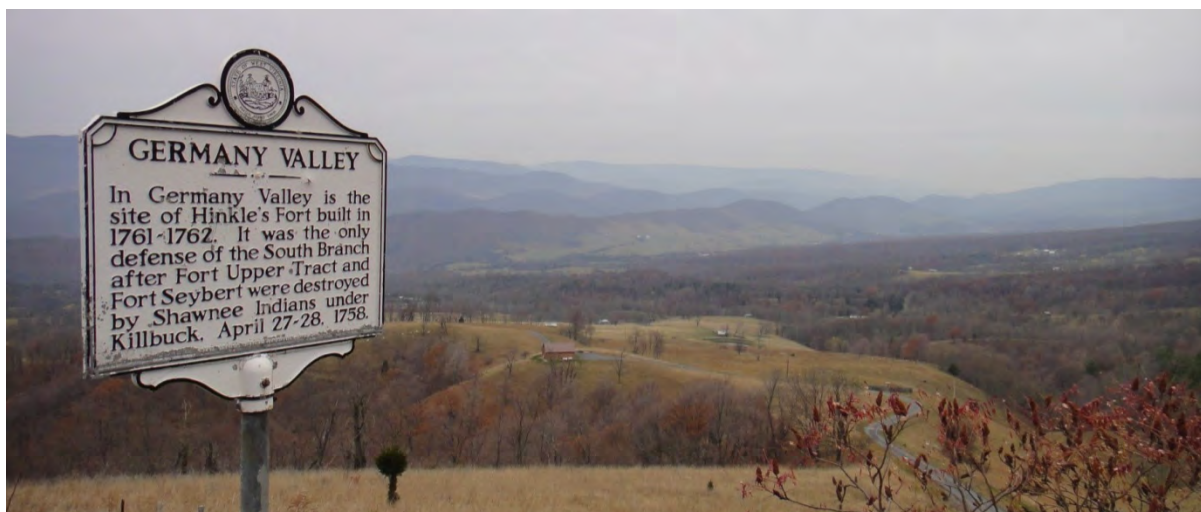
Modest investments in Pendleton County could yield dramatic results. Without this investment, however, residents may continue to “tread water” trying to avoid an era of economic distress.

Among the lessons learned in Pendleton County are the following:

- Legacy industrial sites can become a liability for communities and may draw resources away from more viable development strategies. Communities would benefit from assistance in converting such sites to other uses.
- Access to telecommunications is far from universal. Improved Internet and cell phone access is needed to promote development in isolated areas.
- Tourism can be a viable industry; however, limited infrastructure, such as the lack of lodging facilities, can limit this growth. Entrepreneurship programs are needed to help communities overcome such barriers.

- Local Development Districts are charged with providing planning and funding assistance to small and rural communities. It appears, however, that delivery of these services may be uneven in some areas.
- Good schools alone cannot assure success in college. Mentoring and college prep programs may be necessary to help rural students adjust to the demands of the collegiate academic and social environment.
- Non-governmental leadership can play a major role in a community's development. Pendleton's organizations, ranging from the young professionals association to traditional service clubs could serve as a model for other isolated communities.
- Pendleton County has no full service hospital, yet maintains a very healthy population through good access to basic health services. The county's sliding scale clinic may be a model for other rural communities lacking hospital facilities.

Figure 4-33: The geography of the region is one of ridges and valleys with limited access across ridges. Germany Valley is a community in the northwest part of Pendleton County.



4.4 Calhoun County, West Virginia

Figure 4-34: Word cloud responses to the question, "What are three words that describe your county?"



Figure 4-35: Word cloud responses to the question, "What is your county best known for?"



4.4.1 Calhoun County Introduction

Calhoun County is a community in crisis. Economically distressed well before the recent financial crisis, the small rural county now finds itself on the brink of insolvency. The sources of this distress would be familiar to many of Appalachia's poorest communities. Globalization, isolation, population decline, and a lack of local resources have all conspired to deter growth and development.


Given its status, Calhoun County is a compelling case study of the barriers and obstacles facing many of the region's most troubled communities. At the same time, however, it also serves as a model of Appalachian resilience, determination, and improvisation. Residents and local officials persevere in the face of dire circumstances and, more often than not, prevail in providing important services and resources.

4.4.2 Population Profile

With 7,118 residents, Calhoun County is the fourth least-populous county in West Virginia. Calhoun is also among the least diverse counties, with whites comprising 98.9% of the local population; African-Americans make up just .1% of the total population.

"More cultural awareness would improve the community."

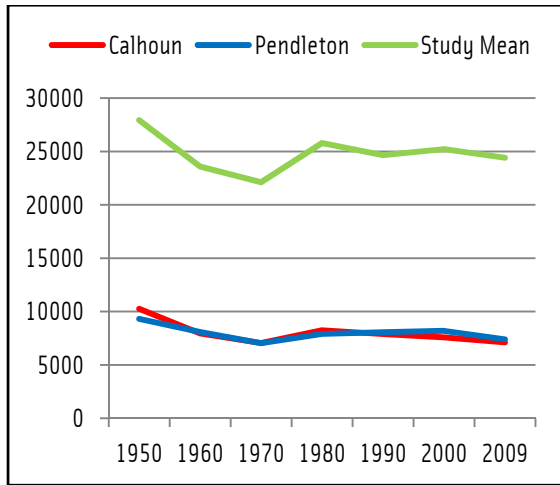
This lack of diversity is a cause of concern among some residents, and the issue of racism was raised by both survey respondents and focus group participants. Most attributed the problem to a lack of familiarity and persistent local attitudes.

Quick Facts	
Calhoun County, West Virginia	
	
Founded	1856
County Seat	Grantsville
Land Area	281 sq. mi.
Water Surface Area	0.02 sq. mi.
Population	7118
Density	26 per sq. mi.
Per Capita Income	\$17,340
Unemployment Rate	18.3%
ADHS Highway	No
Miles to State Capital	75
Miles from county seat to nearest Interstate	33 (I-79); 41 (I-77)
Miles from county seat to nearest commercial airport	75 (Charleston, WV)

Age distribution is weighed towards older residents, and the number of adult residents in their thirties and forties is below average. The county's population has declined steadily since 1980.⁴⁴

⁴⁴ 2010 US Census

Figure 4-36: 60-year population trend with cohort (Pendleton County, WV) and 10-county average.



4.4.3 Access and Infrastructure

Buried amidst the remote hills and valleys of central West Virginia, Calhoun County's location illustrates the challenges faced by many isolated Appalachian communities. As the crow flies, the county seat of Grantsville is just 50 miles from Charleston, the state capital and the nearest commercial airport. The county has no four-lane highway access, so the winding local roads extend the travel distance to more than 75 miles and the time distance between the two points is at least 90 minutes. The nearest Wal-Mart is located in Spencer, WV (pop. 2,100), which is almost 30 miles away - a 40 minute drive on local roads.⁴⁵

State roads appear to be in fair to good condition, but local roads may be more challenging. More than half (58%) of survey respondents rated local road maintenance as "inadequate" or "poor." For those with jobs, long commutes are common and may

⁴⁵ Distances and time distances calculated using Google Earth and Mapquest.

contribute to the declining population. High fuel prices may increase this trend.

Water and sewer services generally received good reviews, but may be limited in some remote areas of the county. Future improvements, however, may be difficult to attain. The financially strapped county lacks matching funds required for grants to fund infrastructure improvements or other types of projects.

"Those who do work eventually move due to the long commute and poor roads."

Many parts of the county lack broadband access. The hospital has a single T1 line, hardly adequate by today's standards. Many county residents rely on dial-up connections. Large portions of the county also lack cell phone access. Residents claim that some residents located in remote areas of the county still lack land-lines. According to local officials, the county has just one public Internet terminal, a single library computer - and its use is strictly controlled.⁴⁶

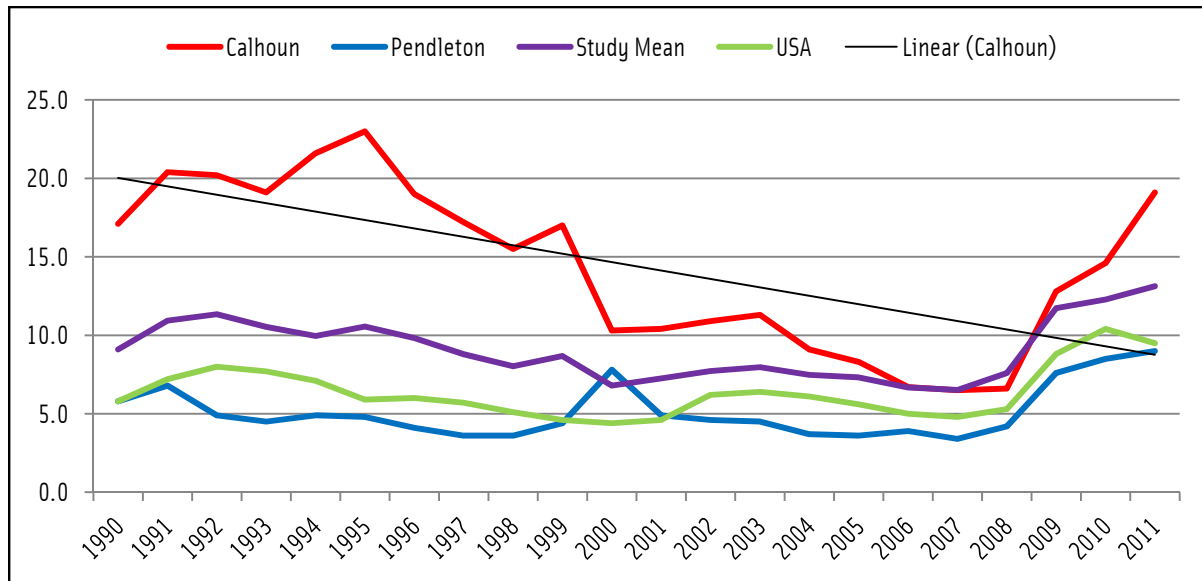
The lack of Internet access deters business development and may also increase the isolation felt by local residents, particularly local youth. The lack of communications services is also an issue for public safety and emergency services and limits their ability to respond to critical incidents.

4.4.4 Economic and Housing Conditions

Economic conditions are dire. Unemployment, at 18.3%, is the highest in West Virginia. Poverty and public assistance appear to be the norm among county residents. When asked what residents in the

⁴⁶ <http://www.wvcommerce.org/business/wvbmp/default.aspx>

Figure 4-37: Calhoun County unemployment rate comparison, percentage by year.



county do for a living, the answer, given by a local elected official, was succinct: "they don't."

Globalization has had a devastating effect on local employment. Factories once located in or near the county have moved overseas and virtually no manufacturing employers remain. The remaining employers appear to be the local hospital and the school system. The only other good paying job is working as a "pipeliner" - work that takes men away from their families for months at a time, with predictable effects on families and children.

Local businesses are limited in both number and scope. The county has no Chamber of Commerce, but shares some business development services with a neighboring county. The county has no car dealership and just one grocer. Residents report that entrepreneurship is low and small-business development skills are limited.

Local officials have little awareness or connection to regional development strategies and view such efforts with bitter cynicism. A road sign, designating the county as a "Certified Business Location," was characterized as "bullshit" by a local official, who added "it does nothing."

Welfare dependence is high. Almost 10% of local residents are dependent on SSI disability income, four times the national average. According to one local leader, the "dream of the middle class is gone."

"Many are content to not work and live off government assistance, because that is what their family has always done."

The built environment in Grantsville and other county communities appears to be dated and worn. Almost 23% of local homes were built before World War II. Another 23% are manufactured structures or mobile homes. Twelve percent of homes in the county still lacked complete plumbing in the 2000 census.⁴⁷

⁴⁷ 2000 US Census

Figure 4-38: Word cloud responses to the question, "What is your county's top attraction for tourism?"

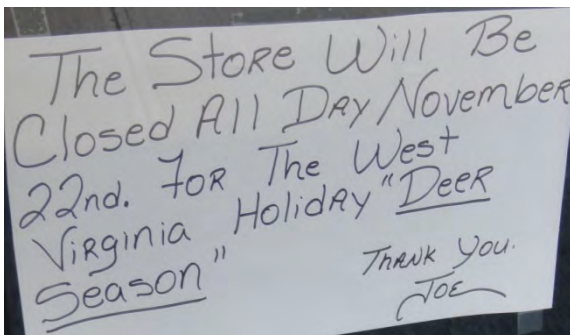


4.4.5 Tourism

Calhoun County has few tourism resources with no supporting tourism infrastructure. Lodging is virtually nonexistent and dining options are very limited throughout the county. Tourism potential is low. The main attraction according to local residents "is darkness." The undeveloped rural county has little light pollution, making the night sky ideal for stargazing.

Five public parks, along with seasonal deer hunting and a couple annual festivals attract local visitors, but with no overnight accommodations other than rough camping, any significant economic benefits

Figure 4-39: A sign in the window of a downtown Grantsville business.



of these activities are lost to neighboring communities. With no Chamber of Commerce, marketing materials and other county awareness building resources are scarce.

4.4.6 Local Leadership and Planning

Most survey participants described county government as adequate, but expressed some dissatisfaction with local government. While 63% of respondents found county government as good or adequate, 47% of residents described local government as poor or inadequate. Residents portrayed local elections as a "popularity contest." With no Chamber of Commerce and no organized economic development effort, the county lacks a clear point of contact.

Calhoun County has an operating budget of just \$1.3 million. At the time of the site visit, November 2010, the county was facing a deficit of over \$200,000. Some of the county's 13 employees had not been paid in weeks and were facing termination at the start of 2011. County commissioners had discussed dissolution of the county government and the possibility of declaring bankruptcy.

The lack of public resources is visible in some public facilities and services. The county courthouse is in need of renovation, hand-painted signs designate parking for public buildings, and a skeletal deer carcass could be seen alongside the main road into Grantsville shortly after passing the "Entering Calhoun County" sign.

Recreational facilities are limited and a source of concern. The closest public swimming pool, for example, is 25 miles away, almost a 45 minute drive for residents. The lack of facilities contributes to poor public health and youth issues. Almost three-fourths of survey participants rated youth recreation programs as inadequate or poor.

Residents and officials of the county feel they have no voice and are forgotten by their state and the nation. A small county, they have to share representation in Charleston with two larger counties. As such, they feel they have no effective representation in state government and are passed over or ignored.

Awareness of ARC programs appears to be low. Residents did, however, express antipathy towards the ARC. Some believed that ARC cared only about the larger or more prosperous counties and had little understanding of the region's poorest communities. Counties like theirs, they believed, were often bypassed in favor of those with more political clout. One resident spoke of the disconnect between the "Washington people...in

their suits" and the rural poor. To their knowledge, no one from the ARC had ever visited their county.

There is virtually no planning and over 60% of survey respondents classified local efforts as poor. Codes enforcement appears to be weak - junked cars line the sides of the road along one entrance into Grantsville. Residents, however, recognize the need for planning and have some awareness of their local assets. Resistance to change is an issue, but some feel that innovation may be possible given the county's desperate situation.

The staffs of local extension offices are equally frustrated - they have a unique opportunity to assist the community, yet, outside of a few important areas, lack the expertise and funding to do so. In 2001, the West Virginia University Extension assisted the county with development of a strategic plan through a non-profit community development corporation serving Calhoun and neighboring Wirt County, the Little Kanawha Area Development Corporation.

The relationship with their LDD, the Mid-Ohio Valley Regional Council, appears to be lacking. Grant writing is a challenge and local stakeholders stated they received little to no outside assistance. Matching funds are all but nonexistent and applications from this county would likely not be competitive against those from better-funded areas. There appeared to be no effective mechanism in place to help level that playing field.

Figure 4-40: The Grantsville town square anchored by the Calhoun County Courthouse and flanked by an automotive parts store, a couple law offices, a realtor, a few retail shops, and a diner.



4.4.7 Health

The county's "lone shining star" is the local health care center, the Minnie Hamilton Health System. The hospital, which has remained open despite huge obstacles, is an important source of local jobs and community pride. Though limited in scope - the hospital has basic emergency care and no surgery - it nonetheless provides vital health and dental care to a wide range of local residents. The facility's odds-defying story of growth and survival is commendable, but the facility continues to face serious obstacles. Among these are recruiting physicians willing to serve in a challenging environment and retaining necessary grant support in a world of diminishing resources.

Food choices at the grocery store are limited and the quality of fresh produce is poor. As a result, nutrition is an issue for many residents and diabetes rates are among the highest in the state. The county ranks 34th of 55 West Virginia counties in health outcomes. Drug abuse is a problem, particularly the misuse of prescription medications. The teen birth rate, at 51 per 1000 females age 15-19, is above the state average of 45 per 1000.⁴⁸

4.4.8 Education

Educational statistics reflect the county's economic status. More than 32% of residents lack a high school diploma. Just 7.5% of residents hold a bachelor's degree or higher, the lowest among the ten counties in this study. High school graduation rates have improved over the past twenty years, from 56.3% to 67.4%. The percentage of residents with bachelor's or advanced degrees, however, has

⁴⁸ Robert Wood Johnson Foundation. "County Health Care Rankings, 2010" www.countyhealthrankings.org/west-virginia/calhoun

Figure 4-41: The former Calhoun County High School building sets vacant. Vacant public structures are a burdensome issue for many Appalachian counties.



declined from 9.3% in 2000 to 7.5% in 2010. An estimated 18% of county residents lack basic prose literacy skills.⁴⁹

The county school system is ranked 76th among the state's 102 school districts. Local officials report that facilities are adequate, but teachers are difficult to recruit and retain. Test scores are second lowest among the ten counties in this study. According to these scores, just 34% of high school students are reading proficient and 44% are math proficient. Per pupil expenditures, at \$9,579, are lowest among the study counties.⁵⁰

Residents report that students who attend college often find themselves overwhelmed in a large and diverse environment and fail to finish. Vocational training is available, but students are trained for jobs that often do not exist locally. Many students, for example, study building trades, yet few construction jobs exist in a poor county with a declining population.

⁴⁹ 2010 US Census; National Center for Education Statistics, "National Assessment of Adult Literacy: State and County Literacy Estimates"

⁵⁰ "West Virginia's Best Public High Schools, 2007-2008," www.wvreport.com/highschool/; West Virginia Department of Education, "NCLB Report Card: Calhoun County, 2008-2009; Federal Education Budget Project, "Calhoun County School District" <http://newamerica.net/k12/wv>

Figure 4-42: Word cloud to the question, "What are three problems in your county that need solved?"



4.4.9 Summary and Lessons Learned

Apathy and a lack of hope are major problems. Many residents appear to have "given up." Youth retention is an important concern, and adults feel that most youth are simply "waiting to leave." Yet, despite these issues, social capital remains high.

It is important to note that residents of Calhoun County recognized that things, as bad as they are, remain better than they were 50 years ago. Progress for them, however, seems to have stalled some time ago and now, in their eyes, they are caught in an unending backward slide.

"People here have an innate ability to help each other."

In short, the county serves as a sobering reminder of the issues facing Appalachia and points towards possible deficiencies in both politics and policies.

Among the lessons learned from Calhoun County are the following:

- The Minnie Hamilton Health System is a major success story and points to the importance of health care, not only in maintaining quality of life, but as a local source of employment. The system is largely dependent on grants and external funding, however, and changes in the national health care system could have a devastating effect on places like Calhoun County.
- Inadequate telecommunications, such as broadband and cell phone service, continue to be an issue in poor and remote areas. This lack of infrastructure increases isolation, prevents growth, and limits emergency services.
- Resources and services designed to assist rural counties and help level the playing field do not appear to be adequate in helping the region's poorest counties.

- Matching funds, even in-kind services, may be unattainable for places like Calhoun County. A county that cannot pay its workers or paint the courthouse walls is in no position to even raise a modest match.
- Poor counties may feel they have little voice at the national, state, or even regional level. As such, there appears to be frustration between these communities, their representatives, and the agencies designed to assist them. It is little wonder then that residents of Calhoun County characterize their community as “abandoned” and “forgotten.”
- Improved marketing materials and basic tourism infrastructure could increase visitation, but could prove difficult to obtain without a local Chamber of Commerce.
- At times, local officials express similar frustration with the ARC staff in Washington. Local leaders and residents feel the ARC leadership is isolated or insulated from small, poor communities. There appears to be no direct engagement between the ARC and these poorest communities. Instead, the ARC appears to rely heavily on intermediaries, such as the LDD system, whose reporting may not be timely, effective, or equitable.
- Regional development strategies do not appear to benefit rural, isolated counties. In fact, long commutes and high energy costs may, in fact, contribute to local poverty and the growing exodus from rural areas.

Figure 4-43: A rustic sign along a local road near Grantsville.



4.5 Pike County, Kentucky

Figure 4-45: Word cloud responses to the question, "What are three words that describe your county?"



Figure 4-44: Word cloud responses to the question, "What is your county best known for?"



4.5.1 Pike County Introduction


The culture of coal permeates all aspects of life in Pike County. Cars are adorned with stickers and license plates that identify their occupants as “Friends of Coal.” The county courthouse features displays of carved coal and local officials embellish their offices, and lapels, with symbols of their allegiance. Residents are commonly wear shirts and hats proclaiming their loyalty to the coal industry. Throughout the area, the coal miner is portrayed as an iconic folk hero, a depiction that reflects local pride along with a measure of shared defiance.

Pike County brands itself as “America’s Energy Capital,” and holds a trademark on the phrase. Local officials view energy, long the staple of the local economy, as the path to future growth. The county’s development strategy is largely based on energy extraction, production and research. To their credit, local leaders are taking a broad-based approach to energy, one that includes renewable sources. Coal, however, remains king in Pike County and mining remains a key element in the local development strategy. The county is at the heart of the Appalachian coal industry and, as a result, is an important case study in the impact and future of this vital and historic industry.

4.5.2 Population Profile

Pike County is the largest county in this study, both in terms of area and population. With over 65,000 residents living across 788 square miles, it is, by far, the most urbanized and developed community in the Eastern Kentucky Coal Belt. As such, it serves as the de facto capital of the state’s coal industry, if not the entire ARC Region.

Yet, in spite of this size and importance, the community lacks diversity. Whites comprise 98% of the county’s population. The community does boast, however, a small but prominent Asian Indian

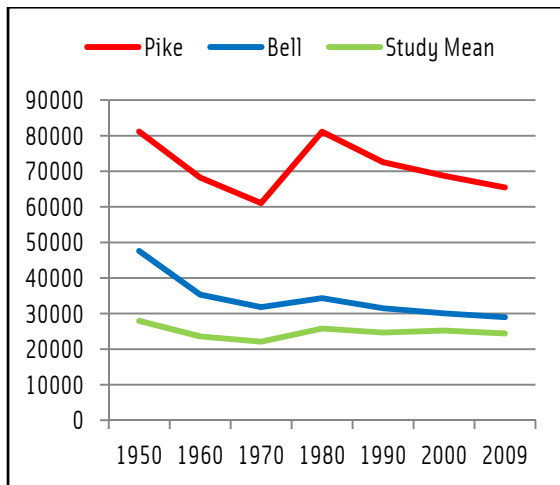
Quick Facts	
Pike County, Kentucky	
	
Founded	1822
County Seat	Pikeville
Land Area	788 sq. mi.
Water Surface Area	1.15 sq. mi.
Population	65,446
Density	83 per sq. mi.
Per Capita Income	\$19,012
Unemployment Rate	8.8%
ADHS Highway	Yes (Cors. B, Q, G, F)
Miles to State Capital	165
Miles from county seat to nearest Interstate	71
Miles from county seat to nearest commercial airport	65(Huntington, WV)

community. Age distribution is close to average for the state but displays a slightly higher percentage of senior residents.⁵¹

Historically, Pike County’s population has fluctuated considerably. The county’s population and the local economy are inexorably tied to coal production and both appear to rise, and fall, with the fortunes of the global energy market.

⁵¹ 2010 US Census

Figure 4-46: 60-year population trend with cohort (Bell County, KY) and 10-county study average.



4.5.3 Access and Infrastructure

Highway access to Pike County is excellent. Pikeville, the county seat, is the nexus of several Appalachian Development Highway System (ADHS) roads converge on the county, including ADHS Corridors B, F, G, and Q. Highways are well-marked and well-maintained. Yet, despite the good roads, the community remains somewhat isolated. The nearest interstate access points are about 90 miles away and the nearest large city, Charleston, West Virginia, is a two-hour drive from Pikeville.

Because of the county's terrain, air access is also a major constraint. The county maintains a regional airport built atop a reclaimed surface mine. The facility is capable of accommodating small private aircraft, but has no commercial air service. Currently, residents and visitors must use commercial airports in Huntington or Charleston or secure a charter flight into Pikeville. Local officials are working to recruit a commercial carrier for the community, including the use of Essential Air Service funds. To date, however, these efforts have been unsuccessful.

Local water services receive high marks from residents. Three-fourths of local survey participants rated water services as "adequate" or "excellent." Sewer access is somewhat limited however, especially outside of Pikeville. Straight-piping and failed septic systems are a problem and improved wastewater treatment was mentioned as a local priority. Flooding remains an issue in parts of the county where runoff from hilly watersheds converge during heavy rain events.

For the county's challenging topography, mobile phone access is surprisingly good and Internet access is among the best in the region. Residents report good reception and speed along transportation corridors and better in the more developed and populated areas of the county.

Remarkable when compared to the other counties in this study, over 80% of Pike County survey participants classified local Internet access as "adequate" or "excellent." This exceptional level of Internet connectivity is largely credited to ConnectKentucky, a statewide public-private partnership initiative to extend broadband access to all residents of the state. While the entire county is far for being completely served with residential broadband, progress is underway. Due to this widespread connectivity, the county has an excellent and comprehensive E-911 emergency response system.

Transportation access to Pikeville was dramatically enhanced by the completion, in 1987, of the Pikeville Cut-Through.⁵² This monumental project, begun in 1973, moved the Levisa Fork of the Big Sandy River and routed a four-lane highway, ADHS Corridor B, and a rail line through a massive wedge

⁵² Pike County Chamber of Commerce, "The Pikeville Cut-Through Project," <http://www.pikecountychamber.org>

Figure 4-47: The Pikeville Cut-Through. Two ridges were cut through, which allowed the river, a major highway, and the railway to be re-routed. Soil and stone removed from the mountain filled the former riverbed, which was redeveloped as part of Pikeville. Remaining rock and soil filled nearby mountain hollows to create flat land for ball fields and other public facilities.



cut through two local ridges. The project, designed to eliminate devastating flooding and improve highway and rail access to Pikeville, required removal of 18,000,000 cubic yards of earth and rock and represents the second largest civil engineering project ever undertaken in the Western hemisphere. Since its completion, the Pikeville Cut-Through has become a symbol of local determination and a source of community pride.

4.5.4 Economic and Housing Conditions

Pike County is one of a handful of counties in east Kentucky not classified as "distressed" by the ARC. Currently, the county is designated as "at risk," but for much of the past decade its status has been "transitional," making its performance exceptional

Figure 4-48: Water tank in Pikeville.



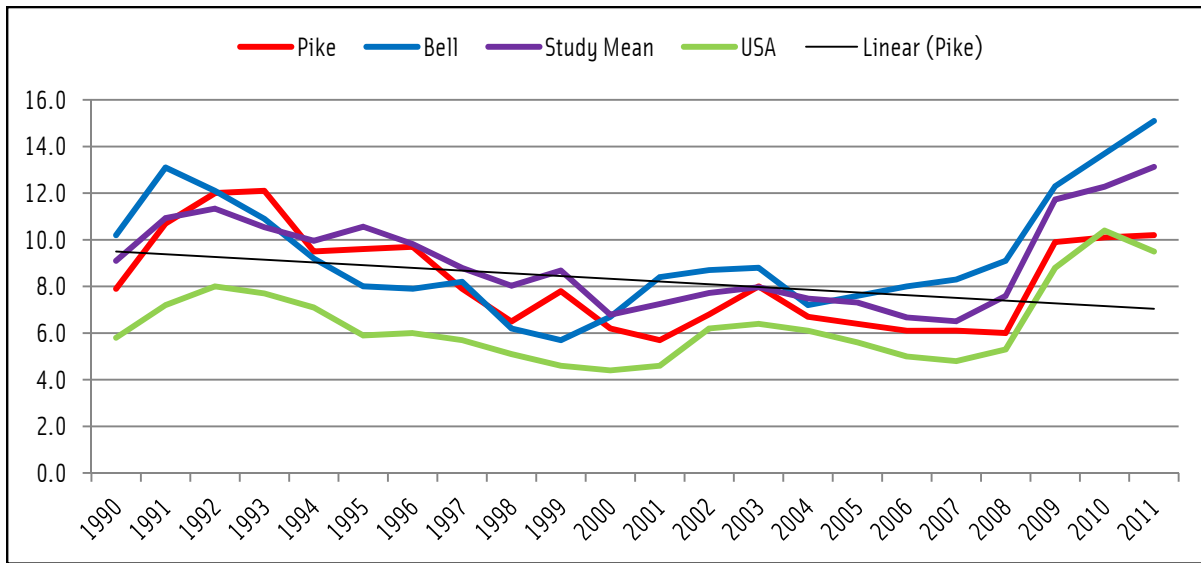
for the ARC's Central subregion.

Local officials and residents attribute this success to a number of factors, including cooperation among stakeholders and government. Pike County has also benefitted greatly from government investments. During the 1970s, Pikeville was designated as a growth center by the ARC. This designation helped the city attract a host of improvements, including improved roads and other infrastructure.

Coal is the lifeblood of the local economy. Local leaders refer to their county as the "Saudi Arabia of America." The county produces more coal than all other Kentucky counties combined and is the tenth largest producer in the nation. In addition to local blue-collar jobs, Pikeville houses the offices of several major energy companies, creating white-collar jobs and giving the community a global presence. Natural gas is also produced in the county, but it is secondary in importance to coal.

Local officials acknowledge the need for diversification, but their options appear to be limited. Steep slopes and hillsides, common to the area, limit potential growth opportunities. According to local business leaders, just 15% of the local terrain is developable. Local topography makes it difficult to attract manufacturing or other industries and even large retail facilities face difficulties.

Figure 4-49: Pike County unemployment rate comparison, percentage by year.



The difficult local terrain also creates other issues that impede growth. Housing, for example, is in short supply. Over 50% of survey respondents reported that the existing housing stock did not meet current needs. Land constraints also limit space for recreational facilities, such as ball fields and park space. Local residents and officials view reclaimed mine sites as an important solution to this problem.

While outsiders and environmentalists may view mountaintop removal as an abomination, Pike County residents view the practice as a win-win. The extraction of coal from the site provides much needed coal and energy. Soil and rock removed from the site is used to fill in low areas, a practice known as "hollow-filling," which then creates space for development. The reclaimed mine site, resembling a level plateau, also becomes developable space. Thus, a single mine site often yields, in addition to the coal, two subsequent sites for commercial, residential, or recreational use.

Given their historical ties to mining, it should come as no surprise that local residents and officials have a dim view of environmental regulations. Many residents view regulatory agencies, such as the

EPA, and environmental activists as ill-informed and a threat to their community and livelihood. While most acknowledge the importance of protecting natural resources, few view current coal practices as environmentally unsound. Both residents and community leaders fear that increased regulation will be the death knell of the coal industry and will drive their community and the surrounding region into perpetual despair.

Local residents, in fact, have a difficult time imagining a future without coal. When pressed, however, most agree that, should coal decline or run out, Pikeville would be a very different place. Entrepreneurship and education, most believe, are essential in developing small businesses and non-coal jobs.

Such entrepreneurship and economic development activities are well organized and lead organizations, including the local Chamber of Commerce, display a high capacity for planning and project development. The county has a well-formed strategy to promote the local economy. The approach, which leverages heavily on unique local strengths, is largely based on energy research,

development, and production. Among the notable activities underway:

- Research into alternative fuels for use in large earth moving equipment used in the mining industry.
- A research partnership with Oak Ridge National Laboratory to explore secondary coal products and the development of other local energy products and technologies.
- A partnership with a coal producing region in China.
- The development of plans for an energy research center located in Pikeville that would direct a wide range of local energy projects.

Despite this progress, welfare dependence is high and remains a major concern for local leaders. Access to welfare system appears to be a thriving local industry and has become a visible feature of the local landscape.

Advertisements for SSI disability lawyers line local highways and dominate local television broadcasts. At times these efforts are comically absurd. One local lawyer, for example, operates a sprawling roadside "law complex," complete with a physician's office, for on-site disability diagnoses, and the "world's second largest seated Lincoln statue." This same attorney erects a giant inflatable

Figure 4-50: A model of a proposed energy research center that would facilitate a range of value added innovations around coal and natural gas.



of himself at public events, airs a 3D television commercial touting his SSI services, and produced a music video that has him dancing with Jesco White and "Obama Girl" while bluegrass legend Ralph Stanley sings about the Social Security Board.

"Adults are financially rewarded for their children's disabilities or poor school performance in the short term with long term negative consequences. There is not perceived value in hard work for some."

Currently, 8.2% of the county is dependent on SSI disability income.⁵³ In part, this is due to the physical risk associated with mining jobs, but this is also indicative of a culture of welfare reliance. Intergenerational welfare dependence is common and eligibility for benefits is almost regarded as a rite of passage for some families.

"The current welfare system makes people prisoners when they draw."

Local leaders acknowledge the problem, but solutions seem beyond their control. Current policies related to unemployment and disability benefits provide few incentives for recipients to find work, no transition period for those who want to work, and no disincentives for those who abuse the system and never seek work.

⁵³ Social Security Administration, "SSI Recipients by State and County, 2009," (2010, SSA Publication No. 13-11976), 39

4.5.5 Tourism

Pike County boasts significant tourism potential. The county is home to Breaks Interstate Park, a 4,500 acre natural park operated by the states of Virginia and Kentucky. The park, which draws over 300,000 visitors annually, is known as the “Grand Canyon of the South” and offers a wide range of recreational activities and amenities.

Pike County is famous for the Hatfield-McCoy feud, which lasted near the end of the Civil War until the 1890s. Several sites and attractions in the county draw on that heritage, and include a Hatfield and McCoy historical tour and an annual festival each June. Pike County is also home to Hillbilly Days, a popular festival held every April. The event began in 1976 as fundraiser for the state’s Shriner’s children’s hospital. This event, started by a small group of grassroots organizers, has grown into a major local event. Today, it is Kentucky’s second largest public festival, after the Kentucky Derby, and draws over 200,000 visitors annually.

Tourism infrastructure in the county is generally good. Websites and marketing materials produced

by the Pikeville-Pike County Tourism Commission are first-rate, and the county has high visibility at state Welcome Centers. Pikeville also has the recently constructed Eastern Kentucky Expo Center, a 7000 seat area that hosts concerts and sporting events. Pikeville has a number of lodging options, including a new Hampton Inn that claims a 98% weekday occupancy rate.

Dining options, however, are less abundant and hospitality training is also lacking. When asked, for example, a hotel desk clerk could only name two local restaurants. Chamber officials, to their credit, offer hospitality training to local businesses but complain that few take advantage of the service. Lingering environmental issues also inhibit tourism. Raw sewage from straight piping, for example, constrains efforts to promote local rafting and whitewater recreation.

While Pike County departments have a web presence, the county government has no comprehensive website and no Facebook page. Pikeville does have a website and a limited presence on Facebook.

Figure 4-51: Word cloud responses to the question, “What is your county’s top attraction for tourism?”



4.5.6 Local Leadership and Planning

The capacity of local government is high. Facilities and resources are on par with those found in large and affluent urban environments. Local officials, for example, have access to satellite imagery and uses pictometry systems to help determine property tax rates. The county government provides a full range of local services, funded, in part, by excise taxes on local coal production. Little surprise, then, that local officials get good reviews. About 80% of survey respondents rank both county and local government as excellent or adequate.

Local leaders, both elected and non-elected, generally receive high marks. Residents praised the spirit of cooperation among local leaders and credited them for local progress. However, some residents complained of poor communication between leaders and residents.

"City leaders often make decisions with very little input from the community...and it only takes one or two voices to influence their decisions. Mostly they make decisions with very little thought or debate."

Leaders across the board appear to have a shared vision along with common concerns. They are aware of their strengths and weaknesses and are acting on opportunities Leadership development is a high priority and is integrated into both educational and corporate programming. Leadership programs exist, for example, in K-5 schools and in the local bank and hospital.

Planning efforts are laudable. Both county and city governments have or engage professional planning services. Pike County is currently developing an updated comprehensive plan using a nationally

recognized design firm. The county also has a good working relationship with their local development district, the Big Sandy Area Development District, who worked with them to develop a Comprehensive Economic Development Strategy.⁵⁴

Survey participants give the community high marks for planning, as 70% of residents rated local efforts as adequate or excellent - the highest score of the ten communities in this study. Evidence of good planning can be seen throughout Pikeville. Some residents fault the county, however, for a lack of county-wide zoning. They also noted the lack of business licensing or registrations.

"The county does not know how many businesses are in the city."

The town is clean, well maintained, and boasts a number of attractive parks and public spaces. Pikeville has also benefitted from a Main Street program, established in 1991, which has helped revitalize its historic downtown business district.

Planners appear to be addressing the local land constraints by encouraging vertical development. Parking garages and increasingly tall structures are evident downtown, demonstrating more efficient use of valuable open space. This practice was less evident outside of downtown, however, where traditional development patterns remain evident.

4.5.7 Health

Access to health care is excellent. Pikeville boasts both a large regional hospital, Pikeville Medical Center, and a small medical school at Pikeville College. The hospital is nationally ranked, features

⁵⁴ Plan available at www.pikecountychamber.org

a full range of medical services, and is a source of community pride. The College of Osteopathic Medicine, with approximately 300 students, is considered a leader in the field of rural medicine and is expanding with construction of a new facility named, somewhat appropriately, the Coal Building. The facility is being constructed, in part, with \$500,000 in ARC funds.⁵⁵

Access to physicians is relatively high for a rural Appalachian community, with 79.6 physicians for every 100,000 residents. Local hospital officials report, however, difficulties in recruiting physicians to serve the area. Dental access, at 62.8 per 100,000, is also good.

Yet, despite a high level of health resources, overall public health is surprisingly poor. The county ranks 114th of 120 Kentucky counties in health outcomes and surpasses state averages in average poor health days (7.9 to 4.7) and poor mental health days (6.9 to 4.4).

Residents attribute public health issues to poor health habits and a lack of health education. Other factors include the nature of the mining industry, poor nutrition, obesity, smoking and other negative health habits.⁵⁶

⁵⁵ *Pikeville College holds groundbreaking for new medical school facility,* www.pc.edu/news/articles/Pikeville_College_holds_groundbreaking_for_new_medical_school_fa,836.aspx; *Interestingly, the name "Coal Building" sparked debate among college supporters. Comments included "there is just something wrong with a medical school naming its clinical building after something that causes many people to become patients themselves," and "People from other regions such as myself, will either laugh at the building or be disgusted by it."* <http://forum.pc.edu/discussion/13/university-of-the-coal-fields/p1>

⁵⁶ *U.S. Department of Health and Human Services, "Community Health Status Report, 2009,"* www.communityhealth.hhs.gov; Robert Wood Johnson

The greatest health concern, by far, is drug abuse – particularly the misuse of prescription medications. Prescription painkillers are a major problem and the county has a lawsuit pending against Purdue Pharma for aggressively marketing Oxycodone. Officials report that addiction takes places across all strata of society and affects young people, the elderly, professionals, and housewives. The county has some success in developing treatment programs and alternatives to prosecution.

4.5.8 Education

Educational attainment has increased dramatically over the past twenty years. Residents with a high school diploma have increased by almost 22% since 1990, from 50.2% to 72%. The level of college graduates has also increased. Currently 12.1% of residents hold a bachelor's degree or higher. The percentage of community college graduates has doubled in this same period, from 2.5% to 5.2%.⁵⁷ While these numbers still lag behind national averages, they represent a significant improvement in a relatively short period of time.

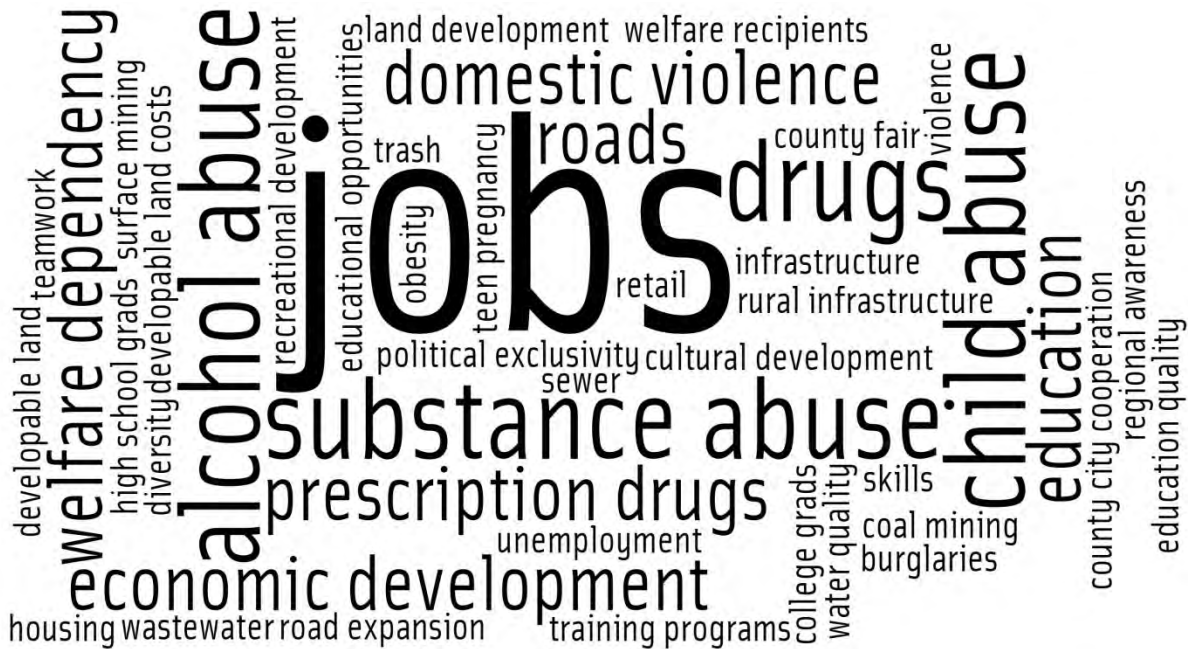
Test scores are average when compared to the other counties in this study. Pikeville city schools, in general, performed better than the county system. Economic factors may contribute to this disparity, as 67% of county students receive free or reduced lunches compared to 32% of city school students. Proficiency scores show a drop between middle and high school, particularly in math. An estimated 16% of residents lack basic prose literacy skills.⁵⁸

Foundation. "County Health Care Rankings, 2010," <http://www.countyhealthrankings.org/kentucky/pike>

⁵⁷ 2010 US Census

⁵⁸ *Kentucky School Testing System, "District Report Card," Pike County and Pikeville Independent School Districts, 2008-2009,* <http://applications.education.ky.gov/KTR>

Figure 4-52: Word cloud to the question, "What are three problems in your county that need solved?"



Pike County is blessed with two significant educational assets – the Kentucky Coal Academy and Pikeville College. The Kentucky Coal Academy began in 2005 as an effort to improve mine safety and productivity in the state’s mines. The Academy helping to avert a workforce crisis, as the industry’s current workforce ages and reaches retirement age. The facility offers both degree and certificate programs and operates as part of the Kentucky Community and Technical College System.

The economic impact for Pike County is significant, as the facility both draws students and helps create skilled high-wage workers. It also helps overall educational attainment by transforming mining from a low-skilled job that promotes school dropout rates into a high-skill trade that encourages post-secondary training.

Pikeville College is a small liberal arts college that has served the community for over a century. Founded in 1889, the college offers three Associate degree programs and 23 Bachelor degree programs,

with an enrollment of approximately 1,000 undergraduate students. The institution maintains a medical school with about 300 students and is expected to begin an MBA program in fall 2011.

Pikeville College is an important community asset and a source of considerable community pride. The college is an active partner in community affairs and campus leaders play a prominent role in local development efforts. Though a private institution, tuition of about \$15,000 per year is attainable.

Figure 4-53: The Kentucky Coal Academy is training a new generation of mine workers and operators.



Over 98% of students receive financial aid. Campus officials recently announced that the institution will become Pikeville University later in 2011.⁵⁹

4.5.9 Summary and Lessons Learned

As an ARC growth center, Pike County has benefitted greatly from public investments. Highway construction and the Pikeville Cut-Through have helped the community grow into the de facto capital of the Kentucky Coal Belt. Local leaders, with a shared vision, have created a development strategy that focuses on their historic ties to the energy industry and are creating new jobs through services such as tourism, education and health care. The region's heavy reliance on coal, however, casts a long shadow over these efforts. The viability of the coal industry is key to the community's growth and a decline in this sector would likely be disastrous to the county's economy.

Pike County offers a number of important lessons for other Appalachian Communities:

- In Pike County, as in other communities, higher education partnerships play an important role in the development and implementation of local development strategies.
- The Kentucky Coal Academy is both an excellent example of a vocational training program and of local educational resources stepping up to meet an industry need. The success of this program could help inspire similar programs related to other energy resources or important regional industries.
- The growth of the local health care industry shows how Appalachian communities, given

proper resources, can address regional health care needs. It also demonstrates the importance of health care as a job source.

- Pike County shows the potential of public investment. Roads, the Pikeville Cut-Through, the Expo Center, and other projects have helped the county evolve into an important regional hub. The impact of this growth on surrounding counties, however, is unclear.
- Local efforts to combat drug abuse, an issue common across Appalachia, are commendable and could be replicated elsewhere.
- Local tourism efforts are also very laudable and provide an excellent case study for other communities. The county's success in marketing local attractions is especially noteworthy. The Hillbilly Days Festival should be promoted as a model for the region.
- Kentucky has done an excellent job of providing Internet access to rural areas. Compared to neighboring states, residents of Pike County have much better access to high speed internet and cell phone services. However, utilization of broadband by the county's business and entrepreneur community appears to need support.
- Excise taxes on local coal production have enabled local officials to undertake many much-needed changes and improvements. The continued dependence on the coal industry, however, is a cause for concern - particularly as many power producers are considering non-coal generation plants.

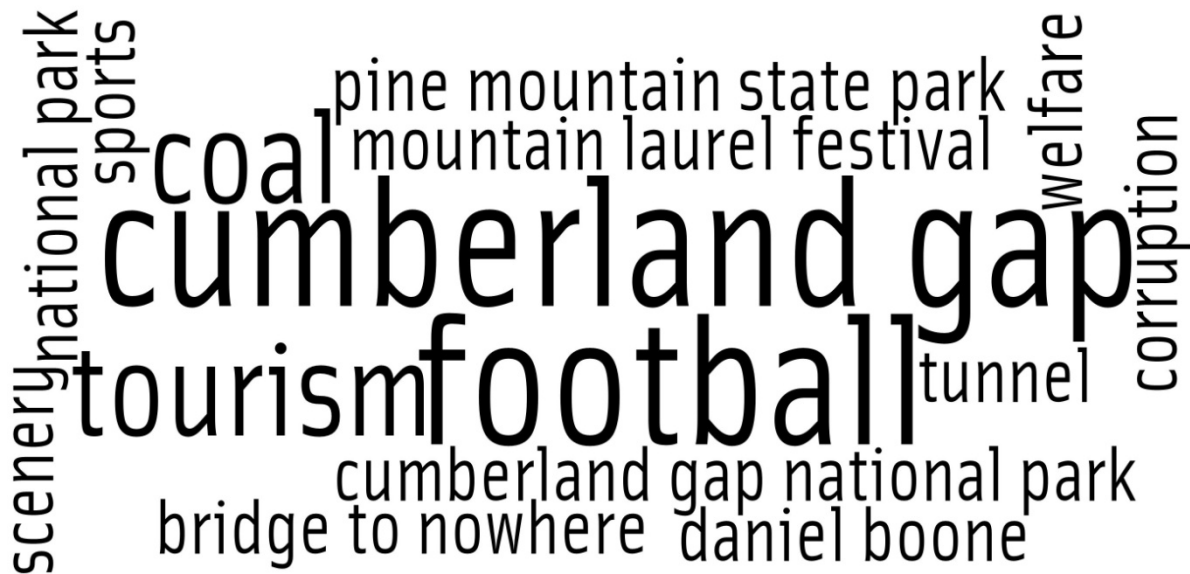
⁵⁹ Data on Pikeville College available at <http://www.pc.edu>.

4.6 Bell County, Kentucky

Figure 4-54: Word cloud responses to the question, "What are three words that describe your county?"



Figure 4-55: Word cloud responses to the question, "What is your county best known for?"



4.6.1 Bell County Introduction


Bell County, Kentucky was once gateway to the West and is home to the Cumberland Gap, the natural passage that once brought settlers into western Kentucky, east Tennessee, and beyond. Today, visitors travel to Bell County beneath the famed gap, via the 4,600 foot Cumberland Gap Tunnel. This ambitious engineering project, completed in 1996, provides quick and easy access between Bell County and neighboring Tennessee communities. While this project has brought benefits to Bell County, it has also created new challenges unforeseen during the project's development. For this reason, Bell County vividly illustrates the costs and benefits of infrastructure investments.

The county also provides important lessons in other areas. Among the poorest counties in this study, Bell County offers insight into ARC's most distressed subregion. At the same time, local leaders have demonstrated creativity and resourcefulness in addressing a host of issues, including drug abuse, youth retention, and tourism.

4.6.2 Population Profile

With almost 29,000 residents, Bell County is among the most populous counties in this study. However, the county's population has declined steadily since the 1980s and is significantly lower than its peak levels in the 1950s. This decline can be attributed to a number of factors. Historically, the decline of the local coal industry has been a major factor. In recent years, however, other issues have also contributed to the loss of residents.

Chief among these would be the shortage of local jobs. Increasing numbers of residents have moved away to find work, a trend exacerbated by rising fuel costs and stagnant wages that make long commutes increasingly untenable. A migration

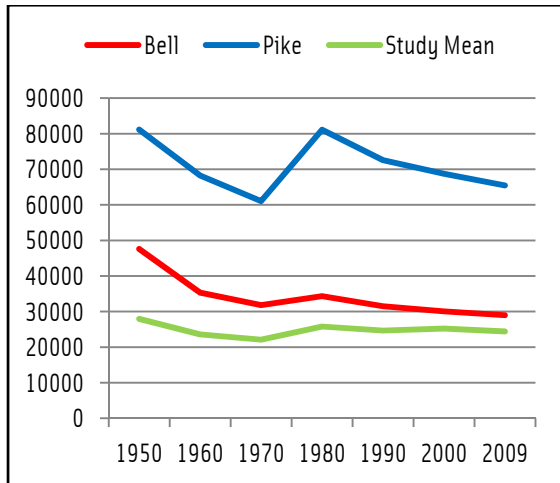
Quick Facts	
Bell County, Kentucky	
	
Founded	1867
County Seat	Pineville
Land Area	360.77 sq. mi.
Water Surface Area	0.6 sq. mi.
Population	28,691
Density	79.5 per sq. mi.
Per Capita Income	\$14,111
Unemployment Rate	15.1%
ADHS Highway	Yes (Corridor F)
Miles to State Capital	144
Miles from county seat to nearest Interstate	34 (I-75)
Miles from county seat to nearest commercial airport	85 (Knoxville, TN)

analysis, based on 2008 tax records, shows outmigration to nearby employment centers of Knoxville, TN, and the London-Corbin Combined Statistical Area.⁶⁰

Kentucky tax policies also contribute to population losses. Many residents are moving to adjacent communities in Tennessee, which has no income or

⁶⁰ 2010 US Census; John Bruner, "Where Americans are Moving," <http://www.forbes.com/2010/06/04/migration-moving-wealthy-interactive-counties-map.html>

Figure 4-56: 60-year population trend with cohort (Pike County, KY) and 10-county study average.



personal property taxes. Topographical constraints also appear to play a role as nearby areas in Tennessee have more developable land and, as a result, newer and more affordable housing options. Census statistics appear to confirm this trend. In the past decade, the population of Bell County has declined 3.6% while the population of adjacent Claiborne County, TN, has increased 4.4%. Local officials believe that the Cumberland Gap Tunnel has helped facilitate this trend.

Other population statistics are typical for a rural Appalachia community. Diversity is low, with 95.6% of county residents are white. Population distribution is weighted toward older residents, a possible indicator of young adults and families moving somewhere else for housing or employment.⁶¹

4.6.3 Access and Infrastructure

Road access to the community is very good and main roads appear to be in good condition. Survey results tend to confirm this finding, with about 65%

of respondents reporting local road conditions as excellent or adequate. The county has access to the ADHS via Corridor F, which passes through the county seat of Pineville and the largest city, Middlesboro. Access to a major north-south interstate corridor, I-75, is 30 miles west of Pineville via U.S. 25, a modern four-lane highway.

Access has improved thanks to the Cumberland Gap Tunnel. Prior to the tunnel construction, residents driving between Bell County and Claiborne County, TN, had to pass through the Cumberland Gap via a steep and winding route. This treacherous stretch of highway, built along an old wagon road, earned the grim moniker "Massacre Mountain" for the number of fatalities it produced. The tunnel, constructed over five years at a cost of \$280 million, now provides a safe, fast and direct route between the two states. According to local officials, 36,000 vehicles pass through the tunnel each day.

Without exception, local leaders and stakeholders agree that the tunnel has been a positive development for their community. At the same time, though, all also believe that the project brought a number of unintended and unexpected consequences. Among these are the aforementioned population shifts and changes in local business dynamics.⁶²

The closest commercial airport is located in Knoxville, TN, just over an hour's drive from Middlesboro. The local regional airport can, however, accommodate a business jet. The county enjoys good rail access.

Water and sewer services appear to be adequate and generally receive good marks. An impressive 96% of survey participants rated water services as

⁶¹ 2010 US Census

⁶² National Parks Service, "The Cumberland Gap Tunnel," <http://www.nps.gov/archive/cuga/tunnel.htm>

adequate or excellent, and 80% of respondents expressed a like view of sewer services.

Bell County has benefitted from ConnectKentucky, a public-private partnership initiative to extend Internet access to all communities in the state. ConnectKentucky has become a national model that inspired the creation of the Connected Nation, a private-public partnership organization currently active in 22 states and Puerto Rico that promotes the expansion of broadband infrastructure.⁶³

A remarkable 96% of Bell County survey respondents rated local Internet access as excellent or adequate, an astounding figure for a distressed rural county. Mobile phone access is also very good and coverage is available in most populated areas of the county.

4.6.4 Economic and Housing Conditions

Bell County is among the poorest communities in this study, ranking last among the ten study counties in household income and second-to-last in per capita and family income. Median household income, at \$22,559, is just 44% of the national average. Unemployment stands at 14.1%, tenth highest among Kentucky's 120 counties.⁶⁴

Officials attribute high unemployment to a number of factors, including the decline of the local coal industry and the loss of local manufacturing jobs. Good local jobs are scarce. Most local jobs offer only temporary or part-time employment, and those with good jobs often work outside of the county. Most full-time employment opportunities

are in neighboring Tennessee and some local residents drive as far as Knoxville to work.

Retail sales are a strength of the local economy, particularly in Middlesboro. Tennessee residents frequently travel through the tunnel to take advantage of Kentucky's lower taxes on food, fuel, tobacco, and other consumable goods. As such, the part of Middlesboro near the tunnel is a hub of retail activity and the town supports a number of businesses, fast food restaurants, a movie theater, and a shopping mall. These establishments provide much-needed employment, but many of the jobs offer low wages, limited hours, and few benefits.

Downtown Pineville is a picturesque community with considerable potential, but many storefronts remain empty. Local residents blame this on a lack of planning, a lack of entrepreneurship, and unrealistic rents charged by a small cadre of downtown property owners. However, the county and city are participating in a main street program to revitalize the area and some successes are already evident. A Subway franchise, for example, has opened near the courthouse and a historic theater has been restored and converted into a performance space.

Industrial development is challenging. As with most eastern Kentucky communities, topography limits development opportunities. Local leaders are quick

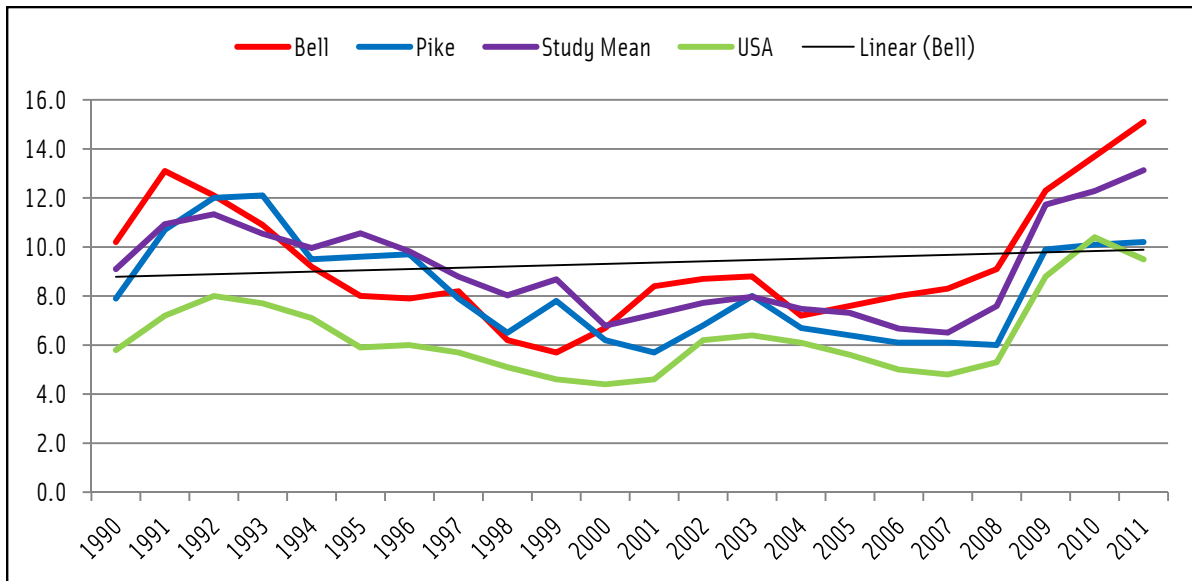
Figure 4-57: The Bell County Courthouse anchors the attractive county seat of Pineville.



⁶³ <http://www.connectednation.org>

⁶⁴ 2010 US Census; Unemployment rate based on figures from the Kentucky Office of Workforce and Training, March 2011; www.workforcekentucky.ky.gov/admin/uploadedPublications/1081_March_11_UR.pdf

Figure 4-58: Bell County unemployment rate comparison, percentage by year.



to tout the benefits of remediated ridge-top mine sites. In spite of these constraints, the county maintains and markets several industrial sites. Local leaders have elected to develop "slab sites" rather than existing structures. By developing only the foundations of industrial sites, they have none of the upkeep cost of a standing structure, yet they are in a position to erect a building quickly when the need arises.

Figure 4-59: Friends of Coal window stickers are common on cars and trucks throughout the region.



Local officials hope to stimulate industrial development through the construction of a coal-fired power plant. The plant, to be constructed on a remediated mine site, would provide low-cost power to industrial tenants. Surplus power would be sold, with revenues going back to the county.

Mining, while no longer at peak levels, remains an important local industry. Local stakeholders expressed universal support for the mining industry, which they believe is often misunderstood and unfairly demonized. Coal is clearly an important element in the local culture and an issue of considerable sensitivity in the region. When asked about a post-coal future, residents and county leaders express few answers. They do, however, seem to recognize the pressing need for local economic diversity.

"Breaking the poverty cycle is critical to Bell County's future."

Because of the employment situation in Bell County, welfare dependence is high and is a major concern among local leaders. Of the ten counties in

Figure 4-60: Word cloud responses to the question, "What is your county's top attraction for tourism?"



this study, Bell County has the highest percentage of residents dependent on SSI disability income at 11.1%.⁶⁵ Residents blame this dependence on several factors, including a lack of motivation, a sense of entitlement, and federal policies that discourage work.

4.6.5 Tourism

Bell County has several important tourism resources and is taking innovative steps to attract visitors. The county is home to Cumberland Gap National Historical Park, a site that drew 918,746 visitors in 2010.⁶⁶ The county also includes Pine Mountain State Resort Park, which boasts a lodge, rental cabins, dining facilities, a golf course, and an extensive trail system.⁶⁷

Local leaders view adventure tourism as a major growth area and are heavily promoting related activities, including rafting, climbing, and an extensive local ATV trail system. The Kentucky legislature has encouraged the development of the ATV trails by exempting local governments from most liability claims. As a result, the county has partnered with a local ATV club, "the Holler Crawlers," and local entrepreneurs to build, maintain, and promote Wilderness Off-Road Park.

The park, which encompasses 9,000 acres and boasts over 120 miles of trails, is regarded as one of the nation's best ATV trail sites. The facility receives rave reviews in ATV publications and recently received a \$30,000 grant from Yamaha, the largest ever made by that corporation.⁶⁸

The recent surge in ATV tourism has created a number of small business opportunities in the county including car washes, repair shops and rental cabins. Yet, despite this growth, tourism

⁶⁵ Social Security Administration, "SSI Recipients by State and County, 2009," (2010, SSA Publication No. 13-11976)

⁶⁶ Visitation figures obtained from the National Parks Service Public Use Statistics Office, www.nature.nps.gov/stats

⁶⁷ Kentucky State Parks, "Pine Mountain State Resort Park," <http://parks.ky.gov/findparks/resortparks/pm>

⁶⁸ Information related to Wilderness Off-Road Park can be found at www.wildernesstrailoffroadpark.net

revenues are insufficient to “carry” the local economy. However, local officials expressed a desire for developing one or two more attractions that would help attract overnight visitors and promote longer stays.

Tourism infrastructure is improving. Marketing materials are first-rate and the county has staff dedicated to tourism development. The county has an excellent web presence and local attractions are well represented on the Internet and social media websites. Lodging and dining facilities, however, remain limited. Residents attribute this deficiency, in part, to the county's “dry” status. The lack of alcohol sales discourages some new restaurants from opening in the county. These restrictions also drive many visitors to Tennessee, where they can dine or purchase alcohol with other supplies.

4.6.6 Local Leadership and Planning

Local officials attribute recent progress to a spirit of cooperation among public and private entities. Survey results tend to confirm this, at least at the

county level. Bell County government received the second highest scores in the survey, with 85 percent of residents rating it as adequate or better. Municipal government, tainted by past corruption scandals, fared somewhat worse. Almost 40% of respondents rated it as inadequate or poor. Most leaders, however, expressed confidence that local governments in the county were improving.

As mentioned, state tax policies are a major constraint for local officials. The county continues to lose both residents and revenues to Tennessee. Income and property tax policies create powerful incentives for more affluent residents to move across the state line to Harrogate and other nearby Tennessee communities. However, increased tax revenues from retail and gas sales have proven beneficial. Fuel tax revenues, for example, have helped finance much-needed improvements on secondary roads.

The problems are compounded by restrictions on alcohol sales. Bell County's “dry” status costs the community much-needed revenues and limits

Figure 4-61: The Bell Theatre in downtown Pineville.



growth in tourism. The issue has become very divisive and is the subject of considerable local debate. Many residents favor liquor and beer sales and note the fact that existing laws don't prevent consumption but simply drive revenues to Tennessee and Virginia. Others cite strong religious or moral objections in defense of current policies. Others cite the irony of local government permitting alcohol sales while combating drug abuse. Few expect the issue to be resolved soon.

Planning is a mixed bag. Strategic planning for transportation, economic development, and tourism projects is good. Local officials are quick to praise ARC for assistance with these planning efforts. Local land use planning, however, is virtually nonexistent. Among survey participants, 58% rated local planning efforts as inadequate and another 15% found them poor. The lack of planning is perhaps most evident near the entrance to the Cumberland Gap National Park. The gateway area in Middlesboro is marred by unsightly commercial and residential development. Local leaders are aware of these issues, but complain that local culture – historically steeped in personal property rights – limits strong zoning and other controls.

The county enjoys a good working relationship with the local development district, the Cumberland Valley Area Development District. Local leaders feel, however, that the district staff is "overwhelmed" and is not always capable of rendering assistance.

4.6.7 Health

Access to health care is excellent. The county boasts two hospitals, Pineville Community Hospital and Middlesboro Appalachian Regional Hospital. The community also benefits from the Debusk College of Osteopathic Medicine, located at Lincoln Memorial University in nearby Harrogate, TN. These

facilities not only provide important care, they also provide a significant number of good paying jobs. Not surprisingly, the county enjoys one of the highest physician-to-resident ratios in this study, at 89.5 per 100,000 residents. Dental care, however, is less available with 37.9 dentists per 100,000 residents.

The county also benefits from an annual health clinic conducted by Knoxville-based Remote Area Medical. Originally established to deliver medical care to remote developing nations, the charity now provides services to many Appalachian communities. Services include medical screenings, dental procedures, vision services, and even veterinary clinics. The continued necessity of these clinics, in places like Bell County that have available resources, indicate that many residents continue to lack access to important services. Also telling is the fact that local leaders seem to view these clinics as a normal part of their health care system rather than the "last resort" opportunity for indigent care that RAM was established to serve.

Figure 4-62: University extension services are highly visible and engaged in Bell County, as are other land grant institutions in this study.



This lack of access may be evident in the county's health care rankings – of the 120 Kentucky counties, Bell County ranks 106th in health outcomes. The county ranks 116th in health factors, an index that includes a number of elements, including access to clinical care, poverty levels, environmental characteristics, and health behaviors (smoking, obesity, etc.).⁶⁹

Drug abuse is a concern among local leaders. Bell County is in the midst of prescription drug abuse crisis and suffers from one of the highest overdose fatality rates in the nation. Evidence of the abuse readily apparent – downtown Pineville, a city of 2,047, has seven pharmacies. The effects of drug abuse are wide spread. Officials blame the abuse for driving away potential visitors and investment.

"It is very hard to find workers who are drug free."

Efforts to prosecute and incarcerate drug offenders overwhelm the local justice system and drain public resources. Funds used to combat the drug trade draw resources away from other important areas and limit vital services. In response, local officials encourage treatment over incarceration and have established special "drug courts" to handle cases related to addiction. Local resources to supply treatment are limited, however, and officials need additional funding to implement treatment programs.

⁶⁹ U.S. Department of Health and Human Services, "Community Health Status Report, 2009" www.communityhealth.hhs.gov; Robert Wood Johnson Foundation. "County Health Care Rankings, 2010," www.countyhealthrankings.org/kentucky/bell

4.6.8 Education

Among the ten study counties, Bell County remains at or near the bottom in a number of key areas. The county ranked last, for example, in the percentage of residents with a high school diploma. Just 63.1% of adult residents have graduated from high school, a figure more than twenty points below the national average. Nearly 18% of adults lack even a ninth grade education and, as late as 2000, 6.2% of adult residents had never advanced beyond 5th grade. An estimated 18% of the local population lacks basic prose literacy skills.

Residents and local officials recognize that the lack of education is a major barrier to economic growth. Despite significant improvements over the past twenty years, dropouts remain a problem. While the percentage of residents with a high school diploma has increased by 16.4 points since 1990,⁷⁰ all too often "16 and the kid is out" of school forever. Unlike some states, Kentucky does not require a high school diploma to obtain a full driver's license. Many residents feel that such a law would discourage youth from leaving school.

Local leaders blame poor educational performance on a number of factors. Traditional mining culture neither required nor emphasized education. As a result, some families place a low priority on educational attainment. Attacking the adult literacy issue, some felt, is an important first step.

"Adult literacy must be addressed one family at a time."

Test scores are mixed, particularly at the high school level. Recent high school math proficiency

⁷⁰ 2010 US Census

discuss local issues and opportunities. Local leaders hope this effort will help create new leaders for the community and inspire some youth to return after college as entrepreneurs.

4.6.9 Summary and Lessons Learned

Bell County is a community with a great deal of potential. Good location, ease of access, and recreational assets make it well-suited for growth. However, formidable obstacles must be overcome before the county can achieve a better future. Educational improvements, changes in state and local policies, and the rising drug problem must be addressed. It is encouraging, though, that local leaders and residents are well aware of these issues and are already taking important and innovative steps to help facilitate change.

Bell County provides a number of important lessons for other communities, including the following:

- Alcohol restrictions deter tourism and prevent investment in restaurants and lodging. Though supported by some local residents, these policies are divisive, quixotic, and deny the county much-needed tax revenues.
- The Cumberland Gap Tunnel is an important reminder that, while infrastructure improvements often bring great benefits, they can also create unexpected issues. New roads run both ways and communities should be fully prepared about potential consequences.
- Bell County's efforts to promote adventure tourism are an excellent example of asset-based development and should serve as a model for the region.
- Internet access is impressive and validates the success of Connect Kentucky, yet more could be done to get citizens using broadband.
- Disparate policies related to taxation, alcohol, or other factors can have a significant impact on state-line communities.
- Bell County demonstrates the impact that drug abuse has, not only on local residents, but also on the local economy and the local government's ability to provide important services. The county's efforts to combat abuse and encourage treatment, however, are laudable and are a model for the region.

Figure 4-64: Mosaic tile floor in the Bell County Courthouse.



4.7 Avery County, North Carolina

Figure 4-65: Word cloud responses to the question, "What are three words that describe your county?"



Figure 4-66: Word cloud responses to the question, "What is your county best known for?"



4.7.1 Avery County Introduction


“Avery County is the richest and the poorest county in North Carolina.” This statement, made by a long-time resident, aptly describes this scenic and dichotomous community. For much of its 100 year existence, this county has been a place of marked contrasts as people of extreme wealth live alongside the working poor, and part-time residents swell the ranks of long-time natives. These dualities lead to misleading statistics and can confound a casual observer.

Avery thus demonstrates the limits of distant observation. Once a community reliant on agriculture, mining, and timber operations, the county has, over the past century, transformed itself into a successful tourism destination and a retreat for wealthy expatriates. Avery County’s experience in this transformation provides a compelling case study in tourism development that is as cautionary as it is encouraging.

4.7.2 Population Profile

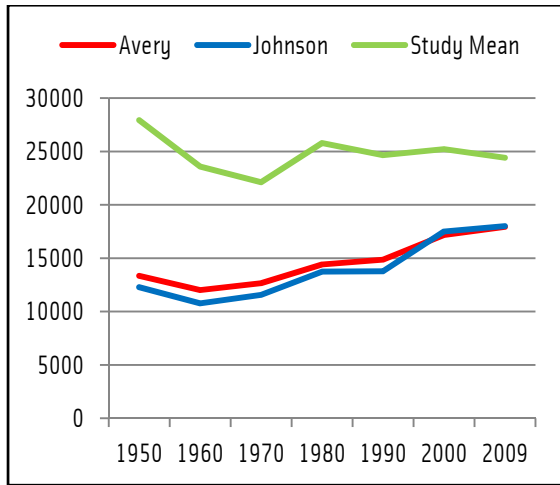
Officially, Avery County has just under 18,000 residents. This number, compiled by the federal census, is accurate to the extent that it counts full-time, year-round residents. It is misleading, however, because Avery County has a much larger population of part-time residents and visitors. During the summer, the county’s population swells to over 60,000 when many local homeowners occupy their homes only on weekends or during summer months.

Likewise, local income statistics paint an inaccurate picture of local conditions. Income disparity is likely more pronounced than official demographic data indicate, as many part-time residents are very wealthy and lead a cloistered existence that contrasts dramatically with that of the native-born community.

Quick Facts	
Avery County, North Carolina	
	
Founded	1911
County Seat	Newland
Land Area	247 sq. mi.
Water Surface Area	0.19 sq. mi.
Population	17,797
Density	72.1 per sq. mi.
Per Capita Income	\$24,915
Unemployment Rate	12%
ADHS Highway	No
Miles to State Capital	220
Miles from county seat to nearest Interstate	38 (I-40)
Miles from county seat to nearest commercial airport	38 (Tri-Cities, TN)

Diversity is low, but somewhat greater than in surrounding communities. The county has a small African-American population that comprises about 5% of the population. A small but growing Hispanic population, who work in agricultural and service jobs, is also present. Officially, about 4% of the local population is classified as Latino or Hispanic. Local social service providers, however, believe the actual number is probably higher and that the population is undercounted due to the questionable legal status of many of these residents.

Figure 4-67: 60-year population trend with cohort (Johnson County, TN) and 10-county average.



Age distribution is skewed, with lower than average percentages of young people and higher averages of senior citizens. This is likely caused by the high number of retirees in the community.

4.7.3 Access and Infrastructure

At an elevation of 3,606 feet, Newland is the highest county seat in the eastern US. Newland is about 20 miles from the rapidly growing city of Boone, about a half-hour drive, and 13 miles or 20 minutes from the resort town of Banner Elk. Avery County is also home Beech Mountain, which at 5,506 feet is the highest incorporated community east of the Mississippi.

As a result of its relatively high elevation, Avery County enjoys considerably cooler summers than most of the rest of the Southeast. Likewise, winters are longer and often much colder with frequent snowfall, which attracts wintertime visitors to nearby ski resorts.

Avery County only has about two miles of four lane road, but access appears to be adequate. Roads through the county are narrow and winding, however, and many residents would like to see improvements. About 60% of survey respondents

found road maintenance to be poor or inadequate. Road congestion during busy summer months may also be an issue.

Road improvements have played a major role in promoting local development efforts. Particularly important for both access and tourism was the expansion of the Blue Ridge Parkway through Avery County. The county was one of the last sections of the popular roadway to be completed, but is also among the most spectacular.

Particularly stunning is the Linn Cove Viaduct, a roadway that skirts the side of Grandfather Mountain. This section of road, the last section of the parkway to be completed, is said to include the most complicated concrete bridge ever built and has become an attraction in its own right. The 1,243 foot section of roadway has its own visitor center and trails that allow visitors to walk beneath it.

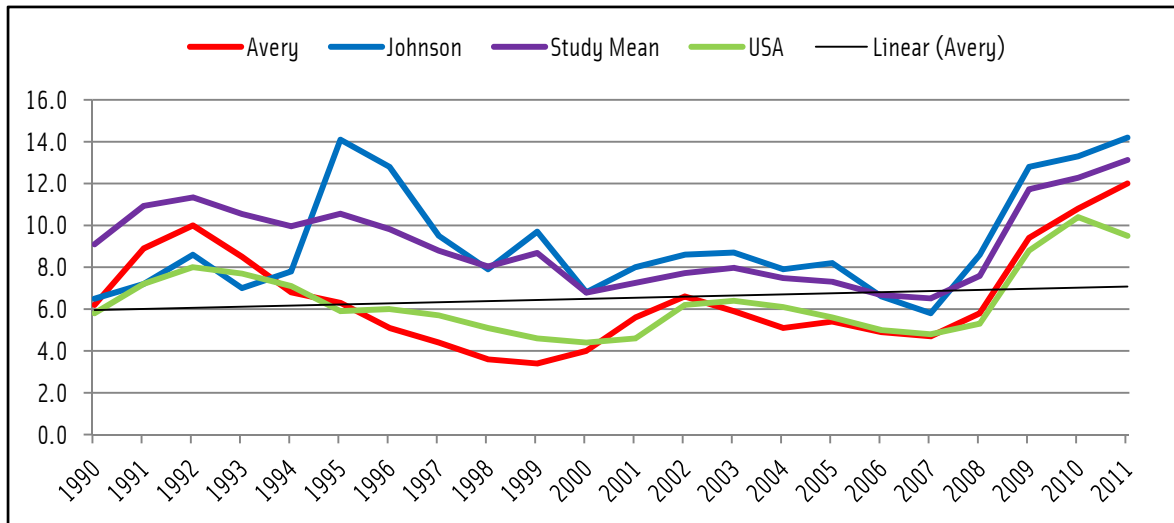
The nearest commercial air access is Tri-Cities Regional Airport, about an hour away in Johnson City, Tennessee. The county has a small general aviation airport, along with private airstrips and helipads located in local gated communities.

While broadband Internet is available inside the county's gated communities, access in other areas of the county is spotty. Residents in less populated areas sometimes have little or no access. Thirty

Figure 4-68: The Linn Cove Viaduct snakes around Grandfather Mountain in Avery County.



Figure 4-69: Avery County unemployment rate comparison, percentage by year.



percent of survey respondents rated Internet access as inadequate and 50% rated it as poor – the lowest ratings of all study counties. Lack of broadband was identified as a major issue by local leaders and residents. Similarly, cell phone access is inconsistent throughout the county depending on the service provider and the part of the county the user is located.⁷³

Water and sewer service received high marks from survey participants, with about 80% rating them adequate or better. The county also received high marks for solid waste services and scored highest among study communities for recycling services.

4.7.4 Economic and Housing Conditions

Avery County has served as a seasonal refuge for Carolina elite for well over a century. Early planters often spent summers in the area to escape the heat of their tidewater plantations. Today that tradition continues, as the county serves as a summer destination for wealthy refugees from Charlotte, Florida, and other environs.

Local roads are lined with exclusive gated communities and private golf courses. Mountainsides are dotted with large vacation homes and Mercedes are as common as Fords.

“We have two Lowes grocery stores in Avery County. At one, you likely to find yourself parked next to a Rolls Royce or a Maserati - I’m not kidding. At the other one, you are in a store full of WIC food where everyone is on food stamps. That’s Avery County.”

One gated community features its own roadside landing strip for private aircraft, and residents spoke of another gated community that featured within its confines, another even more exclusive gated community. Banner Elk, a town with a census population of 811, currently has 26 homes listed for sale for over \$ 1 million.⁷⁴

⁷³ <http://e-ncbroadband.org/>

⁷⁴ Home listings obtained from www.realtor.com

Among study counties, Avery has the highest percentage of high-income residents with 3.2% of households earning over \$200,000 annually.⁷⁵ These well-heeled residents contribute significantly to the local economy and tax base. The county has a wide range of small businesses that cater to these part-time residents, including restaurants, galleries, and service providers.

Yet, while these part-time residents are an important part of the local economy, they seem to live largely divorced from the greater community. Most appear to be cloistered within their gated enclaves and seem to have little interaction with full-time residents.

"We really have no middle class, at least not much of one."

During the recent economic recession, however, even some of Avery County's wealthiest residents have had to cut back. Foreclosures are taking place in even the most exclusive developments and auction signs can be found near neighborhood

gates. Construction, once an active and important sector of the county economy, has slowed the past couple of years. Even with these recent problems, most residents feel the concentration of wealth has helped the county ride out the economic downturn better than many surrounding communities.

The county's agricultural sector is also experiencing a decline related, in part, to the current recession. Thanks to Avery County's high altitude, the main agricultural product is Fraser Fir Christmas trees, a product adopted several years ago as part of a new development strategy.

In the past few years, however, the market for North Carolina Christmas trees has collapsed, while tree businesses started several years ago are now bearing mature trees. As a result, growers accustomed to getting \$20 or more per tree, earned as little as \$5 per tree during the 2010 season.

Local officials point to a number of factors for the decline, including overproduction and a decrease in demand due to the recession. Residents also bemoaned their inability to sell trees and related greenery directly to consumers and felt that, with

Figure 4-70: Fraser Fir Christmas tree farms dot the mountainside landscape in Avery County.



improved internet access, they could conduct more profitable online sales.

The Christmas tree industry appears to be heavily dependent on immigrant labor. Some residents voiced concerns about the ability of the growers to sustain their businesses given increased immigration restrictions. Others voiced concerns about the long-term welfare of immigrant workers should the tree industry fail. Local leaders expressed particular concern for Hispanic women, who are most isolated and, as a consequence, most vulnerable.

Motivated by the recent downturn, some tree growers are searching for additional products to grow and market. Chief among these is wine production. A handful of vineyards and wineries have opened or are in development and many growers are optimistic. Climate conditions, however, could limit production to less lucrative grape varieties. Climate change could, over time, threaten both the wine and tree industries.

In spite of this recent downturn, local entrepreneurship remains high. Small business development is strong and both Newland and Banner Elk have active and viable business districts. Local officials attribute this in part to a local spirit of entrepreneurship and a willingness to accept risk. Historical evidence of this can be seen in their acceptance of tourism, the rapid development of resort communities, and more recently in their willingness to invest in Christmas tree and wine production.

Local entrepreneurs also benefit from extensive business development resources. Western North Carolina is a model for small business development and the region's programs should serve as an example for other rural Appalachian communities.

Potential entrepreneurs have access to multiple training and assistance programs, including the following:

- The North Carolina Rural Economic Development Center develops, promotes and implements sound economic strategies to improve the quality of life of the state's rural communities. The nonprofit organization includes among its programs an Institute for Rural Entrepreneurship that develops policies and programs to encourage the start-up and growth of locally owned companies.
- NC LEAP, North Carolina Lawyers for Entrepreneurs Assistance Program, an initiative sponsored by the state's Bar Association to provide pro bono legal services to low-wealth entrepreneurs who are starting or expanding their businesses.
- The Small Business Center Network, a program of the state's community college system, maintains a network of 58 community-based Small Business Centers to support business development through training, counseling, and resource information.
- Higher education resources are vast. Appalachian State University, for example, maintains eight distinct assistance programs, including an Appalachian Enterprise Center, a Small Business and Technology Development Center, a Center for Entrepreneurship and the Appalachian Center for Mountain Winegrowing.
- Western Carolina University maintains a Center for Entrepreneurship and Innovation and is one of a handful of institutions to offer a Master's Degree in Entrepreneurship.
- The MAY Coalition, a nonprofit corporation established by the Z. Smith Reynolds Foundation, promotes business development by providing affordable loans to entrepreneurs in Mitchell, Avery and Yancey counties in North

Carolina. Loans range from a few thousand dollars up to \$250,000. The coalition operates in partnership with Community Foundation of Western North Carolina, the North Carolina Department of Commerce, the United States Department of the Treasury CDFI Fund and the USDA Rural Development program.

Local leaders view the arts as an important economic development priority. Successful artists not only attract visitors, they also create viable small businesses.

"If we have twenty artists making a living, then we've created twenty jobs."

Housing is a major issue in the county. While luxury homes are abundant, affordable housing is in short supply and 60% of survey respondents felt housing quality has declined in the past decade. Many low-income residents live in substandard homes, often old trailers, and struggle with respiratory ailments and other illnesses as a result.

The local Habitat for Humanity is overwhelmed with requests for assistance and inflated land values prevent affordable housing developments. Rising utility costs, which in some cases have tripled in the past few years, add to housing and poverty issues.

"People have to decide if they want to heat the house or eat."

Homeless services are nonexistent. Social service advocates claim this is a deliberate policy designed to foist the poor upon neighboring counties. These same advocates insist that real and persistent poverty can be found beneath the county's veneer of affluence.

4.7.5 Tourism

Tourism resources are abundant and of high quality. The county offers a number of lodging options, ranging from campgrounds to high-end rental properties. Dining and shopping

Figure 4-71: Word cloud responses to the question, "What is your county's top attraction for tourism?"



opportunities are plentiful and varied. Tourism infrastructure is excellent and the county has a well-trained and capable tourism development staff. Promotional materials are first-rate and the local Chamber maintains an excellent website.

Additional web-based resources are also available and include a presence on Facebook, Twitter, and even YouTube. The county hosts festivals and events throughout the year, including the Annual Woolly Worm Festival, an annual October event that attracts over 20,000 visitors.⁷⁶

4.7.6 Local Leadership and Planning

Residents are quick to lavish praise on county officials and 85% of survey respondents rated county government as “adequate” or better. Local government fared somewhat worse, with 70% of participants finding it “adequate” or “excellent.” Government capacity appears to be high, thanks in part to property tax revenues levied on lavish mountain homes. Matching funds are not an issue and the county offers a full range of services and programs and even operates a small museum.

Regional cooperation is high. The county works with neighboring counties on a number of issues, including shared telemedicine and library systems. The library system, which serves Avery, Mitchell, and Yancey Counties, also support local nonprofit organizations by providing grant writing training and support services. The county enjoys a good working relationship with their local development district, the High Country Council of Governments, which provide important and necessary support to local communities.

Planning is better than in most study counties, with 60% of survey participants finding it to be

⁷⁶ <http://www.woollyworm.com>

Figure 4-72: The public outcry after this resort was built on a prominent mountain led to strict ridge top development restrictions.



adequate or better. The scope of development, however, is a concern to some residents as are potential environmental impacts. Many residents are also frustrated over past developments, particularly a large resort on Sugar Mountain that looms over Banner Elk. The development, described by one resident as “that damn cheese box” built for “Miami re-locaters,” has led to strict development restrictions on ridge tops, which will also likely prohibit future wind power projects.

4.7.7 Health

Avery County is ranked 45th out of 100 North Carolina in Health outcomes, and is 20th in the state in health behaviors. County residents have lower rates of obesity, teen pregnancy, and STDs than the state as a whole. The county is ranked last in the state, however, in clinical care, largely due to the high number of uninsured residents (30%) and a low number of health care professionals. The county claims 50.3 physicians and 22.4 dentists per 100,000 residents. Primary care physicians appear to be lacking, however, with just 1 for every 1,629 residents. Since these statistics are based on the

number of full-time residents, access for some parts of the year may be far worse.⁷⁷

The county has a small 70-bed hospital that provides emergency care and basic services. More extensive diagnostic and clinical services are available in nearby Boone. Among survey participants, 45% lived within 15 minutes of an emergency facility and another 40% lived within 30 minutes of emergency care. Some residents, however, expressed concerns over the level of care at the local facility.

"Don't go there unless you know what is wrong with you and you know what needs to be done."

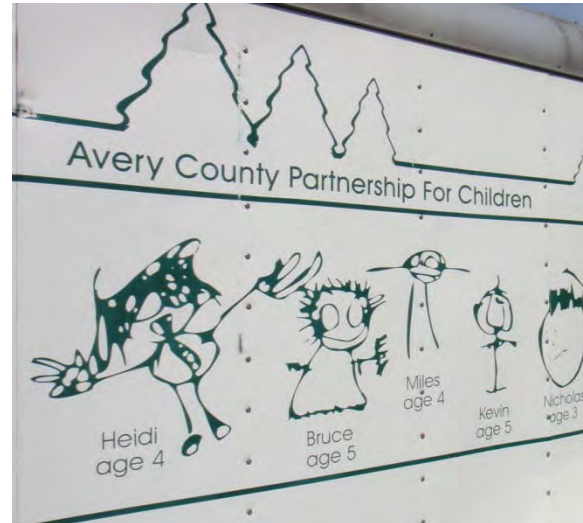
As in other areas, drug abuse is a constant concern. Methamphetamine is a significant issue and is abetted by the rural landscape and large number of campgrounds, which are becoming popular for hosting transient meth labs. Prescription drug abuse is also a rising problem. The county's border with Tennessee contributes to the problem, as it permits addicts to avoid North Carolina's prescription drug database. Perceptions also play a role, as many residents continue to view prescribed drugs as inherently beneficial or benign.

4.7.8 Education

Educational attainment is among the highest of the study counties. Almost 82% of adult residents are high school graduates and almost 22% hold a

⁷⁷ U.S. Department of Health and Human Services, "Community Health Status Report, 2009," www.communityhealth.hhs.gov; Robert Wood Johnson Foundation. "County Health Care Rankings, 2010," www.countyhealthrankings.org/northcarolina/avery

Figure 4-73: Avery County organizations work together well to provide better education.



bachelor's degree or higher, the highest among the ten study counties. The county also boasts the highest percentage of residents with a graduate degree, at 6.5%. Community colleges are a strength of the North Carolina educational system and Avery County has the highest level of Associate Degree holders, at 9.1%.⁷⁸

These figures are the result of steady gains made over the past twenty years. Local officials attribute these results to a number of factors, including increased monitoring of low-performing students and driver's license diploma requirements. Among the more innovative programs is a new policy that places suspended students in local businesses where they are required to work for the duration of their suspension.

Proficiency scores attest to the quality of the local schools. Scores are among the highest in this study and are consistent across all grade levels. Local leaders report that students who attend college tend to succeed. The same holds true for

⁷⁸ 2010 US Census

Figure 4-74: Word cloud to the question, "What are three problems in your county that need solved?"



community college graduates, who transition well to four year degree programs. Distance learning is being utilized throughout the community college system, and the local community college has a dedicated distance learning classroom.⁷⁹

Avery County benefits from a close working relationship with two local colleges. Lees-McRae College, a small liberal arts college in Banner Elk and Appalachian State University in nearby Boone are both important community partners. Both institutions are active in local schools and work to promote local businesses and increase entrepreneurship. They also provide invaluable assistance to local agencies and nonprofit organizations. Local organizations benefit considerably from student interns or volunteers from one or both institutions. Extension staff from North Carolina State University is also an important

partner and are almost overwhelmed by the level of assistance they provide.

4.7.9 Summary and Lessons Learned

Avery County is an important case study in many respects. The county demonstrates the limits of distant quantitative analyses, as many of its most important characteristics are not clearly evident in statistics. The county also serves as a model for entrepreneurial development and sets important examples for other communities. Lastly, the community shows the benefits and consequences of county-wide gentrification. Among the specific lessons garnered from the county are these:

- North Carolina is a clear leader in promoting entrepreneurship and developing small businesses. The pathway to business development is clear and assistance is available every step of the way - from developing a business plan to acquiring capital and managing a new start-up.
- Among business development programs, the MAY Coalition is especially appealing. With a

⁷⁹ Federal Education Budget Project, "Avery County Schools," <http://febp.newamerica.net/k12/nc/3700300>

mission to provide affordable capital, its origins as a foundation-funded initiative, and its current status as a public-private partnership all contribute to its success. The organization's approach is replicable and should serve as a model for other Appalachian communities.

- Avery County validates the importance of partnerships with colleges and universities. Communities that enjoy such partnerships clearly benefit from these relationships.
- As in other communities, the lack of widely available Internet access is seen as a major economic constraint.
- The county's Christmas tree industry demonstrates the potential for success and collapse in large scale agricultural transitions and the need for a diverse agricultural economy. The industry also raises important questions about potential economic impacts

related to climate change and more restrictive immigration policies.

- The county's policy of placing suspended students in the workplace has proven successful in keeping young people in school and in demonstrating the value of education in the workplace. This simple but effective approach could be easily adopted by other communities.
- Part-time residents are clearly an important local economic asset and help sustain a number of vital programs. At the same time, however, they contribute to visible class distinctions and limit the availability of affordable housing. Gated communities, while filling a lucrative market niche, create a sense of duality in the county that, in the long term, may not be healthy. More should be done to engage these property owners in the greater community to encourage mutual understanding and create a shared sense of place.

Figure 4-75: Downtown Newland celebrated Avery County's 100th anniversary in 2011.



4.8 Johnson County, Tennessee

Figure 4-76: Word cloud responses to the question, "What are three words that describe your county?"

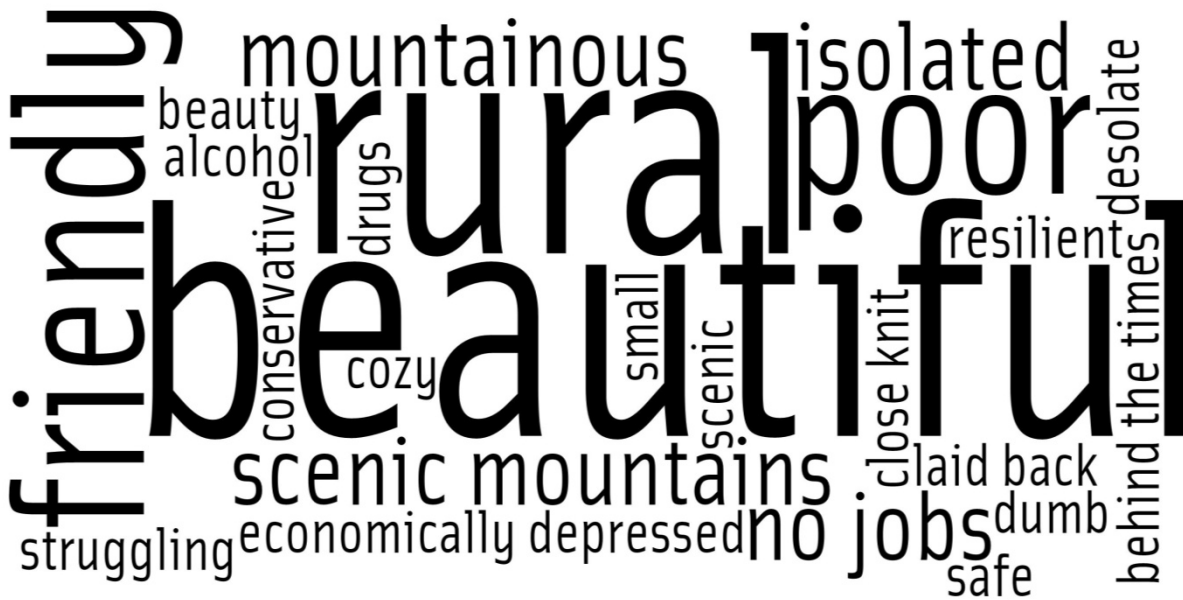
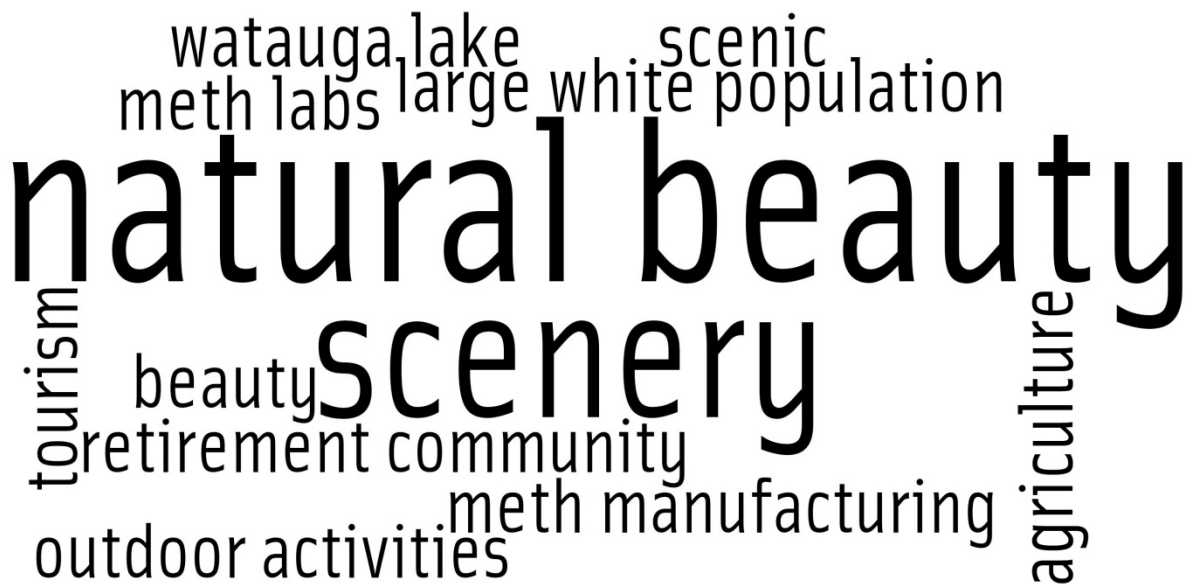


Figure 4-77: Word cloud responses to the question, "What is your county best known for?"



4.8.1 Johnson County Introduction

Johnson County, Tennessee, is a community in transition. Once home to well-known clothing manufacturers like Levi-Strauss and Timberland, the county has cobbled together a diverse economy that includes a major prison, small business development, and tourism. These efforts have led to improvements in the county and have helped prompt revitalization efforts in the county seat of Mountain City. Significant issues remain, however, and while the county has made important progress it is still struggling to find economic stability.

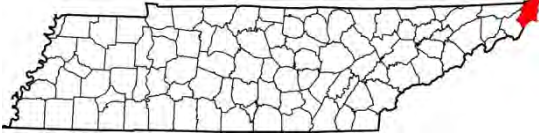
Johnson County's successes to date have much to teach other counties in terms of allocation of resources, creation of jobs, and building tourism infrastructure. The county seat is also an important case study of a community working to create a niche market in a growing but highly competitive regional tourism sector.

4.8.2 Population Profile

Unlike many counties in this study, Johnson County has seen steady population growth over the past fifty years. Since 1990, the local population has increased over 30% to about 18,000 residents. Much of this increase has come through immigration, as the surrounding region has become a popular retirement destination. While these new residents have brought much-needed growth, they have also created a community that sometimes divides between "newcomers" and "natives."

"We do not like outside people."

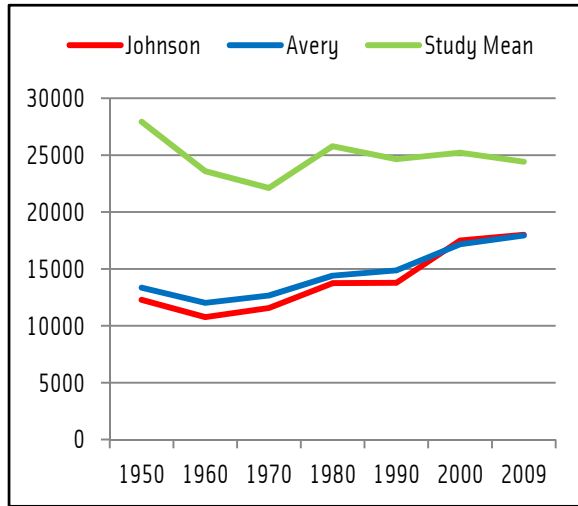
The population increase also reflects an important local industry, the Northeast Correctional Complex. The prison, built to house state inmates, opened in

Quick Facts	
Johnson County, Tennessee	
	
Founded	1836
County Seat	Mountain City
Land Area	298 sq. mi.
Water Surface Area	4 sq. mi.
Population	18,244
Density	59 per sq. mi.
Per Capita Income	\$16,605
Unemployment Rate	12.6%
ADHS Highway	No
Miles to State Capital	327 (Nashville)
Miles from county seat to nearest Interstate	30 (I-81)
Miles from county seat to nearest commercial airport	34 (Tri-Cities, TN)

1991 and currently houses about 1,800 inmates in both the main maximum security facility and a smaller minimum security annex. The presence of the inmates inflates the local population figures and also creates a male majority of about 54%.

As with most Appalachian communities, diversity is low. The county, even with the prison population, is almost 96% white. As in other communities, this lack of diversity may contribute to a lack of tolerance. One survey respondent declared "We only want white people in the area." The county is

Figure 4-78: 60-year population trend with cohort (Avery County, NC) and 10-county study average.



also older than the state average, with fewer youth and a higher percentage of senior citizens.⁸⁰

4.8.3 Access and Infrastructure

Johnson County is in the midst of a high growth region, situated between the cities of Abingdon, Virginia, and Boone, North Carolina. Abingdon, about 30 miles distant, is about a 45 minute drive from Mountain City. Boone, 25 miles distant, is about a 35 minute drive. The nearest major city, Johnson City, Tennessee is about an hour away.

Access, while not necessarily difficult, is also not easy. The best route, from I-81 near Abingdon, VA, requires about a forty minute drive along a narrow winding road. Other routes through Tennessee are considerably more challenging. Not surprisingly, residents often feel isolated and “forgotten.” They feel particularly detached from the State of

⁸⁰ 2010 US Census, Tennessee Department of Corrections, “Northeast Correctional Complex, <http://www.tn.gov/correction/institutions/necx.html>.

Tennessee and seem to align themselves more with their neighbors in North Carolina and Virginia.

Roads within the county are generally good and show recent improvements, particularly near Mountain City. Just over half of survey participants (54%) found road maintenance to be adequate or better. A significant portion, however, reported road conditions as “inadequate,” perhaps a reflection of poorer conditions on side roads or the challenges of access in general.

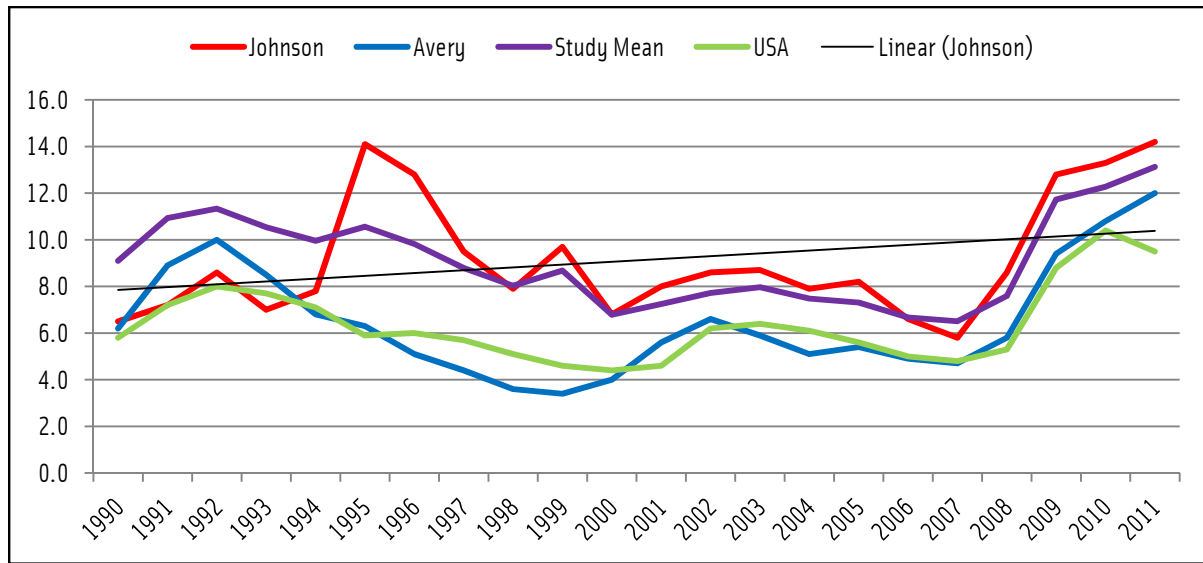
Commercial air service is available at Tri-Cities Regional Airport in Johnson City. The county also maintains a small general aviation airport facility. The nearest interstate access is in Abingdon, which is located on the I-81 corridor.

Water and sewer services received mixed reviews from survey participants and reflect the disparity between more populated and more rural areas. About 64% found sewer services to be adequate or better, while another 35% found them to be inadequate or poor. Water services received better results, with three-quarters of respondents finding services to be adequate or excellent.

Figure 4-79: Downtown Mountain City.



Figure 4-80: Johnson County unemployment rate comparison, percentage by year.



Reliable and affordable high speed internet access is available in Mountain City; however, outside of the county seat access is very limited. Many residents outside of Mountain City rely on satellite or dial-up services. Cell phone reception is mixed, depending on the carrier.⁸¹

4.8.4 Economic and Housing Conditions

For most of the post-WW II era, Johnson County was a manufacturing center. Allied with textile and knitting firms in North Carolina, the county produced clothing. Employers included well-known brands, including Levi-Strauss and Timberland. In the early to mid-1990s, many of these firms moved production overseas, leaving an employment crisis in their wake. Other unanticipated changes have also led to job loss. A local silver recovery plant, for example, also curtailed operations recently, a victim of the transition from film to digital imaging. By 1996, monthly unemployment had peaked at

over 22% and annual unemployment averages exceeded 17%.

Local officials and community leaders responded with efforts to create a more diversified local economy with reduced emphasis on manufacturing. Construction of the prison was an important early component of this strategy. The facility was controversial, however, and many residents initially opposed the effort. Once completed, however, local concerns were abated and today the facility employs about 500 residents.

The facility is not only valued for the jobs it creates, but also for the low-cost labor it provides to local groups and organizations. Prison labor, which is valued at up to \$100,000 per month, is an important contribution to many local projects and also serves as a matching resource for local governments and nonprofit groups.

Leaders also worked to leverage regional assets to promote development. Neighboring counties in North Carolina and Virginia had long attracted tourists. Increasingly, they were also attracting full-time residents as well, especially retirees. Johnson County officials began to promote their

⁸¹ http://www.connectedtn.org/broadband_landscape/_interactive_map_interface/?q=map

community as a retirement destination and have enjoyed some success in attracting new residents.

New residents and retirees have emerged as important new group of entrepreneurs. Local leaders complain that longtime residents are overly risk averse, but report that newcomers are filling the void and beginning new businesses. Residents struggle to explain the lack of local initiative, but believe that many problems are internal.

"People in Johnson County have lost pride in themselves."

Fear of change is also an issue. One resident stated that residents "must learn to embrace change," adding, "maintaining the status quo will not work. If we don't do that, nothing will change."

During the early 2000s, the Tennessee Valley Authority proposed building a modest wind farm along the ridgelines above Mountain City. This project was rejected by local residents who believed the turbines would spoil local viewsheds and hurt tourism. Some residents would now feel the idea "should be addressed again," but the issue remains divisive and prospects for green energy production are unclear.

Welfare dependence is fairly high, with 4.7% of local residents dependent on SSI disability support, a figure that is probably understated due to the local prison population. Those with jobs often work outside of the county, with a significant number commuting to Boone and other North Carolina

communities. Unemployment in April 2011 stands at 12.6%.⁸²

The local capacity for business development is adequate, at best. The local Chamber is underfunded and there appear to be conflicts over resource allocations. The county has an attractive website, with some economic development resources. The county also has a small but emerging Facebook presence. Resources and assistance for business development are much-needed, with one owner conceding "it is so hard to keep a business open here." On a more positive note, however, the outlook for local agriculture is improving, thanks to efforts to create a county farmer's market and improve local food access.

4.8.5 Tourism

In the mid-1990s, as local leaders began to transition the local economy, tourism emerged a major element of the new local development strategy. The move was both sound and compelling, as the surrounding region is a growing haven for tourism development. Neighboring counties in North Carolina had been attracting visitors for decades, and Abingdon Virginia, with its historic Barter Theater and Martha Washington Inn, is well-established tourism destination.

Regional tourism got an additional boost in the 1990s with the completion of the Virginia Creeper Trail. This rails-to-trails project converted a former logging railroad into a recreational hiking and bike trail that connects Abingdon to Damascus, Virginia

⁸² *Social Security Administration, "SSI Recipients by State and County, 2009," (2010, SSA Publication No. 13-11976), 89; Tennessee Department of Labor and Workforce Development, "Labor Force Estimates, April 2011," www.tn.gov/labor-wfd/labor_figures/april2011county.pdf.*

Figure 4-81: Word cloud responses to the question, "What is your county's top attraction for tourism?"



- less than 20 minutes from Mountain City. The trail transformed Damascus into an outdoor recreation hot spot and transformed the dying community into a trendy and popular destination.⁸³

In response to these changes, Johnson County officials embarked on an ambitious tourism development strategy. The centerpiece of this effort was development of a county welcome center in Mountain City. The center, which houses an information desk and a small county museum, has helped boost tourism and improve the local visitor experience. The facility has also proven sustainable, thanks to a dedicated revenue stream derived from occupancy taxes.

Yet, while this revenue source has enabled the county to staff and maintain the center, it has also raised questions about the allocation of resources. Some county leaders worry that the facility, while important, draws resources away from other

important tourism development needs, including Chamber activities, promotional media, and other development efforts.

Most recently, local residents created another tourism resource with the conversion of a former school auditorium into a local community theater. The 1926 school facility was closed in 1966 and its auditorium was used mainly for storage. In the early 2000s, a local grassroots effort, led by a former drama teacher, organized and renovated the structure into a community playhouse - Heritage Hall Theatre. Using grant funds and local donations,

Figure 4-82: The inside of the recently remodeled Heritage Hall Theatre in Mountain City.



⁸³ For more information of the Virginia Creeper Trail, see the official trail website at <http://www.vacreepertrail.org>.

Figure 4-83: A sign on the sidewalk outside of a Mountain City business.



supporters created a modern performance venue that now hosts a regular schedule of plays and musical performances. The facility also enjoys a partnership with Abingdon's prestigious Barter Theater, which lends technical and artistic assistance to theatre supporters.⁸⁴

Tourism infrastructure has improved considerably in the past few years and is generally good. The county has three motels and several small inns and bed and breakfasts. A number of dining options are available and are of good quality. The county also has a golf course which, despite some recent financial issues, remains open and is a popular attraction. The county website, while lacking in economic development information, offers good information for potential visitors.

⁸⁴ <http://www.heritagehalltheatre.org>

Downtown Mountain City has considerable tourism potential. The theatre, improved sidewalks, and some new businesses all show recent progress. Residents would like to see a more coordinated revitalization effort, however, and felt the city or county should do more to retain local businesses.

"The city or county should provide incentives to business owners so we can keep our staff employed."

Officials are hoping to expand their tourism resources even more with the addition of adventure tourism activities to the local entertainment options. Doe Mountain is a local site once slated for development by a private party. These plans, however, fell through after the death of the developer and the recent recession has prevented further efforts. Local officials, however, continue to eye the property and would like to utilize it for ATV trail and other activities. They currently lack funds to purchase the property, but are exploring a number of options to finance future development of the site.

4.8.6 Local Leadership and Planning

Local and county government generally received high marks in the survey, with about 70% of participants finding them to be adequate or better. Focus group participants, however, questioned these statistics and blamed an entrenched "old guard" and "internal policies" for many local problems. Some residents also felt long-term residents were threatened by so-called "newcomers" and were afraid to relinquish power to new residents. Yet, despite these feelings, most residents believe cooperation between local officials is strong. Residents did express a desire, however, for better communication across the

county and an increased awareness of government resources and services.

Since the 1990s, the county has been the subject of numerous plans and studies, most of which produced few results - if any. Local leaders, both inside and outside of government, complained about external "experts" who produced lavish plans and studies, only to disappear - leaving their work to gather dust on a shelf. Because of this, residents view planning with cynicism and many regard it as "a waste of money." They expressed considerable frustration with government, both at the state and local levels, for funding such projects without providing follow-up or implementation support.

The county enjoys a good relationship with its LDD, the First Tennessee Development District, and considers them a valuable regional resource. Relations with the state, however, appear to be paradoxical. Johnson County leaders point out that their county is "closer to seven other state capitals than to Nashville," and often feels forgotten by the state legislature. At the same time, however, they point to the local welcome center and the prison, which were both funded largely by the state.

4.8.7 Health

Johnson County ranks 86th out of 95 Tennessee counties in health outcomes and exceeds state averages in poor health days, premature deaths, and most poor health factors. Access to health care is limited. The county maintains a small hospital capable of providing emergency care and basic services. Residents must travel outside of the county, however, for many medical needs. Among survey respondents, 72% reported they lived within 30 minutes of an emergency care facility.

Although the county has been able to maintain its small hospital, it remains a designated Health Professional Shortage Area. The county claims 44.2

physicians and 27.6 dentists per 100,000 residents.⁸⁵

As in other Appalachian communities, drug abuse is a major issue. Johnson County leads Tennessee in the production of methamphetamine and also reports problems with prescription drug abuse. Residents blame the phenomenon on a number of factors, including a lack of opportunities for local youth and so-called "Florida pain clinics" that appear to be a leading source of illegal drugs.

A significant effort is underway in the county to promote community gardening and agricultural education as a way to improve eating habits and promote healthy lifestyles. The county recently completed and released a thorough and well documented food assessment. The new farmer's market accepts food stamps, giving local recipients access to affordable, local fresh produce.⁸⁶

4.8.8 Education

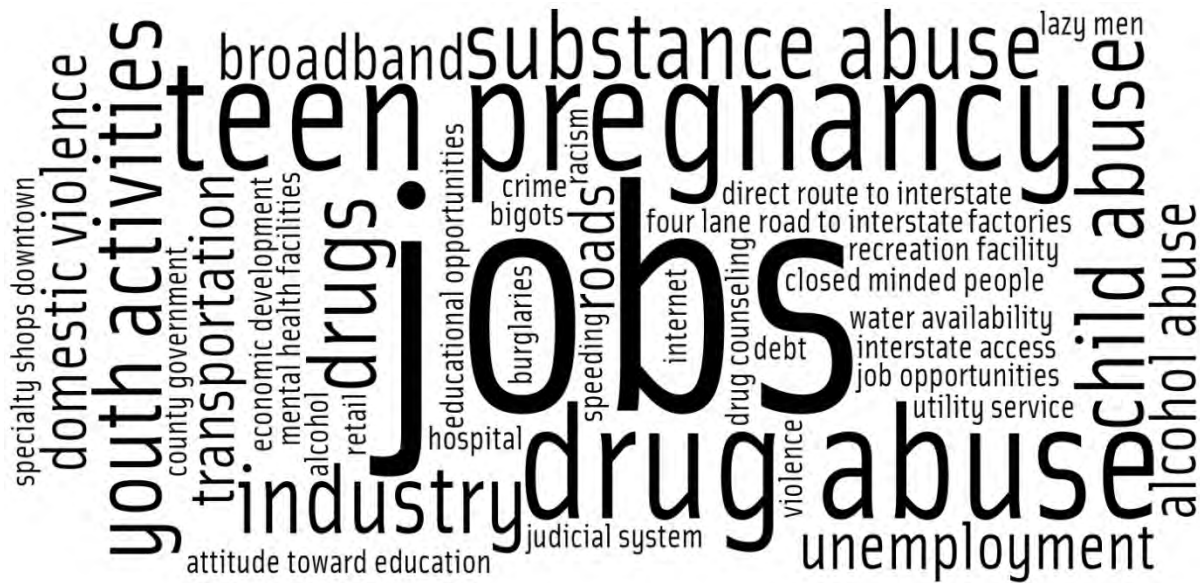
Over the past twenty years Johnson County has achieved remarkable success in promoting education. In 1990 less than half of county residents held a high school diploma. Today, the number stands at 69%. The percentage of college graduates has more than doubled the same period, from 5% to 10.4%.⁸⁷

⁸⁵ U.S. Department of Health and Human Services, "Community Health Status Report, 2009," <http://www.communityhealth.hhs.gov>; Robert Wood Johnson Foundation. "County Health Care Rankings, 2010," <http://www.countyhealthrankings.org/tennessee/johnson>.

⁸⁶ Tamara McNaughton, et. al., "Community Food Security in Johnson County, Tennessee: A Local Food Strategy for Self-Sufficiency, Economic Development, and Community Engagement," Report to the US Department of Agriculture National Institute for Food and Agriculture, August 2010.

⁸⁷ 2010 US Census

Figure 4-84: Word cloud to the question, "What are three problems in your county that need solved?"



Officials attribute this progress to a number of factors. Foremost among these are changes in state policies that now assure funding parity between rural and urban school districts. This additional funding allowed the county to reduce class sizes, improve facilities, and introduce programs to assist gifted students, improve retention rates and provide GED opportunities to former drop-outs. New state laws that require a diploma to obtain a driver's license have also helped keep young people in schools.

County schools are also promoting agriculture through innovative programs. The best known of these is an aquaculture at Johnson County High School. Funded through a \$500,000 ARC grant, the facility instructs young people in aquaculture while raising tilapia, a food product, and koi, a popular garden fish. Waste streams from the facility are then used to grow tomatoes, lettuce, and other

produce. The facility is a point of considerable local pride and has attracted international attention.⁸⁸

Proficiency test scores are excellent through middle school, but drop in high school - particularly in math. Even with this drop, however, they remain among the highest of the ten study communities. Students who attend college reportedly do well, but few return to the county. Local residents would like to develop a scholarship or incentive program that would encourage college graduates to return to start businesses or work in the community.

4.8.9 Summary and Lessons Learned

While still transforming itself from a manufacturing center into a tourism destination, Johnson County's progress to date has been remarkable and the community should serve as a case study for other

⁸⁸ *Best manufacturing Practices: Center of Excellence, "Alternative Farming Center,"*
www.bmpcoe.org/bestpractices/internal/trici/trici_17.html

areas facing difficult economic change. Likewise, the county's progress in education should also serve as an inspiration for other Appalachian communities and demonstrate how educational progress plays a role in securing economic progress. Among the lessons offered by the county are these:

- Heritage Hall Theatre is an excellent example of a grassroots effort to create a new community resource. It is also a very good case study in asset based development, as it leverages local talent, a historic and underutilized local structure, and the county's proximity to the Barter Theatre.
- The county's experiences vividly illustrate the phenomenon of planning fatigue. Given their past experiences with planning efforts, it is difficult to fault local residents and officials for their cynicism. Planning without follow-up or implementation may do little to benefit the community and may only serve to increase local levels of frustration and diminish confidence in public agencies and resources.
- The aquaculture project at Johnson County High School is an innovative and increasingly renowned program. Yet, despite its prominence, the program appears to have done little to actually promote commercial aquaculture in the county. It is unclear if any county students have gone on to pursue degrees or careers in the field of aquaculture. Additional research should be conducted to measure the effectiveness of this program and attempt to more closely link entrepreneurial or career development programs.
- The improvements in educational attainment testify to the impact of changes in state policy and the importance of educational funding.
- Johnson County should be commended for its efforts to improve local nutrition, increase food security, and promote community agriculture. These efforts, which could be replicated elsewhere, demonstrate a win-win for the community: increased revenue for local growers and better food for local residents.

Figure 4-85: The Johnson County Welcome Center in Mountain City.

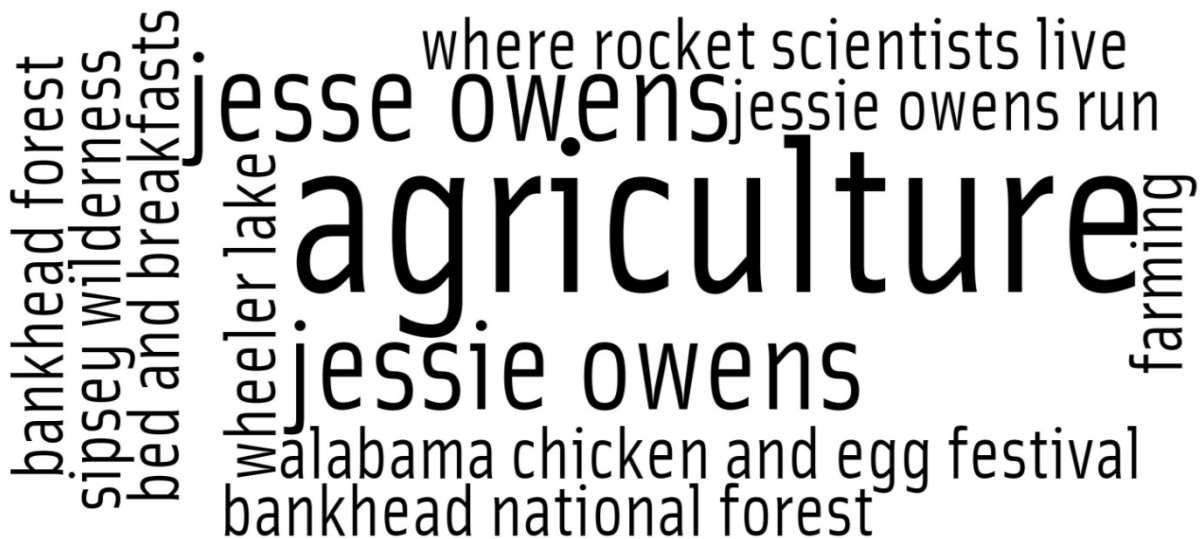


4.9 Lawrence County, Alabama

Figure 4-86: Word cloud responses to the question, "What are three words that describe your county?"



Figure 4-87: Word cloud responses to the question, "What is your county best known for?"



4.9.1 Lawrence County Introduction

Lawrence County is among the most dramatic success stories of Appalachia. Once a poor county in one of the poorest parts of the nation, Lawrence County is now a growing and thriving county located among the most competitive counties in the entire ARC region. The transformation of north Alabama, including Lawrence County, is a story of investment, innovation, and reconciliation.


In spite of this remarkable progress, Lawrence County continues to face important challenges. Educational reforms, downtown revitalization, and industrial recruitment are among the issues confronting local leaders. The community's approaches to these issues may, however, provide important examples of best practices for many other Appalachian counties.

4.9.2 Population Profile

Lawrence County is considerably more diverse than many of the counties in this study. While the county is 79% white, almost 12% of residents are African-American. Another 5.2% of residents identify themselves as Native American and 3.7% are multiracial.⁸⁹ The county also has a small, but growing Hispanic community that currently makes up about 2% of the population.

Age distribution is generally good and near state averages. The county has more than twice as many youth as seniors. The local population, which has climbed steadily since the 1960s, changed little

⁸⁹ 2010 Census; The tribal affiliation of Native American residents is unclear. Currently the Alabama Indian Affairs Commission recognizes nine tribes within the state. Just one of these tribes - the Porch Band of Creek Indians from lower Alabama - is recognized by the federal government. <http://aiac.alabama.gov/tribes.aspx>.

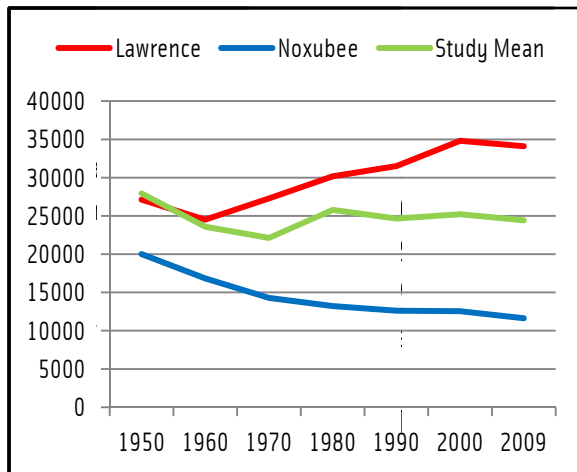
Quick Facts	
Lawrence County, Alabama	
	
Founded	1818
County Seat	Moulton
Land Area	693.38 sq. mi.
Water Surface Area	24.68 sq. mi.
Population	34,339
Density	49.5 per sq. mi.
Per Capita Income	\$19,795
Unemployment Rate	10.3%
ADHS Highway	Yes (Corridor V)
Miles to State Capital	173
Miles from county seat to nearest Interstate	33 (I-65)
Miles from county seat to nearest commercial airport	32 (Huntsville, AL)

during the past decade. Lawrence County is the third most populous county in this study.

4.9.3 Access and Infrastructure

Local leaders are quick to admit that location has been a major factor in Lawrence County's success. The county seat, Moulton, is located within a 30 to 40 minute drive of three major employment centers: Decatur (20 miles), Huntsville (40 miles)

Figure 4-88: 60-year population trend with cohort (Johnson County, TN) and 10-county study average.



The terrain is largely flat and open. Road access is excellent. The county is served by two modern 4-lane highways, including ADHS Corridor V. Main roads appear to be well maintained, but secondary road conditions are mixed. Two-thirds of survey respondents from the county rated road maintenance as “inadequate” or “poor.”

Air access is very good. Commercial air service is less than an hour away in Huntsville. Residents can also use the Birmingham airport which, while more distant, offers more extensive air services. The county also maintains a general aviation airport with two runways. The county also enjoys barge access to the Tennessee River which, in turn, connects to the Tennessee-Tombigbee Waterway, the Ohio and Mississippi Rivers and their tributaries. Rail service is available through the Norfolk Southern system.

Cell phone service is available throughout the county. Local leaders indicate that broadband access is a serious constraint and 60 percent of

survey participants classified service as poor or inadequate. Access is limited outside of Moulton, and officials argued that expanded service was an important factor in attracting new industries and residents. Broadband access maps confirm this lack of service, which is particularly evident in the western portion of the county.⁹¹

4.9.4 Economic and Housing Conditions

Lawrence County largely serves as a “bedroom community” for regional employment centers in Decatur, Huntsville, and the Quad-cities. Most residents drive outside of the county to work, but the county has a handful of manufacturing plants. The largest of these is International Paper, in Courtland. Other major employers include the local hospital and the county school system.

Unemployment, at 10.3% in March 2011, is above the state average but a full point lower than the previous year.⁹² Officials attribute the relatively high rate to a regional economic downturn, but anticipate a recovery. Interestingly, Lawrence County is remarkable in that the current decline in the manufacturing sector may be offset, to a degree, by growth in retail sales.

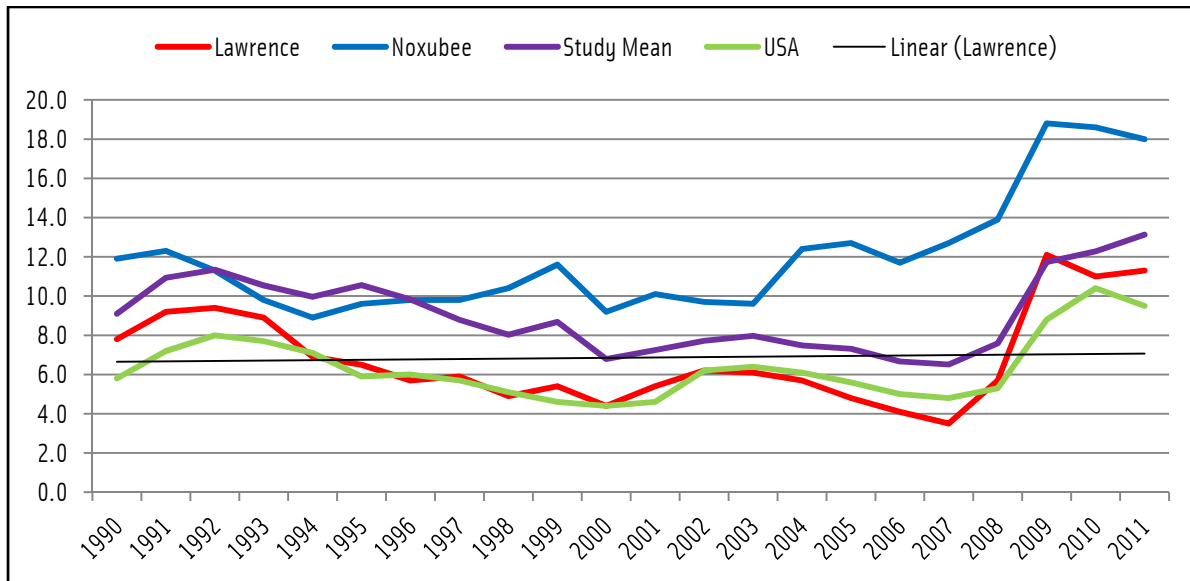
Improved highways have helped transform Moulton into a regional trade center and the town recently saw construction of a Wal-Mart Supercenter. This development, initially feared for its impact on local businesses, had actually improved local sales across the board. New businesses were opening near the development to capitalize on the increased traffic. As a result, the city of Moulton was currently operation with an annual surplus of

⁹⁰ Distances and travel times calculated using Mapquest.com and Google Earth.

⁹¹ <http://al.linkamericadata.org/>

⁹² Alabama Department of Industrial Relations, “County Unemployment Rates,” <http://www2.dir.state.al.us/LAUS>

Figure 4-89: Lawrence County unemployment rate comparison, percentage by year.



\$250,000 and was building a sizable contingency fund. Recent voter approval of local alcohol sales promises to increase that figure even more.

Officials and residents credit ADHS Corridor V with spurring retail and residential development in East Lawrence County, and point towards new businesses as a sign of continued growth and progress. They noted, however, that all of this growth was still largely dependent on proximity to larger urban areas.

"Had Lawrence County been located elsewhere, the results would have probably been much different."

It should also be noted that local retail growth may have occurred at the expense of regional counties. Officials report the new supercenter resulted in declines in sales and revenues in some neighboring communities and that these areas were struggling to recover from Lawrence County's new gains.

Corridor V growth may have also contributed to a downtown decline. Historic Moulton, a charming community, has a number of empty storefronts and

would likely benefit from a Main Street initiative or similar project to stimulate downtown retail development activities.

The capacity of local and county development officials is quite high. The county benefits from an active Chamber, industrial development board, and several dynamic professional organizations.

The county maintains a number of industrial sites and markets them effectively. Among these sites is a major riverfront tract of land that is being reserved for large scale development purposes. The

Figure 4-90: Downtown businesses struggle with changing traffic patterns and increased competition from the local supercenter.



Figure 4-91: The Moulton Business and Professional Association encourages residents to buy local.



site has been a contender for several recent developments and officials are confident that "something is going to hit."

Agriculture remains an important part of the local economy. The county produces cotton and poultry production is significant. Entrepreneurship is mixed but may be improving. One example would be Lewis Innovative Technologies, a small engineering firm that works with defense contractors. The company, founded in the late 1990s, now employs 15 and holds several patents.

For some time, Alabama counties have performed, in general, better than adjacent counties in Mississippi. When asked about this disparity, Alabama residents were quick to offer possible explanations. They noted, for example, that Alabama had invested heavily in educational reforms and had created one of the most extensive systems of community colleges in the nation. They also cited the state's success in attracting industries and the cooperative partnerships that facilitated industrial recruitment efforts.

They also noted, however, the differences in attitudes between the two states. They noted, with some pride, that Lawrence County had peacefully desegregated in the 1960s and they spoke of efforts to increase diversity in their schools and

raise educational attainment among African-American students.

Local residents also stressed that impact of NASA investment in Huntsville could not be underestimated. This impact, they argued, was not just about new jobs that were created. Local involvement in the Space Program instilled a sense of pride in local residents, created confidence, validated the power of learning, and forced communities to look forward.

They also noted that the program brought in a host of new residents who settled in counties across north Alabama. These new residents tended to be educated professionals, unburdened by the past, who brought new and profound expectations about schools, government, and race relations. These residents were perhaps unwilling to accept the status quo and may have forced much needed change in the region.

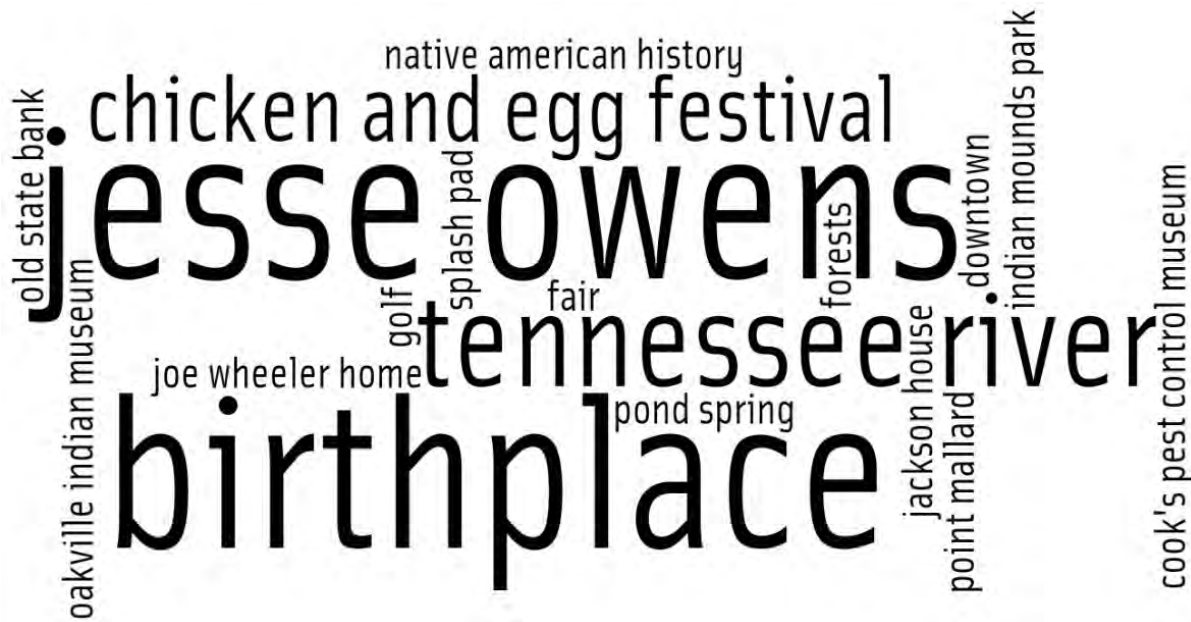
4.9.5 Tourism

Tourism is increasing, in part due to ARC investments and the efforts of local sites. The Jesse Owens Memorial Park, a tribute to a local favorite son, was partly funded by the ARC and reports a steady increase in visitors. The facility is located near the Oakville Mounds, an important Native American site located in a popular park.

Another attraction, the General Joe Wheeler House, state historic site, is undergoing much needed renovations and should also attract increasing visitors. The county's historic attractions have excellent websites and benefit from good signage.

Proposed budget cuts at the Alabama Historical Commission, however, may threaten this progress. The State of Alabama has proposed dramatic 45%

Figure 4-92: Word cloud responses to the question, "What is your county's top attraction for tourism?"



budget cut that, if implemented, could impede continued progress in the county's heritage tourism efforts.⁹³

The county also benefits from a number of natural and recreational amenities. Among these are TVA's Wheeler reservoir and Bankhead National Forest. Local officials are currently working to increase awareness of these amenities.

Tourism infrastructure is adequate. The county claims two hotels and a lakefront cabin resort. Dining options, while limited, are of good quality. Extensive lodging and dining options are available in adjacent counties.

The county hosts an annual event, the Alabama Chicken and Egg Festival. The festival, established in 2005, draws over 15,000 visitors annually and is promoted as "one of the best, family-friendly events in the mid-South."

⁹³ Bob Lowry, "Tourist attractions around Alabama grappling with budget cuts proposed by Gov. Robert Bentley," *Huntsville Times*, March 6, 2011.

The festival sponsor, the local arts council, just opened a downtown headquarters - a symbol of the festival's success and an important effort to help revitalize downtown Moulton. A major renovation of the county's New Deal era courthouse should also boost the downtown district.

4.9.6 Local Leadership and Planning

Among survey respondents, views on local and county government were mixed. Just 40% of respondents rated county government as "adequate" and none found it to be excellent. Local

Figure 4-93: The Lawrence County Courthouse anchors downtown Moulton.



Figure 4-94: The historic Star Theatre in downtown Moulton is being considered for redevelopment.



government, however, garnered more favorable opinions, with 87% of participants ranking it as "adequate."

A number of factors may contribute to the poor perception of county officials. Recent job losses certainly play a role in this perception. Local residents, however, also pointed to a lack of training, reluctance to change, and a small, but vocal group that opposes recent progress. They also point to a number of issues, include school consolidations and alcohol sales, which have alienated some voters.

Cooperation among local officials is high. Major community partners, such as the local Chamber, school system, and tourism development staff, serve as advocates for one another and all pursue a common agenda. Nonprofits are active community partners and help with a number of causes, including downtown redevelopment.

Strategic planning for economic development is good, but other planning appears to be wanting.

Residents expressed a strong desire for more comprehensive planning. About 40% of survey respondents classified planning efforts as "poor" or "inadequate."

Local officials noted an "improving" relationship with their local development district and attributed the change to new local district office leadership. They noted that the organization was still encountering some issues associated with the transition. They also noted that, under the prior director, the LDD would not assist local government in preparing grant proposals and only helped with senior services and similar activities. The local officials stated that this LDD director, now gone, did not prepare grants because he did not like the idea of counties in his district competing for the same money.

Officials also complained about Alabama's outdated and burdensome state constitution. At over 340,000 words, Alabama's constitution is the longest still-operative constitution in the world. The document, which boasts 827 amendments, has become notorious for micro-managing local officials and is widely viewed as an obstacle to further reform.⁹⁴

4.9.7 Health

Lawrence County ranks 39th out of 67 Alabama counties in health outcomes. They rank above state averages in smoking, obesity, and motor vehicle fatalities - a consequence, perhaps, of the high number of commuters. The county ranks third, however, in environmental quality, and the number

⁹⁴ For information about issues related to Alabama's constitution, see <http://www.constitutionalreform.org>

of residents with access to healthy foods is double the state average.⁹⁵

Local residents have ready access to health care, despite statistics which suggest otherwise. The number of local practitioners is quite low - 29.3 physicians and just 5.9 dentists per 100,000 residents. Most residents, however, rely heavily on services offered in Decatur, Huntsville or the Quad Cities. As a result, two-thirds of survey participants were within a 15 minute drive of a hospital and none were more than 30 minutes from care.⁹⁶

Drugs, particularly methamphetamine, are a major concern in the county. Three-fourths of survey respondents viewed drug abuse as a major concern. Teen pregnancy is also an issue, with 60% of survey participants classifying it as a frequent problem. Local residents expressed a need to educational programs to help change negative behaviors.

4.9.8 Education

The county demonstrates leadership in education, especially at the high-school level. Many locals credit the improvements to the county's school superintendent, a young, energetic, and inspiring community leader. Test scores and graduation rates are approaching national averages and a recent consolidation effort promises to increase the number and variety of learning activities.

School budgets remain tight, however, and school officials continue to face a cadre of residents who do not appear to value or support educational

improvements. Officials also expressed a desire to increase diversity at some local schools and discussed challenges with having a so-called "black school" in their main industrial growth area. Local officials believed that perceptions attached to the school sometimes hampered their efforts to recruit new industries.

Both residents and local leaders credit increased education spending by the state for recent progress. Once among the lowest in per-student expenditures, Alabama now ranks 38th in school spending in the nation. Educational attainment has also benefitted from new regulations that require a diploma to obtain a full driver's license.⁹⁷

Youth retention remains a concern and residents bemoaned the loss of their best and brightest to surrounding urban centers. Boredom appears to be a prime motivator and officials would like to find more activities and amenities for young people and young families. With twice as many youth as senior residents living in the county, Lawrence County has the opportunity to grow with next generation, as young individuals make decisions in the coming years about their lives and livelihood.

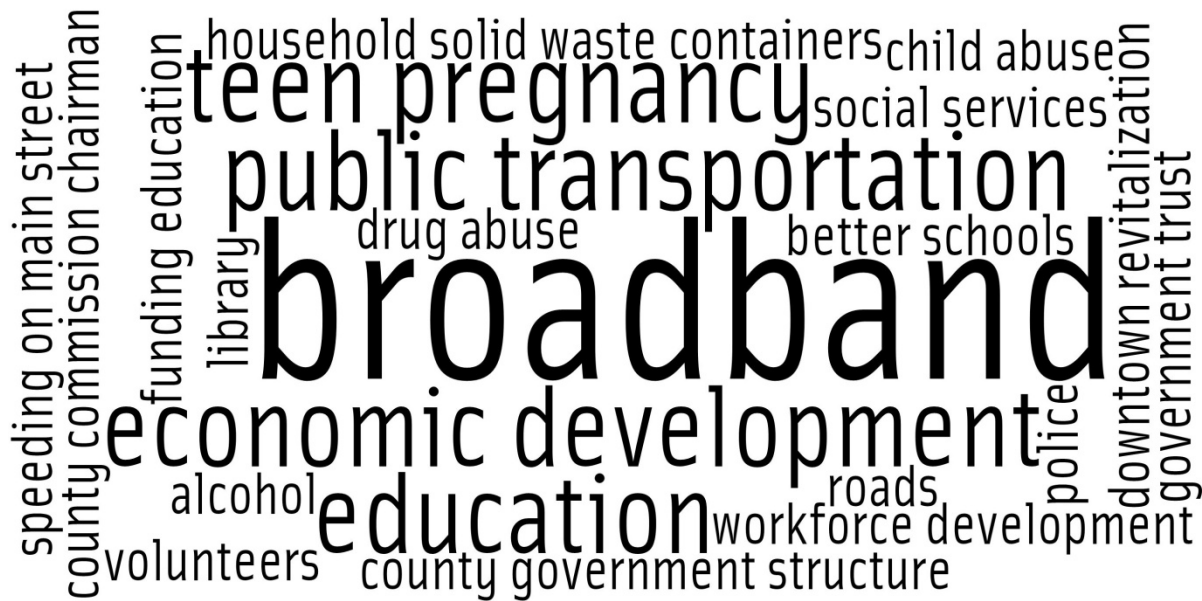
In an effort to help retain young people and promote agriculture, local officials have embarked on an innovative program with Auburn University. The program, designed to encourage youth to pursue careers in agriculture, engages high school students in discussions about agricultural careers and takes them on project-based field trips. Eventually, these students will have the opportunity to earn an "advanced ag" degree from Auburn University.

⁹⁵ Robert Wood Johnson Foundation. "County Health Care Rankings, 2010," www.countyhealthrankings.org/alabama/lawrence

⁹⁶ U.S. Department of Health and Human Services, "Community Health Status Report, 2009," <http://www.communityhealth.hhs.gov>.

⁹⁷ Federal Education Budget Project, "Lawrence County School District," <http://febp.newamerica.net/k12/al/102040>

Figure 4-95: Word cloud to the question, "What are three problems in your county that need solved?"



4.9.9 Summary and Lessons Learned

Lawrence County's success can be attributed to a number of factors, including improved roads, a strategic location, and vast levels of government investment. Educational improvements and good decisions also contribute to local progress. Because of this, the county offers a number of important lessons for other communities. These include the following:

- The transformation of North Alabama, including Lawrence County, is due in large part to federal investments in TVA and NASA. The impacts of these programs meant not only jobs, but were broad and varied. While residents are quick to acknowledge the jobs created by TVA and NASA, they also note the role new residents, new ideas, and newfound pride played in changing the region.
- Lawrence County shows how improved roads can help improve the local economy and the local quality of life. These improvements, including ADHS Corridor V, are an unqualified success. To a degree, however, these roads

succeed because of where they are, what they connect, and who they serve. Road improvements may have a greater impact when they are undertaken in conjunction with other regional improvements.

- Residents recognize that racial reconciliation has played an important role in the achievement of economic progress. It is perhaps symbolic that the county's three main historic sites commemorate Native Americans, an African-American athlete, and a Confederate general. The fact that these sites not only coexist, but cooperate, gives proof that a community can break with its past and still honor its diverse heritage.
- The agricultural education partnership being developed with Auburn University appears to be promising and could be a model for other communities. This program also reinforces the importance of higher education partnerships - a trend that is also important elsewhere.

- As in some other study counties, there is evidence that Local Development Districts may be inconsistent in their range of services.
- The educational progress being made demonstrates the impact that can be achieved through prioritization of schools, increased funding, and effective leadership.
- Conventional development approaches - regional strategies, highway construction, and industrial parks, for example - appear to have work very well in Lawrence County. This suggests these strategies may be better suited to counties located near major employment centers or communities with more favorable terrain.
- Lawrence County, though fairly well developed, struggles with Internet access. Some residents of the county, though they live about 30 or 40 miles from a federal research facility, still lack reliable and affordable high-speed service.

Figure 4-96: The Star Theatre entrance and marquee in downtown Moulton



4.10 Noxubee County, Mississippi

Figure 4-97: Word cloud responses to the question, "What are three words that describe your county?"



Figure 4-98: Word cloud responses to the question, "What is your county best known for?"



4.10.1 Noxubee County Introduction

Noxubee County is one of just a handful of counties in the ARC region with an Africa-American population majority. Located in eastern Mississippi, it is also in one of the most historically economically distressed areas of the nation. As such, the county provides an interesting case study of an atypical Appalachian community. The county's proximity to Alabama also invites comparisons to Lawrence County and demonstrates the impact of state policies and local cultural constraints.


Noxubee County is a community heavily burdened by history. Past events, both recent and distant, cast a long shadow over the community and deter progress and change. Outmoded racial traditions, an archaic power structure, and deep seated political and social divisions all serve to diminish the impact of significant investments and interventions. Yet, despite these issues, the county continues to move ahead and is beginning to show progress in some important areas.

4.10.2 Population Profile

Noxubee County has a level of diversity unseen in most Appalachian communities. Over 70% of Noxubee County residents are African-American. Whites make up fewer than 30% of the population. The county's population, which currently stands at 11,631, has dropped steadily over the past century. In 1900 the county boasted almost 31,000 residents and has since seen a decline of 63%.⁹⁸

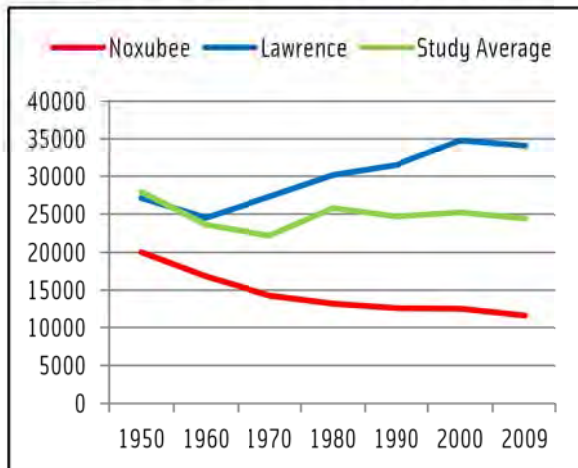
A number of factors have contributed to this decline. Mechanization and changes in agriculture have certainly played a role. Steep declines during World War One and World War Two also suggest

⁹⁸ 2010 US Census

Quick Facts	
Noxubee County, Mississippi	
	
Founded	1833
County Seat	Macon
Land Area	694.79 sq. mi.
Water Surface Area	5.26 sq. mi.
Population	11,631
Density	16.6 per sq. mi.
Per Capita Income	\$13,123
Unemployment Rate	16.6%
ADHS Highway	No
Miles to State Capital	126
Miles from county seat to nearest Interstate	56 (I-20/59)
Miles from county seat to nearest commercial airport	24 (Columbus, MS)

that the county was deeply affected by the so-called "Black Exodus," as African-Americans left the South seeking industrial jobs and better opportunities in northern cities. Interestingly, this trend continues unabated. The local population declined 7.3% during the last decade. One survey respondent complained of being "unable to leave."

Figure 4-99: 60-year population trend with cohort (Lawrence County, AL) and 10-county average.



More than one-third of white residents are Mennonite Christians. These Mennonites settled in the community in the 1960s, attracted by the abundance of affordable farm land. They pursue a traditional agricultural existence and, because of their religious beliefs, deliberately isolate themselves from the larger community. Most do not vote or participate in local elections. They maintain their own church-run schools and most Mennonite families, which tend to be large, do not educate their children beyond eighth grade.⁹⁹

Population density, at 18.1 per square mile, is one-third the state average. Population distribution is uneven, with slightly higher than average percentages of both youth and senior residents.¹⁰⁰

4.10.3 Access and Infrastructure

Noxubee County is ideally located between three important Mississippi cities. Columbus and Starkville are less than thirty miles to the North of

⁹⁹ Association of Religion Data Archives, "Religious Congregations and Membership Study, 2000," www.thearda.com/Archive/ChCounty.asp.

¹⁰⁰ 2010 US Census

the county seat of Macon. Meridian is 50 miles south of Macon. The county is connected to all three cities via a modern 4-lane road, state Highway 45.

Mississippi State University, the state's land-grant institution, is located about a half hour from Macon in Starkville. Two interstate highways, I-20 and I-59 are about an hour away in Meridian. The Gulf of Mexico is accessible via the Port of Biloxi or the Port of New Orleans, both no more than four hours from Macon. Commercial air service is available in both Columbus/Starkville and Meridian. River access is available via the Tennessee/Tombigbee Waterway. The Kansas City Southern Railroad runs parallel to Highway 45.

The main highway, which bisects the county along a North-South axis, is fairly new and in excellent condition. This highway, coupled with the relatively flat terrain, make for easy access to the county. The road is well traveled with trucks moving between Meridian and the northern cities. Macon, the main city and two other towns, Brooksville and Shuqualak are all located along Highway 45 and are easily accessed.

While the main roads are in excellent condition, secondary and side roads in the county fare considerably worse. Gravel roads are not uncommon and may be found just a few blocks from the main corridor. Not surprisingly, 70% of survey respondents found road maintenance to be either "poor" or "inadequate." Water and sewer services scored considerably higher, with a majority of residents rating them as "adequate" or better.

Broadband access is very limited, especially outside of Macon. Most county resident are forced to rely on satellite service, which is expensive, unreliable, and relatively slow. Local officials

contend that digital literacy is an issue for some residents.¹⁰¹

4.10.4 Economic and Housing Conditions

Noxubee ranks at or near the bottom among the ten study counties for many key economic indicators. The county ranks last in per capita income, at \$13,123, and in family income, at \$30,762. The county ranks second to last in household income at \$22,974, surpassing Bell County by \$415. Unemployment in April 2011 stood at 16.6%, the fifth highest of the state's 82 counties.¹⁰²

The county has a handful of small manufacturers, including a heavy equipment trailer builder. Most

Figure 4-100: *A home near downtown Macon.*



local industries focus on agricultural products and include a poultry processor, a catfish producer, and lumber mills. Macon has few businesses and vacant storefronts are common. To its credit, though, the city has undertaken a Main Street program to help revitalize its downtown. However, conditions appear to be grim in the county's smaller communities. Shuqualak, for example consists of a

¹⁰¹ <http://msbb.broadmap.com/StateMap/>

¹⁰² 2010 US Census; Mississippi Department of Employment Security, "Unemployment Rates by County, April 2011" www.mdes.ms.gov/Home/docs/LMI/Publications/Labor%20Market%20Data/labormarketdata.pdf

lone sawmill and a small row of old and largely abandoned storefronts. Local officials blame a lack of available capital for low levels of entrepreneurship.

Signs of economic distress are glaringly evident. Most housing appeared substandard and in poor repair. Litter, abandoned vehicles, and eroding creek beds cut through low-income neighborhoods. The level of economic disparity is striking. Ornate and imposing homes can be found just a few blocks from low-income neighborhoods. Throughout the county, comfortable housing appears to be the exception, rather than the norm. Local leaders characterize the housing market as "dead."

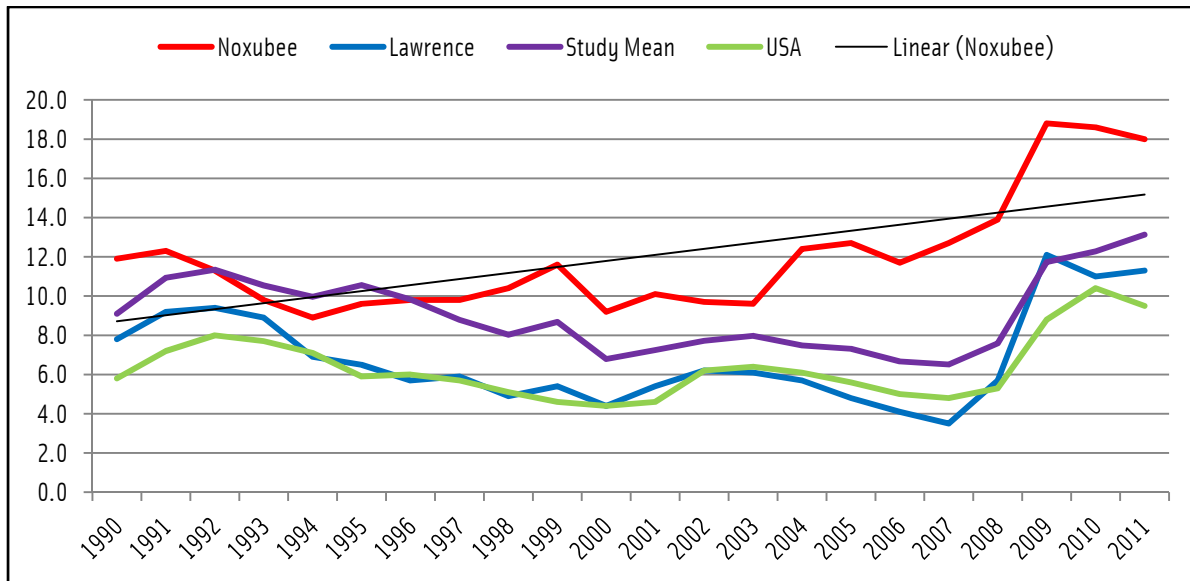
The lack of jobs dominates local discussions. Unemployment remains very high in the county and continues to rise, even after passage of the economic stimulus. Officials blame local and state politics for much of the problem. They complain that Noxubee, a largely Democratic county, is often passed over in the distribution of federal funds. With just 26 Republican votes in the last election, they contend the county is not a priority for state officials, including the state's ARC representative.

Regional development strategies appear to have had little impact on the community. Officials state that regional industry clusters have been good for

Figure 4-101: *Another home near downtown Macon.*



Figure 4-102: Noxubee County unemployment rate comparison, percentage by year.



some counties, but not theirs. Local leaders report that expansion of the highway in the 1990s increased economic activity, but - given the location of the community and the level of traffic - more highway development might be expected.

One explanation for the continued stagnation can be found in the controversy surrounding a proposed hazardous waste facility in the early 1990s. The controversy surrounding the proposed development pitted neighbors against one another and was largely divided along racial and class lines.

The vitriol and bitterness surrounding this debate is still evident almost twenty years later. In fact, the subject raised considerable tension during discussions and nearly resulted in a shouting match among local officials. Yet, while both sides disagreed on the facility, all agreed that the episode has since deterred investment and seriously hindered economic development efforts.¹⁰³

¹⁰³ The waste-site controversy is fully documented by Colin Crawford in, *Uproar at Dancing Rabbit Creek: The Battle over*

Resistance to change and local attitudes were also blamed for the lack of growth. Fear of change, a lack of pride, and a pervasive sense of hopelessness were all seen as common characteristics among many local residents.

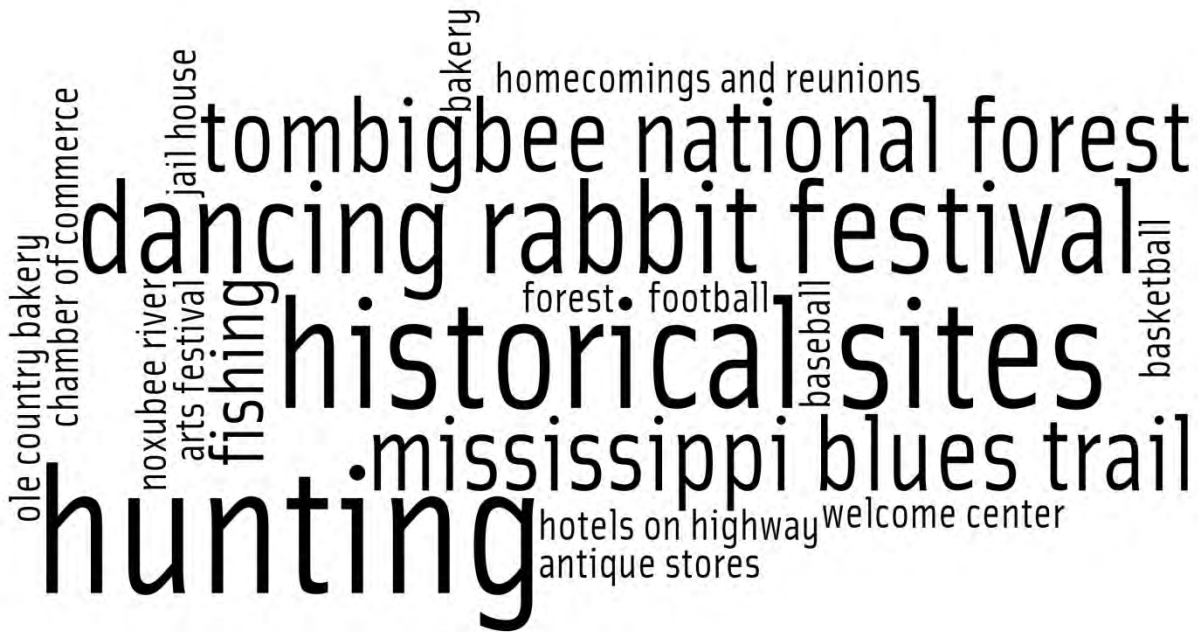
Welfare dependence was reported to be high and multi-generational. One survey participant commented, "People don't work." According to the Social Security Administration, 9.2% of residents rely on SSI disability income.

"Noxubee County should be renamed 'Can't County'...most people here believe the world ends at the county line."

As in Lawrence County, residents were asked to explain the performance disparity between the Mississippi and Alabama counties. Mississippi residents struggled with the question, but noted

Race, Class and the Environment in the New South (Reading, Mass.: Addison-Wesley Publishing Company, 1996).

Figure 4-104: Word cloud responses to the question, "What is your county's top attraction for tourism?"



that Alabama had done a better job at attracting major industries. They also stated that Alabama had done a good job at leveraging their universities to attract industries and noted the relationships between the University of Alabama and Mercedes and the cooperation between Auburn University and Hyundai/Kia.

They also admitted, though, that attitudes played an important role. Mississippians seemed incapable of change, at times. Participants blamed this on fear and the persistent hegemony of "old guard" power elite. These elite, they believe, fight

progress in order to maintain power and control.

4.10.5 Tourism

Tourism resources in Noxubee County are modest. Macon boasts a visitor's center located in a recently converted gas station. The center included a small exhibit on local history, but little else. The facility's lone staff member, while cordial, had few resources to guide visitors to local sites or businesses. Improved marketing materials and docent training would probably increase the center's effectiveness.

Tourism infrastructure throughout the county is generally poor. The most popular local attraction in the county appears to be an excellent Mennonite bakery in Brooksville. Aside from the bakery, the county can claim just a handful of small, local restaurants. A new McDonalds was eagerly anticipated and became a source of community pride. The county has just one hotel, a dated and well-worn facility in Macon. Trip Advisor reviews of the facility are discouraging. The most recent reviewer "would not recommend this hell hole to

Figure 4-103: The Macon Welcome Center.



any decent people" and advised visitors to "sleep in [their] cars."¹⁰⁴

On a more positive note, the county appears to have some potential in nature based tourism. Hunting appears to be a potential growth area, and the county has a high quality quail and turkey hunting plantation with on-site lodging facilities. Local leaders recognize the potential of this business sector and noted unrecognized and underutilized natural assets, including the Noxubee Wildlife Refuge.

The county is well represented in regional tourism media with ads that promote the visitor's center. Better utilized, this center could become an important element in a better crafted tourism strategy. Additional tourism training and planning, however, are needed to help fulfill this vision.

Figure 4-105: Downtown Macon features a site on the Mississippi Blues Trail.



4.10.6 Local Leadership and Planning

Both county and local governments received mixed reviews. About half of survey respondents found both local and county government to be adequate,

¹⁰⁴ http://www.tripadvisor.com/Hotel_Review-g43867-d545623-Reviews-River_Chase_Inn_Macon-Macon_Mississippi.html

but another half found them inadequate or poor. Opinions on local officials were strong and indicate deep divisions, often along racial lines. One survey participant complained of "reverse discrimination" while another stated:

"This county is a hold-over from the 1960s where blacks still believe they are being mistreated and consumed with payback."

These racial divisions have, in recent years, even garnered national attention. In 2006 the U.S. Justice Department filed the first federal lawsuit under the Voting Rights Act accusing black local officials of suppressing the rights of white voters. The suit, which claimed "relentless voting-related racial discrimination," was eventually settled in favor of white voters.¹⁰⁵ The experience and outcome, however, further polarized a community already divided over past issues.

"There are some leaders reaching out to other factions, but to a large degree the effort is not successful. Thus, little or no community sense."

County leaders claim only a fourth of local residents pay property taxes, further limiting government services. Youth programs, senior services, and public transportation are among the services deemed inadequate by survey respondents. An exception to this trend is the local library system, which received universal praise. The county recently opened a new sports complex, an important sign of local progress.

¹⁰⁵ Adam Nossiter, "U.S. Says Blacks in Mississippi Suppress White Vote," *New York Times*, October 11, 2006.

Over 80% of survey participants found local planning efforts to be poor or inadequate. The county government has no central website, but the local library and the cities of Macon and Shuqualak have a web presence.

Local officials contend that political considerations play a role at the local development district, and that their LDD favored projects in larger or more influential communities. While it is unclear if these accusations are founded, it is clear that relations between the community and the development district could be improved.

Yet, despite these grim realities, there are small signs for hope. The Noxubee Economic and Community Development Alliance appears to be making significant progress in marketing the community and recently developed an excellent website. The Alliance also maintains an active Facebook page, which serves as an important web portal for the entire community.

4.10.7 Health

Noxubee ranks 47th out of Mississippi's 81 counties in health outcomes. The county has a 25-bed critical access hospital in Macon, and medical clinics in Macon and Brooksville. Despite these facilities, the county is classified as a health professional shortage area with 16.9 physicians and dentists per 100,000 residents. Major health care facilities, however, are available in Columbus and Starkville. All survey participants reported they lived within 30 minutes of an emergency care facility.

As in other communities in this study, residents of Noxubee County experience high rates of diabetes, obesity and heart disease. Sexual health statistics are alarming. The teen pregnancy rate, at 76 per 1,000 female residents age 16-19, is highest among study counties and well above the national

Figure 4-106: Eroding creek banks cut through residential areas along the main entry point between the highway and downtown Macon.



average of 41.5. The local chlamydia rate of 1,079 per 100,000 residents is also the highest in the study and more than double the national rate of 409.2 per 100,000 people.

The reason for these troubling statistics is unclear, but education could be an important factor. For comparison, Morgan County, Ohio, is also economically distressed and a health professional shortage area, but with excellent schools. Morgan County's teen pregnancy rate is 45 per 100,000, and has a chlamydia rate of only 7 per 100,000 residents, more than 150 times lower than that of Noxubee County.¹⁰⁶

Local officials report that drug abuse is a major problem. Prescription drug abuse is most prevalent, but problems with street drugs, including cocaine, are increasing.

¹⁰⁶ U.S. Department of Health and Human Services, "Community Health Status Report, 2009" www.communityhealth.hhs.gov; Robert Wood Johnson Foundation. "County Health Care Rankings, 2010" www.countyhealthrankings.org/mississippi/noxubee; "STD Statistics for the USA," www.avert.org/std-statistics-america; Centers for Disease Control and Prevention, "Teen Births," www.cdc.gov/nchs/fastats/teenbrth.htm

4.10.8 Education

Educational attainment and educational systems are major issues in Noxubee County and a fundamental source of the area's long-term economic distress. Although it has been 57 years since *Brown vs. Board of Education of Topeka*, Noxubee County schools still maintain a *de facto* system of racial segregation. Virtually no white children attend local public schools. Instead, they attend private schools in Noxubee and neighboring counties.

With no personal stake in the public school system, white families have little incentive to support the public school system. The dual system appears to be so entrenched that it is unlikely to disappear anytime soon. This anachronistic policy places the county outside of the national mainstream and might deter investment by national or global employers.

Surprisingly, African-American schools officials appear to be resigned to accept this system. While some argue that it hurts the county, others stated that the system is "just the way it is" and seem to see no reason to change or even challenge this long-held practice. African-American residents even appear proud that a few token black children now attended the private school.

Low levels of educational attainment are compounded further by the presence of a significant Mennonite community. Citing religious objections, local Mennonites refuse to enroll in public schools and rarely educate their children beyond the eighth grade. This practice further erodes educational attainment statistics. Although the Mennonites promote self-sufficiency and hard work, their low levels of schooling may discourage knowledge-based industries and employers seeking a skilled and adaptable workforce.

Not surprisingly, the county ranks near the bottom among study counties in educational attainment, though still slightly better than Bell County, Kentucky. Just 64.4% of adult residents have a high school diploma. About 10% of residents hold a bachelor's degree or higher. An estimated 28% of residents lack basic prose literacy skills, the highest level among the ten study counties. In the 2000 census, six percent of adult residents lacked a fifth grade education. Over 99% of public school students qualify for free or reduced price lunches.

Proficiency test scores are the lowest among the ten study counties. The scores, which measure performance at the public school, were deficient at all grade levels. In 2008-2009, just 30% of eighth graders scored proficient or above in math and only 25% scored proficient or better in reading. Among high school students, 45% were proficient or better in math and 32% demonstrated proficiency in reading. Proficiency scores for private schools are unavailable, but these public school assessments reflect educational performance among the majority of local youth.¹⁰⁷

Local leaders attribute poor performance to a number of factors. Peer pressure, embarrassment, and a lack of family support systems all contribute to high drop-out rates and low levels of attainment. Middle school performance is an important factor and students who fall behind in seventh or eighth grade often have trouble catching up and sometimes quit school altogether. Local officials also agreed that the lack of integration was also a factor and, in addition to hurting educational performance, also helped keep the community divided.

¹⁰⁷ 2010 US Census; Federal Education Budget Project; Noxubee School District; feb.newamerica.net/k12/ms/2803300.

Among the lessons learned from Noxubee County are the following:

- Race relations in Noxubee County remain a major barrier to economic progress. Any economic development strategy applied to the county that does not address the divisive race issue seems doomed to failure. Particularly distressing are the continued de facto segregation of schools and the alarming levels of economic disparity along race lines. Equally troubling was the tacit acceptance of this dual educational system by residents of both races.
- The lingering racial divisions that exist in the county should not be interpreted as a sign that the residents of Noxubee County are overwhelmingly racist. On the contrary, the county has a degree of racial interaction, understanding, and cooperation unheard of in many parts of Appalachia. These persistent racial divisions, however, encourage anachronistic practices that may discourage investment and prevent much needed change.
- Complaints about the politicization of the local development district and development funds, while not confined to Noxubee County, reflect issues seen in other counties related to county-LDD relations.
- Recent efforts to market the county are commendable; particularly those initiated by the local Economic and Community Development Alliance. Their website and Facebook page serve as a model for other communities, particularly those in economic distress.
- Among the subregional cohorts in this study, the contrast between Lawrence and Noxubee Counties is most striking. Though separated by only about 100 miles, the two communities appear to be decades apart. While Federal investments in NASA and TVA have certainly played a major role in the Alabama county's success, educational reforms and racial reconciliation may have also played a role.

Figure 4-109: A community church near downtown Macon.



5 Comparative Analysis

5.0 Introduction

Each of the ten counties in this study is unique and has its own story to tell. For some counties, economic progress has come more through chance events and luck than through some deliberate strategy. The current boom in Greene County, PA, is the product of shale gas extraction, and Pendleton County, WV, relies on a small military installation to sustain its economy. In other cases, regional strategies or large infrastructure investments have played a vital role in building a viable economy. Lawrence County, AL, and Pike County, KY, are examples of federal interventions that transformed a community and sparked economic growth.

Likewise, barriers to local economic growth are also quite varied. Some areas, such as Calhoun County, WV, seem to be cursed by location. Others, such as Noxubee County, MS, carry an overwhelming historical burden. Policies, at both the state and federal level also appear to play a role. A lack of broadband, an inability to secure matching funds, and tax and alcohol policies all serve to deter growth in some areas. Mechanisms designed to level the playing field for rural areas, such as Local Development Districts, perform inconsistently when applied to the poorest and most rural communities.

Even though these counties vary considerably, they also share a number of important characteristics. A comparison of all ten counties demonstrates a number of important trends. Education, leadership and health care, for example, all play important roles in the economic development of an area. The counties also shared a number of common concerns, especially problems related to youth retention and drug abuse.

Lastly, all counties in this study share a common spirit of resilience and innovation. Every county can claim some noteworthy effort to improve their community. Local residents and officials, often operating independently, have undertaken projects to create jobs, build leaders, engage youth, and attract tourists. Often, perhaps out of necessity, the most innovative and inspiring efforts have come from the distressed counties. In most cases, these efforts serve as models for application in other Appalachian communities.

This chapter will examine some of these important trends, assess common issues, and illustrate programs and efforts being conducted across the region. The discussion will gauge the impact of ARC investments, interventions, and regional strategies on these ten representative case studies covering 21 indicator topics.

Section	Section	Section
5.1 Population Trends	5.8 Broadband	5.15 Grant Development
5.2 Location and Access	5.9 Tourism Development	5.16 The ARC
5.3 Downtowns	5.10 Entrepreneurship	5.17 Welfare Dependency
5.4 Public Transit	5.11 Internet Adoption	5.18 Health Care
5.5 Industrial Development	5.12 Government	5.19 Education
5.6 Coal and Gas	5.13 Planning and Zoning	5.20 Social Capital
5.7 Land Constraints	5.14 Development Districts	5.21 County Assessments

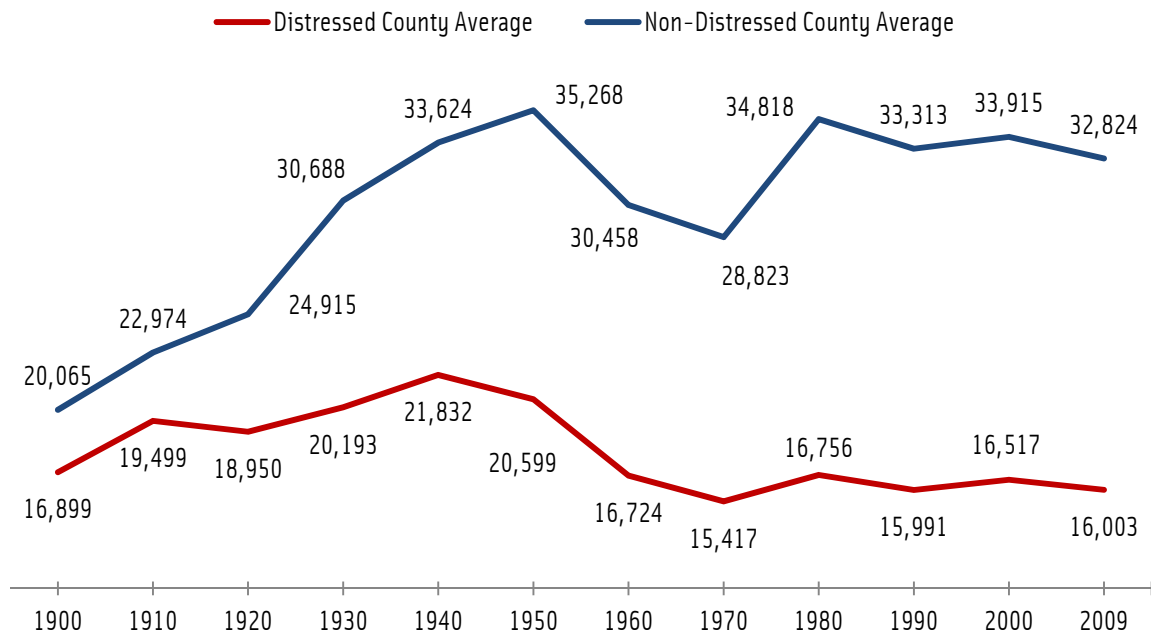
5.1 Population Trends

Conventional wisdom suggests that successful counties add residents and distressed counties lose residents. In this case, however, that assumption is not always upheld. Just four of the ten counties – Lawrence (AL), Avery (NC), Johnson (TN), and Morgan (OH) – have shown a population increase since 1990. Of these, only the increases in Avery and Lawrence Counties appear significant. Johnson’s increase is largely due to their convict population, and Morgan grew by less than 100 residents over two decades. Even Avery’s growth is debatable, as the county hosts both college students and a large number of part-time citizens whose residency may have more to do with tax codes than actual occupancy status.

Surprisingly, two non-distressed counties, Pike, KY, and Pendleton, WV, experienced significant population declines in the past twenty years. Pendleton’s decline is likely understated due to the number of military personnel in the county. Even Greene County, PA, has seen a slight decline in spite of an economic boom and a local college population.

A number of factors help explain this trend. A lack of opportunities, for both work and recreation, play a significant role. This is especially true among youth. Youth retention is cited as a major concern for all ten counties, and all study communities complained of a “brain drain.” Rising energy costs may also play a role, as residents of many communities are facing long commutes, flat wages, and rising costs of living.

Figure 5-1: Population averages for distressed and non-distressed study counties, 1900-2009



In some areas, particularly Kentucky, tax policies play an important role. There, higher income residents moved to communities in adjacent states seeking relief from income and personal property taxes. Interestingly, however, this was not the case in Avery County, NC. Though adjacent to Tennessee, local officials reported that outmigration to the adjacent low-tax state was not an issue. Residents of the more

affluent and better educated county appear to prefer the schools and amenities found in North Carolina to the lower taxes in nearby Tennessee.

The trend towards declining populations represents a serious threat to the development of rural communities. It is difficult to see how communities that constantly lose residents can experience sustained economic growth. Urbanization, a characteristic of modern Appalachia, will likely continue at the expense of rural communities. Rising energy costs, changes in health care access, the need for broadband access, and the rise of retail supercenters will likely accelerate this trend. Changes in the nation's energy portfolio, such as the adoption of limited-range electric vehicles, may also increase the rate of urbanization.

Government policies, including ARC efforts, may contribute to this trend. Growth centers, industry clusters, and supply chains that encourage the concentration of resources seem to be predicated on an assumption of affordable transportation. These policies, however, do not necessarily guarantee growth. Pike County, KY, an early beneficiary of ARC's growth center strategy, lost 10% of its population over the past two decades. Tax records suggest that while the county continues to attract small numbers of migrants from more rural surrounding counties, it loses even more residents to larger urban areas, such as Louisville and Lexington.¹⁰⁸

To date, none of these counties have found a proven answer to the problem of youth retention. Programs tied to career development and entrepreneurship, however, appear to hold promise. Morgan County's incubator project, Avery County's business development programs, and Lawrence County's agricultural education partnership with Auburn University all have the potential to create home-grown opportunities for local youth. As these programs continue to develop and move forward, they should be evaluated as models for other rural communities in the region.

Another important population trend is the lack of racial diversity found in most of the study communities. Aside from the Southern subregion, study communities are over 90% white and many young people grow up with little or no direct exposure to people from many other races, cultures, or belief systems. Many residents acquire their perceptions of other races, religions, or ethnic groups through mass media or outmoded parental views. Isolated communities also face challenges when working with an increasingly diverse business community. Calhoun County, WV, for example, is among the poorest and most isolated communities in this study. One of the two restaurants in the county seat of Grantsville was the Koffee Kup Kafe - known locally as "the KKK." That colloquialism, probably coined with no ill intent, would likely be viewed as offensive to many outsiders and could easily deter future investment.¹⁰⁹

This lack of exposure has cultural consequences, and survey participants from across the entire region complained about racism in their communities. Conversations with community leaders, however, suggest

¹⁰⁸ John Bruner, "Where Americans Are Moving," <http://www.forbes.com/2010/06/04/migration-moving-wealthy-interactive-counties-map.html>

¹⁰⁹ *The Koffee Kup Kafe, a long-time community fixture, ceased operation in May 2011. "Two Restaurants Close in Grantsville - Locals Complain about Void," Hur Herald Online, May 21, 2011, http://www.hurherald.com/cgi-bin/db_scripts/articles?Action=user_view&db=hurherald_articles&id=44308.*

that these perceptions may also have economic consequences. Young people from these communities often have difficulty coping with diverse academic or work environments.

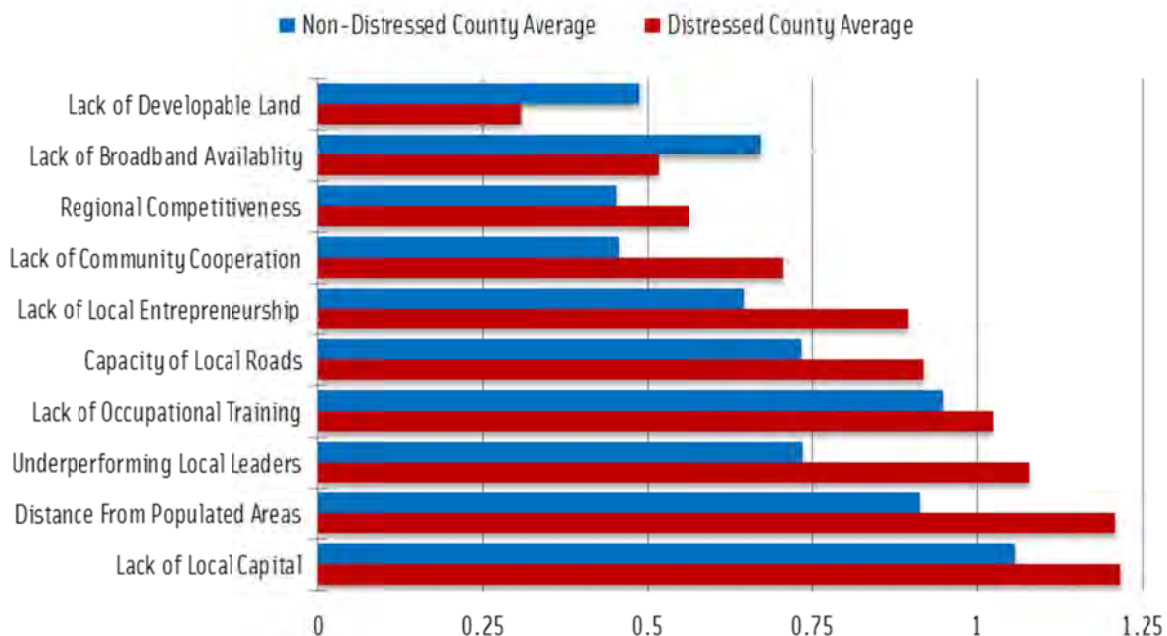
5.2 Location and Access

In economic development, as in real estate, location matters. Rural communities located near urban areas or major employment centers enjoy a decided competitive advantage. Among study counties, this benefit is clearest in Lawrence County, AL. The community's proximity to Huntsville, Muscle Shoals, and other north Alabama cities has proven to be a significant factor in the county's success. Likewise, Pendleton County, WV, benefits from its location near Harrisonburg, VA, and Avery County from its closeness to Boone, NC.

These three examples also help illustrate the value of transportation access. While ADHS Corridor V did not, by itself, transform Lawrence County, it did allow the community to fully capitalize on its main competitive advantage - its location. Avery and Pendleton counties, in contrast, appear constrained by the narrow winding roads that connect them to their urban neighbors and are not able to fully exploit their location.

Yet, just as this study has shown the importance of roads and location, it also reveals the limits of these assets. Location and access, by themselves, do not guarantee success. Greene County, PA, for example, enjoys an optimal location on an Interstate between Pittsburgh, PA, and Morgantown, WV. From the county seat of Waynesburg, it is a forty minute Interstate drive to a major city, several large research universities, and a major airport. The county, however, does not appear to have benefitted significantly from this location and its recent success appears to be tied more to gas drilling than any urban relationships.

Figure 5-2: Responses for the survey question, "How likely is each item an obstacle for economic growth in your county?" (Very Likely=-2, Likely=-1, Unsure=0, Likely=1, Very Likely=2)



The most glaring example of these limits, however, is seen in Noxubee County, MS. By all accounts, Noxubee County should be a thriving community. It is located along a modern four-lane highway between three growing cities. Just minutes from the state's land-grant university, the county is less than a half day's drive to the Gulf of Mexico ports of Mobile, Biloxi, and New Orleans - close enough for easy access, but outside of the significant hurricane damage zone.

Yet, despite these advantages, the community languishes due to antiquated racial customs, class divisions, political infighting, and low levels of educational attainment. The county offers a compelling argument that transportation improvements alone are not sufficient to transform an economy and that such investments should be predicated upon or accompanied by other much needed reforms.

Some study communities illustrate the unintended consequences of highway improvements. The Cumberland Gap Tunnel, for example, has brought many benefits to Bell County, KY. The tunnel, as intended, has increased tourism, improved retail sales, and reduced traffic fatalities. Local officials admit, however, that the tunnel has also contributed to the exodus of some residents from their county.

Road construction may also lead to other regional impacts. Roads that benefit some communities may lead to economic decline in others, creating a state of "windfalls and wipeouts." Completion of ADHS Corridor V through Lawrence County, AL, for example, led to the development of a Wal-Mart Supercenter in Moulton. This growth clearly benefitted the community, but local officials readily admitted this growth occurred at the expense of neighboring counties. These policies, which contribute to the development of trade centers, clusters, and supply chains, may also contribute to the depopulation of more rural areas.

5.3 Downtowns

Road improvements can prove detrimental to historic downtowns. Communities in this study like Moulton, AL, and Pineville, KY, have clearly benefitted from highway improvements, but these gains have occurred at the expense of their downtown and courthouse square areas. In fact, the most viable and appealing downtowns in this study, Newland, NC, and McConelsville, OH, are in counties that lack significant highway improvements. Communities undertaking highway projects need to better comprehensively understand and prepare for these types of consequences. This is especially true of bypass projects which, by design, draw traffic away from established downtowns and their retail districts.

Survey results reflect public concerns about struggling downtown districts. Overall, just 2% of survey respondents rated their downtowns as excellent while 20% found them to be adequate. The vast majority of respondents rated their downtown areas as fair (54%) or poor (24%) with distressed areas faring slightly worse than non-distressed.

To their credit, many study communities are making efforts to revitalize their downtown districts. Some are participating in Main Street programs. Others such as Macon, MS, and McConelsville, OH, have opened visitor centers in their downtowns. Perhaps the best example of revitalization efforts in this study is found in Waynesburg, PA. This project is noted for its collaborative partnership between the city, Greene County, and Waynesburg University and for its innovative use of social media to promote local businesses.

Some counties, including Morgan, OH, and Pendleton, WV, have initiated “buy local” campaigns. The programs promote local businesses and encourage residents to patronize locally owned shops, restaurants, and service providers. Accompanying the marketing of such efforts are noteworthy public education campaigns that explain the ripple effects their local expenditures have on the local economy. Initial responses to these efforts are encouraging and they should be monitored to assess long-term results.

5.4 Public Transportation Services

Public transportation services emerged as an issue in virtually all project counties. Two-thirds of survey participants (66.4%) rated local public transit services as either “poor” or “inadequate.” Interestingly, dissatisfaction with public transit was higher in non-distressed counties (72.3%) than in distressed communities (60.5%). Of the ten counties in this study, only Morgan County, OH, has a transit system that is considered adequate or excellent by a majority of residents.

Public transportation, of course, poses significant challenges in rural Appalachia. The widely dispersed nature of both trip origins and destinations makes effective public transit difficult and often impractical. The sparse population typical of most Appalachian communities also increases logistical inefficiencies, thereby adding to operations costs.

Perceptions are also a significant barrier, as many consider rural transportation to be a service for the poor or a means to “get old folks to the store or to the doctor.” Rising transportation and fuel costs for lower income segments of the population, however, may make public transit more of a priority. As transportation becomes more of a barrier to work and adequate healthcare, rural areas may need to consider a wide range of transit options. These may include shuttle van services as well as organized car pools or ride-sharing.

5.5 Industrial Development

Attitudes towards industrial development differed between distressed and non-distressed counties. Distressed counties, for their part, tended to view manufacturing as more important, with almost half of survey respondents believing industrial development as being very or somewhat important for economic growth. Non-distressed counties, on the other hand, were somewhat less certain, with about 40% believing industry will be a likely source of growth.

Attitudes also differed according to subregion. Survey respondents from the counties in Southern, Central, and Northern subregions show significantly more confidence in manufacturing growth than participants from the North Central and South Central subregions. These may reflect experiences of some of these counties with plant closures but may also show the move of some counties, especially Johnson (TN), Avery (NC), and Pendleton (WV), to more of a tourism-based economy.

Reactions were also mixed on the potential for new or emerging industries. Survey participants in the Central and Northern subregions, for example, were optimistic about the potential for alternative energy industries. These areas, long associated with energy production, saw potential for growth in new energy technologies, with nearly half of survey participants finding such growth very or somewhat likely. In contrast, only about 30% of residents from other subregions anticipated growth in these areas. Survey

participants were consistently less optimistic about technology or information based growth. Only about 30% of respondents felt such growth was somewhat or very likely, while about half found it unlikely.

Attitudes related to globalization were also consistent. Overall, 2.9% of survey respondents strongly agreed and another 19.1% agreed that globalization had benefitted their community. Over 48%, however, either disagreed or strongly disagreed that their community had benefitted from globalization. A significant number of participants, 29.9%, remain unsure about the impact of the global economy.

Local experiences with industrial development vary considerably, particularly those dealing with industrial parks and structures. Lawrence County, AL, for example, is enjoying considerable success with a traditional development strategy. With ample road, river and rail access, the county is poised to attract another major industrial facility in the near future. Lawrence County's experience, however, appears to be the exception among the study counties. Most counties struggle with industrial development and face difficult decisions related to the development and management of their aging industrial infrastructure.

A legacy of industrial sites threatens progress in Pendleton County, WV, and drains scarce resources from other programs. Pendleton County officials might draw from the experience of Morgan County, OH. There, leaders faced a similar dilemma and sold an industrial site in order to concentrate on other development strategies. Counties might also learn from Bell County, KY, where officials forgo turnkey "spec building" structures in favor of a strategy that allows for the quick construction of custom industrial buildings.

5.6 Coal and Gas

Coal casts a powerful and enduring shadow over much of the Appalachian Region. This is particularly true in North, North Central, and Central subregions where coal remains an important industry. The culture of coal is pervasive and miners maintain an iconic status in the community. In recent years, however, coal has become increasingly controversial and coal producing regions have become proudly defensive and defiant.

This reaction is understandable. Coal, after all, is an important natural resource and will likely remain a key element in the nation's energy portfolio for the near future. At the same time, however, coal's future is far from certain. Utilities, the largest consumer of coal, are transitioning away from the fuel in both the U.S. and abroad. Increasing regulations, environmental concerns, and improvements in nuclear technologies and alternative renewable sources are all contributing to this possible transition.

Appalachian producers also face increasing competition from western coal producers. Western states have vast reserves of coal that is relatively accessible via open pit mining practices. As a result, they are able to produce coal for a fraction of the cost of eastern states. Coal from Wyoming, for example, averaged \$12.41 per ton in 2009. Coal from Kentucky, in contrast, averaged \$58.54 per ton - 4.7 times more. Given those

prices, it is not surprising that Wyoming currently leads the nation in coal production. That western state now produces 40.1% of the nation's coal, more than all coal producing Appalachian states combined.¹¹⁰

Given these statistics, the Appalachian coal industry may experience future decline. However, coal producing regions appear ill-prepared for this contingency. When asked about a post-coal future, officials and residents struggled to respond. To their credit, many counties are beginning to diversify and create non-coal jobs. Bell County, KY, for example, is embracing tourism in an effort to expand its economy.

Pike County, KY, deserves special recognition for investing in the research of new industries related to the energy field. Their strategy, tied to their legacy of coal production, could help create jobs around emerging energy sources. The envisioned energy research center, partnering local and state universities and national laboratories, could create new jobs and secure long term growth. Yet even this effort seems overly imbued with the orthodoxy of coal, with much of the proposed research geared towards coal-related products.

While Appalachian coal production is declining, natural gas drilling is booming. This is especially true in Greene County, PA, which is at the epicenter of the Marcellus Shale boom. Hydrofracking, while controversial, has lifted the local economy and proven to be a boon for many land-holding families. This extraction method, increasingly common in Pennsylvania, is poised to spread to other states in the near future. As this occurs, Greene County should serve as a model for both the benefits and dangers of this growing practice. The county's experiences in educating the public about environmental risks, economic benefits, and legal rights should be watched closely by other communities.

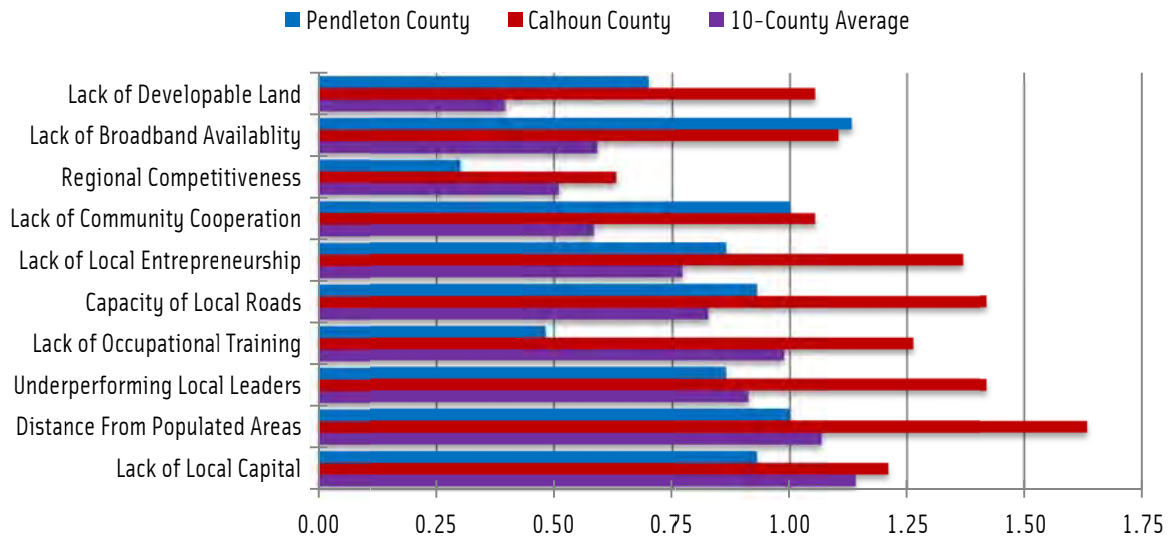
5.7 Developable Land Constraints

Geography is a major barrier to the development of non-coal industries in coal producing regions. The local mountainous terrain limits developable land to a fraction of the total land area. As seen in Figure 5-3 and Figure 5-4, a majority of survey participants in the North Central and Central subregions, respectively, identified local geography as a likely constraint to growth. A significant number of respondents from the Northern subregion also felt terrain is an obstacle, though not to the degree of neighboring subregions.

In order to diversify, communities must find ways to deal with these physical constraints. In both Kentucky counties, cut and fill approaches are an important means of creating new space. This re-use of surface mine sites and the "hollow fill" of other areas is not without merit. Indeed, these approaches have helped create important open space in and around Pikeville for residential, commercial, and recreational developments. At the same time, however, this approach also carries significant costs by radically and permanently altering the local environmental landscape.

¹¹⁰ National Mining Association, "U.S. Coal Production by State and Rank: 2009," http://www.nma.org/pdf/c_production_state_rank.pdf; U.S. Energy Information Administration, "Average Sales Price of Coal by State and Mine Type: 2009," <http://www.eia.gov/cneaf/coal/page/acr/table28.html>

Figure 5-3: Pendleton and Calhoun County, WV, response to question, "How likely is each item an obstacle for economic development in your county?" (Very Unlikely=-2; Unlikely=-1; Unsure=0; Likely=1; Very Likely=2)



Curiously, developments in these areas do not appear to be optimized for the local terrain. Big-box retailers, large parking lots, and low-density developments are common and not unlike those in other regions. Governments in these areas should implement more efficient land use strategies to better utilize scarce space resources. Pike County has already taken important steps in this direction. Downtown Pikeville is encouraging vertical development and the construction of multi-level parking garages. Additional research should be conducted to help identify innovative and appropriate development approaches.

5.8 Broadband Infrastructure and Utilization

A more common constraint for Appalachian counties is the lack of modern communications infrastructure. Inadequate access to broadband Internet and cellular networks was a common complaint among communities in this study. While approximately half of survey participants classified their Internet access as adequate or better, another half stated it was inadequate or poor. Surprisingly, these responses did not vary considerably by economic status, as residents of distressed and non-distressed counties were almost equally dissatisfied with Internet access.

Over 70% of survey participants cited poor telecommunications and Internet access as likely obstacles to economic growth. Residents of non-distressed counties were slightly more apt to view lack of access as a greater problem than those of non-distressed counties. Issues with Internet access were common in four of the five subregions. Only the Central subregion, which benefits from the ConnectKentucky program, reported high satisfaction with Internet access. In fact, almost 90% of Kentucky respondents classified their Internet access as adequate or better.

This lack of connectivity deters growth in a number of ways. Large employers, for example, require dedicated high speed data connections to conduct business in today's global economic environment. Small businesses, however, are also affected. Lack of Internet access, for example, prevents Avery County, NC,

Christmas tree growers from marketing directly to consumers and makes hotels in Pendleton County, WV, and Johnson County, TN, less attractive and less accessible to visitors.

The impacts of poor access, however, go far beyond commerce. Lack of connectivity or digital capacity, for example, prevents community officials from learning about important funding opportunities and keeps them from submitting online applications. Poor access denies isolated counties a voice in decision making processes, as webinars or videoconferencing require meaningful participation. The negative effects on workforce preparedness, digital literacy, and government and civic efficiency run deep.

The social and cultural effects are also profound. The lack of broadband increases the isolation felt by many residents and adds to a sense of alienation. Activities that more urban residents take for granted – streaming movies, learning of breaking news, connecting via social media with family and friends, or online gaming – whether in front of a computer or on the go – all currently prove difficult and often impossible for residents of these rural counties. The lack of access to these services, an increasing part of mainstream culture, may contribute to the exodus from rural areas, especially among young adults and families.

Valid reasons exist as to why broadband has failed to reach rural Appalachia. In many cases, there is simply a lack of market justification for private service providers to invest in the infrastructure to reach buildings and cell towers throughout difficult rural terrain. Simply put, if profits were to be made in the lagging parts of Appalachia, service providers would already be there. Arguments can also be made that the public sector shouldn't be burdened with the build of the infrastructure through sparsely populated, remote areas.

As with roads, water, and sewer, broadband access should be regarded as a critical part of a community's infrastructure. Therefore, the issue of broadband connectivity for all Americans is one that must be borne out of partnership with both private and public sector entities. Around the country, public-private partnerships have worked well in rural areas, and ConnectKentucky is an example lauded in this report.

Government agencies at all levels should look to successful models to help communities bridge this digital divide. In particular, they should evaluate the Connected Nations program, and its predecessor, ConnectKentucky, which stands out as a success story in rural broadband deployment and is worthy of replication. In fact, in addition to Kentucky, two of the eight states in this study have modeled such organized efforts in their states after Kentucky, with Connected Tennessee and Connect Ohio programs.¹¹¹ Officials may also want to revisit historical models related to rural electrification, which may also provide important lessons in rural service delivery.

Not every model will work in every community because of community size, population density, political structures, or service provider capacity, so there is no easy template for replication that will work in every community. However, every community has basic civic assets, such as public safety, healthcare and public structures such as libraries, hospitals and schools, which must have communications connectivity to national backbone networks. Understanding this, the American Recovery and Reinvestment Act of 2009

¹¹¹ <http://www.connectednation.org>

provided funding for such policy improvements and infrastructure gaps in middle and last mile backbone networks, yet plenty of such gaps remain throughout Appalachia, including the counties in this study.

The Federal Communications Commissions' National Broadband Plan (2010)¹¹² continued to show importance for middle and last mile infrastructure, and furthered the idea and importance of private service providers working closely with public sector institutions. Born out of the FCC's National Broadband Plan was the U.S. Unified Community Anchor Network (U.S. UCAN), which is dedicated to connecting community anchor institutions, including libraries, schools, colleges, public safety and health care institutions, as well as local and county governments, economic development organizations and chambers of commerce with advanced broadband capabilities.¹¹³

The ARC is uniquely positioned to play an important role in fostering such organizational relationships throughout the Region to connect such anchor institutions for local and regional broadband strategies. The ARC, together with existing federal partners like the FCC, DOC/NTIA, USDA, and U.S. UCAN, and national associations like the National Telecommunications Cooperative Association¹¹⁴ and the Rural Telecommunications Congress¹¹⁵ can provide further input on these issues. Together, the ARC and such organizations can uniquely engage community stakeholders and service providers to bring broadband and all its benefits to rural Appalachia.

For communities that already have broadband, it is not enough for there to be connectivity throughout the community and economic development "just happen." More must be done to encourage widespread broadband adoption and utilization. Equally important, more effort should be put toward increasing digital literacy skills and broadband usage throughout every community organization and business.

For example, this report has lauded the efforts of the State of Kentucky and the ConnectKentucky initiative that is bringing broadband infrastructure to all underserved parts of the state. According to survey data and local discussions, people in the Kentucky communities are aware that broadband exists and understand the importance of broadband for economic development. However, it appears not much is happening in the way of encouraging broadband adoption or actually using the broadband infrastructure for economic development at the local level.

To illustrate this point, Figure 5-4 below shows that residents and officials in Pike and Bell County, KY, think that broadband availability is likely not an obstacle for economic development for either of the Kentucky counties. In fact, the two Kentucky counties are the only two counties in this study to report that access to broadband is likely not an obstacle for economic development, and is well below the 10-county average response.

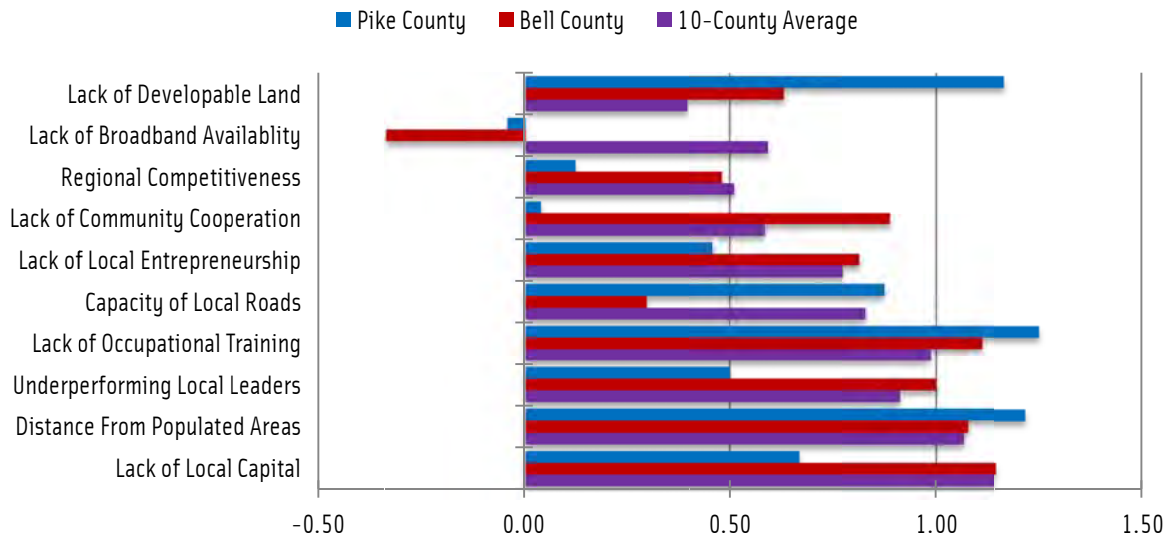
¹¹² <http://www.broadband.gov/plan>

¹¹³ <http://www.usucan.org>

¹¹⁴ <http://www.ntca.org>

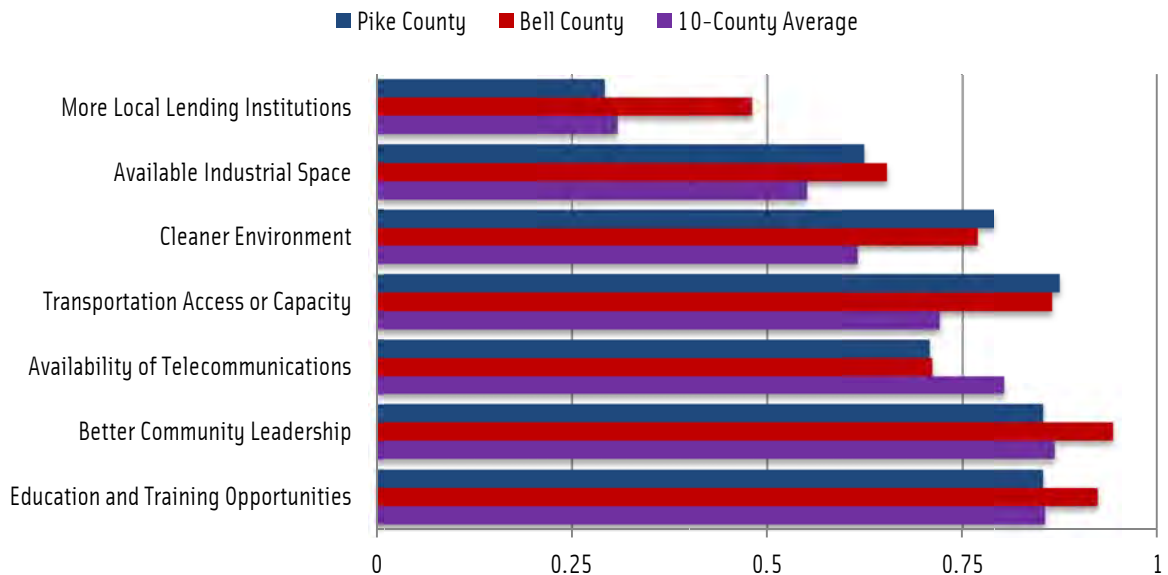
¹¹⁵ <http://www.ruraltelecon.org>

Figure 5-4: Pike and Bell County, KY, responses to the question, “How likely is each item to be an obstacle for economic development in your county?” (Very Unlikely=-2; Unlikely=-1; Unsure=0; Likely=1; Very Likely=2)



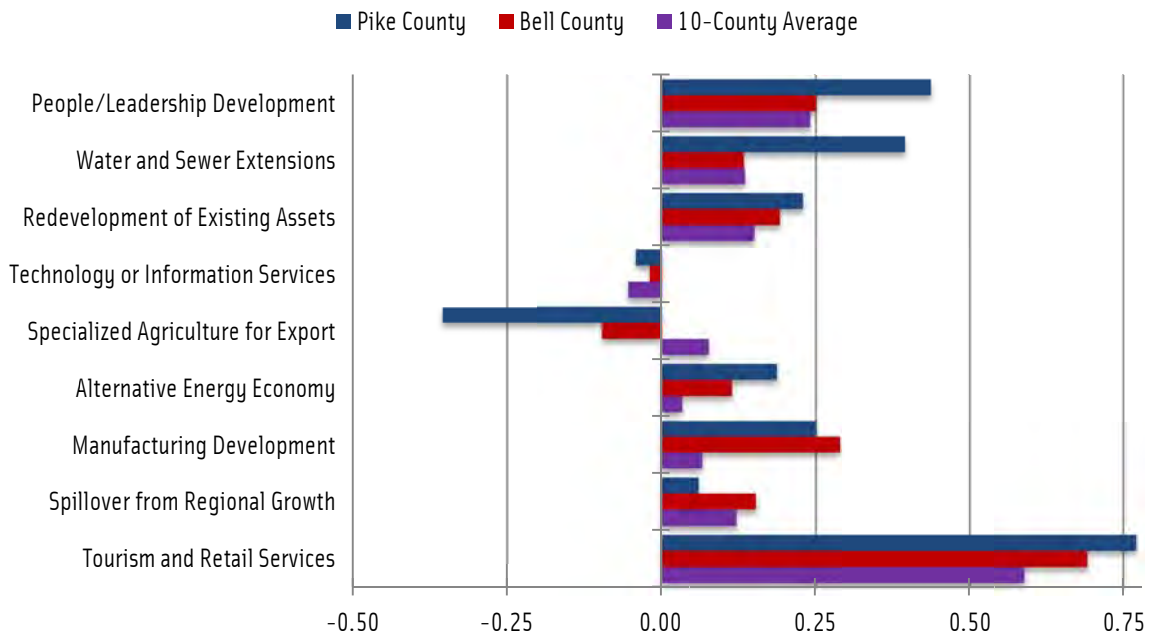
In addition to the availability of broadband availability, Figure 5-5 shows that people from the two Kentucky counties also consider broadband to be important for economic development. They rated the importance of broadband generally on par with importance of other enablers of economic development. Interestingly, however, both Kentucky counties consider the importance of telecommunications availability for economic development slightly under the study average.

Figure 5-5: Pike and Bell County, KY, responses to the survey question, “How important are these items for economic development in your county?” (Not important=-1; Unsure=0; Important=1; Very Important=2)



Both Pike and Bell County residents agree that broadband is important for economic development, and both counties also agree that it is unlikely that broadband availability presents an obstacle for economic growth. Given that, it is most interesting that residents view broadband-enabled economic opportunities in their county as slightly unlikely (Figure 5-6), and during discussions, no new jobs or businesses were credited to broadband utilization. Remarkably, the two counties in this study best positioned to benefit from broadband, in fact, do not recognize the opportunity that broadband presents for economic development.

Figure 5-6: Responses to the question, "How likely is each item to be an opportunity for economic growth in your county?" (Very Unlikely=-2; Unlikely=-1; Unsure=0; Likely=1; Very Likely=2)



Moreover, several of the obstacles to economic development that rated highly in Figure 5-4 can be diminished with the adoption and utilization of broadband. These include lessening the impacts from the lack of developable land and the improving the lack of entrepreneurship. Most importantly, broadband adoption would help bridge the distance with more populated areas, and would help increase regional competitiveness, both of which would remove the feeling of isolation that was reported from residents and business leaders in those two counties.

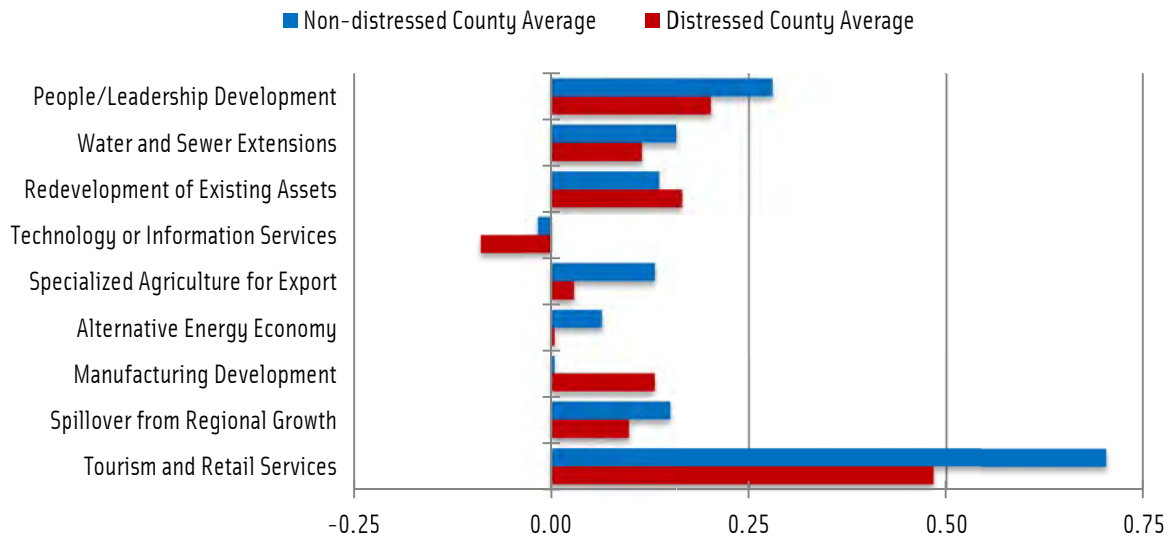
Clearly, as seen in site visits and as reported through the surveys, not enough is being done with broadband adoption and utilization to benefit business development, entrepreneurship, and workforce development initiatives. And Kentucky, for all it has done to 'get connected,' is doing little in Bell and Pike Counties in the way of education to train and encourage residents and organizations to use broadband for economic benefit. It is interesting that Kentucky counties have a distinct competitive advantage in that broadband infrastructure is already in place, yet the argument could be made that broadband is currently doing more to siphon money from rural Kentucky counties through cost of services and online commerce. More must be done in Kentucky and throughout Appalachia to educate the business community and residents on the value that broadband brings to competitiveness, workforce development, and entrepreneurship.

To answer some of these shortcomings, the USDA's Southern Rural Development Center and the National E-Commerce Learning Initiative¹¹⁶ at Mississippi State University is one such effort to increase broadband adoption and utilization for economic development outcomes in rural areas. Also, the US Department of Commerce, in partnership with nine federal agencies, offers an online repository of best practices in the field of digital literacy. DigitalLiteracy.gov is an "online portal to help Americans find jobs and obtain the 21st century skills being sought by today's employers."¹¹⁷ But most readily available would be land grant university extensive services, as well as the Local Development Districts serving each county.

5.9 Tourism Development

Most counties in this study view tourism as a strong opportunity for future growth. Among survey participants, 46.5% saw tourism as a very likely source of future growth and another 38% believed it to be a somewhat likely growth source. Potential was perceived strongest among non-distressed counties, where over 91% of respondents believe tourism to be a source of future development. Still yet, over 77% of distressed county respondents shared this feeling. The promise of tourism development was clearly viewed by all as the most likely opportunity in all study counties.

Figure 5-7: Responses to the survey question, "How likely is each item to be an opportunity for economic growth in your county?" (Very Likely=-2, Likely=-1, Unsure=0, Likely=1, Very Likely=2)



Not surprisingly, Avery County, NC, residents saw the most local tourism potential. Almost 95% of respondents believe tourism to be a very likely source of future growth. In contrast, participants from Calhoun County, WV, were least enthusiastic, where more than half of respondents believed tourism growth

¹¹⁶ <http://srdc.msstate.edu/ecommerce>

¹¹⁷ <http://www.digitalliteracy.gov>

to be very or somewhat unlikely. Even in the case of Calhoun County, however, over 40% of participants believed tourism held potential for growth.

Bell County, KY, stands out among the case studies for its work in developing adventure tourism. While several counties were promoting this rapidly growing tourism sector, Bell County appears to be leading the region in developing and promoting adventure activities. The Kentucky county's success in creating, maintaining and promoting its resources, especially its ATV trails and supporting infrastructure, should serve as a model for other communities in the region. State policies that limit ATV trail liability contributed to this success and should also be studied.

The arts also represent an important tourism growth area. The statement from Avery County that "twenty artists equals twenty jobs" is correct and Appalachian counties are right to view the arts as a bona fide business development strategy. The performing arts were especially well represented in this study and two counties have created successful performance venues. In both Morgan County, OH, and Johnson County, TN, historic structures have been successfully converted to performance halls. The McConelssville (OH) Opera House and Mountain City's (TN) Heritage Hall not only attract visitors they serve as important public amenities for their residents.

Persistent barriers in some areas continue to limit tourism growth. A lack of infrastructure, inadequate marketing, and a lack of workforce training are significant issues in many communities. Vocational training in the culinary arts, hospitality training for local workers, and increased assistance for developing businesses could all help foster tourism and jobs in many areas. Many communities would also benefit from increased awareness of tourism funding and technical assistance for marketing efforts.

5.10 Entrepreneurship

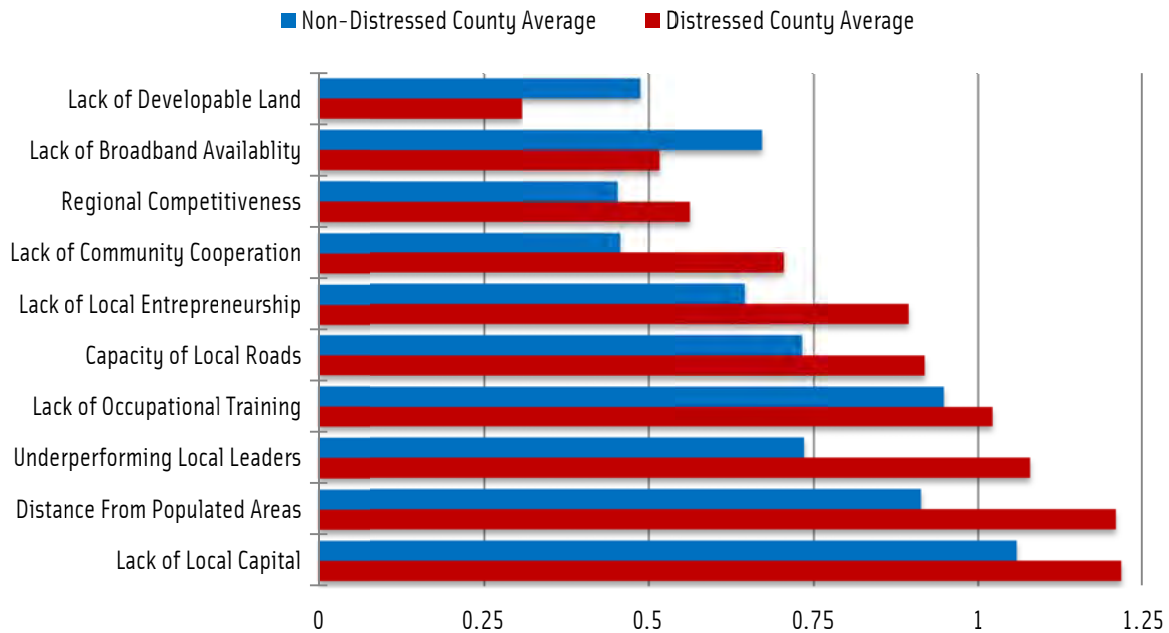
Many of these tourism and retail problems are linked to a lack of entrepreneurship. Aversion to risk, long an Appalachian character trait, continues to plague many parts of the region. In nine of the ten counties, residents and officials discussed a lack of entrepreneurship and the inability to grow small businesses. In some communities the most prolific entrepreneurs were, in fact, new residents or retirees who had moved to the county from elsewhere.

While most residents attributed the lack of business development to an almost innate aversion to risk, other contributing factors include a lack of access to capital and poor business skills. One major deterrent to new businesses, officials report, is the failure of existing businesses. More often than not, business failure was attributed to bad management practices and not market competitiveness. Therefore, business ownership and management training and technical assistance for current business owners could not only help keep existing concerns viable but could encourage the development of new establishments knowing that support resources are available.

In spite of limited resources, communities are implementing programs to foster entrepreneurship. In some areas, such as Pendleton County, WV, and Johnson County, TN, Chamber of Commerce directors are leading efforts to promote local business development. Other communities, such as Morgan County, OH, are undertaking broad partnerships to promote entrepreneurship. Stakeholder partnerships between

government, higher educational institutions, local schools, and business and community leaders are proving to be innovative approaches to help stimulate business growth. Morgan County’s proposed incubator project is among the most innovative programs found in this study and both the approach and its associated partnership deserve recognition and emulation.

Figure 5-8: Responses to the survey question, “How likely is each item to be an obstacle for economic growth in your county?” (Very Unlikely=-2, Unlikely=-1, Unsure =0, Likely=1, Very Likely=2)



The State of North Carolina leads the region in promoting entrepreneurship. Residents of the state enjoy access to a wide range of services and resources to help establish and maintain a small business. Every step of business development, from initial planning to loan financing to ongoing assistance, is available to residents of Avery County and the rest of the state. Also impressive is the level of help provided by institutions of higher learning. Both four- and two-year institutions in the region offer a wide range of support, ranging from technical assistance to industry-based marketing and development programs.

5.11 Online Presence and Social Networking

The Internet has created new opportunities for communities to promote tourism and economic development through websites and online media. Increasingly, the Internet is being used as important portals – or online entry points – offering the opportunity for local governments, community services and social organizations to engage citizen participation. In recognition of this fact, every county in this study maintains some type of web presence. The level of this presence, however, varies considerably throughout the region. Likewise, some counties are using social media tools, mainly Facebook pages and Twitter feeds, to help promote their communities. The effectiveness of these efforts, however, also varies a great deal.

Granted, for now, the broadband and wireless infrastructure needed to fully enable online opportunities is limited in many rural Appalachian communities. However, even the most rural communities with only dial-

up access need to realize the Internet's value in helping to sustain their community. Effective online programs can mean nothing more than a picture of a print brochure, or directory of local businesses and services, or announcements of local events put somewhere online. Relocating families, retirees, expanding businesses, residents and the traveling public all need to be aware of unique opportunities in each community along with contact information for local people who can provide more information.

In the best examples, counties have developed multiple web portals for government, economic development, and tourism. Typically, these organizations connect their sites to one another to allow a potential visitor, resident, or investor to access a full range of information. Among study counties, Noxubee County, MS, and Greene County, PA, stand out for their use of web-based resources.

Noxubee County's Economic and Community Development Alliance recently launched a website to promote economic development. The site, designed to "attract new business, encourage tourism, and grow Noxubee County," is an excellent example of a clear and functional county development portal.¹¹⁸ The site is commendable for not only promoting the county, but also for including a depth of information about the community. Information offered includes an array of downloadable maps, detailed "retail recruitment studies" for the county's communities, and extensive information related to local development incentives.

Greene County, PA, stands out for two websites - those for county government and tourism. The Greene County Government website¹¹⁹ provides access to all county departments and officials, and provides a commendable level of transparency, giving users access to public agendas and meeting minutes. The site also features an employee directory and links to all schools, municipalities, and townships in the county. The site also promotes local events and amenities, provides job listings, and has videos promoting economic development, schools, and the local quality of life.

Greene County also hosts a second website to promote local tourism. The site, operated by the Greene County Tourism Promotion Agency, features an interactive map of local sites, downloadable brochures and guides, and a calendar of local events.¹²⁰ Leveraging local assets, the site has special pages to promote heritage tourism and agritourism attractions. Downloadable coupons are featured to help local businesses attract visitors.

Social networking tools have emerged as important communications channels to promote local assets and improve community participation efforts. Among these Facebook has emerged as the easiest, the most popular with 750 million active users,¹²¹ and the most powerful tool used by communities. While individual businesses and attractions were early adopters of Facebook, local governments and economic development organizations have recognized the trend and now use the service in attempt to improve commerce, attract visitors, and better communicate with its residents and stakeholders.

¹¹⁸ <http://noxubeecountymys.com>

¹¹⁹ <http://www.co.greene.pa.us>

¹²⁰ <http://www.greenecountytourism.org>

¹²¹ <http://www.facebook.com/press/info.php?statistics>

Greene County uses Facebook more than any other community in this study and could serve as a model for other Appalachian areas. Greene County and its partners operate several Facebook pages, including pages for tourism and county commissioners. These pages promote local attractions and annual events and convey public announcements. The county also benefits from “Waynesburg Prosperous and Beautiful,” Facebook page¹²² and web pages dedicated to Waynesburg University’s downtown redevelopment efforts.¹²³ Once an Facebook page has been created, users can “like” the page to be automatically notified when page new updates are made. Essentially, organizational messages are sent to people who follow the page, providing no-cost direct marketing opportunities.

While social media and the Internet offer inexpensive opportunities to promote community assets, they also present new risks. One important issue is maintaining a reputation and positive image in the midst of global opinions. Poor reviews on online travel sites like TripAdvisor, Yelp, or others can prove harmful to a small business and deter prospective visitors. Chambers of commerce, tourism agencies, and business leaders should monitor such sites and assist business owners in quickly addressing business complaints and negative criticisms.

Similarly, officials should also periodically check YouTube, Vimeo, and other video-sharing services for uploaded videos related to their county or community. In some cases, these amateur videos are effective tools in promoting local assets. The popular site YouTube, for example, hosts dozens of videos of climbers scaling Pendleton County, WV’s, Via Ferrata at the Nelson Rocks. These hair-raising clips, and their associated comments, are among the attraction’s most important marketing resources. At the same time, however, a YouTube search for many Appalachian terms retrieves videos that perpetuate negative stereotypes and reinforce erroneous but long-held misconceptions of Appalachian culture. Local tourism and business officials should encourage local businesses to upload positive videos and attach search terms that will link these images to prospective Internet queries.

5.12 Government

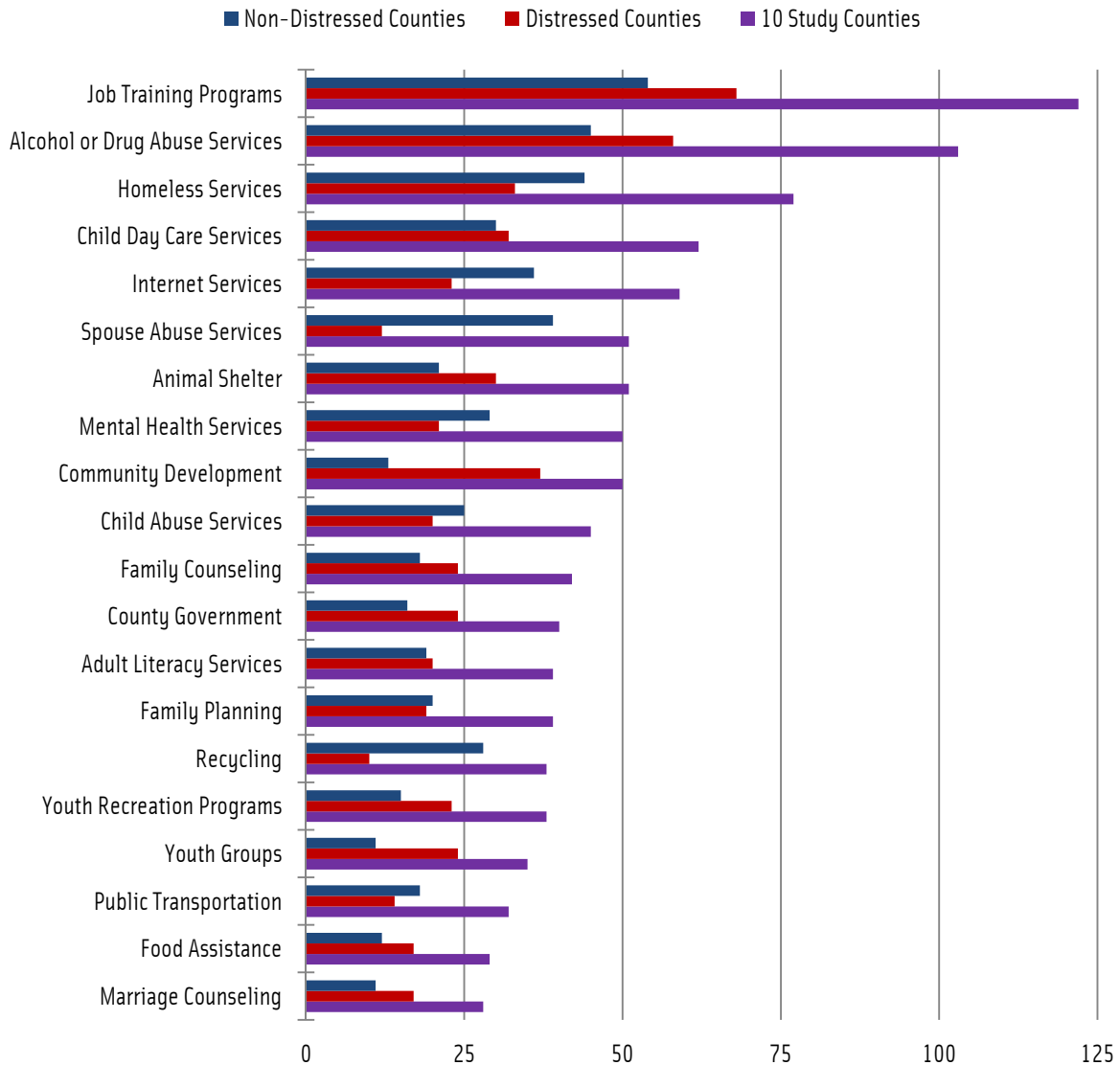
Views of government, particularly at the county level, appear to be mixed. Among survey participants, a majority of respondents (56%) found county government to be adequate, but few (8%) viewed it as excellent. Views varied somewhat according to economic status, with participants from non-distressed counties holding slightly more favorable views of government than those from distressed communities.

Results also varied considerably among individual counties. The highest levels of dissatisfaction, for example, occurred in Lawrence County, AL, one of the highest performing communities in the study, and Morgan County, OH, among the most innovative. Counties with the highest level of satisfaction with their county government were, conversely, Avery County, NC, and Bell County, KY – communities that varied significantly in terms of both income and educational attainment.

¹²² <http://facebook.com/GreeneCountyTourism>

¹²³ <http://www.waynesburgpa.org>

Figure 5-9: A ranking of the top 20 responses to the survey question, "Which services and programs need the most improvement in your county?" (ranked by total number of responses)



Views of local government were slightly more positive. Survey participants generally gave local officials higher marks than their county-level counterparts. As with county officials, non-distressed communities generally viewed local governments more favorable than distressed counties. Locally, attitudes again varied considerably and, in some cases, conversely. Morgan County, OH, and Lawrence County, AL, which scored lowest for county government, had the highest scores for local government officials.

Survey participants were generally satisfied with most essential community services, but found room for improvement in several areas. Job training programs were, by far, seen as the area most in need of improvement. This is not surprising, given the high unemployment rates in many areas. Alcohol and drug abuse services were second, a reflection of high rates of abuse across the region.

The third most prevalent improvement area was, surprisingly, homeless services. Virtually all counties reported a lack of homeless assistance and the problem was consistent in both distressed and non-distressed communities. While this may be a reflection of the limited capacity of some areas to provide assistance, it may also indicate increasing problems associated with rural homelessness. These problems may be exacerbated by the current economic and housing market crises.

Issues of representation were among the most pronounced governance problems encountered. At the state level, small rural counties often shared representation with neighboring counties that were larger and more affluent. In these counties, officials often believed that their legislators represented the interests of the more influential counties over theirs and that they had no effective voice in the state legislature, which ultimately effect policies and various forms of financial support to their county.

County-level representation also emerged as an issue within some counties. Many counties, including those in West Virginia, Pennsylvania, and Ohio, operate with just three elected county commissioners. The small number of county-level officials makes change or innovation extremely difficult. With staggered terms, residents wanting new ideas or a new direction must wait for at least two election cycles to gain a majority. This low number of representatives hinders representation of issues in remote areas and may limit representation of all interests.

Township governments, found in Pennsylvania and Ohio, also emerged as an issue. This was especially true in Greene County, PA, where each township not only has its own government, but also its own local school system. This redundancy promotes inefficiency and increases costs, and also leads to questions about the distribution of resources and equity among township districts within the county.

The efficacy of the county as an administrative unit is also debatable. Most Appalachian counties were formed before the Civil War, when geographic and transportation constraints often determined a county's size. The legacy of these early counties remains, even though the physical constraints that once defined them have long since been addressed. Kentucky, the nation's 36th largest state and its 26th most populous has the third highest number of counties in the United States at 120. Tennessee, which ranks 34th in size and 17th in population, has 95 counties. California, the most populous and third largest state, has, in contrast, just 58 counties.

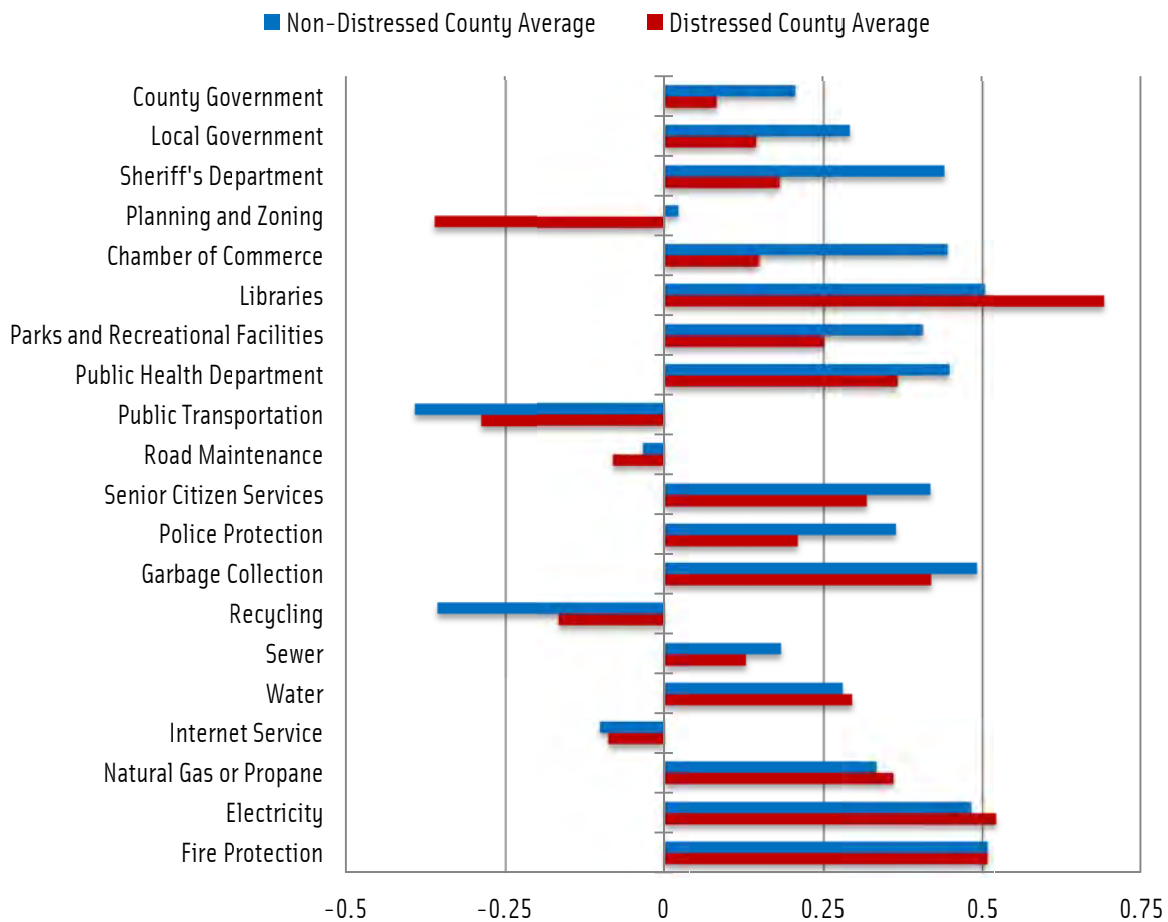
Small counties, or counties with few residents, such as Calhoun County, WV, often struggle to maintain public services. They also face the aforementioned issues related to representation in state government. Redundancy of services is also an issue, as states cope with large numbers of school systems and highway and sheriff's departments. Some states, such as Iowa, have constitutional limits that dictate a minimum county size. Imposing such regulations on existing states, however, would seem politically impossible.

A more realistic approach is the establishment of shared services among multiple counties. Avery County, NC, for example, shares library and other services with neighboring small counties. Calhoun County, WV, shares its economic and community development services with neighboring Wirt County through the Little Kanawha Area Development Corporation. These shared services, applied on a broader scale, could result in significant savings for some counties and might bring improved services to rural areas.

5.13 Planning and Zoning

Planning, or the lack thereof, emerged as an important issue in many project communities. The lack of planning was especially evident in distressed communities. Less than 1% of survey respondents from distressed counties classified local planning and zoning as excellent and only 27% found it to be adequate. In contrast, almost 7% of respondents from non-distressed communities felt local planning was excellent and 49% found it to be adequate. As Figure 5-10 shows, Planning and Zoning rated poorest out of all public services in the distressed counties.

Figure 5-10: Responses to the question, "Rate the performance of public services in your county."
 (Scoring: Poor=-1, Inadequate=-.5, Adequate=.5, Excellent=1)



Among individual counties, capacity clearly plays a role in promoting good planning. Larger and more affluent counties, such as Lawrence County, AL, and Avery County, NC, tended to score higher. Pike County, KY, the most populous and largest county in the study, received the highest ratings for planning and zoning, with two-thirds of respondents ranking local efforts as adequate or excellent. Poorer counties, on the other hand, fared much worse. In Calhoun County, WV, for example, 62.5% of survey participants rated planning as poor.

Impacts resulting from the lack of planning are varied but significant. Bell County, KY, for example, needs improved zoning to improve the gateway to the Cumberland Gap National Park. Likewise, land-use controls could help Pendleton County, WV, protect important viewsheds, the historic downtown, and other tourism resources. Many communities also lack effective comprehensive plans. As a result, these communities often lack a cohesive strategy for future development and, instead, approach the future in an ad hoc fashion. This deficiency stands in the way of their preparedness for applying for much-needed funding and moreover simply slows local progress.

In other cases, counties had *pro forma* plans developed for specific grant applications. In some cases, these plans were little more than boilerplate documents, with little or no community input. Some communities also have plans developed by external consultants or academics. Many times these plans were developed at considerable expense with limited community or stakeholder participation. While these plans have value, they sometimes lack implementation strategies or any follow-up funding to sustain prolonged efforts. As a result, the plans soon wound up on a shelf, collecting dust alongside previous plans and studies.

Not surprisingly, many residents in these communities now view planning as a pointless and futile exercise. In some communities, officials and key stakeholders consider plans to be a waste of money or a bureaucratic folly. Academics or external resource providers may be seen as opportunistic interlopers out to take advantage of the community to promote their own interests. This “planning fatigue” is a major barrier to future coordinated development efforts in some communities, but is preventable if planning is inclusive and linked to some form of actionable implementation.

5.14 Local Development Districts

As mentioned several times throughout this report, Local Development Districts (LDDs) play an important role in the planning and proposal development process. These agencies, created to provide important community and economic development services, are intended to help level the playing field for rural communities. Small rural counties that lack dedicated grant development staff rely on these organizations to help plan and implement important projects.

Additionally, the ARC relies heavily on the LDD network to serve as middlemen between their Washington staff and the region’s communities. Ideally, LDDs help convey information about ARC programs to Appalachian communities and, in return, help keep ARC staff informed of progress and developments in communities throughout the region.

In practice, however, the performance of the LDD system appears uneven. Many communities in this study, such as those in Kentucky and Tennessee, reported a strong working relationship with their LDDs. In these communities the LDD system appears to work as intended, with the LDD serving as both an advocate and partner for counties and municipalities, facilitating the exchange of information through bureaucratic layers.

In other areas, however, relations between the county and local LDDs appear to be less productive. The politicization of development districts was a voiced complaint in some areas, where leaders felt marginalized when compared to their larger or more influential neighboring counties. Inconsistent services

were another important issue. Although most LDDs made proposal development a priority, others viewed funding opportunities as a secondary function. Lawrence County, AL, officials even noted a LDD director who refused to prepare any proposals on the grounds that it might place his partner communities in competition with one another.

In addition to these problems, many communities felt that their LDD staffs are increasingly overwhelmed. These sentiments were expressed among a wide range of study counties, regardless of economic status or the quality of the LDD relationship. As funding constraints increase and state resources diminish, it is likely that LDDs will face increased pressures and workloads. These factors may further impact the efficacy of the existing LDD system.

5.15 Grant Development

The lack of planning and strained Local Development District (LDD) relationships were both cited as significant barriers to grant funding by community stakeholders. Counties without current comprehensive plans often find they are ineligible for funding opportunities or, at the very least, compete at a significant disadvantage. Poor LDD relations or a lack of communication compound these issues. Many times local officials have no knowledge of funding opportunities. In other cases, they receive little LDD assistance in developing a proposal or are perceived as a low priority among LDD communities. LDD staff, operating with limited resources, might also find themselves unable to respond to all requests for assistance. As a result, many low-resource communities are left to fend for themselves in a very competitive funding environment.

Matching funds pose another significant challenge. While relatively affluent counties such as Avery County, NC, or Lawrence County, AL, can usually muster matching resources, smaller or poorer counties face significant problems securing matching funds. Many times, counties with modest tax revenues simply do not have the funds to put together a cash match and may have difficulty finding in-kind resources.

Calhoun County, WV, is representative of these types of communities. Nearly bankrupt, the county has just 13 employees and an annual budget of only \$1.3 million. This level of funding is barely adequate to cover services for county with over 7,000 residents and an area of almost 300 square miles. Struggling to provide even basic services, the county is in no position to provide matching funds. With few county employees, low salaries, and few public resources, an in-kind match is also difficult to attain.

These issues are compounded by other barriers, including poor Internet access and a lack of local capacity. Routine funding tasks, such as online proposal submissions, can prove daunting without the assistance of an LDD, academic institution, or other partner. Isolated or low-resource communities must overcome multiple hurdles to accomplish such a task. In addition to securing a match and preparing a proposal, they may also have to complete multiple forms, convert and merge documents into uploadable files, create detailed budgets, and prove they have the capacity to administer a funded project. The inability to fully accomplish these tasks leaves some communities noncompetitive when pitted against more affluent counties and municipalities.

5.16 The Appalachian Regional Commission

Local perceptions of the ARC are mixed. All counties expressed appreciation for the agency's contributions to the region and for assistance they had received. Even Calhoun County, WV, perhaps the most distressed county in this study, noted that conditions had improved significantly from the days of "subsistence poverty."

Several counties, however, expressed frustration with ARC policies. Some officials of distressed counties, while noting ARC's accomplishments, argued that ARC policies favor larger or more developed counties. Economic development policies, they contend, favor existing employment centers and commercial hubs over rural and isolated areas. Many also point to matching requirements, which they feel discriminate against distressed areas by essentially precluding them from even applying for grants. Many feel that the distribution of ARC funds, particularly state allocations, is based more on political considerations than actual need.

Many counties, even non-distressed areas, referenced the disconnect between the ARC's Washington office and the region it serves. Some officials believe that ARC staff lack awareness of the region, particularly the poorer and more isolated areas. When asked, few county officials could recall a visit from an ARC official.

General understanding of ARC's programs and resources was also surprisingly low. Many residents and even public officials showed little knowledge of the agency, its history, and its programs. While a fair number of focus group participants, for example, had visited the agency's website or knew how to access grant opportunities, few were aware of ARC's recent "Gems of Appalachia" grant program. Not surprisingly, communities with good LDD relationships or strong academic partnerships generally demonstrated a greater awareness of such funding opportunities.

To their credit, ARC has embraced social media to improve communications. Recently, for example, the agency launched a Facebook page. This effort should help ARC distribute news and announcements to a wider audience and is commendable. This project's effectiveness throughout the region, however, is dependent on the availability and quality of local Internet access and the technical capacity of the local intended audience to opt-in to such communications.

Study participants throughout the region also had low awareness of ARC research reports and other materials. Some communities, in fact, feel they lack information about their own community and its performance. These problems are compounded in some areas by the lack of adequate Internet access. Residents that still rely on dial-up services have difficulty downloading large files and those without access face even more difficulties. During site visits, project team members received numerous requests for hard copies of project materials from key stakeholders who lacked email or Internet access.

The ARC is also becoming increasingly dependent on web-based tools in decision making and agency-wide planning processes. Advances in information and communication tools creates new opportunities, but also presents new challenges. In 2010, for example, the agency conducted a strategic planning process that collected "citizen input" from a series of five subregional public forums or "listening sessions," online "webinars," and through "electronic polling and online comments on key issues facing the region." This

process, intended to “accommodate all participants from the general public in Appalachia,” was, no doubt, efficient and cost effective. However, the process relied heavily on widespread Internet access and adequate digital literacy skills. In many areas of Appalachia, however, computer skills and digital infrastructure are lacking. This is especially true for the region's poorest and most isolated communities.

As such, residents of these communities risk being disenfranchised from decision-making processes. It is no surprise that residents of these communities - places like Calhoun County, WV - feel a sense of detachment from the ARC's Washington offices. In fact, the design of that process and the language used to present it may reinforce the perception, common in some areas, that the agency is sometimes insulated from some regional realities. To fulfill their mission, ARC must recognize this digital divide, account for it in their processes and programs, and increase efforts to help communities of Appalachia overcome this critical community infrastructure deficiency.

5.17 Welfare Dependency

While residents and officials express some frustration with the ARC, they view federal welfare policies with near universal contempt. Welfare abuse is rampant across the region and adversely impacts both the economy and the character of Appalachian communities. The percentage of residents receiving SSI income, for example, is above the national average in nine of the ten study counties. In some counties it is three or four times the national average.

The road into Pikeville, KY, demonstrates how welfare has evolved from an intended temporary lifeline into an industry of subsistence. The highway is lined with billboards that draws attention to the U.S. Social Security Administration's Supplemental Security Income (SSI) and promotes lawyers who can help qualify people for disability payments. For many families welfare has become a valid career choice. Local leaders report that achieving disability status is a rite of passage in some families and that parents routinely strive to have their children classified as disabled.

The conditions are common across most of the region. Only Avery County, NC, with its relatively affluent and educated population, can claim an SSI rate below the national average. In some cases, these inflated rates represent genuine disabilities and reflect the difficult nature of Appalachian coal mining and other traditional pursuits. For the most part, however, these rates are the product of a broken entitlement system that invites abuse and rewards dependence.

However, one must realize that the problems associated with welfare abuse are not confined to Appalachia and many solutions will be national in scope. Recent events are encouraging, however, and suggest that federal officials are addressing some of the most blatant forms of abuse. Long-term reforms are much needed, and must include strict and enforceable standards, limits for many recipients, and transitional assistance for families seeking independence.¹²⁴

¹²⁴ In May 2011 federal officials began an investigation of Judge David B. Daugherty, an administrative law judge in Huntington, WV, charged with reviewing SSI disability appeals. In the first half of 2011, Daugherty approved all 729 SSI appeal

5.18 Health Care

Health care services serve two vital roles in Appalachian communities. First and foremost, they provide essential care to residents. Additionally, these facilities serve a vital economic function. In isolated and economically distressed communities, local health care facilities are often one of the largest employers and, along with local schools, comprise the backbone of the local economy.

Most communities in this study have managed to maintain local health care access, often through determination and innovative business models. For example, Pendleton County's (WV) sliding scale clinic ranks among the most innovative and transferrable approaches to health care in this study. The clinic provides affordable health maintenance and preventive services to the rural community and even provides dental care. The clinic's impact is impressive. Pendleton County boasted some of the highest public health statistics in this study, despite being quite isolated and with no local hospital.

Such determined leadership and resourcefulness also helped Calhoun County's (WV) Minnie Hamilton Health Care Center open. While struggling to create a financially viable institution and recruit and retain qualified doctors, this center, like others in the region, is heavily dependent on government funds and faces an uncertain future. Proposed cuts and proposed national healthcare reforms could threaten rural healthcare facilities, leading to increased hardship, job loss, and declining public health.

Public health is a major issue in almost all study counties. Obesity, diabetes and heart disease are the top health concerns. Many of these diseases are tied to food and nutrition issues. Access to fresh food is a concern in some areas, such as Calhoun County, WV, but is being addressed in other communities. Morgan County, OH, and Johnson County, TN, are leaders in this respect. Johnson County's farmers' market not only creates new revenue sources for local producers, it also provides fresh food access for low-income consumers. Likewise, Morgan County's Chesterhill Produce Auction, developed with Ohio University, promotes economic development while improving access to local healthy foods.

Sexual health is also a serious concern. More than half of survey respondents reported teen pregnancy to be a frequent occurrence and another 40% state it happens sometimes. The problem is more pronounced in economically distressed areas, where 63% of survey participants found it to be a frequent occurrence. In non-distressed counties, in contrast, 40% of respondents reported frequent teen pregnancies.

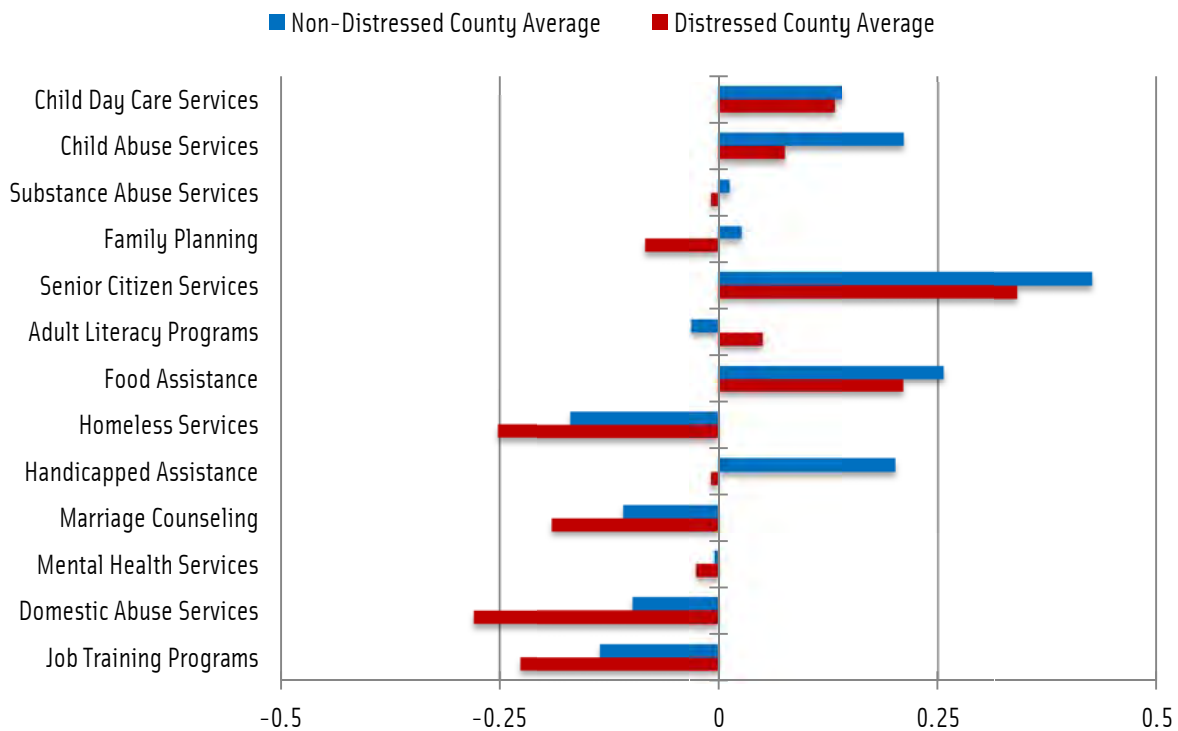
Substance abuse remains the biggest health concern and, along with job creation, is among the most pressing concerns in the region. An alarming 71% of survey participants identified substance abuse as a frequent problem in their community. The problem is common among both distressed and non-distressed counties, with the differences between them a negligible three percentage points.

applications brought before him and approved all but 4 cases brought before him in 2010. Daugherty also reviewed a disproportionate number of cases brought forth by Eric C. Conn, a flamboyant SSI attorney from Pike County, KY. Damian Paletta, "Disability Judge Put on Leave From Post," Wall Street Journal, May 27, 2011.

While street drugs remain a problem, abuse of prescription drugs appears to be the biggest problem. Leaders of project communities offered several explanations for the rise of this addiction. The availability of pain management drugs within families, over prescription by physicians, aggressive marketing by drug companies, and so-called Florida "pain clinics" were all cited as contributing factors. Cultural factors also play a role, including a persistent belief that legal, prescribed drugs cannot be addictive or harmful.

The impact of this addiction on the region's families and children is incalculable. The issue poses dire problems for Appalachian communities. County and local governments struggle to prosecute and incarcerate drug-related violators. The clean-up of meth lab sites is often a major expense to law enforcement, as are related costs, such as increased social services and health care expenditures. Such expenses draw resources away from other important areas, such as community development, road maintenance or education. Substance abuse is also a significant barrier to economic development, and it helps perpetuate negative perceptions associated with Appalachian communities. It also creates genuine problems among the local workforce, with one survey participant commenting that it is "very hard to find workers that are drug free."

Figure 5-11: Responses to the question, "Rate the performance of social services in your county."
 (Scoring: Poor=-1; Inadequate=-.5; Adequate=.5; Excellent=1)



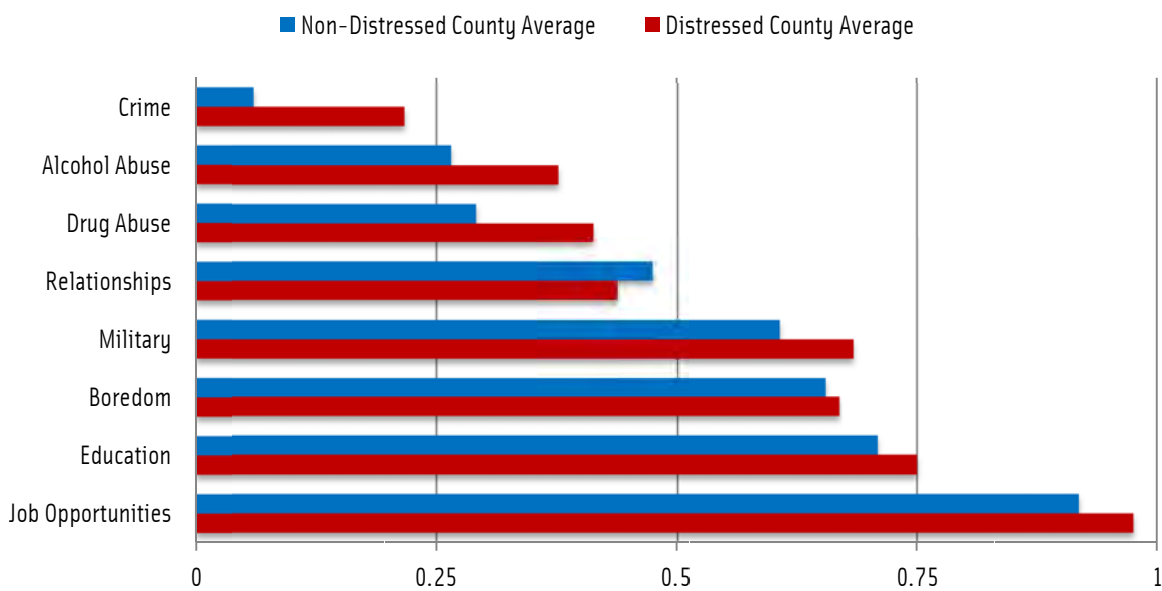
While problems are widespread, solutions seem to be elusive. Most leaders agree, however, that addiction treatment is preferable and more cost effective than the prosecution of offenders. The ability to provide treatment, however, is highly constrained by limited resources. Alternative sentencing, through special drug courts, is an important component of the rehabilitation process. This approach, as seen in Bell County, KY, should be replicated by other communities in the region.

5.19 Education

There is a strong correlation between educational attainment and a county's economic performance. Communities with good schools and high levels of attainment almost always perform better than those with lower-achieving educational systems. Of course, better performing counties can usually afford better school systems and generally attract residents with higher levels of attainment. The result is a "chicken and egg" scenario that plays out across the region and places the poorest counties at a significant competitive disadvantage.

Morgan County, OH, proved to be a notable exception to this trend. Though distressed, the county boasts some of the highest achievement and attainment statistics in this study. By embracing educational attainment as a key development strategy, the county has demonstrated significant leadership and has created a model for other distressed communities. Local leaders believe that promoting education creates a fertile environment for economic growth and will, in time, lead to local and sustained development.

Figure 5-12: Responses to the survey question, "How likely is each a factor in explaining why young adults may decide to leave your county?" (Very Unlikely=-2, Unlikely=-1, Unsure =0, Likely=1, Very Likely=2)



Morgan County is not alone, however, in improving local education levels. All ten study counties have, in fact, shown dramatic improvements in educational attainment over the past twenty years. Johnson County, TN, and Lawrence County, AL, for example, have each increased their percentage of residents with a high school diploma by about 20 percentage points. Yet, despite these improvements, these counties have not, for the most part, kept pace with improvements at the national level. Half of the study counties lag behind the 1990 national averages in terms of residents holding high school diplomas.

A number of factors have help prompt improvement in educational attainment. State policies play an important role. Laws that require a diploma in order to obtain a full driver's license, such as those in Tennessee, have played an important role in keeping youth in school. Equalization of school funding between urban and rural districts has also had a significant impact, allowing systems to decrease class sizes

and upgrade classroom facilities. Avery County's (NC) policy of placing suspended students in local workplaces is a creative and effective tool for combating truancy and expulsion.

Increasing work standards, such as those in the coal industry, also play an incentive in keeping youth in school. Few employers are now willing to hire workers without a diploma, and those who have not completed high school operate in such industries at a distinct disadvantage. Demographic factors also contribute to improving statistics, as older, poorly educated residents, whose matriculation predates mandatory school attendance laws, are now moving out of the workforce.

Perhaps the most troubling educational trend is the persistence of a de facto school segregation system in Mississippi. This anachronistic practice may discourage support for public schools and creates an atmosphere that discourages outside investment. These problems are exasperated by a significant Mennonite population who, citing religious objections, do not complete high school, many leaving school after the eighth grade. This approach, which appears to exist in other Mississippi counties as well, is detrimental to county attainment statistics and undermines any credible development strategy. It also helps explain the growing contrast between Alabama and Mississippi counties and why Mississippi, despite infrastructure investments, continues to lag behind other states in the region.

While high school graduation rates have improved throughout the region, attainment of college degrees remains well below national average. No county in this study met the national average for the percentage of college graduates, and all but one failed to even meet the nation's 1990 average. In part, this is due to the lack of opportunities for college graduates in many rural areas. With fewer opportunities, it is not surprising the case study communities do not attract or retain degreed residents.

Other factors contribute to this lack of attainment. Attachment to family, fear of leaving home, and a devaluation of education are cultural factors that deter youth from leaving home to attend college. Residents of many communities also report that students are often simply unprepared for college. This lack of preparedness is not just academic. In many cases students excel academically, but cannot adapt to the diverse and competitive culture found in many colleges and universities. High-achieving students could benefit from improved pre-college preparations, including transitional or mentoring programs.

Perhaps more encouraging is the rise of Associate degree holders. In many study counties, the percentage of residents holding Associates degrees has doubled since 1990 and community colleges have emerged as important workforce development institutions. While this growth is substantial, even more may be needed. Job training programs were identified by survey participants as the service most in need of improvement and over 80% of respondents found it to be a "very likely" or "somewhat likely" barrier to growth.

Beyond educating residents, academic institutions also play a vital role as community partners. Throughout this study, there was a high correlation between communities with academic partnerships and local success. In many cases, academic partners are a driving force in promoting and implementing local development efforts. While large public intuitions are important, it is also clear that small local institutions play a critical role. Pikeville University, in Pikeville, KY, and Waynesburg University, in Waynesburg, PA, for example, serve as community leaders in addressing important local needs.

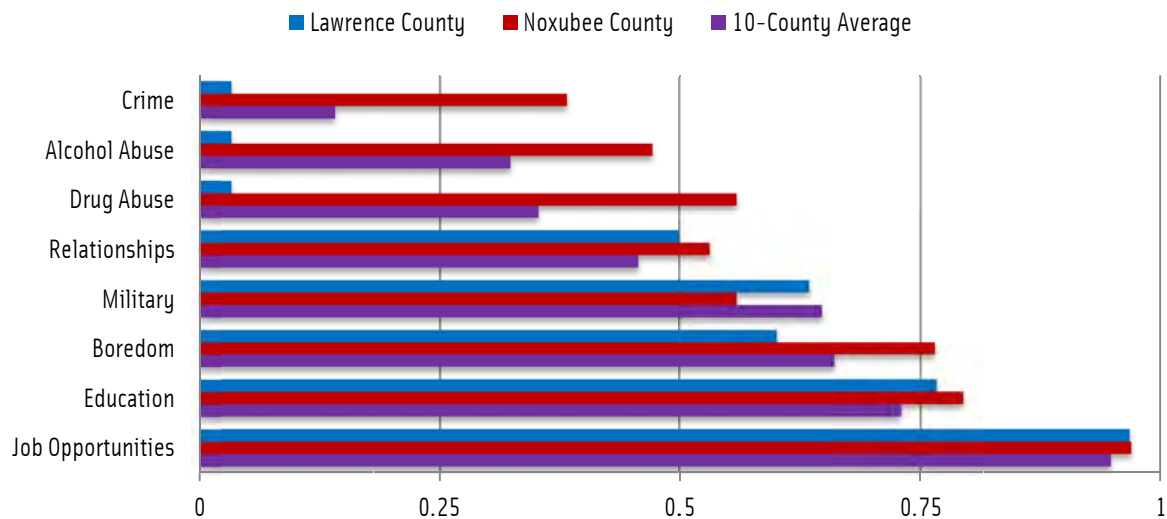
Local university extension services provide an important link between large research institutions and these Appalachian communities. Extension personnel find themselves in the unique position of being both overworked and underutilized. Chronically underfunded, extension personnel manage to perform a wide range of tasks to assist rural communities. In addition to agricultural assistance, they also promote nutrition, public health, and educational reform. They lack the funding and staff, however, to conduct many other needed tasks. Many are frustrated, for example, that they cannot play a larger role in community planning or large-scale development efforts. More could and should be done to leverage this network and take advantage of this local source of knowledge and expertise.

For many counties, advancements in educational attainment bring risks and benefits. Outmigration and the so-called “brain drain” are very real consequences of individual achievement. While some opportunities exist for college graduates in education and health care, others realize few prospects in their home county and must find employment elsewhere. The loss of these residents, often referred to as “the best and brightest,” has an important economic and psychological impact on the community. This outmigration robs the community of emerging leaders. At the same time, however, these concerns must be weighed against the fact that, while these young people do leave their home communities, they do find good jobs elsewhere, pay taxes, and raise families free from the welfare system or other publicly supported costs.

Of course, young people leave their home communities for reasons beyond work or education. While survey participants cited jobs as the main source of outmigration, military service, boredom, personal relationships, and substance abuse were also identified as contributing factors.

Significant outliers with this issue come from South subregion counties. As illustrated in Figure 5-13, Noxubee County, MS, listed crime and substance abuse issues as likely reasons for youth leaving their county, while its cohort, Lawrence County, AL, responded that crime and substance abuse were the least likely reasons. Each was well above and below, respectively, the study average.

Figure 5-13: Noxubee and Lawrence County responses to why young adults might decide to leave their county. (Not Likely=-5, Unsure=0, Likely=.5, Very Likely=1)



Local stakeholders and focus group participants were particularly adamant about the lack of recreational opportunities for young people. Survey participants agreed, with more than half finding youth programs to be inadequate or poor. Programs in distressed counties were rated considerably worse than those in non-distressed areas.

Sports are an important activity for many youth and play a significant role in the community. Residents of several communities, however, bemoaned the lack of non-sports activities for local youth. In many communities, youth have little to do except "cruise" around town or gather in parking lots. This lack of recreational activities not only contributes to outmigration, it also encourages substance abuse, vandalism, and truancy. A lack of resources, however, prevents many communities from developing youth programs.

Perhaps the best success story of youth retention in this study is in Pendleton County, WV. There, local service clubs that shared concerns about the dearth of recreational activities, banded together to construct a community bowling alley – a facility that is now a popular family destination. The effort is not only a case study in public recreation, but also a prime example of grassroots community leadership in action.

5.20 Social Capital

While the community survey was mostly designed to assess local capacities, services and economic activities, it also included questions to help evaluate social capital. Social capital is defined as "the norms and social relations embedded in the social structure of societies that enable people to coordinate action to achieve desired goals."¹²⁵ Simply put, social capital is the glue that binds communities together. Social capital is found in community groups, organizations, and efforts towards developing common goals.

Survey questions measured levels of community trust and cooperation, and assessed the strength of community institutions, such as churches and civic groups. As seen in Figure 5-14, results varied somewhat between subregions and according to economic status. In general, distressed counties in this study exhibited similar levels of social capital than non-distressed counties, with responses to each question within negligible range of each other. The only item in Figure 5-14 with a wider range of discrepancy than all the others could be explained as an indication of the distressed counties' overall lack of broadband infrastructure and usage rather than an actual indication of social capital.

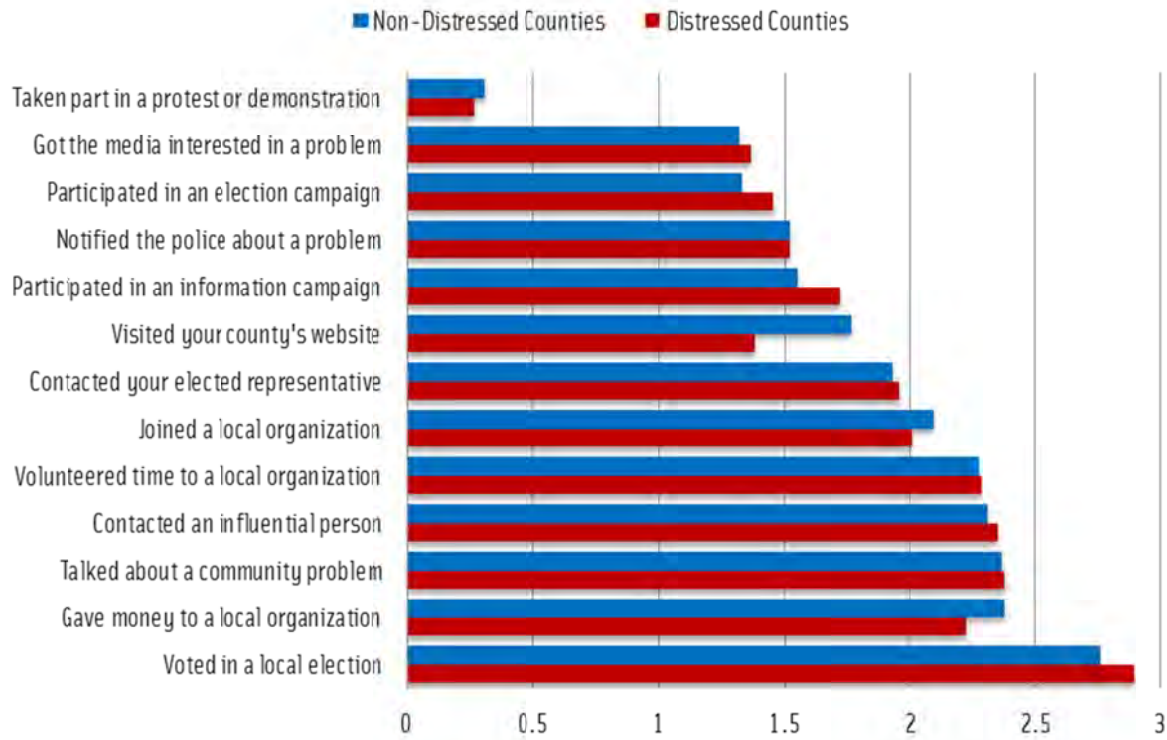
Most survey results are as one might expect, indicate the nature of rural lifestyles, perhaps reflective of the ability of local governments to fund various initiatives, such as animal shelters, and residents being able to support local arts groups, or having enough local demand for business cooperatives. Rural residents responded highest to local election participation, and reported high rates of volunteerism and support to community organizations.

Residents of non-distressed counties also exhibited more community pride. In general, however, most participants expressed some level of pride and satisfaction in their community. However, one standout was

¹²⁵ Christiaan. Grootaert, "Social Capital: the Missing Link?" *Social Capital Initiative, Working Paper No. 3, World Bank, 1998.*

Noxubee County, MS, where no survey participants agreed strongly that they were proud and satisfied with their community and nearly 30% of participants expressed some level of disagreement with that statement.

Figure 5-14: Survey responses to the question, "In the last three years, how often did you do the following community activities?" (0=Never, 1=Rarely, 2=Sometimes, 3=Frequently)



5.21 County Data and Assessment

Based on the results of this study, it is clear that econometric or quantitative data alone are insufficient in understanding the true economic landscape of Appalachia. Such data would tell us nothing of the anachronisms of Noxubee County, MS, the achievements of Morgan County, OH, or the isolation of Calhoun County, WV. Therefore, it is important that future evaluation of counties should include a broader range of indicators, including those related to education and public health. Likewise, discussions with a broad range of stakeholders proved beneficial. In some cases, residents contradicted statements made by public officials, while in other cases they contributed additional information that proved necessary to fully understand local conditions.

Residents and leaders from several counties also expressed a desire for more data about their respective counties. Many seemed surprised to see project statistics during site visits and expressed interest in more information, including basic demographic data. They also found comparisons with other Appalachian counties very helpful.

ARC's County Economic Status Classification System¹²⁶ proved confusing and controversial among many local stakeholders. Residents of many non-distressed counties felt the system did not accurately account for local conditions or the cost of living. Some could not understand how their county could not be considered distressed. Residents of distressed counties, in contrast, sometimes felt the classification served as an additional stigma attached to their community and had a demoralizing affect. While they were grateful for additional assistance, they were troubled at being singled out as a red county on a map.

In fact, the economic status classification system is a significant ARC initiative. This program succeeds in channeling resources and attention to the region's hardest-hit counties and helps the agency identify funding priorities. The five county status designations (distressed, at risk, transitional, competitive, and attainment) effectively demonstrate progress and success in the region. Yet, along with these benefits, these designations can also create problems at the local or regional level.

Likewise, non-distressed designations can create a false sense of security or success. This is especially true of "transitional" counties. All too often, transitional is seen as a sign of attainment. In reality, however, transitional status is often quite tenuous and counties struggle to not transition back to distress. Residents of Pendleton County, WV, for example, expressed surprise they were not distressed and felt the transitional title belied their genuine status.

The designations also mask important distinctions among distressed counties. For some counties, such as Morgan County, OH, distress seems to be temporary. These communities, while certainly experiencing hardship, do not look nor feel like areas in deep distress. Other perennially distressed communities, however, demonstrate deep levels of privation. The region's poorest areas, places like Calhoun County, WV, appear to be a world removed from the rest of the region and perhaps deserve additional recognition.

5.22 Industry Clusters Strategies and Economic Growth

In this study we broadly defined industry clusters as a group of businesses involved in the provision of raw materials, the production of intermediate goods and services, and the distribution of final products to consumer or other economic sectors. Thus, a task for local planners and policy makers is to determine how their counties are positioned to withstand challenging economic times in terms of sustained job growth, business retention or expansion, and real income or job earnings growth given the presence of certain industries. Some industries may positively contribute to local economic growth, but in other instances the presence of a given sector may be a draw on limited resources that could slow growth.

Take, for example, the recent natural gas boom in Appalachia. What may be difficult for local residents to understand is that while expectations of extraordinary revenues from natural gas extraction may continue in the short to medium-run, these "boom times" are rarely permanent. While unlikely in the near future, declines in the real price of energy could occur for a variety of reasons, leaving counties that have directed limited resources towards developing their natural gas resources, they may become at-risk in terms of

¹²⁶ <http://www.arc.gov/research/SourceandMethodologyCountyEconomicStatusFY2007FY2012.asp>

competitiveness in other basic economic sectors. Natural gas is also a non-renewable resource; when the marginal value of extraction is greater than the market price, extraction companies may relocate operations outside the county. This scenario is a classic example of "Dutch Disease," so-named by Corden and Neary,¹²⁷ as they describe the de-industrialization of the Netherlands following the deflation of a natural gas boom in that country.

This sequence of events is not new to Appalachia, as declining communities once dependent on logging, mining, or other extractive industries are typical throughout Appalachia, and neither are the steps communities can take to decrease the odds of spiraling into these types of non-renewable resource traps. As the construction of new hotels and the expansion of business support services expand in the wake of local efforts to develop extraction sector, counties prospering from the boom should also focus on developing local human and social capacity to position the community for a future when the excitement over the resource deposits has waned. Developing these so-called "soft" assets could provide individuals with the skills to increase their competitiveness in the absence of the boom and potentially increase the attractiveness of the community from the perspective of outside investment opportunities.

In our regression analysis, rural counties with both higher proportions of creative capital and richer entrepreneurial contexts (as measured by either the rate of self-employment or the number establishments per job) typically enjoy faster business establishment and job growth, and the beneficial effects of this synergy tends to increase with the prevalence of local outdoor amenities. And, while limited in scope in terms of the time period analyzed, the secondary data analysis of industry clustering shows some potential for certain economic sectors of the region (Appendix 7.5.2, for a detailed summary).

The growth potential stemming from the clusters analyzed in this study appear to be associated with high-tech sectors or involved in the production of intermediate goods. While this may be encouraging for counties with established economic bases suitable for attracting and retaining businesses which make up these sectors, caution should be used by local leaders in terms of picking "winner industries" in the hopes of becoming competitive with neighboring counties who have been successful in attracting businesses.

As with any clustered developed strategy, careful measurement of the local assets communities have in place must be put in perspective in terms of social and human capital, geography, and even local history. Without precedence for attracting certain industries, the odds of doing so in the future may be lower without the necessary infrastructure, talent, or connections to other economic centers of influence.

5.23 Conclusion

It is tempting to believe that there is a secret formula to economic recovery. All too often, even among development professionals, there is a herd mentality when it comes to development strategies. One county's success with a development approach is soon regarded as a universal best practice, as if every

¹²⁷ Corden W.M., Neary J.P. (1982). "Booming Sector and De-industrialization in a Small Open Economy." *The Economic Journal* 92 (December): 829-831.

county could be saved with the addition of a new road, an industrial park, an airport, a museum, a new road, a heritage tour, a new golf course, or whatever else that happened to have worked elsewhere in the past.

In reality, however, the development process is rarely this simple. As this study shows, all counties are unique and face complex obstacles and issues. This uniqueness and complexity undermines cookie-cutter solutions and makes silver-bullet strategies inherently implausible. In many cases, the distinctions between distressed and non-distressed counties are relatively minor. While deliberate strategies play an important role in the development process, successful counties often benefit from location and local resources, along with a little luck. Therefore, understanding local resources and assets is key to developing individualized development plans to grow local jobs and attract good employers.

In the end, people make the difference. Good leaders, good schools, and a skilled and healthy workforce are among the most important resources a community can hold. Even a small group of committed and wise residents can have a lasting impact on local development. Morgan County, OH, and Pendleton Counties, WV, for example, both are being energized and revitalized through the efforts of modest local organizations. Investments in people through things like better schools, leadership programs, modern technology tools, job training and other human development efforts are thus a vital element in any development strategy.

Although the ten counties in this study are quite diverse, the comparison of these Appalachian communities indicates a number of important trends that either promote or hinder economic growth. Among these common trends are the following:

- Extensive economic progress has been made in Appalachia. The region today is a world removed from the one Lyndon Johnson visited in 1964. Access and living standards are markedly improved, even in the poorest regions. Leaders of all ten counties acknowledge ARC's role in this progress, particularly the agency's contributions to road and infrastructure improvements.
- While traditional infrastructure has improved significantly, the region's digital infrastructure is a significant obstacle for many communities. Improvements in Internet access are necessary to promote economic growth. At the same time, they are also needed to reduce feelings of isolation and to ensure full participation in regional and national dialogs.
- Leadership plays a critical role in community success. Identification and development of new leaders is clearly a high priority for the region. It is also clear that, while leaders are important, it does not take a large number of them to have an impact. This report has shown examples in which a small but dedicated group of dedicated and well-informed residents can have a significant impact on a community's development.
- ARC projects and policies have had a significant impact on the economy of the region, particularly at the subregional or multi-county level. The impact of the agency's development strategies at the local level, however, is less clear. Many local development strategies are home-grown efforts, created without ARC support and maintained with local resources on a shoestring budget. Modest levels of assistance to help support these efforts could yield favorable results.

- Location plays a significant role in the development of a community and is an important factor in regional development strategies. These approaches, however, appear to be predicated on an assumption of affordable transportation. Rising fuels costs and flat wages threaten to undermine these strategies and may further increase unemployment and outmigration.
- Persistent cultural traits continue to serve as a barrier in many areas. Aversion to risk, fear of failure, and willful isolation serve to deter entrepreneurship and investment. Racism and antiquated racial divisions perpetuate an image of backwardness and help undermine significant investments in infrastructure.
- Many counties have benefitted from good planning and well developed and coordinated development strategies. Avery County's (NC) tourism strategy, Morgan County's (OH) knowledge-based approach, or Pike County's (KY) energy initiatives are examples of these plans. As often as not, however, counties move forward with no comprehensive strategy in place. While small piecemeal strategies are implemented, growth is often due more to luck than any intentional design. For many counties, the lesson is to discover gas reserves, get a military base, build a prison, or have rockets built in the next county over.
- Academic partnerships appear to be a common thread amongst well-performing counties. Communities with strong academic partners enjoy significant benefits and operate at a tremendous competitive advantage. Colleges and universities provide affordable expertise, legitimacy, and energetic and inexpensive student assistance. More should be done to encourage and promote such partnerships.
- There is no level playing field for the region's poorest and most isolated counties. Mechanisms designed to assist these counties, such as Local Development Districts, are inconsistent in the quality and breadth of their services. While most LDDs provide invaluable services, some appear to be remote or disengaged. These counties are further hampered by their lack of political clout, inadequate local technical capacity, and an inability to raise matching funds. The reality is clear - communities with resources continue to get resources; those without often do not.
- Coal continues to cast a heavy shadow over the entire region and dominates both the economy and the culture of the Central subregion. There, coal has been elevated from an industry to a way of life and the coal miner serves as an iconic folk hero. While this culture provides a sense of community cohesiveness, it also breeds a defensiveness that masks or suppresses many harsh realities. The future of eastern coal production is finite and these communities must prepare for the post-coal era in order to prevent an economic collapse.
- Health care is not only an important community service, it is also a major industry. In many low-resource communities health care is the second largest employer, just after the school system. The

status of this important industry is precarious and a source of major concern to local officials. Proposed reforms, funding cuts, and the inability to recruit and retain physicians and dentists threaten the stability of this essential economic sector, and lack of quality services is a detriment to growth.

- Substance abuse, welfare dependency, and racial issues continue to plague the region and serves as persistent barriers to economic progress. These issues also perpetuate negative stereotype of the region and distort the region's significant achievements. There are no simple solutions to the cultural issues. The closest thing to the proverbial "silver bullet" is education. Investments in education pay clear dividends and should be a priority throughout the region. Educational progress, however, is dependent on effective leadership, efficient administration, and the equitable distribution of resources.
- Outmigration is a regional reality and is likely to continue to plague remote and isolated areas. This sustained drain of people and resources makes it difficult, if not impossible, for these areas to grow. Advances in educational attainment and the rise of regional employment and commerce centers only serve to increase this slow exodus. Combating this trend, however, raises difficult questions. Should public resources be used to try to keep dying communities viable or should policy makers accept the reality of outmigration and attempt instead to mitigate negative consequences?

6 Recommendations

6.0 Introduction

The twelve recommendations that constitute the sections of this chapter are based on the findings from this project and reflect the ideas, issues, and innovations raised by case study communities. They reflect a wide range of approaches, issues, and policies, and are addressed, to a degree, to broad audiences. Some targeted recommendations, such as the adoption of social media or youth programs, are directed towards local communities. Other broader policy recommendations, such as those related to LDD assessments or broadband expansion, are intended for public agencies, including the ARC.

Section	
6.1	The ARC should encourage a dialog among the ten project counties and create opportunities for shared learning and the exchange of ideas.
6.2	Communities should embrace the Internet and social networking to promote tourism, build community, encourage local buying, and increase government services and transparency.
6.3	The ARC should evaluate the existing Local Development District network, assess its effectiveness, and develop new and uniform performance standards.
6.4	Supported by state and federal agencies, including the ARC, local and county governments should form partnerships with academic institutions.
6.5	Community organizations and agencies at all levels of government throughout Appalachia should make broadband access and adoption a priority.
6.6	Communities should develop youth leadership programs and encourage youth participation in entrepreneurship, college mentoring, and planning projects.
6.7	Small counties should consider shared government services and combined marketing and development programs.
6.8	ARC should assist counties with the redevelopment, repurposing, or adaptive reuse of vacant industrial sites and underutilized industrial parks.
6.9	Remote counties should focus on strategies that grow local jobs through entrepreneurship, education, and the leveraging of local assets.
6.10	As infrastructure improves, more resources should be devoted to education, leadership development, and entrepreneurship programs.
6.11	Communities and agencies, including ARC, should do more to promote diversity and racial tolerance throughout the region.
6.12	As Appalachian counties expand tourism, they must also devote resources to marketing, training, and the development of hospitality services.

6.1 The ARC should encourage dialog among the ten project counties and create opportunities for shared learning and the exchange of ideas.

The ten communities profiled as case studies in this report are, in many respects very representative of Appalachia as a whole. They represent the geographic, racial, and cultural diversity of the region. At the same time, they include important common issues. These include isolation, youth retention, substance abuse, and barriers to entrepreneurship. Emerging issues, such as hydrofracking and broadband access are also represented. As such, these communities, and their experiences, are important research subjects in the field of rural development.

From the outset, the ten project communities have expressed considerable interest in both the project outcomes and in the other project communities. Common questions from community members during site visits and focus group included, "What are the other communities like?" "Do they have these same problems?" and "What kinds of things are they doing?" Multiple communities suggested a conference to share information or a return site visit to discuss results.

Given the investment made in creating this network, collecting data, and establishing contacts, it would seem wasteful to end this research with this report. This network of communities, now established, has considerable value for a future ARC conference. These counties have much to teach each other, the entire Appalachian region, and beyond.

To this end, the ARC should host a meeting of community representatives to share information, recognize best practices, and explore future collaborative research and funding opportunities. The meeting should be conducted at a central location, perhaps a project community, and should include ARC representatives and members of the project team. Results of the conference could be compiled and shared with other communities throughout the region.

6.2 Communities should embrace the Internet and social networking to promote tourism, build community, encourage local buying, and increase government services and transparency.

Many communities in this study are embracing social media networks, such as Twitter and Facebook, to help promote economic and community development. Greene County, PA, Noxubee County, MA, and Avery County, NC, are among the counties that are now using these important new tools to grow businesses and attract visitors. Greene County officials have gone a step farther, also using Facebook to help connect county government with local residents.

The use of the communications tools are often free to use and can be inexpensive to maintain with the participation of the right community organizations. The benefits can be remarkable, efficiently communicating and raising awareness of local issues and community events. Also, while many rural residents may lack themselves the wired and wireless broadband infrastructure to fully benefit from social media, many of the same communities rely on tourism as their economic strategy. It is important for these communities to realize that many of the visitors they want to attract plan their vacations online and need a positive online presence.

As use of these networks become more common, the importance of maintaining a viable presence will grow. Yet, while use of social media creates significant opportunities, it also creates new risks. Negative comments, poor reviews, or a lack of site updates can damage public perception and discourage visitors. Poorly constructed or unmonitored pages can do more harm than good. As such, communities that enter the world of social networking must also commit to remain there.

Agencies, including the ARC, should provide training opportunities and technical assistance to help communities develop and manage social networking resources. Counties and communities should designate officials or staff to monitor and maintain these resources and establish processes and guidelines for their management and maintenance.

6.3 The ARC should evaluate the existing Local Development District network, assess its effectiveness, and develop new and uniform performance standards.

Local Development Districts (LDDs) are a vital component in ARC's development network. LDD personnel often serve as the agency's front line, working directly with communities to prepare proposals and develop projects. They also function as the eyes and ears of the region, reporting issues and needs to ARC representatives.

For the majority of communities in this study, local development districts are viewed as vital partners and allies in the development process. Most LDDs appear to perform admirably, even heroically to assist rural county with development issues. In some cases, however, three problems were noted with the LDD system:

1. Inconsistent services - While most LDDs provide support for planning and proposal development, others provide a wider or, at times, reduced range of services. Some, for example, manage senior care or youth programs. One county in this study reported that until recently, its LDD provided no grant development assistance.
2. Agency politicization - Development districts are usually governed by local elected officials and work closely with both state and federal agencies. As such, they are inherently political. In some cases, counties that lack political power, due to low population or party affiliation, may be a lower priority for LDD staff than larger or more politically powerful areas.
3. Lack of capacity in new or emerging areas - Most LDDs appear to be well equipped to develop proposals for traditional projects, such as road construction, community facilities, or water and sewer extensions. Some might benefit from additional training, however, in new or emerging funding areas, such as sustainability plans, energy projects, or telecommunications improvements.

It is difficult to gauge the scope or genuineness of these issues based on these ten case studies. Discussions with stakeholders and community leaders in some communities, however, raise important concerns. Given the significance of the LDD network, ARC should conduct an assessment of the LDD system to gauge its effectiveness, identify current issues, increase training opportunities, and develop uniform guidelines and performance standards.

6.4 Local and county governments should form strong partnerships with academic institutions.

One of the strongest findings from this study is the importance of academic partnerships in the economic and community development process. Communities that enjoy strong, equitable, and sustained partnerships with colleges and universities are more successful, more creative, and enjoy a higher capacity for development and governance.

These partnerships take many different forms. In some cases, as in Ohio, it involves assistance from major state universities. In other cases, as in Pike County, KY, and Greene County, KY, it is a historical partnership with a small local college. Community colleges are also becoming vital partners, especially in the realm of workforce development.

County extension offices are also a vital academic resource. Extension personnel, who live and work in their assigned counties, are often among the most knowledgeable about local conditions and resources. They are in a unique position to provide needed services, such as local planning efforts, but often lack the funding, time, or training to provide them.

Academic partnerships also reap benefits for the participating institutions. They provide important research, outreach, and service opportunities for faculty and students and help with the recruitment of students from distressed areas. Yet, while these partnerships are essential, they are becoming increasingly difficult to maintain. Budget cuts and conflicting demands threaten these relationships and make them difficult to maintain over time.

The ARC, state governments, and other agencies should support academic partnerships through dedicated programs and funding streams. ARC staff should also increase efforts to engage extension personnel and provide them with training opportunities in project development, planning, and community development.

6.5 Broadband infrastructure and utilization should be a priority of communities and all levels of government.

Broadband access is a top issue with the majority of study counties, especially in communities outside county seats and population centers. Rural communities lack the communications resources to bridge distances and minimize long-held feelings of isolation. Businesses are leaving, youth are underprepared for an increasingly connected workforce, and the general rural public is missing out on the security and conveniences that their more urban counterparts are experiencing. Time and time again people remarked that "a new kind of infrastructure is needed." Clearly, a digital divide exists in Appalachia.

The ARC continues to be integral in the building of public infrastructure that provides the important, and often critical, access to our rural communities. History will remember the transformative ARC investments in infrastructure and economic development throughout Appalachia. Now, Appalachia needs to catch-up with much of the country in broadband infrastructure, wired and mobile, and increase digital literacy.

Around the country, public-private partnership models have worked well in rural areas, and ConnectKentucky is lauded in this report. Realizing the public-private conundrum, recent strides in broadband deployment strategies from ARRA stimulus funding through the US Department of Commerce and the US Department of Agriculture placed a priority on public-private partnerships. The FCC's National Broadband Plan continued to show importance for middle and last mile infrastructure, and furthered the idea and importance of private service providers working more closely with public sector institutions.

Indeed, a new kind of infrastructure is needed. For sweeping change to occur, the ARC should take the lead in bringing together public institutions throughout Appalachia, such as fire departments, libraries, schools, and health clinics; and community stakeholders like chambers of commerce, industrial boards, community centers, and neighborhoods. All should be targeted as community anchor institutions in support of regional middle and last mile broadband initiatives.

The ARC can play a unique and important role in fostering organizational relationships throughout the Region focused on connecting anchor institutions for local and regional broadband strategies. The ARC, together with existing federal partners like the FCC, DOC/NTIA, USDA, and U.S. UCAN can uniquely engage community stakeholders and service providers to bring broadband and all its benefits to rural Appalachia.

Lastly, connectivity is not enough. For communities throughout Appalachia to realize the desired economic development outcomes promised through broadband, ARC should support existing efforts throughout the region to increase digital literacy skills and broadband adoption. The ARC should work with the established network of development districts, higher education outreach and university extension services, and broadband planning efforts throughout the Region. These organizations can work local and regional stakeholders to identify gaps in organized broadband efforts and initiate effective digital literacy and digital workforce programs. As with the Kentucky counties in this report, just because broadband is available, it doesn't mean people and communities are realizing economic benefits.

6.6 Communities should develop youth and youth leadership programs and encourage youth participation in entrepreneurship, college mentoring, and planning projects.

All ten case study communities identified youth as a major concern. Youth retention, schools, recreation programs, and substance abuse were among the issues that emerged from focus groups and discussions with local stakeholders. Communities also provided important examples of programs to assist youth and promote youth welfare.

These discussions also made it clear that youth play a vital role in developing local economies. Young people provide the workforce, energy, and innovation that allow communities to grow and prosper over time. They also play a role in maintaining the healthy and stable families essential for local prosperity. As such, programs that promote youth development and invest youth in community leadership are important in developing strong local economies.

Communities should invest in youth by creating leadership and entrepreneurship programs, such as those found in Bell and Morgan counties. They must also recognize young people's stake in the community and give them an active voice in planning and community development programs.

Communities should also work with regional colleges and universities to help prepare youth for the academic and social demands of college life through mentoring programs through middle and high school. In doing so, local officials recognize the importance of post-secondary education for young people, and helps school-age youth be mindful of higher education throughout their middle and high school years, ultimately providing rural youth a better chance at success once they move away to college.

6.7 Small counties should consider shared government services and combined marketing and development programs with neighboring counties.

The county unit is an important element in Appalachia's political history and the basis for many of ARC's data sets. Increasingly however, many Appalachian counties are becoming difficult to justify as administrative units. Many counties were formed centuries ago and reflect eighteenth century transportation constraints or outmoded security concerns. Others, created in mid-nineteenth century or later, are the result of long-past political battles over representation or slavery.

Today, few residents travel by horseback to register a deed and Native American uprisings are, thankfully, nonexistent. Many Appalachian communities, however, still exist in an administrative environment developed to address these past needs. The results are clusters of small remote counties that lack the population or tax base to support required services, leading to needless redundancies and inefficiencies.

In response to this issue, some states have considered county consolidation programs. Among Appalachian communities, however, this approach seems impractical and unfeasible. The loss of county status would likely devastate many viable towns and kill remaining businesses. Consolidations would probably also meet stiff political and community resistance, as many residents identify strongly with their county and local school identities.

Some case study communities show, however, the value of shared multi-county services. Avery County, NC, shares a library and other services with neighboring small counties, and Calhoun County, WV, shares economic and community development activities with neighboring Wirt County. Counties and public agencies, including ARC, should investigate the value of such shared services and help develop models and processes to assist communities with shared governance programs.

6.8 The ARC should assist counties with the redevelopment, repurposing, or adaptive reuse of vacant industrial sites and underutilized industrial parks.

Since the 1970s, counties across the region have invested significant resources in industrial infrastructure, including industrial parks and turnkey sites and structures. These sites, often incorporated into regional strategies, proved effective at creating jobs for many years. Since the 1990s, however, the industrial landscape of the region has changed. Globalization and increased energy costs have undermined this strategy, particularly in the most rural and remote areas.

As a result, these industrial sites have - in many cases - changed from assets to liabilities. Rural counties now find themselves burdened with the upkeep of empty structures designed to accommodate businesses that, in all likelihood, will never return. The costs associated with these structures drain dwindling local coffers and draw resources away from other critical growth areas, such as tourism development, job training, or entrepreneurship programs. These fiscal constraints also prevent local officials from redeveloping industrial sites or adapting them for current needs.

With modest assistance, communities can adapt these sites for other uses. By dividing or remodeling these structures communities could readily convert them into incubator space, vocational training centers, or even recreational facilities. Redevelopment could also increase the energy efficiency of these sites, making them more viable, more attractive to prospective tenants, or easier to sell or transfer ownership.

The ARC and other state or federal agencies should provide financial or technical support to assist with the redevelopment of vacant industrial sites in rural areas. They should also conduct additional research into this problem to identify best practices for the re-use of vacant sites in post-industrial Appalachia.

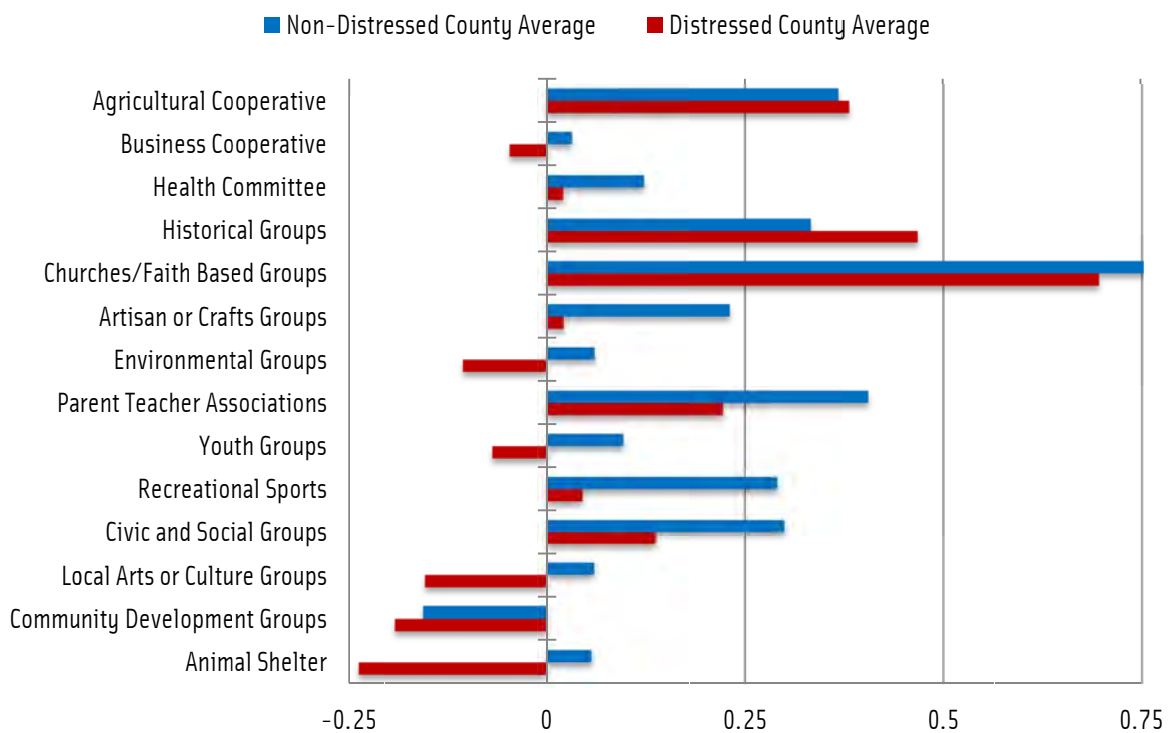
6.9 Small remote counties should focus on strategies that grow local jobs through entrepreneurship, education, and the leveraging of local assets.

For decades, regional development strategies have often relied on industrial development and attracting manufacturers to Appalachian communities. Yet, while this approach benefits larger or more urban areas, it appears to be less beneficial for small remote areas. These communities are less able to attract or retain manufacturing plants in today's global economy and often benefit little from regional growth.

Rather than try to attract outside employers, these communities may be better served by growing their own local businesses. Small communities can foster local growth by creating an environment that encourages business development through education, entrepreneurship, and asset-based growth strategies.

Local growth strategies should emphasize educational attainment through improved schools, support for local businesses, and assistance with new business development, all in attempt to leverage local human, natural, and cultural resources. Business incubators, small business loan programs, "buy local" campaigns, and inclusive planning processes should be included in these development strategies.

Figure 6-1: Responses to the question, "Rate the performance of community organizations your county?"
(Scoring: Poor=-1; Inadequate=-.5; Adequate=.5; Excellent=1)



6.10 As infrastructure improves, more resources should be devoted to education, leadership development, and entrepreneurship programs.

All of the case study communities have benefitted from improved infrastructure over the past half century. In some cases, such as Bell and Pike County, KY, these improvements are outright monumental. Today, water and roads are at worst, adequate and, in some cases, world class. Community facilities have also improved and are, for the most part, on par with those in any community in the nation.

While these investments have led to improvements in both income and the local quality of life, evidence shows that infrastructure alone cannot address the issues confronting rural Appalachian communities. As we continue to improve the "hardware" of Appalachia, we must also address important "software" issues.

These "software" issues include the educational and cultural barriers that continue to plague many communities. Aversion to risk, fear of failure, isolation, lack of broadband adoption and utilization, and poor leadership all remain significant obstacles to growth and prevent infrastructure investments from reaching their full potential.

As these physical "hardware" improvements reach completion, they should be accompanied by "software" reforms in education, leadership development, and entrepreneurial initiatives to help address these persistent and significant cultural issues.

6.11 Communities and agencies, including ARC, should do more to promote diversity and racial tolerance throughout the region.

Racial issues continue to plague many communities throughout the region and may play a role in deterring growth and investment. In some cases, as in Southern Appalachia, these issues are the result of age-old racial traditions and practices. In other regions, such as Central and North Central Appalachia, they result from long-held beliefs and a lack of contact and diversity.

Outmoded racial beliefs and policies undermine the region's competitiveness in an increasingly diverse business and tourism environment. Visitors, investors, and prospective residents represent a wide range of races, ethnicities, and belief systems. In order to grow and prosper, communities need to be welcoming and tolerant of this diverse business and professional landscape.

The ARC and other agencies should assist communities in addressing racial tolerance and improving regional diversity. Educational programs, public dialogs, and diversity training should be made available to rural communities, particularly those with small minority populations. Steps should also be taken to discourage de facto segregation, including the creation of incentives and disincentives for communities that continue to promote institutionalized segregation.

6.12 As Appalachian counties expand their tourism industries, they must also devote additional resources to marketing, training, and the development of hospitality services.

Almost every county in this study viewed tourism as an important component of their future development strategy. For some, such as Avery County, it is already a major industry. For others, it is growing in importance and scale. The growth of tourism, however, is often constrained by a lack of competitive services, poor awareness of local assets, and a lack of training among local providers.

This deficiency was made evident during many site visits. Project counties often had no visibility at state welcome centers, lodging and dining options were limited, and knowledge of local attractions was sometimes surprisingly low. Project staff encountered hotel clerks who could not recommend a local restaurant, waitresses who could not name a local attraction, and there was often a lack of signage related to important tourist sites.

Training opportunities in these fields are also limited. While young people in some communities often enjoy access to training or associate degree programs in industrial, construction, or health care trades, few have ready access to hospitality or culinary arts programs. There is not, for example, a single culinary arts training program in eastern Kentucky despite the growing emphasis on tourism in the region.

Even when available, business owners sometimes fail to take advantage of training programs. Communities should do more to persuade businesses to train workers, such as making participation mandatory for inclusion in local marketing materials and websites. Local businesses must also increase their awareness of social media and online review sites, and make efforts to address negative comments.

State and federal agencies, including ARC, should encourage the development of training programs and expand and promote existing programs. They should also identify existing best practices and expand marketing efforts through websites, social media, and visitor centers.

7 Appendix

7.1 Appendix A: Basic Technology Industry Clusters

Basic Chemicals

Petrochemical manufacturing
Plastics material and resin manufacturing
Other basic organic chemical manufacturing
Synthetic rubber manufacturing
Non-cellulosic organic fiber manufacturing
Adhesive manufacturing
Surface active agent manufacturing
Cellulosic organic fiber manufacturing
Other miscellaneous chemical product manufacturing
Custom compounding of purchased resins
Pesticide and other agricultural chemical manufacturing
Nitrogenous fertilizer manufacturing
Printing ink manufacturing
Industrial process variable instruments

Engine Equipment

Fluid power pump and motor manufacturing
Speed changers and mechanical power transmission equipment
Pump and pumping equipment manufacturing
Air and gas compressor manufacturing
Other engine equipment manufacturing
Metal valve manufacturing
Fluid power cylinder and actuator manufacturing
Measuring and dispensing pump manufacturing
Turbine and turbine generator set units manufacturing
Small arms manufacturing
Scales, balances, and miscellaneous general machinery
Power-driven hand tool manufacturing
Motor and generator manufacturing
Motor vehicle parts manufacturing
Welding and soldering equipment manufacturing
Military armored vehicles and tank parts manufacturing

Precision Instruments

Industrial process variable instruments
Watch, clock, and other measuring and controlling device manufacturing
Analytical laboratory instrument manufacturing
Automatic environmental control manufacturing
Optical instrument and lens manufacturing
Totalizing fluid meters and counting devices
Electricity and signal testing instruments
Relay and industrial control manufacturing

Computer and Electric Equipment

Computer storage device manufacturing
All other electronic component manufacturing
Other computer peripherals and manufacturing
Broadcast and wireless communications equipment
Electricity and signal testing instruments
Search, detection, and navigation instruments
Electronic computer manufacturing
Telephone apparatus manufacturing
Semiconductors and related device manufacturing
Computer terminal manufacturing
Irradiation apparatus manufacturing
Electron tube manufacturing
Electro-medical apparatus manufacturing

Pharmaceuticals

Polish and other sanitation good manufacturing
Toilet preparation manufacturing
Soap and other detergent manufacturing
Pharmaceutical and medicine manufacturing
Pesticide and other agricultural chemical manufacturing

Information Services

Data processing services
Other computer related services, including facilities management
Computer systems design services
Software publishers
Custom computer programming services
Information services
Telecommunications
Cable network and program distribution

Industrial Machinery and Distribution Equipment

Conveyor and conveying equipment manufacturing
Industrial truck, trailer, and stacker manufacturing
Mining machinery and equipment manufacturing
Construction machinery manufacturing
Elevator and moving stairway manufacturing
Overhead cranes, hoists, and monorail systems
Oil and gas field machinery and equipment
Packaging machinery manufacturing
Industrial process furnace and oven manufacturing
Railroad rolling stock manufacturing
Semiconductor machinery manufacturing
Electric power and specialty transformer manufacturing

Basic Technology Industry Clusters (continued)

Cable Manufacturing

Other communication and energy wire manufacturing
Fiber optic cable manufacturing
Paint and coating manufacturing
Wiring device manufacturing
Switchgear and switchboard apparatus manufacturing

Fertilizer and Chemical Products

Fertilizer, mixing only, manufacturing
Other basic inorganic chemical manufacturing
Explosives manufacturing
Synthetic dye and pigment manufacturing
Carbon and graphite product manufacturing
Industrial gas manufacturing
Nitrogenous fertilizer manufacturing
Petrochemical manufacturing

Aerospace

Aircraft manufacturing
Other aircraft parts and equipment
Propulsion units and parts for space vehicle and guided missiles
Aircraft engine and engine parts manufacturing
Guided missile and space vehicle manufacturing

Motor Vehicles

Miscellaneous electrical equipment manufacturing
Automobile and light truck manufacturing
Heavy duty truck manufacturing
Motor vehicle parts manufacturing
Audio and video equipment manufacturing

Wiring Devices and Switches

Switchgear and switchboard apparatus manufacturing
Wiring and device manufacturing

Other communications equipment manufacturing
Motor and generator manufacturing
Architectural and engineering services

Medical Instruments and Optics

Surgical and medical instrument manufacturing
Ophthalmic goods manufacturing
Photographic film and chemical manufacturing
Surgical appliance and supplies manufacturing
Primary battery manufacturing
Dental equipment and supplies manufacturing
Storage battery manufacturing
Other ordnance and accessories manufacturing
Photographic and photocopying equipment manufacturing
Audio and video equipment manufacturing
Ammunition manufacturing
Miscellaneous electrical equipment manufacturing

Architectural and Engineering

Architectural and engineering services
Other communications equipment manufacturing
Environmental and other technical consulting services
Management consulting services
Specialized design services

Technical and Research Services

Environmental and other technical consulting services
Management consulting services
Scientific research and development services
Specialized design services
Other ambulatory health care services
Architectural and engineering services
Custom computer programming services

Note: Industry clusters are based on Feser and Isserman (2009) value chain analysis of the 1997 United States Benchmark Input/Output accounts. A complete set of cross references between I/O sector identification with NAICS listings are available at www.ace.illinois.edu/Reap/Feser_051015_BenchmarkValueChain.xls.

7.2 Appendix B: Statistical Methods and Procedures

7.2.1 Growth Regression Model

The log-linear model used in this analysis is:

$$\ln(y_{2007}/y_{2000}) = \alpha \cdot \ln y_{2000} + \beta_0 + \beta_1 \cdot percomm_i + \beta_2 \cdot empri + \beta_3 \cdot perestab20_i + \beta_4 \cdot perestab100_i + \beta_5 \cdot peragmi_i + \beta_6 \cdot permanf_i + \beta_7 \cdot \Delta pop_{9000}_i + \beta_8 \cdot \Delta emp_{9000}_i + \beta_9 \cdot \Delta estab_{9000}_i + \beta_{10} \cdot perblk_i + \beta_{11} \cdot peramind_i + \beta_{12} \cdot perhsp_i + \beta_{13} \cdot perpop2064_i + \beta_{14} \cdot perpop65up_i + \beta_{15} \cdot perhsdip_i + \beta_{16} \cdot percc_i + \beta_{17} \cdot amenity_i + \beta_{18} \cdot landpub_i + \beta_{19} \cdot interstate_i + \beta_{20} \cdot adhs_i + u_i, \quad i = 1 \text{ to } 1,070 \text{ counties,}$$

which is summarized hereon as, $\Delta y = Z\beta + u$. Dummy variables were used to identify ARC (*arc*) and non-ARC counties (*nonarc*), and interacted with the local determinants which allows slopes and intercepts to vary between ARC and non-ARC counties;

$$\Delta y = \delta_{nonarc} \cdot nonarc + nonarc \cdot Z \cdot \beta_{nonarc} + \delta_{arc} \cdot arc + arc \cdot Z \cdot \beta_{arc} + u. \quad ^{128}$$

The matrix Z contains the local determinants and industry concentration indices but omits a constant. McGranahan, Wojan, and Lambert (2010) applied the same method in their analysis of creative capital and entrepreneurship on growth. The convention allows us to focus on ARC counties specifically, acknowledging that these counties are connected to a wider regional economy by allowing for geographic dependence between ARC and non-ARC counties through the spatial process models developed below.

7.2.2 Spatial Process Model

The SAR model with autoregressive disturbances of order (1,1) (ARAR) (Anselin and Florax, 1995) contains a spatially lagged endogenous variable (Wy) and spatially dependent disturbances; $y = \rho Wy + X\beta + \varepsilon$, $\varepsilon = \lambda W\varepsilon + u$, u is independently and identically distributed with mean zero and covariance Ω , and W is a matrix defining relationships between spatial units. The reduced form of the ARAR model is $y = A^{-1}X\beta + A^{-1}B^{-1}u$, with (respectively) $A = (I - \rho W)$ lag autoregressive and $B = (I - \lambda W)$ error autocorrelation spatial filters. The inverted matrices A^{-1} and B^{-1} are spatial multipliers that relay feedback/feed-forward effects of shocks between locations, thereby distinguishing this class of models from other econometric models.

When the weights are contiguity matrices or groups of observations bounded by some distance metric, local shocks are transmitted to all other locations with the intensity of the shocks decreasing over space. We use two weight matrices to hypothesize about neighborhood dependencies. The first is a queen contiguity matrix (W_1), and the second is an inverse distance matrix that only considers adjacent counties (W_2). The distances are the network road distances between county seats. Both matrices are row standardized. The average number of neighbors was 5.56, with 5,951 nonzero links.

¹²⁸ In the absence of spatial dependence, the growth/local determinant relationships could be estimated separately for ARC and non-ARC counties, where δ_{arc} and δ_{nonarc} would be the overall slopes and intercepts for each group.

7.2.3 Endogenous Growth Regime Specification

Let $G(\gamma, c, \nu)$ be an autocatalytic function (Schabenberger and Pierce, 2002), such as the logistic function; $[1 + \exp(-\gamma[\nu - c]/\sigma_\nu)]^{-1}$, with (respectively) slope and location parameters γ and c , and a transition variable ν . The parameters are approximately scale-neutral when they are normalized by the standard deviation of the transition variable (σ_ν). The adjustment model with regime-switching potential is,

$$\Delta y = G \cdot Z\beta_1 + (1 - G) \cdot Z\beta_2 + u_i$$

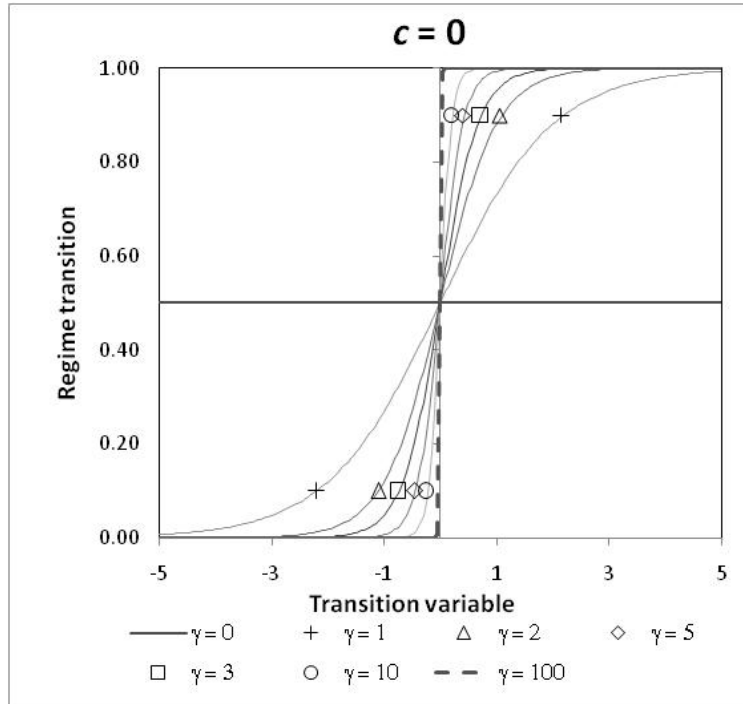
which can be rearranged as:

$$\Delta y = Z\beta + G \cdot Z\delta + u_i$$

with the interaction between the transition function and the covariates permitting nonlinear parameter variation among spatial units. As γ increases, spatial units are sorted into more distinct groups. Intermediate values of γ identify spatial units along a continuum that are "in transition" as determined by the transition variable, ν . The parameter c is a location parameter that determines the inflection point on the regime splitting curve according to the transition variable (Figure 1). For larger values of γ (e.g., >100), spatial units split into distinct regimes with the interaction coefficients (δ) the difference from the reference group mean response to local determinants (the β 's) and the alternative regime. Rejection of the null hypothesis $\delta = 0$ suggests a nonlinear relationship between local covariates and business establishment growth. For large values of γ , (3) behaves "as if" counties were categorized using dummy variables (e.g., "metropolitan" or "nonmetropolitan"), and then interacted with every explanatory variable. There are no regimes when $\delta = 0$ and the effects of the covariates are geographically invariant. Thus, when there are regimes, the location-specific marginal effects (ME) of the basic STAR model are $ME_i = \beta + G_i\delta$.

Of particular importance is the choice of the transition variable (ν), which is hypothesized to drive the sorting process. Ideally, ν confers information about connectivity between spatial units and is also exogenous. We use the road network distance of a county to the nearest metropolitan county (defined by the Office of Management and Budget [OMB]) as the transition variable (*distmet*). A number of alternative transition variables are conceivable (e.g., Pedo [2010]), but using the distance to the nearest metropolitan county is appealing to the extent that (1) the geographic effects of trade costs on business establishment growth are hypothesized to be nonlinear, possibly causing bifurcations in regional growth trajectories (e.g., Fujita and Thisse, 2002), and (2) that the urban-rural hierarchy is important with respect to firm location decisions and economic growth (Partridge et al., 2008b; Partridge and Rickman, 2008; Lambert and McNamara 2009).

Figure 7-1: Example of the transition function $G(\gamma, c, \nu)$, and different levels of smoothing parameter, γ . Note that two distinct regimes emerge when $\gamma = 100$, whereas no regimes are identified when $\gamma = 0$. The parameter c functions as a location parameter; the inflection of the transition function is centered on c .



7.2.4 Growth Regimes and Spatial Process Models

The basic smooth transition model is more complex when *local spillovers* between counties and *regime splitting* potential are possible. For example, combining the STAR with the ARAR spatial process model suggests the following reduced form specification (the “null” model);

$$\text{ARAR-STAR: } \Delta y = A^{-1} Z\beta + A^{-1} G \cdot Z\delta + A^{-1} B^{-1} u \rightarrow \Delta y = \rho W\Delta y + Z\beta + G \cdot Z\delta + B^{-1} u.$$

This specification suggests the following hypotheses with respect to a baseline a-spatial model that could be estimated using Ordinary Least Squares (OLS) or the usual spatial error (SEM) and spatial lag (SAR) process models:

- H1: $\rho = 0, \lambda = 0, \delta = 0$ (a-spatial model, suggesting estimation with OLS),
- H2: $\rho = 0, \lambda = 0, \delta \neq 0$ (STAR model with geographic heterogeneity),
- H3: $\rho = 0, \lambda \neq 0, \delta \neq 0$ (error process model with geographic heterogeneity, SEM-STAR),
- H4: $\rho \neq 0, \lambda = 0, \delta \neq 0$ (lag process model with geographic heterogeneity, SAR-STAR),
- H5: $\rho \neq 0, \lambda \neq 0, \delta \neq 0$ (lag-error process model with geographic heterogeneity, ARAR-STAR),

Appendix

H6: $\rho \neq 0, \lambda \neq 0, \delta = 0$ (lag-error process model, ARAR),

H7: $\rho \neq 0, \lambda = 0, \delta = 0$ (spatial lag process model, SAR),

H8: $\rho = 0, \lambda \neq 0, \delta = 0$ (spatial error process model, SEM).

Each specification has implications with respect to estimating marginal effects. Under H2 and H3, the *ceteris paribus* effect of an additional unit increase in local determinant k is;

$$ME_i^k = \beta_k + G_i \cdot \delta_k.$$

Evidence supporting models H4 and H5 suggest more complicated marginal effects because of the interaction between neighbors through the spatial lag multiplier;

$$ME_i^k = (\beta_k + G_i \cdot \delta_k)(1 - \rho)^{-1},$$

with the indirect effects,

$$ME_i^k = \frac{\rho}{1-\rho} (\beta_k + G_i \cdot \delta_k).$$

In this application, a "general-to-specific" approach (Hendry, 2006; Larch and Walde 2008) is considered to specify each model according to the contiguity and inverse distance specifications. Hypotheses about spatial nonlinearity, lag, error, ARAR processes and their combinations (H2 – H8) are tested by calculating Wald statistics based on the heteroskedastic-robust covariance matrix of the full ARAR-STAR model.

T-statistics are used to test the null hypothesis that the local determinants had no effect on growth. We choose a Type-I error rate of 5%. The squared correlation coefficient was used a measure of fit because of the nonlinear instrumental variables approach used to estimate the models. Estimation procedures are summarized in Xu and Lambert (2011).

7.3 Appendix C: County Cohort Selection

The matching method is summarized as follows. For example, if X contains the local economic indicators in 1960, then WX is the weighted average of the local economic indicators in neighboring counties. The Mahalanobis distance metric (d) takes the form:

$$d(Z_T, Z_C) = (Z_T - Z_C)' \Sigma^{-1} (Z_T - Z_C),$$

where T represents a target county (i.e., those selected based on the cut-off criteria defined above), C represents a candidate matching county, and $Z = [X, WX]$ is the vector of selection variables, and Σ is the covariance of possible matching counties. The term WX are the averages of these values for neighboring counties (also measured in 1960) were included in the algorithm.

Averages were weighted by the proportion of common border shared between counties discounted for the distance between county centroids. This weighting scheme (W) is often referred to as Cliff-Ord type array (Cliff and Ord, 1981). This additional information incorporates geographic information into the matching criteria as potential "spillovers" between neighbors.

7.4 Appendix D: Regression Model Specification

The Wald tests specifying each regression model are reported in Table 7.4.5. The test statistics are based on the null model in Appendix B, "Growth Regimes and Spatial Process Models."

7.4.1 Table: Model Specification for Change in Employment and Per Capita Income Measures

	Δemp_{0007}	$\Delta estabs_{0007}$	Δpci_{0007}
<i>W_{ID}</i> , Inverse Network Distance			
Spatial lag AR, $H_0: \rho = 0$	14.10	0.59	9.82
Spatial error AR, $H_0: \lambda = 0$	0.06	5.80	3.42
Joint lag/error, $H_0: \rho = \lambda = 0$	22.02	12.77	46.29
Spatial nonlinearity, $H_0: \delta = 0$	194.15	276.73	171.12
Joint nonlinearity/lag/error, $H_0: \delta = \rho = \lambda = 0$ /3	223.27	287.31	264.57
<i>W_{Queen}</i> , Order 1			
Spatial lag AR, $H_0: \rho = 0$	12.33	1.17	11.43
Spatial error AR, $H_0: \lambda = 0$	0.19	6.17	3.57
Joint lag/error, $H_0: \rho = \lambda = 0$	18.64	17.13	46.77
Spatial nonlinearity, $H_0: \delta = 0$	197.85	276.27	162.57
Joint nonlinearity/lag/error, $H_0: \delta = \rho = \lambda = 0$	215.18	291.14	263.39

Notes:

1/ 5% critical value = 3.84

2/ 5% critical value = 5.99

3/ 5% critical value = 7.81.

7.4.2 Summary Statistics of Growth Indicators, Technology Cluster Location Quotients, and Local Determinants.

Variable	Description	Source	Mean	Std. Dev.
lnempdens	Log employment density, 2000	REIS ¹²⁹	3.694	1.236
lnpci	Log real per capita income, 2000	REIS	13.533	1.359
distmet	Distance to metro county (miles), 1993	ESRI ¹³⁰	33.466	28.860
percomm00	% Commute outside county, 2000	Census 2000	39.963	17.226
emprrt	Employment rate, 2000	REIS	95.394	1.580
lnmedhhi	Median HH Income, 2000	Census 2000	10.444	0.246
pctest20	% of firms with < 20 employees, 2000	CBP ¹³¹	88.030	3.120
pctest100	% of firms with > 100 employees, 2000	CBP	2.193	1.034
peragmi	% Emp. Ag & Mining, 2000	REIS	3.816	3.266
permanf	% Emp. Manufact., 2000	REIS	20.455	8.672
Δpop9000	Population, 1990-2000	REIS	0.103	0.140
Δemp9000	Employment, 1990-2000	REIS	0.122	0.125
Δestabs9000	Establishments, 1990-2000	CBP	0.181	0.182
perblk	% Black, 2000	Census 2000	16.885	18.809
peramind	% American Indian, 2000	Census 2000	0.428	1.689
perhsp	% Hispanic, 2000	Census 2000	2.220	3.030
pctpop2064	% Pop. 20-64 years old, 2000	Census 2000	58.717	2.428
c00p65ov	% Pop. 64+ years old, 2000	Census 2000	13.434	2.875
hsdip	% high school diploma, 2000	Census 2000	73.099	8.600
pctcc	% Pop. Creative occupations, 2000	ERS ¹³²	16.941	6.101
amenity	Natural amenity index (index)	ERS	-0.200	1.178
pubpct	% Public land	US Forest Service	7.410	11.367
Interstate	Interstate (1 = yes)	ESRI	0.469	
adhs	Appalachian Development Highway (1 = yes)	ARC ¹³³	0.136	

¹²⁹ REIS = Regional Economic Information System (<http://www.bea.gov/bea/regional/reis>)

¹³⁰ ESRI = Environmental Systems Research Institute (<http://www.esri.com/data/free-data>)

¹³¹ CBP = County Business Patterns (<http://www.census.gov/epcd/cbp>)

¹³² ERS = Economic Research Service (<http://www.ers.usda.gov/data>)

¹³³ ARC = Appalachian Regional Commission (<http://www.arc.gov/research/RegionalDataandResearch.asp>)

Table (continued): Summary Statistics of Growth Indicators, Technology Cluster Location Quotients, and Local Determinants.

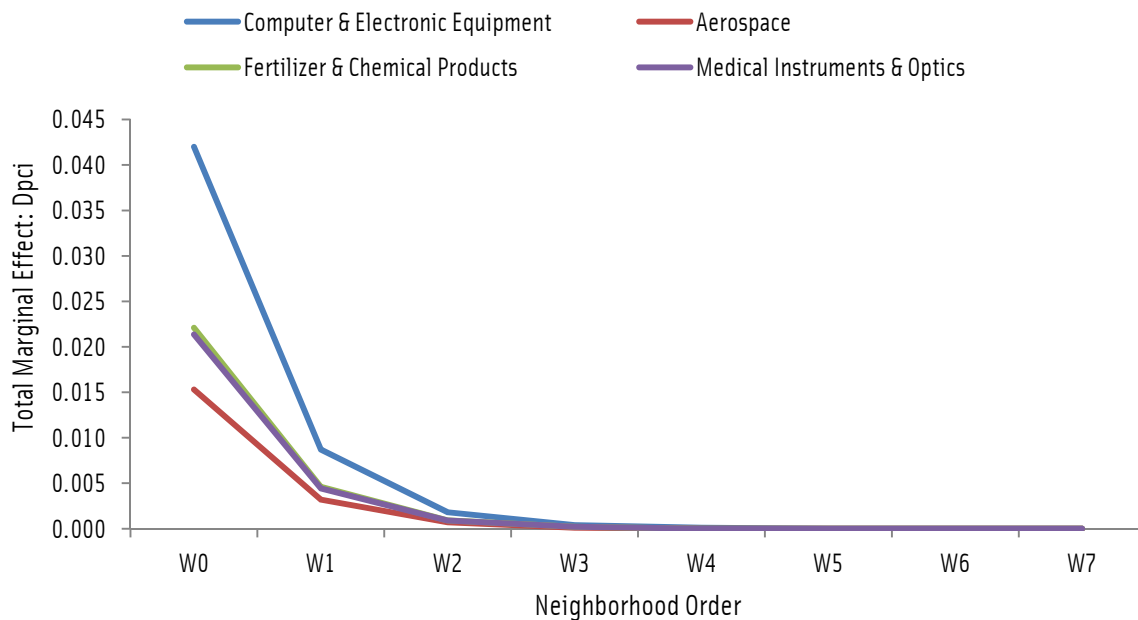
CI1	Basic Chemicals	0.360	0.684
CI2	Precision Instruments	0.156	0.379
CI3	Engine Equipment	0.357	0.476
CI4	Computer & Electronic Equipment	0.143	0.273
CI5	Information Services	0.180	0.139
CI6	Pharmaceuticals	0.192	0.839
CI7	Fertilizer & Chemical Products	0.524	1.279
CI8	Industrial Machinery & Distribution Equipment	0.324	0.655
CI9	Aerospace	0.155	0.605
CI10	Medical Instruments & Optics	0.201	0.407
CI11	Motor Vehicles	0.364	2.041
CI12	Wiring Devices & Switches	0.288	0.979
CI13	Technical & Research Services	0.185	0.128
CI14	Cable Manufacturing	0.275	1.024
CI15	Architectural & Engineering Services	0.206	0.144

7.5 Appendix E: Marginal Effects of Technology Clusters

Discussion of the marginal effects focuses on the technology clusters that were significantly correlated with jobs and income growth. Four sets of parameters correspond with the direct and total effects of the technology clusters on income growth for each regime. The association between job growth and the basic chemicals (BCH) and wiring and device switch (WDS) technology clusters was nonlinear, with a clearly defined switching point of 20 miles beyond urban core counties. Own-county job growth was also positively correlated with employment growth in neighboring counties.

The BCH cluster was associated with a modest decrease in jobs in counties located within 20 miles of metropolitan counties, but farther away from urban areas the relationship changed. For example, a 10% increase in the BCH concentration index in relatively remote counties corresponded with (on average) a 0.004% change in jobs, but in metropolitan counties, the relationship was negative, with a corresponding elasticity of -0.02% . The association between job growth and the WDS cluster was effectively zero moving away from metropolitan to more remote counties. Per capita income in counties where the computer and electronic equipment (CEE) production and manufacturing cluster was relatively concentrated grew, on average, more slowly in counties located within 44 miles of a metropolitan county. A 10% change in the CEE index corresponded with a relatively small decrease in per capita income (-0.09%) in ARC counties located near urban core areas. The relationship was nonlinear, with the association becoming positive beyond the 44 mile threshold. For ARC counties located farthest from metropolitan counties, the marginal effect was $-0.06 + [G = 1] * 0.11$; a 10% change in the CEE concentration index corresponded with a relatively small but positive increase (0.01%) in per capita income in more remote counties.

Figure 7-2: Marginal effect partitioning of selected technology clusters with income growth in the ARC region, 2000-2007.



Partitioning the marginal effects suggests that expansion of this cluster in relatively remote counties could be associated with modest increases in income in neighboring counties up to order 2 (e.g., the “2-deep” ring of counties surrounding a given county, Figure 7-2). Nonlinear trends were also evident in the aerospace (AER), medical and optical instruments (MED), and fertilizer and chemical technology clusters (FCH), except the trends were reversed. All else equal, these sectors were correlated with modest increases in income in urban areas. At the 44-mile threshold, the concentration indices associated with the AER and MED clusters were negatively correlated with income growth in more remote counties. The association between the FCH product cluster and income growth was always positive, but the magnitude of the association decreased moving away from metropolitan core counties. Partitioned marginal effects associated with these clusters with respect to income growth approached zero beyond neighborhood order 2, which is mainly due to the modest lag autocorrelation coefficient of $\rho = 0.21$.

7.5.2 LISA Groupings, Technology Clusters, and Regional Impact Multipliers

In the empirical application, we focus on the results of the per capita income model to motivate the geographic targeting of industry clusters. The analysis considers the FCH, AER, MED, and CEE technology clusters and their relationship with income growth. The elasticity of income growth with respect to a percentage change in the cluster concentration indices were calculated for each county and mapped (Figure 7-4). Local Moran's I statistics were estimated to analyze the spatial distribution of the elasticities. The resulting LISAs identify the “core” counties of a technology cluster (Figure 7-5). Given a set of core counties, peripheral counties were appended to the core group based on the marginal effect partition as in Figure 1, which delineate an “impact region” (Figure 7-4). Each technology cluster is associated with a different set of core-periphery counties, but impact regions may overlap.

As an example, a selected impact region of the CEE technology cluster corresponds with the cities of Beckley and Braxton, West Virginia. Beckley has undergone extraordinary growth since the last decade, and is a regional hub for more than 200,000 residents. The region is also known for its local artisans, and historical and scenic tourism. Interestingly, Braxton is the population weighted center of the state located in the mountain lake region of the state. The impact region selected for the aerospace, medical/optical, and fertilizer/chemical technology clusters all include the Knoxville, Tennessee, greater metropolitan statistical area, including Oak Ridge National Laboratory, and the counties included in the medical/optical technology cluster extend into eastern and central North Carolina, specifically the Raleigh-Durham-Chapel Hill research triangle. The core counties associated with the fertilizer/chemical technology cluster appear correlated with the interstate and the ADHS highway systems, suggesting the importance of transportation costs associated with production and marketing of fertilizer and chemical products.

We estimate the Type SAM (social accounting matrix) regional impact multipliers associated with each impact region and technology cluster separately using IMPLAN software (Figure 7-3). Type SAM multipliers take into account the expenditures resulting from increased household income and inter-institutional transfers resulting from the economic activity. Therefore, Type SAM multipliers assume that as final demand changes, incomes increase along with inter-institutional transfers. Increased spending by people and institutions leads to increase demand from local industries. The average of the location quotient inside

the CEE and MED impact regions was less than one, but at least one county inside each impact region had a location quotient greater than one, suggesting that these counties may be the leaders within the group with respect to concentration. Type SAM (Social Accounting Matrix) multipliers were estimated for the each impact region (Figure 7-3). For example, a \$1 million increase in final demand for products manufactured by the computer and electronic equipment cluster in the impact region results in a \$0.55 million increase in total economic activity in the area, which is associated with 1.83 new jobs for each job created in the CEE cluster of these counties.

Figure 7-3: Regional impact multipliers associated with the identified "core and periphery" clusters

Cluster	Cluster Core	Cluster Core and Periphery				
	LQ (Mean)	LQ (Mean)	LQ (Max)	Type SAM Multiplier		
				Total Value Added	Total Employment	Total Output
Computer and Electronic Equipment	0.257	0.116	1.896	1.988	2.825	1.552
Aerospace	1.137	0.243	3.828	2.060	2.537	1.537
Fertilizer and Chemical Products	1.785	0.358	5.804	2.306	3.641	1.746
Medical Instruments and Optics	0.715	0.368	5.027	2.023	2.556	1.704
Employment, Output, and Earnings						
Cluster	Employment	Total Industry Output*	Total Value Added*	Wage Earnings*		
Computer and Electronic Equipment	303	111.21	34.36	12.69		
Aerospace	1181	412.57	113.58	82.16		
Fertilizer and Chemical Products	4912	2388.93	731.72	379.97		
Medical Instruments and Optics	9454	2638.93	960.03	519.78		

*=in Millions of dollars.

Regional multipliers for each technology cluster estimated using 2006 IMPLAN data;

Figure 7-4: Spatial distribution of estimated elasticities for $\Delta pcr_{2000-2007}$ (breaks are quintiles).

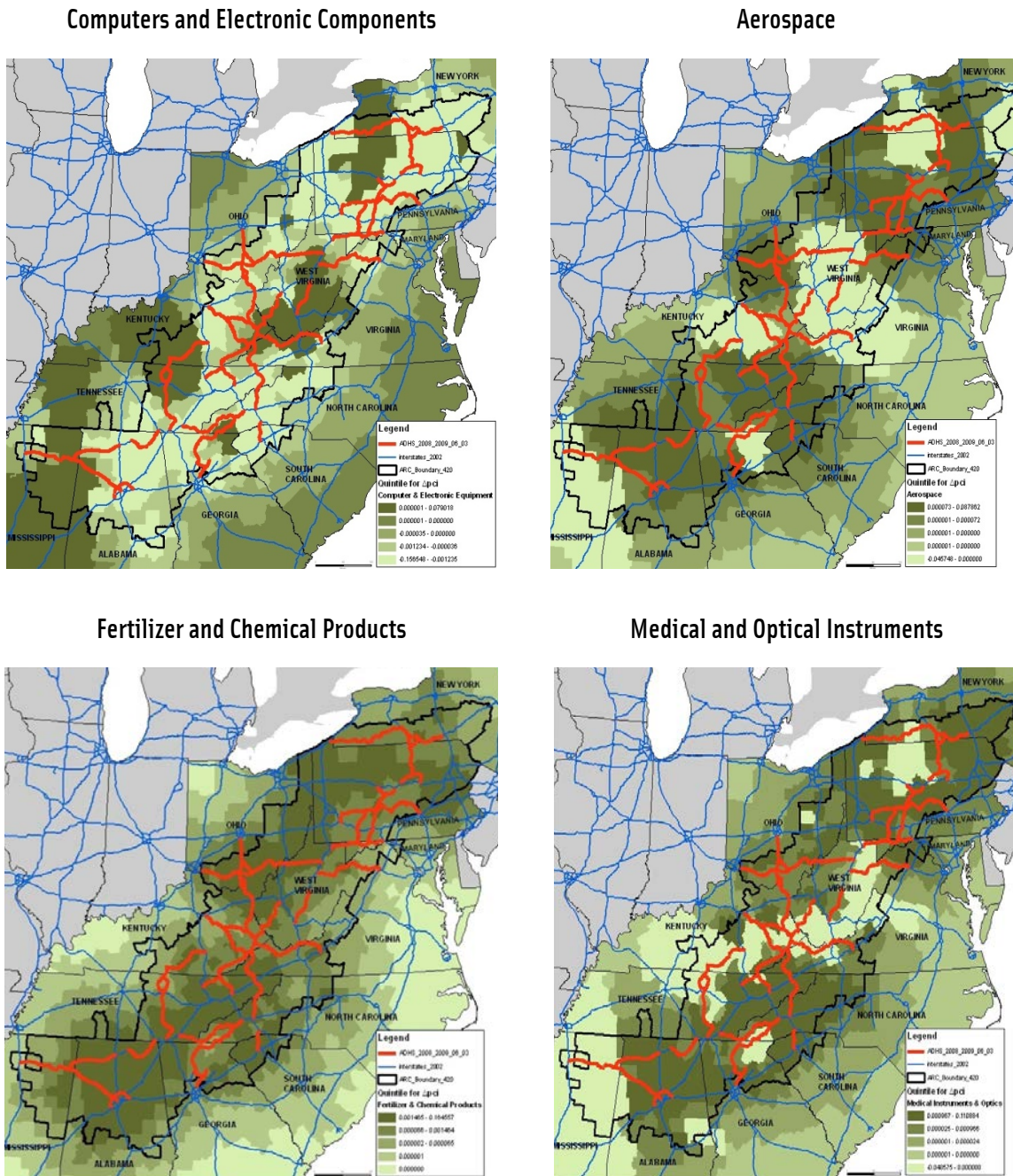
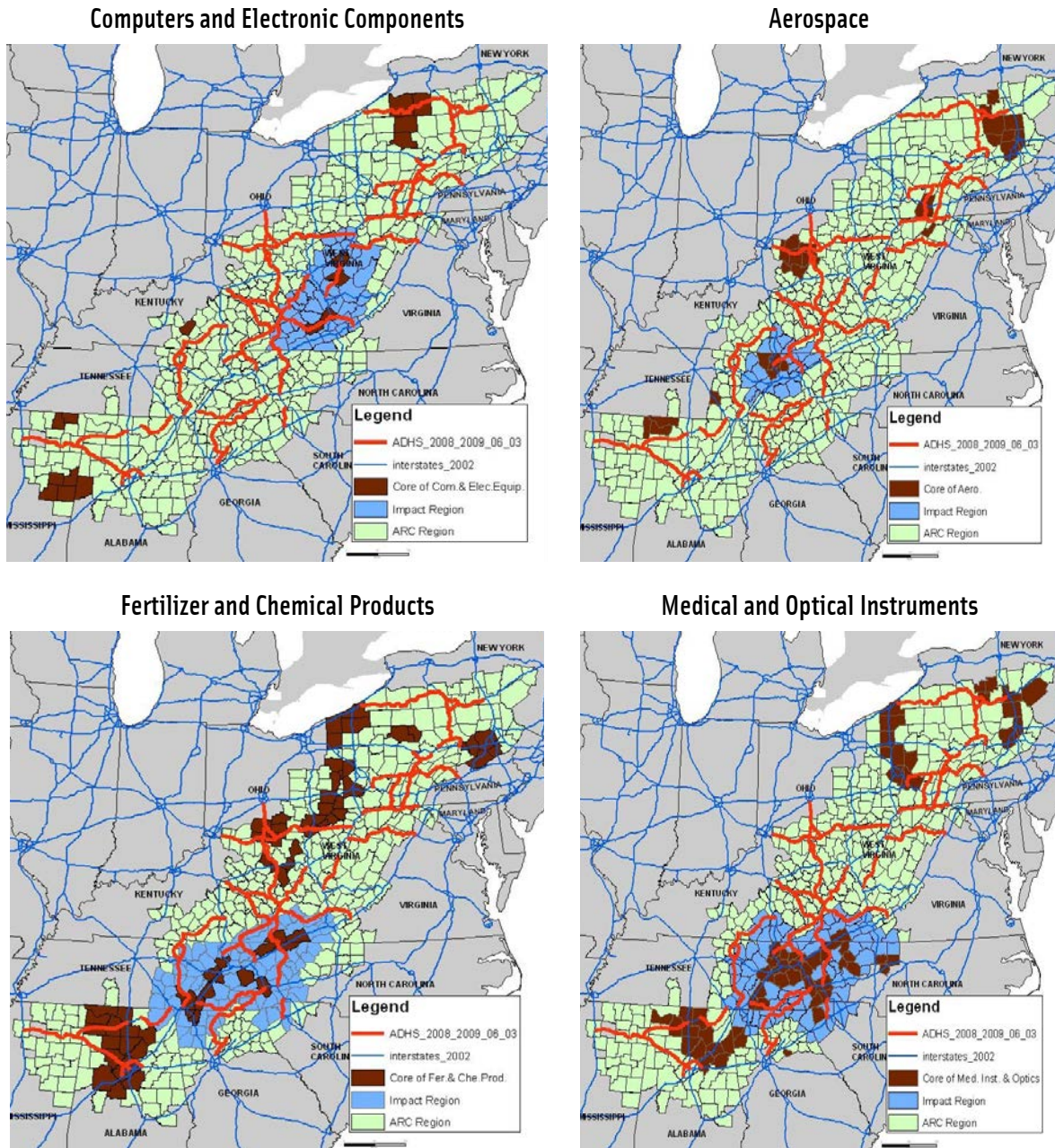


Figure 7-5: "Core and periphery" counties of selected impact regions. Core counties are those where industry cluster elasticities formed significant LISA clusters corresponding with the positive orthant of global Moran's I scatter plot. Periphery counties include the second order neighbors surrounding the core counties, as described in Figure 7-2.





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