



## Land of Sky Regional Council, North Carolina West Next Generation Network Broadband Initiative

**Researcher:** Chris Danis

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### Interviewees

Erica Anderson, Director of Economic and Community Development, Land of Sky Regional Council  
Jody Call, Chief Technology Officer, Wilkes Communications and RiverStreet Networks, Wilkesboro, NC  
John Connet, City Manager, Hendersonville, NC  
Keith Conover, NC Office of Information Technology-Broadband Infrastructure Office (BIO)  
Hunter Goosmann, Executive Director/CEO, ERC, Asheville, NC  
Larry B. Harris, Chair, Board of Delegates, Land of Sky Regional Council and Alderman, Town of Black Mountain  
Edward Katz, Professor, Associate Provost, Dean of University Programs, and Chief Research Officer, University of North Carolina at Asheville  
Timothy Love, Director, Intergovernmental Projects, Buncombe County, NC  
Stagg Newman, Principal, Pisgah Communications Consulting, Asheville, NC  
Sara Nichols, Regional Planner, Land of Sky Regional Council  
William Sederburg, Chair, WestNGN Initiative  
Christopher Todd, Town Manager, Laurel Park, NC

### Background

- Land of Sky Regional Council is a multi-county, local government, planning and development organization serving a region comprising four counties – Buncombe, Henderson, Madison and Transylvania – and 15 municipalities in western North Carolina. The region has a population of approximately 432,000. Haywood County to the west, although part of the adjoining Southwestern Commission Council of Governments, lies within the Asheville-Brevard Metropolitan area and is included in the Land of Sky Regional Council's *Community Economic Development Strategy*.
- Buncombe County, the largest with a 2018 estimated population of 259,103, and anchored by the City of Asheville (population 92,452), is forecasted be the location of most of future growth in the region. Henderson County is the second largest, with a population of 116,748; its major city is Hendersonville (population 14,107). Madison and Transylvania counties are smaller and more rural, with predominately white and aging populations. They have the highest poverty rates, 15.2 percent and 17.6 percent respectively, while Buncombe and Henderson have rates below the national average.
- Much of the region's vitality can be attributed to its unique geographic setting. Its topography ranges from fertile valleys to rugged mountains. The region is framed by the Blue Ridge Mountains on the east and the Great Smoky Mountains on the north and west. The highway network includes the intersection of Interstates 40 and 26, US 25, US 70, US 19/23, and other major thoroughfares. The Asheville-Buncombe County area serves as the job center for eastern Tennessee and northern South Carolina. Many residents commute to work at the BMW plant in Greenville, SC and the associated automotive technology manufacturing cluster. The region has developed a diversified



economic base with large and small firms manufacturing products such as medical devices, data storage systems, fine papers, automotive techniques and electrical equipment. At the same time, a traditional crafts industry has grown and gained national attention. The region serves as an important commercial, medical and educational center for an area which stretches from Piedmont North Carolina into the Tennessee Valley, and from the Virginia border into South Carolina and Georgia. The region houses one university, five colleges, and two community colleges and technical schools.

- The focus of the case study is on the opportunities and challenges associated in bringing broadband access to rural western North Carolina and on the role of the Land of Sky Regional Council as a regional catalyst, coordinator, and collaborator.

## Organization

- The Land of Sky Regional Council was established in 1966 with the mission to “provide creative regional solutions to relevant and emerging issues in Buncombe, Henderson, Madison and Transylvania counties while providing a standard of excellence in the delivery of federal, state, and regional services for member communities.” The Regional Council is designated as a Local Development District by the Appalachian Regional Council and as an Economic Development District by the U.S. Economic Development Administration giving access to community, economic development, and infrastructure funds from the Federal government. It also serves as an Area Agency on Aging, a Metropolitan Planning Organization, and a Transportation Regional Planning Organization, as well as staffing the Mountain Area Workforce Development Board and Waste Reduction Partners.
- West Next Generation Network (WestNGN) Broadband is a regional consortium, with no formal legal status, staffed by the Land of Sky Regional Council. It has a Coordinating Committee comprising representatives of the Chamber, Universities (NC State, UNC Asheville, Lenoir-Rhyne U.), ERC Broadband, and Land of Sky Regional Council, and a Steering Committee of the Regional Council and six local government representatives, for which the Council acts a secretariat and fiscal agent.
- It was formed in 2016 following a meeting hosted by the University of North Carolina at Asheville to learn of the North Carolina Next Generation Network, a regional initiative focused on stimulating the department of broadband networks in the Research Triangle and Piedmont regions. WestNGN’s goal is to “encourage private sector providers to deliver ultra-fast bandwidth at highly affordable prices to ensure [the] region remains competitive and at the forefront of developing the next-generation applications essential to all sectors of the economy.” Initially it was focused on the urban areas of Buncombe, Haywood, and Henderson Counties and led by the cities of Asheville and Hendersonville, and four smaller towns. Collaborative partners included University of North Carolina-Asheville, the Education and Research Consortium of the Western North Carolinas (ERC), North Carolina State University, Asheville Chamber of Commerce, Lenoir-Rhyne University, and the Land of Sky Regional Council.

## Context

- Land of Sky Regional Council’s role in broadband is shaped by both Federal and state regulatory policies. The Federal Communications Commission is an independent U.S. government agency overseen by Congress that regulates interstate and international communications by radio, television, wire, satellite, and cable in all 50 states. 2019 saw a series of announcements from the FCC on proposals to invest in the expansion of broadband in unserved rural areas. These included a proposal to establish as \$20.4 billion Rural Digital Opportunity Fund, which among other things, will make more homes and businesses eligible for support, raise standards for minimum download and



upload speeds, and be technology-neutral opening up opportunities for all types of providers. Other measures reforms to the Universal Service Fund to strengthen and expand the nation's broadband communications systems, improvements to data collection and mapping to better identify coverage gaps, and streamlining rules and regulations to accelerate deployment.

- The State of North Carolina does not currently allow local governments to provide for or regulate broadband service, unlike sewer or water services which are treated as public utilities. As a result, county and municipal governments have avoided inserting themselves in broadband issues or including broadband communications as part of the infrastructure/utility component of their comprehensive plans. Moreover, the entities that normally deliver broadband services, such as data and internet service providers, telephone membership corporations, cable and satellite television, or commercial mobile radio service (including cell phones and pagers) are not regulated by the North Carolina Utilities Commission. Thus, there is no unified regulatory oversight of broadband, no public access to data about broadband rates and utility infrastructure, and no central policy-making body to lobby for broadband inclusion other than the state legislature.
- The development of new broadband infrastructure is therefore based on perceived market return. Typically, densely populated urban areas and some wealthy rural communities attract broadband providers, as do certain public entities such as schools who are connected due to state policy. Other residents and businesses are bypassed by broadband providers.
- The State Broadband Plan, *Connecting North Carolina*, commissioned by the General Assembly in 2015 and prepared by the State Broadband Infrastructure Office, identified the nub of the challenge in the state. Although North Carolina's broadband *deployment* is above the national average of 93 percent and continues to grow, lower deployment rates are to be found in areas of low population density. These estimates are based on Federal Communications Commission mapping which is generally seen to overestimate coverage and availability.
- At the same time, North Carolina has one the nation's lowest broadband *adoption* rates at 16 percent. Adoption is particularly low among low-income households, primarily because of the cost or affordability of service, the perceived or actual costs of computers and laptops, and low levels of digital literacy. The plan addresses availability and adoption in relation to K-12 education, economic development, telehealth, and public safety.
- The Land of Sky Regional Council's 2015-2019 Comprehensive Economic Development Strategy included strategies that will "promote regional collaboration for stronger networks between rural and urban areas" and establish a regional broadband task force to identify gaps in broadband service

## Collaboration

- As noted above, WestNGN is a regional consortium of private and nonprofit organizations, local governments, and universities. Lacking the regulatory power to compel service, the Land of Sky Regional Council through WestNGN has adopted the approach of building public-private partnerships to attract investment to address deployment and adoption issues in the region. A 2017 document, *Request for Negotiation for Strategic Alliance Partnership for Next Generation Broadband Services*, prepared by WestNGN spelled out the terms of such an approach. The municipal members are taking action to make investment by service providers more attractive by reducing the cost of providing services, streamlining bureaucratic requirements, offering where possible access to public funding, and helping to promote broadband adoption. Private sector partners are expected to bear all the costs for expanded internet services, including design, engineering, construction, equipment and insurance. The municipal partners will not charge for access to their assets and infrastructure



and while not committed to provide funds for the construction, maintenance, and operation of the network note that grants may be available from other sources to help some communities.

- One of the original collaborating partners was the Education and Research Consortium of Western Carolina (ERC). ERC is a nonprofit organization, founded in 1997, which provides fiber-based network services to education, healthcare, government, and economic development institutions and agencies in western North Carolina. It began with a government-initiated project with regional colleges to assist communication infrastructure for education, community and non-profit entities in the region. Subsequently it received three rounds of Federal funding, some of it matched by the GoldenLEAF Foundation's Rural Broadband Initiative (GLRBI).
- GLRBI provided 1,300 miles of new, middle-mile fiber to 69 counties through a \$24 million grant to MCNC, a nonprofit statewide education and research network providing broadband services and support to school districts, higher education campuses and academic research institutions across North Carolina. ERC, through a subcontract from MCNC, added 100 miles to its network in western North Carolina. Completed in 2013, ERC's extension connected and served over 50 community anchor institutions, including educational institutions, local government facilities, hospitals, healthcare agencies, libraries and more in Buncombe, Madison, Avery, Yancey, McDowell and Mitchell counties.
- Land of Sky Regional Council and ERC jointly prepared a successful submission for funding from the Appalachian Regional Commission to create a regional broadband deployment plan, including analyses of rural areas not currently being served by WestNGN and a compilation of community profiles.
- One outcome of WestNGN's activities to stimulate interest in broadband expansion (through the Request for Negotiation) has been the entry into the market of RiverStreet Networks, a subsidiary of Wilkes Telephone Membership Corporation. RiverStreet Networks is based in Wilkesboro, a small town about 100 miles northeast of Asheville. It is a communications service provider with about 25,000 broadband users across Wilkes County and beyond. In pursuit of its mission to bring high speed internet to rural areas, it uses a variety of infrastructure approaches, from fiber-to-home, DSL, cables, to fixed wireless, recognizing that although fiber is the best connectivity option, it is very expensive and not currently the best way to serve unserved and underserved in low density areas. RiverStreet Networks is therefore exploring fixed wireless using cellphone towers, state, county or city owned towers, water towers, and grain silos at agricultural locations.
- RiverStreet Networks recently entered into a long-term partnership with the North Carolina Electric Membership Corporation (NCEMC), one of the largest generation and transmission electric cooperatives in the nation, providing electricity to its 26 member cooperatives. The rationale for this partnership is to utilize the NCEMC's statewide loop of fiber optic infrastructure that connects its substations to expand high-speed internet access to unserved and underserved rural communities across the state. NCEMC has about 1.2 million customers across North Carolina of which 700,000 are located within the 17 counties RiverStreet is targeting. Joe Brannan, NCEMC's Chief Executive Officer noted, "From a utility standpoint, broadband technologies benefit cooperative members by allowing them to better manage their home energy use, and they will make cooperative distribution systems more dynamic, flexible and efficient. Not only that, this deployment could also bring economic development, education and healthcare opportunities – by leveraging existing assets – to the parts of our state in most critical need of such services."
- In 2019, Land of Sky Regional Council has been preparing broadband deployment plans with four counties and six municipalities to assist them with understanding and educating their communities about broadband infrastructure and costs. They have been able to draw on technical support from the university, service providers, and the state as well as political support from the counties and



municipalities. These plans provide a roadmap for building a regional broadband market that includes incumbents such as Spectrum and AT&T, who are mostly in the urban areas of Asheville and Hendersonville, as well as the rural cooperatives and non-profits. These providers are already working together in the region with WestNGN contributing its local knowledge and relationships. The ability to facilitate rural broadband in the region builds upon the trust the Regional Council has built in the community over time, the dedication of champions from the universities and the community, and recognition from funders, such as the Appalachian Regional Commission that the Regional Council is a reputable partner and lead entity for the region.

### **Rural-Urban Relationships**

- The Land of Sky region is in the heart of the Southern Appalachians. As noted in the *2015-2019 Comprehensive Economic Development Strategy*, the regional economy is “rooted in the abundant natural and cultural resources of the region. The rich quality of life is often listed as the number one reason many businesses expand, locate, or develop here. The mountain vistas are the backdrop for the communities, crafts, music, and diverse heritage of the people in the region. A strong regional economy builds on the strengths of these local communities and creates resilient economies, critical to long-term growth and financial stability for families.” This statement of connection and interdependence will be tested as by the year 2040, the region’s population is expected to grow by over 40 percent adding 176,000 people mainly to Asheville and the counties of Buncombe and Henderson.
- The newest service requests are coming from Homeowner Associations (HOA) who are reaching out to Spectrum and AT&T as a group to bring broadband services to their communities, often located at the urban-rural interface. They increase property value and provide stay at home workers and second homeowners with the level of service they need or are accustomed to. Due to the growing age-restricted residential upscale developments in the region, these HOA’s now offer possible rural broadband connection points in the regional infrastructure system. They are willing to pay for a connection to an area that may be cost prohibitive to any single homeowner but as a group cost-sharing may be a realistic opportunity.
- The role of Land of Sky Regional Council is critical to bridging rural-urban connections in the region. The local governments in the region have adopted a regional perspective on broadband services, recognizing that the market if left to itself would favor investments in the Asheville area to the detriment of the rest of the region. The Regional Council reached out to private and nonprofit partners that had a demonstrated commitment to and experience of working on broadband deployment, and encouraging them in turn to partner with the incumbent providers to ensure a regionwide approach.

### **Equity**

- The dual challenges of deployment and adoption identified in the state broadband plan are central to considerations of equity, both in terms of geography and income. Deployment of broadband services in rugged mountain terrain and across sparsely populated farm and forestlands raise construction and unit costs and limit the use of newer technologies such as fiber optics. Low adoption levels, particularly among low-income populations, is partly a function of affordability of both hardware and broadband services, and partly a limited understanding of the usefulness of broadband access. The combination of these forces increases the so-called digital divide between rural and urban, and between higher and lower income populations.



- One of the more serious impacts of this divide is highlighted in a 2019 report the North Carolina Broadband Infrastructure Office, *The Homework Gap in North Carolina: A Pilot Study of K-12 Households*. A survey of 115 school districts finds that 10 percent of respondents reported not having internet access at home, and 67 percent of those cited cost as the primary reason. The lower the respondent's income and education levels, the less likely they were to have broadband access. Most respondents without broadband access also do not own a desktop, laptop or tablet.
- Meanwhile, the report noted that school districts, schools, and teachers increasingly use digital resources and tools in and outside the classroom to supplement or replace their traditional teaching methods. For those without home access or digital devices, the Homework Gap results in digital inequities that prevent those students from participating at the same levels as their peers. The survey showed that students without broadband access completed their homework at someone else's home, in a restaurant, or at a public library.
- Interviews in the Land of Sky region revealed that every child in Buncombe County schools, as part of a statewide educational program, has been provided either a Chromebook or I-Pad. Some families will drive into town and work in the McDonald's parking lot in their car to do their homework. Others will take advantage of the wireless school bus parked in their community for connecting to the internet. Schools, libraries, firehouses and municipal buildings are opening to assist homework work groups. Some will even take advantage of laundromats to work on homework or connect to the internet. Downtown Hendersonville provides free Wi-Fi service and the police station is opening a training room with free Wi-Fi connection and snacks for families.
- Although the term 'equity' was rarely used in interviews or in documentation, disparities between growing, more prosperous, more dense urban markets and less economically active, poorer, and less dense rural markets was the focus of the key players in broadband services. The Regional Council, the State Broadband Infrastructure Office, RiverStreet Networks, ERC, and the North Carolina Electric Membership Corporation have all expressed their commitment to addressing the deployment and adoption gaps in the region. The lack of meaningful policy structures at the Federal and state level, which would treat broadband as a regulated utility and as right equivalent to electricity, means that making progress on equitable deployment and adoption will remain a substantial challenge.
- According to Public Knowledge<sup>1</sup>, a national nonprofit focused on communications issues, 31 percent of rural Americans do not have access to high-speed broadband compared to just 4 percent of urban Americans, and 27 percent of people of color in rural areas are unserved. Public Knowledge call on Congress and the FCC to address issues of affordability and transparency through accurate data on the demographic composition of people not being served by high-speed broadband services.

## Commentary

- In any discussion about rural-urban relationships, invariably broadband communications are mentioned both in terms of the so-called digital divide and their potential to allow rural communities and businesses to participate in all the social and economic opportunities that connectivity can offer. The policy context directly influences results on the ground. North Carolina both benefits from Federal investments in broadband and is constrained by Federal (FCC) policy that determines broadband communications as not being a utility that must be available to all households and businesses. The state of North Carolina prevents local governments from intervening in broadband markets either through regulation or direct investment, thus preventing them from acting in the interests of under- and unserved populations. This is not unusual as

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<sup>1</sup> <https://www.publicknowledge.org>



according to BroadbandNOW, a broadband advocacy group, municipal broadband is roadblocked or outlawed in 25 states.

- The activities of the State’s Broadband Infrastructure Office, the Golden Leaf Foundation, and MCNC underscore the importance of broadband to rural areas, and the work of Land of Sky Regional Council, ERC, and RiverStreet Networks show how Federal and state funding can be used at the regional level to benefit urban and rural populations. Yet, there is still much work to do, particularly in addressing the challenge of low adoption rates among rural and low-income populations.
- Land of Sky Regional Council has shown itself to be an effective catalyst and coordinator of broadband deployment efforts even though neither it nor its local government members have any statutory or regulatory role. They have recognized the importance of broadband to the future of their region and used their planning and convening remit to bring together key players to promote public-private partnerships. There appears to be significant progress being made in deployment, which offers the opportunity for Land of Sky Regional Council to explore ways to work with K-12 institutions, libraries, local nonprofits, and others to begin to address the adoption issue. Certainly, the Regional Council has a continuing and critical role in ensuring that all the benefits of broadband expansion do not just go the growing urban areas around Asheville but are equitably spread into the more rural counties of Madison and Transylvania.
- There appear to be many important opportunities in prospect as the region’s communities come to appreciate the critical importance of broadband services. These include integrating broadband infrastructure into emergency preparedness, response, and recovery; floodplain mapping and management; closing the homework gap; expanding telemedicine; and digital inclusion efforts to provide information, training, and support at the local community level.



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