Project Title
WestNGN Broadband - Next Generation Network for Western North Carolina

Project Grantee
Land of Sky Regional Council

Counties Served
Buncombe, Transitional
Haywood, Transitional
Henderson, Transitional
Madison, At Risk
Transylvania, Transitional

Goal/Strategy
Strategic Investment Goal 3: Critical Infrastructure: Invest in Critical Infrastructure - especially broadband; transportation including the Appalachian Development Highway System; and water/ wastewater systems.

Action Objective 3.1: Promote the productive and strategic use of broadband and other telecommunications infrastructure to increase connectivity and strengthen economic competitiveness.

NC Strategy 3.1.5 Assist North Carolina's 29 Appalachian counties in charting a direction for telecommunications and securing assistance in implementing short and long-term strategies in community and economic development efforts.

Purpose
This project will identify local assets and develop community profiles and strategies that can assist communities bridge barriers to broadband infrastructure.

Funding

Source	Amount	Percentage
ARC	$47,500	50%
Local	$35,000	37%
Private	$12,500	13%
Total $	**$95,000**	**100%**

Project Description
Land of Sky Regional Council and Education and Research Consortium (ERC) of the Western Carolinas will build on current work with the six WestNGN Broadband communities to develop locally driven strategies based on existing assets and tools for implementing broadband expansion and capacity improvements throughout the five county area. This project will work with local jurisdictions and other stakeholders to leverage investment and existing infrastructure. The project will occur October 1, 2016 through September 30, 2017.

Strategic Rationale

It is rapidly becoming the case that all economic activity depends on the Internet in some way. Inadequate Internet access (lack of high-speed broadband infrastructure) limits the economic capacity of individuals and the communities they live in. Sparsely populated and rural areas are at a disadvantage because the economics of deploying the required infrastructure do not fit the profit models of typical, large, incumbent telephone or cable companies. This project will enable a small region to identify the barriers and opportunities for having this infrastructure and to do something about it. It is being designed in a way that can be leveraged for other communities.

Collaborative Partnerships

It is not possible for outside entities to sweep in and make advanced broadband infrastructure appear. Local leadership and engagement is required. This project will assist in identifying and developing local leadership, and the tools to facilitate knowledgeable decision-making. Land of Sky Regional Council is partnering with municipalities, counties, Southwestern Commission, and regional partner ERC who will contribute knowledge of local conditions. The NC Broadband office, businesses, health providers, and other key stakeholders are also engaged in the project.

Project Sustainability & Capacity

Land of Sky Regional Council brings considerable experience with economic development planning and implementation. Staff has existing relationships with key leaders in the community and broad grant administration experience. ERC's experience is in building and operating middle-mile broadband infrastructure and contributing to State and National policy governing broadband. This project will build capacity within the municipalities, counties, and economic development entities to identify and leverage available infrastructure to drive broadband to benefit the community. ERC will develop asset maps and data analysis for deployment of middle mile, last mile, and high gigabit broadband, as applicable. The outputs will be incorporated into the approach ERC uses with communities to build infrastructure capacity; which will be enhanced as a result of this project.

Impact Measures

Outputs of this project include:

1. Asset mapping for attracting and implementing high-capacity broadband
2. Facilitate development of community profiles
3. Draft RFP for services & administer responses
4. Web-page with information, FAQs, and resources
5. Broadband Analysis of existing infrastructure and target areas for broadband deployment
6. Quarter and final reports

Outcomes to be derived from this project are:

1. Local leadership equipped and empowered to drive broadband deployment
2. Tools for the greater western North Carolina region to conduct similar processes
3. Greater broadband connectivity within the region
4. Job creation in the knowledge and technology based industries

1. Goals and Strategies

Strategic Investment Goal 3: Critical Infrastructure: Invest in Critical Infrastructure - especially broadband; transportation including the Appalachian Development Highway System; and water / wastewater systems.

Action Objective 3.1: Promote the productive and strategic use of broadband and other telecommunications infrastructure to increase connectivity and strengthen economic competitiveness.

NC Strategy 3.1.5: Assist North Carolina's 29 Appalachian counties in charting a direction for telecommunications and securing assistance in implementing short and long-term strategies in community and economic development efforts.

2. Project Description

Purpose Statement
This project will identify local assets and develop community profiles and strategies that can assist communities bridge barriers to broadband infrastructure.

Statement of Need
Developing a structure for broadband deployment is critical to the region's economic opportunities for attracting businesses and entrepreneurs in advanced technologies, export opportunities and professional and technical services. High-speed access is also critical for training the region's workforce to a level that the advanced manufacturing sector and other technologies demands. Without direct and focused investment in this infrastructure, the region will slip further behind the rest of the state's technology advancements.

Phased Work Plan
The WestNGN Broadband Project is comprised of two Phases. Phase 1 is currently underway, with the grant outputs proposed herein scheduled to start October 1, 2016 and includes the municipalities of:
- ❏ City of Asheville
- ❏ City of Hendersonville
- ❏ Town of Biltmore Forest
- ❏ Town of Fletcher
- ❏ Town of Laurel Park
- ❏ Town of Waynesville

The time spent to date with WestNGN partners has led to completed partner agreements, memoranda of understanding and contracts with each municipality. The partners have donated their time, totaling over 350 hours, to reach this point in the project which now requires dedicated time and focus to lead it to the final RFP development, review, and completion.

These communities have all identified high-speed broadband deployment as a high priority and have dedicated funds specifically toward the advancement of this project. They are also the most densely populated of the towns and cities within the five-county region and are located along the two interstate systems (with multiple broadband networks) - two important factors for broadband deployment in the western region. These communities will be developing and assembling data to develop their Community Profiles for the Broadband RFP, which is in a sense, a marketing tool the region will use to highlight assets for future infrastructure investment.

Phase II of this project will begin in November, 2016 and will use the knowledge gained in Phase I to work with the surrounding, more rural areas to develop a broadband analysis that identifies middle mile segments, that upon completion, can aid in enticing providers to enter the area or expand their presence in the area. In particular, these areas include the counties Madison and Transylvania and the municipalities within.

Land of Sky Regional Council will serve as project manager to convene municipal and community partners to develop a broadband deployment process for the region. This process is modeled after the two other Next Generation Network (or NGN) projects underway in the Triangle and Triad regions and we will use components of their methodology to further advance the western region through this critical infrastructure. The Education & Research Consortium of the Western Carolinas will continue to provide expertise and support to this effort through the asset mapping, broadband analysis, and RFP development process.

Land of Sky Regional Council will work with the Education & Research Consortium of the Western Carolinas, local government teams, and regional stakeholders to develop the following tools and components for the communities:
1. Convene the stakeholder committee
2. Work with Education & Research Consortium of the Western Carolinas to perform a broadband analysis for the region
3. Compile the community profile for each local jurisdiction partnering in Phase I
4. Draft WestNGN RFP for services and manage the response/selection process
5. Web-page with information, FAQs, and resources
6. Facilitate communications with the Steering Committee and supporters
7. Administer the RFP release and response process
8. Complete all reporting required

Education & Research Consortium of the Western Carolinas will work with all associated groups to:
1. Complete the deliverables named for the Land of Sky Regional Council (above)
2. Perform and/or document a broadband analysis for each community engaged in this project
3. Facilitate and document community assets that, combined, will support the desired infrastructure investment.

Counties served through this project include:
- ❏ Buncombe, Transitional
- ❏ Haywood, Transitional
- ❏ Henderson, Transitional
- ❏ Madison, At Risk
- ❏ Transylvania, Transitional

Please see the attached Map of the project area.

3. Strategic Rationale

It is rapidly becoming the case that all economic activity depends on the Internet in some way. Inadequate Internet access (lack of high-speed broadband infrastructure) limits the economic capacity of individuals and the communities they live in. Sparsely populated and rural areas are at a disadvantage because the economics of deploying the required infrastructure do not fit the profit models of typical, large, incumbent telephone or cable companies. This project will enable a small region to identify the barriers to having this infrastructure and to do something about it. It is being designed in a way that can be leveraged for other communities.

Project benefits & Comprehensive Economic Development Strategy Priority
This project, as proposed, addresses one of the highest priority target areas in the Land of Sky Regional Council 2015 *Comprehensive Economic Development Strategy*. The lack, or under capacity, of broadband infrastructure in the region is listed as a predominant concern for emerging sectors such as technology, life sciences, telehealth, and other knowledge-based industries. Economic developers and Chambers of Commerce have identified broadband connectivity as a key indicator for economic opportunities within the region - both inside and outside the urban centers.

The Asheville Metropolitan Statistical Area is determined by the US Census Bureau and is currently comprised of the majority of three counties: Buncombe, Haywood, and Henderson. It is the most populated area (nearly 450,000) and the economic hub for the western region. This project began as a discussion topic among community leaders and North Carolina State University and has evolved to include the entire region. The need for broadband infrastructure has been acknowledged by all partners within the project and is driving it forward.

Progress to Date
The WestNGN Broadband Project began with the convening of a working group in November 2015 that included both the Land of Sky Regional Council and the Education and Research Consortium of the Western Carolinas, among others. The working group began after North Carolina State University leadership presented the Triangle Next General Network (NGN) Project to leadership in the Asheville area. The leadership asked a small group to organize and investigate the opportunities to increase high-speed broadband to the region. This was the start of what has become Phase I of the WestNGN Broadband Project. Six municipalities, North Carolina State University, University of North Carolina Asheville, Asheville-Buncombe Chamber

of Commerce, Education & Research Consortium of the Western Carolinas and Land of Sky Regional Council have moved through the first steps of developing a mutual agreement, financial commitments and strategic plan to move forward. The Phase I group is now ready to move into developing the community profiles, request for proposal and work with a designated consultant to shepherd this process through to completion.

4. Collaborative Partnerships

This project has a breadth of engaged partners and stakeholders. The partners also envision this group expanding as the project develops and more is learned about strategies for infrastructure deployment. Currently, Land of Sky Regional Council is facilitating collaboration among municipalities, universities, community leaders, elected officials, key nonprofits, chambers of commerce, and regional partner Education & Research Consortium of the Western Carolinas, who will continue to contribute knowledge of local, regional and state conditions. The North Carolina state broadband office, businesses, community colleges, workforce development, medical providers, and other key stakeholders are also engaged in the project.

Current project partners include: (Also provided Letters of Support*)
City of Asheville*
City of Hendersonville*
Town of Waynesville*
Town of Fletcher*
Town of Laurel Park*
Town of Biltmore Forest*
UNC-Asheville*
Community Stakeholders*
Education and Research Consortium (ERC)*
NC State University*
NC Broadband Office
Community Care of Western North Carolina*

5. Project Sustainability and Capacity

Grant Management:
As the region's Local Development District, Land of Sky Regional Council has been working with municipalities, businesses and supporting organizations in the areas of economic development, infrastructure, project development, and a number of other direct services for 50 years. We have partnerships with workforce development organizations, community colleges, economic development groups, marketing organizations, business entities, and more. We currently administer nearly 100 various funding sources for projects and have a strong project management and financial department.

Key Partner:

The Education & Research Consortium of the Western Carolinas has been deploying fiber across rural western North Carolina since 2002 and is a recognized leader and partner to communities across our mountains. The award winning Education & Research Consortium of the Western Carolinas network and nationally recognized staff are bold advocates for improved broadband infrastructure and access while its 950+ mile network serves our region from Sparta to Franklin.

Project Team Bios:

Erica Anderson joined Land of Sky Regional Council in 2010 and became the Economic & Community Development Director in 2013. She has 14 years of experience working with communities to implement appropriate development initiatives in the fields of agriculture, energy, environment, transportation, and economic development. Erica leads the Department divisions which include Planning, Transit, and Transportation. Her responsibilities include personnel, budget, public relations, grant writing and project management. Erica holds a master's degree in Urban and Regional Planning from Virginia Polytechnic University. Erica's resume is attached to the Project Narrative.

Hunter Goosmann is the Executive Director of the nonprofit Education & Research Consortium of the Western Carolinas, Inc. In this role for over ten years, he is responsible for building, operating, and supporting broadband Internet access across western North Carolina via the Education & Research Consortium of the Western Carolinas middle mile network and data center.

Goosmann has worked nationally and internationally in the Telecommunications and Information Technology fields. He has spoken widely about middle-mile networks and the need for the growth of rural broadband access. Additionally, he is a strong community advocate and serves on the Board of Directors for the North Carolina Technology Association, is the Vice-Chair of the Board of Directors for Lit Networks, and is the Board President of the Bob Moog Foundation. He has served on the Boards of Directors of the Asheville Chamber of Commerce, the Asheville/Buncombe Economic Development Coalition, Meet the Geeks, the Health Adventure, and the Asheville Symphony. He is also currently an adjunct professor of Management at the University of North Carolina at Asheville and is an ardent supporter of technical entrepreneurship.

Key Consultants

A consultant will be procured for the WestNGN Broadband Project to develop the RFP, FAQs and facilitate the process for the communities. All federal procurement requirements will be followed by Land of Sky Regional Council during this process.

This project will build capacity within the municipalities, counties, and economic development entities to identify and leverage available infrastructure to drive broadband to benefit the community. Education & Research Consortium of the Western Carolinas will analyze and develop strategies for deployment of middle mile, last mile, and high gigabit broadband, as

applicable. The asset mapping and analysis will be incorporated into the approach Education & Research Consortium of the Western Carolinas uses with communities to build the middle mile network and infrastructure capacity; which will be enhanced as a result of this project.

6. Impact Measures

Outputs of this project include:
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4. Job creation in the knowledge and technology based industries

Measurable Impacts:
A goal of the WestNGN Broadband Project is to attract and leverage private investment from telecommunications companies. The intent of the project is to highlight the conditions, assets, and collaboration of regional jurisdictions in order to gain high-speed service, greater capacity, and expanded infrastructure at competitive costs. Broadband is not necessarily the 'leader' for industries to locate in an area, but businesses are unwilling to locate to areas without adequate broadband. It is now considered a necessary infrastructure component. These are key elements to build a competitive workforce and attract technology and knowledge-based businesses and entrepreneurs to the region.

Measuring job creation or retention due to broadband infrastructure expansion is challenging with existing metrics. However, economic developers and service providers have conveyed time and again the need for broadband for technological industry, telehealth, advanced manufacturing and other target sectors in the region. Infrastructure in the western region is challenging and much more expensive given the mountains, rivers and rock. Without targeted innovation and collaborative investment in this infrastructure, this region will continue to lag and fall further behind the rest of the state in technological capability.

The WestNGN Broadband Project has leveraged $35,000 of cash investment from the six Phase I local jurisdictions to serve as match for this project. ERC is investing an additional $12,500 in-kind match. Additional investment is anticipated as this project continues to expand and grow in the region.

Broadband Access Project Area Map

Tennessee

North Carolina

AVERY

MITCHELL
• Bakersville

• Burnsville
YANCEY
• Spruce Pine

• Hot Springs

MADISON
• Mars Hill
• Marshall

• Weaverville

• Woodfin
SWAIN

Montreat   MCDOWELL
• Old Fort
Black Mountain

BUNCOMBE
• Asheville

HAYWOOD
Maggie Valley •   • Clyde   • Canton
• Biltmore Forest

• Waynesville

Chimney Rock Village
• Lake Lure
• Fletcher

Dillsboro   Sylva •
Dillsboro •   Webster
• Mills River
RUTHERFORD

• Forest Hills
JACKSON
HENDERSON
• Hendersonville
Laurel Park •
POLK
• Flat Rock
• Columbus
• Brevard
• Saluda

MACON
TRANSYLVANIA
• Tryon

• Rosman

• Highlands

Georgia

South Carolina

Legend

Broadband Access Project Area

State Boundary

Other County Boundaries

Miles
0   5   10   20

Map Created: 7/22/2016

1. Detailed Budget & Budget Narrative

The following table provides a detailed budget with sources of matching funds.

WestNGN Broadband Project Budget

Output	Funding			
	ARC	**Local**	**In-Kind**	**Totals**
Asset mapping	$ 5,000		$ 5,000	$ 10,000
Facilitate development of community profiles	$ 2,500	$ 2,500		$ 5,000
Draft RFP for services & administer responses	$ 26,000	$26,000		$ 52,000
Web-page with information, FAQs, and resources	$ 3,000	$ 3,000		$ 6,000
Broadband Analysis	$ 7,500		$ 7,500	$ 15,000
Reporting & Project Management	$ 3,500	$ 3,500		$ 7,000
TOTALS	**$ 47,500**	**$ 35,000**	**$ 12,500**	**$ 95,000**
% Totals	50%	37%	13%	100%

Budget Narrative:

Dedicated time from staff, partners and a consultant will provide the expertise and facilitation needed to develop the WestNGN Broadband Project to its fullest potential. This project includes:

1. Personnel, Fringe and Indirect ($15,500) – This will cover staff time of 150 hours toward the tasks listed in the phased work plan. These include facilitation, convening the Steering Committee, website development and maintenance, contracting, and project management and reporting.
2. Travel – ($3,500) includes travel within and outside the region to conduct data analysis, stakeholder meetings, Steering Committee meetings, partner meetings and any technical training necessary for Land of Sky Regional Council staff or the partners.
3. Supplies – ($1,000) – Meeting materials, surveys, maps, and data sheets will be necessary throughout this project.
4. Contractual ($62,500) – This category includes $17,500 contractual for Education and Research Consortium of the Western Carolinas to conduct data analysis of the region and asset mapping for the six WestNGN municipalities. They will also be monitoring the RFP responses and reviewing for technical specifications. They will be matching this contract with $12,500 of in-kind cost-share. As noted technical experts in broadband infrastructure their fully burdened rate is $90.57/hour.
   The remaining $45,000 will be used to contract with a consultant with technical expertise in broadband networks to provide guidance, develop and write the RFP, assemble the Community Profiles of the six WestNGN communities, and convene the Steering Committee and stakeholder groups. It is assumed the rate for a consultant with this expertise would be between $60-$90/hour.

2. Non-ARC Funding Commitments
In-Kind:
Land of Sky Regional Council, Education and Research Consortium of the Western Carolinas, the municipalities, and university partners have been working together for nine months to be 'shovel-ready' for the Next Generation Network process. Hunter Goosmann and staff have already contributed over 50 hours of in-kind to reach this point as part of the Organizing Committee and liaison/consultant to the Steering Committee. As part of the WestNGN effort, additional in-kind will match this project in the amount of $12,500, as shown in the attached letter from Education and Research Consortium of the Western Carolinas

Local Match:
The following list of municipalities contributed cash match totaling $35,000 for this project. Their letters are attached that each state their financial contribution.
- City of Asheville
- City of Hendersonville
- Town of Waynesville
- Town of Fletcher
- Town of Laurel Park
- Town of Biltmore Forest

3. ARC Match Rate Calculation
Counties Served
- ❏ Buncombe, Transitional
- ❏ Haywood, Transitional
- ❏ Henderson, Transitional
- ❏ Madison, At Risk
- ❏ Transylvania, Transitional

4. Additional Documentation
Letters of Commitment for the following partners are included:
- City of Asheville
- City of Hendersonville
- Town of Waynesville
- Town of Fletcher
- Town of Laurel Park
- Town of Biltmore Forest
- UNC-Asheville
- Community Stakeholder
- Education and Research Consortium of the Western Carolinas
- NC State University
- Community Care of Western North Carolina