

Broadband USA Applications Database

Applicant Name: MCNC

Project Title: North Carolina Rural Broadband Initiative

Project Type: Comprehensive Community Infrastructure

Executive Summary

There are three distinct regions in North Carolina: mountain, eastern and Piedmont. The Piedmont that has for 300 years been the center of much of the state's urban growth. In the 1800's, the Piedmont's unique topography and resources fueled growth in agricultural and textile industries, leading to infrastructure investments in roads, sewer, water and electricity. As the economy moved to a knowledge base, the Piedmont continued to receive most infrastructure investment. Evidence of this was investment in the incubation of Research Triangle Park (RTP) in the heart of the Piedmont. In the late 1950's, NC leaders set aside 7000 acres of prime land and equipped it with modern infrastructure to attract jobs. Today over 40,000 jobs are attributed to entities with major presences in RTP. Outside the Piedmont area, NC is a rural state. Census data shows NC has the nation's second largest rural population. In the state's rural areas, farms are folding, jobs are leaving and the brightest students seek opportunity elsewhere. In 1999, the NC Rural Prosperity Task Force, led by now University of NC President Erskine Bowles, ranked building broadband infrastructure in rural NC as the most direct way to address the rural/urban prosperity gap. Several national studies confirm that broadband investment is a catalyst for educational attainment and economic prosperity. In 1980, the state incubated MCNC, a private non-profit company. The main mission of MCNC was to build and manage the NC Research and Education Network (NCREN), a communications infrastructure for all K20 public education. NCREN is the backbone of an equitable education for NC citizens and enables our research institutions to contribute innovations in many fields. In BTOP round 1, due to available match funding, MCNC focused solely on the middle mile infrastructure in high needs areas. MCNC crafted a round 1 proposal to build middle mile infrastructure in areas where its education mission was being impeded by a lack of dark fiber. On January 20, 2010, US Commerce Secretary Gary Locke announced a \$28.2M grant to MCNC to build middle mile infrastructure in 37 counties. This middle mile has begun to disrupt wholesale markets in the round 1 service area with prices falling by 10-30% after the announcement. To further address this digital divide, NC leaders encouraged MCNC to form the necessary partnerships to submit a BTOP round 2 proposal. The result is a Comprehensive Community Infrastructure proposal named the North Carolina Rural Broadband Initiative (NCRBI). The NCRBI bridges the prosperity gap by delivering broadband infrastructure to rural NC. The NCRBI addresses the gap by building both middle mile infrastructure and direct connections to Community Anchor Institutions (CAIs) in the rural northeast, north central, northwest and south central portions of NC. Three factors compelled MCNC to focus on this strategy. First, the round 2 NOFA prioritizes CAI direct connections. Second, the NCRBI covers the remaining areas of extreme rural poverty in NC. CAIs are the place where many in these areas access bandwidth hungry applications to increase educational attainment, access better health care or conduct a job search.

Finally, connecting CAIs also drives fiber further into the regions of the build. This assists the private sector because more of the capital cost of the middle mile build is alleviated and wholesale price competition is increased. This relief of capex investment and greater wholesale competition allows the private sector providers to focus on building last mile deployments in these regions and these last mile builds occur at lower costs with the savings passed along to the consumers. The NCRBI also includes some direct fiber builds to CAIs in MCNC's round 1 award territory. The focus of these builds are in round 1 areas where the capital costs would be deterrents to last mile investments. Proposal Overview: MCNC's NCRBI proposal is an 1802 mile middle infrastructure traversing 69 counties in 4 regions of NC. When combined with NCREN's current and planned fiber network, funding of the NCRBI will create a CAI network that spans the entire state with owned dark fiber. In 38 of the 69 counties unemployment is 1% or more above the national average and in 48 counties the per capita income is 80% or less than the national average. Thirty-one counties meet the NTIA definition of economically distressed which combines unemployment with low per capita income. One of the most compelling documents in the NCRBI proposal is the "without BTOP" financial statements, included in supplemental materials. The substantial losses incurred but for BTOP are stark evidence these regions would never be served adhering to existing business model standards. The cost of the build is \$111,654,323. MCNC has raised, through private foundations and wholesale and retail service providers, a combined \$33,677,197 match composed of \$28,221,197 in cash and \$5,456,000 in existing conduit and land donations. The Golden LEAF Foundation, a NC private foundation focused on economic development in economically distressed counties, has provided the majority of the cash match. The proposal includes direct fiber builds to 45 community college main/satellite campuses, 58 K12 school districts, 7 universities, 54 libraries and 14 county/municipal health and public safety agencies in the 4 region build areas. NCREN already serves community colleges, universities, K12 school districts and county public health and safety agencies. The direct fiber builds will replace bandwidth-limited, leased last mile circuits. Direct fiber will allow these CAIs to substantially upgrade their connections to the state's public sector intranet, the commercial Internet and advanced research networks such as Internet2 and National LambdaRail. While MCNC will operate the public sector portion of the NCRBI, private sector partners are part of each region. In northeastern and north central NC, incumbent service provider CenturyLink has committed to lease fiber that will help complete its network. The proposed NCRBI network will enable CenturyLink to extend enhanced speed and triple play broadband services into these lightly populated and economically distressed regions. In addition, in the northeast, the Albemarle Pamlico Economic Development Corporation (APEC) has donated to MCNC \$4.75M worth of existing fiber optic conduit that had been built in the region but remained unused. The APEC fiber project exhausted funds in 2004 and now NCRBI, if funded, will help meet the original purpose of the conduit, to build a middle mile in the northeast. In the northwestern portion of the state, MCNC has built upon its decade long relationship with ERC Broadband (ERC). ERC will wholesale service to last mile providers in this region and will directly serve CAIs with the new network. ERC submitted an unsuccessful round 1 BTOP proposal combining last mile and middle mile elements. NCRBI includes similar middle mile elements to the ERC Round 1 proposal. This middle mile portion would not be possible without a BTOP award. In northwestern Graham County specifically, MCNC has built upon a 5 year relationship with network operator BalsamWest. BalsamWest operates a network whose owners includes the Eastern Band of the Cherokee Indians. The build through Graham County will allow BalsamWest to offer wholesale services

to last mile operators in the region and to serve several CAIs with direct fiber. This build is supported by \$450K in matching funds from the Eastern Band of the Cherokee and BalsamWest. In the south central portion of the State, MCNC established IRU relationships with wholesale providers Zayo Bandwith (Zayo) and DukeNet to help fund the match for the proposal. Zayo has agreed to lease fiber on the new network in exchange for \$2,307,465M in cash. DukeNet has agreed provided \$792K in match in exchange for the IRUs. MCNC will serve CAIs along the route with direct fiber. Service Area: This proposal interconnects with MCNC's already existing NCREN infrastructure and BTOP1 infrastructure currently in process, to encompass 69 counties in the 4 regions in NC that remain underserved. Statistics: In these 69 counties there are 5.9M residents, and 67 of the 69 counties fully qualify as underserved per the NTIA definition or have smaller underserved pockets within them. There are a total of 4,066 CAIs, including 1,718 K12 schools, 61 community college main/satellite campuses and 33 baccalaureate degree granting 4 year colleges and universities. In addition there are 254 public libraries, and 1,887 municipal, county and state public safety facilities. A comprehensive set of economic, education and public health statistics are included in the upload section. Support: The application includes over 120 support letters from elected officials, education leaders, members of the governor's cabinet and counties along the build.