



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM		Easygrants ID: 4218	
Funding Opportunity: Broadband Technology Opportunities Program		Applicant Organization: MCNC	
Task: Submit Application - BTOP		Applicant Name: Ms. Patricia L. Moody	

Table of Contents

- A. General Application Information**
- B. Executive Summary, Project Purpose, and Benefits**
- C. Partners**
- D. Congressional Districts**
- E. Service Area Details**
- F. Community Anchor Summary**
- G. Project Benefits**
- H. Technology**
- I. Project Budget**
- J. Historical Financials**
- K. Project Readiness**
- L. Environmental Questionnaire**
- M. Uploads**



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

A. General Application Information

Applicant Information	
Name and Federal ID for Applicant	
DUNS Number	018946590
CCR # (CAGE)	1CH60
Legal Business Name	MCNC
Point of Contact (POC)	PATRICIA L MOODY 9192481820 Ext. pmoody@mcnc.org
Alternate POC	BETSY HINE 9192481451 Ext. bhine@mcnc.org
Electronic Business POC	PATRICIA L. MOODY 9192481820 Ext. pmoody@mcnc.org
Alternate Electronic Business POC	VEDA BALDWIN 9192484145 Ext. vbaldwin@mcnc.org

Name and Contact Information of Person to be Contacted on Matters Involving this Application:	
Prefix	Ms.
First Name	Patricia
Middle Name	L.
Last Name	Moody
Suffix	
Telephone Number	919-248-1820



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM		Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program		Applicant Organization: MCNC
Task: Submit Application - BTOP		Applicant Name: Ms. Patricia L. Moody

Fax Number	
Email	pmoody@mcnc.org
Title	Chief Financial Officer

Additional Contact Information of Person to be Contacted on Matters Involving this Application:

Project Role	Name	Phone	Email
Secondary Point of Contact	Mrs. Betsy , Hine	9192481451	bhine@mcnc.org

Environmental Point of Contact

Prefix: Ms.
Name: Kuhn, Wendy
Suffix:
Telephone Number: 19192481935
Title: Director Program Management

Organization Classification

Type of Organization	Non-profit Corporation
Is the organization a small business?	No
Does the organization meet the definition of a socially and economically disadvantaged small business concern?	No

Authorized Organizational Representative

AOR Name	MOODY, PATRICIA
-----------------	-----------------



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

Result	Applicant Authorized
---------------	----------------------

Project Title and Project Description

Project Title: North Carolina Rural Broadband Initiative

Project Description: The North Carolina Rural Broadband Initiative (NCRBI) would build middle mile infrastructure and direct fiber connections to community colleges, libraries, schools, health and safety facilities and other community anchor institutions in 69 of the most rural, economically disadvantaged counties in North Carolina. This is a proposal led by MCNC, which was awarded BTOP round 1 funding.

CCI Priority Checklist

The following items were selected from the CCI Priority Checklist:

1. This project will deploy Middle Mile broadband infrastructure to community anchor institutions.
2. The project will deploy Middle Mile broadband infrastructure and has incorporated a public-private partnership among government, non-profit and for-profits entities, and other key community stakeholders.
3. This project will deploy Middle Mile broadband infrastructure in economically distressed areas.
4. This project will deploy Middle Mile broadband infrastructure to community colleges.
5. This project will deploy Middle Mile broadband infrastructure to public safety entities.
6. This project will deploy Middle Mile broadband infrastructure and either includes a Last Mile infrastructure component in unserved or underserved areas or has received commitments from one or more Last Mile broadband service providers to utilize the Middle Mile components. Any Last Mile components in rural areas do not exceed 20% of the total eligible costs of the project.
7. This project will deploy Middle Mile broadband infrastructure and the applicant has proposed to contribute 30 percent or more in non-federal cost match.

Comprehensive Community Infrastructure Components

The following items were selected from the Comprehensive Community Infrastructure Components:



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

Middle Mile

BIP Applicants

Have you also applied to BIP for funding in the sample proposed funded service area?

➤ No

If Yes, please provide the project title and Easygrants ID number:

Title of Joint BIP Application:

Easygrants ID:

Other Applications

Is this application being submitted in coordination with any other application being submitted during this round of funding?

➤ Yes

Easygrants ID	Project Title
5789	Community Interactive Video Collaborative
69	Building a Sustainable Middle-Mile Network for Underserved Rural NC
6083	North Carolina Rural Fiber Initiative
4381	Town of Red Oak Broadband
6023	North Carolina PUBlic LIBrary Computer Centers
5424	Columbus County ACCESS
6686	Stokes-Rockingham Broadband
5227	Upgrade CATV Network for Cherokee Indian Reservation
4589	United States Unified Community Anchor Network (U.S. UCAN)
7346	NTCH Inc/Clear Talk ICN Last Mile North Carolina 38 County \$35 Per Pop Solution



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

--	--

If YES, please explain any synergies and/or dependencies between this project and any other applications.

MCNC and its partners in the proposed NCRBI have worked with several entities across the state who plan to file Public Computing Center (PCC) and Sustainable Broadband Adoption (SBA) proposals to the NTIA BTOP program or last mile applications to USDA through the RUS sponsored BIP program.

BTOP

In the PCC Category, MCNC worked closely with the State Library of North Carolina (6023) on a proposal that will upgrade public computing centers in libraries in 38 counties with the highest unemployment in North Carolina. These libraries will be connected to NCREN through dark fiber or enhanced options for last mile service. This project builds on a successful Job Search Program that the State Libraries carried out last March in coordination with the North Carolina Employment Security Commission.

In the SBA Category, The University of North Carolina at Pembroke (UNC-P) (5789) submitted a proposal to create interactive video teleconferencing capabilities that would bring new learning, personal and economic development activities to community college and local community sites in UNC-P's region. Using the NCRBI network infrastructure, UNC-P will create interactive video capabilities, increase interactive video access for adults and students, create opportunities to bridge educational gaps and gain topical information on healthcare, business and societal issues from experts brought virtually to the region. The NCRBI establishes a point of presence at the UNC-P Campus to further enable this application.

RUS BIP

North Carolina Rural Fiber Initiative (Intelliport)(6083), Atlantic Telephone Membership Cooperative (ATMC) (5424), ClearTalk (7346), Cherokee CableVision (5227), Town of Red Oak Broadband (4381), Rockingham Stokes Counties (6686)

A rural telephone membership cooperative, ATMC and Intelliport, ClearTalk and Cherokee CableVision private competitive local exchange carriers, are submitting last mile BIP applications to expand fiber to the premise network infrastructure and/or Wi-Max or 3.65 Wireless last mile access in their service territories. Of note is that Cherokee CableVision serves parts of the Eastern Band of the Cherokee reservation with triple play services. In addition, two



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

counties and one municipality (Town of Red Oak and Rockingham and Stokes Counties) are submitting individual BIP proposals to commence last mile fiber/wireless services in their counties.

Collectively these six BIP applications touch all 4 regions and cover 32 counties included in the NCRBI, including the entire northeast service area. The interconnection into the NCRBI middle mile network enables all six of these applications to provide affordable access to upstream transport for their consumer and small business customers. These six applications also have the potential to provide affordable downstream access to CAIs in their service counties that will not be connected to the NCRBI network with direct fiber.

Individual Background Screening

Is the Applicant exempt from the Department of Commerce requirements regarding individual background screening in connection with any award resulting from this Application?

- No, Applicant is subject to these requirements

If the answer to the above question is "No," please identify each key individual associated with the Applicant who would be required to complete Form CD-346, "Applicant for Funding Assistance," in connection with any award resulting from this Application:

Name	Title	Employer
Patricia Moody	CFO	MCNC
Edward T. Jacobson	Chief Architect/Director, Engineering	MCNC
Joseph Freddoso	President and CEO	MCNC
S. Mark Johnson	Chief Technology Officer	MCNC
John Killebrew	Vice President NCREN Community Support	MCNC
Wendy Kuhn	Director Program Management	MCNC
Betsy Hine	Director Human Resources	MCNC



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

B. Executive Summary, Project Purpose and Benefits

Essay Question

Executive Summary of the proposed project:

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



Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

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



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

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, [REDACTED]

[REDACTED] has committed to lease fiber that will help complete its network. The proposed NCRBI network will enable [REDACTED] 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 [REDACTED] specifically, MCNC has built upon a 5 year relationship with network operator [REDACTED]

[REDACTED] The build through [REDACTED] 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 [REDACTED]

[REDACTED] In the south central portion of the State, MCNC established IRU relationships with [REDACTED] to help fund the match for the proposal. [REDACTED]

[REDACTED] 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



Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

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.

Project purpose:

The North Carolina Rural Broadband Initiative (NCRBI), submitted by the non-profit MCNC, addresses North Carolina's urban/rural prosperity gap. NCRBI will provide new opportunities for increased broadband access in areas outside the wealthy central Piedmont region with a middle mile build through 69 counties in the rural northeast, northwest, north central and south central regions of North Carolina.

The NCRBI is a public/private partnership. On the public side, the NCRBI expands the existing NCREN, the K-20 education backbone network in the state, that will add new middle mile fiber connections to NCREN constituents in these regions in place of limited bandwidth circuits. Direct fiber connections will be made to 45 community colleges, 54 libraries, 58 K-12 school districts and 12 public safety locations statewide. For CAIs whose bandwidth requirements or operating budgets make direct fiber service unfeasible, the NCRBI establishes a model by which future subscription to NCREN will be available at attractive prices.

On the private side, the NCRBI has extensive collaborations with wholesale and last mile providers in all regions of the build. In the wholesale market, ERC Broadband, [REDACTED] will create more competitive and lower price points in the northwest and south central regions of the build. For the last mile, ILECs, cable companies, CLECs, telephone co-ops and county governments have collaborated with MCNC to propose expanded last mile services in their regions. The NCRBI will replace antiquated service provider infrastructure, increase broadband service options, and increase last mile competition in all regions of the build.

Some specifics of the project area as they relate to statutory purposes are as follows:

Provide Service in Underserved Areas:

- 67 of the 69 counties fully qualify as underserved per the NTIA definition, or have smaller underserved pockets within them
- Last mile collaborators include 9 companies, 3 of which are outlined here:



Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

██████████ In northeastern and north central North Carolina, ██████████
██████████ has committed to lease fiber that will help complete its network. The proposed NCRBI network will enable ██████████ to extend enhanced speed and triple play broadband services into these lightly populated and economically distressed regions.

ATMC-A telephone membership cooperative that through a BIP grant, will use the NCRBI middle mile to offer fiber to the home in Columbus county in the southeast.

Cherokee CableVision-Will, through a BIP grant, leverage the NCRBI to expand services to the Eastern Band of the Cherokee Nation in the northwest region.

Provide services to CAIs-Libraries, Community Colleges, Public Health and Safety

Libraries are morphing from being repositories of written material to digital hubs where citizens access the Internet. Robust broadband access is critical to libraries performing this role. MCNC has coordinated with the State Library of North Carolina on its BTOP round 2 public computing center proposal that proposes to upgrade library-based public computing centers in more than 38 counties with the high unemployment. These new public computing centers comprise most the public libraries that are to be connected to NCREN with direct fiber through the NCRBI.

In education, the NCRBI specifically targets community colleges and local school districts to provide them with greater capacity and expansion capability. Each of these institutions is directly involved in providing outreach, access, equipment, and support services to facilitate greater use of broadband services by vulnerable populations.

In public health, MCNC has partnered with North Carolina State ITS to build the North Carolina Telehealth Network, and NCRBI will enhance our ability to meet the network's goals. MCNC is also working with North Carolina Healthcare Information and Communications Alliance to develop HIEs and associated underlying infrastructure. In public safety, the North Carolina Secretary of Crime Control and Public Safety has pledged via support letter to work with MCNC to connect other public safety facilities to NCREN as the network is built.

Stimulate the demand for broadband, economic growth, and job creation.
Demand will be stimulated in two ways:



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

- NCRBI will increase wholesale and last mile competition in these regions. This will lower wholesale and last mile rates which will drive demand. According to the January 2010 report, Broadband Adoption in Low Income Communities, the high price of broadband services in the United States is the most obvious obstacle to wider use and a critical factor in every study conducted on the subject.

- Second MCNC, through its roles as staff lead for the North Carolina eLearning Commission and as operator of NCREN, is in a unique position to communicate the importance of broadband access to equity of education. North Carolina's rural K-12 and higher education students rely on Internet based learning to access the same course offerings as their urban peers. Broadband access cannot stop at school; must be present at home in order for virtual education to benefit students.

Economic Growth and Job Creation will be stimulated in two ways:

- For direct job growth, the NCRBI will save or create 1154 job years and will bring a new company, [REDACTED] to North Carolina and expand the operations of MCNC, [REDACTED] and other service providers.

- The introduction of new broadband service in underserved areas will create economic growth and jobs. Jessica Milano, Senior Fellow for the Democratic Leadership Council, in her report Where the Jobs Are: The Role of Innovation, Investment, and Infrastructure in Economic and Job Growth, found that communities with new access to broadband experienced 6.4 percent higher employment growth on average than before they had broadband.

Recovery Act and Other Governmental Collaboration:

NCRBI allows MCNC to expand Internet access and network transport services to public education clients and other CAIs that have received ARRA funding. Some ARRA priorities such as a Healthcare Information Exchange (HIE) cannot exist without a robust fiber optic network. For other ARRA funded projects, NCRBI will provide a leading edge, real-time communications infrastructure that enhances the value and efficiency of the project and deepens the value of the ARRA funding.

A few ARRA projects impacted by the NCRBI are:

- Approximately \$1B in Highways and Bridges and Transit Capital Investment Stabilization Funds received by the NC DOT. DOT will provide right-of-way access along state-controlled



Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

highways for NCRBI, reducing the cost of this project. MCNC will provide DOT with access to NCRBI fiber to aid in the deployment of Intelligent Transportation Systems.

- Part of the \$40M in stimulus funding received by the NC Department of Crime Control and Public Safety and the Governor's Crime Commission. Middle mile build will help these funds enhance interagency communication.
- \$12.9M HIE awarded to NC. MCNC has coordinated HIE activities with the NC Health Information Technology Collaborative and serves on their technical advisory committee.
- MCNC served on the governor's strategic planning team for NC's application for RttT funds from the US Department of Education. A \$25M cloud computing proposal that is included in RttT depends on the proposed NCRBI network. The RttT application emphasized the deployment of collaborative tools, rich virtual content, and face-to-face and virtual assistance to rural school districts.

Other planned collaborations include:

- MCNC has discussed the proposed build with Progress Energy, ElectriCities and electrical co-ops, which may use this fiber as they build their electrical grid to residences.
- MCNC met with the NC Association of Electric Membership Cooperatives and individual energy co-ops that plan to apply for discretionary funds awarded to North Carolina as part of the US Department of Energy's \$58M block grant program for energy efficiency and conservation. The new middle-mile build can be leveraged as the backbone for advanced monitoring devices referenced in the block grant application.
- MCNC has gained commitments for public libraries, county public health agencies and county operated free clinics to connect to NCREN. MCNC has coordinated closely with a BTOP round 2 public computing center proposal from the State Library of North Carolina to upgrade public computing centers in libraries in 38 Counties with high unemployment. The libraries included in the North Carolina Public Library Computing Centers proposal comprise the bulk of the public libraries that will be connected to NCREN with direct fiber.

Letters of support for efforts described above and from elected and/or appointed officials are included in the "Government and Key Partners" upload.

Fit with BTOP CCI Priorities:



Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

The NCRBI proposal is crafted through a series of collaborations that address the major CCI priorities including: Coordination with last mile service providers with a focus on underserved areas and vulnerable populations, Direct Connections to Community Anchor Institutions (CAI) and raising 30% matching funds for the application.

Coordination to the last mile:

MCNC, a 501(c)3 not for profit, is the applicant for the NCRBI and has established relationships with incumbent local exchange carriers, agencies of the North Carolina State Government, [REDACTED] ERC Broadband, [REDACTED] and others. Letters are included in the application package from these entities and others describing their involvement in NCRBI. Of these it is notable that [REDACTED] the [REDACTED] in the northeast and north central regions. [REDACTED] has committed to lease fiber that will help complete its network. The proposed NCRBI network will enable [REDACTED] to extend enhanced speed and triple play broadband services into these lightly populated and economically distressed regions. In all, 67 of the 69 counties in the NCRBI build area fully qualify as underserved per the NTIA definition, or have smaller underserved pockets within them and almost 710,000 households lack broadband access.

Last mile relationships exist with several providers. First, Cherokee Cablevision, a corporate entity that is 99% owned by the Eastern Band of the Cherokee Indians, is a Cherokee company which provides last-mile service to tribal locations and will be able to leverage the NCRBI middle mile to enable lower pricing to its customers. Next, Inteliport, an existing Competitive Local Exchange Carrier (CLEC), that proposes to expand its services to bring Gigabit Passive Optical Networking Fiber to the Home (GPON FTTH) and licensed 3.65 Wireless Broadband deployment to the following nine northeastern North Carolina counties: Perquimans, Pasquotank, Camden, Chowan, Gates, Washington, Bertie, Northampton and Tyrrell Counties. Third, ClearTalk, a wireless carrier that proposes to bring wireless broadband to 24 counties in the northeast. Finally, Atlantic Telephone Membership Cooperative (ATMC), an existing telephone cooperative, which proposes to bring a fiber-to-the-home deployment to rural Columbus County in the south central portion of NCRBI.

On the wholesale side [REDACTED] all wholesale service providers, will obtain fiber from NCRBI and offer it to ILECs, CLECs, MSOs, enterprise



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

businesses, electric membership cooperatives and other wholesale clients. [REDACTED]

[REDACTED]

Vulnerable Populations

Eighteen hundred and two miles of new fiber will be part of the NCRBI and will directly serve 180 CAIs in 69 of NC's 100 counties. Thirty-one of the 69 counties have unemployment rate 1% or more greater than the national average AND median income less than or equal to 80% of the national average meeting the NOFA definition of economically distressed. Fifty-five of sixty-nine have either unemployment rate 1% or more greater than the national average OR median income less than or equal to 80% of the national average meeting the Federal Highway Administrations's (FHWA) Office of Planning, Environment, and Realty definition of economically distressed areas.

Community Anchor Institutions

NC has an extensive community college system. There are 160 physical facilities – 58 main campuses, 28 multi-campus and 74 off-campus sites – that bring community college classrooms within a 30-minute drive of virtually every North Carolinian, and distance learning technology reaches students in their homes and workplaces. 45 Community Colleges will be connected directly through this proposal. The remaining main campuses are being connected to NCREN using services provided by commercial carriers and will have the opportunity to join via direct fiber connection as funds are available. The NCRBI goal was to connect every community college campus within 6 miles of our route and all school districts and libraries within one mile. Once in place additional CAIs and commercial entities will be encouraged to connect to the network at our open interconnect facilities.

In addition to the community college deployment 12 fire stations will be connected in the northwest portion of the state by ERC Broadband

The NCRBI will also provide direct fiber connections for 58 local school districts and 54 libraries to its middle mile network.

Match



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

MCNC has raised \$33,677,197 in matching funds. \$28,221,197 of the total matching funds are in the form of cash and \$5,456,000 are in-kind contributions. This represents 30% match.

Is the applicant seeking a waiver of the Buy American provision pursuant to section x.Q of the NOFA?

➤ No

Is the applicant delinquent on any federal debt?

➤ No

If Yes, justification for delinquency:

Are you seeking a waiver of any requirement set forth in the NOFA that is not mandated by statute or applicable law?

➤ No

Is the applicant a current recipient of a grant or loan from RUS?

➤ No

C. Partners

Are you partnering with any other key institutions, organizations, or other entities for this project?

➤ Yes

If YES, key partners are listed below:

Project Role: Other
Name: Boone, Mary
Phone: 9198077400
Email: mary.boone@ncdcr.gov
Address 1: 4640 Mail Service Center
Address 2:
Address 3:
City: Raleigh
State: North Carolina
Zip Code: 27699-4640
Organization: North Carolina Department of Cultural Resources
Organization Type: State or State Agency
Small business: No



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

Socially and economically disadvantaged small business concern: No



Organization Type: For-profit Entity
Small business: Yes
Socially and economically disadvantaged small business concern: No

Project Role: Other
Name: Ralls, R.
Phone: 9198077100
Email: rallss@nccommunitycolleges.edu
Address 1: 5001 Mail Service Center
Address 2:
Address 3:
City: Raleigh
State: North Carolina
Zip Code: 27699-0401
Organization: North Carolina Community College System
Organization Type: State or State Agency
Small business: No
Socially and economically disadvantaged small business concern: No

Project Role: Other
Name: Didow, Nicholas
Phone: 9199623189
Email: nick_didow@unc.edu
Address 1: Kenan-Flagler Business School
Address 2: University of North Carolina
Address 3: CB #3490
City: Chapel Hill
State: North Carolina
Zip Code: 27599-3490



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

Organization: Kenan-Flagler Business School, University of North Carolina
Organization Type: State or State Agency
Small business: No
Socially and economically disadvantaged small business concern: No

Project Role: Other
Name: Nelson, Robert
Phone: 9199621000
Email: rnelson@northcarolina.edu
Address 1: The University of North Carolina - General Administration
Address 2: 910 Raleigh Road
Address 3: P.O. Box 2688
City: Chapel Hill
State: North Carolina
Zip Code: 27514
Organization: The University of North Carolina
Organization Type: State or State Agency
Small business: No
Socially and economically disadvantaged small business concern: No

Project Role: Sub-recipient
Name: Goosmann, Hunter
Phone: 8283502415
Email: hgoosmann@ercbroadband.org
Address 1: One North Pack Square
Address 2: Suite 419
Address 3:
City: Asheville
State: North Carolina
Zip Code: 28801
Organization: Education and Research Consortium of the Western Carolinas, Inc.
Organization Type: Non-profit Corporation
Small business: No
Socially and economically disadvantaged small business concern: No

Project Role: Other
Name: Gerlach, Dan
Phone: 2524427474
Email: dgerlach@goldenleaf.org
Address 1: 301 North Winstead Avenue
Address 2:
Address 3:



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

City: Rocky Mount
State: North Carolina
Zip Code: 27804
Organization: Golden LEAF Foundation
Organization Type: Non-profit Foundation
Small business: No
Socially and economically disadvantaged small business concern: No

Project Role: Other
Name: Smith, Michael
Phone: 9199625438
Email: msmith@sog.unc.edu
Address 1: School of Government Foundation, Inc.
Address 2: CB#3330 Knapp-Sanders Bldg
Address 3: University of North Carolina - Chapel Hill
City: Chapel Hill
State: North Carolina
Zip Code: 27599
Organization: School of Government Foundation, Inc.
Organization Type: Non-profit Foundation
Small business: No
Socially and economically disadvantaged small business concern: No

Project Role: Other
Name: Atkinson, June
Phone: 9198073430
Email: jatkinson@dpi.state.nc.us
Address 1: 6301 Mail Service Center
Address 2:
Address 3:
City: Raleigh
State: North Carolina
Zip Code: 27699-6301
Organization: Public Schools of North Carolina
Organization Type: State or State Agency
Small business: No
Socially and economically disadvantaged small business concern: No

Project Role: Other
Name: Bowles, Erskine
Phone: 9199621000
Email: ebowles@ncorthcarolina.edu



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

Address 1: 910 Raleigh Road
Address 2: P.O. Box 26888
Address 3:
City: Chapel Hill
State: North Carolina
Zip Code: 27514-2688
Organization: University of North Carolina
Organization Type: Other
Small business: No
Socially and economically disadvantaged small business concern: No

Project Role: Other
Name: Williams, A.
Phone: 9198325817
Email: williams@ncicu.org
Address 1: 530 N. Blount Street
Address 2:
Address 3:
City: Raleigh
State: North Carolina
Zip Code: 27604
Organization: North Carolina Independent Colleges and Universities
Organization Type: Non-profit Institution
Small business: No
Socially and economically disadvantaged small business concern: No

Project Role: Other
Name: Benson, Brad
Phone: 9199624248
Email: bbenson@lexingtonnc.net
Address 1: c/o UNC School of Government
Address 2: Knapp-Sanders Building
Address 3: Campus Box # 3330
City: Chapel Hill
State: North Carolina
Zip Code: 27599-3330
Organization: North Carolina Local Government Information Systems Association
Organization Type: Non-profit Institution
Small business: No
Socially and economically disadvantaged small business concern: No

Project Role: Other



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

Name: Russ, Allen
Phone: 9107544311
Email: aruss@atmc.coop
Address 1: 640 Whiteville Road NW
Address 2: P.O. Box 3198
Address 3:
City: Shallotte
State: North Carolina
Zip Code: 28459
Organization: Atlantic Telephone Membership Corporation
Organization Type: Non-profit Corporation
Small business: No
Socially and economically disadvantaged small business concern: No

Project Role: Third party in-kind contributor
Name: Britt, Ann
Phone: 2527921521
Email: abritt@martincc.edu
Address 1: 1161 Kehukee Park Rd.
Address 2:
Address 3:
City: Williamston
State: North Carolina
Zip Code: 27892-8307
Organization: Martin Community College
Organization Type: Non-profit Institution
Small business: No
Socially and economically disadvantaged small business concern: No

Project Role: Third party in-kind contributor
Name: Friedman, Deborah
Phone: 3363868121
Email: friedmd@surry.edu
Address 1: 630 S. Main Street
Address 2:
Address 3:
City: Dobson
State: North Carolina
Zip Code: 27017
Organization: Surry Community College
Organization Type: Non-profit Institution
Small business: No



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

Socially and economically disadvantaged small business concern: No

Project Role: Third party in-kind contributor

Name: Griffin, Ervin

Phone: 2525367217

Email: griffine@halifaxcc.edu

Address 1: 200 College Drive

Address 2: P.O. Drawer 809

Address 3:

City: Weldon

State: North Carolina

Zip Code: 27890

Organization: Halifax Community College

Organization Type: Non-profit Institution

Small business: No

Socially and economically disadvantaged small business concern: No

Project Role: Other

Name: Dominick, James (Jay)

Phone: 7046878483

Email: JDominick@uncce.edu

Address 1: 320C Kennedy Building

Address 2: 9201 University City Boulevard

Address 3:

City: Charlotte

State: North Carolina

Zip Code: 28223-001

Organization: University of North Carolina at Charlotte

Organization Type: Non-profit Institution

Small business: No

Socially and economically disadvantaged small business concern: No

Project Role: Third party in-kind contributor

Name: Jenkins, Charles

Phone: 9105216201

Email: charles.jenkins@uncp.edu

Address 1: Chancellor's Office

Address 2: One University Drive

Address 3: P.O. Box 1510

City: Pembroke

State: North Carolina

Zip Code: 28372-1510



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

Organization: University of North Carolina at Pembroke
Organization Type: Non-profit Institution
Small business: No
Socially and economically disadvantaged small business concern: No

Project Role: Third party in-kind contributor
Name: Peacock, Kenneth
Phone: 8282622040
Email: peacockke@appstate.edu
Address 1: Office of the Chancellor
Address 2: Dougherty Administration Building
Address 3: ASU Box 32002
City: Boone
State: North Carolina
Zip Code: 28608-2002
Organization: Appalachian State University
Organization Type: Non-profit Institution
Small business: No
Socially and economically disadvantaged small business concern: No

Project Role: Contractor
Name: Chase, Lee
Phone: 8287582383
Email: lchase@blueridgeemc.com
Address 1: 1216 Blowing Rock Blvd. NE
Address 2: P.O. Box 112
Address 3:
City: Lenoir
State: North Carolina
Zip Code: 28645
Organization: Blue Ridge Electric Membership Corporation
Organization Type: Cooperative or Mutual
Small business: No
Socially and economically disadvantaged small business concern: No

Project Role: Third party in-kind contributor
Name: O'Neal, Paul
Phone: 2524827402
Email: sponeal@co.currituck.nc.us
Address 1: 119 W. Water St.
Address 2:
Address 3:



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

City: Edenton
State: North Carolina
Zip Code: 27932
Organization: Albemarle Pamlico Economic Development Corporation
Organization Type: Non-profit Corporation
Small business: No
Socially and economically disadvantaged small business concern: No

Project Role: Third party in-kind contributor
Name: Matlock, Kathleen
Phone: 9196427141
Email: KMatlock@sccnc.edu
Address 1: 4564 Chadbourn Hwy
Address 2: P.O. Box 151
Address 3:
City: Whiteville
State: North Carolina
Zip Code: 28472
Organization: Southeastern Community College
Organization Type: Non-profit Institution
Small business: No
Socially and economically disadvantaged small business concern: No

Project Role: Third party in-kind contributor
Name: Keys, Robert
Phone: 3363424261
Email: keysr@rockinghamcc.edu
Address 1: Highway 65
Address 2: P.O. Box 38
Address 3:
City: Wentworth
State: North Carolina
Zip Code: 27375
Organization: Rockingham Community College
Organization Type: Non-profit Institution
Small business: No
Socially and economically disadvantaged small business concern: No

Project Role: Third party in-kind contributor
Name: Bartlett, Walter
Phone: 3365991181
Email: bartlew@piedmontcc.edu



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

Address 1: Person County Campus
Address 2: 1715 College Drive
Address 3: P.O. Box 1197
City: Roxboro
State: North Carolina
Zip Code: 27573
Organization: Piedmont Community College
Organization Type: Non-profit Institution
Small business: No
Socially and economically disadvantaged small business concern: No

Project Role: Third party in-kind contributor
Name: McKay, John
Phone: 7042725353
Email: jmckay@spcc.edu
Address 1: P.O. Box 126
Address 2:
Address 3:
City: Polkton
State: North Carolina
Zip Code: 28135
Organization: South Piedmont Community College
Organization Type: Non-profit Institution
Small business: No
Socially and economically disadvantaged small business concern: No

Project Role: Third party in-kind contributor
Name: Soney, Ralph
Phone: 2528621308
Email: soneyr@roanokechowan.edu
Address 1: 109 Community College Road
Address 2:
Address 3:
City: Ahoskie
State: North Carolina
Zip Code: 27910
Organization: Roanoke-Chowan Community College
Organization Type: Non-profit Institution
Small business: No
Socially and economically disadvantaged small business concern: No

Project Role: Third party in-kind contributor



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

Name: Burns, Gordon
Phone: 3368386100
Email: gordon.burns@wilkescc.edu
Address 1: 1328 S. Collegiate Drive
Address 2: P.O. Box 120
Address 3:
City: Wilkesboro
State: North Carolina
Zip Code: 28697
Organization: Wilkes Community College
Organization Type: Non-profit Institution
Small business: No
Socially and economically disadvantaged small business concern: No



Address 2:
Address 3:
City: Wake Forest
State: North Carolina
Zip Code: 27587
Organization: [REDACTED]
Organization Type: For-profit Entity
Small business: No
Socially and economically disadvantaged small business concern: No



Address 2:
Address 3:
City: [REDACTED]
State: Pennsylvania
Zip Code: 18109



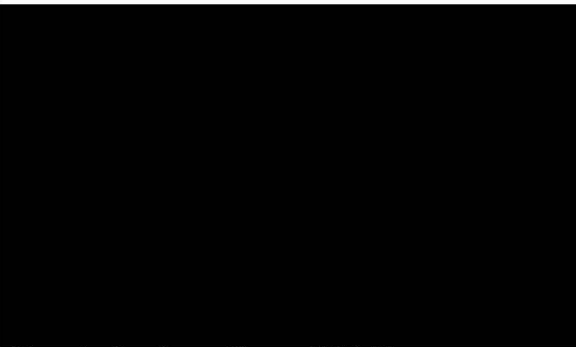
Small business: No



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

Socially and economically disadvantaged small business concern: No



Organization Type: For-profit Entity

Small business: No

Socially and economically disadvantaged small business concern: No

Project Role: Contractor

Name: Herron, Wayne

Phone: 7042824523

Email: wherron@monroenc.org

Address 1: 300 W. Crowell St.

Address 2: P.O. Box 69

Address 3:

City: Monroe

State: North Carolina

Zip Code: 28111-0069

Organization: City of Monroe

Organization Type: City or Township Government

Small business: No

Socially and economically disadvantaged small business concern: No



Address 2:

Address 3:

City: Atlanta

State: Georgia

Zip Code: 30309



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

Small business: No
Socially and economically disadvantaged small business concern: No

Description of the involvement of the partners listed above in the project.

MCNC will implement NCRBI in partnership from a wide variety of collaborators, some of whom are identified below.

Proposal Support

Governor Beverly Perdue led the effort to submit this proposal. University of North Carolina (UNC) System President Erskine Bowles has advocated for rural broadband in North Carolina since he chaired the North Carolina Rural Prosperity Task Force in 1999.

The Frank Hawkins Kenan Institute at UNC Chapel Hill, supported by the UNC School of Government, organized and coordinated community outreach and data gathering activities. The Golden LEAF Foundation (GLF) agreed to provide the majority of the cash match for this project. GLF leverages funds from the tobacco industry settlement to improve quality of life for rural North Carolina citizens. GLF will invest up to \$24,000,000 in cash match. Professional engineering firms provide design assistance and oversight; to ensure use of best practices; and to develop the most economical and environmentally sound construction plans. County representatives participated in and led Town Hall briefings giving an overview of the project. These county leaders have provided letters of support, and worked tirelessly within their communities to garner and document their strong support.

Implementation Support

North Carolina State agencies will support the planned build including the Department of Transportation, the Department of Environment and Natural Resources, and the Department of Cultural Resources.



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

Implementation of the NCRBI will create immediate jobs (in addition to allowing for longer term jobs) and many engineering, environmental and construction firms are excited about the opportunity to partner with us on the construction of this project.

Customers and third party providers

ERC Broadband, (ERC-B), a not-for-profit broadband networking organization that operates in western N.C. will operate the NCRBI fiber in the western region. ERC-B will also wholesale service to last mile providers in this region, and will directly serve CAIs within the new network.

[REDACTED] In northeastern and north central North Carolina, [REDACTED] has committed to lease fiber that will help complete its network. The proposed NCRBI network will enable [REDACTED] to extend enhanced speed and triple play broadband services into these lightly populated and economically distressed regions. [REDACTED] will provide approximately [REDACTED] in cash match for short term leases on fiber.

[REDACTED] a commercial service provider partly [REDACTED] and operating in [REDACTED] NC, will provide the fiber path to connect [REDACTED] county to the network, as well as attractively priced last mile connectivity to the new broadband middle mile throughout their service area.

[REDACTED] will provide match to lease fibers in the north central and south central regions of the build. [REDACTED] is a wholesale provider selling to last mile providers.

NCRBI will use third party providers, many of whom are private commercial businesses, to connect the remainder of the 4,066 Community Anchor Institutions in the 69 counties included in the backbone fiber build to NCREN. This proposal provides wholesale affordable middle mile connectivity to last mile providers so they can stabilize or reduce their retail prices for services (letters of support: [REDACTED] ERC-B, [REDACTED] etc).

Public School Districts will allow equitable education in small, rural, disadvantaged areas by providing affordable, reliable bandwidth (Letter of support: Dr. June Atkinson, State School Superintendent, atkinson@dpi.state.nc.us);

Community Colleges will enable their virtual education strategy, stabilize costs, and substantially grow bandwidth usage (letter of support: Dr. Scott Ralls, President of North Carolina Community College System, ralls@nccommunitycolleges.edu);



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

Libraries will address bandwidth availability and affordability challenges for their public computing centers (Letter of support: Mary Boone, State Librarian, North Carolina Department of Cultural Resources, mary.boone@ncdcr.gov)

Universities and Colleges will improve e-learning, assure equity of education, improve healthcare, and spread economic opportunity by directly connecting additional campuses to the fiber backbone (letters of support: Erskine Bowles, Rob Nelson, and Dr. Hope Williams)
The North Carolina Department of Crime Control and Public Safety has agreed to explore using the services of the NCRBI (letter of support from Secretary Ruben Young ryoung@nccrimecontrol.org).

ATMC, a rural telephone membership cooperative, and Intelliport and ClearTalk, private competitive local exchange carriers, are submitting last mile BIP applications to expand fiber to the premise network infrastructure and/or Wi-Max or 3.65 Wireless last mile access in their service territories. These service territories cover over 30 counties in the northeast and south central regions of the NCRBI. In addition, two counties (Rockingham and Stokes) are submitting public/private BIP proposals for last mile fiber/wireless services in their counties. The interconnection in to the NCRBI middle mile network will enable all five of these applications to provide affordable access to upstream transport for their consumer and small business customers.

Additional Key Partners contact information:

The University of North Carolina; Chapel Hill, N.C.; Professor Nick Didow at nick.didow@northcarolina.edu, Shannon Tufts at tufts@sog.unc.edu, and Robert Nelson at rmelson@northcarolina.edu

The Golden LEAF Foundation; Dan Gerlach, dgerlach@goldenleaf.org
ERC Broadband; Hunter Goosman, hgoosmann@ercbroadband.org; (828) 350-2416

D. Congressional Districts

Applicant Headquarters

- North Carolina



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

Project Service States

North Carolina

Project Service Areas

North Carolina - 1
North Carolina - 2
North Carolina - 3
North Carolina - 5
North Carolina - 7
North Carolina - 8
North Carolina - 9
North Carolina - 10
North Carolina - 11
North Carolina - 12
North Carolina - 13
North Carolina - 6
North Carolina - 4

Will any portion of your proposed project serve federally recognized tribal entities?

➤ Yes



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

Indicate each federally recognized tribal entity your proposed project will serve.

Eastern Band of Cherokee Indians

Have you consulted with each of the federally recognized tribal entities identified above?

➤ Yes

E. Service Area Details

Is the applicant seeking a waiver for providing less than 100% coverage of a service area?

➤ No

Project Details

Service Area Type: Middle Mile
Service Area Name: Alleghany
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Underserved

If Service Status is "Underserved" please select at least one applicable option from this list.

The rate of broadband subscribership for the proposed funded service area is 40% of households or less.

Total Square Miles in Service Area: 235
Total Population in Proposed Service Area: 10,677
Total Number of Households in Service Area: 4,593
Total Number of Businesses in Service Area: 310
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 18
Unemployment Rate in the Service Area: 12
Median Income in the Service Area: 17,691
Estimated Percentage of Households with Access to Broadband: 53
Estimated Percentage of Households Subscribing to Broadband: 23



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

Service Area Type: Middle Mile
Service Area Name: Ashe
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Underserved

If Service Status is "Underserved" please select at least one applicable option from this list.
The rate of broadband subscribership for the proposed funded service area is 40% of households or less.

Total Square Miles in Service Area: 426
Total Population in Proposed Service Area: 25,482
Total Number of Households in Service Area: 11,002
Total Number of Businesses in Service Area: 608
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 31
Unemployment Rate in the Service Area: 12
Median Income in the Service Area: 19,932
Estimated Percentage of Households with Access to Broadband: 58
Estimated Percentage of Households Subscribing to Broadband: 25

Service Area Type: Middle Mile
Service Area Name: Avery
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Underserved

If Service Status is "Underserved" please select at least one applicable option from this list.
The rate of broadband subscribership for the proposed funded service area is 40% of households or less.

Total Square Miles in Service Area: 247
Total Population in Proposed Service Area: 17,167
Total Number of Households in Service Area: 6,532
Total Number of Businesses in Service Area: 612
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 31
Unemployment Rate in the Service Area: 10



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

Median Income in the Service Area: 15,176
Estimated Percentage of Households with Access to Broadband: 69
Estimated Percentage of Households Subscribing to Broadband: 30

Service Area Type: Middle Mile
Service Area Name: Caldwell
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Served

If Service Status is "Underserved" please select at least one applicable option from this list.

Total Square Miles in Service Area: 472
Total Population in Proposed Service Area: 79,471
Total Number of Households in Service Area: 30,634
Total Number of Businesses in Service Area: 1,455
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 53
Unemployment Rate in the Service Area: 17
Median Income in the Service Area: 20,029
Estimated Percentage of Households with Access to Broadband: 59
Estimated Percentage of Households Subscribing to Broadband: 57

Service Area Type: Middle Mile
Service Area Name: Beaufort
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Underserved

If Service Status is "Underserved" please select at least one applicable option from this list.

No more than 50% of the households in the proposed funded service area have access to facilities-based, terrestrial broadband service at greater than the minimum broadband transmission speed;

The rate of broadband subscribership for the proposed funded service area is 40% of households or less.

Total Square Miles in Service Area: 828



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

Total Population in Proposed Service Area: 45,794
Total Number of Households in Service Area: 19,442
Total Number of Businesses in Service Area: 1,252
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 55
Unemployment Rate in the Service Area: 12
Median Income in the Service Area: 21,851
Estimated Percentage of Households with Access to Broadband: 48
Estimated Percentage of Households Subscribing to Broadband: 34

Service Area Type: Middle Mile
Service Area Name: Bertie
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Underserved

If Service Status is "Underserved" please select at least one applicable option from this list.
No more than 50% of the households in the proposed funded service area have access to facilities-based, terrestrial broadband service at greater than the minimum broadband transmission speed;
The rate of broadband subscribership for the proposed funded service area is 40% of households or less.

Total Square Miles in Service Area: 699
Total Population in Proposed Service Area: 19,773
Total Number of Households in Service Area: 7,743
Total Number of Businesses in Service Area: 334
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 30
Unemployment Rate in the Service Area: 11
Median Income in the Service Area: 14,096
Estimated Percentage of Households with Access to Broadband: 36
Estimated Percentage of Households Subscribing to Broadband: 22

Service Area Type: Middle Mile
Service Area Name: Brunswick



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Served

If Service Status is "Underserved" please select at least one applicable option from this list.

Total Square Miles in Service Area: 855
Total Population in Proposed Service Area: 98,667
Total Number of Households in Service Area: 43,710
Total Number of Businesses in Service Area: 2,526
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 61
Unemployment Rate in the Service Area: 12
Median Income in the Service Area: 24,760
Estimated Percentage of Households with Access to Broadband: 78
Estimated Percentage of Households Subscribing to Broadband: 47

Service Area Type: Middle Mile
Service Area Name: Buncombe
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Served

If Service Status is "Underserved" please select at least one applicable option from this list.

Total Square Miles in Service Area: 656
Total Population in Proposed Service Area: 225,992
Total Number of Households in Service Area: 95,975
Total Number of Businesses in Service Area: 7,704
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 143
Unemployment Rate in the Service Area: 8
Median Income in the Service Area: 26,456
Estimated Percentage of Households with Access to Broadband: 71
Estimated Percentage of Households Subscribing to Broadband: 66

Service Area Type: Middle Mile



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

Service Area Name: Camden
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Underserved

If Service Status is "Underserved" please select at least one applicable option from this list.

No more than 50% of the households in the proposed funded service area have access to facilities-based, terrestrial broadband service at greater than the minimum broadband transmission speed;

The rate of broadband subscribership for the proposed funded service area is 40% of households or less.

Total Square Miles in Service Area: 241
Total Population in Proposed Service Area: 6,885
Total Number of Households in Service Area: 2,662
Total Number of Businesses in Service Area: 201
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 13
Unemployment Rate in the Service Area: 8
Median Income in the Service Area: 18,681
Estimated Percentage of Households with Access to Broadband: 36
Estimated Percentage of Households Subscribing to Broadband: 25

Service Area Type: Middle Mile
Service Area Name: Caswell
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Underserved

If Service Status is "Underserved" please select at least one applicable option from this list.

No more than 50% of the households in the proposed funded service area have access to facilities-based, terrestrial broadband service at greater than the minimum broadband transmission speed;

The rate of broadband subscribership for the proposed funded service area is 40% of households or less.

Total Square Miles in Service Area: 425
Total Population in Proposed Service Area: 23,314
Total Number of Households in Service Area: 8,210
Total Number of Businesses in Service Area: 240



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 20
Unemployment Rate in the Service Area: 13
Median Income in the Service Area: 17,748
Estimated Percentage of Households with Access to Broadband: 28
Estimated Percentage of Households Subscribing to Broadband: 13

Service Area Type: Middle Mile
Service Area Name: Chowan
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Underserved

If Service Status is "Underserved" please select at least one applicable option from this list.
No more than 50% of the households in the proposed funded service area have access to facilities-based, terrestrial broadband service at greater than the minimum broadband transmission speed;
The rate of broadband subscribership for the proposed funded service area is 40% of households or less.

Total Square Miles in Service Area: 173
Total Population in Proposed Service Area: 14,526
Total Number of Households in Service Area: 5,580
Total Number of Businesses in Service Area: 409
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 25
Unemployment Rate in the Service Area: 12
Median Income in the Service Area: 15,027
Estimated Percentage of Households with Access to Broadband: 36
Estimated Percentage of Households Subscribing to Broadband: 29

Service Area Type: Middle Mile
Service Area Name: Cleveland
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Served



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

If Service Status is "Underserved" please select at least one applicable option from this list.

Total Square Miles in Service Area: 465
Total Population in Proposed Service Area: 98,276
Total Number of Households in Service Area: 37,221
Total Number of Businesses in Service Area: 1,973
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 61
Unemployment Rate in the Service Area: 15
Median Income in the Service Area: 18,911
Estimated Percentage of Households with Access to Broadband: 65
Estimated Percentage of Households Subscribing to Broadband: 63

Service Area Type: Middle Mile
Service Area Name: Columbus
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Underserved

If Service Status is "Underserved" please select at least one applicable option from this list.

No more than 50% of the households in the proposed funded service area have access to facilities-based, terrestrial broadband service at greater than the minimum broadband transmission speed;

The rate of broadband subscribership for the proposed funded service area is 40% of households or less.

Total Square Miles in Service Area: 937
Total Population in Proposed Service Area: 54,049
Total Number of Households in Service Area: 20,809
Total Number of Businesses in Service Area: 1,117
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 64
Unemployment Rate in the Service Area: 14
Median Income in the Service Area: 18,998
Estimated Percentage of Households with Access to Broadband: 43
Estimated Percentage of Households Subscribing to Broadband: 21



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

Service Area Type: Middle Mile
Service Area Name: Currituck
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Served

If Service Status is "Underserved" please select at least one applicable option from this list.

Total Square Miles in Service Area: 69
Total Population in Proposed Service Area: 23,829
Total Number of Households in Service Area: 9,216
Total Number of Businesses in Service Area: 652
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 21
Unemployment Rate in the Service Area: 9
Median Income in the Service Area: 26,201
Estimated Percentage of Households with Access to Broadband: 71
Estimated Percentage of Households Subscribing to Broadband: 45

Service Area Type: Middle Mile
Service Area Name: Dare
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Served

If Service Status is "Underserved" please select at least one applicable option from this list.

Total Square Miles in Service Area: 384
Total Population in Proposed Service Area: 33,677
Total Number of Households in Service Area: 15,689
Total Number of Businesses in Service Area: 1,938
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 53
Unemployment Rate in the Service Area: 16
Median Income in the Service Area: 31,175
Estimated Percentage of Households with Access to Broadband: 99
Estimated Percentage of Households Subscribing to Broadband: 60



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

Service Area Type: Middle Mile
Service Area Name: Edgecombe
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Underserved

If Service Status is "Underserved" please select at least one applicable option from this list.
No more than 50% of the households in the proposed funded service area have access to facilities-based, terrestrial broadband service at greater than the minimum broadband transmission speed;
The rate of broadband subscribership for the proposed funded service area is 40% of households or less.

Total Square Miles in Service Area: 505
Total Population in Proposed Service Area: 52,805
Total Number of Households in Service Area: 21,810
Total Number of Businesses in Service Area: 892
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 50
Unemployment Rate in the Service Area: 17
Median Income in the Service Area: 17,420
Estimated Percentage of Households with Access to Broadband: 40
Estimated Percentage of Households Subscribing to Broadband: 33

Service Area Type: Middle Mile
Service Area Name: Franklin
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Served

If Service Status is "Underserved" please select at least one applicable option from this list.
--

Total Square Miles in Service Area: 492
Total Population in Proposed Service Area: 57,098
Total Number of Households in Service Area: 20,774
Total Number of Businesses in Service Area: 1,010
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 44



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

Unemployment Rate in the Service Area: 10
Median Income in the Service Area: 20,643
Estimated Percentage of Households with Access to Broadband: 53
Estimated Percentage of Households Subscribing to Broadband: 43

Service Area Type: Middle Mile
Service Area Name: Gaston
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Served

If Service Status is "Underserved" please select at least one applicable option from this list.

Total Square Miles in Service Area: 356
Total Population in Proposed Service Area: 202,141
Total Number of Households in Service Area: 76,632
Total Number of Businesses in Service Area: 4,043
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 111
Unemployment Rate in the Service Area: 14
Median Income in the Service Area: 22,756
Estimated Percentage of Households with Access to Broadband: 71
Estimated Percentage of Households Subscribing to Broadband: 68

Service Area Type: Middle Mile
Service Area Name: Gates
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Underserved

If Service Status is "Underserved" please select at least one applicable option from this list.

No more than 50% of the households in the proposed funded service area have access to facilities-based, terrestrial broadband service at greater than the minimum broadband transmission speed;

The rate of broadband subscribership for the proposed funded service area is 40% of households or less.



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

Total Square Miles in Service Area: 341
Total Population in Proposed Service Area: 10,516
Total Number of Households in Service Area: 3,901
Total Number of Businesses in Service Area: 137
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 16
Unemployment Rate in the Service Area: 7
Median Income in the Service Area: 15,963
Estimated Percentage of Households with Access to Broadband: 43
Estimated Percentage of Households Subscribing to Broadband: 19

Service Area Type: Middle Mile
Service Area Name: Graham
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Underserved

If Service Status is "Underserved" please select at least one applicable option from this list.
No more than 50% of the households in the proposed funded service area have access to facilities-based, terrestrial broadband service at greater than the minimum broadband transmission speed;
The rate of broadband subscribership for the proposed funded service area is 40% of households or less.

Total Square Miles in Service Area: 292
Total Population in Proposed Service Area: 7,993
Total Number of Households in Service Area: 3,354
Total Number of Businesses in Service Area: 182
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 13
Unemployment Rate in the Service Area: 18
Median Income in the Service Area: 14,237
Estimated Percentage of Households with Access to Broadband: 27
Estimated Percentage of Households Subscribing to Broadband: 12

Service Area Type: Middle Mile



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

Service Area Name: Granville
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Served

If Service Status is "Underserved" please select at least one applicable option from this list.

Total Square Miles in Service Area: 531
Total Population in Proposed Service Area: 55,705
Total Number of Households in Service Area: 19,526
Total Number of Businesses in Service Area: 849
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 53
Unemployment Rate in the Service Area: 11
Median Income in the Service Area: 20,932
Estimated Percentage of Households with Access to Broadband: 56
Estimated Percentage of Households Subscribing to Broadband: 46

Service Area Type: Middle Mile
Service Area Name: Halifax
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Underserved

If Service Status is "Underserved" please select at least one applicable option from this list.

No more than 50% of the households in the proposed funded service area have access to facilities-based, terrestrial broadband service at greater than the minimum broadband transmission speed;

The rate of broadband subscribership for the proposed funded service area is 40% of households or less.

Total Square Miles in Service Area: 725
Total Population in Proposed Service Area: 55,041
Total Number of Households in Service Area: 21,510
Total Number of Businesses in Service Area: 1,062
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 68
Unemployment Rate in the Service Area: 14
Median Income in the Service Area: 17,189
Estimated Percentage of Households with Access to Broadband: 40



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

Estimated Percentage of Households Subscribing to Broadband: 27

Service Area Type: Middle Mile
Service Area Name: Haywood
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Served

If Service Status is "Underserved" please select at least one applicable option from this list.

Total Square Miles in Service Area: 554
Total Population in Proposed Service Area: 56,363
Total Number of Households in Service Area: 25,086
Total Number of Businesses in Service Area: 1,462
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 42
Unemployment Rate in the Service Area: 10
Median Income in the Service Area: 23,752
Estimated Percentage of Households with Access to Broadband: 58
Estimated Percentage of Households Subscribing to Broadband: 53

Service Area Type: Middle Mile
Service Area Name: Henderson
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Underserved

If Service Status is "Underserved" please select at least one applicable option from this list.

The rate of broadband subscribership for the proposed funded service area is 40% of households or less.

Total Square Miles in Service Area: 374
Total Population in Proposed Service Area: 100,364
Total Number of Households in Service Area: 43,054
Total Number of Businesses in Service Area: 2,856
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 52



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

Unemployment Rate in the Service Area: 9
Median Income in the Service Area: 26,024
Estimated Percentage of Households with Access to Broadband: 54
Estimated Percentage of Households Subscribing to Broadband: 39

Service Area Type: Middle Mile
Service Area Name: Hertford
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Underserved

If Service Status is "Underserved" please select at least one applicable option from this list.

No more than 50% of the households in the proposed funded service area have access to facilities-based, terrestrial broadband service at greater than the minimum broadband transmission speed;

The rate of broadband subscribership for the proposed funded service area is 40% of households or less.

Total Square Miles in Service Area: 353
Total Population in Proposed Service Area: 23,212
Total Number of Households in Service Area: 8,685
Total Number of Businesses in Service Area: 514
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 34
Unemployment Rate in the Service Area: 9
Median Income in the Service Area: 16,377
Estimated Percentage of Households with Access to Broadband: 33
Estimated Percentage of Households Subscribing to Broadband: 20

Service Area Type: Middle Mile
Service Area Name: Hyde
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Underserved

If Service Status is "Underserved" please select at least one applicable option from this list.

No more than 50% of the households in the proposed funded service area have access to facilities-based,



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

terrestrial broadband service at greater than the minimum broadband transmission speed;

The rate of broadband subscribership for the proposed funded service area is 40% of households or less.

Total Square Miles in Service Area: 613
Total Population in Proposed Service Area: 5,826
Total Number of Households in Service Area: 2,185
Total Number of Businesses in Service Area: 177
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 23
Unemployment Rate in the Service Area: 12
Median Income in the Service Area: 13,164
Estimated Percentage of Households with Access to Broadband: 36
Estimated Percentage of Households Subscribing to Broadband: 16

Service Area Type: Middle Mile
Service Area Name: Jackson
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Underserved

If Service Status is "Underserved" please select at least one applicable option from this list.

The rate of broadband subscribership for the proposed funded service area is 40% of households or less.

Total Square Miles in Service Area: 491
Total Population in Proposed Service Area: 36,427
Total Number of Households in Service Area: 14,966
Total Number of Businesses in Service Area: 1,033
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 37
Unemployment Rate in the Service Area: 9
Median Income in the Service Area: 20,599
Estimated Percentage of Households with Access to Broadband: 59
Estimated Percentage of Households Subscribing to Broadband: 26



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

Service Area Type: Middle Mile
Service Area Name: Lincoln
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Served

If Service Status is "Underserved" please select at least one applicable option from this list.

Total Square Miles in Service Area: 299
Total Population in Proposed Service Area: 72,826
Total Number of Households in Service Area: 27,749
Total Number of Businesses in Service Area: 1,649
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 49
Unemployment Rate in the Service Area: 14
Median Income in the Service Area: 22,789
Estimated Percentage of Households with Access to Broadband: 54
Estimated Percentage of Households Subscribing to Broadband: 46

Service Area Type: Middle Mile
Service Area Name: Madison
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Underserved

If Service Status is "Underserved" please select at least one applicable option from this list.

No more than 50% of the households in the proposed funded service area have access to facilities-based, terrestrial broadband service at greater than the minimum broadband transmission speed;

The rate of broadband subscribership for the proposed funded service area is 40% of households or less.

Total Square Miles in Service Area: 449
Total Population in Proposed Service Area: 20,265
Total Number of Households in Service Area: 8,074
Total Number of Businesses in Service Area: 351
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 27
Unemployment Rate in the Service Area: 10



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

Median Income in the Service Area: 20,136
Estimated Percentage of Households with Access to Broadband: 38
Estimated Percentage of Households Subscribing to Broadband: 21

Service Area Type: Middle Mile
Service Area Name: Martin
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Underserved

If Service Status is "Underserved" please select at least one applicable option from this list.

No more than 50% of the households in the proposed funded service area have access to facilities-based, terrestrial broadband service at greater than the minimum broadband transmission speed;

The rate of broadband subscribership for the proposed funded service area is 40% of households or less.

Total Square Miles in Service Area: 461
Total Population in Proposed Service Area: 23,604
Total Number of Households in Service Area: 9,722
Total Number of Businesses in Service Area: 499
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 34
Unemployment Rate in the Service Area: 11
Median Income in the Service Area: 18,038
Estimated Percentage of Households with Access to Broadband: 33
Estimated Percentage of Households Subscribing to Broadband: 30

Service Area Type: Middle Mile
Service Area Name: Mecklenburg
Rural Classification of the Last Mile Service Area: Non-Rural
Service Status of the Last Mile Service Area: Served

If Service Status is "Underserved" please select at least one applicable option from this list.

Total Square Miles in Service Area: 526



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM		Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program		Applicant Organization: MCNC
Task: Submit Application - BTOP		Applicant Name: Ms. Patricia L. Moody

Total Population in Proposed Service Area: 862,131
Total Number of Households in Service Area: 351,962
Total Number of Businesses in Service Area: 31,956
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 316
Unemployment Rate in the Service Area: 11
Median Income in the Service Area: 33,109
Estimated Percentage of Households with Access to Broadband: 71
Estimated Percentage of Households Subscribing to Broadband: 64

Service Area Type: Middle Mile
Service Area Name: Mitchell
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Underserved

If Service Status is "Underserved" please select at least one applicable option from this list.
No more than 50% of the households in the proposed funded service area have access to facilities-based, terrestrial broadband service at greater than the minimum broadband transmission speed;
The rate of broadband subscribership for the proposed funded service area is 40% of households or less.

Total Square Miles in Service Area: 221
Total Population in Proposed Service Area: 15,687
Total Number of Households in Service Area: 6,551
Total Number of Businesses in Service Area: 398
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 25
Unemployment Rate in the Service Area: 13
Median Income in the Service Area: 15,933
Estimated Percentage of Households with Access to Broadband: 31
Estimated Percentage of Households Subscribing to Broadband: 14

Service Area Type: Middle Mile
Service Area Name: Nash



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Served

If Service Status is "Underserved" please select at least one applicable option from this list.

Total Square Miles in Service Area: 540
Total Population in Proposed Service Area: 92,549
Total Number of Households in Service Area: 36,492
Total Number of Businesses in Service Area: 2,278
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 49
Unemployment Rate in the Service Area: 12
Median Income in the Service Area: 24,283
Estimated Percentage of Households with Access to Broadband: 55
Estimated Percentage of Households Subscribing to Broadband: 40

Service Area Type: Middle Mile
Service Area Name: New Hanover
Rural Classification of the Last Mile Service Area: Non-Rural
Service Status of the Last Mile Service Area: Served

If Service Status is "Underserved" please select at least one applicable option from this list.

Total Square Miles in Service Area: 199
Total Population in Proposed Service Area: 189,860
Total Number of Households in Service Area: 82,157
Total Number of Businesses in Service Area: 7,176
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 106
Unemployment Rate in the Service Area: 10
Median Income in the Service Area: 30,473
Estimated Percentage of Households with Access to Broadband: 81
Estimated Percentage of Households Subscribing to Broadband: 78

Service Area Type: Middle Mile



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

Service Area Name: Northampton
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Underserved

If Service Status is "Underserved" please select at least one applicable option from this list.

No more than 50% of the households in the proposed funded service area have access to facilities-based, terrestrial broadband service at greater than the minimum broadband transmission speed;

The rate of broadband subscribership for the proposed funded service area is 40% of households or less.

Total Square Miles in Service Area: 536
Total Population in Proposed Service Area: 20,690
Total Number of Households in Service Area: 7,847
Total Number of Businesses in Service Area: 336
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 37
Unemployment Rate in the Service Area: 11
Median Income in the Service Area: 16,618
Estimated Percentage of Households with Access to Broadband: 30
Estimated Percentage of Households Subscribing to Broadband: 24

Service Area Type: Middle Mile
Service Area Name: Pasquotank
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Underserved

If Service Status is "Underserved" please select at least one applicable option from this list.

The rate of broadband subscribership for the proposed funded service area is 40% of households or less.

Total Square Miles in Service Area: 227
Total Population in Proposed Service Area: 40,421
Total Number of Households in Service Area: 14,383
Total Number of Businesses in Service Area: 963
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 47
Unemployment Rate in the Service Area: 10



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

Median Income in the Service Area: 21,927
Estimated Percentage of Households with Access to Broadband: 56
Estimated Percentage of Households Subscribing to Broadband: 25

Service Area Type: Middle Mile
Service Area Name: Perquimans
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Underserved

If Service Status is "Underserved" please select at least one applicable option from this list.

No more than 50% of the households in the proposed funded service area have access to facilities-based, terrestrial broadband service at greater than the minimum broadband transmission speed;

The rate of broadband subscribership for the proposed funded service area is 40% of households or less.

Total Square Miles in Service Area: 247
Total Population in Proposed Service Area: 11,368
Total Number of Households in Service Area: 4,645
Total Number of Businesses in Service Area: 210
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 16
Unemployment Rate in the Service Area: 10
Median Income in the Service Area: 15,728
Estimated Percentage of Households with Access to Broadband: 36
Estimated Percentage of Households Subscribing to Broadband: 32

Service Area Type: Middle Mile
Service Area Name: Person
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Underserved

If Service Status is "Underserved" please select at least one applicable option from this list.

No more than 50% of the households in the proposed funded service area have access to facilities-based, terrestrial broadband service at greater than the minimum broadband transmission speed;



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

The rate of broadband subscribership for the proposed funded service area is 40% of households or less.

Total Square Miles in Service Area: 392
Total Population in Proposed Service Area: 37,265
Total Number of Households in Service Area: 14,947
Total Number of Businesses in Service Area: 733
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 32
Unemployment Rate in the Service Area: 11
Median Income in the Service Area: 21,817
Estimated Percentage of Households with Access to Broadband: 47
Estimated Percentage of Households Subscribing to Broadband: 21

Service Area Type: Middle Mile
Service Area Name: Pitt
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Served

If Service Status is "Underserved" please select at least one applicable option from this list.

Total Square Miles in Service Area: 652
Total Population in Proposed Service Area: 152,159
Total Number of Households in Service Area: 63,477
Total Number of Businesses in Service Area: 3,700
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 102
Unemployment Rate in the Service Area: 10
Median Income in the Service Area: 22,054
Estimated Percentage of Households with Access to Broadband: 63
Estimated Percentage of Households Subscribing to Broadband: 57

Service Area Type: Middle Mile
Service Area Name: Polk



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Underserved

If Service Status is "Underserved" please select at least one applicable option from this list. The rate of broadband subscribership for the proposed funded service area is 40% of households or less.

Total Square Miles in Service Area: 238
Total Population in Proposed Service Area: 18,324
Total Number of Households in Service Area: 7,908
Total Number of Businesses in Service Area: 537
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 25
Unemployment Rate in the Service Area: 9
Median Income in the Service Area: 19,804
Estimated Percentage of Households with Access to Broadband: 54
Estimated Percentage of Households Subscribing to Broadband: 24

Service Area Type: Middle Mile
Service Area Name: Richmond
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Served

If Service Status is "Underserved" please select at least one applicable option from this list.
--

Total Square Miles in Service Area: 474
Total Population in Proposed Service Area: 45,914
Total Number of Households in Service Area: 17,268
Total Number of Businesses in Service Area: 881
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 49
Unemployment Rate in the Service Area: 14
Median Income in the Service Area: 19,649
Estimated Percentage of Households with Access to Broadband: 78
Estimated Percentage of Households Subscribing to Broadband: 70



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

Service Area Type: Middle Mile
Service Area Name: Robeson
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Underserved

If Service Status is "Underserved" please select at least one applicable option from this list.

No more than 50% of the households in the proposed funded service area have access to facilities-based, terrestrial broadband service at greater than the minimum broadband transmission speed;

The rate of broadband subscribership for the proposed funded service area is 40% of households or less.

Total Square Miles in Service Area: 949
Total Population in Proposed Service Area: 127,962
Total Number of Households in Service Area: 42,622
Total Number of Businesses in Service Area: 1,882
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 102
Unemployment Rate in the Service Area: 12
Median Income in the Service Area: 15,627
Estimated Percentage of Households with Access to Broadband: 48
Estimated Percentage of Households Subscribing to Broadband: 39

Service Area Type: Middle Mile
Service Area Name: Rockingham
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Served

If Service Status is "Underserved" please select at least one applicable option from this list.

Total Square Miles in Service Area: 566
Total Population in Proposed Service Area: 92,152
Total Number of Households in Service Area: 37,700
Total Number of Businesses in Service Area: 1,741
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 64
Unemployment Rate in the Service Area: 13



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

Median Income in the Service Area: 20,194
Estimated Percentage of Households with Access to Broadband: 61
Estimated Percentage of Households Subscribing to Broadband: 58

Service Area Type: Middle Mile
Service Area Name: Rutherford
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Underserved

If Service Status is "Underserved" please select at least one applicable option from this list.

No more than 50% of the households in the proposed funded service area have access to facilities-based, terrestrial broadband service at greater than the minimum broadband transmission speed;

The rate of broadband subscribership for the proposed funded service area is 40% of households or less.

Total Square Miles in Service Area: 564
Total Population in Proposed Service Area: 63,087
Total Number of Households in Service Area: 26,445
Total Number of Businesses in Service Area: 1,269
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 48
Unemployment Rate in the Service Area: 17
Median Income in the Service Area: 19,864
Estimated Percentage of Households with Access to Broadband: 38
Estimated Percentage of Households Subscribing to Broadband: 19

Service Area Type: Middle Mile
Service Area Name: Scotland
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Served

If Service Status is "Underserved" please select at least one applicable option from this list.

Total Square Miles in Service Area: 319



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

Total Population in Proposed Service Area: 36,367
Total Number of Households in Service Area: 13,386
Total Number of Businesses in Service Area: 689
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 44
Unemployment Rate in the Service Area: 17
Median Income in the Service Area: 16,388
Estimated Percentage of Households with Access to Broadband: 61
Estimated Percentage of Households Subscribing to Broadband: 52

Service Area Type: Middle Mile
Service Area Name: Stokes
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Served

If Service Status is "Underserved" please select at least one applicable option from this list.

Total Square Miles in Service Area: 452
Total Population in Proposed Service Area: 45,936
Total Number of Households in Service Area: 17,692
Total Number of Businesses in Service Area: 633
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 35
Unemployment Rate in the Service Area: 11
Median Income in the Service Area: 19,935
Estimated Percentage of Households with Access to Broadband: 56
Estimated Percentage of Households Subscribing to Broadband: 42

Service Area Type: Middle Mile
Service Area Name: Surry
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Served

If Service Status is "Underserved" please select at least one applicable option from this list.



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

Total Square Miles in Service Area: 537
Total Population in Proposed Service Area: 72,206
Total Number of Households in Service Area: 28,378
Total Number of Businesses in Service Area: 1,711
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 68
Unemployment Rate in the Service Area: 12
Median Income in the Service Area: 20,907
Estimated Percentage of Households with Access to Broadband: 59
Estimated Percentage of Households Subscribing to Broadband: 45

Service Area Type: Middle Mile
Service Area Name: Transylvania
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Underserved

If Service Status is "Underserved" please select at least one applicable option from this list.
The rate of broadband subscribership for the proposed funded service area is 40% of households or less.

Total Square Miles in Service Area: 378
Total Population in Proposed Service Area: 29,933
Total Number of Households in Service Area: 12,742
Total Number of Businesses in Service Area: 880
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 27
Unemployment Rate in the Service Area: 10
Median Income in the Service Area: 23,677
Estimated Percentage of Households with Access to Broadband: 49
Estimated Percentage of Households Subscribing to Broadband: 22

Service Area Type: Middle Mile
Service Area Name: Tyrrell
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Underserved



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

If Service Status is "Underserved" please select at least one applicable option from this list.

No more than 50% of the households in the proposed funded service area have access to facilities-based, terrestrial broadband service at greater than the minimum broadband transmission speed;

The rate of broadband subscribership for the proposed funded service area is 40% of households or less.

Total Square Miles in Service Area: 390
Total Population in Proposed Service Area: 4,149
Total Number of Households in Service Area: 1,537
Total Number of Businesses in Service Area: 78
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 17
Unemployment Rate in the Service Area: 13
Median Income in the Service Area: 13,326
Estimated Percentage of Households with Access to Broadband: 36
Estimated Percentage of Households Subscribing to Broadband: 16

Service Area Type: Middle Mile
Service Area Name: Union
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Served

If Service Status is "Underserved" please select at least one applicable option from this list.

Total Square Miles in Service Area: 637
Total Population in Proposed Service Area: 182,966
Total Number of Households in Service Area: 62,799
Total Number of Businesses in Service Area: 4,474
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 82
Unemployment Rate in the Service Area: 11
Median Income in the Service Area: 27,992
Estimated Percentage of Households with Access to Broadband: 71
Estimated Percentage of Households Subscribing to Broadband: 68



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

Service Area Type: Middle Mile
Service Area Name: Vance
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Served

If Service Status is "Underserved" please select at least one applicable option from this list.

Total Square Miles in Service Area: 254
Total Population in Proposed Service Area: 42,921
Total Number of Households in Service Area: 15,537
Total Number of Businesses in Service Area: 873
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 41
Unemployment Rate in the Service Area: 14
Median Income in the Service Area: 17,348
Estimated Percentage of Households with Access to Broadband: 57
Estimated Percentage of Households Subscribing to Broadband: 50

Service Area Type: Middle Mile
Service Area Name: Warren
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Underserved

If Service Status is "Underserved" please select at least one applicable option from this list.

No more than 50% of the households in the proposed funded service area have access to facilities-based, terrestrial broadband service at greater than the minimum broadband transmission speed;

The rate of broadband subscribership for the proposed funded service area is 40% of households or less.

Total Square Miles in Service Area: 429
Total Population in Proposed Service Area: 19,972
Total Number of Households in Service Area: 7,708
Total Number of Businesses in Service Area: 293
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 23



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

Unemployment Rate in the Service Area: 13
Median Income in the Service Area: 14,716
Estimated Percentage of Households with Access to Broadband: 43
Estimated Percentage of Households Subscribing to Broadband: 23

Service Area Type: Middle Mile
Service Area Name: Washington
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Underserved

If Service Status is "Underserved" please select at least one applicable option from this list.

No more than 50% of the households in the proposed funded service area have access to facilities-based, terrestrial broadband service at greater than the minimum broadband transmission speed;

The rate of broadband subscribership for the proposed funded service area is 40% of households or less.

Total Square Miles in Service Area: 348
Total Population in Proposed Service Area: 13,723
Total Number of Households in Service Area: 5,367
Total Number of Businesses in Service Area: 251
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 23
Unemployment Rate in the Service Area: 13
Median Income in the Service Area: 14,994
Estimated Percentage of Households with Access to Broadband: 39
Estimated Percentage of Households Subscribing to Broadband: 24

Service Area Type: Middle Mile
Service Area Name: Watauga
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Served

If Service Status is "Underserved" please select at least one applicable option from this list.



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

Total Square Miles in Service Area: 313
Total Population in Proposed Service Area: 44,602
Total Number of Households in Service Area: 18,549
Total Number of Businesses in Service Area: 1,688
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 40
Unemployment Rate in the Service Area: 8
Median Income in the Service Area: 21,610
Estimated Percentage of Households with Access to Broadband: 92
Estimated Percentage of Households Subscribing to Broadband: 55

Service Area Type: Middle Mile
Service Area Name: Yancey
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Underserved

If Service Status is "Underserved" please select at least one applicable option from this list.
No more than 50% of the households in the proposed funded service area have access to facilities-based, terrestrial broadband service at greater than the minimum broadband transmission speed;
The rate of broadband subscribership for the proposed funded service area is 40% of households or less.

Total Square Miles in Service Area: 312
Total Population in Proposed Service Area: 17,774
Total Number of Households in Service Area: 7,472
Total Number of Businesses in Service Area: 356
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 26
Unemployment Rate in the Service Area: 12
Median Income in the Service Area: 16,335
Estimated Percentage of Households with Access to Broadband: 35
Estimated Percentage of Households Subscribing to Broadband: 16

Service Area Type: Middle Mile



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

Service Area Name: Anson
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Underserved

If Service Status is "Underserved" please select at least one applicable option from this list.

No more than 50% of the households in the proposed funded service area have access to facilities-based, terrestrial broadband service at greater than the minimum broadband transmission speed;

The rate of broadband subscribership for the proposed funded service area is 40% of households or less.

Total Square Miles in Service Area: 532
Total Population in Proposed Service Area: 25,231
Total Number of Households in Service Area: 8,616
Total Number of Businesses in Service Area: 465
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 28
Unemployment Rate in the Service Area: 15
Median Income in the Service Area: 16,362
Estimated Percentage of Households with Access to Broadband: 43
Estimated Percentage of Households Subscribing to Broadband: 24

Service Area Type: Middle Mile
Service Area Name: Cabarrus
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Served

If Service Status is "Underserved" please select at least one applicable option from this list.

Total Square Miles in Service Area: 364
Total Population in Proposed Service Area: 162,223
Total Number of Households in Service Area: 61,585
Total Number of Businesses in Service Area: 4,211
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 82
Unemployment Rate in the Service Area: 12
Median Income in the Service Area: 26,426
Estimated Percentage of Households with Access to Broadband: 67



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

Estimated Percentage of Households Subscribing to Broadband: 53

Service Area Type: Middle Mile
Service Area Name: Carteret
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Served

If Service Status is "Underserved" please select at least one applicable option from this list.

Total Square Miles in Service Area: 520
Total Population in Proposed Service Area: 63,184
Total Number of Households in Service Area: 26,938
Total Number of Businesses in Service Area: 2,154
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 64
Unemployment Rate in the Service Area: 10
Median Income in the Service Area: 27,128
Estimated Percentage of Households with Access to Broadband: 92
Estimated Percentage of Households Subscribing to Broadband: 77

Service Area Type: Middle Mile
Service Area Name: Craven
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Served

If Service Status is "Underserved" please select at least one applicable option from this list.

Total Square Miles in Service Area: 708
Total Population in Proposed Service Area: 96,434
Total Number of Households in Service Area: 40,145
Total Number of Businesses in Service Area: 2,390
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 73
Unemployment Rate in the Service Area: 11
Median Income in the Service Area: 24,229



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

Estimated Percentage of Households with Access to Broadband: 80
Estimated Percentage of Households Subscribing to Broadband: 59

Service Area Type: Middle Mile
Service Area Name: Cumberland
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Served

If Service Status is "Underserved" please select at least one applicable option from this list.

Total Square Miles in Service Area: 653
Total Population in Proposed Service Area: 309,542
Total Number of Households in Service Area: 118,846
Total Number of Businesses in Service Area: 5,976
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 161
Unemployment Rate in the Service Area: 9
Median Income in the Service Area: 22,564
Estimated Percentage of Households with Access to Broadband: 93
Estimated Percentage of Households Subscribing to Broadband: 86

Service Area Type: Middle Mile
Service Area Name: Onslow
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Served

If Service Status is "Underserved" please select at least one applicable option from this list.

Total Square Miles in Service Area: 767
Total Population in Proposed Service Area: 163,390
Total Number of Households in Service Area: 55,470
Total Number of Businesses in Service Area: 2,808
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 74
Unemployment Rate in the Service Area: 8



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

Median Income in the Service Area: 21,221
Estimated Percentage of Households with Access to Broadband: 96
Estimated Percentage of Households Subscribing to Broadband: 82

Service Area Type: Middle Mile
Service Area Name: Swain
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Underserved

If Service Status is "Underserved" please select at least one applicable option from this list.

No more than 50% of the households in the proposed funded service area have access to facilities-based, terrestrial broadband service at greater than the minimum broadband transmission speed;

The rate of broadband subscribership for the proposed funded service area is 40% of households or less.

Total Square Miles in Service Area: 528
Total Population in Proposed Service Area: 12,968
Total Number of Households in Service Area: 5,137
Total Number of Businesses in Service Area: 375
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 32
Unemployment Rate in the Service Area: 15
Median Income in the Service Area: 14,647
Estimated Percentage of Households with Access to Broadband: 36
Estimated Percentage of Households Subscribing to Broadband: 16

Service Area Type: Middle Mile
Service Area Name: Wilson
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Served

If Service Status is "Underserved" please select at least one applicable option from this list.

Total Square Miles in Service Area: 371



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

Total Population in Proposed Service Area: 76,573
Total Number of Households in Service Area: 30,589
Total Number of Businesses in Service Area: 1,861
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 69
Unemployment Rate in the Service Area: 13
Median Income in the Service Area: 20,879
Estimated Percentage of Households with Access to Broadband: 62
Estimated Percentage of Households Subscribing to Broadband: 59

Service Area Type: Middle Mile
Service Area Name: Chatham
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Served

If Service Status is "Underserved" please select at least one applicable option from this list.

Total Square Miles in Service Area: 683
Total Population in Proposed Service Area: 61,222
Total Number of Households in Service Area: 22,794
Total Number of Businesses in Service Area: 1,294
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 44
Unemployment Rate in the Service Area: 8
Median Income in the Service Area: 28,189
Estimated Percentage of Households with Access to Broadband: 68
Estimated Percentage of Households Subscribing to Broadband: 44

Service Area Type: Middle Mile
Service Area Name: Harnett
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Underserved

If Service Status is "Underserved" please select at least one applicable option from this list.

The rate of broadband subscribership for the proposed funded service area is 40% of households or less.



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

--

Total Square Miles in Service Area: 595
Total Population in Proposed Service Area: 108,624
Total Number of Households in Service Area: 39,132
Total Number of Businesses in Service Area: 1,659
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 62
Unemployment Rate in the Service Area: 11
Median Income in the Service Area: 19,114
Estimated Percentage of Households with Access to Broadband: 59
Estimated Percentage of Households Subscribing to Broadband: 34

Service Area Type: Middle Mile
Service Area Name: Lee
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Underserved

If Service Status is "Underserved" please select at least one applicable option from this list.
The rate of broadband subscribership for the proposed funded service area is 40% of households or less.

Total Square Miles in Service Area: 257
Total Population in Proposed Service Area: 57,878
Total Number of Households in Service Area: 21,104
Total Number of Businesses in Service Area: 1,356
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 45
Unemployment Rate in the Service Area: 15
Median Income in the Service Area: 20,354
Estimated Percentage of Households with Access to Broadband: 68
Estimated Percentage of Households Subscribing to Broadband: 30

Service Area Type: Middle Mile
Service Area Name: Moore



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

Rural Classification of the Last Mile Service Area:Rural
Service Status of the Last Mile Service Area: Served

If Service Status is "Underserved" please select at least one applicable option from this list.

Total Square Miles in Service Area: 698
Total Population in Proposed Service Area: 84,058
Total Number of Households in Service Area: 30,091
Total Number of Businesses in Service Area: 2,422
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 66
Unemployment Rate in the Service Area: 10
Median Income in the Service Area: 23,780
Estimated Percentage of Households with Access to Broadband: 70
Estimated Percentage of Households Subscribing to Broadband: 60

Service Area Type: Middle Mile
Service Area Name: Wake
Rural Classification of the Last Mile Service Area:Rural
Service Status of the Last Mile Service Area: Served

If Service Status is "Underserved" please select at least one applicable option from this list.

Total Square Miles in Service Area: 832
Total Population in Proposed Service Area: 829,218
Total Number of Households in Service Area: 311,112
Total Number of Businesses in Service Area: 28,184
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 451
Unemployment Rate in the Service Area: 8
Median Income in the Service Area: 33,149
Estimated Percentage of Households with Access to Broadband: 90
Estimated Percentage of Households Subscribing to Broadband: 85

Service Area Type: Middle Mile



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

Service Area Name: McDowell
Rural Classification of the Last Mile Service Area: Rural
Service Status of the Last Mile Service Area: Underserved

<p>If Service Status is "Underserved" please select at least one applicable option from this list.</p> <p>No more than 50% of the households in the proposed funded service area have access to facilities-based, terrestrial broadband service at greater than the minimum broadband transmission speed;</p> <p>The rate of broadband subscribership for the proposed funded service area is 40% of households or less.</p>

Total Square Miles in Service Area: 442
Total Population in Proposed Service Area: 43,523
Total Number of Households in Service Area: 17,309
Total Number of Businesses in Service Area: 726
Total Number of Community Anchor Institutions and Public Safety Entities in Proposed Funded Service Area: 39
Unemployment Rate in the Service Area: 15
Median Income in the Service Area: 18,451
Estimated Percentage of Households with Access to Broadband: 37
Estimated Percentage of Households Subscribing to Broadband: 31

F. Community Anchor Summary

Community Anchor Summary	
Schools (k-12)	58
Libraries	54
Medical and Healthcare Providers	2
Public Safety Entities	12
Community Colleges	45
Public Housing	0
Other Institutions of	7



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM		Easygrants ID: 4218	
Funding Opportunity: Broadband Technology Opportunities Program		Applicant Organization: MCNC	
Task: Submit Application - BTOP		Applicant Name: Ms. Patricia L. Moody	

Higher Education	
Other Community Support Organization	1
Other Government Facilities	0
TOTAL COMMUNITY ANCHOR INSTITUTIONS	179
Historically Black colleges and Universities	6
Tribal Colleges and Universities	0
Alaska Native Serving Institutions	0
Hispanic Serving Institutions	0
Native Hawaiian Serving Institutions	0
TOTAL MINORITY SERVING INSTITUTIONS	6

G. Project Benefits

Demographics

Jobs	
How many direct jobs-years will be created from this project?	14
How many indirect jobs will be created from this project?	725
How many jobs will be induced from this project?	416

Methodology used to estimate jobs:



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

NCRBI uses the methodology suggested by the President's Council of Economic Advisors to produce job estimates. The CoEA measures the impact on GDP of all ARRA spending and assumes this impact will create jobs in a ratio similar to the number of jobs resulting from the entire GDP. Because the effects on employment lag slightly those of real GDP, the CoEA assume that one-half of the employment effect occurs in the contemporaneous quarter, one-third occurs in the subsequent quarter, and one-sixth in the quarter two quarters ahead. The CoEA simulated impacts of the three main types of fiscal stimulus: government spending, tax cut, and state fiscal relief. The results of simulations show that \$92,136 of stimulus funding will create one job-year. The NCRBI value is \$111,654,323 with \$33,677,197 in matching and \$77,977,126 in Federal funds. To determine job years created the in-kind match (\$5,456,000) is subtracted and the cash spending of \$106,198,323 is then divided by \$92,000 per job-year figure to produce 1,154.23 job-years created by this project. Per CoEA 64% of total job-years are direct and indirect jobs and the remaining 36% are induced. MCNC and its sub-recipient ERC Broadband will hire 14 of 738.71 calculated direct/indirect jobs leaving 724.71 indirect job-years created. There will be 415.52 induced job-years created.

Most of the spending from NCRBI will be in economically distressed areas of NC with unemployment and poverty rates much higher than the national average.

Project Impact:

North Carolina Rural Broadband Initiative (NCRBI) Impact

A February 2010 study by Jessica Milano entitled Where Jobs Come From: The Role of Innovation, Investment, and Infrastructure in Economic and Job Growth once again confirmed the role of broadband in creating economic prosperity, educational attainment and job growth. Ms. Milano found that communities with newly installed enhanced broadband access had, on average, 6.4% greater job growth than communities without. With the body of research regarding the positive impacts on enhanced broadband infrastructure being so consistent, the non-profit operator of NCREN, MCNC, has chosen to follow this research by charting a definitive path for the pursuit of BTOP round 2 Comprehensive Community Infrastructure (CCI) funds. The focus of the application is to build public/private partnerships in the state to bring middle mile infrastructure to areas of North Carolina where it is lacking.

On the public sector side, the strategy builds upon NCREN, an existing high speed optical backbone operated by MCNC, that serves almost all K-20 public education institutions in the state. NCREN is significantly bandwidth limited in the same counties that are identified as underserved in the application. MCNC is positioned as the operator of the public side of the network serving public sector Community Anchor Institutions (CAI). MCNC proposes to



Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

enhance the NCREN connections to the existing K-20 public education CAIs on the network and expand NCREN service to other CAIs including public health and safety facilities and libraries. These enhanced connections will be accomplished with direct dark fiber builds to the CAIs or in combination with private sector partners who provide enhanced bandwidth last mile circuits to these CAIs. Commitments from existing and new CAIs to connect to NCREN are included in the application via letters of support.

On the private sector side, MCNC has built coalitions with nine middle and last mile private sector service providers that are outlined in several sections of the NCRBI. These private sector providers will partner with MCNC to provide last mile circuits off the new middle mile that serve CAIs not connected via direct fiber. These private sector providers will also offer added competition to the wholesale and last mile sectors in these underserved areas. This competition will increase options for broadband service for consumers and small businesses in these regions, leading to wholesale and retail market disruption and the positive results so many broadband adoption studies have documented the last decade.

This round 2 middle mile proposal build covers 69 rural counties in the northeast, north central, northwest and south central portions of North Carolina. MCNC, with the help of the University of North Carolina at Chapel Hill's Frank Hawkins Kenan Institute for Entrepreneurship and the School of Government, has done extensive research on the probable project impact of this round 2 CCI proposal named the North Carolina Rural Broadband Initiative (NCRBI).

Community Anchor Institutions

MCNC's BTOP round 2 proposal is a 1802 mile middle mile build through 69 counties in northeastern, northwestern, north central and south central North Carolina. This proposal builds on the existing NCREN. When combined with NCREN's current owned fiber and the MCNC round 1 BTOP award, funding of the round 2 proposal will create a CAI network that spans the entire state with owned dark fiber. The round 2 middle mile build encompasses 67 rural counties 31 of whom meet the NTIA standard for economically distressed classification (unemployment 1% or more above the national average and per capita income 80% or below the national average), 55 of the 69 counties meet either the unemployment or per capita income standard. The proposal includes direct fiber builds to 45 community college main and satellite campuses, 58 K-12 school districts, 7 institutions of higher learning, 54 libraries and 14 county and municipal health and public safety agencies in the 4 region build area. In these 69 counties there



Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

are 5.9M residents, and approximately 710,000 households without access to broadband service. There are a total of 4066 community anchor institutions in the NCRBI service area.

MCNC, through its operation of NCREN and in partnership with the State of North Carolina Office of Information Technology Services (ITS), already serves community colleges, universities, K-12 school districts and county public health and safety agencies. The direct fiber builds will replace bandwidth-limited, leased last mile circuits with direct fiber connections. Direct fiber will allow these Community Anchor Institutions to substantially upgrade their connections to the state's Public Sector Intranet, the commercial Internet and advanced research networks such as Internet2 and National Lambda Rail with whom NCREN directly peers.

MCNC has coordinated closely with the State Librarian and the state's public health sector to gain commitments for public libraries and county public health agencies and county operated free clinics to connect to NCREN. Letters of support outline these commitments. NC has coordinated closely with a BTOP round 2 public computing center proposal from the State Library of North Carolina to upgrade public computing centers in libraries in 38 counties with high unemployment. The libraries included in the North Carolina Public Library Computing Centers proposal comprise the bulk of the public libraries that will be connected to NCREN with direct fiber.

Service Provider Relationships

Relationships with wholesale and last mile service providers are the core of this round 2 BTOP proposal. In northeastern and north central North [REDACTED] [REDACTED] has committed to lease fiber that will help complete its network. The proposed NCRBI network will [REDACTED] to extend enhanced speed and triple play broadband services into these lightly populated and economically distressed regions.

In the northwestern portion of the state, in all counties but Graham County, MCNC has built upon its decade long relationship with the Education & Research Consortium of the Western Carolinas (ERC Broadband). ERC will operate the round 2 BTOP fiber in this region. ERC will wholesale service to last mile providers in this region and will directly serve schools, libraries, community colleges and county health and public safety facilities with the new network. ERC, submitted an unsuccessful round 1 BTOP proposal combining last mile and



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

[REDACTED] and would not be possible without a BTOP award.

In [REDACTED] County in the Northwest, MCNC has built upon a 5 year relationship with network operator [REDACTED]. The build through [REDACTED] will allow BalsamWest to offer wholesale services to last mile operators in the region and to serve several Community Anchor Institutions with direct fiber. This build is supported by [REDACTED]

In the south central portion of the NCRBI, MCNC has incubated a new relationship with [REDACTED] and [REDACTED] to help fund the match for the proposal. [REDACTED] and [REDACTED] have agreed to lease fiber on the NCRBI network. Zayo and [REDACTED] will use these fibers to wholesale to last mile carriers in the region.

Vulnerable Populations:

Unfortunately, we have no shortage of vulnerable populations in North Carolina. In fact, the majority of the roughly 6 million citizens, 2.3 million households, and 160,000 businesses in the 69 counties to be served by this project is vulnerable in one respect or another and has been so for decades. The NCRBI seeks to help foster fundamental, transformational change in these outcomes.

Analysis of the 69 counties included in the NCRBI using standard definitions of “vulnerable populations” results in the following findings with respect to vulnerable population groups that are overrepresented in the Proposed Funded Service Area (PFSA).

- 38 of the 69 counties have unemployment rates 1% or greater than the national average. For example, in December 2009, Graham and Scotland counties had the highest unemployment rates among the 69 counties of 17.6% and 17.1% respectively.
- 48 of the 69 counties have median incomes less than or equal to 80% of the national average. For example, Richmond, Northampton, Bertie, Halifax, Robeson, and Tyrrell counties have median incomes less than 70% of the national average.
- 31 of the 69 counties have an unemployment rate 1% or more above the national average AND median income less than or equal to 80% of the national average.



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

- 55 of the 69 counties have EITHER an unemployment rate 1% or more above the national average OR median income less than or equal to 80% of the national average.
- 67 of the 69 are considered rural, only 2 – Mecklenburg and New Hanover – are considered non-rural.
- A significant overrepresentation of Native American population lives in Cherokee, Graham, Jackson, Richmond, Scotland, Robeson, Columbus, Halifax, and Warren counties and the PFSA is the ancestral home to more than 6 Native American tribes.
- 24 of the 69 counties have an African American population that is overrepresented with respect to the state average of 21.6% Black. Warren, Halifax, Northampton, Hertford, Bertie, and Edgecombe counties have over 50% Black population.
- Hertford, Bertie, Martin, Edgecombe, and Washington counties are projected to continue losing population over the coming two decades as they have during the current decade.
- 23 of the 69 counties have a median age over 40 years old, and 25 counties are significantly overrepresented with senior citizens over the age of 65 compared to the state average of 12%.
- Hispanic citizens are overrepresented relative to the state average of 4.7% in 6 of the 69 counties.
- 20 of the counties are ranked within the lowest quartile of the 25 least healthy counties in North Carolina.

Level of Need:

The NCRBI is a comprehensive proposal to address the CAI, consumer and business needs for broadband services in the most rural parts of North Carolina (NC). It will provide both middle mile infrastructure and direct connections to CAI's in 69 counties, 67 of them rural. The need is great. In these counties, 50% of school age children live below the poverty line. In 38 of the counties, unemployment is 1% or more above the national average. 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, and 67 of the 69 counties fully qualify as underserved per the NTIA definition or have underserved pockets within them.

When combined with MCNC's round 1 BTOP award, the NCRBI would give NC a robust middle mile network providing direct fiber or greatly enhanced broadband services to the majority of K12 schools, community colleges, 4 year colleges and universities, libraries and public health facilities in rural NC.

The NCRBI builds both middle mile infrastructure and direct connections to CAIs in the northeast, north central, northwest and south central portions of NC. MCNC focuses on this strategy for three reasons. First, the round 2 NOFA prioritizes CAI direct connections. Second, the NCRBI covers the areas of rural poverty in NC not touched by MCNC's round 1 award.



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

CAIs are where many citizens in these areas access bandwidth hungry internet applications to increase educational attainment, access better health care or conduct a job search. Finally, directly connecting CAIs drives fiber further into the regions of the build. This assists the private sector by reducing the capital cost of the middle mile build and increasing wholesale price competition. This relief of capex investment and greater wholesale competition allows the private sector providers to focus on building last mile deployments at lower costs with the savings passed on to consumers. The NCRBI also includes 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 of a middle mile build would deter last mile investments.

Broadband Landscape

For CAIs and consumers there is a lack of dark fiber in each of the regions covered by the build. In the northeast, the residents of the region were so desperate for broadband they funded an economic development organization, APEC, to support installation of fiber optic lines in the right-of-way of a gas pipeline project. After installing most of the conduit, APEC ran out of funds. As a result, CAIs in the region, including historically black university Elizabeth City State, the University Coastal Studies Institute and several community colleges, have limited ability to deliver an equitable education to their students. MCNC now leases low bandwidth last mile circuits to serve CAIs in this region. The NCRBI will provide direct fiber to many of CAIs in the region and will use the existing APEC constructed conduit as part of the NCRBI deployment.

[REDACTED] The traditional service provider business model greatly limits infrastructure investment and new broadband services in these regions. As evidence of the current lack of broadband facilities, [REDACTED] has committed to lease fiber that will help complete its network. The proposed NCRBI network will enable [REDACTED] enhanced speed and triple play broadband services into these lightly populated and economically distressed regions.

CAIs in the north central region are similar to those in the northeast. Most CAIs depend on NCREN for transport and Internet access and [REDACTED] for last mile service. MCNC has been limited to leasing low bandwidth last mile circuits to serve CAIs in this region. These low bandwidth circuits are the only services available due to outdated middle and last mile infrastructure. The NCRBI will provide upgraded equipment and direct fiber to many of CAIs in the region.

MCNC has tried to obtain fiber in the northwest and south central portions of the state for many years. MCNC has been challenged to provide adequate capacity to CAIs in this region. The



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

NCRBI will provide direct fiber to many CAIs in these two regions. As broadband-enabled technologies become mission critical for CAIs, it is important these institutions have dependable service and enhanced capacity. The resiliency of NCREN in these two regions is challenged by the fact that only a single path of fiber for middle mile is available. This means that a single fiber cut or outage disrupts service to the region. In carrier class networks, multiple paths to regions exist so network traffic can be re-routed in the case of an outage or fiber cut and service can continue uninterrupted.

In addition in the south central and northwest regions, MCNC has developed IRU arrangements with long time MCNC collaborators [REDACTED] and ERC Broadband in the northwest and [REDACTED] and [REDACTED] in the south central. These wholesale providers have plans to disrupt the wholesale market and lower last mile prices.

Needs not being met today

Throughout the NCRBI regions, MCNC is limited in its ability to find middle-mile capacity and alternate routes needed to meet the NCREN availability SLA and serve the growing CAI community using NCREN. Even when MCNC has obtained dark fiber capacity along national backbone routes passing through NC, it has been very difficult to connect those resources to regional provider networks. The policies of incumbent carriers regarding access to their PoPs, colocation, and cross connect make it impossible to cost effectively link private fiber to incumbent services. The direct fiber provided by the NCRBI will address this need. Simply put, the NCRBI will allow all of NC to scale quickly to the CAI standard of a minimum of 1G of service to each CAI (as outlined in the recently released National Broadband Plan) with a multiple path network that can meet carrier reliability standards. The specific unmet needs of sectors of CAIs are described below.

Education CAIs

MCNC's existing base of users of NCREN in higher education and K12 school districts already exceed available network capacity in the NCRBI regions. MCNC data shows that just the university portion of the higher education CAIs has seen traffic grow from about 1.5Mbps of aggregate demand in 1992 to over 10Gbps today; this represents a 10,000 fold increase in demand. Other CAI sectors have been slower to adopt technology and are at the beginning of what MCNC expects to be a similar or steeper growth curve.

Until 2 years ago, K12 education in NC had no organized approach to using the Internet. Since then, political and educational leaders funded the connection of K12 districts and schools to the NCREN backbone. While the State has funded K12 connectivity, there is great pressure to keep that funding flat or even decrease it, even as bandwidth demand in these institutions grows at a 30-40% compounded annual growth rate. It will be impossible to sustain the growing demand for



Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

K12 at flat or decreasing prices unless the facilities-based approach outlined in the NCRBI is funded.

NC has one of the most extensive community college systems in the nation, and with 58 main campuses and approximately 150 more satellite locations, a community college facility is within a 30 minute drive of every citizen in the state. Community colleges also offer a unique program called Learn and Earn, where high school students earn an associates degree and a high school diploma in 5 years of study. Community colleges also offer 4 year degree classes to on-site students through a partnership with the University of North Carolina system called 2+2. Community colleges serve every learner from the high school student to the laid off worker seeking retraining.

Community colleges in NC have had a common network that served their modest administrative needs. In recent years however community college needs for bandwidth have exploded. The system's mission to provide life-long learning, retraining, and college prep has led to the aggressive adoption of online and video course offerings. While traditional, on-campus student registrations have remained at 1998 levels, distance-based (video and online) have increased from about 1.5% of student FTEs to 37% during that same time period. In the next 3-7 years, online enrollment will surpass on-campus enrollment. The NCRBI will directly connect 45 community college facilities to NCREN via direct fiber. Direct fiber connections will fix costs for bandwidth and allow growth in virtual learning demand to occur unimpeded by quickly rising delivery costs.

NC is also home to 36 private colleges and universities, and in the mid 1990s MCNC was at the forefront of offering Internet access to them supplemented by NSF grants. Since that time many private schools have discontinued NCREN service because of costs. NCRBI will allow MCNC to offer more attractive subscription rates to these institutions.

Other CAIs

CAIs such as libraries, public health and public safety facilities are often the only places citizens in the NCRBI targeted communities can access the internet. These CAIs have the same bandwidth limitations as education CAIs. The NCRBI would build direct fiber to these public access CAIs and will increase the capacity of incumbent carriers to serve these facilities with robust, modern services like burstable gig-E.

The role of libraries in these communities is changing. They are morphing from being merely repositories of written material to digital hubs where citizens access the Internet to seek employment and educational opportunities. Robust broadband access is critical to libraries performing this role. MCNC has coordinated closely with the State Library of NC on its BTOP Round 2 public computing center proposal that proposes to upgrade library-based public



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

computing centers in 38 counties with the high unemployment. These new public computing centers comprise the bulk of the public libraries that are to be connected to NCREN with direct fiber through the NCRBI.

There are 229 county health agency offices and county operated free clinics, some of which are also first-responder locations. Federal and state governments are pushing for coordinated electronic medical records to improve individual patient care and public health roles. Access to EMRs will soon become critical to these locations and patients will not be served without this capability. EMRs and their exchange via Healthcare Information Exchanges can help reduce healthcare expense by making it possible to coordinate treatment and avoid duplicate tests, procedures, and medications. MCNC recently won a competitive bid contract offered by a regional consortium of public health providers to serve all county health agencies and county operated free clinics in NC. The NCRBI will provide high bandwidth services to these facilities.

Consumers

Finally, last mile broadband infrastructure investments for consumers and businesses in the regions of the build have been muted since the CLEC collapse of 2000-01. Until now, there has been no incentive for incumbent carriers to invest in rural infrastructure. The NCRBI, through its 9 private sector collaborators [REDACTED] ERC Broadband, [REDACTED] provides a compelling case for infrastructure investment. New, leading edge services will be offered at more attractive prices to consumers and small businesses by these collaborators if the NCRBI is funded. These areas will not be left behind as the NTIA and FCC pursue the 100 squared (100M homes with 100 Mbps) strategy of the national broadband plan.

H. Technology

Technology Type

Indicate the technology that will be used to deliver last mile services. The following items were selected:

Wireline - Fiber-optic Cable

Other:

Technology Questions

Methodology for Area Status:



Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

MCNC defines the NCRBI middle-mile service areas at the county level. These middle mile services include 69 of North Carolina's 100 counties and are fully listed within the proposal. MCNC's methodology enlisted the assistance of the Broadband Consulting Group (BBCGi), a consortium of broadband technology specialists; and the e-NC Authority, North Carolina's rural broadband authority.

BBCGi researched status using the NOFA <40% subscribership criteria while also collecting data estimating broadband access to see where the <50% access criteria was met. BBCGi purchased over 150,000 current records from Experian to obtain a representative sample of household addresses and demographics within each service area. BBCGi's methodology: 1) Processed active phone numbers and addresses against public switched phone number databases, cable and telephone franchise databases, provider broadband availability websites, and internal databases to determine subscribership to broadband for each household in the representative sample; 2) Aggregated data analysis and results at the county level; 3) Used measured and modeled estimates at the census tract level; 4) Took additional steps to collect broadband access data for geographically dispersed households necessary to estimate the access percentage within each service area.

The FCC released Form 477 subscribership data from 2008. BBCGi data is similar to the FCC's with a few minor differences. BBCGi collected more data in these counties to better compare with the FCC provided data which was submitted by telecommunications providers. In 58 of 69 counties the FCC and BBCGi data were consistent, though in some cases BBCGi simply did not measure the level of subscribership as reported by the FCC. For those counties, to maintain consistency, we are reporting estimates based on the BBCGi data methodology.

e-NC derived composite underserved service percentages from analysis and interpolation of data from providers, census tract data, and cable and DSL service areas. Focusing on the <50% access criteria to identify underserved areas, e-NC used this process: Selected all wirecenters with 10-50% DSL (per 12/31/2007 data); Removed census blocks with cable service from this set (a conservative assumption reflecting how cable service is reported). e-NC's composite percentages are affected by overlapping service areas, population and housing reporting data, geographical variations and other variables.

NCRBI analysis found the majority of our service areas are underserved. 37 of the 69 counties qualify based on the <40% subscribership and/or the <50% access criteria. NCRBI also



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

considers 30 of 32 "served" areas to truly be only partially served, as smaller regions within can be identified as underserved. Please refer to our service area map for a visual representation of these underserved pockets within partially served counties, and to our supplements for further information on the census blocks.

Description of Network Openness:

MCNC has established policies for the proposed NCRBI solution that are fully consistent with the BTOP NOFA's nondiscrimination and network interconnection obligations, and adhere fully to the principles contained in FCC 05-151. MCNC's policies on nondiscrimination, interconnection, and network management are accessible on the MCNC Web site under the Network Policies section. Changes to the policies are prominently noted on the Web site, and current MCNC customers are notified of changes via e-mail.

NONDISCRIMINATION POLICY: MCNC provides Internet service to community anchor institutions (CAI) in an open, non-discriminatory manner. Any CAI within the MCNC service area is eligible to connect at reasonable rates and terms. As a middle-mile provider, MCNC uses several upstream Tier 1 Internet service providers to provide full access to the Internet. MCNC does not make any distinction in its treatment of customer traffic based on application or content. MCNC also provides lit capacity and other middle-mile services to private-sector middle-mile operators and wholesalers in an open, provider-neutral and non-discriminatory fashion. Any middle- or last-mile provider or wholesaler within the MCNC service area is eligible to connect at reasonable rates and terms.

INTERCONNECTION POLICY: MCNC provides interconnection points in each of its regional points of presence. Last-mile providers (including ILEC, MSO, CLEC, energy cooperatives, and independent telecom companies) may interconnect with MCNC's network at reasonable rates and terms for the purpose of exchanging traffic. These interconnection points also allow commercial participants to serve last-mile providers with wholesale access to network components and services such as wavelengths and fibers, at reasonable rates and terms. MCNC serves the needs of CAIs, while wholesale commercial providers serve commercial last-mile providers and their customers.

NETWORK MANAGEMENT POLICY: The MCNC Internet service is based on best-effort delivery. MCNC does not use any mechanisms to allocate bandwidth preferentially to any specific class of users, applications, providers, or sources. Users, peers, and providers are limited



Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

only by the physical or contractual bandwidth limitations of their connection to the network. Except for enforcing contracted bandwidth limits, MCNC does not limit bandwidth usage by its users, peers, or providers via mechanisms such as rate limiting or policing. MCNC does not restrict user's access to specific content, block the use of specific applications, or limit the type of devices that can be used to access the network. However, MCNC will block any traffic destined for its infrastructure by unauthorized sources and will take the appropriate action to either block or limit traffic that transits its network if, by MCNC's determination, that traffic is harmful to the recipient. MCNC will cooperate with law enforcement if notified of harmful or illegal traffic transiting its network.

System Design:

The proposed build aims to extend the scalable, reliable, cost-effective services that are available to CAIs in the core of the state to as many CAIs as possible in the four proposed service areas: northeastern, north central, northwest, and south central (see the Network Diagrams and Network Maps sections for more details). In addition, this project will provide middle-mile services to last-mile providers and commercial wholesaler providers in these same regions. The system design consists of three functional elements: 1) fiber access, 2) optical transport and 3) routing/switching.

Fiber Access: New fiber construction involves placing two 1¼-inch HDPE conduits; one supplied with 48 strands (or more) of SMF-28 fiber, the other a spare conduit to allow for capacity and/or technology upgrades. New builds will be buried in most areas of the state to maximize reliability, particularly in those areas susceptible to hurricanes or harsh winter ice storms. Aerial will be used as an alternative in mountainous areas if needed to maintain budget and schedule constraints. Interconnection points to be located along the route at approximately 5,000 foot intervals (or less) will provide for lateral connections to CAIs, interconnection of commercial wholesale providers, and future expansion of the network. In addition, this proposal includes a collaboration with the NC Department of Transportation to attach conduit to bridges carrying high count SMF-28 fiber bundles across rivers as part of the network build. This will provide additional fiber access for commercial wholesale providers on paths that are difficult and expensive to traverse, thus lowering their cost and time to build out their infrastructure to unserved and underserved areas of North Carolina.

Optical transport: New 40-channel (minimum) DWDM nodes will be installed and interconnected along the fiber spans. Each segment will be connected to the existing network as



Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

well as to the BTOP round 1 network at NCREN PoPs, which serve as regional aggregation points. The new nodes will integrate into the existing Cisco-based optical network (comprised of ONS 15454 MSTPs) to allow provisioning of wave services between any two points on the footprint. The system will support increases in the number of channels and the capacity per channel over its lifetime. Detailed engineering of the new routes (using a sample vendor) is complete and serves as the basis for generating the equipment budget contained within the proposal.

Routing/switching: The NCREN IP network is built using Cisco CRS-1 core routers and Cisco 7609 aggregation routers. The core routers are currently deployed at NCREN PoPs in Charlotte, Winston-Salem, and Raleigh, and serve as redundant peering points for upstream Tier 1 ISPs and national R&E networks such as Internet2 and National Lambda Rail. Aggregation routers on the existing network are located at the remaining NCREN PoPs, and new aggregation routers will be deployed at new NCREN PoP locations during the BTOP round 1 network build. Completion of the BTOP round 1 network will allow for interconnection of all core and aggregation routers via waves provisioned on MCNC-owned infrastructure. The proposed round 2 build will provide the platform to allow CAIs in the four new service regions to be backhauled via provisioned waves to one or more NCREN aggregation routers for IP service. Each CAI served will connect to the middle-mile build via direct fiber and interface to the aggregation routers at a minimum of Gigabit Ethernet. A router outfitted with a minimum of two Gigabit Ethernet interfaces (one connected to NCREN and the other connected to the CAI LAN) will serve as the CPE and demarc between NCREN and the CAI. All current NCREN IP services will be made available to CAIs in the proposed service areas, including commodity Internet access and access to national R&E networks.

This suite of technologies has provided a robust, scalable and cost effective combination of services to CAIs in the more developed areas of the state for many years. The NCREN IP service, which utilizes all three layers (fiber, optical transport and routing), operates at 99.999% availability. The strategy of extending the infrastructure to provide these services into unserved and underseved areas has been validated by the NTIA through the BTOP round 1 award, and will be continued for this proposed build.

The proposed build will enable scalability and stable service pricing for CAIs at a time of intense budget pressure and increasing need for bandwidth. With the core of the network implemented on MCNC-owned fiber infrastructure, CAIs will not experience bandwidth funding related



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

barriers to innovation. MCNC has a fully funded program for technology refresh and redeployment of the core backbone to ensure that capacity and feature requirements are met over the long term through funding from the MCNC endowment and existing service contracts with the University of North Carolina System, NC Department of Public Instruction, and the NC Community College System. The total life of this system will be greater than ten years, with replacement of certain components occurring approximately every six years.

The fiber network deployed will be delivered directly to the heart of the communities included in this proposal. In many cases the community colleges, universities, and school districts in the four proposed service area have agreed to serve as PoPs in order to minimize operational expenses over the long term.

CAIs will be able to apportion bandwidth on an as-needed basis with no long-term contractual commitments, which is especially beneficial for collaborations with research institutions unwilling or unable to enter into long-term contracts for short-term bandwidth needs. The new network will allow for collaboration between researchers in underserved areas and their counterparts in well-served regions of the state.

Is the applicant seeking a waiver pursuant to section IX.C of the NOFA so as to sell or lease portions of the award-funded broadband facilities during their life?

Yes

I. Project Budget

Project Budget		
	Federal Grant Request	Match
Last Mile	0	0
Middle Mile	77,977,126	33,677,197
Total	77,977,126	33,677,197

Project Budget Total: \$111,654,323

Match Percent: 30.2%

Projects Outside Recommended Funding Range:



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM		Easygrants ID: 4218	
Funding Opportunity: Broadband Technology Opportunities Program		Applicant Organization: MCNC	
Task: Submit Application - BTOP		Applicant Name: Ms. Patricia L. Moody	



Outside Leverage	
Applicant is providing matching funds of at least 20% towards the total eligible project costs?	Yes
Matching cost detail	<p>MCNC has raised, through private foundations and wholesale and retail service providers, a combined \$33,677,197 match (30.16%) composed of \$28,221,197 in cash (25.27%) and \$5,456,000 (4.89%) in in-kind matching contributions. The match includes contributions from several collaborators.</p> <p>Cash: Foundation Grant The Golden LEAF Foundation (GLF), a North Carolina private foundation focused on economic development in economically distressed counties has provided the majority of the cash match in the amount of \$24M which amounts to 21.49% of the total NCRBI budget. The terms of the GLF grant allow for the proportionate expenditure of funds as required by the BTOP program. The GLF and MCNC will have equal interest in fibers in the NCRBI that are not leased prior to the submission of the application.</p> <p>IRUs</p> <div style="background-color: black; height: 150px; width: 100%;"></div>



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

	<p>[REDACTED]</p> <p>[REDACTED] yield a lease of 8 strands and approximately 400 strand miles.</p> <p>In the northwest, [REDACTED] County specifically, MCNC has built upon a [REDACTED]</p> <p>[REDACTED] and MCNC to interconnect with a network that includes the Oak Ridge National Laboratory (ORNL). ORNL is a strategic research site for the R1 higher ed institutions served by NCREN.</p> <p>[REDACTED]</p> <p>These five IRU commitments total 3.55% of the total budget.</p> <p>Short Term Leases</p> <p>In northeastern and north central North Carolina [REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED] This amounts to .23% of the budget.</p>
--	--



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

In-Kind

The Albemarle Pamlico Economic Development Corporation (APEC), a public economic development organization, has donated existing fiber optic conduit in the northeast region of the state to MCNC. This conduit is a key part of the NCRBI plan. The conduit remained unused as the financial resources to complete a previously planned middle mile project in the region could not be raised. The previous project exhausted funds in 2004 after much of the conduit had been constructed but no fiber had been placed. The NCRBI, if funded, will assist in meeting the original purpose of the conduit, to build a middle mile in the northeast. This is an in-kind match valued at \$4.75M and represents 4.25% of the total budget. But for this 128 miles of conduit this proposal would have had to include more costly new construction.

Across the four service areas MCNC will be requiring environmentally controlled "hut" locations for regeneration facilities. We have received overall support from the UNC system and the NC Community College system for donated use of their facilities (see attached letters). MCNC suspects that up to 19 of these donated sites will offset the need to acquire land. The proposal conservatively includes in-kind funds for 17 of these sites and will inspect all possibilities. MCNC has specific letters of donation from Appalachian State University, University of North Carolina-Pembroke, Elizabeth City State University, University of North Carolina-Wilmington, Fayetteville State University, the Golden LEAF Foundation, Wilkes Community College, Rockingham Community College, Piedmont Community College, Halifax Community College, Roanoke-Chowan Community College, Martin Community College, South Piedmont Community College and Southeastern Community College that have suitable space in their existing facilities or land to locate prefabricated telecom huts. These spaces will be used in lieu of the eligible costs of purchasing land and amounts to \$.7M, or .64% of the total budget. The university and community college system will benefit from an award for this proposal by being recipients of long term, price stable, bandwidth availability.



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

	<p>The 30% match coming from several different sources, shows the breadth and depth of support for the NCRBI.</p>
Unjust enrichment	<p>MCNC received an award in round 1 BTOP for \$28.2M to address access issues in portions of the southeastern and western areas of the State of North Carolina. This BTOP2 proposal, the NCRBI, addresses the northeast, north central, northwest, and south central areas of the state. Together these two awards encompass the vast majority of North Carolina's rural middle mile broadband needs in the most economically distressed, underserved and rural areas of the state.</p> <p>The round 2 BTOP proposal complements the first round and does not duplicate any of the BTOP1 efforts. A portion of the NCRBI middle mile traverses a small number of counties that were included in round 1 BTOP. Where round 1 BTOP fiber paths intersect round 2 BTOP fiber paths, the county where the intersection occurs and possibly nearby counties will appear in both applications. For example, locations near Wilmington are touched by both middle mile routes. In these counties, MCNC has access to a single pair of fiber for round 1 BTOP. Single pair routes are not resilient enough to serve MCNC's Community Anchor Institution clients.</p> <p>The counties where NCRBI and round 1 routes both pass are engineered this way to achieve one or more of the following: 1) logically link the round one middle mile with the NCRBI middle mile, 2) provide direct connections to Community Anchor Institutions from the round 1 BTOP middle mile, or 3) enhance the ability to provide service to Community Anchor Institutions 4) Create opportunities for enhanced resiliency through alternate pathing. In the second case, we only include a request to fund lateral connections to round 1 BTOP fiber.</p> <p>Our application includes Polk County which, through Pangaea offered by e-Polk, Inc., has built fiber to individual schools. Our round 2 BTOP proposal will connect Pangaea's local fiber to our middle mile</p>



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

	<p>enabling lower cost access to Internet and NCREN.</p> <p>The NCRBI application includes servicing fire stations in the City of Asheville through the Education & Research Consortium of the Western Carolinas (ERC). These fire stations are also part of a CCI application from the Mountain Area Information Network (MAIN) to build fiber to service public housing sites and CAIs in and around the City of Asheville (Easy grant ID 4300, Project Title: Middle Mile/Last Mile Broadband Access for Public Housing Neighborhoods in Asheville, NC). MAIN, ERC and MCNC have agreed that if both the MAIN and the NCRBI proposals are funded that the NCRBI will serve these fire stations.</p> <p>ERC, one of MCNC's proposed subrecipients for round 2 BTOP, applied to the round 1 BTOP process but was denied due to lack of matching funds.</p>
Disclosure of federal and/or state funding sources	<p>MCNC provides services for many state and a few federal customers. These services include network connectivity, backbone, ISP, and/or hosting to K-12 schools, community colleges, 4 year colleges, and universities; public libraries, the National Oceanic and Atmospheric Administration; National Humanities Center, the National Institute of Statistical Services, the North Carolina Department of Justice; and others. Some MCNC education customers receive E-Rate reimbursements from the Schools and Libraries Program (USF). MCNC receives less than \$100,000 per year for E-Rate from three libraries and two charter schools. This E-rate program and the H-rate program described below are part of the USF.</p> <p>MCNC, in partnership with the State Office of Information Technology Services (ITS) has recently been selected to provide services as part of the North Carolina Telehealth Network. MCNC and ITS will provide network connectivity and Internet access to county health agencies and county operated free health clinics through this agreement. Some of the revenue MCNC will receive for this project will be based on reimbursements from the Rural Health Care</p>



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

	<p>Pilot Program (FCC). MCNC estimates receiving \$6M in H-Rate funds for the North Carolina Telehealth Network over 3 years.</p> <p>Each of these services generate recurring revenues from state and federal sources, but they are not related to the non-recurring costs of this proposed broadband build.</p>
Budget reasonableness	<p>MCNC leverages 25 years of experience in designing and operating leading edge networking throughout NC to develop the NCRBI proposal for broadband CCI totaling \$111,654,323. To assist in the developing of specifics related to this application, MCNC contracted with a professional outside engineering firm to assist in estimating the cost of its route designs for the four regions of NCRBI. As a NC-based company, this firm was able to provide insight into typical costs for the construction of the outside plant regarding materials, labor, and expected easements. In addition the firm was asked to advise on ways to avoid cost along the route and to use conservative estimates for costs of a project that wouldn't conclude for 3+ years. Consideration was also given to inflation of costs for human and material capital resources, some of which have a high dependency on the cost of petroleum products.</p> <p>The engineering firm provided estimates for constructing outside plant consisting of buried construction of two conduits one and a quarter inches in diameter with a minimum of 48 fibers. The results were an average cost of approximately \$11.00/foot. Cost estimates include adjustments for mountainous or rocky terrain and river crossings. Estimated costs also included route engineering, materials, construction labor, permit fees, as well as a budget for project management and quality control of the project. The line item for project management and quality control in the budget is based on an outsourcing model. If awarded MCNC will investigate the cost comparison between use of outsourced vs. in-house resources.</p> <p>A portion of the footprint will leverage existing conduit that was put in place approximately 7 years ago to construct broadband infrastructure.</p>



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

	<p>The project was abandoned because it could not be sustained. Use of this conduit enables MCNC to save an expected \$4.7M worth of construction expense in the northeast region. In addition, MCNC has explored with the NC Department of Transportation a scenario enabling MCNC to attach conduit and fiber to bridges in northeast NC to avoid costly river bores. In those instances MCNC will install high-count fiber and allow open interconnect on either side of the bridge avoiding the need for expensive river bores or additional bridge attachments. DOT has expressed willingness to pursue this. With these two critical pieces of savings factored in, the cost of construction over the entire footprint approaches \$9.80/ft.</p> <p>A dense wave division multiplexing system was designed based on MCNC's experience with its existing equipment vendor. The design assumes each CAI will receive a gigabit ethernet connection to the NCREN network. Budget numbers were based on an assumption of aggressive discounts. Open bidding by multiple suppliers may yield additional savings.</p> <p>Placement of optical nodes was an average of 90 km apart and leverages the donation of land from key CAIs to control land acquisition costs.</p>
Demonstration of need	<p>The addition of the NPV and IRR calculations to the round 2 application process was valuable. These calculations display why there is minimal middle mile fiber in the unserved and underserved areas. In the case of this proposal, the results of a successful application produce a \$8M positive NPV. The eighth year free cash flow may be producing a more positive terminal value calculation due to the fact that the majority of the six year life assets are due to be refreshed in year 9 (the cash impact of this is not felt in the current proformas and calculation). While the operations will be able to afford the equipment refresh, the timing of this calculation methodology may be overstating the \$8M NPV. Relative to the IRR</p>



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

calculations, two different vehicles were employed using the requested methodology and both produced incalculable results on an investment of \$111M. It took reducing the investment to below \$42M before it would calculate (and then the result was negative) and further down to \$16M before a positive rate was returned (+.1%).

The "without BTOP funding" calculation was done assuming that equal funds were borrowed from a commercial lending source at a 5% rate. The NPV of this "without" scenario produced a -\$81.4M NPV. The "without BTOP funding" financial proformas were included in the supplemental materials. The result of "without BTOP funding" is significant annual losses and the inability to repay debt. This is compelling evidence of the necessity of BTOP funding to serve these regions.

Both NPV and IRR calculations explain the current scarcity of middle mile in North Carolina. The history of the donated conduit included in MCNC's match is a stark illustration. The Albemarle Pamlico Economic Development Corporation (APEC), has donated existing conduit in the northeast region of the state to MCNC. The conduit remained unused as the financial resources to complete a previously planned middle mile project in the region could not be raised. The previous project exhausted funds in 2004 after much of the conduit had been constructed but no fiber had been placed.

A third view of the demonstration of need is from our customers perspective. Most of MCNC's customers are CAIs that receive the bulk of their funding from the State of NC. Current economic conditions caused MCNC to experience a 7% reversion of funds in fiscal 2009 and 15% reversion in fiscal 2010 (see attached letter from the UNC system CFO). As bandwidth needs grow exponentially, CAI customers struggle to meet current costs let alone the ever escalating bandwidth costs. This proposed middle mile build solves that problem. What this application process does not demonstrate is the extent of the savings to which these customers will benefit. MCNC estimates that even the existing customer base prior to BTOP growth will be saving in excess of \$4M by year 8 given growth at desired rates.



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

	But for the BTOP program this middle mile build would not be possible.
--	--

Funds to States/Territories

States	Amount of Federal Grant Request
North Carolina	77,977,126

Funds to States/Territories Total: \$77,977,126

J. Historical Financials

Matching Funds			
	2007	2008	2009
Revenue	10,970,906	12,113,970	15,734,825
Expenditures	14,023,707	14,010,714	17,045,131
Net Assets	59,571,515	62,374,250	50,003,215
Change in Net Assets from Prior Year	6,889,146	2,802,735	-12,371,035
Bond Rating (if applicable)			

K. Project Readiness

BTOP Organizational Readiness

MCNC, the operator of the North Carolina Research and Education Network (NCREN), provides broadband networking, advanced communications technologies and support services that enables access to 21st century learning applications, opportunities to improve teaching, learning, research and collaboration among North Carolina's education community. NCREN also enables reliable high speed exchange of health record information among the NC health-care institutions.



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

For a quarter century, NCREN has provided a robust, secure communications network connecting the university institutions and the North Carolina State Government Information Technology Network to each other, the Internet, and to advanced research networks such as Internet2 and NLR. In the last two years MCNC has extended these same service offerings to the NC K-12 community, demonstrating its capability to expand to additional anchor institutions. NCREN now serves as the foundation of a K-20 networking enterprise serving 3 million students daily.

MCNC is governed by a board of directors, who are primarily top-level education, business, and government leaders from across the state of North Carolina. The board of directors and the company officers have fiduciary responsibility. The MCNC Advisory Council (MAC) provides valuable strategic advice to MCNC. Members of the MAC are primarily technology leaders in education fields. MCNC has a tactical and operational advisory group called the K-20 Networked Services Operating Committee (NSOC). The members of the NSOC are primarily technology managers in education fields.

MCNC is led by its president and CEO, who reports to the board of directors. Other officers selected by the board are secretary/treasurer and assistant secretary. The internal MCNC organizational management comprises three divisions: operations and engineering, customer support, and administration. Within the operations and infrastructure (O&I) division are separate operations, engineering, knowledge information systems and advanced services development groups. Two customer facing parts of O&I are the MCNC Network Operations Center which is staffed 24x5 and the NCREN service desk which is staffed by a mix of network, systems and video personnel working together to support NCREN's customers 24x7.

The NCREN customer support division of MCNC features external and internal communications, customer advocacy across the diverse spectrum of constituents, promotion of offered services, professional client network consulting and scheduling of video and related services.

MCNC's accounting system is in compliance with OMB Circular A-122 and OMB Circular A-133. MCNC's accounting system has been audited by the Defense Contract Audit Agency and the company maintains the federal contractor integrity of this system.

Construction and Vendor Contracts



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

The NCRBI will rely heavily on external contractors and vendors who are not direct employees of MCNC or ERC. The NCRBI undertook efforts to avoid overbuilding existing fiber. The NCRBI includes fiber acquisitions via IRU from Blue Ridge Electric Cooperative in the northwest, [REDACTED] the City of Monroe between Monroe and Huntersville, and [REDACTED] in the northwest. MCNC has agreed in principle to terms for the acquisition of fiber from these sources prior to the application as evidenced in the letters of intent.

Outside these IRUs all routes must be engineered and constructed through four regions in North Carolina. As with its successful round 1 application, MCNC will administer a competitive request for proposal (RFP) process to find an appropriate firm(s) to perform the Environmental Assessment and engineer and design the route MCNC has proposed for round 2. Once engineering is completed a subsequent RFP for the actual physical construction of the fiber routes will be let. Experience gained issuing RFPs for the round 1 award will allow MCNC to act quickly to award round 2 contracts.

MCNC will deploy the required electronics on to the constructed fiber. Operation of physical layer DWDM components has been at the core of the MCNC NCREN backbone for the last decade. Upon award, MCNC will work with hardware vendors to acquire appropriate equipment to operate the fiber and will deploy using MCNC staff.

Customer Base

The NCRBI customer base includes public and private universities and colleges, community colleges, public school districts (including charter schools), private schools, federal government facilities, libraries, local and state government locations, and medical institutions. MCNC's existing NCREN customer base within the proposed funded service area is exclusively community anchor institutions, for a total of 113 CAI subscribers.

ERC Broadband, a private not-for-profit organization headquartered in Asheville, NC, is the only key partner and sub-recipient that will manage part of the network. ERC Broadband serves 19 community anchor institutions, 45 businesses, and 5 third-party service providers in the northwestern North Carolina portion of the proposed funded service area.

Licenses, Regulatory Approvals and Agreements



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

Building Leases: New colocation contracts where required for new construction will be sought subsequent to final engineering (upon award).

Rights of Way/State Authorizations/Federal Authorizations: All state and federal regulatory approvals will be applied for subsequent to final engineering (upon award)

Agreements: MCNC is anticipating several agreements such as Indefeasible Rights of Use (IRUs), fiber swaps, construction agreements, engineering agreements, etc. Letters of intent will be executed prior to proposal submission. Development of contracts and contract negotiations will transpire subsequent to award. MCNC is in the process of developing several of the agreements in federally compliant fashion in conjunction with our BTOP1 award, which agreement forms can be utilized if a second award is received.

SPIN Number

MCNC's SPIN is 143011802.

As a proposed award subrecipient, the Education and Research Consortium of the Western Carolinas, Inc.'s SPIN is 143031324.

L. Environmental Questionnaire

Project Description

If NCRBI is funded, MCNC will release an RFP seeking a professional engineering firm that includes conducting an environmental assessment (if required) as part of providing a detailed design and engineering for the fiber build. The RFP will require that the engineering design make the proposed fiber build compliant with all applicable environmental laws and regulations, including explicit descriptions of where categorical exclusions apply. The RFP will also require that the route be engineered to minimize environmental impact such that an EIS is not needed, and that all needed permits be acquired. As a result of its BTOP 1 activities, MCNC is in active conversations with all relevant federal, state, and local authorities and will ensure that they are aware of the route of this round 2 NCRBI proposal.

The MCNC BTOP application is largely consistent with categorical exclusion "B.1: Construction of buried and aerial telecommunications lines, cables, and related facilities" and the majority of the fiber route will be constructed along NC DOT rights of way on soil which has previously



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

been disturbed. The project will primarily consist of buried fiber (with aerial if needed) and there will be up to 22 small prefabricated telecommunication huts required along the route.

As part of the community outreach elements of the NCRBI, the MCNC team met with a wide variety of leaders in the impacted counties to discuss the environmental considerations associated with this project.

Property Changes

The majority of the property changes in this application will be covered by categorical exclusion B.1 and will be along a road or railroad right of way. They are only to the extent necessary to bury fiber or lay fiber except as described in the building section below.

Buildings

Whenever possible, the NCRBI will use existing facilities or will build on property owned by community anchor institutions (CAIs) or other partners. There will be up to 22 huts, and most will be placed on land owned by CAIs who have submitted letters of support donating this land. Huts will be sited consistent with environmental regulations and designed to minimize environmental impact.

Wetlands

Most of North Carolina is some degree of wetland. Engineering work will be necessary to determine where the proposed fiber will be laid and to identify the appropriate method for laying fiber based on the nature of the land encountered. Any issues related to wetlands will be formally identified during the engineering phase of the project and the route will be adjusted around the impacted areas as required and/or appropriate permitting as required will be obtained. MCNC will work with the Army Corps of Engineers and the North Carolina Department of Environmental and Natural Resources if any such areas are encountered.

Critical Habitats

Attached is a county by county description of endangered species, threatened species, Federal special of concern and Candidate species in counties through which we will be laying new fiber. The engineering firm engaged for this effort will be required to ensure that critical habitats are not disturbed or to obtain appropriate permits. MCNC will contact Fish and Wildlife services



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM	Easygrants ID: 4218
Funding Opportunity: Broadband Technology Opportunities Program	Applicant Organization: MCNC
Task: Submit Application - BTOP	Applicant Name: Ms. Patricia L. Moody

upon receipt of an award to discuss any potential environmental impacts and how they can be avoided or mitigated.

Floodplain

Because the majority of this project will be on rights of way, we believe that the following categorical exemption applies: “Acquisition, installation, or operation of utility and communication systems that use existing distribution systems or facilities, or currently used infrastructure rights-of-way.” Because we do not know the exact route of the fiber, it is premature to create a FIRMette. The engineering firm will be responsible for this analysis in any flood plains for which the categorical exclusion does not apply.

Protected Land

The proposed route traverse tribal land [REDACTED] and [REDACTED] has consulted with the appropriate tribal authorities. The route is anticipated to traverse a portion of national parks or forests, and we will ensure it is engineered to minimize environmental impact and is completed only with the appropriate environmental assessments and permits. The engineering firm responsible for the design and the Environmental Assessment will also be responsible for ensuring that the appropriate permits are sought. MCNC has a letter of support for this application from the Chief of the Eastern Band of the Cherokee.

Coastal Area

North Carolina’s coastal zone includes the 20 counties that in whole or in part are adjacent to, adjoining, intersected by or bounded by the Atlantic Ocean or coastal sound(s). As indicated on the attached map, the proposed project builds fiber in 17 of these counties. Additional analysis is needed to determine if the route passes through any areas of environmental concern. The engineering firm hired to engineer the route will determine if the proposed route encounters any areas of concern and will either adjust for them or follow the appropriate permitting process.

17 counties in the BTOP2 application are Coastal Zone management areas: Beaufort; Bertie; Brunswick; Camden; Chowan; Craven; Currituck; Dare; Gates; Hertford; Hyde, New Hanover; Onslow; Pasquotank; Perquimans; Tyrrell; and Washington.

Brownfield



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM		Easygrants ID: 4218	
Funding Opportunity: Broadband Technology Opportunities Program		Applicant Organization: MCNC	
Task: Submit Application - BTOP		Applicant Name: Ms. Patricia L. Moody	

The engineering contractor will consider brownfield avoidance as part of the fiber design. If necessary, the appropriate permits will be filed with NC Department of Environment and Natural Resources.



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM		Easygrants ID: 4218	
Funding Opportunity: Broadband Technology Opportunities Program		Applicant Organization: MCNC	
Task: Submit Application - BTOP		Applicant Name: Ms. Patricia L. Moody	

Uploads

The following pages contain the following uploads provided by the applicant:

Upload Name	File Name	Uploaded By	Uploaded Date
Service Offerings and Competitor Data	Service OfferingsCompetitorData v9 UPLOADED 3 23.xlsx	Moody, Patricia	03/23/2010
Network Diagram	network diagrams for uplaod.pdf	Moody, Patricia	03/23/2010
Build Out Timeline	Build-out+Timeline-FINAL.docx	Moody, Patricia	03/23/2010
List of Community Anchors and Points of Interest	POI and CAI 3 24 final.xlsx	Moody, Patricia	03/24/2010
Management Team Resumes and Organization Chart	Management Team Resumes and Organization Chart.pdf	Moody, Patricia	03/09/2010
Government and Key Partnerships	BTOP LOS 3 24 v2.1 optimized.pdf	Moody, Patricia	03/25/2010
Historical Financial Statements	MCNC Audited Financial Statements 2007 2008 2009.pdf	Moody, Patricia	02/22/2010
Budget Narrative	CCI Budget Narrative Attachment.pdf	Moody, Patricia	03/23/2010
Detailed Budget	CCI Detailed Budget 031910 for upload.xls	Moody, Patricia	03/24/2010



**Broadband Infrastructure Application
Submission to NTIA – Broadband Technology Opportunities Program**

Submitted Date: 3/25/2010 12:46:28 PM		Easygrants ID: 4218	
Funding Opportunity: Broadband Technology Opportunities Program		Applicant Organization: MCNC	
Task: Submit Application - BTOP		Applicant Name: Ms. Patricia L. Moody	

Pro-forma Forecast	CCI Pro Forma Financial Projections Attachment for upload.xlsx	Moody, Patricia	03/23/2010
Subscriber Estimates	Subscriber Estimates uploaded to app 3-23-1.srt.v3.xlsx	Moody, Patricia	03/25/2010
Dashboard Metrics	KeyMetricsDashboard.srt.kmay.wlk.v2.docx	Moody, Patricia	03/25/2010
Service Area Data	Service Areas 3 24 10 for upload.xlsx	Moody, Patricia	03/24/2010
Waivers	waivertemplate Sale or Lease of Fiber 3-24.doc	Moody, Patricia	03/24/2010
Network Maps	4218 BTOP2-MAP-20100324-1715.pdf	Moody, Patricia	03/24/2010
BTOP Certifications	BTOP Authentication and Certifications.pdf	Moody, Patricia	03/04/2010
SF-424 C and D	construction.pdf	Moody, Patricia	03/23/2010
Supplemental Information	supplement 3 24.pdf	Moody, Patricia	03/24/2010