

NTIA NEPA ENVIRONMENTAL ASSESSMENT

MCNC Golden LEAF Rural Broadband Initiative
Round 2 Fiber Optic Cable Expansion Project
North Carolina

Submitted To:



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Acronyms List

Acronym	Definition
AEC	Area of Environmental Concern
AFR	Asheville Fire and Rescue
APEC	Albemarle Pamlico Economic Development Corporation
APGI	Alcoa Power and Generating, Inc.
BIA	Bureau of Indian Affairs
BMP	Best Management Practices
BREMCO	Blue Ridge Electric Membership Corporation
BTOP	Broadband Technologies Opportunities Program
CAI	Community Anchor Institution
CAMA	Coastal Area Management Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CEQ	Council on Environmental Quality
CRC	Coastal Resources Commission
CTP	Comprehensive Transportation Plan
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
DAQ	Division of Air Quality
DLR	Division of Land Resources
EA	Environmental Assessment
EO	Executive Order
EPA	United States Environmental Protection Agency
ESA	Endangered Species Act

Acronym	Definition
FCC	Federal Communications Commission
FCX	Farmers Cooperative Exchange
FEP	Fiber Expansion Project
FHA	Federal Highway Administration
FONSI	Finding of No Significant Impact
FSC	Federal Species of Concern
GHG	Greenhouse Gas
Gbps	Gigabit per second
GLRBI	Golden LEAF Rural Broadband Initiative
HDPE	High Density Poly Ethylene
HUC	Hydrologic Unit Codes
IRU	Indefeasible Rights of Use
ISP	Internet/Intranet Service Provider
LTLT	Land Trust for the Little Tennessee
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Grave and Patriation Act
NC DAQ	North Carolina Division of Air Quality
NC DCM	North Carolina Division of Coastal Management
NCDENR	North Carolina Department of Environment and Natural Resources
NC DMF	North Carolina Division of Marine Fisheries
NC DWQ	North Carolina Division of Water Quality
NC EMC	North Carolina Environmental Management Commission

Acronym	Definition
NC GWA	North Carolina Groundwater Association
NC NHP	North Carolina Natural Heritage Program
NC DOT	North Carolina Department of Transportation
NCREN	North Carolina Research and Education Network
NCWAM	North Carolina Wetland Assessment Method
NC WRC	North Carolina Wildlife Resources Commission
NEPA	National Environmental Policy Act
NOAA	National Oceanic and Atmospheric Administration
NMFS	National Marine Fisheries Service
NPDES	National Pollutant Discharge Elimination System
NPL	National Priority List
NRHP	National Register of Historic Places
NSW	Nutrient Sensitive Waters
NTIA	National Telecommunications and Information Administration
NWR	National Wildlife Refuges
ORW	Outstanding Resource Waters
PCE	Tetrachloroethene
PNA	Primary Nursery Area
RCRA	Resource Conservation and Recovery Act
ROW	Right-of-way
SCH	State Clearinghouse
SHPO	State Historic Preservation Office

Acronym	Definition
SIP	State Implementation Plan
SMP	Shoreline Management Plan
SONET	Synchronous Optical Network
SW	Swamp Waters
TCE	Trichloroethene
TCNS	Tower Construction Notification System
T&E	Threatened and Endangered
THPO	Tribal Historic Preservation Office
TIP	Transportation Improvement Projects
TSCA	Toxic Substances Contact Act
TVA	Tennessee Valley Authority
UA	Urbanized areas
UC	Urban clusters
UPS	Uninterruptible Power Supply
USACE	United States Army Corps of Engineers
USFWS	United States Fish & Wildlife Service
USFS	United States Forest Service
USGS	United States Geological Survey
UST	Underground Storage Tank
VOCs	Volatile Organic Compounds

ENVIRONMENTAL ASSESSMENT
MCNC Golden LEAF Rural Broadband Initiative
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1.1 EXECUTIVE SUMMARY

The proposed “Golden LEAF Rural Broadband Initiative” (GLRBI) project (formerly known as North Carolina Rural Broadband Initiative) is a fiber optic cable expansion project for MCNC and the North Carolina Research and Education Network. Pursuant to requirements of the National Environmental Policy Act, an Environmental Assessment (EA) has been prepared for this project. S&ME, Inc. and Kimley-Horn and Associates, Inc. have prepared this EA in accordance with the Department of Commerce’s National Telecommunications and Information Administration (NTIA) Broadband Technologies Opportunities Program (BTOP) Environmental Assessment Guidance for BTOP Award Recipients (version 1.3, dated August 2010). According to those guidelines, this EA addresses the existing environmental characteristics along the proposed project corridor and the predicted environmental effects of the project.

In early 2010, MCNC was the recipient of a grant from NTIA’s BTOP, funded by the American Recovery and Reinvestment Act of 2009, to build Round 1 of a fiber expansion project in North Carolina. The approximately 500 miles of new fiber optic network included in Round 1 will support the “Building a Sustainable Middle-Mile Network for Underserved Rural North Carolina” project and will span 37 counties in southeastern and western North Carolina. An EA was prepared for Round 1 and a Finding of No Significant Impact (FONSI) was received. Round 1 is currently under construction.

MCNC received a second award from NTIA BTOP, as well as matching funds from North Carolina’s Golden LEAF Foundation that will fund BTOP Round 2 GLRBI. In addition, ERC Broadband (a non-profit network operation in western, North Carolina), was a subrecipient of the award. The GLRBI will involve new fiber construction within existing North Carolina Department of Transportation right of way (ROW) and will also include lateral routes, also in existing ROW, that will serve Community Anchor Institutions (CAIs) off new and existing fiber backbone (including the BTOP 1), installation of prefabricated telecommunication huts on CAI property, and placement of below ground pull boxes.

The GLRBI includes the following components and approximate mileage:

- 1340.23 new network miles deployed
- 248.20 new network miles leased
- 106.10 existing network miles upgraded
- 1694.53 number of miles of fiber

This EA identifies and evaluates environmental impacts associated with the proposed project, located in 69 counties throughout North Carolina. The GLRBI is broken into 12 segments.

Early coordination with regulatory agencies and concerned entities was conducted by the NTIA project team in September 2010, as well as during the EA scoping process in November 2010 and March 2011. Consultation packages included letters and maps illustrating project details and a link for agencies to access project maps included in Appendix I of this EA. The purpose of this agency consultation was to solicit comments and concerns appropriate state and federal agencies may have regarding the proposed project. The proposed project received generally favorable responses. Agency responses are addressed in appropriate sections of this EA; scoping correspondence is presented and cross-referenced in Appendix III of the EA. Agencies involved in the scoping process included:

Tribes:

- Eastern Band of Cherokee Indians
- Eastern Shawnee Tribe of Oklahoma
- Shawnee Tribe
- United Keetoowah Band of Cherokee Indians
- Tuscarora Nation
- Seminole Tribe of Florida
- Cherokee Nation in Oklahoma
- Catawba Indian Nation

Federal and State Agencies:

- NOAA Marine Fisheries Service – Southeast Regional Office
- North Carolina State Clearinghouse for their distribution to:
 - Department of Agriculture and Consumer Services
 - Department of Transportation
 - North Carolina Department of Environment and Natural Resources Regional Offices, including:
 - Office of Conversation, Planning and Community Affairs-Natural Heritage Program
 - Division of Water Quality
 - Division of Environmental Health/Public Water Supply Section
 - North Carolina State Historic Preservation Office
 - North Carolina Wildlife Resources Commission
 - Division of Coastal Management
- U.S. Fish and Wildlife Services – Asheville Field Office
- U.S. Fish and Wildlife Services – Raleigh Field Office
- U.S. Forest Service – Nantahala – Cheoah Ranger District

- U.S. Forest Service – Pisgah – Appalachian Ranger District, Grandfather Ranger District
- U.S. Forest Service – Croatan – Croatan Ranger District
- National Forests in North Carolina – Supervisors Office
- National Park Service:
 - Wright Brothers National Memorial
 - Cape Hatteras National Seashore
 - Blue Ridge Parkway

With the exception of the United Keetoowah Band of the Cherokee Indians, the tribes provided comments regarding the proposed GLRBI relative to the interests of their tribes. Their responses did not include any expressed concerns that the proposed project may have an adverse effect on Native American resources. However, the responses did include requests that, in the event human remains or archaeological materials are uncovered, construction activities immediately stop and their tribe be notified to resume consultation.

SHPO responded stating that since the proposed GLRBI project will be limited to existing, disturbed ROW, potential effects on archaeological, architectural, or historic resources should be minimal. SHPO requested notification if any portion of the project will involve new ground disturbance, particularly with the construction of prefabricated telecommunication huts. Upon completion of the field work and the preliminary design of the GLRBI, S&ME submitted a follow-up letter to SHPO informing that the proposed GLRBI will be limited to existing ROW or previously disturbed land. On February 9, 2011, SHPO responded stating that they do not recommend archaeological investigations since no new ground disturbing activities will be conducted and that they determined that the project, as proposed, will not have an effect on any historic structures. On March 23, 2011, a revised scoping letter was submitted to SHPO through the State Clearinghouse for additional review of project updates that includes lateral routes to CAIs, CAI locations and telecommunication hut locations. SHPO responded on April 7, 2011 stating 1) that no known archaeological sites are located within the proposed project area and that it is unlikely archaeological resources that may be eligible for inclusion in the National Register of Historic Places will be affected by the project, and 2) SHPO does not recommend an archaeological investigation. However, as three telecommunication hut locations (Fayetteville State University, Gaston Community College, and the University of North Carolina at Pembroke) were in historic districts and/or near historic structures, SHPO requested site plans and photographs of these hut locations. SHPO stated that the remaining hut locations will have no effect on historic properties. The requested information was provided to SHPO on April 29, 2011 and on May 11, 2011, SHPO responded stating that upon their review of the telecommunication hut locations and photographs, the telecommunication huts will have no effect on historic properties. In addition, SHPO's May 11, 2011 letter also reiterated that the remaining hut locations and the placement of the GLRBI within existing ROW will also have no effect on historic properties.

The U.S. Fish and Wildlife Service Raleigh and Asheville Field Offices stated that, since the project is limited to existing ROW and stream and wetland impacts are not anticipated, their primary concern with the proposed project is the potential adverse effects on federally listed threatened and endangered (T&E) species whose habitat can include maintained ROWs. No federally-listed T&E species were identified along the GLRBI project corridor. Upon completion of the protected species assessment, follow-up letters presenting the findings of the assessment were submitted to the Asheville and Raleigh Field Offices on March 29, 2011. The USFWS Asheville and Raleigh Field Offices responded on April 11 and 13, 2011, respectively, indicating that they concur that the proposed project will not likely adversely affect federally listed protected species, and that Section 7 of the Endangered Species Act has been satisfied.

The proposed project's engineering firm will apply for necessary ROW access permits prior to construction. Permitting for crossing railroad ROWs, National Parks Service lands, U.S Forest Service Lands, and North Carolina Department of Transportation ROWs is currently underway. Through avoidance and minimization design methods, including directional bore, hanging the conduit on NCDOT bridges, and utilizing existing conduit, it is not anticipated that the proposed project will impact jurisdictional waters of the U.S. (streams and wetlands) beyond the staked-sloped limits of the ROW.

Alternatives considered to cost-effectively satisfy the purpose and need of the proposed project while minimizing environmental impacts included 1) no action, 2) direct bury, 3) aerial construction, and 4) buried in conduit (the preferred alternative and proposed action). Two other alternatives considered to possibly satisfy the project purpose and need included 1) the utilization of copper cable, and 2) wireless transmission techniques.

The *Proposed Action* is not expected to significantly adversely affect the quality of the human environment. If this judgment is confirmed through coordination of this EA, an Environmental Impact Statement will not be required, and a FONSI will be signed prior to the initiation of the proposed action.

1.2 Chapter 1 – Purpose and Need

The Golden LEAF Rural Broadband Initiative (GLRBI) is an MCNC project intended to expand the broadband network in North Carolina. Established in 1980, MCNC is an independent, non-profit organization that provides broadband and advanced networking technologies and systems to continuously improve learning and collaboration throughout North Carolina. MCNC is the operator of the existing North Carolina Research and Education Network (NCREN) backbone, the Internet/Intranet Service Provider (ISP) and backbone for the public University of North Carolina system, public kindergarten through grade 12 schools, a majority of North Carolina independent colleges and universities, and 20 institutions in the North Carolina community college system.