OMB CONTROL NUMBER: 0660-0037
EXPIRATION DATE: 6/30/2015

ANNUAL PERFORMANCE PROGRESS REPORT FOR BROADBAND INFRASTRUCTURE PROJECTS

General Information

1. Federal Agency and Organizational Element to Which Report is Submitted	2. Award Identification Number	3. DUNS Number
Department of Commerce, National Telecommunications and Information Administration	NT10BIX5570120	018946590

4. Recipient Organization

MCNC 3021 Cornwallis Road, Research Triangle Park, NC 27709-2889

5. Current Reporting Period End Date (MM/DD/YYYY)	6. Is this the last Annual Report of the Award Period?
12-31-2013	◉ Yes ○ No

7. Certification: I certify to the best of my knowledge and belief that this report is correct and complete for performance of activities for the purposes set forth in the award documents.

7a. Typed or Printed Name and Title of Certifying Official	7c. Telephone (area code, number and extension)
Patricia Moody	9192481820
Chief Financial Officer	7d. Email Address: pmoody@mcnc.org
7b. Signature of Certifying Official: Submitted Electronically	7e. Date Report Submitted (MM/DD/YYYY): 10-23-2013

OVERALL PROJECT PERFORMANCE INDICATORS

1. Please provide the following average cost figures for your project. Please review the instructions to determine how to calculate these figures. Write "0" in the second column and "N/A" in the third column if your project does not yet have this information. Depending on whether your project contains Middle Mile and/or Last Mile components, some metrics may not apply. Please provide a narrative description if the total is different from the target provided in your baseline plan (600 words or less).

Cost Indicator	Average Cost / Speed	Narrative (describe your reasons for any variance from the baseline plan or any other relevant information)
Average cost per new mile (Middle Mile)	$63,759.66	Total capital construction costs not including IRUs, equipment and software total $82,951,324 for 1,301 miles. We are slightly above baseline of $59,657.62 per mile due to costs of construction in the western portion of the network being higher than expected than in the budget.
Average cost per household passed (Last Mile)	NA	N/A to our project
Average cost per subscriber (Last Mile)	NA	N/A to our project
Maximum broadband speed advertised (Middle Mile)	100Gbps	We anticipate initially that most expected service offerings requested from our user base will be 1Gbps through 10Gbps. The system being deployed, however, has capability to scale to 100Gbps as required.
Maximum broadband speed advertised (Last Mile)	NA	N/A to our project
Average broadband speed provided (Middle Mile)	3.2Gbps	As it relates to services to the CAI's served, all are provisioned with 1Gbps capacity. Along the backbone routes of the network we provisioned thirty-eight 10Gbps backbone services. Additionally we have turned up MPLS based last mile services to the following speeds and tiers of services: 10M:6 20M:4 30M:1 50M:6 100M:52 150M:1 250M:30 275M:2 475M:1 500M:13 1G:11 2G:2 3G:1
Average broadband speed provided (Last Mile)	NA	N/A to our project

2. Please provide each facility name and type, the county where the facility is located, and census tract information for any facilities funded by your project during this annual reporting period. Report only facilities for which construction has been completed.

Facility Identifier / Name	Facility Type	County	Census Tracts
N/A	N/A	N/A	N/A

Add Facility Remove Facility

3. Please identify (1) the total number of interconnection, peering, and/or transit agreements entered into during this annual reporting period; (2) the total number of agreements of each type that you are currently negotiating; and (3) whether you have denied any request for interconnection and if so, why. If you have not entered into any agreements, please write "N/A."

Interconnection Agreements (600 words or less)

To date we have entered in to 6 IRU agreements for dark fiber with wholesale and last mile carriers. The agreements are with Broadplex, Dukenet Communications, RST Communications, Conterra, Earthlink, and MOX networks. We have not executed any other transit, peering, or interconnection

agreements to date. Negotiations continue with 6 additional providers for fibers in various portions of the constructed route. We have not denied any request for interconnection to the fiber routes.

Peering and Transit Agreements (600 words or less)

N/A

CAPACITY, UTILIZATION, AND CAPABILITY INDICATORS

4. Community Anchor Institutions: In the chart below, please provide information on the types of community anchor institutions capable of receiving service (i.e., anchor institutions connected to your network plus those passed by your network) as a result of BTOP funds.

Type of Community Anchor Institution	Total Number Within Service Area	Type of Community Anchor Institution	Total Number Within Service Area
Schools (K-12)	57	**Public Housing**	0
Libraries	52	**Other Institutions of Higher Education**	7
Medical and Healthcare Providers	2	**Other Community Support Organizations**	1
Public Safety Entities	11	**Other Government Facilities**	0
Community Colleges	45	**Total Community Anchor Institutions**	175

5. Please indicate the average increase in broadband speed provided to the community anchor institution customers as a result of your project, including a description of how this increase was calculated (600 words or less).

The CAI's that we currently serve operate on limited capacity 100M interfaces at most. As we deployed, we put them on to burstable 1Gbps links that interface directly with a 10Gbps path. Therefore based on what we know, their immediate increase with the equipment deployed gives them 900Mbps more in capability day one.

6. What retail services are being provided by this project? Please describe below. (600 words or less). As an attachment to this report, please provide pricing plans (in $ per month) associated with each retail service. Retail services description:

There are no planned retail service offerings associated with this project as MCNC does not provide residential or service to business enterprises. Several of the carriers that have signed on for dark fiber access will provide this service, but to date we do not have visibility in to how they will price their offerings. We do know that it will be scalable service as required from 10Mbps up to 100Gbps as users warrant. Additionally one of the carriers that has bought fiber on the whole footprint is a residential provider that in it's current operations provides 50x50M service for $59.95/month.

7a. What network management policies (e.g., bandwidth limitations, traffic prioritization) are in place for the services provided by your project? 7b. Have you ever limited or blocked consumers from accessing any lawful content, service, service provider, or application, or prevented any consumers from attaching any legal device to the network? If so, please explain why (300 words or less)?

The North Carolina Research and Education Network by policy does not limit/restrict access to the network. There is no prioritization of traffic placed on the backbone for IP based services. Lambda based circuits encompass their own payload, so by nature that traffic is prioritized within the circuit design. The only filtering policies on the IP backbone that are utilized relate to anti-spoofing related filters to protect our customers, and the IP based resources of the infrastructure itself. If a site is the target of or initiating a Denial of Service attack, from time to time network access will be limited to resolve those issues. We do have a service that our K-12 community users can procure related to content filtering to satisfy CIPA (Children Internet Protection Act) requirements.

8. If applicable, please provide the total number and the percentage of subscribers who have dropped the broadband service provided through this project (total number of households and/or businesses and the "churn rate") and the subscribers' reasons for discontinuing their service (600 words or less).

N/A

9. Please provide the following information regarding the number of fiber strand-miles:

Total Number of Strand-miles	Total Number of Active Fiber Strand-miles Used by Recipient	Total Number of Leased Fiber Strand-miles	Total Number of Dark Fiber Strand-miles	Total Number of Strand-miles Being Built		
				Active	Leased	Dark
197,921	6,256	11,865	179,800	0	0	0

10. If you wholesale dark fiber, please list your wholesale customers and the number of fiber miles you currently are leasing to those customers:

MCNC has sold dark fibers to MOX Networks (12 strands over 70 miles), RST Communications (6 strands over 1345 miles), Broadplex Communications (2 strands over 1349 miles), Dukenet Communications (2 strands over 101 miles), Conterra (2 strands over 15.5 miles), and Earthlink (2 strands over 12 miles) to account for the 11,865 strand miles noted above.

11. Please provide the following information regarding the facility collocation capacity:

Total Facility (total square feet for all facilities)	Number of Square Feet Used by Recipient	Number of Square Feet Leased	Number of Square Feet Available
3,600	592	16	2,992

12. If you do not own collocation space, please describe how and where other network providers and/or customers interconnect with your network (600 words or less).

MCNC has deployed telecommunication huts as part of the project as outlined above. MCNC will additionally use a few select CAI's along the route to house the equipment that will operate the network. In these particular facilities MCNC does not control the ability to allow other carriers or entities to colocate. Above and beyond that, hand holes that are placed no farther apart than a mile act as interconnect points for splicing capability to the backbone to fibers another provider or user would build to those locations.

13. To the extent that you have made any subcontracts or sub grants, please provide the number of subcontracts or sub grants that have been made to socially and economically disadvantaged small business (SDB) concerns as defined by section 8(a) of the Small Business Act, 15 U.S.C. 647, as modified by NTIA's adoption of an alternative small business size standard for use in BTOP. Please also provide the names of these SDB entities (150 words or less).

MCNC's efforts for socially and economically disadvantaged small (SDB) business involvement has resulted in one prime contract and four subcontracts through our prime contractors with SDB concerns:

SEPI Engineering and Construction, Inc - WBE
CBW Communications Engineers - VBE
Edwards Telecommunications, Inc. - VBE
Minter Consulting - MBE
Globenet Telecommunications, LLC - MBE
Vertech International MBE
MSM, Inc. MBE
Dig-It MBE
Coastline Cable Construction WBE
HK&L, LLC WBE applied for
Peachtree Telecommunications, Inc. WBE

14. Please describe any best practices/lessons learned that can be shared with other similar BTOP projects (900 words or less).

Work through your permitting process as quickly as possible, especially those involving railroads. Issues will undoubtedly surface that will take additional time.

Do not allow your contractors that you award work to to only focus on the easy elements of construction first without also addressing some of the difficult elements.

Award RFP's early. Implement stringent contracts for material delivery and construction delivery.

Expect your legal bills to be more than you anticipated.

Celebrate your successes and always look at the big picture.

15. Using the Excel spreadsheet template titled "Annual PPR CCI Addendum", please provide an updated list of Community Anchor Institutions (CAIs) that you have connected and plan to connect to your network.

16. Using the Excel spreadsheet template titled "Annual PPR CCI Addendum", please provide a list of community pairs that are receiving new or improved broadband service as a result of BTOP grant funds.

17. Please provide up-to-date network route maps in a single file, in a Google Earth compatible format (e.g., KMZ file).