

U.S. DEPARTMENT OF COMMERCE

Performance Progress Report

2. Award Or Grant Number

37-50-M09002N

4. Report Date (MM/DD/YYYY)

04-04-2012

1. Recipient Name

North Carolina Department of Commerce

6. Designated Entity On Behalf Of:

n/a

3. Street Address

301 N. Wilmington St., 4301 Mail Service Center,

8. Final Report?

Yes

No

9. Report Frequency

Quarterly

Semi Annual

Annual

Final

5. City, State, Zip Code

Raleigh, NC 27601

7. Project / Grant Period
Start Date: (MM/DD/YYYY)

10-01-2009

7a. End Date: (MM/DD/YYYY)

10-01-2014

7b. Reporting Period End Date:

03-31-2012

9a. If Other, please describe:

n/a

10. Broadband Mapping

10a. Provider Table

Number of Providers Identified	Number of Providers Contacted	Number of Agreements Reached for Data Sharing	Number of Partial Data Sets Received	Number of Complete Data Sets	Number of Data Sets Verified
0	0	0	0	0	0

10b. Are you submitting the required PROVIDER DATA by using the Excel spreadsheet provided by the SBDD grants office? Yes No

10c. Have you encountered challenges with any providers that indicate they may refuse to participate in this project? Yes No

10d. If so, describe the discussions to date with each of these providers and the current status

We believe that most of the broadband coverage in the state is captured through the 75 providers who submitted full or partial data sets for the Spring 2012 data collection. This number is generally in-keeping with previous data collections. Out of the 105 providers identified as relevant and operational in North Carolina, 4 previously indicated to the e-NC Authority that they will not provide data for the SBDD program. These include:

- 3db Wireless, LLC
- Lightwave Communications of North Carolina, LLC
- NC RIDE
- Skyenet Wireless Communications

We do not anticipate these providers changing their minds, but believe that their broadband coverage areas are very small. It is also possible that due to the grant transfer to the NC Department of Commerce, that NC Broadband (the Commerce Division recently created to oversee and implement the SBDD work) may be able to encourage additional participation. NC Broadband plans to re-focus on increased outreach to non-participating providers. Out of those actually refusing participation, Skyenet Wireless serves part of one island of the outer banks, and its served area and speeds were compiled from the company's website for inclusion in North Carolina's broadband data. Red's Cable TV Inc. serves the town of Bath, NC and has recently expressed the decision to participate in broadband mapping, despite having declined participation previously. Carolina Cable – Red Fox TV had also been on the list of refusals, but has recently gone out of business. The remaining providers have been non-responsive or said they plan to participate but have not submitted actual data yet. (See detailed list of providers in the Data Package submitted in April 2012.) NC Broadband will continue reaching out to providers and should have more time with the Fall 2012 data collection. The Spring 2012 collection was tight due to the January 1 grant transfer and confidentiality re-negotiations with providers.

10e. If you are collecting data through other means (e.g. data extraction, extrapolation, etc), please describe your progress to date and the relevant activities to be undertaken in the future

Except for the November 2009 data submission, NC Broadband and its predecessor the e-NC Authority have submitted to NTIA only provider data obtained directly from providers, and provider data is all that is reflected on the NC online broadband map at this time. As previously reported, North Carolina has collected data through other means as well. These methods include: consumer data collected through survey sampling (completed in summer 2010) and Web-enabled data mining by an independent contractor (completed in late 2009 for the November 2009 data submission). e-NC submitted for NTIA review a report from e-NC's external evaluators where they compare data collection methods and provide recommendations on which methods may offer the best solutions for broadband data collection. Moving forward, NC Broadband will use these recommendations to determine how to best utilize additional data collection methods. NC Broadband is also continuing its GIS-based propagation modeling of wireless coverage areas. NC Broadband plans to continue to map and refine individual wireless providers' coverage areas every six months as new data is collected. NC Broadband also continuously collects broadband service inquiries directly from citizen input (including point locations) to capture unserved or

underserved areas, and to compare with provider-sourced data. Follow-up with providers then takes place to reconcile the data and pursue service options for those citizens.

10f. Please describe the verification activities you plan to implement

Verification activities continue to be assessed as the data collection project moves forward. The verification activities planned are simply further refinement of the activities already initiated. NC Broadband continues to look at these additional possible verification activities within the following categories:

- Further automations within the broadband databases: On-going
- Additional quality control measures within datasets: On-going
- Continued exploration of additional data sources and data feedback- On-going: NC Broadband continues to assess additional data collection methodologies that may be used for verification purposes, and additional data sources. Based on the e-NC report (NC Broadband Rigor in Mapping: An Assessment of Methods), NC Broadband is looking at further ground-truthing work and continuing to explore the possibility of a combined web-mining consumer demand analysis approach on a pilot scale, e.g., in a single county. NC Broadband is also looking at developing a methodology for adding a citizen-sourced data layer to the map – to show self-reported unserved households. Data could come from service inquiries, map feedback and surveys conducted locally and shared with NC Broadband's technical assistance team. NC Broadband is still determining how to incorporate additional data collection methods and feedback into the statewide data submission along with the provider data. NC Broadband plans to add mapped FCC "deadzone" and speed test results to its comparative analysis and for use with follow-up efforts in the state.
- Feedback loops with providers: NC Broadband is pursuing, with Michael Baker Jr., Inc., the creation of an automated Provider Update Tool for the NC Broadband Map. The tool will allow providers secure access to view their mapped data as well as a system to graphically submit suggested changes or corrections.

10g. Have you initiated verification activities? Yes No

10h. If yes, please describe the status of your activities

- Implementation of SBDD Check Submission tool: This provision of an automated client-side check for geometry, expected values, and business rules allowed for streamlining validation work and ensuring statewide dataset compliance prior to submission.
- Further automations within the broadband databases: NC Broadband uses both a tabular SQL-based database and a relational geodatabase paired with PostGreSQL, to house its broadband data. The geodatabase has the same SQL-based query capabilities as the original tabular broadband database. Establishment of the SDE database set up has allowed for robust queries and analysis combining SQL with the mapping environment, as well as the addition of more business rules to automate the flagging of data that contradicts expected values. NC Broadband also uses a streamlined update process via automated removal of known duplicates between newly and previously submitted address level datasets, reducing redundant geocoding.
- Quality control measures within datasets: With the new relational geodatabase in place, and with the new database automations, these QC measures have been implemented for the spring 2012 data collection. See White Paper for Spring 2012.
- Comparison and evaluation of current data collection methodologies: The external evaluators for e-NC completed the final report to e-NC in June 2011 (NC Broadband Rigor in Mapping: An Assessment of Methods). The report was submitted to NTIA in August, after final review by e-NC. NC Broadband continues this comparative evaluation as updated data is available.
(For the remaining activities, please refer to the Q1 2012 Supplemental Answers Document.)

10i. If verification activities have not been initiated please provide a projected time line for beginning and completing such activities

All verification activities explained above are underway although NC Broadband continues to evaluate how additional methods can be incorporated into the current process.

Staffing

10j. How many jobs have been created or retained as a result of this project?

Jobs created or retained during the first quarter of 2012 include the following time funded through the American Recovery and Reinvestment Act (ARRA) for this State Broadband Data and Development (SBDD) grant program: NC Broadband, a Division of the NC Department of Commerce: 5.95 FTEs spread out over 8 staff members including administrative positions; program development, research and management; a data administrator and Geographic Information Systems (GIS) specialist, and technical and outreach work performed by the technical assistance team.

10k. Is the project currently fully staffed? Yes No

10l. If no, please explain how any lack of staffing may impact the project's time line and when the project will be fully staffed

North Carolina's SBDD grant was transferred to the NC Department of Commerce effective January 1, 2012. Most of the previous staff moved over with the project, creating the NC Broadband Division in Commerce. A few minor personnel adjustments are being made as part of the transfer. The project (previously fully staffed) is expected to be completely staffed, with these minor adjustments made, by June 2012. The overall grant transfer has caused delays in some projects, but NC Broadband is working to get all projects fully back on track and operating at full speed. The minor personnel adjustments currently underway should not impact the timelines of the grant projects under the SBDD grant.

10m. When fully staffed, how many full-time equivalent (FTE) jobs do you expect to create or retain as a result of this project?

When fully staffed, the NC Broadband staff of the NC Department of Commerce should consist of 9 staff members, with a total of 7.6 FTEs charged to the ARRA funds. Work by contractors under the grant will generally be charged to matching funds. Their FTEs will vary by month.

10n. Staffing Table		
Job Title	FTE %	Date of Hire
Director, NC Broadband	100	01/01/2012
Senior Director, Research and Development	75	01/01/2012
Director, Outreach and Communication	32	01/01/2012
Data Administrator/GIS Specialist	100	01/01/2012
Research Associate	100	01/01/2012
Senior Technical Assistance Director	63	01/01/2012
Technical Assistance Director (West)	63	01/01/2012
Technical Assistance Director (East)	63	01/01/2012

Sub Contracts

10o. Subcontracts Table

Name of Subcontractor	Purpose of Subcontract	RFP Issued (Y/N)	Contract Executed (Y/N)	Start Date	End Date	Federal Funds	In-Kind Funds
University of North Carolina at Greensboro	Mobile and fixed wireless propagation modeling for NC and GIS support	N	Y	01/01/2012	12/31/2012	0	0
Topsail Technologies (Database)	Database development and maintenance	Y	Y	01/01/2012	12/31/2012	0	0
Michael Baker Jr., Inc.	GIS Mapping and hosting of online map	Y	Y	01/01/2012	12/31/2012	0	0
MCNC	Hosting and storage of broadband data database and development of speed test	Y	Y	01/01/2012	12/31/2012	0	0
East Carolina University (Citizen Survey)	Citizen surveys for broadband planning	N	Y	01/01/2012	06/30/2014	0	0
NC Center for Geographic Information and Analysis	Address File Improvement	N	Y	01/01/2012	09/30/2013	0	0

Funding

10p. How much Federal funding has been expended as of the end of the last quarter? \$129,896 10q. How much Remains? \$3,916,063

10r. How much matching funds have been expended as of the end of last quarter? \$33,961 10s. How much Remains? \$947,225

10t. Budget Worksheet

Mapping Budget Element	Federal Funds Granted	Proposed In-Kind	Total Budget	Federal Funds Expended	Matching Funds Expended	Total Funds Expended
Personal Salaries	\$1,078,587	\$596,628	\$1,675,215	\$92,985	\$19,482	\$112,467
Personnel Fringe Benefits	\$348,074	\$205,986	\$554,060	\$24,070	\$5,433	\$29,503
Travel	\$48,593	\$0	\$48,593	\$0	\$5,966	\$5,966
Equipment	\$0	\$0	\$0	\$0	\$0	\$0
Materials / Supplies	\$34,018	\$27,345	\$61,363	\$0	\$0	\$0

Mapping Budget Element	Federal Funds Granted	Proposed In-Kind	Total Budget	Federal Funds Expended	Matching Funds Expended	Total Funds Expended
Subcontracts Total	\$1,351,756	\$119,605	\$1,471,361	\$0	\$0	\$0
Subcontract #1	\$0	\$0	\$0	\$0	\$0	\$0
Subcontract #2	\$0	\$0	\$0	\$0	\$0	\$0
Subcontract #3	\$0	\$0	\$0	\$0	\$0	\$0
Subcontract #4	\$0	\$0	\$0	\$0	\$0	\$0
Subcontract #5	\$0	\$0	\$0	\$0	\$0	\$0
Construction	\$0	\$0	\$0	\$0	\$0	\$0
Other	\$1,017,662	\$31,622	\$1,049,284	\$0	\$3,080	\$3,080
Total Direct Costs	\$3,878,690	\$981,186	\$4,859,876	\$117,055	\$33,961	\$151,016
Total Indirect Costs	\$167,269	\$0	\$167,269	\$12,841	\$0	\$12,841
Total Costs	\$4,045,959	\$981,186	\$5,027,145	\$129,896	\$33,961	\$163,858
% Of Total	80	20	100	79	21	100

Hardware / Software

10u. Has the project team purchased the software / hardware described in the application? Yes No

10v. If yes, please list

There is no specific software or hardware outlined in the work to be conducted by the NC Department of Commerce with the January 1, 2012 grant transfer. Specific software or hardware will be listed in the Detail Budget and Detailed Project Plans being finalized for submission to NTIA.

10w. Please note any software / hardware that has yet to be purchased and explain why it has not been purchased

All software/hardware needed under the e-NC life of the grant was purchased and is listed on the final report from e-NC (covering Q4 2011).

10x. Has the project team purchased or used any data sets? Yes No

10y. If yes, please list

Not since the grant transfer.

10z. Are there any additional project milestones or information that has not been included? Yes No

10aa. If yes, please list

Considerable energy this quarter went into navigating the organizational transition to the NC Department of Commerce, ensuring continued mapping success, adequate staffing, and a complementary set of interrelated broadband access programs in accordance with the goals of state government as well as the federal SBDD grant. Beyond continued implementation and refinement of the data collection process which currently uses provider data, and minor improvements to NC Broadband's online map and mapping tools, the key goals for NC Broadband moving forward include: determining how best to integrate other data or verification methods into the baseline provider data, ways to pursue project sustainability, how to quantify the data collected, how to respond to needs for more granular data, and how to effectively use the map in the fuller context of what NC Broadband is working on with its technical assistance program as well as broadband adoption and use. NC Broadband will continue to evaluate these issues. NC Broadband has established a fairly reliable mapping solution used to aggregate address-level data for reflection in the online map. Also, providers are now summarized by county and listed with hyperlinks to their websites on NC Broadband's county profile webpages, as a resource to the public. A method for estimating broadband access by percent of total households in a given area (state, county, multi-county region, municipality) has been developed, is now implemented, and is being reviewed externally by the UNCG Center for GIS. The methodology is loosely based on those explained by the federal program office at the SBDD grantee conference in Texas, May 2011.

NC Broadband awaits a complete description of the program office's methodology, as mentioned in previous discussions, for comparing and/or aligning results on estimated households served. Also note that the Address File Improvement project, a compliment to the mapping work, is described under Broadband Planning.

10bb. Please describe any challenge or obstacle that you have encountered and detail the mitigation strategies the project team is employing
Due to the transfer of the SBDD grant, the NC Department of Commerce did spend significant time with providers this quarter explaining Commerce's protection of trade secret information under NC's Public Records law, and provided letters explaining this treatment of the data, upon request. No NDAs exist between Commerce and providers. No providers refused participation on this basis.

• Non-Participation from Some Providers: Continued Outreach, Assistance Offered

NC Broadband continues to address the issue of non-compliance by individual providers directly through one-on-one interaction plus collective outreach efforts (email, a resource page for providers on NC Broadband's website, instructional meetings and webinars) and the development of tools to assist their submission of data in the appropriate format. Templates for submission of data by providers continue to be provided along with opportunities for consultancy on individual questions, and hands-on help in identifying geographic extent of service areas.

• Timeliness of Submission: Firmer Deadline, More Standardized Process

A continuing challenge has been submission of data by providers well after deadlines set for them by NC Broadband and its predecessor, but the timelines have begun to show improvement. For the fall 2012 submission e-NC set a deadline early enough to allow sufficient time for formatting, checking and mapping the data. Some data is accepted after the deadline on a case by case basis, and NC Broadband reserved the option to use prior data for providers that have submitted in past data pulls, but did not submit new data or written notice of no changes this spring. In addition, NC Broadband's GIS Analyst has additional support as needed from UNC-G for assistance with the extraction, transformation and loading of data. As importantly, as the data collection process becomes more standardized (without changes) from NTIA and NC Broadband, the process should continue to become smoother.

10cc. Please provide any other information that you think would be useful to NTIA as it assesses your Broadband Mapping Project

The NC Broadband team is currently developing and growing in its capacity to make use of broadband availability information once it is mapped. Goals for this include: decisions about the most effective maps to prepare in advance as tools, decentralizing access to frequently needed spatial and tabular queries of the data, and wisely allocating resources for custom mapping or analyses on demand. NC Broadband is also considering the opportunities for greater collaboration among states via regional conversations and the use of open-source applications. We look forward to further discussions with NTIA and other states on these issues. NC Broadband continues to look at opportunities to document best practices within this project, related to data verification systems and specific collection methods such as the wireless propagation study and citizen-sourced data.

11. Broadband Planning

11a. Please describe progress made against all goals, objectives, and milestones detailed in the approved Project Plan. Be sure to include a description of each major activity / milestone that you plan to complete and your current status

Effective January 1 2012, the SBDD grant was transferred to the North Carolina Department of Commerce to be carried out through a newly-created division, NC Broadband. The final grant award/transfer documents from NIST were executed March 19, 2012. NC Broadband is currently working on the Detailed Budget and Detailed Project Plans for submission to NTIA and expect to submit that information in May 2012. In general, the detailed project plans should remain the same, with some updates to project timelines. These supplemental programs include: Capacity Building, Technical Assistance, and Computer Ownership (LITE-UP) and Address File Development. All programs are on-track with some short-term delays due to the transfer, particularly with the LITE-UP program. More specific updates are included in 11j.

11b. Please describe any challenge or obstacle that you have encountered and detail the mitigation strategies the project team is employing

The NC General Assembly, in its 2011 summer session, did not extend the December 31, 2011 sunset date for the e-NC Authority. In addition, the 2011 state budget directed that e-NC work to transfer the NTIA grant to the NC Department of Commerce. As of January 1, 2012 the NTIA grant and subsequent programs have been carried out under the newly-created NC Broadband, a Division of the NC Department of Commerce. NC Broadband believes that the NC Department of Commerce is a solid fit for the work of the SBDD grant and is working hard to catch up on delays from the transfer as well as focusing on re-newed outreach efforts to ensure the state is aware of this work now under NC Broadband. Note: our new Website is: www.ncbroadband.gov and is in the process of being linked to the NC Department of Commerce Website.

11c. Does the Project Team anticipate any changes to the project plan for Broadband Planning? Yes No

11d. If yes, please describe these anticipated changes. Please note that NTIA will need to approve changes to the Project Plan before they can be implemented

Generally, we do not anticipate changes, but Detailed Project Plans as a result of the recent grant transfer are being finalized and will be soon submitted to NTIA for consideration.

Funding

11e. How much Federal funding has been expended as of the end of the last quarter? \$0

11f. How much Remains? \$0

11g. How much matching funds have been expended as of the end of last quarter? \$0

11h. How much Remains? \$0

11i. Planning Worksheet

11i. Planning Worksheet

Personal Salaries	\$0	\$0	\$0	\$0	\$0	\$0
Personnel Fringe Benefits	\$0	\$0	\$0	\$0	\$0	\$0
Travel	\$0	\$0	\$0	\$0	\$0	\$0
Equipment	\$0	\$0	\$0	\$0	\$0	\$0
Materials / Supplies	\$0	\$0	\$0	\$0	\$0	\$0
Subcontracts Total	\$0	\$0	\$0	\$0	\$0	\$0
Subcontract #1	\$0	\$0	\$0	\$0	\$0	\$0
Subcontract #2	\$0	\$0	\$0	\$0	\$0	\$0
Subcontract #3	\$0	\$0	\$0	\$0	\$0	\$0
Subcontract #4	\$0	\$0	\$0	\$0	\$0	\$0
Subcontract #5	\$0	\$0	\$0	\$0	\$0	\$0
Construction	\$0	\$0	\$0	\$0	\$0	\$0
Other	\$0	\$0	\$0	\$0	\$0	\$0
Total Direct Costs	\$0	\$0	\$0	\$0	\$0	\$0
Total Indirect Costs	\$0	\$0	\$0	\$0	\$0	\$0
Total Costs	\$0	\$0	\$0	\$0	\$0	\$0
% Of Total	0	0	0	0	0	0

Additional Planning Information

11j. Are there any additional project milestones or information that has not been included?

Updates on the supplemental programs: State Capacity Building, Technical Assistance, LITE-UP and Address File Development are as follows:

- State Capacity Building: Quarterly milestones of this program continued to be met in Quarter 1 2012 under NC Broadband.
- o Operation of the new State Broadband Initiative as the newly-created NC Broadband, a division of the NC Department of Commerce
- o Oversight and analysis of all the programs of the SBDD Grant, with quarterly reports to the NTIA and ARRA (continuing)
- o Website and communication materials to communicate broadband information and resources (NC Broadband has taken the previous e-NC Website and framed it in terms of NC Broadband, with the substantive content still in place. The new site is www.ncbroadband.gov. NC Broadband is continuing development of additional communications materials.)
- o Tracking of state broadband policy issues (continuing)
- o Regional profiles studying broadband utilization (Digital Economy Indexes) completed in September. Discussions were underway with SNG this quarter for the next phase of this work, which includes on the ground workshops in three of NC's 7 economic development regions (via Strategic Networks Group)
- o As mentioned under Mapping, a process for quantifying mapping data (via percent of unserved households) was developed and is currently being reviewed by the UNCG Center for GIS.

Note:

- o Quarterly meetings with BTOP/BIP grant recipients (last mtg Nov 30) NC Broadband did not convene the BTOP/BIP grant recipients this quarter, but met with some grantees individually –in person or by phone. Group meetings are currently being discussed with relevant broadband partners.

(For the remaining activities, please refer to the Q1 2012 Supplemental Answers Document.)

11k. Please describe any challenge or obstacle that you have encountered and detail the mitigation strategies the Project Team is employing

All program items are proceeding as planned, with some delay due to learning the ins and outs of a new agency and the subsequent operating procedures. Due to the grant now being carried out by a newly created division, additional outreach efforts and branding activities are planned for the spring and summer to make the public aware that the grant and its programs are still in place and NC Broadband and the NC Department of Commerce are dedicated to fulfilling the goals of the grant.

111. Please provide any other information that you think would be useful to NTIA as it assesses your Broadband Mapping Project
As mentioned earlier in the report, Stephanie Jane Edwards, NC Broadband's Data Administrator and the point person for the mapping project, recently developed a methodology for using the data reported to NTIA to estimate the percentage of households without access to broadband. By county, NC Broadband produces the number of unserved households and corresponding percentage of unserved households, displaying available speeds of 768 kbps (kilobytes per second) down and 200 kbps up, and also for available speeds of at least 3 mbps (megabytes per second) down and 768 kbps up.

The estimates are based on availability data collected from broadband service providers, at a combination of census block, street segment, and address levels, in accordance with the NTIA data collection requirements. The methodology has been initially reviewed by the Center for Geographic Information Science at the University of North Carolina at Greensboro with some minor adjustments underway. Once totally finalized in May 2012, NC Broadband would be happy to share this methodology with NTIA, or other states, if desired.

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

12a. Typed or Printed Name and Title of Authorized Certifying Official

Angie Bailey

Director

12c. Telephone
(area code, number, and extension)

919-715-0793

12d. Email Address

abailey@nccommerce.com

12b. Signature of Authorized Certifying Official

Submitted Electronically

12e. Date Report Submitted
(Month, Day, Year)

04-30-2012