U.S. DEPARTMENT OF COMMERCE

Performance Progress Report

2. Award Or Grant Number
37-50-M09002N

4. Report Date (MM/DD/YYYY)
07-02-2012

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,

5. City, State, Zip Code
Raleigh, NC 27601

8. Final Report?
○ Yes
◉ No

9. Report Frequency
◉ Quarterly
○ Semi Annual
○ Annual
○ Final

7. Project / Grant Period Start Date: (MM/DD/YYYY)	7a. End Date: (MM/DD/YYYY)	7b. Reporting Period End Date:	9a. If Other, please describe:
10-01-2009	10-01-2014	06-30-2012	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

Out of the 106 providers identified as relevant and operational, 4 have indicated 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. We believe that most of the broadband coverage in the state is captured through the 75 providers who have submitted full or partial data sets to NC Broadband. Also, 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 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 identified 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 April 2012.) NC Broadband continues reaching out to providers with communication including official data requests in accordance with federal program office instructions, and offers of technical assistance to those who have not participated to date.

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. This data has been refined through comparison with other data sources and follow up with the providers. As previously reported, North Carolina has collected data through other means including: 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 may 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 best 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 and other QC measures within datasets (see Methodology PDF for Spring 2012)
• Further automations within the broadband databases: NC Broadband uses a relational geodatabase paired with PostGreSQL to house its broadband data. Establishment of the SDE database set allows for queries and analysis combining SQL with the mapping environment, as well as additional business rules to flag data that contradicts expected values (work is ongoing to better utilize this capability). NC Broadband also uses scripts to streamline and reduce error in update processes, eliminating redundant geocoding and duplicates between new and previously submitted address level datasets.
• Comparison and evaluation of current data collection methodologies: 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 made available.
• Field testing of wireless signal: Checking signal strength and ground conditions were conducted by UNCG Center for GIS at a battery of randomly placed sample locations across wireless propagation study areas. Results of these field verifications were used to calculate margin of error and calibrate wireless propagation models accordingly to best reflect regional factors.
• Feedback loops with providers: High-quality PDF maps are created from wireless propagation results for providers to review, submit feedback, and use as a tool for marketing and internal planning. ArcExplorer maps for wireline providers are packaged on request, and posted on NC Broadband's secure server for providers to download, review, and provide feedback in a Google Earth-like format. Regional technical assistance and outreach staff include providers in discussions about broadband access strategy.

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 second 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: 6.31 FTEs spread out over 9 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
The project was not not fully staffed during this quarter, but is fully staffed as of the end of the reporting period. The grant was transferred to Commerce effective January 1, 2012. At the end of January 2012, the Communications and Outreach Director left the organization. This position has been replaced with an additional Research Associate, who joined the staff in May 2012. Communications work will be overseen by the Director of NC Broadband, with support from the Commerce Communications Division, and support from the two Research Associates on staff. Outreach work is implemented primarily by the Technical Assistance Staff. In addition to this change, NC Broadband added an Accountant to the staff to help with fiscal management and reporting. The Accountant was part-time in May and June and full-time effective July 1, 2012. The SBDD project is fully staffed as of July 1, 2012. The staffing transitions during this initial grant transfer period did not significantly impact the project timelines.

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 with the new Research Associate and Accountant on board at 100%, 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
Data Administrator/GIS Specialist	100	01/01/2012
Research Associate	26	06/07/2012
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
Accountant	42	05/01/2012

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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	N	Y	01/01/2012	12/31/2012	0	15,791
Topsail Technologies (Database)	Database development and maintenance	Y	Y	01/01/2012	12/31/2012	0	15,177
Michael Baker Jr., Inc.	GIS Mapping and hosting of online map	Y	Y	01/01/2012	12/31/2012	0	21,187
MCNC	Hosting and storage of Broadband data database and development of speed test	Y	Y	01/01/2012	12/31/2012	0	5,010
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	20,520
Richard Kelly	Technical Assistance	N	Y	02/06/2012	01/30/2013	0	36,093
Topsail Technologies (Website)	Rebuild, Redesign, and Maintenance Website	Y	Y	01/01/2012	12/31/2012	0	1,778
East Carolina University (Research Support)	Research Support for Broadband Planning	N	Y	01/01/2012	09/30/2014	0	1,524

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Funding

10p. How much Federal funding has been expended as of the end of the last quarter? $368,248   10q. How much Remains? $3,677,711

10r. How much matching funds have been expended as of the end of last quarter? $205,303   10s. How much Remains? $775,883

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	$260,109	$51,952	$312,061
Personnel Fringe Benefits	$348,074	$205,986	$554,060	$54,559	$18,729	$73,289
Travel	$48,593	$0	$48,593	$16,455	$0	$16,455
Equipment	$0	$0	$0	$0	$0	$0
Materials / Supplies	$34,018	$27,345	$61,363	$2,383	$0	$2,383
Subcontracts Total	$1,351,756	$119,605	$1,471,361	$0	$117,080	$117,080
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	$7,008	$17,542	$24,549
Total Direct Costs	$3,878,690	$981,186	$4,859,876	$340,515	$205,303	$545,818
Total Indirect Costs	$167,269	$0	$167,269	$27,733	$0	$27,733
Total Costs	$4,045,959	$981,186	$5,027,145	$368,248	$205,303	$573,551
% Of Total	80	20	100	64	36	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.

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

No, not since the grant has been transferred under the NC Dept. of Commerce.

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

10aa. If yes, please list

NC Broadband continued this quarter to complete transition items related to transfer of the SBDD grant into the NC Dept. of Commerce. The Detailed Project Plans and Detailed Budget were submitted to NTIA in May 2012. NC Broadband looks forward to continuing implementation of the grant programs at full speed in the upcoming quarter. 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 NCB moving forward include: determining how best to integrate other data or verification methods

into the baseline provider data, ways to pursue project sustainability, new ways to quantify the data collected, responding to needs for more granular data, and using the map in fuller context of what NC Broadband is working on with broadband adoption and use. NC Broadband will continue to evaluate these issues. NC Broadband has established a satisfactory mapping solution used to aggregate address-level data for display 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 public resource. County-level maps displaying aggregate broadband availability as an overlay on census blocks shaded by total households are also being made available online. A method for estimating broadband access by percent of total households in a given area (state, county, municipality, etc) has been developed, is now implemented, and was 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.

10bb. Please describe any challenge or obstacle that you have encountered and detail the mitigation strategies the project team is employing

• 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 after deadlines set for them by NC Broadband and its predecessor, but the timelines have begun to show improvement. For the spring 2012 submission NC Broadband set a deadline early enough to allow sufficient time for formatting, checking and mapping the data. Some data was accepted after the deadline on a case by case basis, and NC Broadband in some cases has used prior data for providers that submitted in past data pulls, but did not submit new data or written notice of no changes. 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. The Detailed Budget and Detailed Project Plans, as a result of the transfer, were submitted to NTIA in May 2012. These supplemental programs include: Capacity Building, Technical Assistance, Computer Ownership (LITE-UP) and Address File Development. All programs are on-track except for some short-term delays in the LITE-UP program.

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

NC Broadband continued this quarter to complete transition items related to transfer of the SBDD grant into the NC Dept. of Commerce. The transition has taken extra time in grant implementation, but will not affect the overall outcomes and timelines of the SBDD program. The only significant delay faced this quarter has been with the LITE-UP project. NC Broadband, and its predecessor, had not realized that the LITE-UP project should be reviewed by an Institutional Review Board (IRB). In participating in an NTIA Webinar in the Spring, it was apparent that this IRB approval would be a necessary step since the project is a research project looking at human behavior involving Internet access. NC Broadband has been working to outline the exact processes under the project and the project is currently being reviewed through the IRB housed under research partner East Carolina University.

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

Detailed Project Plans were submitted to NTIA in May 2012, as required by the grant transfer. No changes to these project plans are currently anticipated.

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					
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?

Quarterly deliverables for the supplemental programs: State Capacity Building, Technical Assistance, and Address File Development continue to be met. Under State Capacity Building, the contract with Strategic Networks Group looking at broadband utilization is finalized and regional workshops are expected to be underway beginning in August 2012. Work continues on the economic impact symposium to be held in November 2012. The Technical Assistance program is extremely active. NC Broadband is currently focusing on writing up success stories and lessons learned as part of that program and should be able to submit those examples in the next quarterly report. The Address File Improvement project is underway in partnership with the NC Center for Geographic Information and Analysis. A survey was conducted to engage local government offices from which the raw address data is sourced. The survey was successful, capturing information about address data quality across the state, as well as obstacles and best practices for on-going updates and maintenance.

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

With the LITE-UP project, the IRB review is expected to be complete in August 2012, along with the contracts for the project partners. NC Broadband hopes to launch the project at full-speed in September.

11l. Please provide any other information that you think would be useful to NTIA as it assesses your Broadband Mapping Project

As mentioned in the last quarterly report, and earlier in this report, NC Broadband has developed a methodology for calculating percent of households with broadband coverage by county. This methodology and the resulting percentages will be provided to NTIA for reference. As mentioned earlier, this methodology has been reviewed by an external evaluator (UNC-G's Center for Geographic Information Science).

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) 08-22-2012