U.S. DEPARTMENT OF COMMERCE	2. Award Or Grant Number
	37-50-M09002
Performance Progress Report	4. Report Date (MM/DD/YYYY)
	10-13-2011

1. Recipient Name	6. Designated Entity On Behalf Of:
Rural Economic Development Center, Inc.	The e-NC Authority

3. Street Address	8. Final Report?	9. Report Frequency
4021 Carya Drive ,	○ Yes	◉ Quarterly
	◉ No	○ Semi Annual
5. City, State, Zip Code		○ Annual
Raleigh, NC 27610-2914		○ 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	09-30-2011	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 104 providers identified as relevant and operational, 6 have indicated that they will not provide data for the SBDD program. These six include:
• 3db Wireless, LLC
• Carolina Cable-Red Fox TV
• Lightwave Communications of North Carolina, LLC
• NC RIDE
• Red's Cable TV Inc.
• 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 71 providers whose full or partial data sets are included in the submission to NTIA. 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. 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 in October 2011.) e-NC continues to reach out to providers with communication including official data requests, 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, the e-NC Authority has 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, e-NC 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 recently submitted for NTIA review the final report from e-NC's external evaluators (NC Broadband Rigor in Mapping: An Assessment of Methods), where they compare data collection methods and provide recommendations on which methods may offer the best solutions for broadband data collection. e-NC also held a call with NTIA and the lead evaluator, Dr. Ed Feser, on September 22 to answer any questions about the report. Moving forward, e-NC will use the report recommendations to determine how to best utilize additional data collection methods. e-NC is also continuing its GIS-based propagation modeling of wireless coverage areas. e-NC plans to continue to map and refine individual wireless providers' coverage areas every six months as new data is collected. e-NC 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. e-NC 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: e-NC 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), e-NC 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. e-NC 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 e-NC's service inquiries, map feedback and surveys conducted locally and shared with the e-NC technical assistance team. e-NC is still determining how to incorporate additional data collection methods and feedback into the statewide data submission along with the provider data.
• Feedback loops with providers: e-NC is exploring, with Michael Baker Jr., Inc., the creation of an automated Provider Update Tool for the NC Broadband Map. The tool would allow providers secure access to view their mapped data as well as an online system to submit suggested changes or corrections.

10g. Have you initiated verification activities? ◉Yes   ◯No

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

Details on the verification activities already initiated are also included in the latest White Paper/Data Collection Methodology submitted to NTIA.
• 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: The e-NC Authority 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 faster 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. e-NC has also streamlined the update processes and results via automated removal of known duplicates between newly and previously submitted 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 fall 2011 data collection. See White Paper for Fall 2011.
• Comparison and evaluation of current data collection methodologies: While this activity was initially planned to be completed in 2010, it proved to be more complex than anticipated. Completion of the SDE-in-PostGreSQL database facilitated better cross-method and cross-data pull comparison. 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.
(For the remaining activities, please refer to the Q3 2011 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 e-NC 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 third quarter of 2011 include the following time funded through the American Recovery and Reinvestment Act (ARRA) for this State Broadband Data and Development (SBDD) grant program: The e-NC Authority: 4.9 FTEs spread out over 10 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. Contractors under this project make up the remaining jobs created or retained. Under broadband data collection and mapping the following contractors contributed time paid by ARRA funds: Topsail Technologies: 0.45 FTEs for development and maintenance of the broadband database and geo-database. The University of NC at Greensboro: 1.24 FTEs for GIS analysts performing GIS-based radio wave propagation modeling and GIS support work for the broadband data collection efforts. Michael Baker Jr., Inc.: 0.02 FTEs for project and technical management during the quarter, related to the NC Broadband mapping application. Under the planning and technical assistance portion of the SBDD project, the following contractors contributed time paid by ARRA funds this quarter: East Carolina University: 0.28 FTEs for broadband consumer survey work from a research professor and two graduate students. Topsail Technologies: 0.02 FTEs for further development of the e-NC Website. Strategic Networks Group: 0.29 FTEs for a Senior Analyst and Senior Data Analyst to develop a statewide digital economy report and develop regional profiles that outline current broadband utilization by sector and by region in the state. The total for the quarter from the e-NC Authority and contractors is 7.20 FTEs.

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

N/A

10m. When fully staffed, how many full-time equivalent (FTE) jobs do you expect to create or retain as a result of this project?
The e-NC Authority is currently fully staffed. The estimated FTEs for e-NC staff for year 2 are approximately 5.1 FTEs per quarter. The total may vary slightly depending on the exact allocation of time by our 10 staff members. ARRA-reported time from contractors varies by quarter depending on the contract requirements.

10n. Staffing Table

Job Title	FTE %	Date of Hire
Executive Director, The e-NC Authority	43	
Assistant Director, The e-NC Authority	56	
Dir. of Research & Development, The e-NC Authority	33	
Sr. Telecommunications Specialist, The e-NC Authority	8	
Data Administrator/GIS Specialist, The e-NC Authority	75	02/01/2010
Communications & Outreach Director, The e-NC Authority	40	
Research Associate, The e-NC Authority	49	07/13/2010
Sr. Technical Assistance Director, The e-NC Authority	62	10/25/2010
Technical Assistance Director - East, The e-NC Authority	62	10/25/2010
Technical Assistance Director - West, The e-NC Authority	62	01/19/2011
President, Topsail Technologies (contractor/database project)	12	01/05/2010
Sr. Software Developer, Topsail Technologies (contractor/database project)	33	01/05/2010
President, Topsail Technologies (contractor/Website project)	1	10/01/2010
Sr. Software Developer, Topsail Technologies (contractor/Website project)	2	10/01/2010
Technical Manager, Michael Baker, Inc. (contractor/mapping)	2	08/01/2010
Faculty, East Carolina University (contractor/citizen survey)	3	12/01/2009
Graduate Student, East Carolina University (contractor/citizen survey)	25	12/01/2009
GIS Analyst, University of NC Greensboro (contractor/GIS support)	95	06/01/2010
GIS Analyst, University of NC Greensboro (contractor/wireless modeling)	29	12/01/2009
Senior Analyst, Strategic Networks Group (contractor/economic development through broadband)	14	07/01/2011
Senior Data Analyst, Strategic Networks Group (contractor/economic development through broadband)	15	07/01/2011

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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
Telogical Systems	Web-Enabled Data Mining for Collection of Broadband Data	N	Y	10/26/2009	11/30/2009	25,000	0

University of North Carolina at Greensboro	Mobile and Fixed Wireless Propagation Modeling for NC and GIS Support	N	Y	12/01/2009	12/31/2011	315,814	64,828
University of North Carolina at Chapel Hill	Consumer Survey on Broadband Availability	N	Y	12/01/2009	07/31/2010	87,448	15,269
Foothills Connect Business & Technology Center	Collecting Broadband Data at the Consumer Level	Y	Y	01/01/2010	03/31/2010	33,749	0
Rockingham County for Rockingham County Business & Technology Center	Collecting Broadband Data at the Consumer Level	Y	Y	01/01/2010	03/31/2010	34,199	0
MCNC	Hosting and Storage of Broadband Data Database and Development of Speed Test	Y	Y	01/01/2010	12/31/2011	68,248	0
Topsail Technologies, Inc.	Database Development and Maintenance for e-NC	Y	Y	01/05/2010	12/31/2011	122,830	0
East Carolina University	PLANNING - Citizen Surveys for Broadband Planning	N	Y	12/01/2009	12/31/2011	32,871	6,887
Strategic Networks Group, Inc.	PLANNING - Analysis of Broadband Adoption and Strategic Gaps	Y	Y	02/01/2010	10/31/2010	185,990	0
Michael Baker Jr., Inc.	GIS Mapping/Hosting for e-NC	Y	Y	08/01/2010	12/31/2011	77,729	0
Topsail Technologies, Inc.	e-NC Website Upgrades and Maintenance	Y	Y	10/01/2010	12/31/2011	75,521	0
Strategic Networks Group, Inc.	Economic Development through Broadband: Phase I - Regional Profiles	N	Y	07/01/2011	09/30/2011	22,800	0

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Funding

10p. How much Federal funding has been expended as of the end of the last quarter? $2,147,902   10q. How much Remains? $4,463,094

10r. How much matching funds have been expended as of the end of last quarter? $618,156   10s. How much Remains? $1,084,393

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	$1,587,859	$1,012,604	$2,600,463	$426,479	$350,207	$776,686
Personnel Fringe Benefits	$473,128	$305,177	$778,305	$105,487	$84,272	$189,759
Travel	$58,000	$0	$58,000	$8,863	$7,481	$16,344
Equipment	$0	$0	$0	$0	$0	$0
Materials / Supplies	$163,480	$39,000	$202,480	$0	$9,137	$9,137
Subcontracts Total	$2,529,372	$230,455	$2,759,827	$1,635,373	$106,400	$2,192,870
Subcontract #1	$304,692	$64,828	$369,520	$315,814	$64,828	$380,642
Subcontract #2	$185,990	$0	$185,990	$185,990	$0	$185,990
Subcontract #3	$95,217	$16,625	$111,842	$87,448	$15,269	$102,717
Subcontract #4	$275,220	$0	$275,220	$122,830	$0	$122,830

Mapping Budget Element	Federal Funds Granted	Proposed In-Kind	Total Budget	Federal Funds Expended	Matching Funds Expended	Total Funds Expended
Subcontract #5	$1,668,253	$149,002	$1,817,255	$382,462	$26,303	$408,765
Construction	$0	$0	$0	$0	$0	$0
Other	$252,020	$115,313	$367,333	$0	$60,659	$60,659
Total Direct Costs	$5,063,859	$1,702,549	$6,766,408	$1,635,373	$618,156	$2,253,529
Total Indirect Costs	$1,547,137	$0	$1,547,137	$512,529	$0	$512,529
Total Costs	$6,610,996	$1,702,549	$8,313,545	$2,147,902	$618,156	$2,766,058
% Of Total	80	20	100	78	22	100

Hardware / Software

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

10v. If yes, please list

1 laptop, $2028, Q4 2010 (charged as mapping match)
2 laptops, $3452, Q1, 2011 (charged as tech asst match)

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

The ESRI software license costs may be charged to the grant in the future as the State begins to charge e-NC for use of the license. To date, e-NC has maintained active licenses, but they have not been charged to the SBDD grant.

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

10y. If yes, please list

Web-mined data from Telogical Systems, $25,000, Q4 2009

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

10aa. If yes, please list
Beyond continued implementation and refinement of the data collection process which currently uses provider data, and minor improvements to e-NC's online map and mapping tools, the key goals for e-NC moving forward include: determining how best to integrate other data or verification methods into the baseline provider data, how to best and most accurately aggregate data for reflection in the online map, 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 e-NC is working on with broadband adoption and use. e-NC will continue to evaluate these issues. A method for estimating broadband access by percent of total households in a given area (state, county, multi-county region, municipality) has been developed, and is being further refined. The methodology is loosely based on those explained by the federal program office at the SBDD grantee conference in Texas, May 2011. e-NC 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 during this quarter the e-NC Authority has continued to refine the details of its new SBDD programs funded under the NTIA supplemental funding, looking at how these programs can complement the mapping work.

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
e-NC 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 e-NC'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 e-NC. For the fall 2011 submission e-NC set a firm deadline of July 29, to allow additional time for formatting, checking and mapping the data. Some data was accepted after the deadline on a case by case basis and e-NC on occasion, may submit prior data for providers that have submitted in

past data pulls, who indicate no changes. In addition, e-NC's GIS Analyst had additional support this quarter 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 e-NC, the process should continue to become smoother.
• Change to 2010 geometry: Communication/TA with providers, developing conversion methods. Geometry was updated to 2010 for fall 2011 data submission, and not all providers were prepared for this change. Providers were notified of this change, and 2010 census block shapefiles posted for them online. Extra technical assistance in data preparation was offered, and some providers still submitted data using 2000 vintage census blocks. For these cases e-NC developed a reliable method for converting data to 2010 geometry with minimal inaccuracy.

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

In recent conversations with fellow grantees and commercial contractors for other states, e-NC has gained some comparative insight on the strengths of data collection and mapping as conducted by established in-state organizations versus out-of-state contractors. There may greater flexibility and control via in-state/in-house efforts, yet some benefits of utilizing targeted products and services of the commercial contractors also remain apparent. e-NC is also considering the opportunities for greater collaboration among states via the use of open-source applications. We look forward to further discussions with NTIA and other states on these issues. e-NC also 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

In February 2011 e-NC submitted its Detailed Project Plan to the NTIA. In June, e-NC received the grant amendment acknowledging receipt of the plan, timeline and cost estimates. Included in the plan are detailed activities for the following programs: Capacity Building, Technical Assistance, and Computer Ownership (LITE-UP) and Address File Development. General plans for the Address File Development project were submitted in February with an updated plan and detailed scope of work for this project submitted to NTIA on October 13, 2011. As explained in the plan, the remaining original broadband planning work has been rolled into the Capacity Building program. All programs are on-track with short-term delays in 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 summer session, did not extend the December 31, 2011 sunset date for the e-NC Authority. (e-NC is a legislatively-created state broadband authority.) The state budget passed in June 2011 directed that e-NC work to transfer the NTIA grant to the NC Department of Commerce. Essentially, the legislature eliminated the matching funding for the e-NC Authority and placed the money in Commerce and asked Commerce to manage the grant or contract out the grant. e-NC held a conference call with the NTIA on June 1 to discuss this transfer, and has worked to keep NTIA up to date on this transition issue, including a recent in-person site review and grant transfer discussion held on October 17. As of this date, e-NC continues to work closely with NTIA, the Governor's Office and the NC Department of Commerce to ensure a smooth transition of the grant. It is understood that the work of the grant must remain the same, with essentially just the grant entity being substituted. The Secretary of Commerce indicated to the NTIA broadband mapping director and program officer at a DC meeting in October that he was fully committed to making certain North Carolina would continue to meet its grant contract requirement - despite the directed transfer. The e-NC Authority does have funding to operate fully through December 31 and is continuing to implement all aspects of the SBDD grant. Assuming final approval from NTIA and all relevant parties, the transfer date will be January 1, 2012.

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

We do not anticipate that the transfer of this grant would result in any changes to the project plans. e-NC's goal through the transfer is to keep the projects in place as they are currently outlined.

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

11i. Planning Worksheet						
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?

• Technical Assistance: All milestones for Quarter 3 of this program, and for the year, are on track, including all of the following activities:

o Seven regional kick-off meetings (Feb-April 2011)
o Broadband Tool Kit, Manuals and Resource Documents (on-going)
o Database of NC Broadband Contacts and Projects (focus on Tier 1 counties) (underway)
o Inventory of Local Broadband Resources ("My County" section of website) (Web tool launched October 21)
o Response to Specific Local Requests for Assistance (on-going)
o Local Engagement/Educational Meetings (focus on Tier 1 counties) (on-going)
o Countywide Broadband Planning Efforts (on-going)
o Increased use of NC Broadband Map (on-going)
o Collection and tracking of Service Inquiries (on-going)
o Broadband Activity Level Survey (development completed in Q3 with distribution planned for Q4) (Note: this survey was originally called a County Technology Index in the Detailed Project Plan, but has been re-framed as the more specific "Broadband Activity Level Survey" to provide more focus on broadband than other technologies).

A detailed report of Technical Assistance activities is being submitted to the Golden LEAF Foundation by October 31, 2011, including a list of activities by county. (Golden LEAF provides some of the matching funds for North Carolina's SBDD grant.) e-NC will submit a copy of this annual report to NTIA once complete.

(For the remaining activities, please refer to the Q3 2011 Supplemental Answers Document.)

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

Just those mentioned in 11b.

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

We appreciated having a site review visit from NTIA on October 17 and look forward to working closely with NTIA to ensure a successful grant transfer.

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	12c. Telephone (area code, number, and extension)	
	12d. Email Address abailey@e-nc.org	
12b. Signature of Authorized Certifying Official Submitted Electronically	12e. Date Report Submitted (Month, Day, Year) 11-22-2011	