U.S. DEPARTMENT OF COMMERCE	2. Award Or Grant Number
	29-50-M09022

Performance Progress Report

	4. Report Date (MM/DD/YYYY)
	01-27-2012

1. Recipient Name	6. Designated Entity On Behalf Of:
Missouri Office of Administration	Missouri

3. Street Address	8. Final Report?	9. Report Frequency
301 West High Street, HST Room 280, P.O. Box 809,	○ Yes ◉ No	◉ Quarterly ○ Semi Annual ○ Annual ○ Final

5. City, State, Zip Code		
Jefferson City, MO 65102-0809		

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:
11-01-2009	10-30-2014	12-31-2011	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

At this point we have fourteen (14) providers that are non-responsive to our requests. We also have six (6) providers that have refused to sign an NDA and are not participating at this time. They are:

   Birch Telecom of Missouri Inc. Will not cooperate until mandated by FCC. Too costly
   Pixius Communications Will not cooperate. They claim information is available on ID Insight
   Ionex Communications, Inc. Affiliated with Birch Telecom above
   Poplar Bluff Internet, Inc (SEMO). Will not cooperate until mandated by FCC.
   SEMO Communications Inc. Will not cooperate until mandated by FCC.
   St. Louis Broadband - Does not see the benefit

We have asked their respective associations to aid in gaining their cooperation as well as pursuing publicly available maps of their service area and representing their service delivery in that manner.

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

We continue our public-based search and collection of provider information. All mapped resources are being geo-registered and heads-up digitized. We continue to analyze air-card information to gain a better understanding of wireless boundaries and their representation within the mapping. With the 2010 Census data being more available we continue to integrate census data (housing units, population, demographics, etc.) to start the transition to adoption-based mapping and to support our Regional Technology Planning Teams. Interviews and surveys continue to be used in field work elements to collect detail in selected blocks about service provision. We continue to encourage Missouri residents to visit the Missouri Ookla speed test site through distribution of postcards at various events (County Fairs, Regional Fairs, State Fairs, Broadband Summit). We are currently proposing to NTIA an investigation of price data from Telogical to see how it would help inform our approach to adoption issues in Missouri. We are also discussing using sporting events to collect information and conduct surveys as well as using various state level associations to target certain groups (i.e. Agriculture: Missouri Corn Growers; Missouri Soybean Association; Missouri Farmers Association).

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

We are using a convergence of evidence approach to both determine coverage consistency as well as provide a measure of confidence for these areas and boundaries. The actual verification activities can be broken down as follows:

1. Provider validation – provider review of mapping established boundaries. The Oct. 1, 2011 submission had 101 providers now mapped.

2. Lab-based verification – Using publicly available data and maps; tower locations and service parameters; Still working on receiving Form 477 information; marketing materials of providers; web crawling results; new 2010 Census data at the block level; Structures project for locations of residential, commercial, and other built sites.

3. Field verification – field-based observation, interviews, and measures; Air-cards; Moving away from Community Anchor Institution phone calling into a more collaborative relationship with statewide groups and associations (i.e. Fire Marshal; State Police Chiefs Association; State Sheriffs Association, Missouri Municipal League) Towards this end we have created a packet approach to aid in the

distribution of both educational information as well as data collection materials.
4. Surveys - Final tally of completed residential (9,984) and business surveys (1,154); and state / regional / county fair booths with surveys, postcards, and pin-mapping. Sector-based surveys have also been collected from within over 400 regionally-based groups.
5. Consumer feedback – Feedback on broadband coverage through web-mapping portal is occurring; the Missouri 'Speed Test' Ookla site has recorded 4,519 hits to date. As well, the FCC Speed Test site has collected 19,212 hits for Missouri to date.

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

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

1. Provider validation – feedback from provider review of submitted areas and boundaries for the October 1 submission is underway and will be integrated into the final April 1, 2011 submission. This round of validation is using the new GIS-based overlay maps for their review since this is more representative of their service areas in most cases. The data call has been delayed due to contracting reasons but should be out in early February.
2. Lab-based verification – Initially independently completed by GeoDecisions / CBG and the University of Missouri. These are then compared and fed back into each others systems to cross-validate information on individual providers.
3. Field verification – As we continue to move forward with each submission, our field verification efforts, as with all other aspects of the project, continue to advance. Providers are now categorized from prior verification rounds as unverified, high, medium or low priority. 'Unverified' are new providers or ones not able to be verified in previous attempts. 'High' are providers with minimal verification in previous attempts. 'Medium' are providers fairly thoroughly verified in previous verification and 'Low' are providers heavily verified in prior verification. Provider data is loaded on laptops or Garmin units for use by field verification personnel.
4. Consumer feedback – Citizen residential sampling and survey strategy continues. We also obtained 1053 new surveys and 390 pin points from Fairs that are now part of the growing database on consumer attitudes and opinions.

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

N/A

Staffing

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

6.80 FTE are currently funded with federal dollars.

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?
Fully staffed we will have 15.26 FTE. This number is expected to vary due to work loads within the University, subcontractors, field effort timing, billing cycles of the University and State, as well as Regional Technology Planning Team coordinators and Regional Planning Council staff working on the project.

10n. Staffing Table

Job Title	FTE %	Date of Hire
Project Director - MU	10	12/01/2009
Administrative Assistant Mapping - MU	18	12/01/2009
Temporary Technical - MU	37	12/01/2009
Temporary Technical - MU	6	01/10/2011
Undergraduate Student Assistant Technical - MU (n=3)	13	05/17/2010
Undergraduate Student Assistant Service - MU (n=3)	24	12/01/2009
Graduate Research Assistant - MU	33	08/22/2011
Program Manager - Research Specialist Senior Mapping - MU	17	12/01/2009
Research Specialist Mapping - MU	53	12/01/2009
Post-Doc Fellow - MU	14	10/03/2011

MoBroadbandNow Director		100	12/01/2010
MoBroadbandNow Assistant Director		100	12/01/2010
Regional Planning Commissions / Councils - RTPT Coordinators		100	10/01/2010
Regional Planning Commissions / Councils - RTPT Coordinators		100	10/01/2010
Regional Planning Commissions / Councils - RTPT Coordinators		55	10/01/2010

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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 Missouri	Mapping: Support to the State of Missouri to include public source data collection, integration, mapping, database construction for community anchor points, independent quality control, communications, field verification, lab verification, and maintenance	N	Y	12/01/2009	11/30/2011	1,693,253	292,207
GeoDecisions and CBG Team	Mapping: Support to the State of Missouri to include NDA work, data collection, integration, mapping, database construction, quality control, communications, field verification, lab verification, website development and transfer, and maintenance; Planning	N	Y	12/01/2009	11/30/2011	2,262,936	0
Environmental Systems Research Institute (ESRI)	Architecture and support for Web Mapping applications and services; Installation of Web Mapping Services for Broadband Map	N	Y	05/02/2011	05/02/2012	0	65,000
Regional Planning Councils	Aid in the hosting and facilitation of regional technology planning teams and sector development as well as residential survey and business survey support.	N	Y	10/01/2010	03/30/2012	647,000	0
Not Selected	State-based Address Points Mapping	N	Y	01/02/2012	12/31/2012	340,000	529,067

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Funding

10p. How much Federal funding has been expended as of the end of the last quarter? $658,418   10q. How much Remains? $5,914,964

10r. How much matching funds have been expended as of the end of last quarter? $1,643,346   10s. How much Remains? $0

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	$1,466,615	$623,726	$2,090,341	$86,450	$43,193	$129,643
Personnel Fringe Benefits	$6,648	$100,746	$107,394	$29,621	$8,226	$37,847
Travel	$0	$0	$0	$4,925	$5,059	$9,984
Equipment	$0	$32,600	$32,600	$0	$1,750	$1,750
Materials / Supplies	$0	$0	$0	$71,201	$8,218	$79,419
Subcontracts Total	$4,943,189	$886,274	$5,829,463	$466,221	$1,576,901	$2,043,122
Subcontract #1	$1,693,253	$292,207	$1,985,460	$117,360	$564,067	$681,427
Subcontract #2	$2,262,936	$0	$2,262,936	$189,261	$909,634	$1,098,895
Subcontract #3	$0	$65,000	$65,000	$0	$65,000	$65,000
Subcontract #4	$647,000	$0	$647,000	$159,600	$38,200	$197,800
Subcontract #5	$340,000	$529,067	$869,067	$0	$0	$0
Construction	$0	$0	$0	$0	$0	$0
Other	$156,930	$0	$156,930	$0	$0	$0
Total Direct Costs	$6,573,382	$1,643,346	$8,216,728	$658,418	$1,643,346	$2,301,765
Total Indirect Costs	$0	$0	$0	$0	$0	$0
Total Costs	$6,573,382	$1,643,346	$8,216,728	$658,418	$1,643,346	$2,301,765
% Of Total	80	20	100	10	20	28

Hardware / Software

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

10v. If yes, please list

Servers and other hardware for support of the state's Broadband Mapping portal has been purchased. Accounting is in the process of moving this cost from the State to the University as the determination of where to host the services changed in mid-stream when the State decided to move all image services and many map services to the University's geospatial data clearinghouse. Software was also acquired (ArcGIS10, ArcServer10, etc.).

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

Waiting to see if scaling will be necessary for the Broadband Mapping application or MoBroadbandNow website. As well, the Year 3 through 5 contracting amendment with the University has not be finalized.

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

10y. If yes, please list
N/A

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

10aa. If yes, please list

The fourth quarter of 2011 saw the official release of the updated format for the MOBroadbandNow static map series. The maps display broadband access for each of Missouri's nineteen Regional Planning Councils. In this series the use of roads and census blocks as means for visualization was completely abandoned. In its place, Missouri used the actual broadband coverage footprints issued by providers. To retain the anonymity of providers, these coverage footprints were stacked together in ArcGIS and merged into a single polygon layer so that no single provider can be recognized. Additionally, no provider identifying information was retained in the merge as only the number of providers available in any given polygon was retained.   These changes have proven highly successful. Missouri broadband providers are generally much happier with the improved visualization, as are citizens. The overall improvement in the accuracy of the maps is a welcome change for the MOBroadbandNow team.

Missouri's October data submission to NTIA was uploaded on 29 August 2011. This submission represented a significant milestone for the Missouri broadband mapping effort as it marked the first time more than 100 different providers were included in the data model. In total, the Missouri submission included 518,849 census block polygons, 190,678 street segments, 63 wireless shapefiles, 838 middle mile points, 587 service overview polygons, and 6,917 Community Anchor Institutions. In keeping with standard practices, after passing internal quality control measures, the data model was run against NTIA's quality control script prior to submission. The data model passed every check except for the "CAInstitutions_TRANSTECH" category. This was due to a known error with the script. Due to the fact that NTIA is aware of this issue, the data model was submitted as-is.

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

The new FCC breaks at 4M-1M do not coincide with the current data model. We have asked NTIA if the data model will change.
On 06 October 2011, Missouri received an email from the NTIA, stating that there were several data quality issues with the submission. It was explained that several providers listed by Missouri as using Symmetrical DSL were not recorded as having symmetrical up and down speeds and that several other providers were recorded as having achieved speeds not expected by NTIA given the transmission technology used. The Missouri broadband mapping team immediately went to work confirming these inconsistencies. The providers indicated as having asymmetrical speeds despite claiming Symmetrical DSL technology were double checked to confirm their transtech type. Once it was confirmed that each provider was, indeed, utilizing Symmetrical DSL technology, the speed records were changed . At the same time, the providers indicated as achieving "unexpected" speed values were also checked against both speed test data and provider records. When possible, representatives from the providers were directly contacted to confirm the speed values. It was determined, after these checks, that the speed values submitted were accurate and these records were not changed. This re-submission was uploaded to the FCC website on 10 October 2011.
The Missouri mapping team received another email indicating that the "unexpected" speed values would still not be accepted by NTIA. When the mapping team determined that the "unexpected" values were genuine, a teleconference was set up. During this call, NTIA officially asked us to change these speeds to acceptable values, in spite of existing data, and that NTIA was in discussion with the providers in question to clarify the problems. As a result of the teleconference, the Missouri team changed the speed records to NTIA's accepted values. This final version of the October submission was uploaded 18 October 2011.

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

The entirety of the State's match has been used up-front to cover year 1 and a portion of Year 2 costs associated with the mapping and planning elements of the award. Match used were actual State dollars allocated for the purpose of supporting the mapping and planning aspects of the NTIA proposal. No data match was calculated. Some state personnel salary is still being used as part of this match but is now classified as overmatch and is not being reported within this framework.

We are drafting a 'best practices' submission for work related in part to Telogicals 'pricing' data and the use of that data in examining adoption issues and parity in Missouri. We hope to have the formal request to NTIA in the Q1 2012 as that is when the 1st increment in Missouri's best practices funding is available.

Missouri is also considering hosting a National Broadband Mapping meeting as we feel the need for this type of event has been growing since the initial meeting in Texas. We would be interested in NTIA view of this activity and if there is already a plan in place for another National Meeting of the SBDD group.

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

All Regional Technology Planning Teams are in place with the state association under contract to gather information for the one RPC that could not participate.

All RTPT's have now assembled and drafted their Strengths, Weaknesses, Opportunities, and Challenges regional assessment. These will be distributed early in Q1 2012 for final review. Once comments are received, the draft Strategic Plan for each region will be drafted, distributed for comment, and a final 'town hall' meeting hosted by the region. A draft of the first Regional Strategic Plan is almost complete. Target dates for the final regional strategic plans is Q2 2012.

Residential surveys (n=9,984) and Business surveys (n=1,154) numbers will support splitting of these samples into sector groups such as agriculture, manufacturing, technology, etc. We have already published a sector report titled "The Benefits of Expanded Broadband for Missouri Farms and Agribusinesses.' This was picked up by the press and made multiple media outlets both in print and via radio. We are at work on two other such reports.

The 2011 Broadband Summit was held November 17, 2011 in Jefferson City, MO. Over 350 people attended representing citizens, providers, regional groups, industry sectors and public officials. The event provided information on the development, availability and adoption of Missouri's current broadband as well as highlighted some of the present and future regional broadband planning activities that are taking place across the state.

The keynote speakers were, Governor Jay Nixon who gave the official welcome and address; author and broadband strategist, Craig Settles, who discussed the development of public-private partnerships;Keith Bryars, with the FBI discussed the intersection of broadband technology with public safety; and Blair Levin, described his views of the future of high and ultra-high-speed networks.As well, 9 breakout sessions were held on a variety of topics.

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

Delays in contracting along with changes in positions at the State have compromised our timelines for the RTPT process such that the the planning progress has slipped almost a full quarter. Once contracts are settled we hope to complete the RTPT process no later than Q2 2012. We have been in contact with our RTPT Teams and partner organizations so that we can ramp-up quickly once contracts and amendments are in place.

Rural Addressing: In the many conversations that have been held to date regarding rural addressing and the magnitude of the need in Missouri we have come to the conclusion that with the funds available we could only support 4-6 counties at the funding levels they would need to complete a rural addressing project. That number is not sufficient to really be of good purpose for the broadband mapping and planning. We have now turned our attention to possibly supplementing an ongoing project that is a structures inventory wherein all built structures (residential, commercial, industrial, agricultural, etc) are labeled by a point (or if large enough a polygon) for an entire county. To date over 21 counties have been collected totaling 488,486 points and 14,849 footprints. In talking to the project leads they believe that over a three year time period they can complete the rest of the 94 counties through their process. It is our belief that this type of information will greatly aid our evaluation of implementation plans and allow us to move forward with some measure of statewide confidence.

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

N/A

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

11i. Planning Worksheet						
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?
The MoBroadbandNow office has continued participation in the RTPT activities. As well, they have engaged many state associations in order to make presentations at meetings and conferences so that we can take the message to them in a more proactive manner.

The state's counties are pursuing the development of web presence for each and every county (57 currently do not have a web site) through a cooperation of state, extension, and university personnel. As part of this development a mapping portal for each county is planned and as part of that deployment - the broadband map service is under consideration.

The graduate student employed is outlining a project wherein he will be evaluating the fragility of the broadband deployment to both technological change as well as company failures and natural disasters.

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

N/A

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

N/A

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 Tim Haithcoat	12c. Telephone (area code, number, and extension)
	12d. Email Address Tim.Haithcoat@oa.mo.gov
12b. Signature of Authorized Certifying Official Submitted Electronically	12e. Date Report Submitted (Month, Day, Year) 01-31-2012