Project Status Report

Broadband Mapping (BB Mapping) Execution Phase

For period:	**June 12 to June 25, 2010**
Submitted by:	**Dirk Huggett**
Green	Strong probability the project will be delivered on time, within budget, and with acceptable quality.
Yellow	Good probability the project will be delivered on time, within budget, and with acceptable quality. Schedule, budget, resource, or scope changes may be needed.
Red	Probable that the project will NOT be delivered with acceptable quality without changes to schedule, budget, resources, and/or scope.

EXECUTIVE SUMMARY

Status Item	Current Status	Prior Status	Summary
Overall Project Status	**Green**	**Green**	Overall, the project is doing well. We are tracking slightly behind schedule and slightly under budget. We submitted the "final" NTIA deliverable due June 15th. The team is finalizing the data (Sept update to NTIA) and the web app for the state map.
Scope	**Green**	**Green**	There were no changes to scope during this period. One change request was rejected.
Schedule	**Green**	**Green**	ND Schedule Index=.97 (2.5% Behind). We slipped a little behind schedule. Details can be found in the section below.
Cost	**Green**	**Green**	CPI=1.05 (4.4% Under) The variance is related to travel that was planned but has not occurred. *[Note: This is for contractual data only. We are significantly under budget for non-contractual grant related funding.]*
Project Risk	**Green**	**Green**	No new risks or issues occurred during this period.

Accomplishments and Other Notes of Interest:

- We delivered the "final" NTIA dataset on June 15th.
- The supplemental grant request for years 3-5 was developed. This is due July 1. A draft of the narrative is attached with this report.
- ITD Staff has reviewed the Beta version of the application and offered several suggestions. The application itself was delivered on June 28th (about 8 days late). ITD staff will test our installation process to minimize issues during the final delivery. This is part of our risk mitigation effort.

Expected Accomplishments:

- Finalize the supplemental grant request and submit to NTIA. Make adjustments per NTIA suggestions.
- Begin quarterly reporting process. ARRA reporting is due July 14th. (A couple extra days due to the July 4th holiday.) My update to OMB is due July 8th.
- Test installation of beta application will be almost completed.
- No deliverables are due during the next two weeks.

RISK MANAGEMENT

Status Item	Current Status	Prior Status	Summary
Project Risk	**Green**	**Green**	There were no changes to risks in this period.

Risk Management Log Summary

Risk #	Description	Response Plan	Owner

Comments: No active risks at this time.

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Issues Log Summary			
Issue #	Description	Required Action	Owner
Comments: No issues were created in this period			

SCOPE MANAGEMENT

Status Item	Current Status	Prior Status	Summary
Scope	**Green**	**Green**	One change request was rejected.

Change Control Log Summary			
Change #	Description	Action Accept / Reject	Action Date
5	Extend timeline for providers to submit data from July 1 to August 1 and extending delivery of final project dataset (September NTIA Update) from August 11th to September 8th.	Reject	6/28/2010
Comments:			

Deliverable Acceptance Log Summary			
Deliverable #	Deliverable Name	Action Accept / Reject	Action Date
Task 6b	Collect data from providers	Accept	6/24/2010
Task 1a	Beta of Map Application	In Progress	
Task 10 May	Project Management & Administration for May	Accept	6/24/2010
Comments:			

COST MANAGEMENT

Status Item	Current Status	Prior Status	Summary
Budget	**Green**	**Green**	CPI = 1.04 Travel continues to be the driving factor in variance.

PV	AC	EV	+/- (CV)	CPI	Total Budget	Est @ Completion	Cost Var %	SPI
$552,720.94	$406,959.16	$426,026.14	$19,066.98	1.05	$782,951.00	$747,909.70	4%	0.77

Comments: The reason for the SPI variance being so great is because of the $109,000 Final Data Cut deliverable. This is where our baseline plan differs from the revised plan after the NTIA delay agreement (i.e. the June 15th deadline). Tetra Tech agreed not to ask for even a partial payment for the June 15th deliverable and would accept full payment upon the final deliverable in late July.

NOTE: The following pages are the draft of our supplemental grant request narrative. This request is due July 1.

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North Dakota SBDD Grant Supplemental Application – Project Narrative

The state of North Dakota received a State Broadband Data and Development grant in December of 2009. The grant award was to accomplish the following objectives:

- Gather broadband availability data from the providers and public sources and transform the data to meet the requirements of the Notice of Funds Availability (NOFA) issued by the National Telecommunications and Information Administration (NTIA)
- Gather other data requirements (such as anchor institution data) as required by the NOFA and grant award
- Develop an interactive map of broadband availability available to the public
- The state's STAGEnet organization will work with public safety institutions and healthcare and medical institutions to determine the feasibility of leveraging the organizational structure, relationships with anchor institutions and providers and the network itself in providing both of those service areas with broadband services.

The state of North Dakota would like to request funding to add the following efforts to the grant.

Data Collection, Integration, Verification and Display

The state recognizes the need to maintain and improve the underlying data of the map and how that data is presented to the public. The following is a description of the efforts the state would like funding to perform.

Data Collection & Analysis

Updates

The state would like to continue updating the maps on a biannual basis as described below.

Current Amount Funded:	$66,500
New Funding Requested:	$530,000
Total:	$596,500

Data Gathering Methodology

The state would like to continue updating the maps on a biannual basis. The current process is to send to each provider the current dataset requesting them to provide any updates. Then process all returned data. We would like to utilize our current vendor and contract to perform this work.

During the first round of mapping, we accepted any provider submissions as is and adapted to scores of different formats and iterative processes. Keeping the maintenance process simple, standardized and repeatable will be the key to success in maintaining quality and maintenance costs in the future. Given the reluctance of most providers to submit infrastructure, we propose focusing our interactions with existing providers primarily on standardized census block map and spreadsheet updates for year 2-3 updates - we are proposing switching to a web based update methodology in years 4 and 5 which is described in a subsequent section.

Infrastructure acquisition and modeling, a major focus of our year 1 mapping, will be accomplished through additional public resources and independent measurements (detailed in other sections). We will

continue to request and work with infrastructure requests in selective situations with willing providers who submitted this type of data in year 1.

Processes for Data Integration

Data integration during maintenance and future development cycles will be maintained in the operational geodatabase structure we developed in year 1 mapping and propose continuing to maintain in years 2-5. A feature class labeled "Last point of aggregation" (LPA) in the operational database was created to hold point locations of broadband infrastructure (examples include central offices, remote terminals, head ends, etc.). Addresses purchased or obtained at any level of geography will be processed, including geocoding a street address (using ESRI Business Analyst and TeleAtlas data), or locating a point in a town (snapped to the USGS Geographic Names Information System location), and all mobile wireless locations obtained from public sources or commercial sources with validity checks using NAIP aerial imagery and Google Street View, and Bing 3D where coverage exists.

Verification Methodology

Our contractor developed a robust reliability and validity methodology that was integral to the broadband mapping efforts in the state in year 1. We propose continuing and building on this base in subsequent maintenance cycles. The lists below incorporate the currently used and proposed public and private data sources that we have used in the past and propose using during verification steps.

We propose to further develop spatial analysis procedures to integrate speed tests, and independent direct measurements with provider submitted coverages. Speed test clusters were used in year 1 mapping to validate provider presence for providers not participating in the process. We anticipate further refinement of these procedures can also assist in verification of provider coverage that was submitted. Converting speed test points to raster surfaces and using zonal statistics within existing dissolved coverage polygons would standardize the use of the speed tests for validation or provider submissions.

A reliability code indicating the source and geographic scale of infrastructure data identified from public sources or submitted by providers, represented as an integer from 1 (low) to 10 (high) was assigned to all points in the operational data model in year 1 mapping. We propose continuing to assign this reliability code to all new infrastructure data collected in future maintenance cycles. A persistent unique identifier was used to track each point and each instance of a point as they moved through the system and improved in quality, with old points retired instead of deleted. In maintenance cycles, this will also provide the advantage of temporal tracking of data and the basis for creating a historical tracking record and version history if required for maintenance cycles.

During our year 1 mapping we performed an independent survey and statistical analysis of broadband coverage. We propose doing a similar independent survey in year 3 of the project.

Active Updates

The state would like the opportunity to make the process defined above more active. That means targeting specific providers and data sets such as the ones listed below.

Current Amount Funded:	$0
New Funding Requested:	$297,000
Total:	$297,000

- Gathering a more complete cell tower database with specific ownership/equipment on multiple tower sites
- Moving our top 10 providers who delivered a partial dataset to providing a complete dataset, primarily through increased efforts by the state, direct meetings and web and GIS enabled GIS conference calls.

- Enhancement of typical speed reporting and subscriber weighted nominal speeds is proposed to better determine the speed information at a census block or provider coverage (for wireless coverage) level of geography.
- We do not anticipate extensive efforts to identify and process reseller data in the state. We consistently tried to distinguish between resellers not meeting the provider definition in year 1 mapping effort to avoid confusion in the data modeling results. We did, however, identify a number of resellers during year 1. We recognize the value and convenience of this data for customers, and plan a limited development of reseller data, which we propose to map as a standalone feature class of point address locations.
- Integration of public data sources has been an integral part of our methodology for broadband mapping throughout year 1 mapping effort. In maintenance periods in years 2-5 we propose continuing this effort and associated verification through reliability and validity codes and work flow as described in the methods above. We will apply lessons learned in the initial mapping effort.
- We did not identify free public Wi-Fi in the first year mapping effort but see promise in this given the return on investment for this technology in portions of urban areas, such as downtown development districts, business parks, university campuses and in small rural communities prevalent in all geographic regions of the state. We propose identifying these community efforts.
- We collected some pricing data during year 1 mapping, but it was non-systematic and opportunistic. We propose a standardized and systematic research of public data sources, including web research, advertisements through local media sources, provider interviews, and purchasing of MediaMark consumer expenditure data from ESRI consumer segmentation data for price points per tier, required bundles, equipment rebates or costs and incentive offers.
- When new providers enter the state, the initial data gathering, modeling and provider interaction is significant and consumes much more resources than maintaining an existing provider. We anticipate starting new provider processing in year 2.
- Major tech updates: As funding becomes available from things like BTOP grants and acquisitions, major technology changes could occur with current vendors. The state would like the ability to incorporate those significant changes into our mapping data.
- During year 1 mapping we conducted a direct measurement mapping effort using GPS enabled cell phones and driving over 4000 miles of Interstates and highways in the state. We plan on conducting a revised direct measurement exercise in year 3. However, routes and measurement methodologies will be modified to focus on areas where the most changes are thought to have occurred or where testing was not as dense as needed from year 1 efforts.
- Collecting all data elements for Anchor institutions has proved difficult due to the number of institutions and their understanding of their Internet connectivity. We feel a proactive effort of contacting both individual institutions and the umbrella organizations they are part of can increase the completeness and accuracy of this data set.

Address File Development

The state has determined that it will not ask for funding for any address file development initiatives. However, the state would like to have the ability to change which commercially or publicly available address files we use as we find more accurate data for our state. The map being developed currently uses Google's geocoding. We have found that data less than perfect for our state. In addition, we recognize that as time passes different data sources become better. So we anticipate that we will want to change the geocoding address source once in year two and two additional times during the grant period.

Current Amount Funded:	$0
New Funding Requested:	$15,000 + geocoding service charges
Total:	$15,000

Continued support of the speed test

The state of North Dakota feels continuing to support a speed test site is an important part of our data validation efforts as we collect additional information not collected on the FCC speedtest site. . Maintenance, hosting, storage and licensing costs are estimated below.

Current Amount Funded:	$0
New Funding Requested:	$8000
Total:	$8000

Development

Develop a web application that allows providers to update their own data

Overview

The State will build a web based data application for maintaining and creating broadband data. The application will allow for Providers and Anchor Institutions to update both spatial and attribute data directly using a simple web interface. The application will also allow for the State to use administrative level staff for broadband updates if the Providers do not wish to use the web application to maintain their own data.

Developing a web based maintenance application will provide many benefits including: increase data integrity through use of structured input, allow for cost effective data maintenance beyond the 5-year NTIA funding cycle, and provide for continuous update cycle as opposed to every 6 months.

The application will incorporate full authentication for each Provider to insure protection of proprietary information. It will also include tools that provide direct value to the Providers such as data export and PDF map generation to encourage their use of the application. Training materials will be developed and training workshops will be provided at several locations around the State to increase Provider participation and acceptance of the application.

The state of North Dakota is interested in coordinating with Montana on the development of this application and sharing costs. Some costs incurred will be split and some will be State specific.

Shared Costs (Application Development) estimated total is $218,000 for a cost per State of $109,000.

Individual Costs (Application Installation, support, training) estimated cost is 68k.

Current Amount Funded:	$0
New Funding Requested:	$161,000
Total:	$161,000

Cost Estimate – Some application costs can be split between the States and some cannot.

Broadband Map Application Enhancements and Maintenance

There are typically a number of enhancements that are desired after the initial rollout of an application as well as standard application maintenance. This funding would help the state of North Dakota make needed changes to make the site a more effective tool for its citizens. This funding could be necessary in year 2 of the project. Since the mapping application is not scheduled to roll out until August, no specific list of enhancements is available. Expected maintenance activities include insuring compatibility with future browser releases, updating web, GIS, and database servers, modifying application to address revisions to NTIA data model, etc.

Estimated cost $40,000.

Current Amount Funded:	$0
New Funding Requested:	$40,000
Total:	$40,000

Future Leading Practices

As the program matures, NTIA will identify leading practices that they will want all states to adopt. This request is to ensure the state will be able to comply with those requests. This funding is listed as "Other" in the SF424a form submitted with this document.

Current Amount Funded:	$0
New Funding Requested:	$142,200
Total:	$142,200

Project Management

The state requires project management and Large Project Oversight for any projects over $250,000. (Note: vendor project management will be included in each of the above projects and not included in this section.) This includes a part-time project manager (50%) plus LPO fees.

Current Amount Funded:	$128,250
New Funding Requested:	$183,000
Total:	$311,250

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Technology Planning

Program Management and Reporting

The state requires the program to have staff dedicated to managing the overall direction of the Broadband Mapping & Planning efforts.

Current Amount Funded:	$120,750
New Funding Requested:	$148,000
Total:	$268,750

This would be a program manager full-time with 75% federal funding and 25% state matching funding.

Develop other reporting using data

NAME: The state recognizes that both the NTIA formatted data and many data elements used to produce it could be of significant value to other state agencies such as the Department of Commerce and the Public Service Commission. The State is proposing to provide consulting, analysis, reporting, and map development services to State agencies that exceed what is available from basic web queries. This funding is to pay for development of those reports (using non-confidential or aggregate information).

Examples of possible products include –

- Create a report of underserved areas summarized by County or Zip Code.
- Create a map or areas with a population density above 100 people per square mile that does not have wireless broadband access.
- Create a map and a list of anchor institutions with broadband connections that are less than or equal to 2 Mbps.

Current Amount Funded:	$0
New Funding Requested:	$40,000
Total:	$40,000

ND Comprehensive Approach Towards Leadership in a Digital Economy

Awardees should note that they must include, at the end of Project Narrative, a description not to exceed two pages that specifically describes how the proposed projects will fit into their state's comprehensive approach toward leadership in a digital economy.

Budget Narrative

Activity	**Total Cost**	**ND Share**
Shared Costs (total that can be split if States team)		
Requirements	$30,000	$15,000

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Definition		
Database design	$16,000	$8,000
Application Administration Design\Build	$32,000	$16,000
Application Design\Build	$128,000	$64,000
Training Materials Development	$12,000	$6,000
Subtotal	***$218,000***	***$109,000***
Individual State Costs		
User Acceptance Testing (UAT)	$12,000	$12,000
Training Workshops	$16,000	$16,000
Application Installation and Support	$24,000	$24,000
Subtotal	***$52,000***	***$52,000***
Project Total		**$161,000**