

Georgia - Follow-Up Questions

Data Collection:

Methodology:

1. What is the methodology for identifying all broadband providers in Georgia? At this point, do you have a sense of the estimated number of broadband providers in Georgia?
2. Georgia intends to use a "third party" for Data Collection. What are the detailed steps the third party provider will use in collecting required data from broadband providers?
3. The application states "GTA will work on its own and with selected third parties" to support Data Collection. What are the "selected third parties"?
4. The application states Georgia anticipates "we may receive hand drawn maps of service areas and facilities". What is the intended methodology to format that data into required data as stated in the NOFA and subsequent clarification?
5. In cases where "we are not able to receive any data at all", the application states Georgia may conduct direct surveys to "infer broadband service area". Please provide additional information on the direct survey methodology.
6. What is meant by the statement, "While we understand the need for NTIA to change the NOFA's data requirements, we are disappointed in the lack of detail present at the census block level"?
7. Please name the specific state agencies, if any, participating in the Data Collection Process.
8. Please provide a description of the type and format of metadata that you will provide.

Type of Data to be Collected:

1. Please clarify whether you are planning to request data from providers at the address or census block/street segment level. If you are requesting data at the address level, please explain your anticipated action(s) if providers are unwilling/unable to provide data at the address level?
2. Please clarify your intent to collect last-mile and middle-mile data, as specified in the NOFA and subsequent Clarification. The text currently does not indicate whether this data will be collected.
3. Does Georgia intend to format all required data according to technical specifications in the NOFA and subsequent Clarification?
4. Please clarify that Georgia will provide a complete set of Community Anchor Institution availability data to NTIA, as required by the NOFA.

Verification:

1. What specific process(es) will be used to ensure data integrity, as described in the application?
2. The application states Georgia will contact the providers to confirm data is "correct and complete". What is the process facilitating that discussion?
3. What is the "second statistical process" for spot checking data as part of "Statistical Sampling"?

4. In situations where “incumbents provide challenges to unserved/underserved designations in stimulus applications”, Georgia intends to “use the resolution of these challenges to improve our state map”. What is meant by this statement? What is the intended resolution process?
5. How will corrections provided through public inspection be adjudicated? What is the process for verifying these corrections are accurate?

Accessibility:

1. What data does Georgia intend to provide access to through the mapping web viewer?
2. What user communities will have access to the data? Are there different levels of access based on these groups?
3. Please clarify the types of “multi-layer analysis” that will be available through the mapping web viewer.
4. Please provide additional details on how confidentiality concerns will be addressed in providing access to data through the mapping web viewer.

Confidentiality and Non-Disclosure:

1. The application does not specifically mention creation of appropriate NDAs. How will Georgia ensure NDAs conform to the confidentiality requirements set forth in the NOFA and subsequent Clarifications? Please list the specific confidentiality provisions that will be included to ensure compliance with the SBDD NOFA and subsequent clarifications.

Security:

1. Please provide additional details on the security procedures/protocols Georgia intends to include in the MOU with the neutral third party data storage provider.

Project Feasibility:

Applicant Capabilities:

Budget:

1. Please provide a detailed budget spreadsheet used to generate the aggregated Mapping costs.
2. Please provide a detailed budget spreadsheet used to generate the aggregated Planning costs.
3. What was the process used in developing Mapping costs from the 4 RFQC qualified responses?
4. How does Georgia intend to generate the \$200,000 in sustainment funds currently included in the Mapping budget?
5. How were matching costs determined? Please include additional detail on the matching funds that will be provided.
6. Were Planning cost estimates developed based on the same RFQC responses used to generate the Mapping budget?

Budget Descriptions:

1. *BB Planning and Mapping Budgets and Narratives:*

Please provide additional detail to the budget spreadsheets and narratives such that the information below is completed for the first two years of your proposed budget. Please retain a separate budget narrative and spreadsheet for mapping and planning.

Your budget narrative should provide narrative detail (such as description of position or calculation of travel costs), while your revised spreadsheet should include detail for all budget areas. Please ensure that you continue to detail the differences in costs between years one and two. We have attached a spreadsheet that you may use as a guide to delineate this information in a spreadsheet format. If your budget already provides the information needed for the tabs "Detailed Mapping Budget," "Detailed Planning Budget," "Contracts Budget," please still complete the "Overview" tab.

Narrative Information:

Personnel Salaries: For each position allocated to the projects, provide a description of the position responsibilities, annual salary, and percentage of time dedicated to this project for Year 1 and Year 2. Please ensure that costs are clear for both Years 1 and 2, as opposed to both years cumulatively. Be sure to clearly indicate if a portion of time is paid through an in-kind match (i.e. clear federal vs. match distinction).

Personnel Fringe Benefits: For each position allocated to the projects, provide the cost for fringe benefits, if available.

Travel: Provide additional information such that the basis for all figures is clear. For example, if assuming airplane travel, provide an estimated cost for each roundtrip ticket and how many trips are expected. For mileage, provide an estimate of how many miles are expected and how many trips, etc. Be sure to distinguish between federal funds and any matching funds.

Equipment: For hardware costs, provide a detailed description of all equipment to be purchased, when it will be purchased in the first two years, and the basis for the figures used. Be sure to distinguish between federal funds and any matching funds.

Materials/Supplies:

- For software costs, provide a detailed description of all equipment to be purchased, when they will be purchased in the first two years, and the basis for the figures used. Be sure to distinguish between federal funds and any matching funds.
- For all supplies expected to be purchased, please provide the information such that the basis for figures is clear. Be sure to distinguish between federal funds and any matching funds.

Subcontracts: For any significant subcontract, please provide the cost allocation in a format similar to the one listed directly above. Your current contractor budget only allocates personnel hours. If the contractor will be purchasing any equipment, performing any travel, etc. that should be clearly delineated.

Other: For training purposes not related to travel, please describe in detail and provide a calculation of the cost. For other activities or existing data sets, provide the value and calculation of such value. Be sure to distinguish between federal funds and any matching funds.

Indirect Cost: (Administrative Overhead) Please provide a clear description of the costs attributed to administrative overhead.

NOTE: Any requested pre-award costs should be allocated to the respective categories above. Be sure to indicate whether something is a pre-award cost.

Applicant Capacity, Knowledge, and Experience:

1. What are the roles of the “GIS experienced state agencies and local entities” in the executing the overall technical approach.
2. As described in the NOFA, please provide a description of the knowledge and experience of the applicant and associated project personnel. If you have not yet hired for certain positions please provide a description of the qualifications and expected work activities for these positions.

Expedient Data Delivery:

1. What are the major risks to meeting the defined timeline for data delivery? How will Georgia mitigate these risks?

Process for Repeated Data Updating

1. Please provide a detailed methodology on how Georgia will achieve Repeated Data Updating.

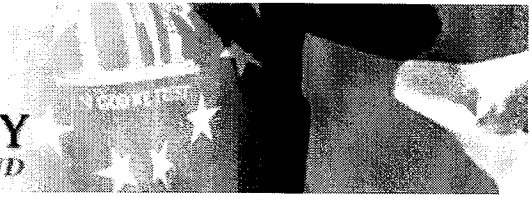
Collaboration and Planning:

Collaboration

1. Please clarify how Georgia will meet the requirement to “collaborate with State-level agencies and local authorities”. The Collaboration and Planning Section does not include details on specific collaboration activities. Please note that the NOFA states that “Collaboration with State-level agencies, local authorities, businesses and non-profit organizations will be a critical component of any successful data collection or mapping effort...”
2. Which specific stakeholders will Georgia collaborate with in execution of both the Mapping and Planning approaches?

Planning:

1. Please provide additional information about the activities and outputs, and costs associated with those activities and outputs for the request for broadband planning funds. What specific outcomes are expected from these activities?
2. How will Planning funds be used to achieve Planning goals?



From the Georgia Technology Authority

State of Georgia Mapping Application Response for the ARRA Broadband Technology Opportunity Program U.S. Department of Commerce - NTIA

Contact:

Rich Calhoun

State of Georgia

Director, Broadband Stimulus Office

404-463-5906

richard.calhoun@gta.ga.gov

Revised November 11, 2009
Amended Items highlighted



Introduction:

Enclosed is the Georgia Technology Authority's (GTA) response to the NTIA request to clarify its mapping proposal that was submitted on August 20, 2009. GTA looks forward to partnering with NTIA to help produce high quality mapping that will assist in making good fact based decision for telecommunications investment nation wide and Georgia.

Data Collection:

Methodology:

- 1) What is the methodology for identifying all broadband providers in Georgia? At this point, do you have a sense of the estimated number of broadband providers in Georgia?

We expect to work with over 200 entities on broadband mapping in Georgia. We have estimated this number based on the following:

On the Wireline side, we expect to contact:

1. All ILECs (35)
2. All IXCs (150)
3. All Cable Companies (over 40)
4. Entities involved in the state's broadband programs: Wireless Communities Georgia and BRIDGE programs.

For reference, we have provided a summary of Georgia's certificated communications providers from the Georgia Public Service Commission below:

Registered entities at the Georgia Public Service Commission:

Certificate Type	Number of Certificates
Alternate Operator Services (AOS)	243
Automatic Dialing and Announcing Devices (ADAD)	242
Competitive Local Exchange Carriers (CLEC)	467
Independent Local Exchange Carriers (ILEC)	35
Institutional Telecommunication Services (ITS)	63
Interconnection Agreement (Interconnection)	1543
Operate Telephone Line, Plant or System (IXC)	150
Payphone Service Provider (PSP)	1397
Resell Interexchange Telecommunication Services (Resale)	1076
Telephone Service Observing Equipment (TSOE)	504



On the wireless side, we expect to contact:

1. All Cellular Companies as identified through the CTIA wireless association.
2. All Wireless ISPs as identified through WISPA.org and other websites.
3. Entities involved in the state's established broadband programs: Wireless Communities Georgia and BRIDGE programs.

In addition, we plan to review the form 477 data for Georgia in finalizing our contact lists. We also plan to list the organizations we are contacting on a publicly available website to solicit input on other providers and to use the GeorgiaBroadband.net subscription list (with over 500 subscribers) to build awareness to the list and process for mapping inclusion.

- 2) Georgia intends to use a "third party" for Data Collection. What are the detailed steps the third party provider will use in collecting required data from broadband providers?

After several discussions with our qualified vendors, we expect the following process to be followed:

- I. Broadband service provider introduction to the Georgia Broadband Mapping program via one or more workshops and one on one communication.
- II. Non-disclosure agreements (NDA) completed as required
- III. Provision of service provider forms for data collection under several methodologies and collection of completed input. In the case of fixed location broadband providers (wireless or Wireline), we expect to receive data under one of the four following categories:
 - a. NTIA record formats
 - b. General GIS datasets or coordinate locations of customers
 - c. Electronic lists of addresses where service is provided
 - d. Paper maps, verbal descriptions, or other undesirable formats

In the case of mobile broadband providers, we anticipate requesting customer home location addresses as well as shape files which indicate the areas of service coverage and associated data requested of wireless carriers. We expect we may have to create shape files for coverage of some smaller wireless carriers based on tower locations or other base station locations and propagation analysis.

- IV. Base map creation of Georgia households and census blocks.
- V. Data cleaning and loading of provider maps onto base map.



VI. An analysis of the gaps that exist in the data collection process will allow our assessment of the confidence of the data. We are considering regression analysis in order to assess relationship with independent and dependent variables of the data collected.

3) The application states "GTA will work on its own and with selected third parties" to support Data Collection. What are the "selected third parties"?

GTA issued an RFQC in July to identify third party contractors to assist in its broadband mapping efforts. We qualified the following vendors:

- Connected Nation
- Georgia Tech Research Corporation
- One Economy
- Sanborn and Associates

The RFQC and the Notice of Award are attached as supporting information. GTA now has completed memorandum of understandings with all but one of the vendors.

GTA has continued discussions with each of these four vendors to respond to NTIA's questions and intends to issue a final statement of need next week to agree on definitive roles and responsibilities as well as vendor pricing. At this point in the process, we believe that a multi-vendor approach that utilizes the strengths of two or more of the qualified vendors will provide the highest quality and most cost effective approach.

4) The application states Georgia anticipates "we may receive hand drawn maps of service areas and facilities". What is the intended methodology to format that data into required data as stated in the NOFA and subsequent clarification?

In cases where service providers do not have electronic files of any kind and provide paper or verbal input, we anticipate a GIS Analyst working with the provider to create a suitable map of service. In some instances, this GIS Analyst will need to bring in other expertise (such as wireless propagation analysis) to create a conclusive map.

5) In cases where "we are not able to receive any data at all", the application states Georgia may conduct direct surveys to "infer broadband service area". Please provide additional information on the direct survey methodology.

In such a situation, Georgia intends to use a statistically controlled telephone survey service to collect direct information. We believe this method is the lowest cost method to obtain accurate information. Our qualified vendors indicated that they have good relationships with the large telecommunications companies. For the small players that lack the capability or capacity to respond we will use our state ecosystems that included the regional commissions, department of community affairs and the GTA to assist in producing a high response to our surveys.



- 6) What is meant by the statement, “While we understand the need for NTIA to change the NOFA’s data requirements, we are disappointed in the lack of detail present at the census block level”?

We are concerned that carriers may not provide information to us at the address level now that census block or street segment data can be acceptable. Georgia desires to map broadband availability at the address level where possible. We think that the address level is the best way for Georgia to assess its unserved and underserved citizen.

- 7) Please name the specific state agencies, if any, participating in the Data Collection Process.

Aside from GTA, we expect the following agencies to participate in data collection:

- a. Department of Education - DOE provides basic connectivity to all public K-12 schools
 - b. Board of Regents – BOR operates a fiber network over public and private networks for the University System.
 - c. Office of Student Achievement – OSA collects student performance data and can provide additional information on school connectivity.
 - d. Georgia Center for Advanced Telecommunications Technology at Georgia Tech – GCATT created a map of middle mile fiber in 2001 and can provide lessons learned in collecting such data.
 - e. OneGeorgia Authority – OGA has been a principal advocate of rural broadband and has many connections to rural carriers and rural community leaders. While OGA will not be directly involved in data collection, we expect they may be able to provide reference information in difficult to reach rural areas.
 - f. Department of Community Affairs – DCA maintains GIS data that can assist in identifying all community anchor institutions. DCA also has significant connections in local communities which can be used to encourage service provider cooperation.
 - g. Department of Public Safety – DPS will be used to identify public safety entities.
 - h. Cable and Telecommunication associations in the state.
 - i. The Georgia Municipal Association that supports the needs of municipal governments.
 - j. State Regional Commissions that supports the need of counties of which Georgia has 159.
 - k. Various private sector concerns in Telehealth, public safety, education, and telecommunications
- 8) Please provide a description of the type and format of metadata that you will provide.

Georgia will use the FGDC standard for metadata and provide all data requested by NTIA in the NOFA and subsequent Clarification. In addition, Georgia will collect additional metadata particular to our state’s economic development and broadband planning initiatives. This metadata will be supplied by many of the agencies described in question 7 above.



Type of Data to be collected:

- 1) Please clarify whether you are planning to request data from providers at the address or census block/street segment level. If you are requesting data at the address level, please explain your anticipated action(s) if providers are unwilling/unable to provide data at the address level?

GTA’s goal is to collect data at the address level. We believe that it is important to set a high quality level. We envision bringing community based agencies such as Department of Community Affairs and Office of Student Achievement to further educate providers on the value of making this data available. In cases where providers are not able to respond due to technical or resource issues, GTA will provide resources as available. If these measures fail to be persuasive and service providers remain non-compliant, GTA will mark these providers as non-compliant on the state broadband website.

- 2) Please clarify your intent to collect last-mile and middle-mile data, as specified in the NOFA and subsequent Clarification. The text currently does not indicate whether this data will be collected.

GTA intends to be compliant with the NOFA as amended in the subsequent Clarification. We understand this to mean that the middle mile interconnection points will be collected and verified but that last mile connection points are no longer required. Where last mile connection points are made available to GTA, we will collect and verify it as well. Any middle mile and last mile data collected will be held as confidential per the NOFA and subsequent Clarification.

- 3) Does Georgia intend to format all required data according to technical specifications in the NOFA and subsequent Clarification?

Yes. Georgia intends to provide the data requested by NTIA in the specified tab delimited files and file names such as “middlemile_GA.txt”. We understand the complete list of these files to be:

Broadband Service Availability

- address_availability_GA.txt (fixed service)
- census_block_greater2mi_GA.txt (fixed service where only census block info available)
- area_availability_GA.zip (zipped Shapefile for mobile, wireless service)

Residential Pricing

- pricing_GA.txt (we are seeking pricing data and not just subscriber weighted speeds)

Infrastructure

- middlemile_GA.txt
- lastmile_GA.txt (to be used only where Georgia is only able to gather facility information rather than service area)

Community Anchor Institutions and Other Data

- cai_GA.txt



- road_segment_availability_GA.txt

At this point, Georgia does not anticipate using the M_Adv_Speed_GA.txt format to report an RSA's or MSA's maximum advertised speeds. Instead, our goal is to include this data at the address level report, but welcome the flexibility as we begin this process.

- 4) Please clarify that Georgia will provide a complete set of Community Anchor Institution availability data to NTIA, as required by the NOFA.

Georgia strives to provide a 100% complete set of Community Anchor Institution availability data but recognizes the challenge of identifying all non-profit and private community anchor institutions across the state. Our plan for collecting state information as well as that of other entities includes the following:

- Schools – Georgia Department of Education and the Governor's Office of Student Achievement will facilitate all data collection for public and private school K-12 entities.
- Libraries – Georgia Public Library Service keeps master lists of libraries that will be essential to collecting data from this group. See <http://www.georgialibraries.org/directories/>
- Medical and healthcare providers – Georgia Office of Regulatory Services within the Department of Human Resources Community Health maintains a master list of healthcare facilities. <http://167.193.144.216/>. Almost 18,000 providers are available on this list.
- Public safety entities – Georgia Emergency Management Agency, Georgia Department of Public Safety, and Georgia Office of Homeland Security will provide appropriate information. We will work these entities to get detailed information at local, regional, and state levels.
- Community colleges and other institutions of higher education – Georgia Board of Regents and Georgia Department of Technical and Adult Education (www.dtae.org) can provide all public higher education locations and associated information.
- Other community support organizations and entities – Georgia will work with Department of Community Affairs to reach Regional Commissions, Development Authorities, and other entities. Over 900 State Authorities are on this list. We expect DCA to also serve as a link to independent community support organizations such as Community Technology Centers.

Georgia's plan for data completion is:

1. Initial Data Set - provide anchor institution data for state entities.
2. First Data Set Update – provide anchor institution data for 75% of all entities identified (state, local, and private)
3. Second Data Set Update – provide anchor institution data for 90% of all entities identified (state, local, and private)



Verification:

1) What specific process(es) will be used to ensure data integrity, as described in the application?

Georgia will employ multiple means of verification depending on the type of data collected. The following table demonstrates the mechanisms we plan to employ and the types of data we will apply these verification methods to.

	Data Types				
Verification Method	Fixed, Address specific service availability	Mobile wireless service availability	Pricing	Middle mile infrastructure locations	Community anchor institutions
Internal data consistency check	x	x	x	x	x
Carrier confirmation	x	x	x	x	
Public review	x	x			
Anchor institution review					x
Expert review	x	x	x	x	x
Telephone sampling	x		x		

More information on these verification methods is provided below:

Internal data consistency check – this method describes a set of logical checks that we expect our vendors to complete to verify that the data received by a service provider is reasonable and to reconcile multiple inputs to a specific area via a conflation process. Such checks can include verification that the data points provided are clustered in a service area with reasonable outliers, that addresses where provided are verified and reconcile with parcel or other existing Georgia data, and that the data is formatted properly. These general checks and data cleaning processes will be applied to all data received. We expect these internal checks to grow over time with experience.



Carrier confirmation – this process is one where GTA will provide carriers with a map of the service area and associated pricing data to confirm that we have received and entered the proper data. We will request each service provider confirm that their information is accurately represented.

Public review – this process provides a mechanism to incorporate public input into specific data points on the Georgia map. The general public will be able to submit public comments on the map’s accuracy. These comments will be responded to individually and incorporated as appropriate. This public review can also incorporate speed tests.

Anchor Institution review – this process will provide a closed loop feedback process for anchor institutions to validate we have received their information and properly represented it. While we expect to receive anchor data in bulk from entities such as Department of Education for Georgia public schools, we plan to ask individual anchor institutions to validate the accuracy of the data we have received via an online tool.

Expert review – GTA and/or its vendors will employ telecommunications experts to review the assembled data and check it based on their experience in Georgia on a spot check basis. These experts have an understanding of typical service levels in specific parts of Georgia and the technologies many companies in Georgia utilize. These experts may also use third party databases to compare primary data to these secondary sources.

Telephone sampling – We have allocated 8000 telephone survey calls at \$10 per complete to either randomly verify the data received or to focus on particular areas where we have concerns about the quality of the data. We will require both wireless and wireline phone numbers to be in the pool for telephone sampling.

- 2) The application states Georgia will contact the providers to confirm data is “correct and complete”. What is the process facilitating that discussion?

The Carrier Confirmation process described in the Verification section above provides a high level description of this process. Please let us know if you need more information on this process. This process will be limited to each operators own service area. Unresponsive operators will be noted publicly on the Georgiabroadband.net.

- 3) What is the “second statistical process” for spot checking data as part of “Statistical Sampling”?

The amount of data assembled in this process is enormous. We have contemplated using statistical sampling techniques such as a control chart to manage the quality of the data gathered. In a control chart approach, increasing levels of verification are applied in the cases of spot checks of the data failing to prove accurate. We anticipate that this technique could be applied on each source of data. As an example only:

- Provider A: 10 spot checks of data accuracy via telephone calls. 9 of 10 pass and provider’s data is accepted.
- Provider B: 10 spot checks of data accuracy via telephone calls. 5 of 10 pass and provider’s data is rejected. Resubmitted provider data is verified via 30 spot checks. If



these checks fail at a 50% level as well, provider's data will be rejected. Any resubmitted data will be validated by 50 spot checks and so on.

Determining what a "pass" means in this case can be challenging. What if a respondent doesn't have all of the facts or what if that respondent mis-reports the information? We expect to use the responses in the context of the provider's supplied information and knowledge about Georgia's telecommunications infrastructure to make this determination.

The questionnaire used in these phone surveys will support both the mapping process and the broadband office activities focused on awareness and adoption. More detail on the broadband office activities can be found in the Planning section below.

A second statistical process can be applied to spot check the population of data as a whole, not by provider or source of data, to get an overall confidence level in the data accuracy. As we mentioned we will be using regression analysis techniques to help ensure data accuracy as well.

- 4) In situations where "incumbents provide challenges to unserved/underserved designations in stimulus applications", Georgia intends to "use the resolution of these challenges to improve our state map". What is meant by this statement? What is the intended resolution process?

GTA has considered using the challenge data provided by existing service providers in the ARRA Round 1 Infrastructure program adjudicated by NTIA and RUS as a source of verification and validation of mapping data. At this point, we have no knowledge of this data being made publicly available and therefore have not built it into the revised plans discussed in these questions.

- 5) How will corrections provided through public inspection be adjudicated? What is the process for verifying these corrections are accurate?

GTA expects that the process between its vendors and the service providers and the public will generally resolve itself through the clarity of the data itself. It is important that we maintain good relationship with our public and private sector broadband stakeholders. In cases where there are doubts on how to resolve differing input on services that are available in a particular area, GTA will be the lead entity to help drive to a resolution through an adjudication process. This process will involve bringing in the data and analysis to uncover the discrepancies to arrive at a solution. We will like to work with NTIA as to the challenges that we are encountering to help create better policies and guidelines that support a higher quality of mapping data being available for the public.

Accessibility:

- 1) What data does Georgia intend to provide access to through the mapping web viewer?



We believe specific GIS information is most valuable when it presented in context. While Georgia has cut back on its GIS Clearinghouse given fiscal constraints, we intend to offer various data such as unemployment levels, educational levels, growth rates, and poverty levels in addition to the mapping data requested by NTIA.

- 2) What user communities will have access to the data? Are there different levels of access based on these groups?

Service providers will have a unique view of their own data under secure login. Other users will have a standard level of access to the data.

We will make maps of the data available to all relevant agencies throughout the state, including economic development, community affairs, community health, public safety, regional development centers, and research institutions. These entities will want to assess the macro state of broadband availability in particular regions of the state.

We expect the general public, particularly those who are dissatisfied their service, will utilize the online map data to understand the level of service available in various locations.

We are interested in making the data accessible via various APIs for integration in other analytical systems and have received information from vendors on such solutions.

We envision a dashboard for public policy makers to stress the importance of broadband expansion, and investment.

We welcome any recommendations NTIA may provide on best practices for specific user communities.

- 3) Please clarify the types of “multi-layer analysis” that will be available through the mapping web viewer.

This statement refers to additional Georgia context described in question 1.

- 4) Please provide additional details on how confidentiality concerns will be addressed in providing access to data through the mapping web viewer.

It is critical that proprietary information received under non disclosure remain secure. We expect to audit the IT systems of the vendor who hosts this data and to review their software architecture to ensure that the mapping web server provides a minimum risk to this proprietary data. Furthermore, we intend to review the data control processes end to end to ensure that proper procedures are in place for data security overall.



Confidentiality and Non-Disclosure:

- 1) The application does not specifically mention creation of appropriate NDAs. How will Georgia ensure NDAs conform to the confidentiality requirements set forth in the NOFA and subsequent Clarifications? Please list the specific confidentiality provisions that will be included to ensure compliance with the SBDD NOFA and subsequent clarifications.

We understand that NTIA requires an NDA following the limitations set forth in the BDIA be extended under Georgia’s broadband mapping program for service provider data capture and that the following information be marked as confidential:

- Information describing the type and technical specification of any technical infrastructure owned or leased or used by a specific broadband provider
- Information describing ARPU. As a note, GTA does intend to collect ARPU information per the Clarification.
- Information explicitly describing a particular service provider’s footprint at a particular address. Census block or street segment level data is no longer classified as confidential.

GTA expects its vendor to prepare this NDA. GTA will use its own in-house counsel to review the proposed NDA and to ensure that all parties involved in the mapping collection process have taken the appropriate measures relative to NDAs.

Security:

- 1) Please provide additional details on the security procedures/protocols Georgia intends to include in the MOU with the neutral third party data storage provider.

As noted above, GTA will review the practices of the third party data host using the state’s security standards. Details of this review can be provided within a week to NTIA.

Project Feasibility:

Applicant Capabilities:

Budget:

- 1) Please provide a detailed budget spreadsheet used to generate the aggregated Mapping costs. See excel file.
- 2) Please provide a detailed budget spreadsheet used to generate the aggregated Planning costs. See excel file.
- 3) What was the process used in developing Mapping costs from the 4 RFQC qualified responses?

After receiving the request for clarification from NTIA, GTA sought pricing for the mapping activities from the four qualified respondents in an NTIA compliant spreadsheet format. While GTA has not



selected a particular vendor or vendors to complete the work, GTA used these four reference points to submit a detailed budget to NTIA.

- 4) How does Georgia intend to generate the \$200,000 in sustainment funds currently included in the Mapping budget?

Based on discussions with NTIA and the shortened 2 year period of performance, GTA wishes to remove any program income from the budget.

- 5) How were matching costs determined? Please include additional detail on the matching funds that will be provided.

It is our understanding that matching cost includes in-kind contributions. We will contribute to the matching funds by utilizing a dedicated fulltime (1) program manager and one (1) project manager for the mapping initiative and broadband office activities over a two year period. See budget detail in planning spreadsheet.

Planning Georgia - Follow-Up Questions

1. Were Planning cost estimates developed based on the same RFQC responses used to generate the Mapping budget?

No. GTA is utilizing the planning budget to fulfill other purposes of the BDIA beyond mapping. Georgia intends to work on both demand and supply programs using the planning grant. This work is presented below a problem / solution format under the Planning section.

Budget Descriptions:

- 1) *BB Planning and Mapping Budgets and Narratives:*

Please provide additional detail to the budget spreadsheets and narratives such that the information below is completed for the first two years of your proposed budget. Please retain a separate budget narrative and spreadsheet for mapping and planning.

Your budget narrative should provide narrative detail (such as description of position or calculation of travel costs) while your revised spreadsheet should include detail for all budget areas. Please ensure that you continue to detail the differences in costs between years one and two. We have attached a spreadsheet that you may use as a guide to delineate this information in a spreadsheet format. If your budget already provides the information needed for the tabs "Detailed Mapping Budget," "Detailed Planning Budget," "Contracts Budget," please still complete the "Overview" tab.

Narrative Information:



Personnel Salaries: For each position allocated to the projects, provide a description of the position responsibilities, annual salary, and percentage of time dedicated to this project for Year 1 and Year 2. Please ensure that costs are clear for both Years 1 and 2, as opposed to both years cumulatively. Be sure to clearly indicate if a portion of time is paid through an in-kind match (i.e. clear federal vs. match distinction).

Personnel Fringe Benefits: For each position allocated to the projects, provide the cost for fringe benefits, if available.

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Equipment: For hardware costs, provide a detailed description of all equipment to be purchased, when it will be purchased in the first two years, and the basis for the figures used. Be sure to distinguish between federal funds and any matching funds.

Materials/Supplies:

- For software costs, provide a detailed description of all equipment to be purchased, when they will be purchased in the first two years, and the basis for the figures used. Be sure to distinguish between federal funds and any matching funds.
- For all supplies expected to be purchased, please provide the information such that the basis for figures is clear. Be sure to distinguish between federal funds and any matching funds.

Subcontracts: For any significant subcontract, please provide the cost allocation in a format similar to the one listed directly above. Your current contractor budget only allocates personnel hours. If the contractor will be purchasing any equipment, performing any travel, etc. that should be clearly delineated.

Other: For training purposes not related to travel, please describe in detail and provide a calculation of the cost. For other activities or existing data sets, provide the value and calculation of such value. Be sure to distinguish between federal funds and any matching funds.

Indirect Cost: (Administrative Overhead) Please provide a clear description of the costs attributed to administrative overhead.

NOTE: Any requested pre-award costs should be allocated to the respective categories above. Be sure to indicate whether something is a pre-award cost.

Please see excel file for information.

Applicant Capacity, Knowledge, and Experience:

- 1) What are the roles of the "GIS experienced state agencies and local entities" in the executing the overall technical approach.



GIS expertise in Georgia will be involved as to the most effective utilization of proven techniques in the state across transportation, education, and healthcare to produce higher quality data. They will act as reviewers of the methodology and will direct us as to existing data sources and the quality of those sources.

- 2) As described in the NOFA, please provide a description of the knowledge and experience of the applicant and associated project personnel. If you have not yet hired for certain positions please provide a description of the qualifications and expected work activities for these positions.

Please see below:

Removed GTA senior leadership profiles.

Funding Area - Planning	
Position	Role and Description
Broadband Office Director	Lead manager in directing broadband planning activities for broadband demand, supply, outreach, education, and the Network Expansion Program. Responsibilities include managing staff and ensuring the development of measures and program outcomes under the Georgia Broadband Office
Specialist for Community Outreach	Key contact to public and private sector outreach for community anchor institutions. This role included establishing contacts and setting up workshops. Establishing the right program agenda, and collecting data on its effectiveness. This role also involves creating the formats for technology plans and collecting, and analyzing the results. This position reports to directly to the Broadband Office Director.
Specialist for Broadband Applications	Key contact to public and private sector for application repository and development. This role involves identification and cataloguing of applications that can be readily used across Georgia networks in the areas of Telehealth, Education, Municipal Government, and citizens. This position reports to directly to the Broadband Office Director.
Funding Area - Mapping	
Position	Role and Description
Broadband Office Director	State lead for managing the selected vendor to ensure proper use of funds and timely delivery of mapping data to NTIA. This role includes establishing excellence criteria and ensuring the integrity of the mapping data.
State GIS Project Manager	Key contact to manage mapping vendor on a day-to-day basis to track and manage activities pursuant to NTIA guidelines. This role includes: holding project meeting, consolidating reports, measuring outcomes, providing existing Georgia GIS data,



	integrating vendor mapping information with Georgia data, validating mapping activities, and ensuring on time delivery of key milestones. This position reports to directly to the Broadband Office Director.
Specialist for Broadband Applications	Key contact to manage applications for education, Telehealth, and citizen use. This role ensures the creation of a state-wide repository of applications that are available for use over a range of broadband networks. In addition, metrics will be captured on the use and the benefits of these applications. This position reports to directly to the Broadband Office Director.





PROGRAM DIRECTOR
calhounrichard1@gmail.com

Richard G. Calhoun, Jr

Mr. Calhoun advises state and municipal governments on a wide range of IT strategy, broadband planning, and execution models including infrastructure buildout, project management, technology selection, vendor management, procurement, contract management, customer relationship management, and asset return on investment.

He is a program director at the Georgia Technology Authority and currently runs the day-to-day activities of the Governor's Wireless Communities Georgia program (WCG), the state broadband taskforce working team, and provides broadband technical consultation to the OneGeorgia Authority for rural projects.

He is the state lead for the broadband portion of the American Recovery and Reinvestment Act (ARRA) and broadband mapping programs.

His private sector experience includes 15 years with AT&T/Lucent Technologies in switching and wireless deployments and several years at FEMA and GEMA as a federal and state grants manager in the mitigation division.

PRACTICES

- Wi-Fi/Wi-Max (802.11)/16
- IT Program Management
- Risk Management
- Grants Management
- Contract Negotiations
- Business Modeling
- Financial Planning
- IT Strategy

INDUSTRIES

- Municipal Broadband
- Education/Health Care
- Cellular
- Class 5A Switching
- Healthcare IT
- Emergency Management

EDUCATION

- B.S.; Benedict College
- M.S.; Clark-Atlanta University
- M.B.A.; Northwestern University

Professional/ Community Affiliations

- Director – National Taskforce for Digital Inclusion Foundation www.ntdl.org
- Active Member Telecommunication Association of Georgia (TAG)
- Director Georgia Broadband Taskforce Working Team
- Technical Consultant to the OneGeorgia Authority www.onegeorgia.org

Upcoming Talks

October 20, 2009 - Georgia Tech GCATT Broadband Symposium Speaker – GCATT – State Broadband Initiatives

NEWS

9/28/2009 Presenter State Broadband Stimulus Georgia Technology Summit – Omni Hotel, Atlanta, GA

6/21/2009 Presenter and Panel Discussion -GMA Annual Conference -State of Georgia Broadband Stimulus Planning Overview

07/8/09 Presenter Gartner Executive Programs Event – Fulton County Government Building - State of Georgia Community Broadband Stimulus Opportunities





Bailey White
Senior Partner

Bailey White is a Senior Partner with Civitium where he helps cities, counties, and states achieve their goals for municipal wireless. He has recently assisted Southwest Georgia in the largest alternative broadband project in the state, continued to consult with Georgia Technology Authority on a state wide municipal wireless program, and advised Long Island on a two county broadband project. Previously he assisted San Francisco in their negotiations with EarthLink and Google, led Riverside's negotiations with AT&T, conducted a feasibility study for Harlem, New York City, and authored an extensive broadband research paper published by Informa Telecoms.

Prior to Civitium, Bailey's experience includes the design and operation of content management systems, the design and sale of field service applications, online consumer research for NBC, The WB, Fidelity Investments, and Toyota, and enterprise resource planning for Hewlett-Packard.

Bailey graduated from Stanford University with a Bachelors of Science degree in Industrial Engineering and has led graduate research in large scale Wi-Fi implementations, applications within these networks, and the impact of SMS on communications at the University of Georgia's New Media Institute. Bailey is a regular speaker for municipal wireless events including Muniwireless, Gartner, and the Strategy Institute. Bailey is a member of the Georgia Economic Developers Association and the Technology Alliance of Georgia.

We will drive our selected mapping vendors to provide the highest quality personnel for this project. Over oversight will be important given that the Georgia Technology Authority is the lead entity responsible to state and NTIA for the best use of funds and a high quality project to be produced.

Resumes for vendor staff will be supplied to NTIA as soon they are known.

Expedient Data Delivery:

- 1) What are the major risks to meeting the defined timeline for data delivery? How will Georgia mitigate these risks?



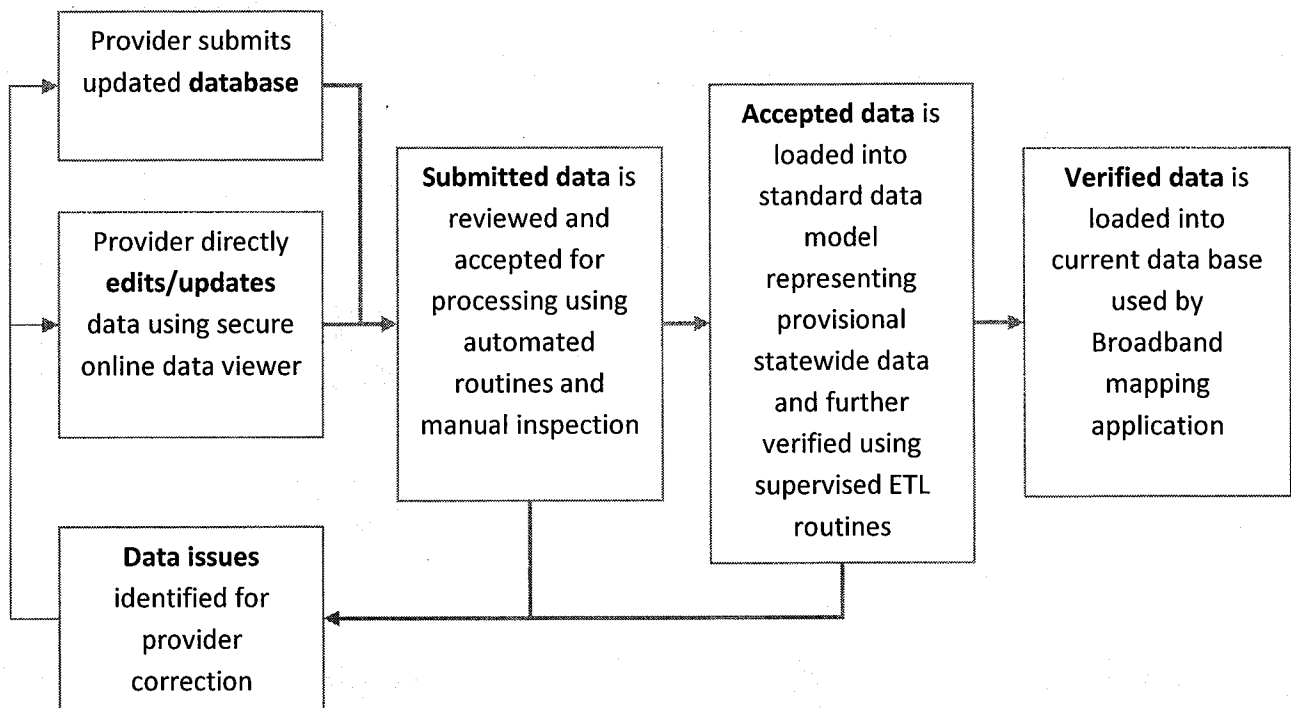
The major risks to expedient data delivery are several. The following table lists these risks and potential mitigation strategies

Risk	Mitigation Strategy
Late start date. We have received schedules from the vendors and all require a start date of 11/2/2009.	GTA active engagement with vendor community and NTIA. GTA leadership is already meeting frequently to support broadband.
Poor service provider / carrier cooperation	Strong support by Georgia state leadership and community relationships
Discovery – As a large state with many rural carriers and no prior last mile map, we may find that the volume of work to compile the NTIA record formats is beyond what is budgeted or that other unanticipated issues cause delays.	This risk is potentially the largest and will be difficult to mitigate without additional budget for resources. We plan to ensure all engaged resources are working effectively.

Process for Repeated Data Updating

1) Please provide a detailed methodology on how Georgia will achieve Repeated Data Updating.

GTA is currently discussing processes for data updating. An example process proposed by one of the vendors is shown below. This workflow provides multiple ways for providers to make updates:



Collaboration and Planning:

Collaboration

- 1) Please clarify how Georgia will meet the requirement to “collaborate with State-level agencies and local authorities”. The Collaboration and Planning Section does not include details on specific collaboration activities. Please note that the NOFA states that “Collaboration with State-level agencies, local authorities, businesses and non-profit organizations will be a critical component of any successful data collection or mapping effort....”

GTA’s Broadband Stimulus activities have a history of strong collaboration. These include:

- Broadband Working Team of State Agencies including:
 1. Office of Student Achievement
 2. Department of Community Affairs
 3. Georgia Emergency Management Agency
 4. GTA
 5. Governor’s Office
 6. Stimulus Accountability Czar
 7. OneGeorgia Rural Development Authority
 8. Georgia Public Service Commission
- Over 500 subscribers to Georgiabroadband.net, the state portal for broadband related activities.
- Frequent communications with state and local entities of all types via meetings, phone, email, and web.

We have already established an advisory team for broadband mapping made up of mapping experts throughout the state:

1. Gwinnett County GIS
2. Dekalb County GIS
3. Department of Community Affairs
4. Board of Regents
5. Georgia Tech
6. University of Georgia

In addition, we routinely meet with the Georgia Telephone Association and Georgia Cable Association and local representation groups such as Georgia Municipal Association.

We expect to use all of these relationships to accelerate Georgia’s mapping program and get the best collaboration possible. We intend to host at least one public workshop announcing the initiation of the program upon funding award.

- 2) Which specific stakeholders will Georgia collaborate with in execution of both the Mapping and planning approaches?



Please see above.

Planning:

- 1) Please provide additional information about the activities and outputs, and costs associated with those activities and outputs for the request for broadband planning funds. What specific outcomes are expected from these activities?

Problems in Georgia the Planning Grant will Address

Broadband Demand: Broadband can be better utilized in Georgia by its residents, businesses, and anchor institutions. For example:

- Many educational entities still use T1s even though better service is available.
- Telehealth applications in our 91 counties of persistent poverty are on limited connections and provide associated limited functionality.
- Municipal leaders often do not know how to utilize the power of the internet to provide better services to constituents or develop their economies.
- Smart Grid efforts in Georgia are often myopically focused on control needs and fail to take into account the benefits of connections via general use broadband networks.

Broadband Supply: The Georgia broadband ecosystem has several challenges that lead to lack of broadband capacity and reach in several rural areas of Georgia. These challenges include:

- Lack of incentives to deploy broadband in areas with low return on investment
- Limited backhaul capacity in rural and remote areas
- Low speeds to end users in rural areas that limit the use of high end applications
- Lack of collaboration and awareness on ways to address the issues above
- Lack of central authority to help guide issues to any resolution

Proposed Solutions

To fully address the challenges above would require funds much larger than the NTIA Planning Grant. However, we believe the following activities, funded by a Planning Grant, can make substantial progress in particular areas. We view these funds as seed funds that can help catalyze larger, longer term efforts.

Georgia will execute on the following activities under the Georgia Broadband Office:

1. Outreach program – conferences, regional meetings, and webinars on the value of broadband and how to connect with local providers and other resources.
2. Education program – helps superintendents and technology directors with k-12 broadband applications, utilization, and connectivity.
3. Broadband Network Expansion program – assists public and private stakeholders fill in the capacity and coverage gaps revealed by the broadband map.



The Outreach program will work with Georgia Municipal Association, the Regional Commissions under Dept of Community Affairs, the Association of County Commissioners of Georgia, the OneGeorgia Authority, and others to promote the use of broadband for economic development throughout the state. The program will perform the following:

- 3 public demand building workshops per year for two years. These workshops are focused on municipal leaders, economic developers, city planners, county commissioners, and state agency leadership. These 2 day workshops will include topics such as:
 - Case studies for successful utilization of broadband
 - Broadband map availability interpretation
 - Key success factors in creating programs that make use of broadband technologies
 - Break out groups on particular subject areas:
 - Telehealth
 - Education
 - Government
 - Business

OUTCOMES:

- Increased social networking and viral activity driving better utilization of broadband throughout the state.

MEASURES:

- Surveys of participant satisfaction.
- Follow up surveys after 6 months past the workshop to gauge impact and identify programs started by participants.
- Number of people engaged in improving broadband utilization. Target of 300 people per year.

The Education program will work with Department of Education and Office of Student Achievement to drive better utilization of broadband in K-12 education. The program will perform the following:

- 2 symposiums for Georgia school board superintendents and key agency and other stakeholder leaders over two years. These symposiums will discuss:
 - The role of broadband in today's educational strategies
 - The use of broadband in today's economy with a focus on recent high school graduates



- Broadband map availability interpretation
- Key success factors in creating programs that make use of broadband technologies
- Discussion on curriculum, teacher education, student applications, parental involvement, and key data on the benefits of utilizing broadband in education.

OUTCOMES:

- Increased social networking and viral activity driving better utilization of broadband in education throughout the state.
- Improved use of broadband in education and higher demand for broadband in education.

MEASURES:

- Surveys of participant satisfaction.
- Follow up surveys after 6 months past the workshop to gauge impact and identify programs started by participants.
- School Broadband Application Utilization Project. This project will follow up on the symposiums and provide information to school superintendents and technology directors on existing and future broadband applications for education.

OUTCOMES:

- Technology Plans for school systems
- Increased utilization of broadband applications in schools
- Increased demand for better broadband capacity into schools
- Improved student educational test results and achievement

MEASURES: (to be captured initially and annually for two years or longer if funding permits)

- Number of schools with broadband technology plans
- Number of schools with high capacity lines active (45 mbps and above) and number that do not.
- Changes in test rest results for schools with high capacity lines versus those that do not have such capacity.
- School Connectivity Consulting. This project will provide resources for those school systems who are still operating on single or only a few T1s and are looking to improve their connectivity. This project will provide resources for school systems to evaluate their options and associated costs.

OUTCOMES:



- School systems will be aware of their options for improving connectivity.
- School systems with poor connectivity will be improved.

MEASURES:

- Number of schools that take advantage of the consulting.
- Number of schools that have increased broadband capacity.

The Broadband Network Expansion Program is designed to encourage the expansion of broadband capacity and reach throughout Georgia and in particular in areas that broadband mapping identifies as unserved or underserved. The program focuses on increasing collaboration among all public and private sector stakeholders in specific geographic areas desiring better service. The program facilitates the development and understanding of a business case and Return on Investment that can lead to an improved and sustainable broadband network.

OUTCOMES:

- Increased communication and collaboration between service providers, vendors, universities, and community stakeholders that results in economic development.
- Improved broadband connectivity (speed, latency, jitter) within areas engaged in the Broadband Network Expansion Program.

MEASURES:

- Number of additional households passed and served.
- Number of communities engaged in collaborative discussions.
- Number of households, businesses, and community anchor institutions with improved service resulting from participation in the Broadband Network Expansion Program.
- Number of jobs saved or created by increased broadband availability resulting from this program.

2) How will Planning funds be used to achieve Planning goals?

GTA will utilize these funds to support the aforementioned activities mainly for staff support, supplies and materials, and auditing activities to ensure the integrity of the NTIA program and ongoing state-wide broadband programs. See the budget for additional detail.



**Combined Two Year Broadband Planning and Mapping Budget, Federal funds and Match
Georgia**

	Applicant Share	Federal Share	Total	Notes
Personnel Salaries	\$258,000	\$322,000	\$580,000	see worksheets
Personnel Fringe Benefits	\$87,325	\$102,200	\$189,525	see worksheets
Travel	\$6,000	\$48,500	\$54,500	see worksheets
Equipment	\$3,500	\$18,650	\$22,150	see worksheets
Materials/Supplies	\$2,000	\$15,350	\$17,350	see worksheets
Subcontracts	\$160,000	\$1,717,500	\$1,877,500	see worksheets
Construction	\$0	\$0	\$0	see worksheets
Other	<u>\$80,000</u>	<u>\$22,000</u>	<u>\$102,000</u>	see worksheets
Total Direct Costs	\$596,825	\$2,246,200	\$2,843,025	
Total Indirect Costs	0	0		
Total Costs	\$596,825	\$2,246,200	\$2,843,025	
Match	21%			
consistency check	596,825	2,246,200	2,843,025	

Detailed Mapping Budget - Georgia

Cost	YEAR 1			YEAR 2			Total			Notes	
	Applicant Share	Federal Share	Total	Applicant Share	Federal Share	Total	Applicant Share	Federal Share	Total		
Personnel Salaries											
Broadband Office Director	Rich Calhoun	43,750		43,750	43,750	-	43,750	87,500	-	87,500	\$120,000 @ .35 FTE
State GIS Project Manager	To be selected		81,000	81,000		81,000	81,000	-	162,000	162,000	\$90,000 @ .9 FTE
Administrative Assistant	To be selected	19,250		19,250	19,250		19,250	38,500	-	38,500	\$55,000 @ .35 FTE
Total		63,000	81,000	144,000	63,000	81,000	144,000	126,000	162,000	288,000	
Personnel Fringe Benefits											
Overhead expenses: Director	35%	15,313	-	15,313	15,313	-	15,313	30,625	-	30,625	includes retirement, health care, training, computer, support, office space.
Overhead expenses: GIS Project Manager	35%	28,350		28,350	28,350		28,350	56,700	-	56,700	includes retirement, health care, training, computer, support, office space.
Total		43,663	-	43,663	43,663	-	43,663	87,325	-	87,325	
Travel											
Mileage - Oversight	5000 miles for Oversight Travel	1,375	-	1,375	1,375	-	1,375	2,750	-	2,750	55 cents per mile
Mileage - Subcontractor	20000 miles for data gathering and drive tests		8,250	8,250		2,750	2,750	-	11,000	11,000	55 cents per mile
Airfare - Oversight	2 trips to DC for reporting (2 persons each)	1,000	-	1,000	1,000	-	1,000	2,000	-	2,000	\$500 per airline ticket
Airfare - Subcontractor	8 trips to Georgia (3 people each)		6,000	6,000		6,000	6,000	-	12,000	12,000	\$500 per airline ticket
Hotel and Meals - Oversight	Overnight stays for trips more than 2 hours from Atlanta	625	-	625	625	-	625	1,250	-	1,250	\$125/ day hotel and meals x 10 days
Hotel and Meals - Subcontractor	Overnight stays for trips more than 2 hours from Atlanta		3,750	3,750		3,750	3,750	-	7,500	7,500	\$125/ day hotel and meals x 60 days
Total		3,000	18,000	21,000	3,000	12,500	15,500	6,000	30,500	36,500	
Equipment											
4 ESRI 9.3.1 advanced licenses for GIS analysis	\$2500 each		10,000	10,000				-	10,000	10,000	
2 Desktop computers for GIS with Windows 7 and Office 2007	\$1500 each		3,000	3,000				-	3,000	3,000	
1 Plotter	\$2000 for use	1,000		1,000	1,000		1,000	2,000	-	2,000	
Total		1,000	13,000	14,000	1,000	-	1,000	2,000	13,000	15,000	
Materials/Supplies											
Ink for Plotter and Printers	\$1,500	750		750	750		750	1,500	-	1,500	
Paper	\$500	250		250	250		250	500	-	500	
Miscellaneous	unanticipated software, licenses, printing, etc		5,000	5,000		5,000	5,000	-	10,000	10,000	
Total		1,000	5,000	6,000	1,000	5,000	6,000	2,000	10,000	12,000	

Subcontracts										
Estimated Prime Contract (Qualified Contractors: OneEconomy, Sanborn, Connected Nation, GeorgiaTech)	Subcontracts to be completed on fixed cost basis with 2 statements of need (1 annually)									
	857,500	857,500	625,000	625,000	-	1,482,500	1,482,500			
Website	GeorgiaBroadband.net map updates									
	15,000	15,000	15,000	15,000	-	30,000	30,000			
Oversight and Validation	Independent oversight and validation of mapping									
	80,000	80,000	80,000	80,000	160,000	-	160,000			
Total	80,000	872,500	952,500	80,000	640,000	720,000	160,000	1,512,500	1,672,500	
Construction										
Total										
Other										
Lessons Learned Post Mortem Report	Academic engagement for lessons learned report and outcome analysis									
	11,000	11,000	11,000	11,000	-	22,000	22,000			
Office space for contractors	4 cubicals, phone, use of conference room, network access									
	40,000	40,000	40,000	40,000	80,000	-	80,000			
Total	40,000	11,000	51,000	40,000	11,000	51,000	80,000	22,000	102,000	
Total Direct Costs	\$0	231,663	1,000,500	1,232,163	231,663	749,500	981,163	463,325	1,750,000	2,213,325
Total Indirect Costs										
Total Costs	\$0	231,663	1,000,500	1,232,163	231,663	749,500	981,163	463,325	1,750,000	2,213,325
Total Federal Share										1,750,000
Total Georgia Share										463,325
										20.93%
										\$ 442,665

Georgia Substantive Budgets

Cost	YEAR 1			YEAR 2			Total	Notes	
	Applicant Share	Federal Share	Total	Applicant Share	Federal Share	Total			
Personnel Salaries	Contract details to be supplied upon vendor selection								
Total		0	0	0		0		0	
Personnel Fringe Benefits								0	
								0	
Total		0	0	0		0		0	
Travel								0	
								0	
Total		0	0	0		0		0	
Equipment								0	
								0	
Total		0	0	0		0		0	
Materials/Supplies								0	
								0	
Total		0	0	0		0		0	
Subcontracts								0	
								0	
Total		0	0	0		0		0	
Construction								0	
Total		0	0	0		0		0	
Other								0	
								0	
Total		0	0	0		0		0	
Total Direct Costs	\$0	0	0	0		0		0	
Total Indirect Costs								0	
Total Costs	\$0	0	0	0		0		0	