Follow Up Broadband Mapping Questions for Arkansas:

1. Please provide a more detailed breakdown of how you intend to collect data. Your data collection is heavily reliant on provider participation, have you considered back-up methods of data collection if you don't have provider cooperation?

   Connect Arkansas, established in 2007, has historically enjoyed a great working relationship with broadband service providers as well as the support of related trade associations. We anticipate these relationships will be maintained. We would envision continuing to approach broadband providers directly is a valid method of obtaining related coverage data.

   As has been the strategy since Connect Arkansas began implementing our mapping activities, we have looked at various methods to ensure the data we receive from providers is as accurate as possible. To achieve higher levels of accuracy we have utilized speed tests linked to the state of Arkansas website, speed tests linked to mobile phones and conducted in various communities, physical inspection of broadband infrastructure within communities, purchased third party data and broadband user surveys conducted in person during our e-communities process as well as in phone interviews.

   We believe a combination of these methods will deliver results with a far greater level of accuracy than any one method. These various methods have been in our plan and will continue to be moving forward.

2. Pursuant to the Technical Appendix in the NOFA, please clarify that metadata will be incorporated for all GIS products.

   In compliance with the data required and requested by the NTIA through the State Broadband Data and Development Grant Program, Connect Arkansas fully intends to utilize metadata in the data collection process as developed and currently utilized by all our GIS products. Connect commits obtaining the data as outlined in the Technical Appendix in the NOFA to submit by the stated deadlines.

3. Please provide more detail on how you plan to conduct quality control checks on provider data submitted through your proposed web-based system.

   Connect Arkansas will develop a secure web-based database form for broadband providers to upload with the data required for this program. This form will be accessible through the Connect Arkansas website and will have required fields, as described in the NOFA, for the service providers to fill in before being allowed to upload. The information being uploaded to Connect will be protected with a web enabled encryption

system.

Through the Connect Arkansas eCommunity program we confirm service provider data with random telephone survey calls to citizens within the county or region. These calls are randomly selected throughout Arkansas's 75 counties to ask consumers a variety of questions such as: do they have internet access in their home, what type of connection they have and what type of speed they have. Based on the location of the consumer, Connect Arkansas then confirms the survey information to the broadband provider's reported information.

Connect Arkansas has also worked with the state of Arkansas to have the state homepage host a speed test which collects data on actual speeds obtained by citizens. These results are then collected in a database and geocoded to develop a data layer to compare to broadband provider reported results. We are working with a number of public organizations (schools, libraries) to ensure a broad level of participation in the speed test so a meaningful sample size is obtained for comparison to data provided by broadband providers.

Connect Arkansas has purchased third party data to review broadband access and would envision continuing to utilize that method in combination with the above methods. Examples of third party data that can be purchased include: central office sites, wireless broadband coverage files and consumer warranty information from consumers who have purchased broadband related equipment such as modems.

Connect Arkansas would also like to utilize a statistical model to verify the results. We would work with the Gadberry Group to develop a mathematical algorithm which would take into account such factors as income, computer ownership and other related factors to predict where broadband usage patterns could be maximized. This application would depend on the availability of funding and if successful within Arkansas could be a tool that could be expanded into other states.

Finally Connect Arkansas has conducted field visits where we confirm the data provided by broadband providers. These field visits include conducting mobile speed tests from mobile devices as well as reviewing the location of infrastructure such as central offices and wireless towers.

4. Please provide more detail on continued updating of data.

Connect Arkansas decided to take a service provider relationship approach to deliberately

develop close, yet confidential, working relationships with the service providers working in Arkansas for initial data capture as well as continued data updating. Since Connect Arkansas is a technology and service provider neutral non-profit, the organization's ability to work with and obtain service provider data has been highly successful. Additionally, Connect Arkansas believes that the data from the service providers is an important and efficient means to capture availability data.

After the initial data deliverables to the NTIA, Connect Arkansas will continue to update and maintain broadband coverage and infrastructure data from the service providers. More specifically, Connect will continue to maintain service provider relationships as well as develop those needed relationships with any potential new provider within the state. Connect will be able to maintain data capture either through personal contact or by offering the service providers a secured, data-encrypted, website by which they will be allowed to submit updated data on a regular basis.

With regards to the service provider encrypted data collection website, providers will be given unique username and password access into the data upload page. There the provider will be able to upload their spreadsheets onto Connect's server and integrated into updated coverage maps. Likewise, Connect will submit updated data per NOFA requirements to the NTIA.

Additionally phone surveys will be conducted on an ongoing basis in conjunction with the e-communities process, speed test will be conducted on a daily basis by consumers across the state and geocoded, field trips will be conducted on a regular basis and purchased data could be acquired on an semi-annual basis. All of these activities will generate data files which will be compared to the service provided data on a regular basis.

5. Please provide more description of your mathematical model. Will this provide a cross check for availability or simply be used as a predictor of subscribership?

Should the financial resources be available, Connect Arkansas will work with the Gadberry Group to develop and refine a mathematical (statistical) model. This model is a predictive model using demographic data to determine possible subscriptions rates. Connect Arkansas plans to obtain consumer purchasing and census information that includes the consumer's address information and their zip+4 code.

This information will allow Connect to accurately map the address and predict the coverage area for the zip+4 area. In other words, Connect will be able to obtain consumer warranty card information for purchases of computer and broadband related equipment and overlay that with broadband coverage files. Consumers that utilize such equipment

as wireless routers and high speed modems, likely have broadband internet access. As such Connect Arkansas can reasonably assume that within that Zip+4 area access is available.

This method of statistical model will be primarily utilized to cross check given service provider data. However, if the service provider is unwilling to provide their data to CA, then this method will be used as a primary predictor of subscribership.

6. Please describe how much information you expect to obtain from the Gadberry "warranty card" approach. This is very expensive but we would appreciate further discussion of how it is an efficient or effective method.

The Gadberry "warranty card" approach will supply Connect with survey information, warranty card data, product registrations and additional consumer submitted data. This data captures census and zip+4 information that has shown highly effective methods of determining where broadband availability in the state. The Gadberry approach will provide Connect with a primary validation tool for broadband information given to Connect by service providers.

Additionally, Connect Arkansas will be able to use the Gadberry approach as a tool for predicting broadband availability in areas where providers have declined to participate in sharing their subscriber information. Given the census and zip+4 data provided by Gadberry, Connect Arkansas will be able to map broadband coverage based on assumptions that can be made from the Gadberry data utilizing zip+4 data blocks.

7. Does CT&T already have the infrastructure data or are they tasked with obtaining it? What representations have CT&T made about their ability to share such data with the state? How do they secure and protect such data?

Currently, CT&T does not have infrastructure data in GIS format; however they have worked with a number of broadband providers throughout the state in the design and build out of their networks. Connect is tasking CT&T with obtaining the infrastructure information. Since CT&T has over 20 years of working with service providers in Arkansas as a utility consulting agency. This history of relationships with the service providers will be an advantage to Connect in collecting this data, and Connect has leveraged their relationship with CT&T to get previous infrastructure data from the service providers.

CT&T will obtain physical infrastructure data from Arkansas One Call. Arkansas One Call is a non profit that maintains a database of all traditional utility related infrastructure

such as electric lines. Arkansas One Call has data on the exact location of all provider infrastructure data in Arkansas although much of it is not yet in a GIS format. Additionally, CT&T will work with providers to identify their infrastructure and gather any missing details such as tech, speeds, etc. Based on preliminary conversations with the associated parties this information will be shared with Connect (and subsequently with the NTIA) as long as all the service providers are aware of the use and distribution of their information. CT&T will not collect or distribute infrastructure information without the consent of the service provider and Connect.

8. If you obtain last and middle-mile infrastructure information, how do you propose to protect it? Do you have an entity within your state responsible for managing cyber security readiness and critical infrastructure coordination? If so, please describe if and how you will work with such entity to protect sensitive information (such as infrastructure information). Does such entity interface with the U.S. Department of Homeland Security, Department of Defense, or other such national security agencies?

Connect does intend to obtain last and middle-mile infrastructure information that will be protected on designated servers established for CA that is hosted by IFWorld. The servers are encrypted and password protected with additional back-up protection. Connect Arkansas does work with the state Department of Information Services (DIS) very closely, who is the designated cyber security office for the state of Arkansas. CA will work with DIS to ensure our data protection and back-up protocols meet the state and national standards. Additionally, DIS does work with such Federal agencies as the U.S. Department of Homeland Security and others to ensure Federal compliance with cyber security issues.

9. Please describe your "propagation tool" for fixed wireless datasets.

Connects propagation tool for fixed wireless datasets includes utilizing the information from fixed wireless providers about their infrastructure. The data that will be collected include tower height, antenna configuration (omni or sectorized antennas), equipment type, elevation of the tower, type of equipment being utilized on the tower. The propagation tool combines all of this information with specific performance data relating to the providers equipment, topological maps, and mathematical models to determine a highly accurate prediction of coverage area. While gathering this information depends on the cooperation of the service providers, Connect will be engaged in provider relationship development as a means to obtain the most accurate information quickly.

10. How do you plan to obtain subscriber data if service providers don't provide it? How will you protect subscriber confidentiality? Have you considered methods of calculating

ARPU and Weighted Average Speed without requiring individual subscriber data?

As discussed in question number one Connect Arkansas has employed a number of venues to collect broadband coverage data. We will continue to utilize all methods which yield accurate results.

Connect Arkansas has taken subscriber confidentiality very seriously in working with service provider data. Beside the Non-disclosure Agreement that Connect Arkansas signs in conjunction with the service provider, CA gathers and stores data on a secured server. The data provided by the service provider is aggregated into an anonymous spreadsheet that is utilized by the GIS mapping software.

Lastly, Connect plans to calculate ARPU and weighted average speed by using the FCC form 477. Each provider submits a 477 to the FCC annually reporting on ARPU and Weighted Average Speed. This information is supplied on the Census Tract level which means it will be easy to aggregate data for each provider on the county level. Additionally, this information is easily obtainable by Connect through the FCC should the providers not share the information directly with Connect Arkansas.

11. In your 71 county eCommunity survey, to be funded by the BTOP Grant? How will you fund it if you don't receive a BTOP Grant?

The funding being requested by Connect for the eCommunity survey is not to engage in a 71 county survey, rather engage nine of the most unserved and underserved counties that include Ashley, Lafayette, Miller, Nevada, Hempstead, Little River, Sevier, Howard and Pike Counties. These are counties that lie within the Delta Regional Authority footprint and this effort supports their iDelta plan. The proposed funds will be utilized for the Community Planning Leader within the eCommunity to conduct critical data surveys to find the best outreach, education and use of broadband internet access in the country's most economically disparate region. The surveys assessments will allow each county to engage in a strategic planning process around broadband adoption as recommended in the "iDelta Report."

It is Connect's hope that funding through the NTIA Sustainable Broadband Adoption program will enable Connect to deploy a more robust survey mechanism for the remaining 66 counties in Arkansas. However, if funding is not received for the proposed eCommunities survey through the BTOP program, Connect will need to further engage in private sector fundraising in order to complete the organization's broadband strategic planning mission and would explore shifting the process from a county level effort to a

regional level effort and streamline the number of communities served in the process.

12. What is the status of the NDA renegotiations? Please confirm that NDA's will be no more restrictive than permitted under the NOFA as clarified.

   Since the submission of the Broadband Mapping proposal to NTIA, Connect has reviewed and revised the NDA currently in use with participating service providers. The new NDA was approved by Connect's legal counsel in early October, and the NDA is being distributed to participating service providers through the end of October.

   The new NDA is less restrictive than Connect's original agreement. The reason behind the less restrictive NDA is to allow the data collected from the service providers to be shared according to the NTIA requirements as outlined in the NOFA and the revised NOFA.

13. Please provide a more detailed description of the actual roles of additional personnel (e.g. Shelby Johnson and Learon Dalby)

   It was contemplated utilizing these additional outside personnel. For example Shelby Johnson and Learon Dalby are both with the Arkansas State Geographic Information Office (GIO) with whom we have enjoyed a collaborative relationship as they manage a number of state related GIS activities. Due to budgetary constraints we will explore alternative methods of collecting data but will continue to maintain a collaborative relationship with those organizations.

14. Please describe your planned outreach to Indian Tribes to ensure that these groups are involved in the process and that you will receive information about broadband availability on these lands.

   Arkansas has no federally recognized Indian tribes located within her borders. We do maintain an excellent collaborative relationship with the Delta Regional Authority. We have integrated the iDelta report into our processes, have the former DRA Co-Chair on the Connect Arkansas Board of Directors and have received financial support from the DRA previously. We would envision continuing that relationship with DRA to support the delta counties in the implementation of the iDelta plan.

15. BB Mapping Budget:

Connect Arkansas is exploring the budgetary factors raised during our phone conversation earlier today with NTIA. We are modifying the budget to address the items discussed and will submit that on October 8th at the latest.