

**Broadband Mapping in Maine - Program Narrative**  
State Broadband Data and Development Grant Program  
Opportunity No. 0660-ZA29  
Submitted by the State of Maine, ConnectME Authority

In fulfillment of the application procedures for the National Telecommunications and Information Administration (NTIA) State Broadband Data and Development Grant Program 0660-ZA29, the ConnectME Authority, authorized by Governor John Baldacci of Maine as the single eligible entity to receive a grant under this program, submits this program narrative for the State of Maine.

***Executive Summary***

The ConnectME Authority (ConnectME) requests **\$2.759** million in NTIA grant funding to map broadband service and availability in Maine with a contracted mapping company partner and other interested stakeholders in Maine, by utilizing service provider (SP) address data and the state's substantial investment in E911 roads data. ConnectME proposes a phased approach to this project which will initially provide the base data required by NTIA, and in subsequent years provide refinements and updates to the data. In the first phase, ConnectME proposes to use the sophisticated addressing of Maine's E911 roads data to correctly place current broadband customers, and follow that with a review of as-built infrastructure plans provided by the service providers to fill in missing areas. For wireless broadband mapping, ConnectME will work with the service providers to either acquire accurate propagation models or will generate such models manually. Using the state's E911 address ranges, ConnectME will finally generate a database of all possible addresses that have broadband access, including information about the types of service available at each address, as required by this grant program. After this first phase is complete, ConnectME will work on further refinements to the database by acquiring semiannual updates and by refining wireless propagation models with sophisticated light detection and ranging (LIDAR) data in urban areas. ConnectME is also requesting **\$436,000** for the planning piece of the project.

***1. Data:***

***(a) Data Gathering.***

To complete the phase I requirements, ConnectME has nearly completed negotiating a contract with noted mapping and GIS service provider James W. Sewall Co., of Old Town, Maine. Sewall and ConnectME will work together and in conjunction with the Maine Public Utilities Commission (PUC) to contact all providers of internet service that meet the definitions of "broadband" as outlined in the broadband mapping Notice of Funds Availability (NOFA), that is two-way data transmission with advertised speeds of 768 kbps downstream and 200 kbps upstream. Data requested will include addresses of current subscribers and as-built infrastructure (for wired broadband) or propagation models (for wireless broadband). A non-disclosure agreement developed by the law firm of Rudman & Winchell will be used to protect the data confidentiality. This agreement

will be based on the confidentiality guidelines presented by NTIA in the NOFA documents and other resources.

ConnectME intends to update and refine the data over the five-year performance period of this grant. To that end, ConnectME proposes to have its contractor request updates for availability data every 6 months and provide those updated addresses to NTIA. Additionally, ConnectME proposes to acquire high-resolution 3D data of urbanized areas to refine and verify wireless propagation data by contributing to the New England LIDAR project.

Below is the list of tasks provided by Sewall Company, the broadband mapping and inventory contractor to accomplish the goals of the State Broadband Data and Development Grant Program:

1. Establish a template Non-Disclosure Agreement (NDA) document that meets the requirements set forth in Maine State law, the ConnectME rules, and the guidelines/requirements set forth in the NTIA Notice of Funds Availability for the State Broadband Data and Development Program issued July 1, 2009 to promote the use of data from Broadband Service Providers (SPs) concerning the location of their broadband infrastructure within the State of Maine.
2. Execute the project NDAs with those SPs who will participate in the mapping project program as provided in the aforementioned NOFA and related NOFA for the Broadband Technology Opportunity Program.
3. File originals and copies of the executed NDA documents with ConnectME and the Service Providers.
4. Investigate the availability of commercially available address data for the State of Maine. Report the findings of this investigation. If advantageous to the project, incorporate this data into the mapping project strategy.
5. In coordination with ConnectME, develop tools to assist with the collection of SP data and to validate that minimum coverage standards for the mapping project have been satisfied.
6. Establish a web-based interface and accompanying tools to facilitate the collection and updating of address records, mapping files, and other suitable materials to support the creation and maintenance of an enhanced statewide map of broadband service availability.
7. Using data provided by the SPs, create a geographic, street-level statewide inventory of “wired” (i.e. DSL, cable modem, fiber) and “fixed-wireless” high speed (broadband) internet service to identify where current terrestrial broadband service and infrastructure does or does not exist. The data will include service type, transmission speed, and service provider.
8. Using data sources gathered from SPs and the Maine Office of GIS, provide a GIS-ready dataset suitable for use by ConnectME and that meets accuracy standards adequate for 1:24,000-scale mapping. The mapping will represent road

- segments coded as to availability of DSL and/or cable internet, including transmission speeds and levels and types of service. As stated in the RFP, the State's E-911 road centerline data will form the basis of this primary dataset where available. The resulting dataset will be in the UTM coordinate system, zone 19N, NAD83 in ESRI shapefile format.
9. Using data sources gathered from SPs and the Maine Office of GIS, provide a GIS-ready dataset suitable for use by ConnectME and that meets accuracy standards suitable for 1:12,000-scale mapping. This mapping will represent fixed-wireless broadband service availability. The dataset will include terrain-corrected and, where available, building-corrected transmission areas for fixed-wireless broadband providers so that areas blocked from service by buildings, mountains, or hills are shown as not receiving service. The resulting dataset will be in the UTM coordinate system, zone 19N, NAD83 in ESRI shapefile format.
  10. In un-served areas, and to the extent facilitated by using available project data sources, identify public and private infrastructure (towers, etc.) that might be utilized to provide broadband service.
  11. In coordination with ConnectME, participate in and execute collaboration activities with other State-level agencies, local authorities, non-profit entities such as MaineREN, Native American tribal authorities, business community interests, and other key stakeholders who may contribute to the successful completion of a statewide broadband service map. Activities would be designed to gain access to existing data and to increase awareness of the mapping project and resulting products and services.
  12. Assemble a substantially complete address level data table depicting the availability of broadband service including technology type, advertised speed, "expected actual" speed, and end user type. Information so provided will comply with any pertinent rule adopted by RUS, NTIA, and the FCC in connection with the implementation of the ARRA.
  13. Collect data and produce a shapefile depicting wireless service not provided to a specific address (mobile wireless) including Provider Name, DBA name, FCC registration number (FRN), technology used, transmission spectrum, advertised speed, and typical speed. Information so provided should comply with any pertinent rule adopted by RUS, NTIA, and the FCC in connection with the implementation of the ARRA.
  14. Collect data and assemble a table representing the "middle-mile connection points" for each broadband service provider with attributes representing provider name, DBA name, FRN, ownership, serving facility capacity, serving facility type, latitude and longitude coordinate, and elevation. Information so provided should comply with any pertinent rule adopted by RUS, NTIA, and the FCC in connection with the implementation of the ARRA.
  15. Collect data and assemble a table representing "community anchor institutions" with attributes representing institution name, address, category based on defined codes, service availability, latitude and longitude coordinate, downstream and upstream service speed. Information so provided should comply with any

- pertinent rule adopted by RUS, NTIA, and the FCC in connection with the implementation of the ARRA.
16. Collect data and assemble a table representing the “last mile connection points” for each broadband service provider. Information so provided will be used as part of independent analysis of those locations where service is made available. This data will be maintained as confidential information by the project team.
  17. Provide field data collection services to support specific data development and data verification requirements of the project plan.
  18. Perform independent activities to validate the accuracy of data collected from service providers. This may include but not be limited to sampling of location based information, sampling of download and upload speeds, and sample testing of mobile wireless coverage.
  19. Execute updates of these data and map items based on new information at six month intervals for years 1 – 3 of the 5-year mapping project. Updates for year four and five are scheduled to be completed by State personnel upon transfer of process responsibilities.
  20. Develop a work process to facilitate a bi-annual update of the aforementioned products and deliverables. Document this process for training and reference by project team members.
  21. Pilot and, if necessary, revise processes for the implementation of the systems for map product updating. Document this process for training and reference by project team members.
  22. Conduct refinement of the broadband availability data and maps using LIDAR data, photogrammetric mapping, and other field collected or generated data that may be developed by ConnectME in support of the long-term broadband mapping program. Services will include integration into the tabular and GIS data sets and map products and refinement of location and service representations based on this new information. Such refinement would be used to enhance information representing underserved subscribers of broadband such as those blocked from reception of wireless service by natural or manmade features.
  23. Conduct analysis of broadband mapping and availability data with available census data to support the activities associated to development of a long-term broadband sustainability plan within the State of Maine. This task to be defined further by ConnectME as the strategy develops.
  24. Assist ConnectME in deploying these systems within the State’s IT and GIS infrastructure as per Sewall’s proposal.
  25. Document and transition the work process developed from these tasks to State personnel who will take ownership of the updating processes.
  26. Provide training to ConnectME staff who will take over execution of these tasks.
  27. Provide technical support to users of these systems for the period of the contract as per Sewall’s proposal.

28. Throughout the project, provide project management services including work plan documents, attending meetings, creating regular progress reports summaries, coordination of work teams, and management of the team's schedule to meet project deadlines for the period of the contract.

ConnectME intends to update and refine the data over the five-year performance period of this grant. To that end, ConnectME proposes to have its contractor request updates for availability data every 6 months and provide this updated location, mapping, and service information to NTIA.

Connect ME proposes to refine the mapping of broadband further in phase II, during the second and third year of the project. ConnectME is interested in refining fixed wireless broadband propagation in urban areas by using 3D modeling based on LIDAR data. Such data would provide the measurements necessary to see where buildings attenuate wireless signals in urban areas. ConnectME proposes to leverage the existing LIDAR for New England project which is a regional approach for gathering LIDAR in the northeast. By participating in this program, the LIDAR costs for urbanized areas will be greatly reduced.

ConnectME is also interested in mapping the distribution of broadband by parcels, to provide area analyses and maps. In a rural state such as Maine, many parcels are large and may only have one dwelling. A map based solely on addresses and roads will be misleading when determining the area served. ConnectME proposes to leverage Maine's significant investments in parcel mapping to map broadband at the parcel level and to integrate with other state parcel-level mapping projects such as those put forward by the Maine Library of Geographic Information.

Phase II of the project will involve updates and refinements to the data including:

1. Contacting vendors for changes in their as-built infrastructure every six months
2. Compiling the updates as above into addresses that can be provided to NTIA
3. Collection of light detection and ranging (LIDAR) data over urban areas for 3D modeling of wireless broadband propagation
4. Collection of digital parcel data for mapping broadband service at the parcel level.

***(b) Accuracy and Verification.***

Integrity of the map data sets is critical. There are a number of data validation checkpoints that will be incorporated as part of the project work. The GIS mapping tasks will incorporate validation processes to assess the geospatial alignment and source content of the GIS sources such as the E-911 roads data. The data collection mechanism will utilize processes for detecting changes in the data sources as the project moves into maintenance mode.

The information delivered by the SPs concerning the broadband level and location should be validated. To be cost-effective and produce the results necessary to demonstrate the integrity of the information, these processes should be seamlessly transferable.

GIS Sources: All GIS sources, whether from the SPs or other sources, will be validated. For example, the initial review of the E-911 roads data may indicate that some segments are incomplete in content or not reflected in the current data set. Work will be done to update segmentation and/or address range values to improve the accuracy of the geo-locating processes.

Data from the SPs may need to be aligned to the roads data for spatial updating. Conflation of attributes may be a viable means to create the records for the project maps. More definition of what each provider may have available for street level information will be required to define these types of processes more clearly and establish the overall validation protocols associated to these sources.

Service Provider Data: Since the goal of this effort is to create mapping that represents areas that are unserved or underserved relative to broadband service, it will be important to test the validity of the service area and service levels reported by the providers. To test the transfer rate of any network connection, one must first have appropriate access to that network. Once connected, there are different ways to test the upload and download transfer rates of the network. The network provider is able to test a particular network site by sending a signal that returns a measurable response, establishing both connection capability and connection throughput estimates.

A consumer of network service is now able to use any of a number of online network speed testing services that have established servers that receive the signal via the client ISP system and returning a value showing the upload and download transfer rates of the measured response. As part of our project, this type of network test server will be established where users can independently test their network speeds. The results of these independent tests along with confidential information about the IP address being tested and the location from where the test is run will be used to sample and validate the information from service providers. An on-line tool will be used that measures this information and reflects how that service point speed fits within the range of networking services understood to be available.

To encourage the use of this system, ConnectME intends to use planning funds to launch a public awareness program to educate the public on the initiatives to increase broadband service and the role they can play in contributing to the mapping and planning of broadband service. We will also seek the collaboration of key agencies, businesses, local governments, and community anchor institutions in providing data that will support the goals of this project.

In addition to independent sampling of network speeds, we will use field data methods such as test mapping the extent of mobile broadband signals. The goal of these efforts will not be to identify isolated pockets in the system, but rather to identify larger gaps in these networks.

As mentioned previously, modern GIS tools provide the means to analyze the systems in a number of ways. One such way is using available or acquired 3D data sources to analyze the impacts of terrain relief and man-made objects on signal reception. As Maine is a state with a wide range of community types and environmental features, this will be a valuable part of assessing the infrastructure requirements to develop a long-term broadband sustainability plan.

***(c) Accessibility.***

ConnectME will make the provided data available by using a simple web mapping application developed by Maine for that purpose, in conjunction with the Maine Office of GIS. The application will allow a user to simply point to a location on the map, or enter their address, and see whether broadband service is available and what tiers of service are available. Additionally, if providers desire to be identified, the application can also reveal what providers can provide service at the address. The state-level map will be based on the E911 data for wired broadband infrastructure and will show polygon-based propagation models for wireless infrastructure. The state-level map will be available as both an interactive web mapping application and a high-quality downloadable PDF suitable for printing. All non-confidential data will be made available from the Maine Office of GIS online data catalog.

***(d) Security and Confidentiality.***

ConnectME's contractor has secured the services of a prominent Maine law firm, Rudman & Winchell, to develop a non-disclosure agreement (NDA) which will protect the confidentiality of the data.

In order to release its data, a SP will seek assurance that its confidential data will be kept confidential with controlled distribution as it is likely to be considered proprietary and strategically sensitive.

The mapping contractor and its law firm will work with ConnectME to establish a standard NDA template that describes specific uses for the data requested as well as who will have access to it. Confidential information as established by these NDA between the State of Maine and the SPs will not be made public. Once the NDA template has been developed, the contractor and representatives of ConnectME, will enter into discussions with the each of the SPs to execute the agreements.

Data identified as sensitive information relative to the business interests involved and to the public these businesses serve shall be maintained as secure, confidential data. Security of the data collected will be maintained through the use of encrypted security protocols and password authenticated systems. Access to these systems will be limited to members of the project team and to designated points of contact with the different service providers.

***2. Project Feasibility:***

***(a) Applicant Capabilities.***

ConnectME is requesting **\$2.759** million in funding under this program to cover the costs of developing, updating, and internet-enabling the broadband mapping data. See the attached ConnectME Fund Performance Report for June 2009 as a demonstration of ConnectME's ability to fully fund the matching requirement, if necessary. It is expected, however, that in-kind matches will provide a significant portion of the match requirement.

***(b) Applicant Capacity, Knowledge, and Experience.***

This project is being undertaken by a coalition of organizations with a wide breadth of broadband and mapping experience. The coalition includes:

ConnectME Authority: The Maine Legislature approved the operation of the ConnectME Authority with the goal of expanding broadband access in the most rural, un-served areas of the state that have little prospect of service from a traditional provider. ConnectME is to "identify un-served areas of the State; develop proposals for broadband expansion projects, demonstration projects and other initiatives; and administer the process for selecting specific broadband projects and providing funding, resources, and incentives." The Authority has funded twenty-one grant proposals in three grant rounds made on behalf of, in partnership with communications service providers. The Authority currently hosts a web-based broadband availability map that is much less granular (at the town boundary level) than the NTIA requires, but is nonetheless, very useful to consumers looking for service providers.

Maine Public Utilities Commission. The Commission regulates local and in-state service, while the Federal Communications Commission (FCC) regulates interstate service. Wireless carriers are regulated by the FCC. The Commission regulates three types of landline carriers: Incumbent Local Exchange Carriers (ILECs) whose monopoly service territories were established before competition entered the telecommunications market, Interexchange Carriers (IXCs) that provide in-state or interstate long distance services, and Competitive Local Exchange Carriers (CLECs) that provide local service in competition with ILECs and other CLECs. The MPUC is a critical partner in the mapping project as many telephone carriers provide broadband that delivers high-speed internet services. Broadband is provided through a variety of technologies, including Digital Subscriber Line (DSL), cable, and wireless technologies. The Director of the Safety and Security Team at the MPUC has provided significant staff time assisting with the development of the Mapping and Inventory Project RFP and contract, and with the preparation of the grant project application.

Maine Office of GIS. The Maine Office of GIS (MEGIS) is an active participant in this project, providing GIS advice and overview, and working with the contractor to ensure quality data delivery and attainment of the NTIA requirements. MEGIS has been the

leading GIS agency in Maine since 1992, and provides GIS services to hundreds of users in the state. MEGIS has completed several large GIS projects including development of the state's E911 roads data, mapping of Maine's hydrography and participation in the National Hydrography Dataset, coastal flood mapping projects, and development of aerial orthophotos for the State. The State GIS Manager, Michael Smith, is providing oversight for this project, has 19 years of experience with GIS and management of large GIS data development projects.

Broadband Strategy Council: The ConnectME Authority was directed by the legislature to establish a special council to advise ConnectME on broadband opportunities available under the American Recovery and Reinvestment Act of 2009, as well as the University of Maine System on matters pertaining to the sale or lease of excess capacity as a result of the conversion of the education broadband spectrum.

James W. Sewall Company: Sewall, established in Old Town, Maine, in 1880, is Maine and New England's largest and most experienced mapping firm. Sewall is a privately held firm under management ownership, with eleven offices nationwide, 150+ staff, and ever broadening capabilities. Company headquarters are in Old Town which houses more than 100 staff. Sewall clients relevant to ConnectME's project include private and public sector organizations requiring accurate and efficient geocoding, telecommunications firms for whom the company has converted existing land-based and facilities data from hardcopy source documents, migrated digital data from one system to another, and acquired new data with aerial and ground surveys, and dozens of entities for whom the company has built online databases and internet mapping systems.

Sewall has been a provider of utility and telecommunications data conversion and GIS data development services since 1988. These services have included asset mapping, location based data collection, infrastructure integrity management applications, custom GIS database development and integration, GIS work process design, and data validation processing. Sewall's client list totals in the thousands, nation wide. Industries served include local, state, and federal government agencies, telecommunications providers, pipeline operators, public and private utilities, mining and exploration, energy generation, transportation, forestry, and agriculture. Sewall's assigned project staff includes consulting and project management staff with more than 50 years of combined experience, 5 GIS data analysts, 3 software and web development staff, 2 database specialists, and 10 data support staff. In addition we will be able to draw upon a resource pool that includes 20 additional data development and GIS staff, 6 surveyors, and 12 mapping specialists.

### ***3. Expedient Data Delivery:***

The NTIA deliverables, as understood by the Authority and restated in the "Data" section of this project narrative are extremely ambitious. The Authority shares the NTIA goals, and believes the required deliverables will ultimately lead to the best product on a national scale. However, the Authority respectfully notes that the feasibility of any state that hasn't already completed broadband mapping, delivering all products to the required

specifications by the dates in the NOFA is impossible. Attempting to do so or trying to deliver substitute products to temporarily but incompletely satisfy the requirements will only side-track a state's long-term broadband mapping effort.

Understanding that there is a requirement for a national broadband map is to be completed by February 17, 2011 the state submits the following project timeline:

<b>Date</b>	<b>Milestone</b>
August 14, 2009	State Broadband Data and Development Program grant application submitted
August 31, 2009	Contract negotiation with vendor complete
September 15, 2009	Grants awarded
September 16, 2009 - October 15, 2009	Award documents made available
November 13, 2009	Compliance with award documentation requirements
November 1, 2009	Initial delivery of state broadband availability data required to be delivered to NTIA, will not be available because of time constraints.
February 1, 2010	Substantially complete delivery of state broadband availability data to NTIA
March 1, 2010	First complete 2010 delivery of state broadband availability data to NTIA
September 1, 2010	Second complete 2010 delivery of state broadband availability data to NTIA
March 1, 2011	First complete 2011 delivery of state broadband availability data to NTIA
September 1, 2011	Second complete 2011 delivery of state broadband availability data to NTIA
March 1, 2012	First complete 2012 delivery of state broadband availability data to NTIA
September 1, 2012	Second complete 2012 delivery of state broadband availability data to NTIA
December 31, 2012	Broadband data collection and delivery transitioned from vendor to State
March 1, 2013	First complete 2013 delivery of state broadband availability data to NTIA
September 1, 2013	Second complete 2013 delivery of state broadband availability data to NTIA
March 1, 2014	First complete 2014 delivery of state broadband availability data to NTIA
September 1, 2014	Second complete 2014 delivery of state broadband availability data to NTIA
October 10, 2014	Final Recovery Act report due

#### ***4. Process for Repeated Data Updating:***

The mapping contractor will execute updates of these data and map items based on new information at six month intervals for years 1 – 3 of the 5-year mapping project. Updates for year four and five are scheduled to be completed by State personnel upon transfer of process responsibilities. The update process will use many of the procedures and tools established during the early project phases. As new service providers initiate business activities, new broadband technology is employed, and new territories developed, staff will seek sources and include this data into the systems it supports. In addition to verification procedures designed to validate the incoming data from providers, the team will use other sources that become available over the life of the project.

For wireless updates and further verification, ConnectME proposes to partner with the “LIDAR for New England” project and fund collection of data over urbanized areas. Again, "Urban area" here is not defined based on census characteristics, but rather those towns or cities with "downtowns" that have tall buildings creating shadows for RF propagation. LIDAR data will be converted to 3D building models and ArcGIS Spatial Analyst software will be used to compute "viewsheds" for wireless propagation taking into account attenuation caused by buildings. The exact dates for this delivery cannot be specified yet, but should occur in the fourth year of the project.

For parcel-level mapping, ConnectME proposes to partner with existing parcel-level mapping projects in Maine, especially those funded by the Maine Library of Geographic Information and the United States Geological Survey. ConnectME and the Maine Office of GIS will provide parcel-level mapping by contributing to further digital parcel completion in Maine and providing a parcel-level map in the fourth year of the project.

#### ***5. Planning and Collaboration:***

##### **(a) Collaboration.**

Our collaboration efforts center around the search and exchange of knowledge and the benefit gained from working together with stakeholders and organizations with goals in common to the mission of the Authority. We apply this knowledge to create solutions to the problems facing Maine’s constituents as they relate to our core mission. To that end we routinely participate in public forums, conferences, webinars, and other gatherings where the development and enhancement of broadband access are centric to the agenda. Where appropriate we share and leverage data that provides information on the state of the industry and the plans of other agencies and organizations who wish to take advantage of the opportunities and benefits broadband service can offer. Since our inception, ConnectME has regularly and routinely sought the input of service providers and consumers to better understand their needs and concerns as it relates to a long-term broadband plan. These inputs factor into our policy decisions, grant approval decisions, and procedures. We will continue to seek the advice of the communities, organizations and industries we serve in the future.

The ConnectME Authority and the Broadband Strategy Council are made up of members from a variety of industries, individual companies, and state agencies. ConnectME works closely with a variety of state agencies including the Public Utilities Commission, Maine Office of GIS, the Office of the CIO, Maine State Library and Archives, Department of Education, Department of Economic and Community Development and the Office of Innovation. ConnectME also collaborates closely with the University of Maine System, especially in relation to its operation of the Maine School and Library Network (MSLN) and the Maine Research and Education Network (MaineREN). The MSLN connects nearly all public K-12 schools and public libraries, over 850 locations.

The Authority will continue to work closely with Federal Agencies such as the Federal Communications Commission, Department of Commerce – NTIA, the Universal Service Administrative Company - Schools and Libraries Program, and the Maine Federal Congressional Delegation. During the course of the Authority’s operation and grant programs we have worked closely with many small towns and cities across the most rural parts of the state, as well as with county economic development organizations such as the Sunrise County Economic Council and Washington County: One Community. The Authority and the Broadband Strategy Council have also been in contact with representatives of Maine’s Native American tribes regarding their broadband infrastructure projects.

The Authority routinely collaborates with its counterparts in the other New England states of New Hampshire, Vermont, and Massachusetts.

The LIDAR portion of this proposal collaborates with the Maine Office of GIS, all the New England States, US Geological Survey, Federal Emergency Management Agency, US Fish and Wildlife Service, US Forest Service, US Department of Transportation, Army Corps of Engineers, Natural Resource Conservation Service, several state agencies in New England, and the Maine Library of Geographic Information.

The parcel-level mapping portion of this project collaborates with the Maine Office of GIS, the Maine Library of Geographic Information, US Geological Survey, Federal Geographic Data Committee, and the counties and municipalities in Maine.

**(b) Planning.**

- 1) BDIA-related purpose as listed in NOFA footnote 6. ConnectME’s mapping and inventory project, funded by the NTIA for the collection of broadband-related data, will fulfill four of the ten purposes listed in footnote number six of the NOFA (numbers 1, 2, 4, and 10). Our project will provide a baseline of broadband service in Maine, by indentifying and tracking the availability of broadband service and its adoption rate. The project will also identify the providers and speed of available broadband service, creating a geographic inventory map of broadband service to be made available to the NTIA and the general public.

The ConnectME Planning proposal will address four purposes listed in footnote six of the NOFA (numbers 3, 6, 8, and 9):

3) to identify barriers to the adoption of broadband service and information technology services; 6) to collaborate with broadband service providers and information technology companies to encourage deployment and use; 8) to collect and analyze detailed market data concerning use and demand for broadband service; and 9) to facilitate information exchange regarding use and demand for broadband services between public and private sector users.

2) The problem(s) to be addressed.

A major concern of the ConnectME Authority beyond the simple availability of broadband service is the low take-rate or penetration of subscribership to available broadband services. Maine's average penetration rate is significantly lower than the national average. Factors contributing to a lower than average penetration rate, are socio-economic – low income consumers cannot afford the computer or the cost of subscribing to broadband service; lower education level consumers are not aware of the services available online; and many consumers do not see value in being online. Increasing the penetration rate for broadband services changes the economic tipping point for investment by service providers. Service providers calculate many variables in making an investment decision for a particular community: homes per mile; terrain; topography; geology; and expected penetration rate. Raising the expected penetration rate changes that calculation allowing, for example, fewer homes per mile for an investment decision.

3) The proposed solution. ConnectME's planning proposal will utilize information gained by the existing mapping contractor (Sewall) in its contacts with SPs to identify barriers to adoption, as the SPs are in constant contact with potential consumers. The contractor will continuously collaborate with the SPs to identify methods to encourage deployment and use of computers. ConnectME will also advertise for the services of market research and marketing firm to collect and analyze market data concerning the use and demand for broadband service. The marketing firm will develop and coordinate website activities, a public awareness campaign, and market research.

In addition to proactively gathering data to analyze barriers to user adoption, ConnectME intends to initiate a public awareness campaign designed to further educate consumers of the social and economic opportunities available through broadband use. Using mailings, media outlets, and our website, we will enhance the public's ability to better understand the options for services available and those being developed. We will also promote the broadband industry by highlighting projects that expand service in a way that creates economic opportunity and growth throughout the state and the region.

4) The anticipated outcomes of the project.

The primary expected outcome is a higher than national average for broadband subscription rates which, in turn, will lower the “tipping point” for investment, allowing higher rates of broadband infrastructure build-out by SPs. Consumer outcomes are expected to higher user rates of online services such as E-government, medical resources, telecommuting, economic development resources, and education resources.

5) The cost of such proposal: **\$436,000** in NTIA grant funds. The Authority will provide **\$69,500** in cash match and **\$43,133** in in-kind match. (See attached spreadsheet for details)